From:	Stevens, Clint@Wildlife
To:	Nobuhiro, Nicolette
Cc:	Salazar, Veronica@Wildlife; Connolly, Linda@Wildlife
Subject:	RE: Status of Notification Nos.: 1600-2019-0267-R4; 1600-2019-0268-R4; 1600-2019-0270-R4
Date:	Tuesday, July 28, 2020 1:29:56 PM
Attachments:	image001.png

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Hello,

This email is being sent to inform you that because the CA Department of Fish and Wildlife did not provide a draft streambed alteration agreement for your review by the deadline of July 17, 2020 your project is authorized to proceed by operation of law (oplaw). This means your project can be constructed as described in your notification of lake or streambed alteration (Notification No. 1600-2020-0267-R4, 1600—0268-R4, 1600-2019-0270-R4). This includes the project term, begin and end dates for construction, and all avoidance and minimization measures for wildlife included in the notification, attachments, and email correspondence. Please note that notifications approved by oplaw are not eligible for extension or amendment. A courtesy letter will be forthcoming but you do not need anything further from CDFW to begin your project. Please contact me at Clint.Stevens@wildlife.ca.gov f you have any questions regarding the oplaw status of your project.

From: Nobuhiro, Nicolette <nnobuhiro@fresnocountyca.gov>
Sent: Tuesday, July 28, 2020 10:27 AM
To: Stevens, Clint@Wildlife <Clint.Stevens@Wildlife.ca.gov>
Subject: RE: Status of Notification Nos.: 1600-2019-0267-R4; 1600-2019-0268-R4; 1600-2019-0270-R4

Warning: This email originated from outside of CDFW and should be treated with extra caution.

Hi Clint,

I just wanted to follow up with you regarding my previous email and if you are able to provide any information on the status of these Notifications?

Thank you,

Nicolette Nobuhiro | **Planner**
Department of Public Works and Planning | **Design Division**
2220 Tulare St. 7th Floor Fresno, CA 93721
Main Office: (559) 600-4078 Direct: (559) 600-0524
Your input matters! Customer Service Survey

From: Nobuhiro, Nicolette
Sent: Monday, July 20, 2020 7:40 AM
To: Stevens, Clint@Wildlife <Clint.Stevens@Wildlife.ca.gov>

Subject: Status of Notification Nos.: 1600-2019-0267-R4; 1600-2019-0268-R4; 1600-2019-0270-R4

Good morning Clint,

On May 18th, the County received complete letters for the following Notifications:

- Notification No. 1600-2019-0267-R4 – Los Gatos Creek
- Notification No. 1600-2019-0268-R4 – Los Gatos Creek
- Notification No. 1600-2019-0270-R4 – Travers Creek

The Department had until July 17th, 2020 to issue a draft agreement or inform that an agreement is not required. Since it is July 20th, I was wondering if you could provide an update on the status of these Notifications?

Thank you,

Nicolette Nobuhiro | **Planner**
Department of Public Works and Planning | **Design Division**
2220 Tulare St. 7th Floor Fresno, CA 93721
Main Office: (559) 600-4078 Direct: (559) 600-0524
Your input matters! Customer Service Survey

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4593
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

January 27, 2020

RECEIVED
JAN 30 2020
FRESNO COUNTY
DEPT. OF
PUBLIC WORKS & PLANNING

Cynthia Zamora
County of Fresno
2220 Tulare Street, 6th Floor
Fresno, California 93721

Subject: Incomplete Notification of Lake or Streambed Alteration
Notification No. 1600-2019-0270-R4
Bridge Preventative Maintenance Program Scour Mitigation Project
Travers Creek – Fresno County

Dear Ms. Zamora:

On December 27, 2019, the California Department of Fish and Wildlife (Department) received your Notification of Lake or Streambed Alteration (Notification). On January 27, 2020, the Department determined that your Notification is incomplete because the information checked below is either missing or insufficient. To complete your Notification, please review the Notification instructions and provide the following Notification sections, along with a copy of this letter, to the Department at the above address.

- ☐ *Section 4:* Agreement term requested
- ☐ *Section 5:* Agreement type
- ☐ *Section 6:* Notification fee balance
- ☐ *Section 7:* Prior notification order
- ☐ *Section 8:* Project location, map, and directions from nearest highway
- ☐ *Section 8:* USGS quad map name, township/range, section, and ¼ section
- ☒ *Section 10:* Complete project description
- ☒ *Section 10:* Project diagrams, plans, maps
- ☒ *Section 11A-D:* Project impacts
- ☐ *Sections 11E-G:* Biological or hydrologic studies; resource mapping
- ☒ *Section 12:* Measures to protect fish, wildlife, and plants
- ☐ *Section 13:* Permits required
- ☒ *Section 14:* Environmental review documents
- ☐ Notification Attachment: A ☐ B ☐ C ☐ D ☐ E ☐

Section 10: The description of work discusses what the contractor would likely do to install rock slope protection, perform bridge maintenance, and remove vegetation. Please clarify the methods that are proposed and provide a detailed step-by-step description of all activities that will include a stream alteration. For sealing cracks in existing concrete, please specify if any ground disturbance, for example to expose the area to treat, will be included in the project. Please describe how vegetation will be cleared from the channel and what equipment will be used. Please indicate on maps and aerial photos the areas of vegetation removal.

Please provide a map (i.e., over an aerial photo) that depicts the extent of each activity, including but not limited to grading, vegetation removal, rip rap placement, concrete pouring, staging, stockpiling, and access. On maps included with the Notification, please clarify what is meant by the notation for temporary earthen dams on the upstream and downstream side of the bridge.

Section 12: Please clarify if any mitigation or compensation measures are proposed for permanent and/or temporary project impacts.

Section 14: Box E in this section indicates that an Initial Study was prepared but it is not included with this Notification. Please provide the Initial Study for clarification. Also, these projects are part of a larger project pursuant to CEQA. As indicated in the instructions to Box G, please briefly describe the entire project.

Please note that you may not proceed with your project until your Notification is deemed complete, and you have obtained a Lake or Streambed Alteration Agreement, if required. If you have any questions regarding this matter or need additional information, please consult the "Notification Instructions" and/or "Questions and Answers" that were included in the notification materials and are available online at https://www.wildlife.ca.gov/Conservation/LSA. If you have questions, please contact Jim Kitch, Environmental Scientist, at (559) 243-4014 extension 233 or by email at James.Kitch@wildlife.ca.gov.

Sincerely,

Linda Connolly
Senior Environmental Scientist Supervisor

Section 10 and 11

Step-by-Step process of Scour Protection Activities at Bridge 42C0179:

1. Pre-construction surveys will be conducted by a qualified biologist prior to the start of any activity. Avoidance and minimization measures will be implemented per Natural Environment Study (Minimal Impacts).

2. The construction vehicles and equipment will enter the channel from the construction staging area on the South side. A temporary earthen berm will be constructed across each end of the temporary access in order to get the equipment down into the channel without cutting into the banks. Clean materials, washed gravel or soil, will be used to construct the berm to minimize and prevent siltation. Upon completion of construction activities, the area used for temporary construction access will be restored to its original condition.

3. Clearing and grubbing will occur before performing earthwork in the area. The Contractor will clear the channel of vegetation by removing shrubs, dead vines, bushes, and approximately 15 willow and cottonwood trees with a DBH of 18" – 22"; about eleven (11) trees on the Southeast side and about four (4) on the Northeast side (see Impacts Map for more details). No trees will be removed on the Northwest and Southwest side of the channel. The Contractor will grub the area to remove all existing low-lying vegetation. Typical excavator, chainsaw, and other suitable machinery may be used to complete clearing and grubbing. All removal activity will occur in the permanent impact area and all excavated material will be hauled off site.

4. Construct Rock Slope Protection (RSP)

   The Contractor will install RSP as follows:

   a) The Contractor will grade the slope to elevations shown on the plans.
   b) To prepare the area for rock slope protection, an excavator will cut 140 cubic yards (cy) of existing native soil and small broken pieces of concrete along the channel bottom near the culvert invert.
   c) Before placing the fabric, the Contractor will ensure the surface of the slope is free of loose or extraneous material and sharp objects that may damage the fabric.
   d) Place the RSP fabric per the manufacturer's instruction and ensure that the fabric is placed loosely enough on the slope to conform to the surface, but not damage the fabric when the cover material is positioned.
   e) Edges of the fabric will be joined by overlapping joints or stitched seams.
   f) Excavate for footing trench along the toe of the slope.
   g) Place the rocks in accordance to Caltrans Standards Specification Section 72-2.03C Method B. Rocks will be placed by dumping and spreading in layers by bulldozers or other suitable equipment (backhoes and dump trucks) and in such a way that will minimize voids. Larger rocks will be placed in the toe course and on the outside surface of slope protection.

h) Approximately 133 cy of RSP will be installed.
i) Excavated material will be used to fill the voids.
j) Upon completion of rock slope protection work, the Contractor will clean up RSP debris and haul off site.
k) Further details can be found in the Construction Plans.

5. Complete Replacement of Northeast Concrete Slope Paving (CSP)

Demolition and concrete slope replacement work sequence will be as follows:

a) Contractor will sawcut the existing concrete slope in sections through its full thickness and lift each slab section using removal buckets mounted on hydraulic excavators.
b) Demolished materials will be hauled out to an approved disposal site.
c) Backfill voids and evenly grade to existing topography. Light equipment will be used for the backfill compaction. Contractor will excavate existing ground to the bottom of cutoff.
d) Contractor will form and install rebars. A concrete pump truck will be used to pour concrete per construction plans.
e) Placing concrete slope protection will comply with Caltrans Standard Specifications (CSS) Section 72-5.03:
    a. Evenly grade all surfaces where concrete is to be placed, such that no point on the graded surface is above the designated plane.
    b. Placing concrete must comply with CSS Section 51.
    c. Spread and tamp concrete until it is thoroughly compacted and mortar flushes to the surface. If the slope is too steep to allow the use of concrete wet enough to flush with tamping, tamp the concrete until it is consolidated and immediately trowel on a mortar surface that is 1/4 inch thick. The mortar must consist of 1-part portland cement and 3 parts fine aggregate.
    d. After striking-off to grade, hand-float the concrete with floats that are at least 4 inches wide and 30 inches long. Broom the entire surface with a stiff-bristle broom to produce a uniform surface. Brooming must be done when the surface is set enough to prevent deep scarring and must be accomplished by drawing the broom down the slope, leaving marks parallel to the edge of the slope. The Engineer may direct you to apply a fine spray of water to the surface immediately before brooming. Edges and joints must be edged with a 1/4-inch-radius edger before the brooming.
    e. Approximately 7 cubic yards of CSP will be installed.

6. Seal cracks in Northwest slope paving will be repaired in accordance to Section 15-5.11 of the Special Provisions. *Contractor will carry out sealing activities in a way that no ground disturbances will occur; therefore, there will be no exposed areas.*
    a. Cracks having widths less than 250 mils will be sealed by injecting epoxy adhesive into cracks through injection ports.

b. Cracks having widths greater than 250 mils will be sealed by placing a backer rod and flexible joint sealant at the surface of the crack and injecting behind the sealant with epoxy resin.

7. Patch Abraded Culvert Walls:
   a. The Contractor will carry out the repair in the following sequence:
      a) Remove unsound concrete in accordance to Caltrans Standard Specifications. The perimeters of the repair area shall be sawcut to a minimum depth of ½ inch.
      b) Prepare the concrete surfaces per the manufacturer's recommendations. Clean concrete surfaces by abrasive blasting. Presoak the prepared concrete surface to provide a saturated surface-dry condition.
      c) Fill spalled surface areas with approved filler material with bonding agent.
      d) Apply bonding epoxy before placing filler material when recommended by the manufacturer. Place the filler material per the manufacturer's recommendations.
      e) Cure filler material per manufacturer's recommendations.

Section 12

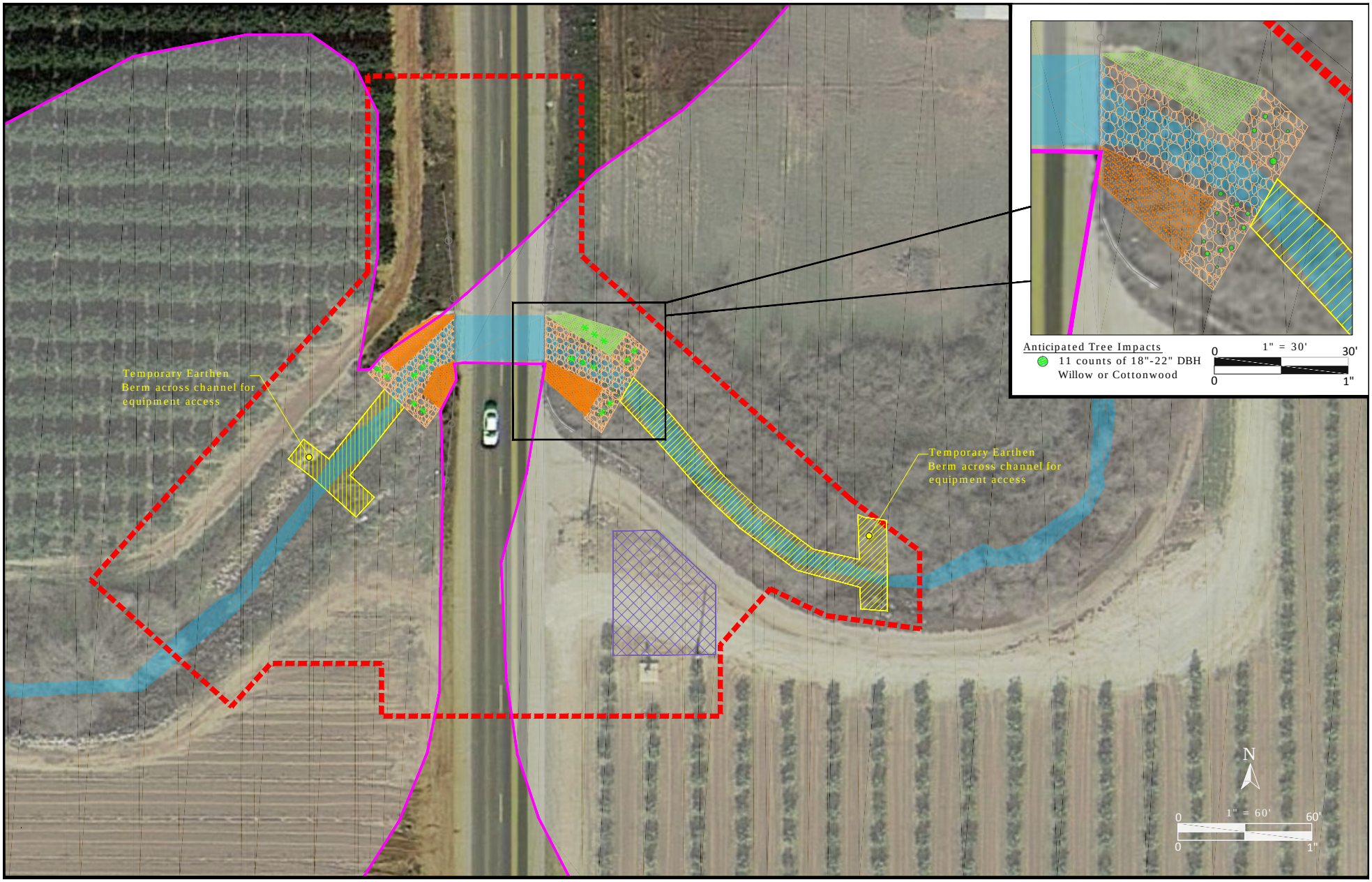
The County does not propose any mitigation or compensation measures.

Section 14

An Initial Study was not prepared for this project.

Brief Description of Entire Project:

The County of Fresno proposes to conduct maintenance activities on seven bridges as part of the Bridge Preventative Maintenance Program. The proposed project would extend the service life of the existing structure at each location by installing new or repairing scour countermeasures and conducting other maintenance activities. Vegetation and trash will be removed from the channel at each location, with tree removal at two sites: Bridge No. 42C0179 and Bridge No. 42C0458. The proposed Project will be funded by the Federal Highway Bridge Program and therefore requires both compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The lead agency for CEQA is the County and the federal lead agency for NEPA compliance is the California Department of Transportation (Caltrans), as authorized under the NEPA Assignment Memorandum of Agreement between Caltrans and the Federal Highway Administration.



LEGEND

- Area of Potential Effect (APE)
- Rock Slope Protection (RSP) - .04 ac
- Existing Concrete Slope Protection (CSP) to remain
- Temporary Staging Area - .05 ac
- Temporary Equipment Access Area - .07 ac
- New Concrete Slope Protection to replace existing
- 100 yr. Flood Plain Area
- Channel
- * * * Area where patches of Low lying vegetation will be remove

IMPACT AREAS:

Permanent Impact -	.04 ac.
Temporary Impact -	.12 ac

BPMP Scour Mitigation
Alta Avenue at Travers Creek
Fresno, CA
(C42C0179)

Permanent and Temporary Impacts

County of Fresno

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

December 26, 2019

California Department of Fish and Wildlife
Central Region – LSA Program
1234 East Shaw Avenue
Fresno, CA 39710

SUBJECT: Notification of Lake or Streambed Alteration
BPMP Scour Mitigation Project, Fresno County, California

To Whom It May Concern:

Fresno County is submitting the enclosed Notification of Lake or Streambed Alteration for the BPMP Scour Mitigation Project (4 Notifications).

Should you have any question, please contact Cynthia Zamora at (559) 600 4326 or email at czamora@fresnocountyca.gov, and Thien Truong at (559) 600-4510 or email at ttruong@fresnocountyca.gov.

Sincerely,

Steven E. White, PE, PLS
Director

Enclosures:

- Notifications, checks, and location specific attachments
  - Notification 1: Los Gatos Creek at Los Gatos Rd; 11.3mi W/O Derrick
  - Notification 2: Los Gatos Creek at Los Gatos Rd; 5.6mi W/O Derrick
  - Notification 3: Fresno Slough at Excelsior Avenue
  - Notification 4: Travers Creek at Alta Avenue
- Appendix A – Natural Environmental Study Minimal Impacts (NESMI)
- Appendix B – NEPA Categorical Exemption and Revalidation
- Appendix C – CEQA Notice of Exemption and Filing Fee Receipt
- Appendix D – Aquatic Resource Delineation Report
- Appendix E – Initial Site Assessment (ISA)
- Appendix F – Water Quality Memo
- Appendix G – Archaeological Survey Report (ASR)
- Appendix H – Preliminary Environmental Study Form (PES Form)

County of Fresno

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

December 26, 2019

California Department of Fish and Wildlife
Central Region – LSA Program
1234 East Shaw Avenue
Fresno, CA 39710

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Sincerely,

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DESIGN DIVISION
2220 Tulare Street, Seventh Floor / Fresno, California 93721 / Phone (559) 600-4109 / FAX (559) 600-4399
The County of Fresno is an Equal Employment Opportunity Employer

State of California – Department of Fish and Wildlife
NOTIFICATION OF LAKE OR STREAMBED ALTERATION
FISH AND GAME CODE SECTION 1602
DFW 2023 (REV. 05/28/19) Page 1

FOR DEPARTMENT USE ONLY				
Date Received	Amount Received	Amount Due	Date Complete	Notification No.
	$	$		
Assigned to:				

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

Complete EACH field, unless otherwise indicated, following the instructions and submit ALL required enclosures, attachments, and fee(s) to the CDFW regional office that serves the area where the project will occur. Attach additional pages to notification, if necessary.

1. APPLICANT PROPOSING PROJECT

Name	Steven E. White, PE, PLS, Director
Business/Agency	County of Fresno
Mailing Address	2220 Tulare St., 6th Floor
City, State, Zip	Fresno, Ca 93721
Phone Number	(559) 600-4537
Email	stwhite@fresnocountyca.gov

2. CONTACT PERSON (*Complete only if different from applicant.*)

Name	Cynthia L. Zamora
Business/Agency	County of Fresno
Mailing Address	2220 Tulare St., 6th Floor
City, State, Zip	Fresno, Ca 93721
Phone Number	(559)600-4326
Email	czamora@fresnocountyca.gov

While an applicant is legally responsible for complying with Fish and Game Code section 1602 et seq., an applicant may designate and authorize an agent (e.g., lawyer, consultant, or other individual) to act as a Designated Representative. The Designated Representative is authorized to sign the notification and any agreement on behalf of the Applicant.

Do you authorize the Contact Person above to represent you as your Authorized Designated Representative?

☑ Yes, I authorize. ☐ No, I do not authorize.

3. PROPERTY OWNER (*Complete only if different from applicant*)

Name	
Mailing Address	
City, State, Zip	
Phone Number	
Email	

4. PROJECT NAME AND AGREEMENT TERM

A. Project Name	Bridge Preventive Maintenance Program (BPMP) Scour Mitigation Project			
B. Agreement Term Requested	☑ Regular (*5 years or less*) ☐ Long-term (*greater than 5 years*)			
C. Project Term	Beginning (*year*)	2020	Ending (*year*)	2025

D. Seasonal Work Period

Season(s)*	Start Date (*month/day*)	End Date (*month/day*)	E. Number of Work Days
1	04/01	09/01	107
2			
3			
4			
5			

** Continue on additional page(s) if necessary*

5. AGREEMENT TYPE

Check the applicable box. If boxes B – F are checked, complete the specified attachment.

A.	☑ Standard *(Most construction projects, excluding the categories listed below)*	
B.	☐ Gravel/Sand/Rock Extraction (*Attachment A*)	*Mine I.D. Number:* _____
C.	☐ Timber Harvesting (*Attachment B*)	*THP Number:* _____
D.	☐ Water Diversion/Extraction/Impoundment (*Attachment C*)	*SWRCB Number:* _____
E.	☐ Routine Maintenance (*Attachment D*)	
F.	☐ Cannabis Cultivation (*Attachment E*)	
G.	☐ CDFW Grant Programs	*Agreement Number:* _____
H.	☐ Master	
I.	☐ Master Timber Operations	

6. FEES

See the current fee schedule to determine the appropriate notification fee. Itemize each project's estimated cost and corresponding fee. ***Note: CDFW may not process this notification until the correct fee has been received.***

	A. Project Name	B. Project Cost	C. Project Fee
1	BPMP Scour Mitigation Project - BR#42C0179	$184,000	$3,288.75
2			
3			
4			
5			
6			
7			
8			
9			
10			
		D. Base Fee *(if applicable)*	
		E. TOTAL FEE*	$3,288.75

** Check, money order, and Visa or MasterCard (select Environmental Fees from Menu) payments are accepted.*

7. PRIOR NOTIFICATION AND ORDERS

A. Has a notification previously been submitted to, or a Lake or Streambed Alteration Agreement previously been issued by, CDFW for the project described in this notification?

☐ Yes (*Provide the information below*) ☑ No

Applicant	Notification Number	Date

B. Is this notification being submitted in response to a court or administrative order or notice, or a notice of violation (NOV) issued by CDFW?

☐ Yes ☑ No (*Enclose a copy of the order, notice, or NOV. If the applicant was directed to notify CDFW verbally rather than in writing, identify the person who directed the applicant to submit this notification, the agency he or she represents, and describe the circumstances relating to the order.*)

Name of person who directed notification	Agency

Describe circumstances relating to order

☐ *Continued on additional page(s)*

8. PROJECT LOCATION

A. Address or description of project location.
(Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway.)

The Travers Creek Bridge No. 42C0179 on Alta Avenue is located in the County of Fresno, 0.3 mi north of South Ave., near the city of Reedley. From CA-180E, exit on Reed Ave., head South 6.0 miles, then turn east on E. Adams Ave. for 3.5 mi to turn south on S. Alta Avenue. Travel 0.7 miles to Bridge No. 42C0179.

See Attached Site Location Map

☑ *Continued on additional page(s)*

B. River, stream, or lake affected by the project.	Travers Creek
C. What water body is the river, stream, or lake tributary to?	Kings River
D. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts?	☐ Yes ☑ No ☐ Unknown
E. County	Fresno

F. USGS 7.5 Minute Quad Map Name	G. Township	H. Range	I. Section	J. ¼ Section
Reedley	15S	24E	17,18	

☐ *Continued on additional page(s)*

K. Meridian (check one) ☐ Humboldt ☑ Mt. Diablo ☐ San Bernardino

L. Assessor's Parcel Number(s)

373-070-48	373-070-68S
373-070-52	373-070-86S

☐ *Continued on additional page(s)*

M. Geographic coordinates (*Provide the latitude and longitude coordinates for the property where the project(s) will take place. CDFW utilizes decimal degrees and WGS 84 datum. Access Google Maps Help if you need assistance in finding your coordinates.*)

Latitude/Longitude	*Latitude:* 36.623362	*Longitude:* -119.394879
	Latitude:	*Longitude:*
	Latitude:	*Longitude:*
	Latitude:	*Longitude:*
	Latitude:	*Longitude:*

9. PROJECT CATEGORY

WORK TYPE	NEW CONSTRUCTION	REPLACE EXISTING STRUCTURE	REPAIR-MAINTAIN-OPERATE EXISTING STRUCTURE
Bank stabilization – bioengineering/recontouring	☐	☐	☐
Bank stabilization – rip-rap/retaining wall/gabion	☐	☐	☐
Boat dock/pier	☐	☐	☐
Boat ramp	☐	☐	☐
Bridge	☐	☐	☑
Channel clearing/vegetation management	☐	☐	☑
Culvert	☐	☐	☐
Debris basin	☐	☐	☐
Dam	☐	☐	☐
Filling of wetland, river, stream, or lake	☐	☐	☐
Geotechnical survey	☐	☐	☐
Habitat enhancement – revegetation/mitigation	☐	☐	☐
Levee	☐	☐	☐
Low water crossing	☐	☐	☐
Road/trail	☐	☐	☐
Sediment removal: pond, stream, or marina	☐	☐	☐
flood control	☐	☐	☐
Storm drain outfall structure	☐	☐	☐
Temporary stream crossing	☐	☐	☐
Utility crossing: horizontal directional drilling	☐	☐	☐
jack/bore	☐	☐	☐
open trench	☐	☐	☐
Water diversion without facility	☐	☐	☐
Water diversion with facility	☐	☐	☐
Other *(specify)*:	☐	☐	☐

10. PROJECT DESCRIPTION

A. Describe the project in detail. Include photographs of the project location and immediate surrounding area.

- Written description of all project activities with detailed step-by-step description of project implementation.
- Include any structures (e.g., rip-rap, culverts) that will be placed or modified in or near the stream, river, or lake, and any channel clearing.
- Specify volume, and dimensions of all materials and features (e.g., rip rap fields) that will be used or installed.
- If water will be diverted or drafted, specify the purpose or use and include Attachment C.
- Enclose diagrams, drawings, design plans, construction specifications, and maps that provide all of the following: site specific construction details; dimensions of each structure and/or extent of each activity in the bed, channel, bank or floodplain; overview of the entire project area (i.e., "bird's-eye view") showing the location of each structure and/or activity, significant area features, stockpile areas, areas of temporary disturbance, and where the equipment/machinery will access the project area.
  - A helpful resource to assist in the development of quality PDF maps in Google Earth. See Using Google Earth to Map your Property (PDF).

The South Alta Avenue crossing at Travers Creek Bridge No. 42C0179 is a double barrel cast in place reinforced concrete culvert. The culvert is 22 feet long and 40'-8" wide with a 20 degree skew to the channel.

The County of Fresno is proposing to conduct preventative maintenance on the existing bridge to extend the service life of the existing structure.

Preventive maintenance work on this structure will include the following :

1. Rehabilitation of cracked slope paving and the complete replacement of the severely damaged slope paving at the northeast corner of the culvert.
2. Placing rock slope protection along the channel bottom along the length of slope paving to prevent further erosion of the channel bottom near the structure.
3. Patch abraded culvert walls
4. Clearing the channel of vegetation near the bridge to improve hydraulics

See attached 10A Responses for detailed Work description and Diagrams
See attached Construction Plans and Area of Potential Effect Map

☑ *Continued on additional page(s)*

B. Specify the equipment and machinery that will be used to complete the project.

See attached 10A Responses

☑ *Continued on additional page(s)*

C. Will water be present during the proposed work period (specified in box 4.D) in the stream, river, or lake (specified in box 8.B).	☐ Yes ☑ No (*Skip to box 11*)
D. Will the project require work in the wetted portion of the channel?	☐ Yes (*Enclose a plan to divert water around work site*) ☑ No

11. PROJECT IMPACTS

A. Describe impacts to the bed, channel, and bank of the river, stream, or lake, and the associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise disturbed, if applicable.

The project will involve working inside the channel to remove existing material and place rip rap and concrete slope protection at the banks and channel bottom. It is anticipated that there will be approximately 140 CY of material removed from the channel and replaced with 133 CY of rip rap rock and 7 CY of concrete slope protection. This work covers permanent impact of about 45 linear feet of channel length east and west of the culvert and a total area of .04 acre.

☐ *Continued on additional page(s)*

B. Will the project affect any vegetation? ☑ Yes (*Complete the tables below*) ☐ No (*Include aerial photo with date supporting this determination*)

Vegetation Type	Temporary Impact	Permanent Impact
Low lying grass/weeds	Linear feet: 343.00 Total area:	Linear feet: 90.00 Total area:
	Linear feet: Total area:	Linear feet: Total area:

Tree Species	Number of Trees to be Removed	Trunk Diameter (range)
N/A		

☐ *Continued on additional page(s)*

C. Are any special status animal or plant species, or habitat that could support such species, known to be present on or near the project site?

☑ Yes (*List each species and/or describe the habitat below*) ☐ No ☐ Unknown

There is one documented occurrence of San Joaquin Valley Orcutt grass located approx. 1 mile east of the project site. This species is known to occur in vernal pools, which is not present in the site therefore there is no potential for this plant to occur in the project site.

☐ *Continued on additional page(s)*

D. Identify the source(s) of information that supports a "yes" or "no" answer above in Box 11.C.

See page 39 (Site 9) of Appendix A - Natural Environment Study-Minimal Impacts

☐ *Continued on additional page(s)*

E. Has a biological study been completed for the project site?

☐ Yes (*Enclose the biological study*) ☑ No

Note: A biological assessment or study may be required to evaluate potential project impacts on biological resources.

F. Has one or more technical studies (e.g., engineering, hydrologic, geological, or geomorphological) been completed for the project or project site?

☑ Yes *(Enclose the study(ies))* ☐ No

Note: One or more technical studies may be required to evaluate potential project impacts to a lake or streambed.

G. Have fish or wildlife resources or waters of the state been mapped or delineated on the project site?

☑ Yes (*Enclose the mapped results*) ☐ No

Note: Check "yes" if fish and wildlife resources or waters of the state on the project site have been mapped or delineated. "'Wildlife' means and includes all wild animals, birds, plants, fish, amphibians, reptiles and related ecological communities, including the habitat upon which the wildlife depends." (Fish & G. Code, § 89.5.) If "yes" is checked, submit the mapping or delineation. If the mapping or delineation is in digital format (e.g., GIS shape files or KMZ), you must submit the information in this format for CDFW to deem your notification complete. If "no" is checked, or the resolution of the mapping or delineation is insufficient, CDFW may request mapping or delineation (in digital or non-digital format), or higher resolution mapping or delineation for CDFW to deem the notification complete.

12. MEASURES TO PROTECT FISH, WILDIFE, AND PLANT RESOURCES

A. Describe the techniques that will be used to prevent sediment, hazardous, or other deleterious materials from entering watercourses during and after construction.

The construction contract will require a water pollution control plan (WPCP) for the project. Rock slope protection will reduce sedimentation after project completion. To control sedimentation during and after construction, County would implement best management practices (BMP's) outlined in any authorizations or permits, issued under the authorities of the CWA that it receives for the project. If best management practices are ineffective, the County would attempt to remedy the situation immediately, in consultation with the regulatory and resource agencies.

See Water Quality Section 9 of Appendix F- Water Quality Memo

☐ *Continued on additional page(s)*

B. Describe project avoidance and/or minimization measures to protect fish, wildlife, and plant resources.

Construction contract will implement the mitigation measures as described in Section 6.6 (page 74) of Appendix A Natural Environmental Study - Minimal Impacts (NESMI)

☐ *Continued on additional page(s)*

C. Describe any project mitigation and/or compensation measures to protect fish, wildlife, and plant resources.

Unknown

☐ *Continued on additional page(s)*

13. PERMITS

List any local, State, and federal permits required for the project and check the corresponding box(es). Enclose a copy of each permit that has been issued.

A.	RWQCB Water Quality Certification 401	☑ Applied	☐ Issued
B.	U.S. Army Corps - Section 404 (Non-Notifying)	☐ Applied	☐ Issued
C.		☐ Applied	☐ Issued

D. Unknown whether ☐ local, ☐ State, or ☐ federal permit is needed for the project. (*Check each box that applies*)

☐ *Continued on additional page(s)*

14. ENVIRONMENTAL REVIEW

A. Has a CEQA lead agency been determined?	☑ Yes (*Complete boxes B, C, D, E, and F*) ☐ No (*Skip to box 14.G*)		
B. CEQA Lead Agency	Fresno County		
C. Contact Person	Alexis Rutherford	D. Phone Number	559-600-4530

E. Has a draft or final document been prepared for the project pursuant to CEQA and/or NEPA?

☑ Yes (*Check the box below for each CEQA or NEPA document that has been prepared and enclose a copy of each.*)
☐ No (*Check the box below for each CEQA or NEPA document listed below that will be or is being prepared.*)

☑ Notice of Exemption	☐ Mitigated Negative Declaration	☑ NEPA document (*type*):
☑ Initial Study	☐ Environmental Impact Report	CATEGORICAL EXCLUSION
☐ Negative Declaration	☐ Notice of Determination *(Enclose)*	
☐ THP/ NTMP	☐ Mitigation, Monitoring, & Reporting Plan	

F. State Clearinghouse Number (*if applicable*)	N/A

G. **If the project described in this notification is not the "whole project" or action pursuant to CEQA, briefly describe the entire project** (Cal. Code Regs., tit. 14 § 15378).

N/A

☐ *Continued on additional page(s)*

H. Has a CEQA filing fee been paid pursuant to Fish and Game Code section 711.4?

☑ Yes (*Enclose proof of payment*) ☐ No (*Briefly explain below the reason a CEQA filing fee has not been paid)*

Note: The CEQA filing fee is in addition to the notification fee. If a CEQA filing fee is required, the Lake or Streambed Alteration Agreement may not be finalized until paid.

Filing Fee Receipt attached

15. SITE INSPECTION

Check one box only.

☐ In the event CDFW determines that a site inspection is necessary, I hereby authorize a CDFW representative to enter the property where the project described in this notification will take place at any reasonable time, and hereby certify that I am authorized to grant CDFW such entry.

☑ I request CDFW to first contact (*insert name*) Cynthia Zamora at (*insert phone number or email address*) (559) 600-4326 to schedule a date and time to enter the property where the project described in this notification will take place. I understand that this may delay CDFW's determination as to whether a Lake or Streambed Alteration Agreement is required and/or CDFW's issuance of a draft agreement pursuant to this notification.

16. DIGITAL FORMAT

Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?

☑ Yes (Please enclose the information via digital media with the completed notification form.)

☐ No

17. SIGNATURE

I hereby certify that to the best of my knowledge the information in this notification is true and correct and that I am authorized to sign this notification as, or on behalf of, the applicant. I understand that if any information in this notification is found to be untrue or incorrect, CDFW may suspend processing this notification or suspend or revoke any draft or final Lake or Streambed Alteration Agreement issued pursuant to this notification. I understand also that if any information in this notification is found to be untrue or incorrect and the project described in this notification has already begun, I and/or the applicant may be subject to civil or criminal prosecution. I understand that this notification applies only to the project(s) described herein and that I and/or the applicant may be subject to civil or criminal prosecution for undertaking any project not described herein unless CDFW has been separately notified of that project in accordance with Fish and Game Code section 1602 or 1611.

Signature of Applicant or Applicant's Authorized Representative

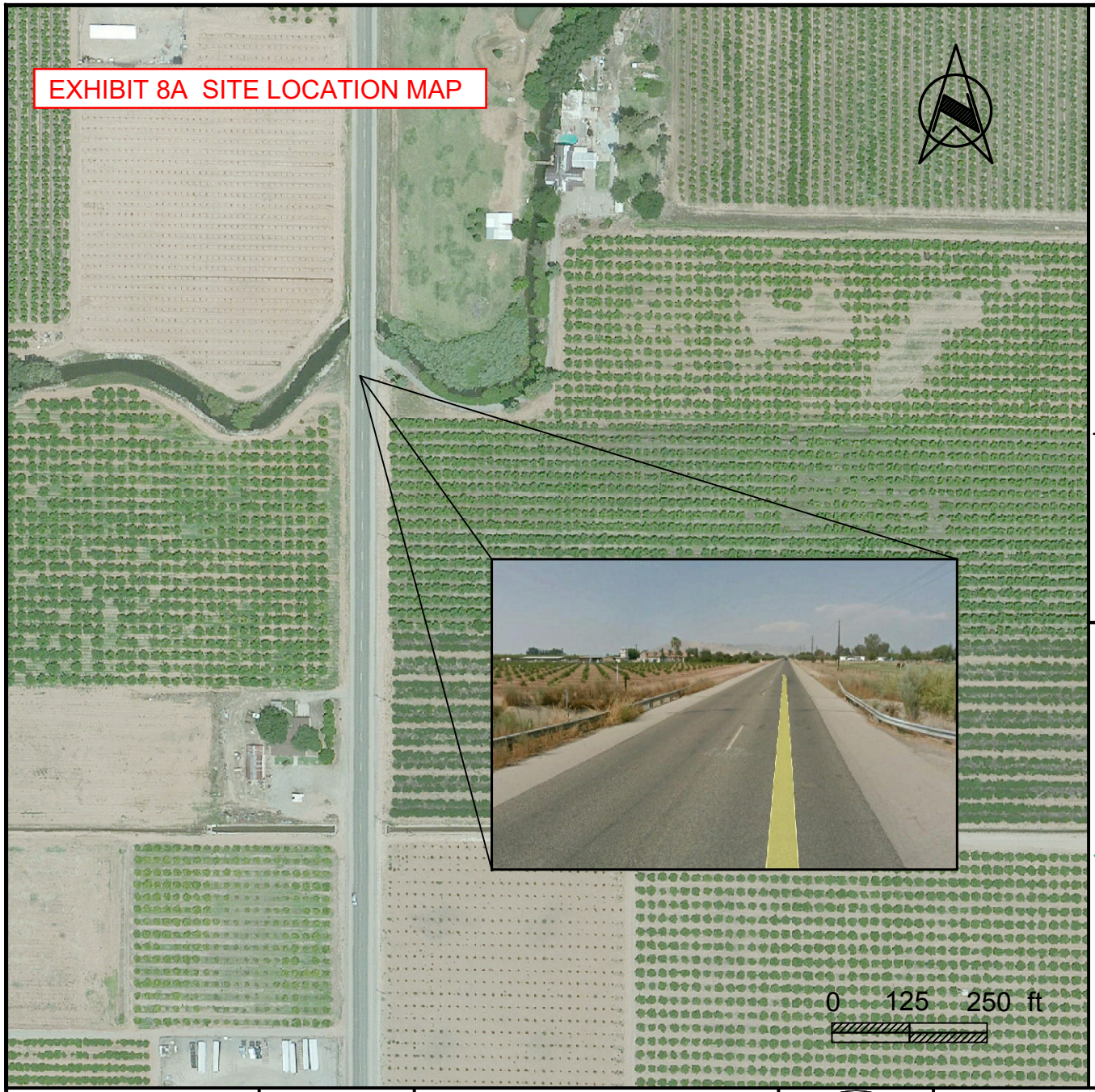
12/26/19
Date

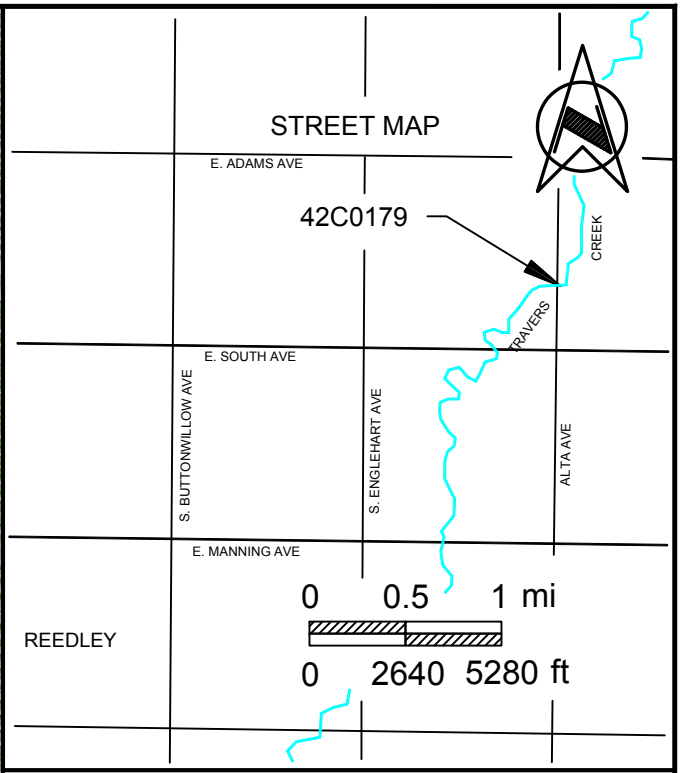
Print Name

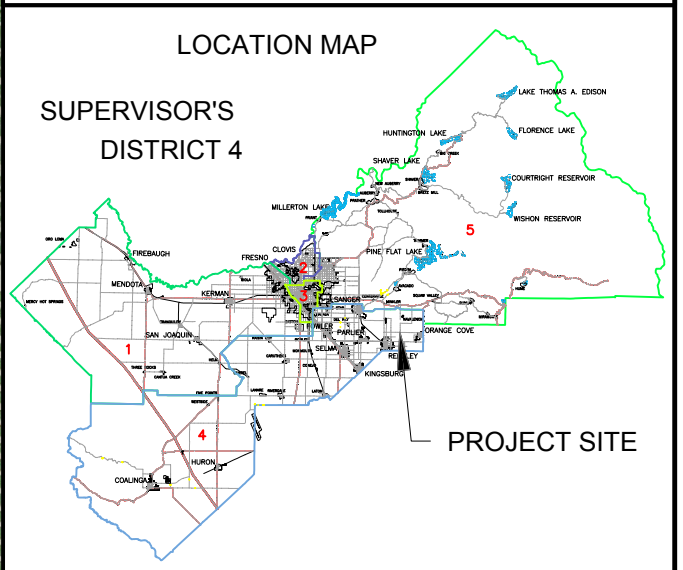
CDFW LSA Application Attachments :

- Check
- Site Location Map
- Section 10A Response
- Area of Potential Effect Map
- Aquatic Resource Delineation Map
- Construction Plans
- Location Hydraulic Study
- Signed RWQCB 401 Application

EXHIBIT 8A SITE LOCATION MAP







	DATE:	NOTES
DESIGNED: F.C.	03/15	SCOUR MITIGATION LOCATION MAP
DRAWN: J.M.	05/15	
BRIDGE NO:	42C0179	

THE COUNTY OF FRESNO 1856

DEPARTMENT OF PUBLIC WORKS AND PLANNING

BPMP FUNDING PROJECTS 2015 - 2016
ALTA AVE BRIDGE
TRAVERS CREEK

10A Project Description

Structure Type and Geometry

The South Alta Avenue crossing at Travers Creek (Br. No. 42C0179) is a double barrel cast in place reinforced concrete culvert. The culvert is approximately 40.5 feet long and 22 feet wide, with two 10' wide by 8' tall barrels. The structure carries two vehicular lanes with 8' wide shoulders which are covered with asphalt concrete.

Travers Creek is a natural creek that has been channelized to a trapezoidal shape. The channel sides and bottom are typically earth-lined with moderate vegetation consisting of small trees and grasses. Adjacent to the culvert, the channel banks are lined with concrete slope paving, extending approximately 25' along the length of the channel, and there are small broken pieces of concrete along the channel bottom near the culvert invert. The creek makes an approximate 90 degree turn within the limits of the structure, which increases the potential for scour at the site.

The study area is located on Travers Creek near Reedley, California. Water flows south into Travers Creek out of Alta Main, which is owned by the Alta Irrigation District (AID). The creek is part of the AID system and is used to deliver irrigation waters to farms in Fresno and Tulare Counties. The bridge is located in a very rural area consisting of agricultural lands and residential/agricultural structures, and there are established orchards on three of the four quadrants of the bridge

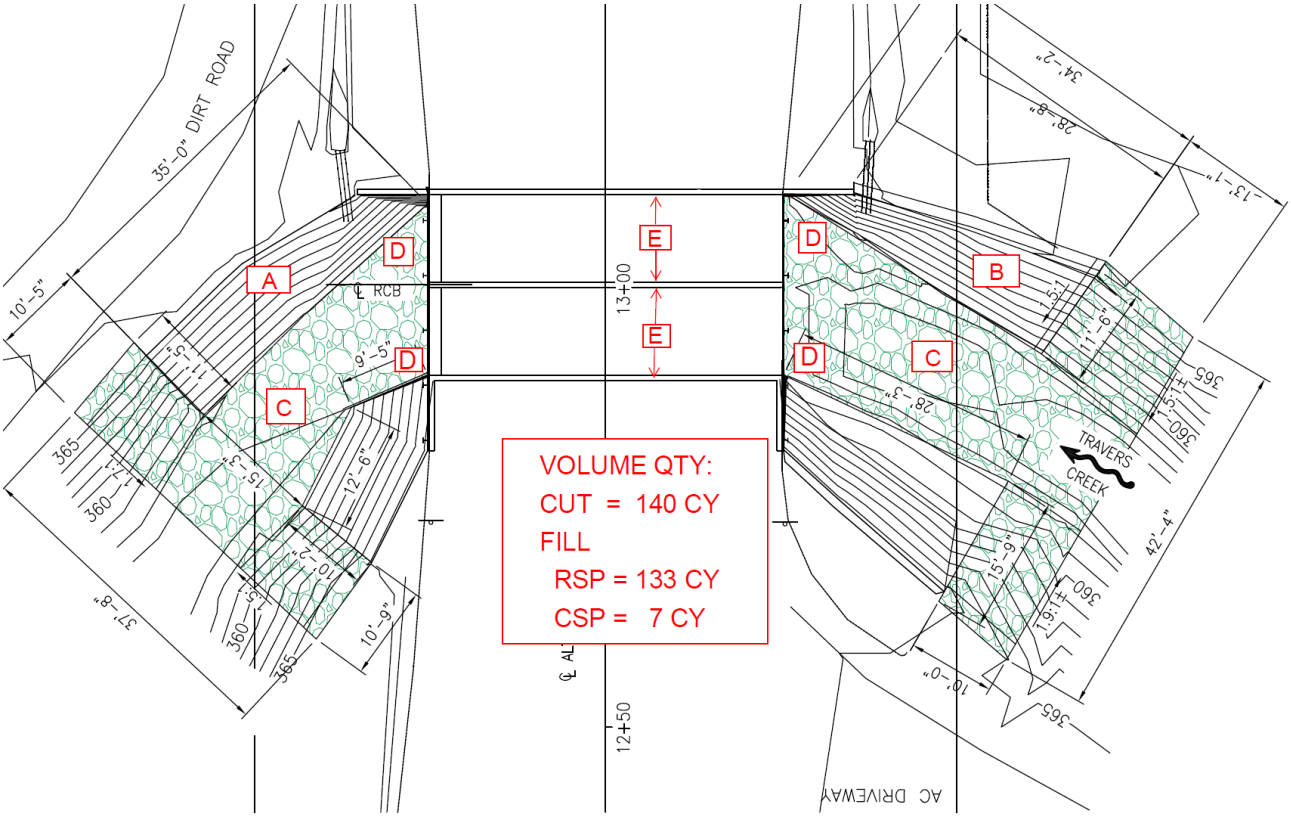


Figure 1 Travers Creek on Alta Avenue BR # 42C0179

Maintenance Work Description :

A. Seal Cracks in Northwest Slope Paving will be repaired in accordance to Section 15-5.11 of the Special Provisions.

a) Cracks having widths less than 250 mils would likely be sealed by injecting epoxy adhesive into cracks through injection ports.
b) Cracks having widths greater than 250 mils would likely be sealed by placing a backer rod and flexible joint sealant at the surface of the crack and injecting behind the joint sealant with epoxy resin.

B. Complete Replacement of Northeast Slope Paving:

In general, demolition and concrete slope replacement work sequence will be as follows:

a) Sawcut existing concrete slope in sections through its full thickness and lift each slab section using removal buckets mounted on hydraulic excavators.
b) Haul out demolished materials to an approved disposal site.
c) Backfill voids and grade to existing topography. Light equipment will be used for the backfill compaction.
d) Contractor will existing ground to the bottom of cutoff wall as shown on Section B-B of the construction plans attached.
e) Contractor will form, install rebars and pour concrete per construction plans.
f) Contractor would likely use a concrete pump truck.

C. Rock Slope Protection:

In general, Contractor would likely install RSP as follows:

a) Strip areas that will receive RSP of all vegetation and other objectionable materials. Slope will be graded to the elevations shown on the plans.
b) Place RSP fabric per the manufacturer's instruction.
c) Excavate for footing trench along toe of slope.
d) Place the rocks in accordance to Caltrans Standards Specification Section 72-2.03C Method B. Rocks will be placed by dumping and spreading in layers by bulldozers or other suitable equipment. Rocks will be placed in such a way that there will be minimum voids. Larger rocks will be placed in the toe course and on the outside surface of the slope protection. Voids will be filled in the footing trench with excavated material.
e) After completion of rock slope protection work, Contractor will clean up RSP debris and haul out off site.

D. Clearing the channel of vegetation near the bridge to improve hydraulics.

a) Contractor would likely remove physically or cut above ground vegetation and haul out off site.

E. Patch abraded culvert walls:

In general, Contractor would likely carry out repair in the following sequence:

a) Remove unsound concrete under in accordance to Caltrans Standard Specifications. The perimeters of the repair area shall be sawcut to a minimum depth of 1/2 inch.
b) Prepare the concrete surfaces per the manufacturer's recommendations. Clean concrete surfaces by abrasive blasting. Presoak the prepared concrete surface to provide a saturated surface-dry condition.
c) Fill spalled surface areas with approved filler material with bonding agent.

d) Apply bonding epoxy before placing filler material when recommended by the manufacturer. Place the filler material per the manufacturer's recommendations.
e) Cure filler material per the manufacturer's recommendations.

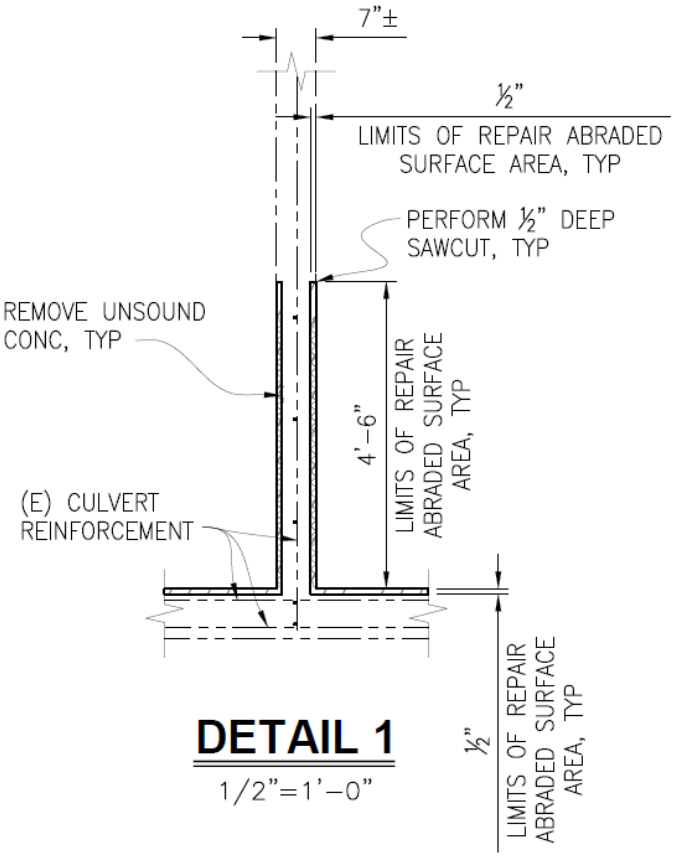


Figure 2 Abraded Surface Area

Construction Equipment

Typical construction equipment at the project site (and within the channel) will include the following:

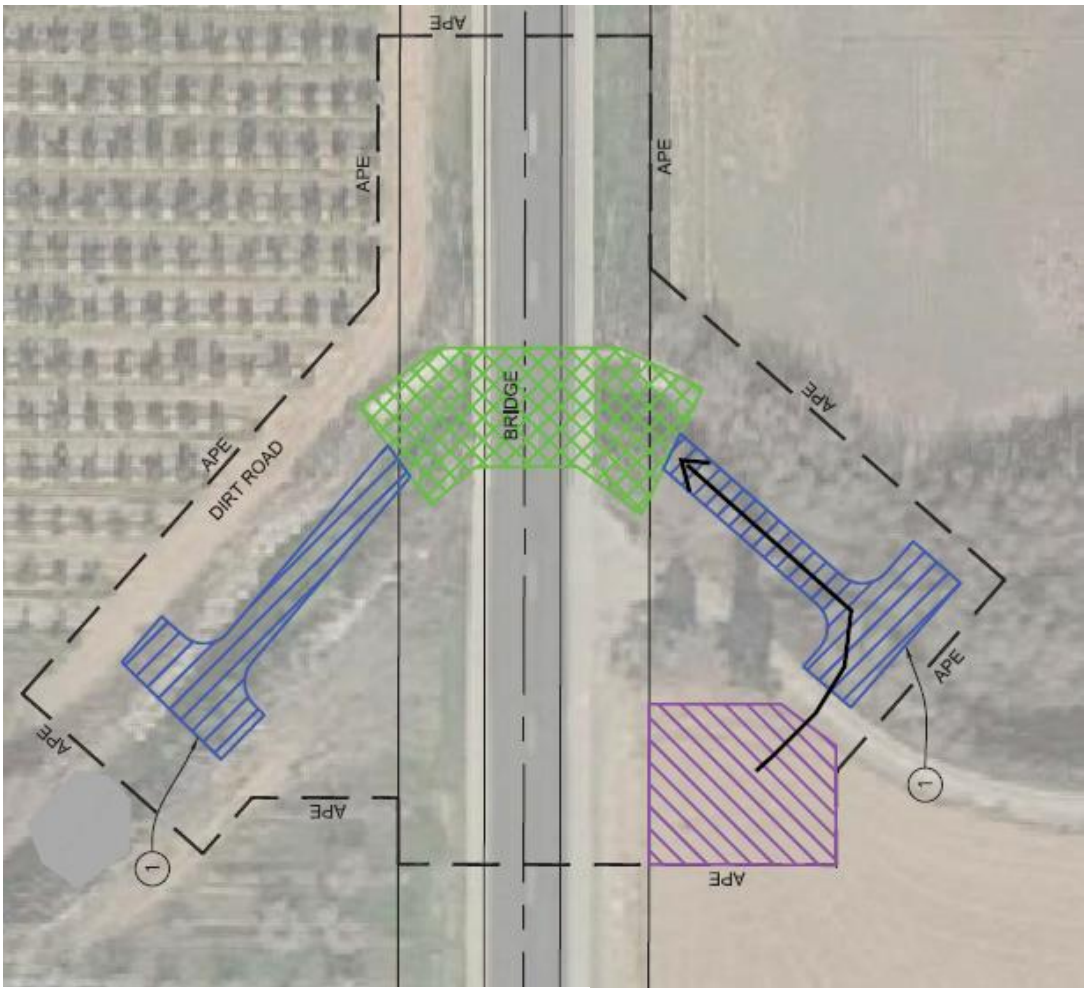
1) Backhoes and dump trucks will be used for excavation at the abutments and bridge piers, and lighter equipment will be used for backfill compaction.
2) Backhoes and dump trucks are also anticipated to be used for the placement of the rock slope protection around the bridge piers.

Dewatering

After careful review and assessment of the construction schedule, construction activities will take place between the months of April and September when water is not present. In this case, we will not utilize the use of cofferdam or any other method of dewatering.

Construction Staging

The contractor may choose to locate a staging area near one corner of the bridge. The staging area will be used to store equipment and materials and to provide parking areas for construction workers and equipment for the duration of construction. This temporary staging area will be restored to conditions equivalent to existing conditions after project construction has been completed.



LEGEND:

- Indicates permanent impacts
- Indicates construction staging area
- Indicates potential temporary construction access

NOTES:

1. Temporary Earthen Dam
- → Temporary Equipment Access

Site Photos

Bridge 42C0179 - Looking North

Bridge 42C0179 - Looking Northwest

Bridge 42C0179 - Looking Under Bridge

Caltrans District 6 Local Assistance Engineer _____ Date _____

Caltrans District 6 Professionally Qualified Staff _____ Date _____

	DATE
DESIGNED: R. DANSBY	12-03-14
DRAWN: A. CARDOZA	12-03-14
CHECKED: M. CHRISTENSEN	12-03-14

REVISION

FOR R/W DATA AND ACCURATE ACCESS DETERMINATION SEE R/W RECORDS AT PUBLIC WORKS

SCALE IN FEET
0 30 60

TRC
6051 N. Fresno St., Suite 200
Fresno, California 93710

MARK IMBRIANI — SUPERVISING ENGINEER: — 12-03-14 — DATE:

PROJECT

BPMP SCOUR MITIGATION
Travers Creek
at Alta Avenue

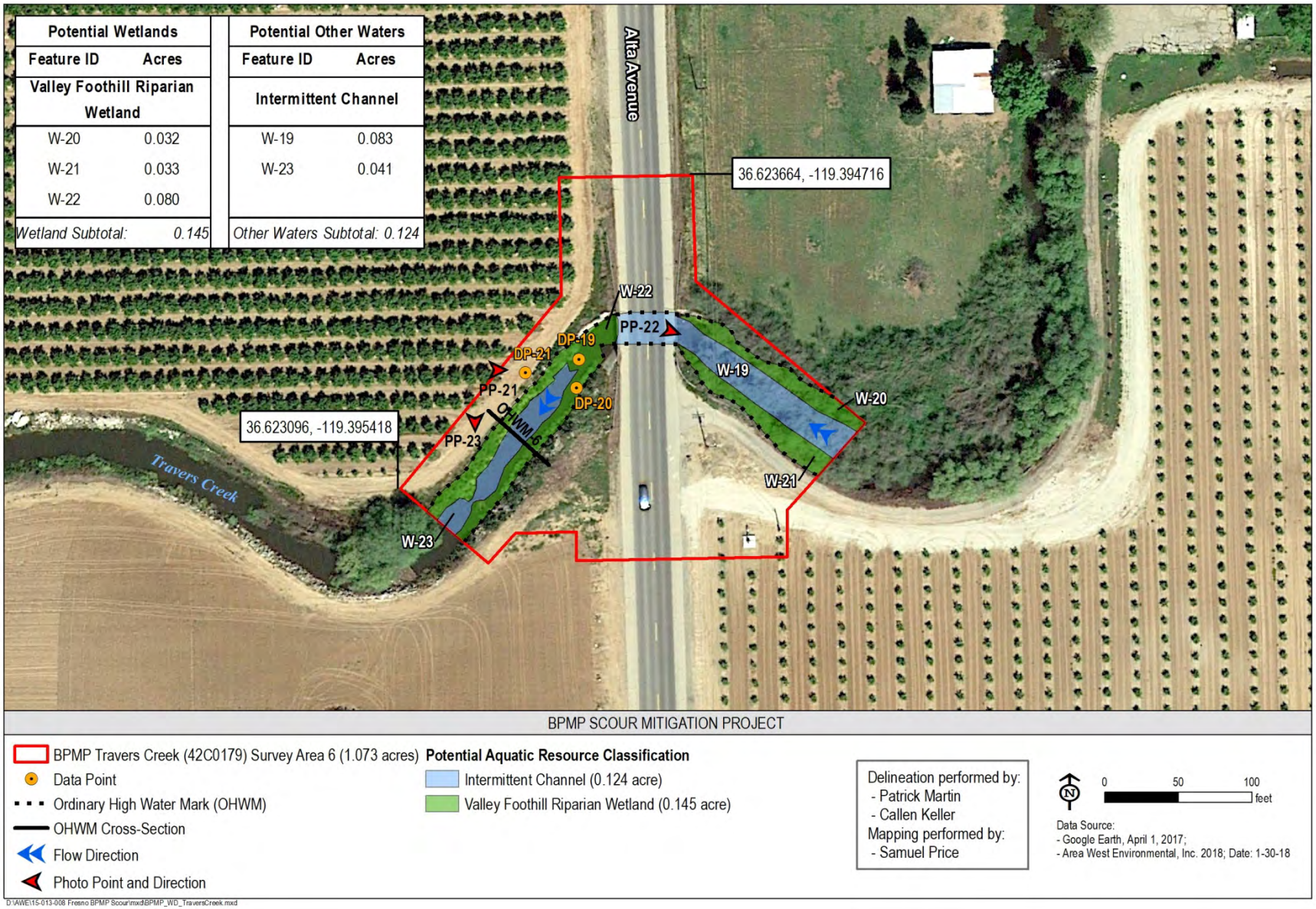
BRIDGE NO. 42C179

THE COUNTY OF FRESNO

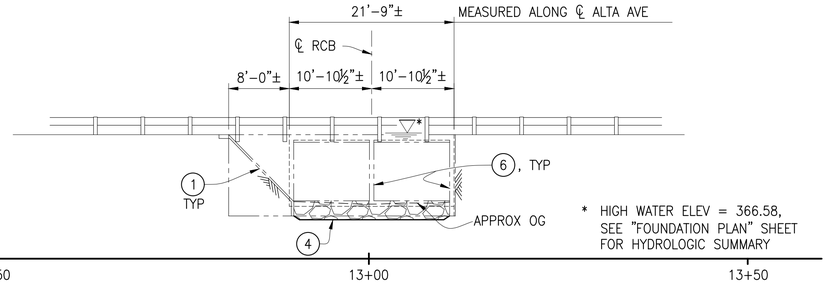
DEPARTMENT OF PUBLIC WORKS AND PLANNING

AREA OF POTENTIAL EFFECT

DRAWING NO. — SHEET NO. — TOTAL: 1 OF 1

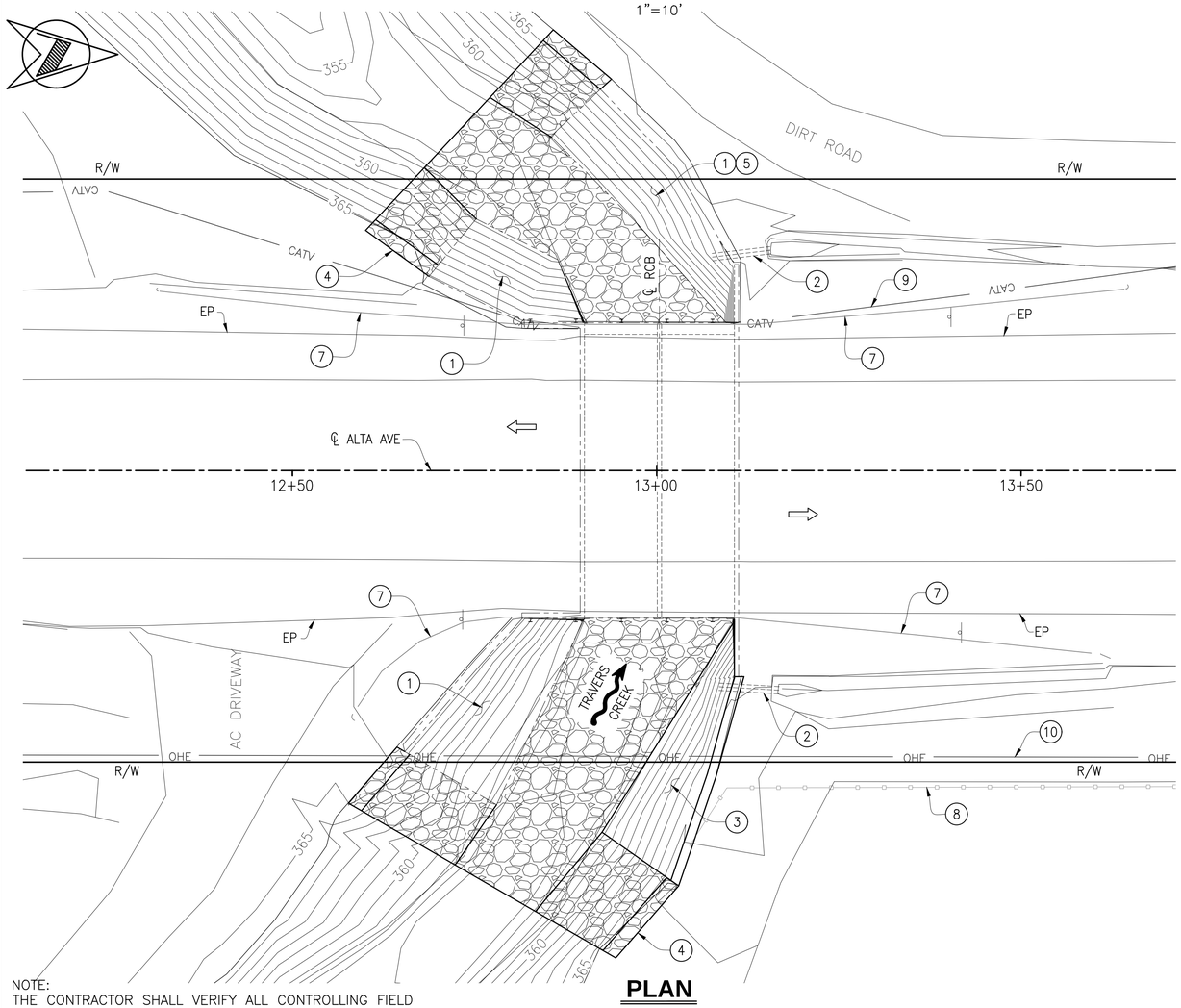


Appendix A-6: Aquatic Resource Delineation Map – Survey Area 6



ELEVATION

1"=10'

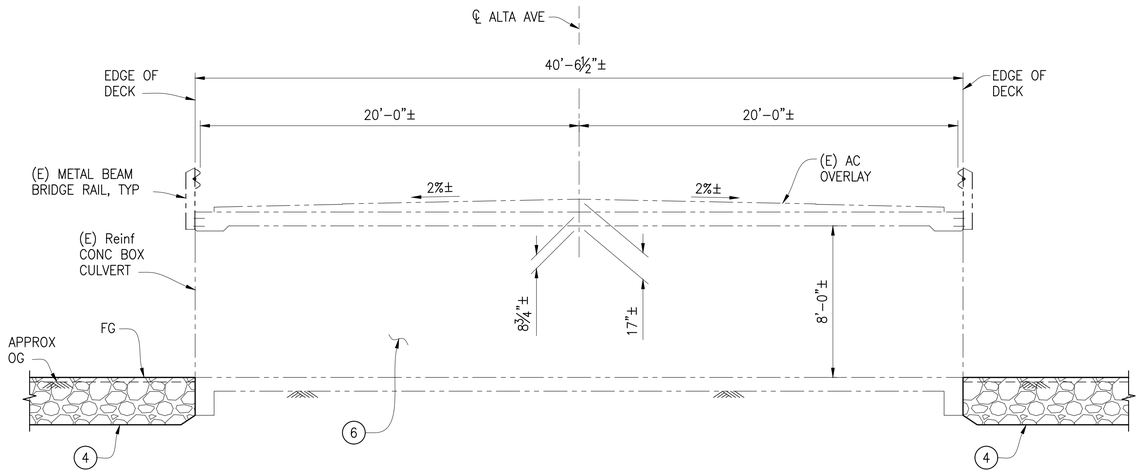


NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

PLAN

1"=10'

ELEVATION LOOKING NORTHEAST



TYPICAL SECTION

1/4"=1'-0"

LEGEND:

⇨	Indicates Direction of Traffic	(6)	Patch Abraded Concrete
-----	Indicates Existing Structure	(7)	Existing MBGR to remain
(1)	Existing Concrete Slope Protection to remain	(8)	Existing fence to remain
(2)	Existing 12" CMP to remain	(9)	Existing Verizon communication to remain
(3)	Remove existing Concrete Slope Protection and Construct new Concrete Slope Protection.	(10)	Existing PG&E overhead electrical to remain
(4)	Construct Rock Slope Protection		
(5)	Seal cracks in existing Concrete Slope Protection		

NOTES:

1. For GENERAL NOTES, see "GENERAL LEGEND AND GENERAL NOTES" sheet.

90% SUBMITTAL NOT FOR CONSTRUCTION

		DATE
DESIGNED:	R. YATES	09-08-16
DRAWN:	G. IMBSEN	09-08-16
CHECKED:	M. CHRISTENSEN	09-08-16

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2

REVISION

FOR R/W DATA AND ACCURATE ACCESS DETERMINATION SEE R/W RECORDS AT PUBLIC WORKS

TRC
6051 N. Fresno St., Suite 200
Fresno, California 93710

MARK IMBRIANI
SUPERVISING ENGINEER:

09-08-16
DATE:

REGISTERED PROFESSIONAL ENGINEER
ROBIN E. YATES
No. 76631
Exp. 12/31/16
CIVIL
STATE OF CALIFORNIA

PROJECT

BPMP SCOUR MITIGATION AT VARIOUS LOCATIONS

ROAD NO. BRIDGE NO. 42C0179

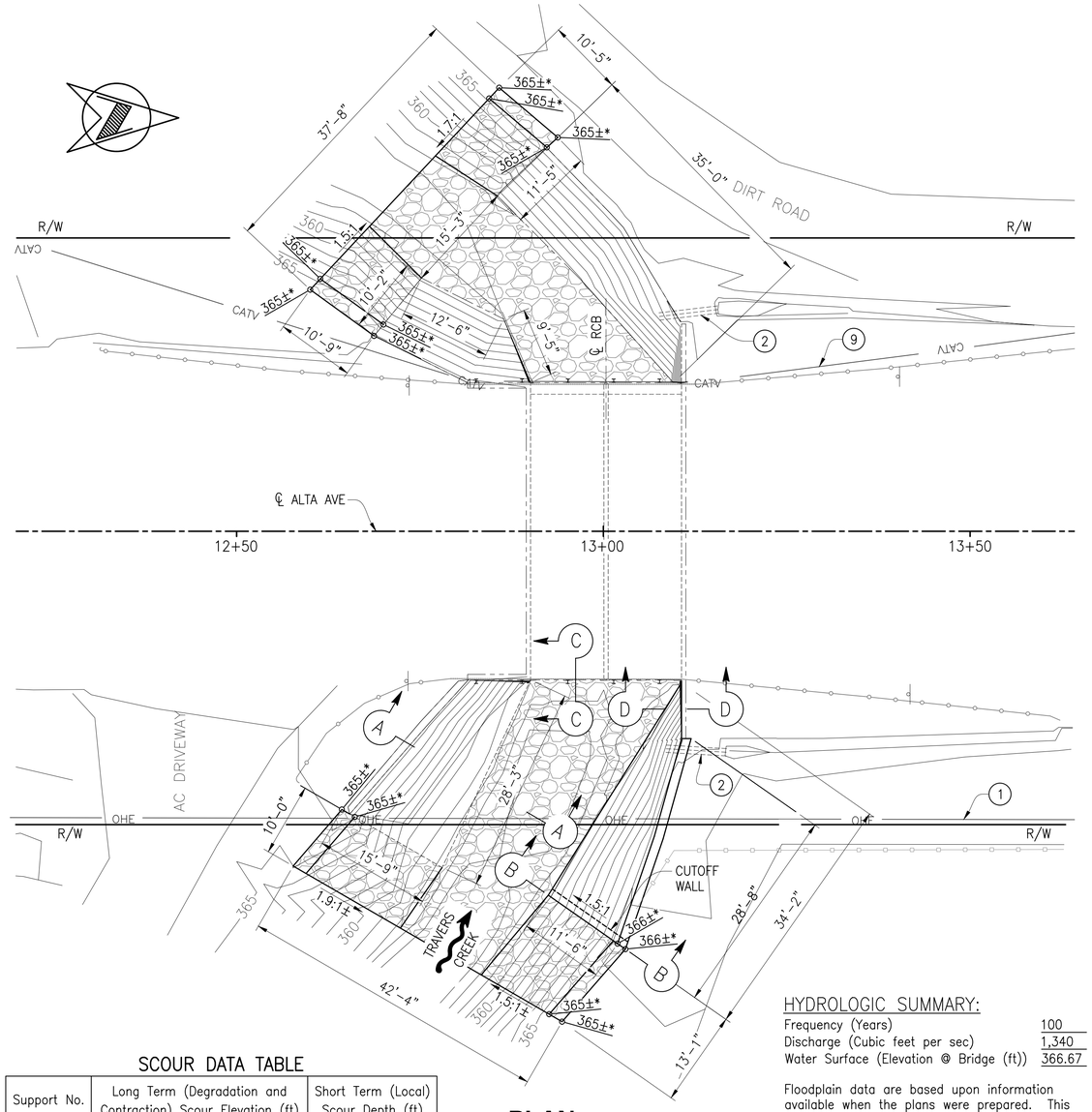
THE COUNTY OF FRESNO 1856

DEPARTMENT OF PUBLIC WORKS AND PLANNING

GENERAL PLAN

TRAVERS CREEK CULVERT AT ALTA AVENUE

DRAWING NO. 11259 SHEET NO. 20 TOTAL 29



PLAN
1"=10'

* MATCH OG

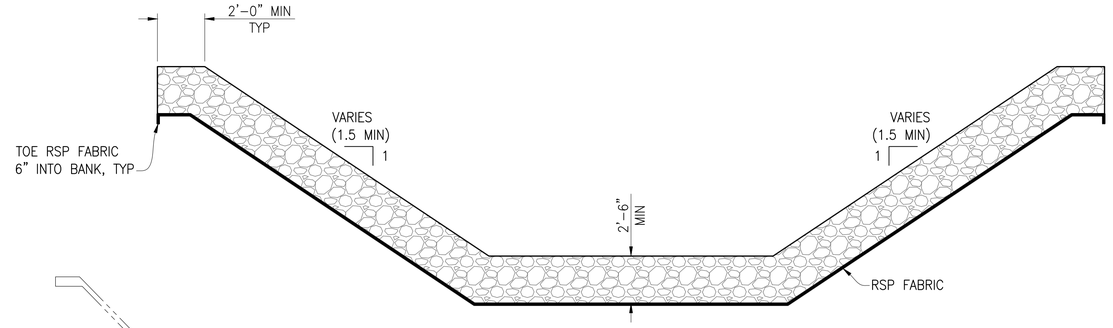
SCOUR DATA TABLE

Support No.	Long Term (Degradation and Contraction) Scour Elevation (ft)	Short Term (Local) Scour Depth (ft)
RCB	355.2'	N/A

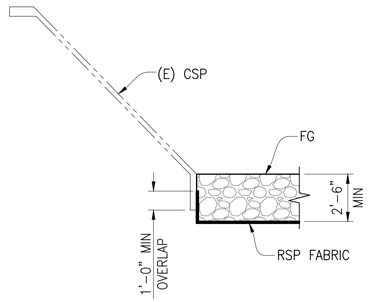
HYDROLOGIC SUMMARY:

Frequency (Years)	100
Discharge (Cubic feet per sec)	1,340
Water Surface (Elevation @ Bridge (ft))	366.67

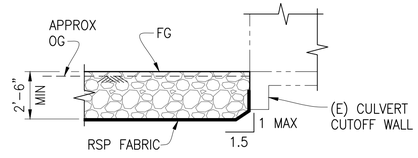
Floodplain data are based upon information available when the plans were prepared. This information is for the purposes of scour countermeasure design only, and any interested or affected parties should make their own investigation.



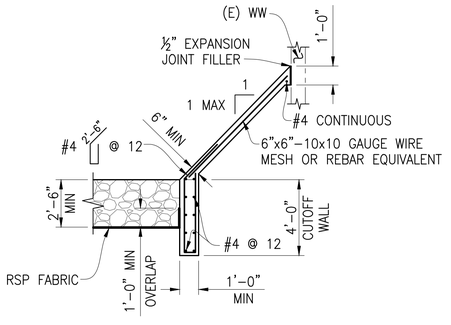
FULL RSP SECTION
1/4"=1'-0"



SECTION A-A
1/4"=1'-0"



SECTION C-C
1/4"=1'-0"



SECTION D-D
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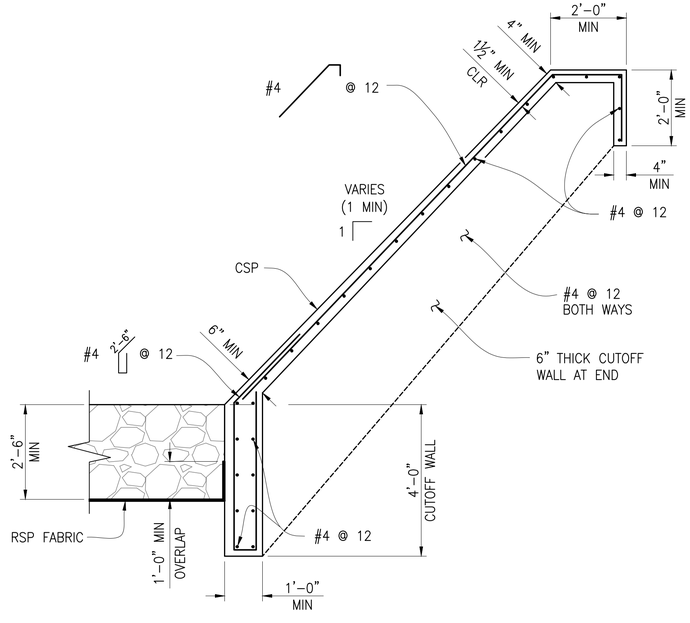


SECTION B-B
1/2"=1'-0"

LEGEND:

- Indicates Light Class RSP
- Indicates Existing Structure
- (2) Existing 12" CMP to remain
- (9) Existing Verizon communication to remain
- (10) Existing PG&E overhead electrical to remain

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

BENCH MARK:
FRESNO COUNTY BRASS CAP MONUMENT STAMPED LO 70, LOCATED ON THE SOUTHEAST CORNER OF ALTA AVENUE AND SUMNER ALIGNMENT, 48.8' SOUTHEAST OF THE SECTION CORNER, 2.0' SOUTH OF A POWER POLE, HAS AN NGVD29 ELEVATION OF 369.643' PER COUNTY OF FRESNO BENCHMARK RECORDS.

90% SUBMITTAL
NOT FOR CONSTRUCTION

	DATE
DESIGNED: R. YATES	09-08-16
DRAWN: G. IMBSEN	09-08-16
CHECKED: M. CHRISTENSEN	09-08-16

REVISION

FOR R/W DATA AND ACCURATE ACCESS DETERMINATION SEE R/W RECORDS AT PUBLIC WORKS

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2

TRC
6051 N. Fresno St., Suite 200
Fresno, California 93710

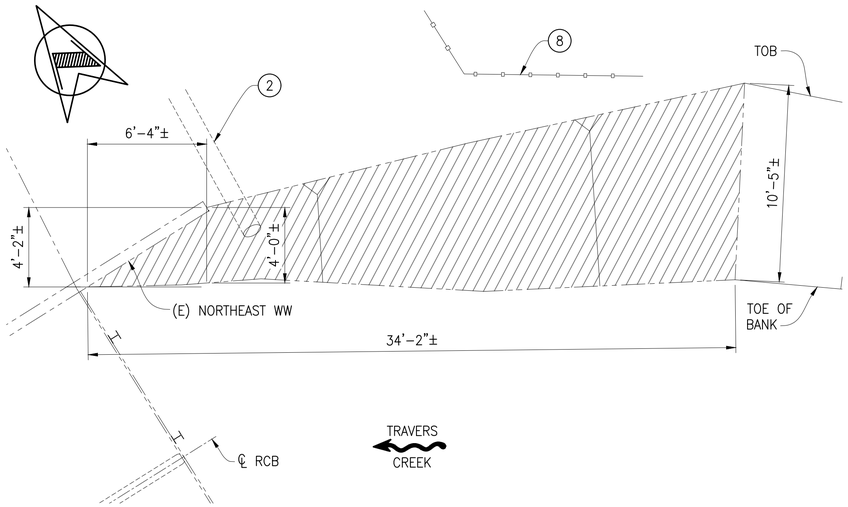
MARK IMBRIANI
SUPERVISING ENGINEER:
09-08-16
DATE:

REGISTERED PROFESSIONAL ENGINEER
ROBIN E. YATES
No. 76631
Exp. 12/31/16
CIVIL
STATE OF CALIFORNIA

PROJECT
BPMP SCOUR MITIGATION
AT VARIOUS LOCATIONS
ROAD NO. BRIDGE NO. 42C0179

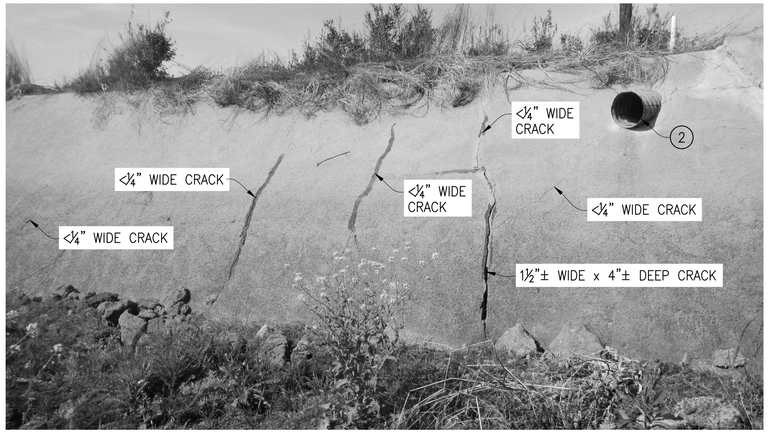
THE COUNTY OF FRESNO 1856

DEPARTMENT OF PUBLIC WORKS AND PLANNING
FOUNDATION PLAN
TRAVERS CREEK CULVERT AT ALTA AVENUE
DRAWING NO. 11259 SHEET NO. 21 TOTAL 29



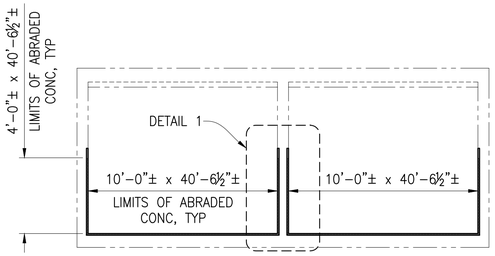
LIMITS OF NORTHEAST SLOPE PAVING REMOVAL

1/4"=1'-0"



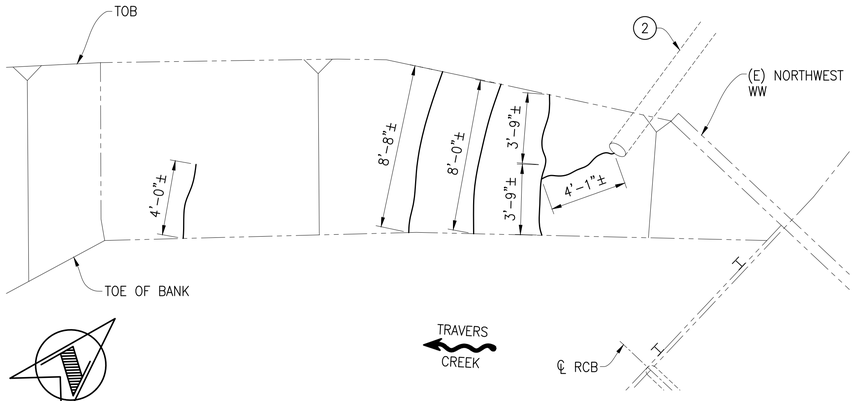
NORTHWEST SLOPE PAVING

ABRADED CULVERT WALLS



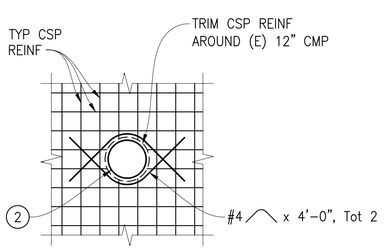
PATCH ABRADED SURFACE AREA

1/4"=1'-0"



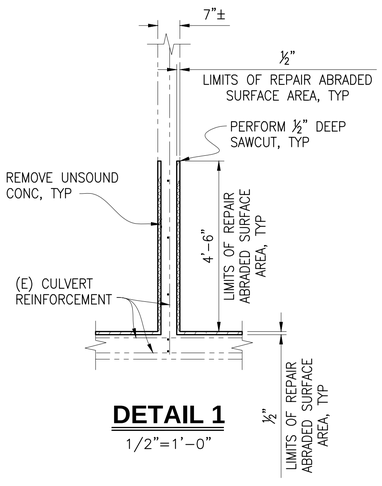
SEAL CRACKS IN NORTHWEST SLOPE PAVING

1/4"=1'-0"



UTILITY OPENING - NORTHEAST SLOPE PAVING

1/2"=1'-0"



DETAIL 1

1/2"=1'-0"

LEGEND:

- Indicates Proposed Improvements
- Indicates Existing Structure
- Indicates Concrete Removal
- (2) Existing 12" CMP to remain
- (8) Existing fence to remain

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

90% SUBMITTAL
NOT FOR CONSTRUCTION

	DATE
DESIGNED: R. YATES	09-08-16
DRAWN: K. NEGORO	09-08-16
CHECKED: M. CHRISTENSEN	09-08-16

REVISION

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2

FOR R/W DATA AND ACCURATE ACCESS DETERMINATION SEE R/W RECORDS AT PUBLIC WORKS

TRC
6051 N. Fresno St., Suite 200
Fresno, California 93710

MARK IMBRIANI, SUPERVISING ENGINEER: 09-08-16, DATE:

REGISTERED PROFESSIONAL ENGINEER — ROBIN E. YATES — No. 76631 — Exp. 12/31/16 — CIVIL — STATE OF CALIFORNIA

PROJECT

BPMP SCOUR MITIGATION AT VARIOUS LOCATIONS

ROAD NO. BRIDGE NO. 42C0179

THE COUNTY OF FRESNO 1856

DEPARTMENT OF PUBLIC WORKS AND PLANNING

MISCELLANEOUS DETAILS

TRAVERS CREEK CULVERT AT ALTA AVENUE

DRAWING NO. 11259 SHEET NO. 22 TOTAL 29

09- Travers Creek Bridge at S. Alta Avenue
Fresno County, California

LOCATION HYDRAULIC STUDY

In accordance with Executive Order 11988 and the regulations promulgated by the Federal Highway Administration in its Federal-Aid Highway Program Manual (FHPM), Volume 6, Chapter 7, Section 3, Subsection 2, "Location and Hydraulic Design of Encroachments on Flood Plains," dated November 15, 1979, as revised in Title 23, Code of Federal Regulations, Part 650, Subpart A (23 CFR 650A), and in general conformance with the guidance from the State of California, Department of Transportation (Caltrans), Standard Environmental Reference, Chapter 17, "Floodplains," last updated July 16, 2015; Local Assistance Procedures Manual, Chapter 6, "Environmental Procedures," dated July 2015 and Chapter 11, "Design Standards," last updated October 2012; and the County of Fresno and the Alta Irrigation District Drainage Manuals or equivalent publication(s), the following documentation is provided.

1. Location

The bridge is located 0.3 miles north of South Avenue, near the City of Reedley. See Exhibit 1 for the project site location.

2. Name of Stream

Travers Creek (under the jurisdiction of Alta Irrigation District)

3. Bridge Number

42C0179

4. Geographical reference

The bridge is located approximately 4 miles northeast of the City of Reedley.

5. Description of Proposed Action

The following preventive maintenance action is proposed for this location:

- Repair/replace existing concrete slope paving and place adequately sized rock slope protection at the channel bottom along the length of concrete slope paving, and along the channel banks and bottom 10' beyond the concrete slope paving.
- Patch abraded culvert walls to prevent water intrusion.
- Clear vegetation and trash from channel.

6. Hydraulic Data

- The 100-year flow taken from the "Technical Memorandum – Hydrology and Hydraulic Analysis for the Replacement of the Manning Avenue Bridge over Travers Creek" by Avila and Associates dated October 23, 2014 = 1,340 cfs.
- The calculated 100-yr high water elevation at the bridge site (based on HEC-RAS analysis by TRC) = 366.58'. This calculated high water elevation overtops the roadway.

7. Map of Flood Plain, with Base Flood (Q_{100}) and Flood of Record (when available), or the information developed, if NFIP maps are not available, to determine whether an alternative will include an encroachment

Exhibit 3 is the F.E.M.A. Flood Insurance Rate Map which shows the site mapped as Zone A. Zone A areas are subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are provided.

Hydraulic modeling was performed for this project by TRC using HEC-RAS software. The existing and proposed water surface elevations are shown in Exhibit 2 for the 1,340 cfs base (100-yr) flow. The 100-yr flow is shown to overtop the roadway in both the existing and proposed conditions

8. Base Flood (Q_{100}) Backwater Potential Impacts To:

◊ **Residences**:

Nearest residence is approximately 600 ft. upstream of the bridge, located on the east bank of Travers Creek.

◊ **Other Buildings:** There is a horse stable/agricultural building located across the creek from the nearest upstream residence.

◊ **Crops:** There are established orchards on three of the four quadrants of the bridge.

9. Traffic

◊ **Approximate Traffic Volume**

6050 (2010)

◊ **Emergency Supply or Evacuation Route**

According to the County Sherriff's Department, S. Alta Avenue is an emergency evacuation route.

◊ **Emergency Vehicle Access**

Emergency vehicles do access S. Alta Avenue; however there are other main north-south corridors which are suitable for emergency vehicle access nearby.

◊ **Practicable Detour Available**

According to a recent Caltrans Bridge Inspection Report, the detour length for this location is approximately 3 km (or 2 miles); therefore, practicable detour routes are available.

◊ **School Bus or Mail Route**

Yes

10. Approximate Duration of Traffic Interruption for Base Flood (Q_{100})

None. Shallow sheet flow across the roadway should not prohibit traffic from passing over the structure. Traffic is expected to be slowed but not stopped.

11. Approximate Value Of Base Flood (Q_{100}) Damages
******Required only for the rare situations of moderate or high risk******

◊ **Roadway**

None

◊ **Property**

None

◊ **Total**

None

Location Hydraulic Study Evaluation

In the format of the minimum required content of an LHS per the Caltrans Standard Environmental Reference, Section 17, Floodplains, commensurate with the significance of the risk or environmental impact as perceived by a hydrologic and hydraulic engineer, the proposed action is evaluated as follows:

1. The risk associated with implementation of the action

The risks associated with the implementation of the proposed action are not significant. The proposed design minimally increases (~1 inch) water surface elevations in the channel.

2. The impacts on natural and beneficial floodplain values

The impact of the proposed design on the natural and beneficial floodplain values is not significant. The proposed design does not raise the backwater surface elevation.

3. The support of probable incompatible floodplain development

The proposed design will not further support incompatible floodplain development.

4. The measures to minimize floodplain impacts associated with the action

The project will not impact the floodplain as shown on F.E.M.A. Flood Insurance Rate Maps.

5. The measures to restore and preserve the natural and beneficial floodplain values impacted by the action

Routine construction procedures to minimize impacts to the floodplain will be specified and employed. Construction will require permits for working within the channel and implementation of sediment control techniques. These permits will require measures to restore and preserve the natural and beneficial floodplain values and will be made a part of the construction contract work. All scour protections will be placed to match the culvert invert elevation, so the culvert toe will be protected, and the culvert flow area is not impacted by the action.

6. The practicability of alternatives to any significant encroachment

The proposed action does not have a significant potential to impact a transportation facility which is needed for emergency vehicles or provides a community's only evacuation route. It is not a significant risk and it will not have a significant adverse impact on natural and beneficial floodplain values. Therefore, the proposed action does not constitute a significant floodplain encroachment as defined in FHPM 6-7-3-2, paragraph 4q and revised in Title 23, Code of Federal Regulations, Part 650, Subpart A, Section 650.105, "Definitions," paragraph (q), and the Federal-Aid Policy Guide in Transmittal 12, dated December 7, 1994 (23 CFR 650A, § 650.105, "Definitions," paragraph (q)).

7. The practicability of alternatives to any longitudinal encroachment

The proposed action is to repair/replace existing concrete slope paving and to place rock slope protection along the channel bottom, approximately 30 feet upstream and 30 feet downstream of the bridge; and to place rock slope protection on the banks and channel bottom in front of the concrete slope paving for approximately 10 feet. Therefore the maximum longitudinal encroachment along the length of the channel is approximately 80 feet. The rock slope protection will be buried below existing grade so that the flow area of the channel is not decreased. Therefore, the proposed action is expected to have minimal impact on the floodplain.

There are no other practical and cost effective alternatives to protect the existing bridge from further scour.

This Location Hydraulic Study was prepared by or under the direction of the following Registered Person:

Mark J. Christensen, P.E.; Registration Expires 12/31/16

LOCATION HYDRAULIC STUDY FORM

Dist. 6 **Co.** Fresno **Rte.** S. Alta Ave. M.P. N/A
EA: N/A **Federal Project No.:** BPMP – 594(240) **Bridge No.** 42C0179

Floodplain Description:

The floodplain is located in flat, agricultural terrain. The location within the project area is mapped as FEMA Special Flood Hazard Area Zone A. Zone A areas are those areas which are estimated to be within the 100-year (1% recurrence chance) floodplain based upon approximate analysis. This information was obtained from FEMA Flood Insurance Rate Map (FIRM) panel 2685 of 3525, map number 06019C2685H (February 18, 2009). Travers Creek transports natural flows from the Kings River. These flows are controlled during the irrigation season, and uncontrolled during the flood season.

1. Description of Proposal (include any physical barriers i.e. concrete barriers, soundwalls, etc. and design elements to minimize floodplain impacts)

Repair/replace existing concrete slope paving at upstream and downstream banks and place adequately sized rock slope protection along the channel bottom to prevent further scour. The rock slope protection will be buried below existing grade so that the flow area is not reduced.

2. ADT: Current 6050 (2010) Projected 10500 (2030)

3. Hydraulic Data*: Base Flood Q_{100}= 1,340 ft^3 / s WSE_{100}= 366.58'
The flood of record, if greater than Q_{100}: Q= N/A m^3/s WSE= N/A
Overtopping flood Q> 1,160 ft^3/s WSE = 366.14'

Are NFIP maps and studies available? YES X (Zone A) NO

4. Is the highway location alternative within a regulatory floodway?

YES NO X

5. Attach map with flood limits outlined showing all buildings or other improvements within the base floodplain. See Exhibit 4.

Potential Q_{100} backwater damages:

A. Residences? NO X YES **(no increase from existing condition)**
B. Other Bldgs? NO X YES **(no increase from existing condition)**
C. Crops? NO X YES **(no increase from existing condition)**
D. Natural and beneficial Floodplain values? NO X YES **(no increase from existing condition)**

6. Type of Traffic:

A. Emergency supply or evacuation route? NO YES X

B. Emergency vehicle access? NO_____ YES__X__
C. Practicable detour available? NO_____ YES__X (2 miles)
D. School bus or mail route? NO_____ YES__X__

7. Estimated duration of traffic interruption for 100-year event, hours:__0__

8. Estimated value of Q100 flood damages (if any) – moderate risk level.

A. Roadway $__0__
B Property $__0__
Total $__0__

9. Assessment of Level of Risk Low__X__
Moderate _____
High_____

For High Risk projects, during design phase, additional Design Study Risk Analysis may be necessary to determine design alternative.

Signature – Hydraulic Engineer Robin Yates Date 1/26/16
(Item numbers 3,4,5,7,9)

Is there any longitudinal encroachment, significant encroachment, or any support of incompatible Floodplain development? NO X (see discussion below) YES_____

If yes, provide evaluation and discussion of practicability of alternatives in accordance with 23 CFR 650.113

There will be a minor encroachment to place rock slope protection for a maximum of 80 feet along the length of the channel. This is necessary in order to protect the existing bridge from scour. The rock slope protection will be buried below existing grade in order to maintain the existing channel flow area, and is therefore anticipated to have minimal impact on the floodplain.

Information developed to comply with the Federal requirement for the Location Hydraulic Study shall be retained in the project files.

Signature – Project Engineer Robin Yates Date 1/26/16
(Item numbers 1,2,6,8)

SUMMARY FLOODPLAIN ENCROACHMENT REPORT

Dist. 6 **Co.** Fresno **Rte.** S. Alta Ave. **M.P.** N/A
EA: N/A **Federal Project No.:** BPMP – 594(240) **Bridge No.** 42C0179

Limits: 80' along Travers Creek at S. Alta Ave., 0.3 mi north of South Ave.

Floodplain Description: The floodplain is located in flat, agricultural terrain. The location within the project area is mapped as FEMA Special Flood Hazard Area Zone A. Zone A areas are those areas which are estimated to be within the 100-year (1% recurrence chance) floodplain based upon approximate analysis. This information was obtained from FEMA Flood Insurance Rate Map (FIRM) panel 2685 of 3525, map number 06019C2685H (February 18, 2009). Travers Creek transports natural flows from the Kings River. These flows are controlled during the irrigation season, and uncontrolled during the flood season.

	No	Yes
Is the proposed action a longitudinal encroachment of the base floodplain?	X	
Are the risks associated with the implementation of the proposed action significant?	X	
Will the proposed action support probable incompatible floodplain development?	X	
Are there any significant impacts on natural and beneficial floodplain values?	X	
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.	X	
Does the proposed action constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q).	X	
Are Location Hydraulic Studies that document the above answers on file? If not explain.		X

PREPARED BY:

Consultant: Mark J. Christensen, P.E. — Date: 02/09/16

I CONCUR:

Signature - Caltrans Dist. Hydraulic Engineer — Date: 3/2/16

Signature - Caltrans Dist. Environmental Branch Chief — Date: 3/8/16

Signature - Caltrans DLAE — Date: 3/8/16

EXHIBIT 1

PROJECT SITE LOCATION MAP

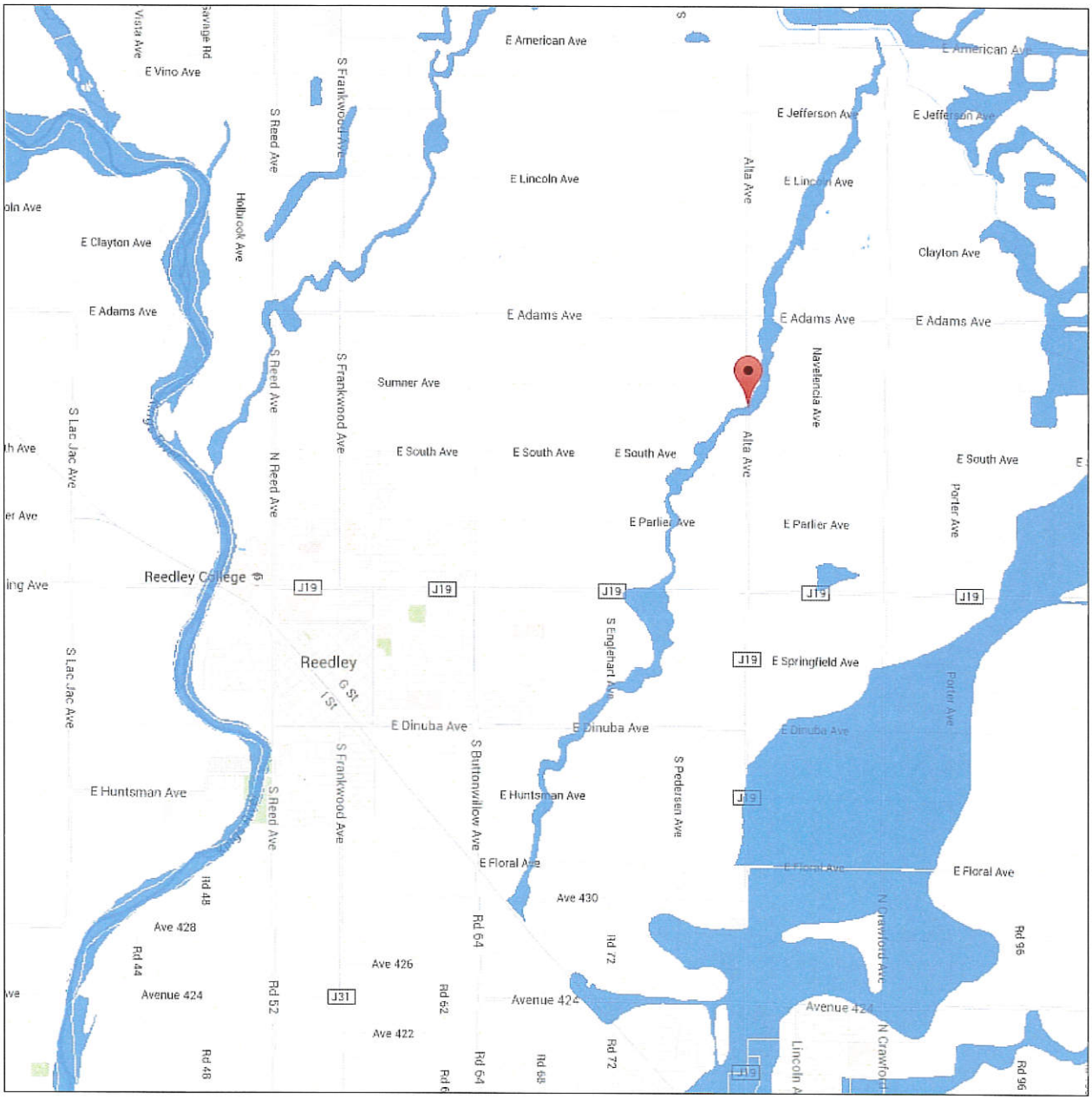
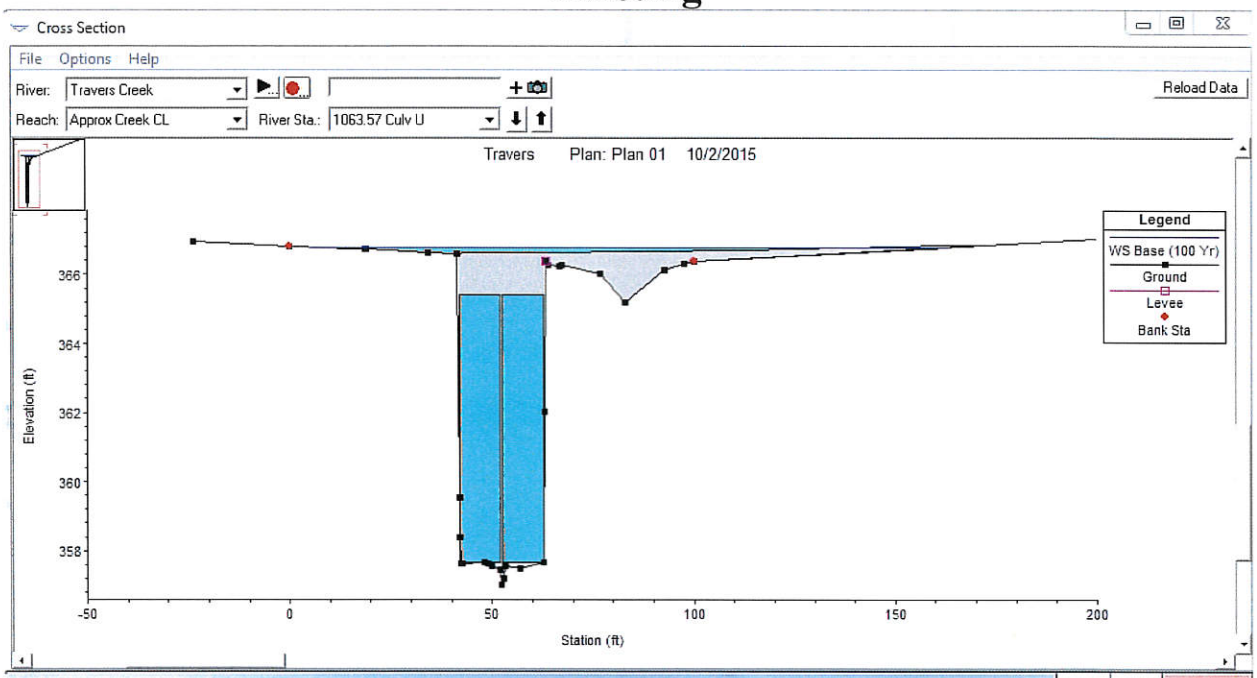


EXHIBIT 2

SUMMARY OF EXISTING vs PROPOSED HYDRAULICS (HEC-RAS MODELING)

Existing



Culvert Output

File Type Options Help

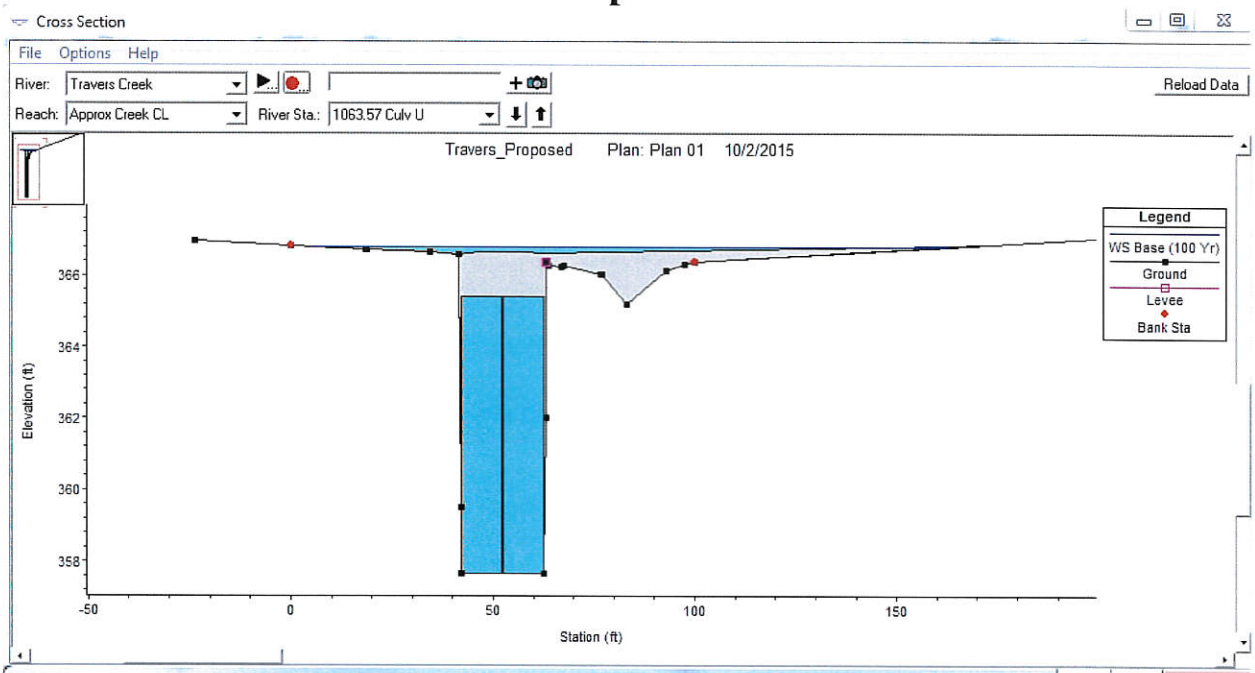
River: Travers Creek | Profile: Base (100 Yr) | Culv Group: Culvert #1

Reach: Approx Creek CL | RS: 1063.57 | Plan: Plan 01

Plan: Plan 01 Travers Creek Approx Creek CL RS: 1063.57 Culv Group: Culvert #1 Profile: Base (100 Yr)

Q Culv Group (cfs)	1155.71	Culv Full Len (ft)	41.04
# Barrels	2	Culv Vel US (ft/s)	7.48
Q Barrel (cfs)	577.86	Culv Vel DS (ft/s)	7.48
E.G. US. (ft)	367.22	Culv Inv El Up (ft)	357.67
W.S. US. (ft)	366.66	Culv Inv El Dn (ft)	357.63
E.G. DS (ft)	366.80	Culv Frctn Ls (ft)	0.06
W.S. DS (ft)	365.94	Culv Exit Loss (ft)	0.02
Delta EG (ft)	0.42	Culv Entr Loss (ft)	0.35
Delta WS (ft)	0.72	Q Weir (cfs)	184.29
E.G. IC (ft)	366.07	Weir Sta Lft (ft)	-23.57
E.G. OC (ft)	367.22	Weir Sta Rgt (ft)	227.36
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	365.40	Weir Max Depth (ft)	0.67
Culv WS Outlet (ft)	365.36	Weir Avg Depth (ft)	0.42
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	104.85
Culv Crt Depth (ft)	4.70	Min El Weir Flow (ft)	366.79

Proposed



Culvert Output

File Type Options Help

River: Travers Creek | Profile: Base (100 Yr) | Culv Group: Culvert #1

Reach: Approx Creek CL | RS: 1063.57 | Plan: Plan 01

Plan: Plan 01 Travers Creek Approx Creek CL RS: 1063.57 Culv Group: Culvert #1 Profile: Base (100 Yr)

Q Culv Group (cfs)	1172.08	Culv Full Len (ft)	41.04
# Barrels	2	Culv Vel US (ft/s)	7.58
Q Barrel (cfs)	586.04	Culv Vel DS (ft/s)	7.58
E.G. US. (ft)	367.19	Culv Inv El Up (ft)	357.67
W.S. US. (ft)	366.58	Culv Inv El Dn (ft)	357.63
E.G. DS (ft)	366.77	Culv Frctn Ls (ft)	0.06
W.S. DS (ft)	365.88	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.42	Culv Entr Loss (ft)	0.36
Delta WS (ft)	0.70	Q Weir (cfs)	167.92
E.G. IC (ft)	366.07	Weir Sta Lft (ft)	-23.57
E.G. OC (ft)	367.19	Weir Sta Rgt (ft)	223.26
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	365.40	Weir Max Depth (ft)	0.64
Culv WS Outlet (ft)	365.36	Weir Avg Depth (ft)	0.40
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	97.99
Culv Crt Depth (ft)	4.74	Min El Weir Flow (ft)	366.79

EXHIBIT 3

F.I.R.M. MAP

(9) Br. No. 42C0179

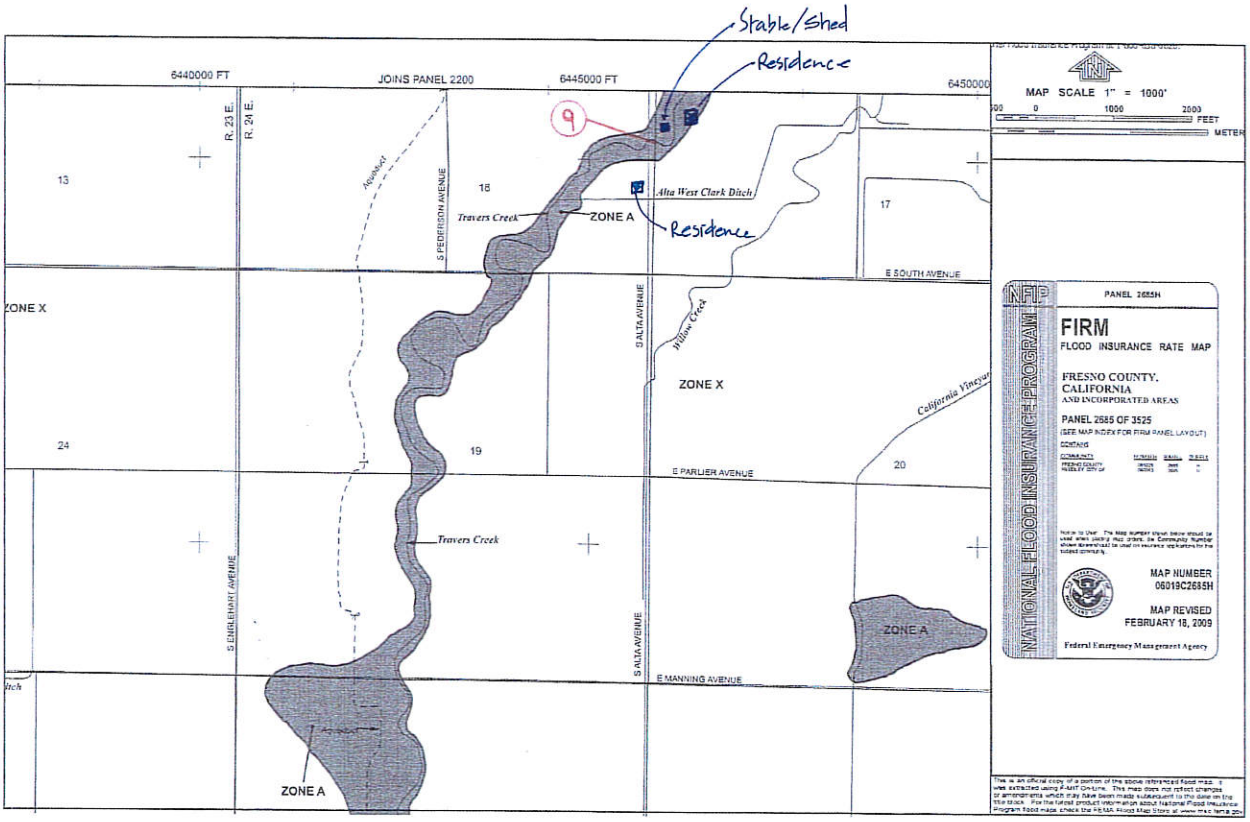
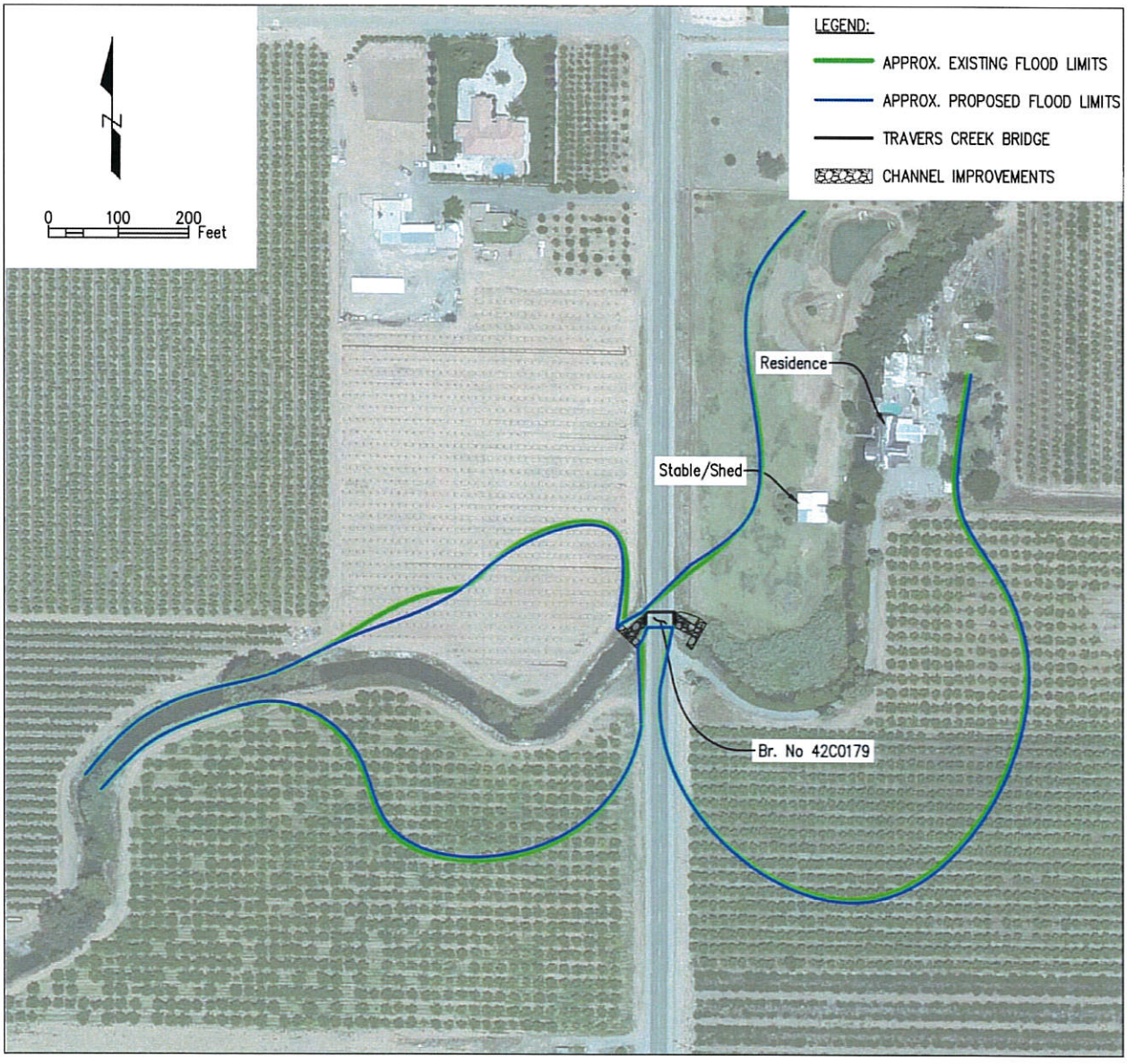


EXHIBIT 4

EXISTING AND PROPOSED FLOOD LIMITS BASED ON HEC-RAS ANALYSIS



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

SECTION 401 WATER QUALITY CERTIFICATION
APPLICATION FORM

Application Fees: Application fees shall be based on the current fee schedule in accordance with Title 23 CCR § 2200 (a)(3), and is required. To determine the total application fee, please use the fee calculator at: http://www.waterboards.ca.gov/water_issues/programs/#wqcert. In order to process the application, an application fee deposit, as determined by the fee calculator, is required. Projects qualifying for a flat fee category must remit the flat fee with the application. Please include a check payable to the **State Water Resources Control Board.**

Annual Fees: After the certification has become effective, annual active discharge fees and annual post discharge monitoring will be based on the fee schedule at time of billing.

Application and Fee Submission: See the Section 401 Water Quality Certification Application Instructions and Information Sheet at the end of the application form for instructions on submitting the application and fees.

Attach additional sheets as necessary. If any information is not applicable to the proposed project please indicate that as N/A.

1. APPLICANT INFORMATION

Applicant: County of Fresno
Contact Name: Dale A. Siemer, PE
Address:
2220 Tulare Street, 6th Floor, Fresno, CA 93721
Phone No: (559) 600-4327
Fax No: (559) 600-4399
E-mail Address: dsiemer@fresnocountyca.gov

2. AGENT INFORMATION*

Agent*
Contact Name:
Address:
Phone No:
Fax No:
E-mail Address:

*Complete only if applicable

3. PROJECT DESCRIPTION

a) Project Title: BPMP Scour Mitigation - Travers Creek on Alta Avenue, Bridge No. 42C0179

b) Project Location:

0.3 miles north of South Avenue near the City of Reedley

County: Fresno Section: 17,18 Township: 15S Range: 24E

Quadrangle Name: Reedley Latitude: 36° 37' 24.1" Longitude: -119° 23' 41.56"

*Attach site map with "waters" clearly indicated (e.g. USGS 7 ½ quadrangle map)

c) Project Description (Please provide a detailed explanation of all project activities. Include applicable information such as: avoidance and minimization measures for project impacts; alternatives analysis; project activity impacts to water bodies and/or water quality; whether or not dewatering is planned; whether or not wet concrete will be used; and implementation of Low Impact Development (LID) strategies. Attach additional pages as necessary):

See Attached 3C responses

See Attached 3C responses

d) Proposed Schedule (start date, and completion date):

Start Date 04/01/2020 , Completion Date 9/01/2020

e) Total Project Size (clearing, grading, other construction activities):

0.48 acres _____ linear feet (if appropriate)

4. IMPACTED WATER BODIES

a) Name(s) of Receiving Water Body(ies):

Travers Creek

b) Anticipated potential stream flow during project activity:

Construction activities will take place between months of April and September when water is not present.

c) Describe potential impacts to water quality:

See Water Quality Section 9 of Appendix F-Water Quality Memo

d) **Waters of the United States:** Indicate in ACRES and LINEAR FEET (where appropriate) the proposed waters of the United States to be impacted by any discharge other than dredging, and identify the impacts(s) as permanent and/or temporary for each water body type listed below:

Water Body Type	Permanent Impacts		Temporary Impacts	
	(acres)	(linear feet)	(acres)	(linear feet)
Jurisdictional Wetland	0.04	90	.26	343
Riparian				
Streambed un-vegetated				
Lake/Reservoir				

e) **Non-Federal Waters**: This section is **only** for waters that the U.S. Army Corps of Engineers does **not** consider federally jurisdictional. Indicate in ACRES and LINEAR FEET (where appropriate) the proposed **waters of the State** to be impacted by any discharge other than dredging, and identify the impacts(s) as permanent and/or temporary for each water body type listed below:

Water Body Type	Permanent Impacts		Temporary Impacts	
	(acres)	(linear feet)	(acres)	(linear feet)
Isolated Wetland				
Ditch/Canal				
Other			.18	

f) **Fill:** Indicate the amount (cubic yards) and type of fill material to be discharged/installed in waters of the State/United States:

Type of Material (Soil, concrete, steel, rock.....)	**Amount** (cubic yards)	**What type of water body?** (Wetland, riparian, streambed, lake.....)	**Indicate if fill is in federal or non-federal waters**
Rock Slope Protection	133	Wetland	Federal
Concrete	7	Wetland	Federal

g) **Dredge/Removal:** Indicate the amount (cubic yards) and type of material to be dredged and/or removed from waters of the State/United States:

Type of Material (Soil, concrete, steel, rock.....)	**Amount** (cubic yards)	**What type of water body?** (Wetland, riparian, streambed, lake.....)	**Indicate if dredge or removal is in federal or non-federal waters**
Soil	133	Wetland	Federal
Concrete	7	Wetland	Federal

5. COMPENSATORY MITIGATION

a) Indicate in ACRES and LINEAR FEET (where appropriate) the total quantity of **waters of the United States** proposed to be Created, Restored and/or Enhanced for purposes of providing Compensatory Mitigation If mitigating for state waters that were not considered federally jurisdictional then attach a description of the proposed mitigation:

Water Body Type	**Created**		**Restored**		**Enhanced**	
	(acres)	(linear ft)	(acres)	(linear ft)	(acres)	(linear ft)
Jurisdictional Wetland						
Riparian						
Streambed						
Lake/Reservoir						

b) If contributing to a Mitigation or Conservation Bank, indicate the agency, dollar amount, acreage, and water body type (if applicable):
Mitigation Bank or Conservation Agency_____
$_____ for_____ acres of _____ (water body type)
How many acres of this mitigation area qualify as waters of the United States?_____

c) Other Mitigation (omit if not applicable):

How many acres of this mitigation area qualify as waters of the United States?_____

d) Location of Compensatory Mitigation Site(s) (attach map of suitable quality and detail):

City of Area _____ County _____

Longitude/Latitude _____ Township/Range _____

6. OTHER ACTIONS/BEST MANAGEMENT PRACTICES (BMPs)

Briefly describe other actions/BMPs to be implemented to Avoid and/or Minimize impacts to waters of the United States, including preservations of habitats, erosion control measures, project scheduling, flow diversions, etc.

The construction contract will require a water pollution control plan (WPCP) for the project. Rock slope protection will reduce sedimentation after project completion. To control sedimentation during and after construction, County would implement best management practices (BMP's) outlined in any authorizations or permits, issued under the authorities of the CWA that it receives for the project. If best management practices are ineffective, the County would attempt to remedy the situation immediately, in consultation with the regulatory and resource agencies.
Although not anticipated, if required, channel flow will be maintained during construction via the use of cofferdams, pipes, or other suitable methods that will minimize impacts to the floodplain.

See Water Quality Section 9 of Appendix F- Water Quality Memo

7. OTHER PERMITS/AGREEMENTS/ETC

a) U.S. Army Corps of Engineers Permit: Indicate the type of ACOE permit *(check one)*

Nationwide Permit No(s)_____ Individual Permit No(s):_____ Regional Permit No(s):____

Letter(s) of Permission_____ ACOE Permit Reference Number_____

Have you notified ACOE of project? No, Non notifying

Have you reviewed the General Conditions for your ACOE permit? _____

Have you attached a copy of the application/notification to ACOE? _____

b) California Department of Fish and Game Lake or Streambed Alteration Agreement:

Date of Application: 12/27/19

Have you attached a copy of the application? Yes

Has the Agreement been issued? No if so, list Agreement number:_____

c) Water Rights:

If the project is directly related to any diversion, obstruction, extraction, or impoundment of the natural flow of a river, stream, lake or underground source then provide the Water Right Application ID Number_____ or Permit ID Number_____

8. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

a) Indicate the type of CEQA Document required for this project:

Categorical Exemption X Negative Declaration ___ Environmental Impact Report ___

Has the document been certified/approved, or has a Notice of Exemption been filed? Yes

If yes date of approval/filing 12/12/2014 If no, expected approval/filing date:_____

Lead Agency County of Fresno

Have you attached a copy of the draft/final CEQA documentation*? Yes

* A final copy of valid CEQA documentation must be provided before a project can be certified

b) List State and Federal Threatened/Endangered Species that could potentially be impacted by this project:

San Joaquin Valley Orcutt grass located approx. 1 mile east of project site. This is species is known to occur in vernal pools, which is not present in the site therefore there is no potential for this plant to occur in the project site.
See page 39 (Site 9) of Appendix A - Natural Environment Study - Minimal Impacts

9. PAST/FUTURE PROPOSALS BY THE APPLICANT

Briefly list/describe any projects carried out in the last 5 years or planned for implementation in the next 5 years that are in any way related to the proposed activity or may impact the same receiving body of water. Include the estimated adverse impacts from the past or future projects.

None

SIGNATORY REQUIREMENTS

All reports, notices, or other documents required by the Water Quality Certification or requested by the Central Valley Regional Water Quality Control Board (Central Valley Water Board) shall be signed by a person described below or by a duly authorized representative of that person.

a. For a corporation: by a responsible corporate officer such as (1) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function; (2) any other person who performs similar policy or decision-making functions for the corporation; or (3) the manager of one or more manufacturing, production, or operating facilities if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
b. For a partnership or sole proprietorship: by a general partner or the proprietor.
c. For a municipality, State, federal, or other public agency: by either a principal executive officer or ranking elected official.

10. CERTIFICATION [Any person signing or submitting a document, e.g. an application, a monitoring report, etc., to demonstrate compliance with the Water Quality Certification regulations shall make the following certification, whether written or implied]

"I certify under penalty of law that this document, including all attachments and supplemental information, were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel property gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Print Name: Dale Siemer Title: Supervising Engineer

Signature: _____ Date: 12/26/19

STATEMENT OF AUTHORIZATION (if designating a specific agent)

I hereby authorize _____to act on my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

X_____ DATE_____
APPLICANT'S SIGNATURE (not the authorized agent)

All information on this application becomes part of the public record, and as such is subject to public records requests disclosure. In addition, the application will be posted for public review on the Regional Board's web site in accordance with California Code of Regulations Title 23 Section 3858.

Natural Environment Study

(Minimal Impacts)

Bridge Preventive Maintenance Program (BPMP 5942(240)
Scour Mitigation Project
Fresno County, California
06-FRE-0-CR

March 11, 2016

STATE OF CALIFORNIA
Department of Transportation
County of Fresno

Prepared By: Steve McMurtry, Principal/Biologist
(916) 580-9818
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Sacramento

Recommended
for Approval By: _____ Date: 3-22-16
Elmer Llamas, Environmental Planner, Biologist
(559) 445-6314
District 6
Environmental Analysis, Planning & Local Program

Approved By: _____ Date: 3/22/2016
Shane Gunn, Branch Chief
(559) 445-6310
District 6
Environmental Analysis, Planning & Local Program

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Summary

The County of Fresno with the California Department of Transportation proposes to conduct maintenance activities on twelve (12) bridges as part of its Bridge Preventive Maintenance Program (BPMP). A map depicting the location of these bridges is included a Figure 1. The proposed project would extend the service life of the existing structure at each location by installing new, or repairing existing, scour countermeasures and conducting other maintenance activities at each location (See Appendix A for the detailed scope of work specific to each bridge). Vegetation and trash will be removed from the channel at each location. Portions of the channel could be excavated to a maximum depth of 3' to install new or repair the existing scour countermeasures. A dead tree overhanging bridge site 3 will be removed. It is the intention of the County to use existing paths to temporarily access the channel and not remove any trees as depicted in the APE maps (Figure 2a – 2k). Permits may be required to facilitate the contractor's temporary access the channel at some locations during construction. Construction is anticipated to occur within the existing right of way.

A literature review and database search was performed for each location. Field surveys did not reveal the presence of any these special status species within the project limits; however, there are potential effects identified at seven bridge sites (3, 4, 5, 6, 7, 9, and 12) for special status species. Avoidance and minimization measures have been presented to ensure the protection of plant and wildlife special status species at each bridge site.

This NES-MI included a wetland evaluation at each bridge site. Two of the sites (Site 5 and 11) included construction staging areas that were located within jurisdictional areas and are recommended to be moved. All sites included permanent impacts to jurisdictional features, however, the actual impact is associated with the existing structure and the permanent impact has already occurred with the original construction. All sites also include temporary impacts associated with the access to the bridge sites for the maintenance and repair activities. These impacts will be restored after construction is complete. It is anticipated that the work would qualify for a maintenance exemption under Section 404, but this determination would require concurrence with the USACE. A 401 water quality certification and 1600 Streambed Alteration Agreement would be needed for each bridge site.

1. Introduction

1.1. Project Description

The County of Fresno with the California Department of Transportation proposes to conduct maintenance activities on twelve (12) bridges as part of its Bridge Preventive Maintenance Program (BPMP). A map depicting the location of these bridges is included a Figure 1. The

proposed project would extend the service life of the existing structure at each location by installing new or repairing existing scour countermeasures and conducting other maintenance activities at each location (See Appendix A for the detailed scope of work specific to each bridge). Vegetation and trash will be removed from the channel at each location. Portions of the channel could be excavated to a maximum depth of 3' to install new or repair the existing scour countermeasures. A dead tree overhanging bridge site 3 will be removed. It is the intention of the County to use existing paths to temporarily access the channel and not remove any trees as depicted in the APE maps (Figure 2a – 2k. Permits may be required to facilitate the contractor's temporary access the channel at some locations during construction. Construction is anticipated to occur within the existing right of way.

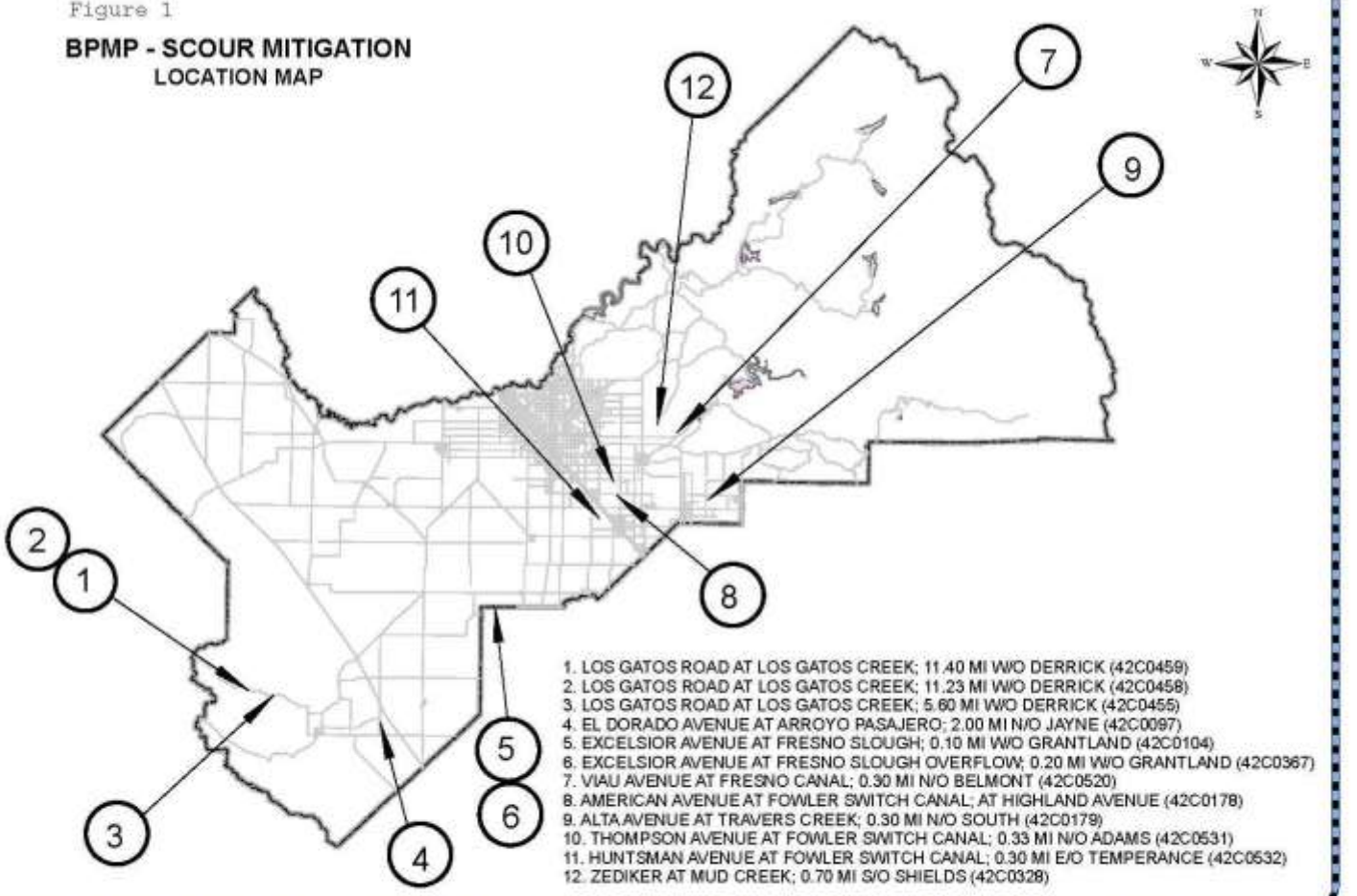
1.2. Project Location

The County of Fresno proposes to conduct maintenance activities, through its BPMP program, on the twelve (12) bridges listed below. A map depicting the location of these bridges is included a Figure 1.

1. Bridge Number 42C0459 - Los Gatos Creek at Los Gatos Road
2. Bridge Number 42C0458 - Los Gatos Creek at Los Gatos Road
3. Bridge Number 42C0455 - Los Gatos Creek at Los Gatos Road
4. Bridge Number 42C0097 - Arroyo Pasajero at El Dorado Avenue
5. Bridge Number 42C0104 - Fresno Slough at Excelsior Avenue
6. Bridge Number 42C0367 - Fresno Slough Overflow at Excelsior Avenue
7. Bridge Number 42C0520 - Fresno Canal at Viau Avenue
8. Bridge Number 42C0178 - Fowler Switch Canal at American Avenue
9. Bridge Number 42C0179 - Travers Creek at Alta Avenue
10. Bridge Number 42C0531 - Fowler Switch Canal at Thompson Avenue
11. Bridge Number 42C0532 - Fowler Switch Canal at Huntsman Avenue
12. Bridge Number 42C0328 - Mud Creek at Zediker Avenue

Figure 1

BPMP - SCOUR MITIGATION
LOCATION MAP



1. LOS GATOS ROAD AT LOS GATOS CREEK; 11.40 MI W/O DERRICK (42C0459)
2. LOS GATOS ROAD AT LOS GATOS CREEK; 11.23 MI W/O DERRICK (42C0458)
3. LOS GATOS ROAD AT LOS GATOS CREEK; 5.60 MI W/O DERRICK (42C0455)
4. EL DORADO AVENUE AT ARROYO PASAJERO; 2.00 MI N/O JAYNE (42C0097)
5. EXCELSIOR AVENUE AT FRESNO SLOUGH; 0.10 MI W/O GRANTLAND (42C0104)
6. EXCELSIOR AVENUE AT FRESNO SLOUGH OVERFLOW; 0.20 MI W/O GRANTLAND (42C0367)
7. VIAU AVENUE AT FRESNO CANAL; 0.30 MI N/O BELMONT (42C0520)
8. AMERICAN AVENUE AT FOWLER SWITCH CANAL; AT HIGHLAND AVENUE (42C0178)
9. ALTA AVENUE AT TRAVERS CREEK; 0.30 MI N/O SOUTH (42C0179)
10. THOMPSON AVENUE AT FOWLER SWITCH CANAL; 0.33 MI N/O ADAMS (42C0531)
11. HUNTSMAN AVENUE AT FOWLER SWITCH CANAL; 0.30 MI E/O TEMPERANCE (42C0532)
12. ZEDIKER AT MUD CREEK; 0.70 MI S/O SHIELDS (42C0328)

DEPARTMENT OF PUBLIC WORKS AND PLANNING

2. Study Methods

2.1. Regulatory Requirements

There are a number of regulatory agencies whose responsibility includes the oversight of the natural resources of the state and nation including the California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), and the National Marine Fisheries Service (NMFS). These agencies often respond to declines in the quantity of a particular habitat or plant or animal species by developing protective measures for those species or habitat type. The following is an overview of the federal, state and local regulations that are applicable to transportation projects.

- Federal Endangered Species Act.
- Migratory Bird Treaty Act.
- Clean Water Act – Section 404 and 401.
- Department of Transportation Act - Section 4(f).
- National Environmental Policy Act
- Fish and Game Code §2050-2097 - California Endangered Species Act.
- Fish and Game Code §1900-1913 California Native Plant Protection Act.
- Fish and Game Code §3503, 3503.5, 3800 - Predatory Birds.
- Fish and Game Code § 3511- "Fully Protected" Bird Species
- Fish and Game Code §1601-1603 – Streambed Alteration.
- Public Resources Code § 21000 - California Environmental Quality Act.

2.2. Literature and Database Review

De Novo Planning Group conducted a literature review and database search to gather information regarding sensitive plants, animals, and habitats. The purpose of the literature and database review is to identify species known to occur within the region based on historic range, observations, and habitat requirements. The literature and database sources included the California Natural Diversity Data Base (CNDDB RareFind 3) administered by the California Department of Fish and Game and the Environmental Conservation Online System (ECOS) administered by the United States Fish and Wildlife Services. The information obtained from these sources are listed in Section 9 Appendix. The result of the literature and database reviews is presented in Section 4 Environmental Setting.

2.3. Surveys

Steve McMurtry, Principal Biologist with De Novo Planning Group, performed reconnaissance-level surveys on February 3 and 4, 2015. The surveys included traversing the project limits on foot and performing a windshield survey for the area within an approximately two-mile radius of

the project limits. The purpose of the surveys was to document the biological conditions within the project limits and vicinity. Aerial photographs of the project limits were also examined to assess any changes that have occurred from historical aerial photos. Additional surveys were performed by Steve McMurtry on June 30 and July 1, 2015.

Additional surveys were performed for blunt-nosed leopard lizard (Gambelia sila) at the Arroyo Pasajero/El Dorado Avenue BPMP Scour Mitigation location in Fresno County. An approximately 12.4 acre survey area was established to encompass the 3.4 acre Area of Potential Effect. Surveys were performed according to the California Department of Fish and Wildlife Approved Survey Methodology for the Blunt-Nosed Leopard Lizard, May 2004. The required eight days of surveys for operations and maintenance activities were performed on June 10, 12, 16, 17 and 29 and July 13-15, 2015. Surveys were performed by a team of two qualified individuals that included Darren Newman or Justin Jack as the Level II surveyor and Kat Calderala, Preston Whitehead, or Rob Knutson as the Level I surveyor. The surveys were accomplished by two biologists walking parallel transects at approximately 10-20 meter spacing to ensure visual coverage of the survey area, which included non-native grassland vegetation in upland areas and tamarisk (Tamarix ssp.), saltbush (Atriplex ssp.), and Russian thistle (Salsola ssp.) in the wash. Start /finish times and temperatures, as well as target species counts, are included in Table 1 of Appendix E. As an off-site blunt-nosed leopard lizard (BNLL) sighting reference during the course of the scour mitigation surveys at the Arroyo Pasajero/El Dorado site, a BNLL was observed in conjunction with an unrelated survey effort on 25, 26 and 30 June. The observations occurred along Panoche Road in eastern San Benito County (36.57441, -120.71867). Although not in close proximity to the El Dorado location, the observation demonstrates that BNLL were generally active during the period in which the El Dorado BNLL surveys occurred.

3. Environmental Setting

The biological resources assessment contained in this NES-MI covers the entire APE for each bridge site as depicted in Figures 2a through 2k below. The extent of the biological habitat at each APE is located in the channel and bank at each bridge site. The contractor would require temporary access to the channel as depectied on each respecitve APE map. The temporary access is specifically designed to avoid the need to remove trees.

3.1. Description of the Existing Biological and Physical Conditions

Site 1 (Bridge Number 42C0459 - Los Gatos Creek at Los Gatos Road)

The Los Gatos Road Bridge at Los Gatos Creek (Br. No. 42C0459) is a continuous 2-span cast in place flat slab structure with a 4-column pier on a reinforced concrete spread footing and

reinforced concrete diaphragm abutments founded on steel H piles. The bridge is 52 feet long and 28.5 feet wide, and there is an asphalt concrete overlay on the bridge deck.

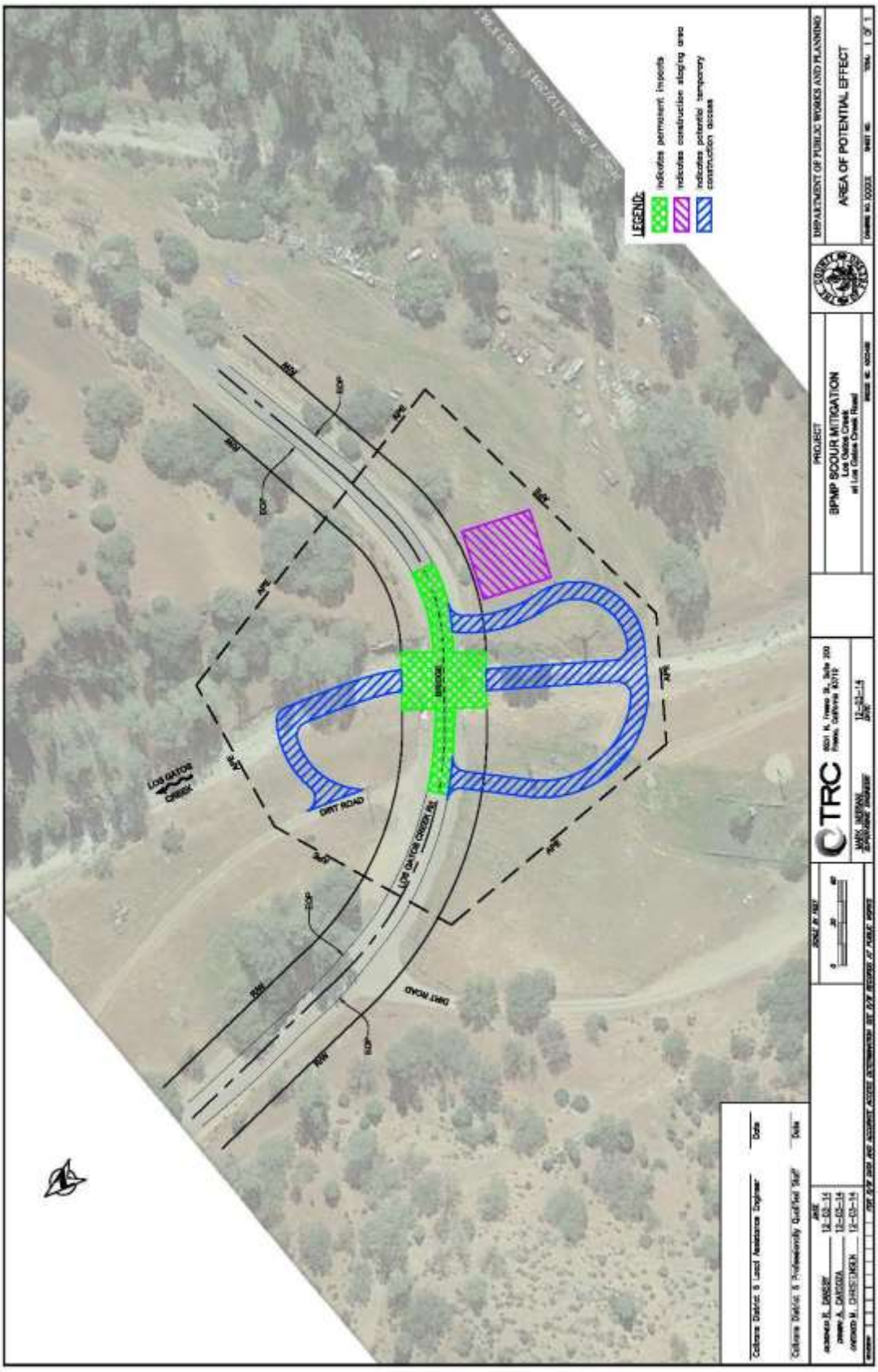
The creek bottom is gravel/rock with limited to no vegetation present. The following site photographs illustrate the site conditions.

Upstream side of Abut 3.

Roadway view of the structure approach from the valley.

Elevation View of structure with cattle fencing hung from bridge.

Figure 2a - Site 1



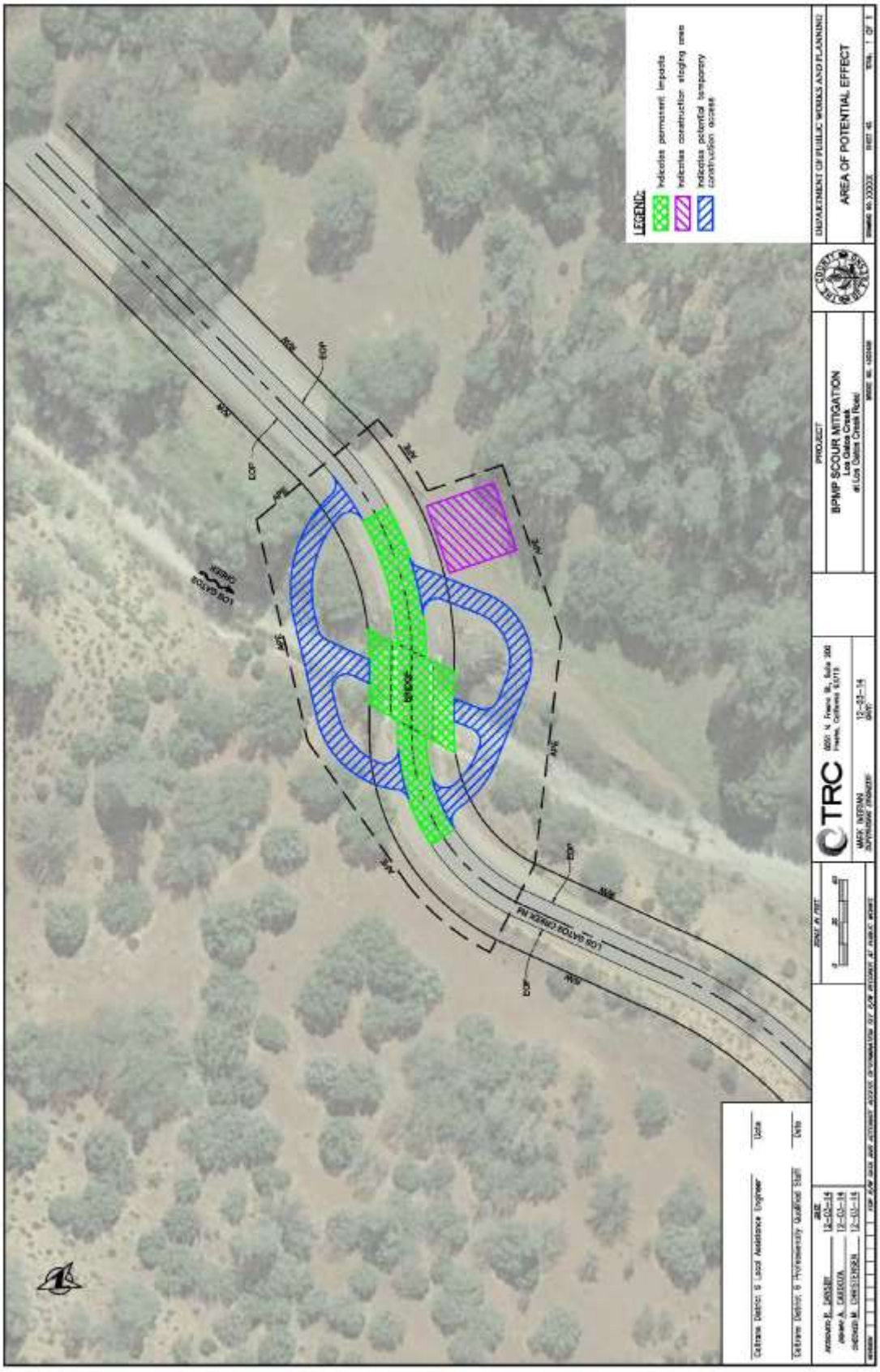
Site 2 (Bridge Number 42C0458 - Los Gatos Creek at Los Gatos Road)

The Los Gatos Road Bridge at Los Gatos Creek (Br. No. 42C0458) is a continuous 2-span cast in place flat slab structure with a 4-column, pile extension pier and reinforced concrete diaphragm abutments. The bridge is 54 feet long and 28.5 feet wide, and there is an asphalt concrete overlay on the bridge deck. The structure is skewed 30 degrees to the channel. The creek bottom is gravel/rock with limited to no vegetation present in the channel bottom with some willow and cottonwood along the banks of the creek. The following site photographs illustrate the site conditions.

View from the north.

View from the south.

Figure 2b - Site 2



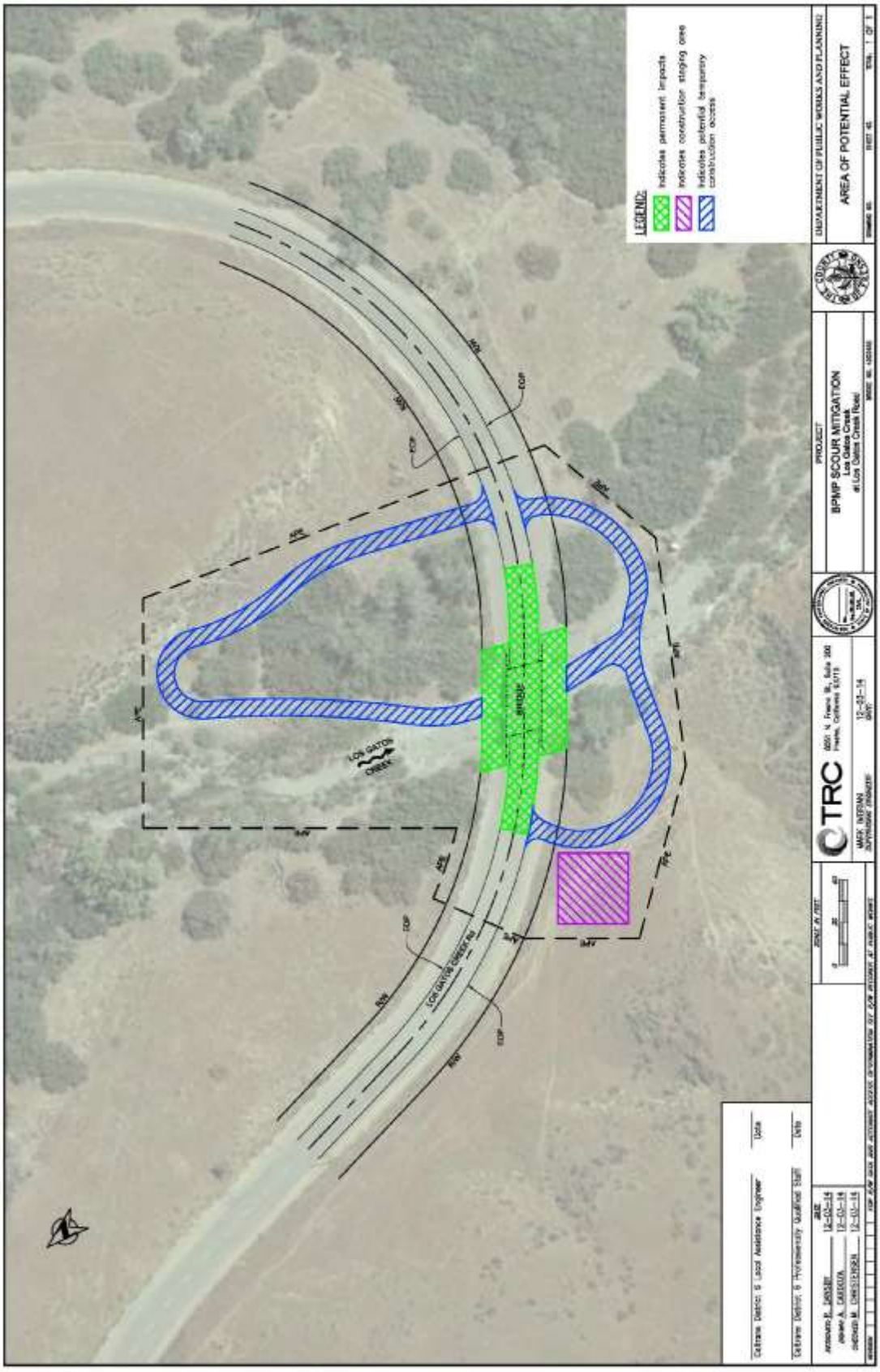
Site 3 (Bridge Number 42C0455 - Los Gatos Creek at Los Gatos Road)

The Los Gatos Road Bridge at Los Gatos Creek (Br. N0. 42C0455) is a continuous 2-span cast in place flat slab structure with a 4-column pier and reinforced concrete diaphragm abutments. All foundations are supported by steel H-piles. The bridge is 53 feet long and 28.5 feet wide, and there is an asphalt concrete overlay on the bridge deck. The structure is skewed 23 degrees to the channel. The creek bottom is gravel/rock with limited to no vegetation present in the channel bottom with some willow and cottonwood along the banks of the creek. The following site photographs illustrate the site conditions.

Upstream face of bridge.

Elevation View of structure from the riverbed.

Figure 2c - Site 3



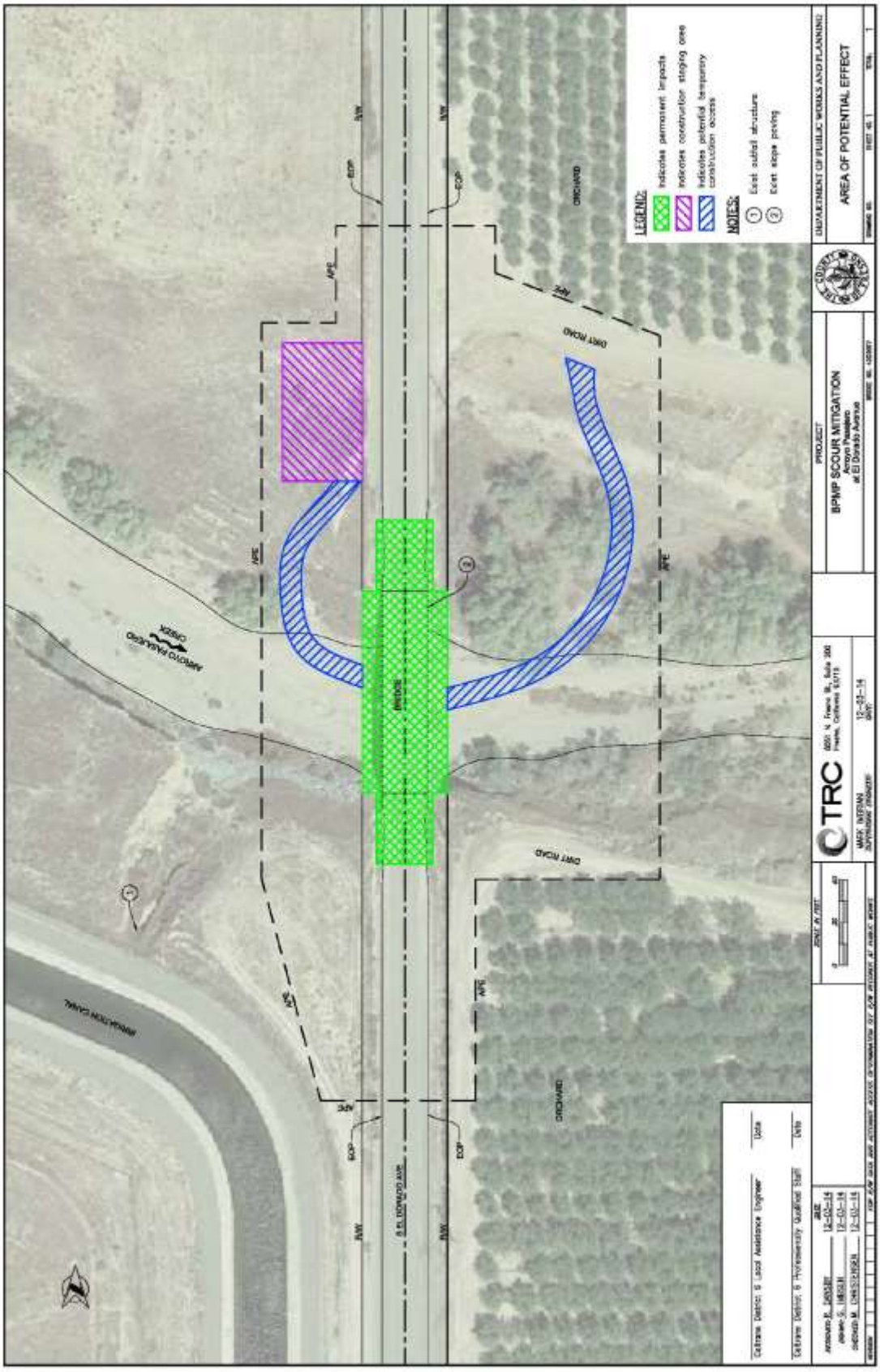
Site 4 (Bridge Number 42C0097 - Arroyo Pasajero at El Dorado Avenue)

The El Dorado Avenue Bridge at Arroyo Pasajero (Los Gatos Creek) is a 3-span structure with concrete piers walls and diaphragm abutments supporting four double T-girder units and a composite, CIP concrete deck. The bridge is 152 feet long and 33.8 feet wide. The creek bottom is gravel/sand with limited to no vegetation present in the channel bottom. The following site photographs illustrate the site conditions.

Elevation view of the structure from the protected South embankment.

The front edge of the slope paving at Abutment 4 is quite close to being undermined.

Figure 2d - Site 4



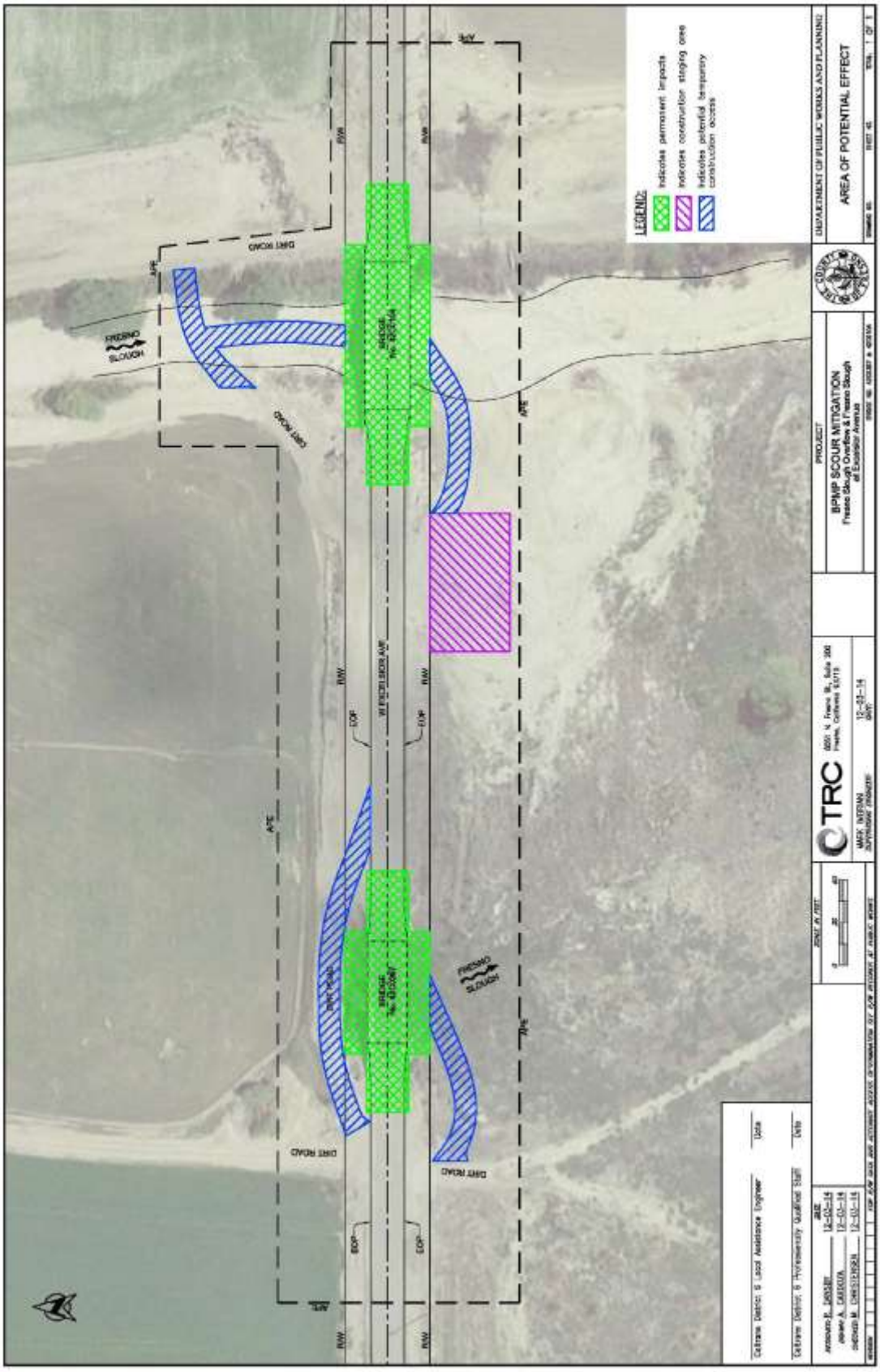
Site 5 (Bridge Number 42C0104 - Fresno Slough at Excelsior Avenue)

The Excelsior Avenue Bridge at Fresno Slough is a continuous 4-span flat slab structure with pile extension piers and reinforced concrete diaphragm abutments. The bridge is 107 feet long and 32.5 feet wide. The creek bottom is gravel/sand with limited to no vegetation present in the channel bottom. The following site photographs illustrate the site conditions.

Elevation view of the structure from the protected South embankment.

Exposed pile cans at each pier showing signs of rustification. Piles are also offset from columns by a few inches is some cases.

Figure 2e - Sites 5 and 6



Site 6 (Bridge Number 42C0367 - Fresno Slough Overflow at Excelsior Avenue)

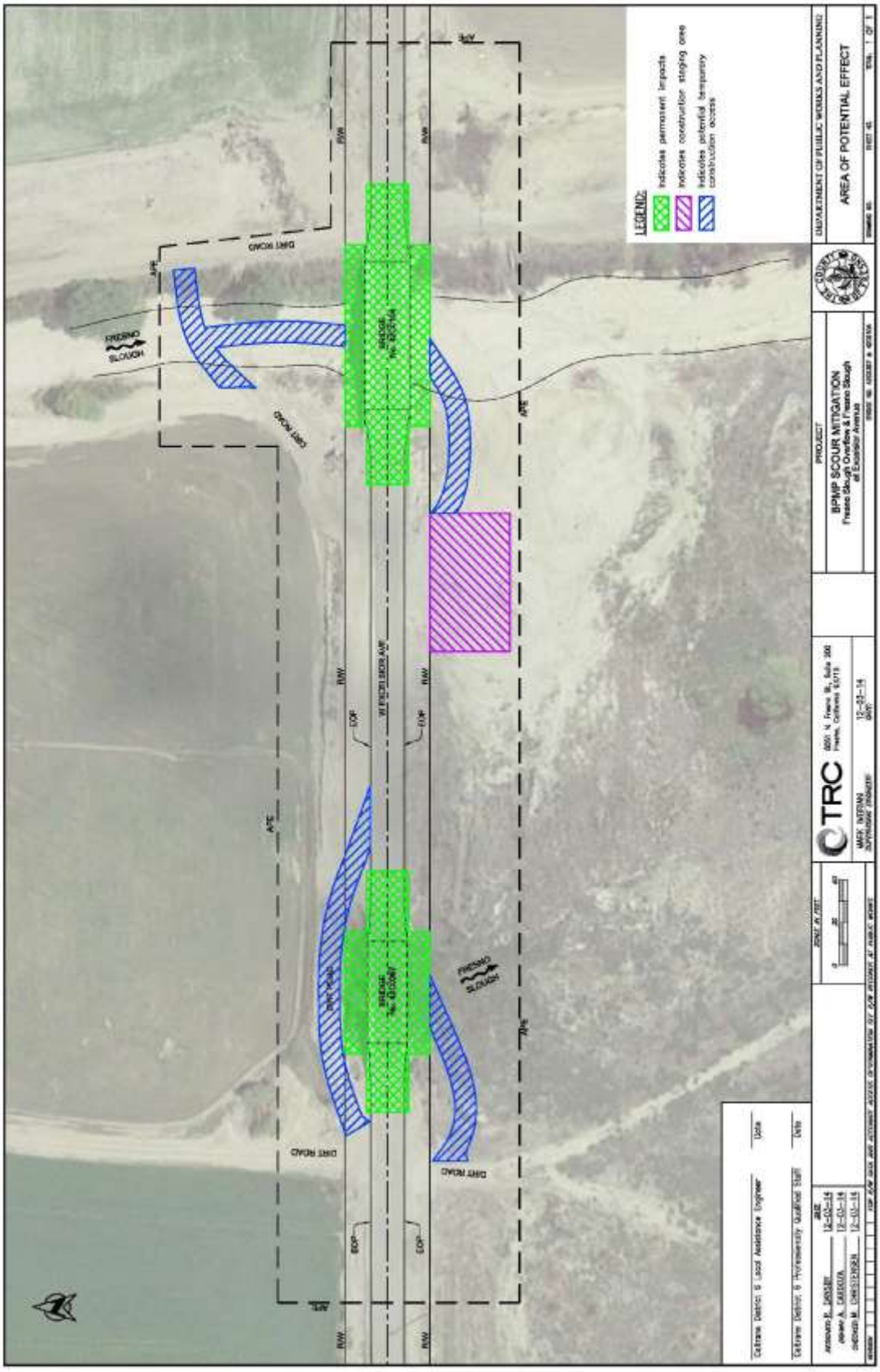
The Excelsior Avenue Bridge at Fresno Slough Overflow is a 4-span cast-in-place flat slab structure with reinforced concrete square 4-column piers and reinforced concrete diaphragm abutments. All foundations are supported by pre-cast/pre-stressed concrete piles. The bridge is 87 feet long and 28.5 feet wide. The roadway has been chip sealed and this carries across the concrete deck.

The creek bottom under the bridge is broken concrete/gravel with limited to no vegetation present in the channel bottom. Beyond the bridge is more abundant annual grassland vegetation The following site photographs illustrate the site conditions.

Elevation View of structure from the flood plain to the South.

Edge of slope paving at Abutments is exposed and undermined, highlighting the need for scour protection.

Figure 2e - Sites 5 and 6



Site 7 (Bridge Number 42C0520 - Fresno Canal at Viau Avenue)

The Viau Avenue Bridge at Fresno Canal (Br. No. 42C0520) is a simply supported 3-span timber and concrete structure with douglas fir stringers supported on timber sills atop reinforced concrete pier walls and abutments. All foundations are spread footings. The bridge is 59 feet long and 24 feet wide.

The creek bottom gravel/sand. The following site photographs illustrate the site conditions.

Elevation View of structure with water flowing through canal.

Figure 2f - Site 7

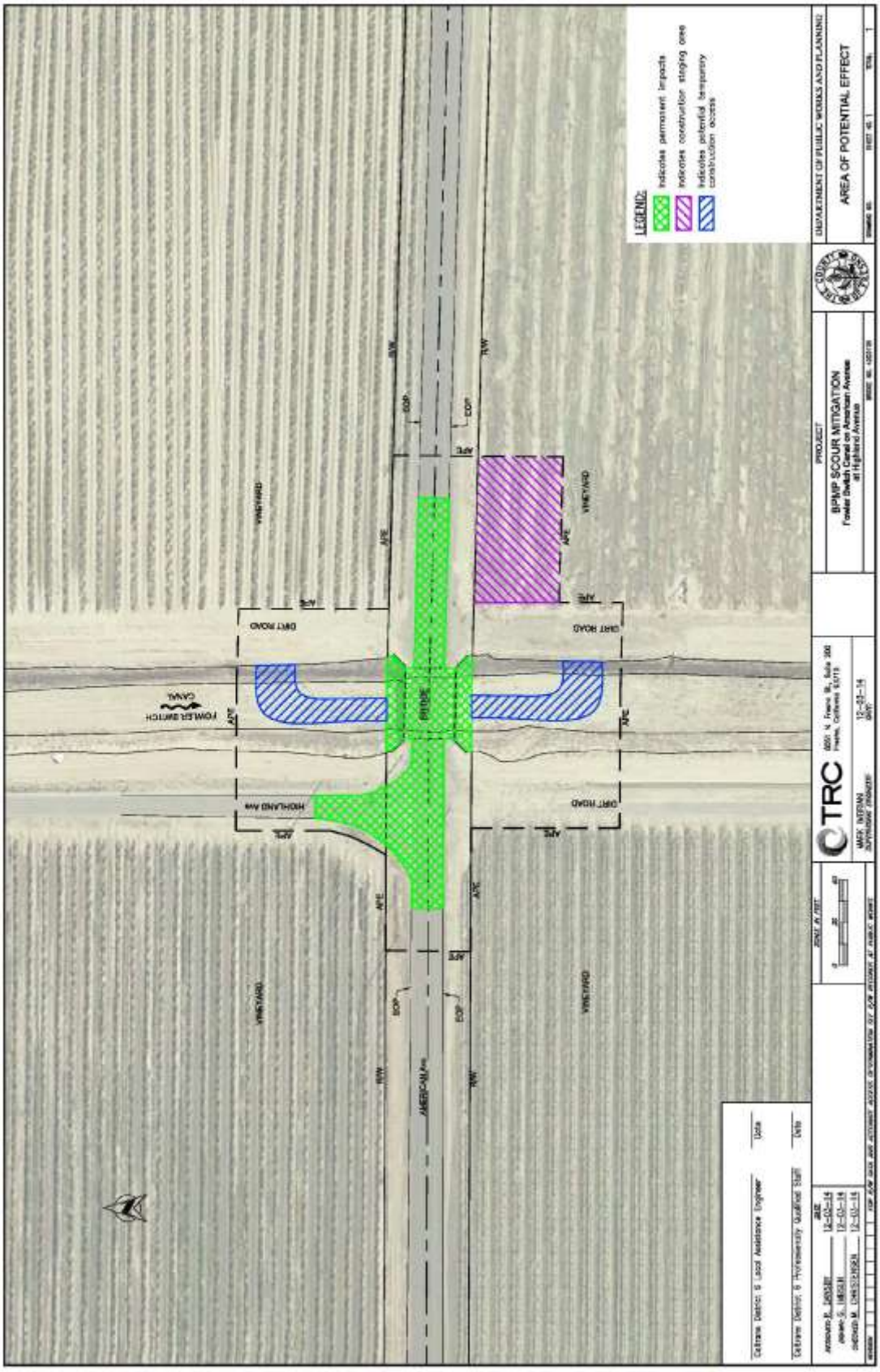
Site 8 (Bridge Number 42C0178 - Fowler Switch Canal at American Avenue)

The American Avenue Bridge at Fowler Switch Canal (Br. No. 42C0178) is a 3-span castin-place concrete slab structure with reinforced concrete pier walls and abutments. All foundations are spread footings. The bridge is 52 feet long and 36 feet wide. The creek bottom is gravel/sand with limited to no vegetation present in the channel bottom. The following site photographs illustrate the site conditions.

Elevation View of structure looking South.

Spread footing at Pier 2 has been exposed a length of 16' and has been undermined by up to 2' in Some locations.

Figure 2g - Site 8



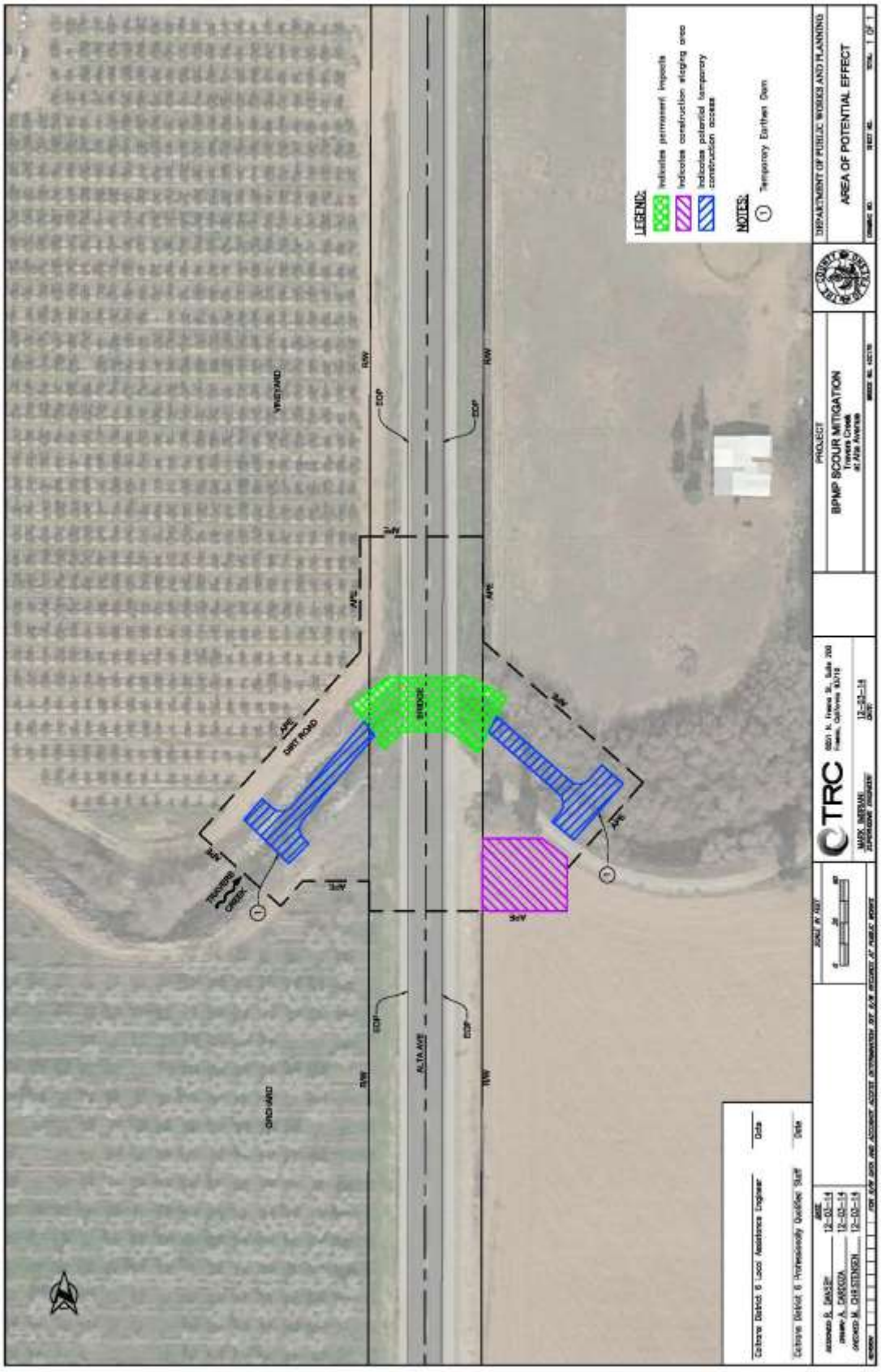
Site 9 (Bridge Number 42C0179 - Travers Creek at Alta Avenue)

The South Alta Avenue crossing at Travers Creek (Br. No. 42C0179) is a double barrel castin-place reinforced concrete culvert. The culvert is 22 feet long and 40'-8" wide with a 20 degree skew to the channel. The creek bottom under the bridge is concrete culvert no vegetation present in the channel bottom. Beyond the bridge is a mix of sand/gravel. The following site photographs illustrate the site conditions.

Elevation View of structure from the West waterway approach.

Culvert is exposed up to 4" on both ends of the culvert.

Figure 2h - Site 9



Site 10 (Bridge Number 42C0531 - Fowler Switch Canal at Thompson Avenue)

The Thompson Avenue Bridge at Fowler Switch Canal (Br. No. 42C0531) is a simply supported 3-span structure with concrete piers and abutments supporting timber stringers on timber sills and a concrete deck. All foundations are spread footings. The bridge is 65 feet long and 24 feet wide with a 20 degree skew to the channel.

The creek bottom sand/gravel with limited to no vegetation present in the channel bottom. The following site photographs illustrate the site conditions.

Elevation View looking East towards the structure.

Erosion gully at Abutment 4 due to roadway runoff.

Figure 2i - Site 10

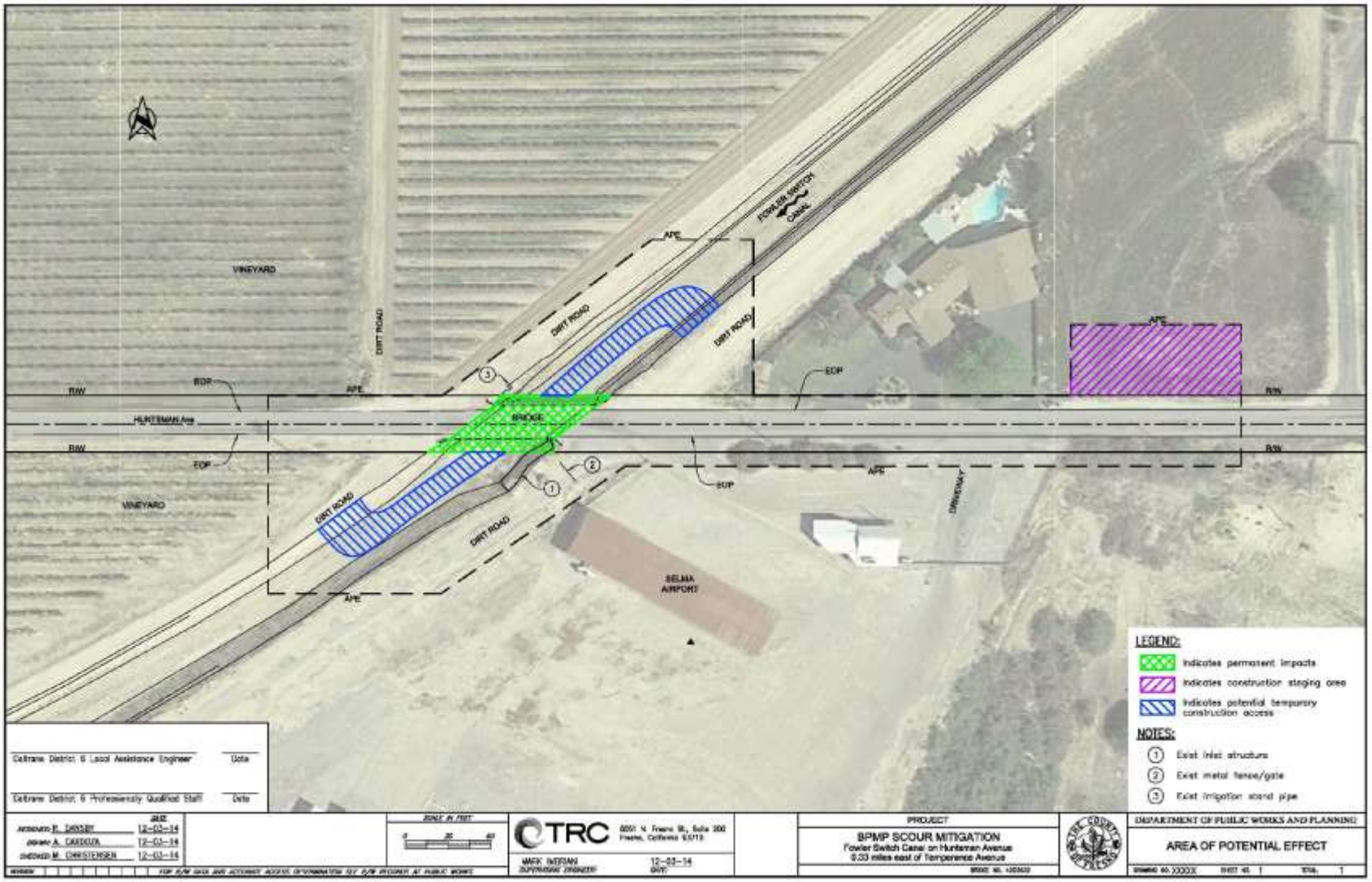
Site 11 (Bridge Number 42C0532 - Fowler Switch Canal at Huntsman Avenue)

The Huntsman Avenue Bridge at Fowler Switch Canal (Br. No. 42C0532) is a 4-span structure with concrete pier walls and abutments supporting timber stringers on timber sills and a continuous concrete deck. All foundations are spread footings. The bridge is 71 feet long and 24.2 feet wide with a 45 degree skew to the channel. The creek bottom sand/gravel with limited to no vegetation present in the channel bottom. The following site photographs illustrate the site conditions.

Elevation View of structure from the West waterway approach.

The leading edges of both piers are beginning to be undermined as well.

Figure 2j - Site 11



Site 12 (Bridge Number 42C0328 - Mud Creek at Zediker Avenue)

The Zediker Avenue Bridge at Mud Creek (Br. No. 42C0328) is a 2-span, cast-in-place concrete slab structure with a reinforced concrete pier wall and diaphragm abutments. All foundations are spread footings. The bridge is 24 feet long and 24 feet wide. The creek bottom sand/gravel. The following site photographs illustrate the site conditions.

Elevation View of structure from the upstream approach.

Spread footings at Abutments and Pier 2 has been exposed necessitating scour protection.

Figure 2k - Site 12

3.2.

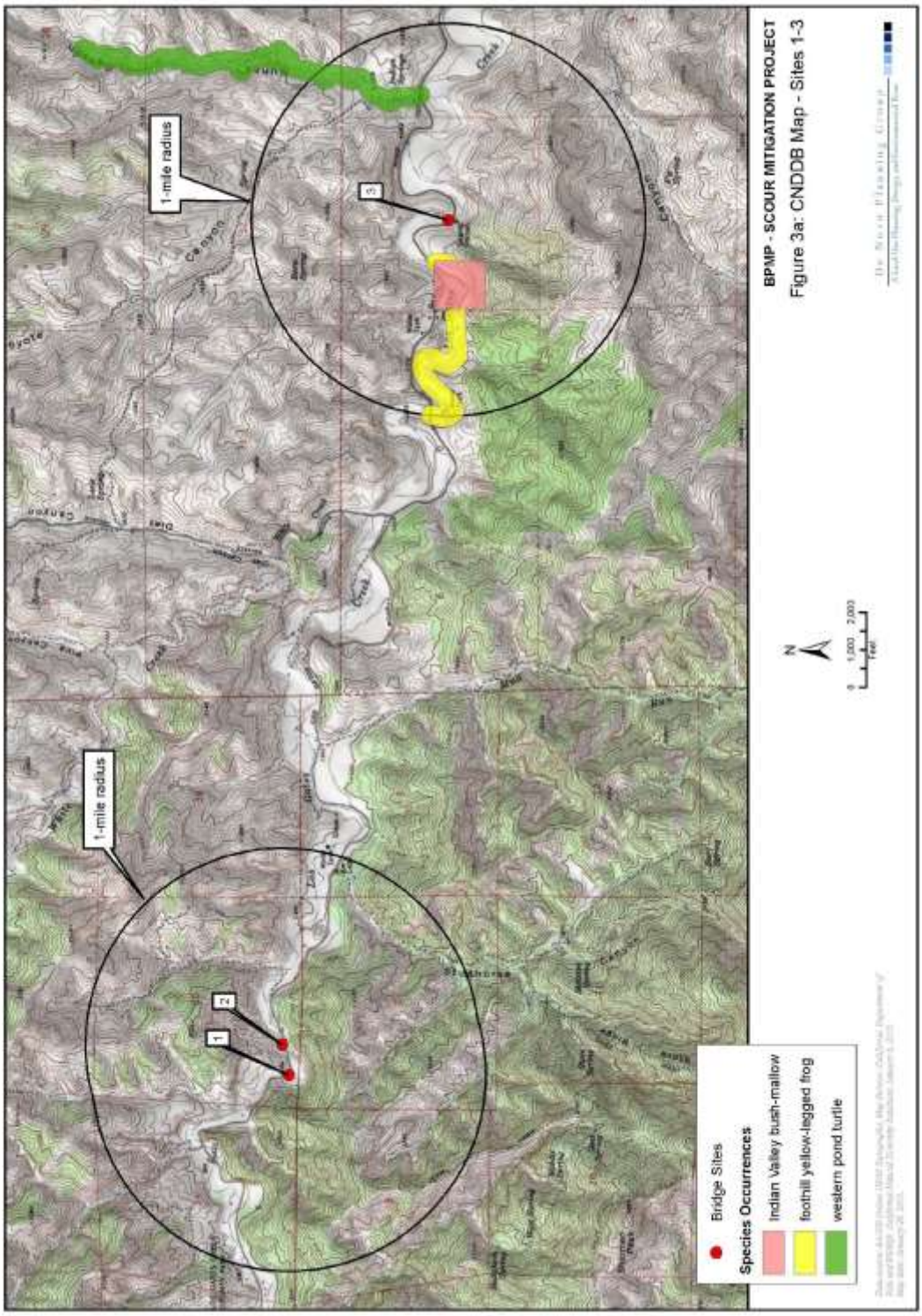
3.3. Regional Species and Habitats of Concern

There are numerous special-status species that are known to occur within the region. Some species require localized micro-habitats, while others are highly mobile and may occur throughout the region. Some species are migratory, and are not present in the region during their winter migration period. For instance, migratory birds, such as cliff swallow, and bat species, such as Mexican free-tailed (*Tadarida brasiliensis*), Big Brown bats (*Eptesicus fuscus*), and Myotis bats (*Myotis* sp), commonly use bridge structures for different purposes at different times. Cliff swallow commonly build mud nesting colonies under bridges during their nesting season (February – August), but they may be absent during their fall and winter migration. Likewise, bats will utilize the crevices in bridges for roosting. Bat mating and maternal roosting period is generally between February and August like most nesting birds such as the cliff swallow. The nesting period for raptors is also sensitive, and generally occurs between February – August regardless of whether the raptor is migratory. Raptors will typically nest in large trees, and construction activities within 250 feet of a raptor nesting can disturb the nesting activity. When work on a bridge is performed between the months of February and August preconstruction surveys are necessary given that a bridge or the trees in the vicinity can be used by these senstive species even if there isn't a history of use in the past.

The following discussion is based on field surveys of the individual sites, a review of the CNDDB, CNPS list of rare and endangered plants, and the USFWS species/resource lists. These lists are contained in the Appendix. The following discussion includes CNDDB maps of occurrences within a one mile radius of each site. A CNDDB map of occurrences within a ten mile radius of each site is also included in the Appendix. The USFWS official species list was developed from the APE boundary. The CNPS list encompasses all of Fresno County.

Site 1 and 2 (Bridge Number 42C0459 and42C0458 - Los Gatos Creek at Los Gatos Road)

There are no documented special-status wildlife within the project site and none were observed during field surveys. There are a variety of other special-status wildlife documented within a ten mile radius; however, with the exception of highly mobile wildlife such as birds that could travel through the area, none are expected to be present within the project site based on habitat conditions. There are no documented special-status plants within the project site and none were observed during field surveys. There are no CNDDB documented natural communities of special concern within the project site, or in the immediate vicinity.


1-mile radius
1-mile radius
1
2
3
Bridge Sites
Species Occurrences
Indian Valley bush-mallow
foothill yellow-legged frog
western pond turtle
N
0 1,000 2,000
Feet
BPMP - SCOUR MITIGATION PROJECT
Figure 3a: CNDDB Map - Sites 1-3

Site 3 (Bridge Number 42C0455 - Los Gatos Creek at Los Gatos Road)

There are documented occurrences of two special-status wildlife species in the immediate vicinity of the project site. There is one documented occurrence of foothill yellow-legged frog (*Rana boylii*) (CSC) located .25 miles west of the project site. This species is known to occur in the in partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. They need at least some cobble-sized substrate for egg-laying and about 15 weeks to attain metamorphosis. There is one documented occurrence of western pond turtle (*Emys marmorata*) (CSC) located .25 miles east of the project site. This species is a thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation. They need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 KM from water for egg-laying. There are a variety of other special-status wildlife documented within a ten mile radius; however, with the exception of highly mobile wildlife such as birds that could travel through the area, none are expected to be present within the project site based on habitat conditions. There is one documented occurrence of Indian Valley bush-mallow (*Malacothamnus aboriginum*) (1B) located.25 miles west of the project site. This species grows in cismontane woodland and chaparral, often on granitic outcrops and sandy bare soil. Surveys performed in July (the blooming season for this species) did not reveal the presence of this species. There are no CNDDB documented natural communities of special concern within the project site. Beyond the species discussed above, there are no CNDDB documented species in the immediate vicinity.

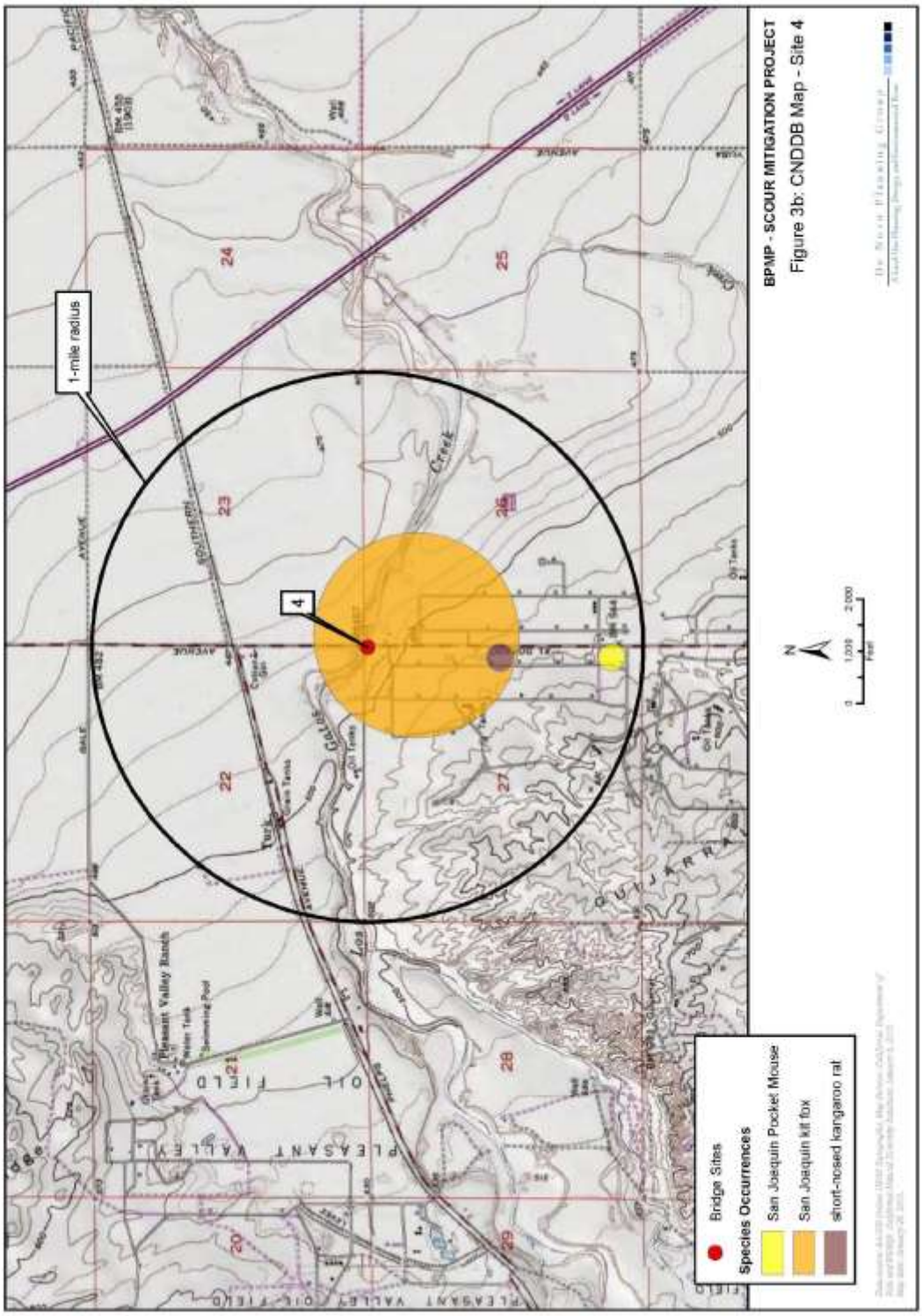
Site 4 (Bridge Number 42C0097 - Arroyo Pasajero at El Dorado Avenue)

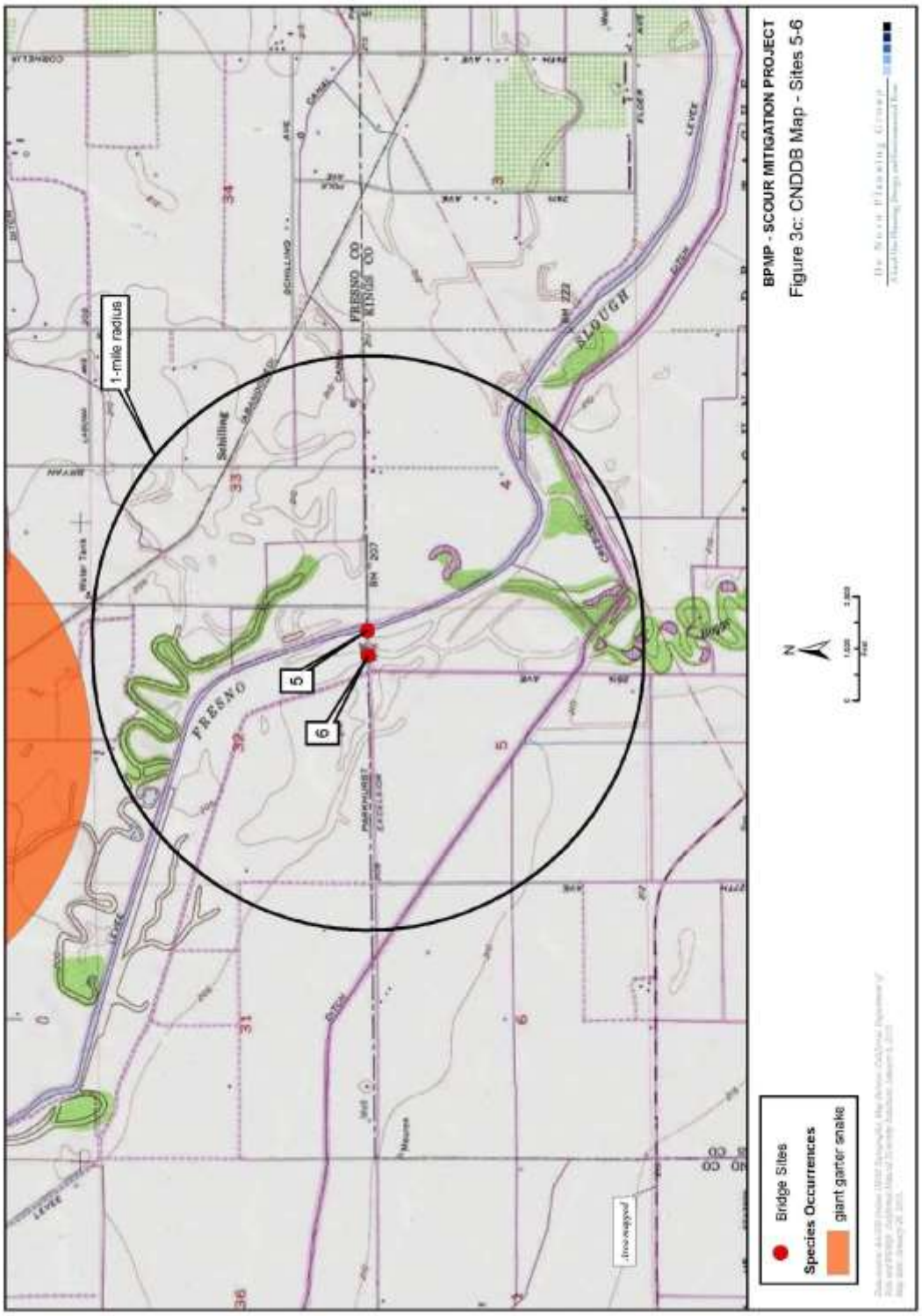
There are documented occurrences of two special-status wildlife species in the immediate vicinity of the project site. There is one documented occurrence of short-nosed kangaroo rat (*Dipodomys nitratoides brevinasus*) (CSC) located on the west side of El Dorado Avenue approximately .25 miles south of the project site. This is also once documented occurrence of San Joaquin pocket mouse (*Perognathus inornatus*) located approximately .50 miles south of the project site. These species are known to occur in the western side of San Joaquin Valley in grassland and desert shrub associations. The short-nosed kangaroo rat often occurs in highly alkaline soils, they need friable soils, and favor flat to gently sloping terrain. The San Joaquin pocket mouse is assocaited with fine textured, sandy, friable soils. There is also one documented occurrence of San Joaquin kit fox (*Vulpes macrotis mutica* (FE/CT) located along El Dorado Avenue approximately .25 miles south of the project site. This species is known to occur in annual grasslands or grassy open stages with scattered shrubbery vegetation. They need loose textured sandy soils for burrowing, and suitable prey base. Field surveys did not reveal the presence of burrows, either active or not, and this species is not expected to be actively denning within the project site. It is anticipated that this species could travel through the project site at times, as they are highly mobile and will travel for food resources. While not documented in the immediate vicinity, the blunt-nosed leopard lizard (*Gambelia sila*) is a reptile species that is

documented within the regional vicinity of this site. Protocol level surveys were performed on this site; however, none were found and this species is not expected to be present. There are a variety of other special-status wildlife documented within a ten mile radius; however, with the exception of highly mobile wildlife such as birds that could travel through the area, none are expected to be present within the project site based on habitat conditions. There are no documented special-status plants within the project site and none were observed during field surveys. There are no CNDDB documented natural communities of special concern within the project site.

Site 5 (Bridge Number 42C0104 - Fresno Slough at Excelsior Avenue)

There are no documented special-status wildlife within the project site. There is one documented occurrence of giant garter snake (*Thamnophis gigas*) (FT/CT) located just outside the project site. This species is known to occur in freshwater marshes, sloughs, ponds, small lakes or low gradient streams with adjacent upland areas. They also are adapted to drainage canals, irrigation ditches, and agricultural wetlands especially flooded rice fields. This species was not observed during field surveys during multiple seasons and is not anticipated to be present due to the lack of appropriate habitat. While not documented on the project site or immediate vicinity, the San Joaquin kit fox (*Vulpes macrotis mutica* (FE/CT) is known to occur in the regional vicinity in annual grasslands or grassy open stages with scattered shrubbery vegetation. They need loose textured sandy soils for burrowing, and suitable prey base. Field surveys did not reveal the presence of burrows, either active or not, and this species is not expected to be actively denning within the project site. It is anticipated that this species could travel through the project site at times, as they are highly mobile and will travel for food resources. While not documented in the immediate vicinity, the blunt-nosed leopard lizard (*Gambelia sila*) is a reptile species that is documented within the regional vicinity of this site. Protocol level surveys were initiated on this site; however, after one survey it was concluded that the habitat was so disturbed that this species would not be present. There are a variety of other special-status wildlife documented within a ten mile radius; however, with the exception of highly mobile wildlife such as birds that could travel through the area, none are expected to be present within the project site based on habitat conditions. There are no documented special-status plants within the project site and none were observed during field surveys. There are no CNDDB documented natural communities of special concern within the project site.


BPMP - SCOUR MITIGATION PROJECT
Figure 3b: CNDDB Map - Site 4
1-mile radius
4
Bridge Sites
Species Occurrences
San Joaquin Pocket Mouse
San Joaquin kit fox
short-nosed kangaroo rat
N
0
1,000
2,000
Feet


1-mile radius
5
6
FRESNO
SLOUGH
Schilling
BPMP - SCOUR MITIGATION PROJECT
Figure 3c: CNDDB Map - Sites 5-6
Bridge Sites
Species Occurrences
giant garter snake

Site 6 (Bridge Number 42C0367 - Fresno Slough Overflow at Excelsior Avenue)

There are no documented special-status wildlife within the project site. There is one documented occurrence of giant garter snake (*Thamnophis gigas*) (FT/CT) located just outside the project site. This species is known to occur in freshwater marshes, sloughs, ponds, small lakes or low gradient streams with adjacent upland areas. They also are adapted to drainage canals, irrigation ditches, and agricultural wetlands especially flooded rice fields. This species was not observed during field surveys during multiple seasons and is not anticipated to be present due to the lack of appropriate habitat. While not documented on the project site or immediate vicinity, the San Joaquin kit fox (*Vulpes macrotis mutica* (FE/CT) is known to occur in the regional vicinity in annual grasslands or grassy open stages with scattered shrubbery vegetation. They need loose textured sandy soils for burrowing, and suitable prey base. Field surveys did not reveal the presence of burrows, either active or not, and this species is not expected to be actively denning within the project site. It is anticipated that this species could travel through the project site at times, as they are highly mobile and will travel for food resources. While not documented in the immediate vicinity, the blunt-nosed leopard lizard (*Gambelia sila*) is a reptile species that is documented within the regional vicinity of this site. Protocol level surveys were initiated on this site; however, after one survey it was concluded that the habitat was so disturbed that this species would not be present. There are a variety of other special-status wildlife documented within a ten mile radius; however, with the exception of highly mobile wildlife such as birds that could travel through the area, none are expected to be present within the project site based on habitat conditions. There are no documented special-status plants within the project site and none were observed during field surveys. There are no CNDDB documented natural communities of special concern within the project site.

Site 7 (Bridge Number 42C0520 - Fresno Canal at Viau Avenue)

There is one documented occurrence of the California satintail (*Imperata brevifolia*) (1B) located in the immediate vicinity of the project site. The occurrence is from 1965 and 1970 with the exact location unknown. This species is known to occur in coastal scrub, chaparral, riparian scrub, mojavean scrub, meadows and seeps (alkali), riparian scrub in mesic sites, alkali sites, and riparian areas. While not documented on the project site or immediate vicinity, the San Joaquin kit fox (*Vulpes macrotis mutica* (FE/CT) is known to occur in the regional vicinity in annual grasslands or grassy open stages with scattered shrubbery vegetation. They need loose textured sandy soils for burrowing, and suitable prey base. Field surveys did not reveal the presence of burrows, either active or not, and this species is not expected to be actively denning within the project site. It is anticipated that this species could travel through the project site at times, as they are highly mobile and will travel for food resources. There are a variety of other special-status wildlife documented within a ten mile radius; however, with the exception of highly mobile

wildlife such as birds that could travel through the area, none are expected to be present within the project site based on habitat conditions. There are no CNDDB documented natural communities of special concern within the project site.

Site 8 (Bridge Number 42C0178 - Fowler Switch Canal at American Avenue)

There are no documented special-status wildlife within one mile of the project site. There are no documented special-status plants within one mile of the project site and none were observed during field surveys. There are no CNDDB documented natural communities of special concern within one mile of the project site. A search within ten miles of the project site shows very little documented occurrences, suggesting that there is limited biological diversity within the regional vicinity of this site.

Site 9 (Bridge Number 42C0179 - Travers Creek at Alta Avenue)

There are no documented special-status wildlife within one mile of the project site. While not documented on the project site or immediate vicinity, the San Joaquin kit fox (*Vulpes macrotis mutica* (FE/CT) is known to occur in the regional vicinity in annual grasslands or grassy open stages with scattered shrubbery vegetation. They need loose textured sandy soils for burrowing, and suitable prey base. Field surveys did not reveal the presence of burrows, either active or not, and this species is not expected to be actively denning within the project site. It is anticipated that this species could travel through the project site at times, as they are highly mobile and will travel for food resources. There are a variety of other special-status wildlife documented within a ten mile radius; however, with the exception of highly mobile wildlife such as birds that could travel through the area, none are expected to be present within the project site based on habitat conditions. There is one documented occurrence of San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*) (FT/CE/1B) located approximately one mile east of the project site. This species is known to occur in vernal pools, which are not present on the project site. This bridge is a double barrel castin-place reinforced concrete culvert (i.e. concrete bottom); therefore, there is no potential for this plant to occur within the project site. There are no CNDDB documented natural communities of special concern within one mile of the project site.

Site 10 (Bridge Number 42C0531 - Fowler Switch Canal at Thompson Avenue)

There are no documented special-status wildlife within one mile of the project site. There are no documented special-status plants within one mile of the project site and none were observed during field surveys. There are no CNDDB documented natural communities of special concern within one mile of the project site. A search within ten miles of the project site shows very little documented occurrences, suggesting that there is limited biological diversity within the regional vicinity of this site.

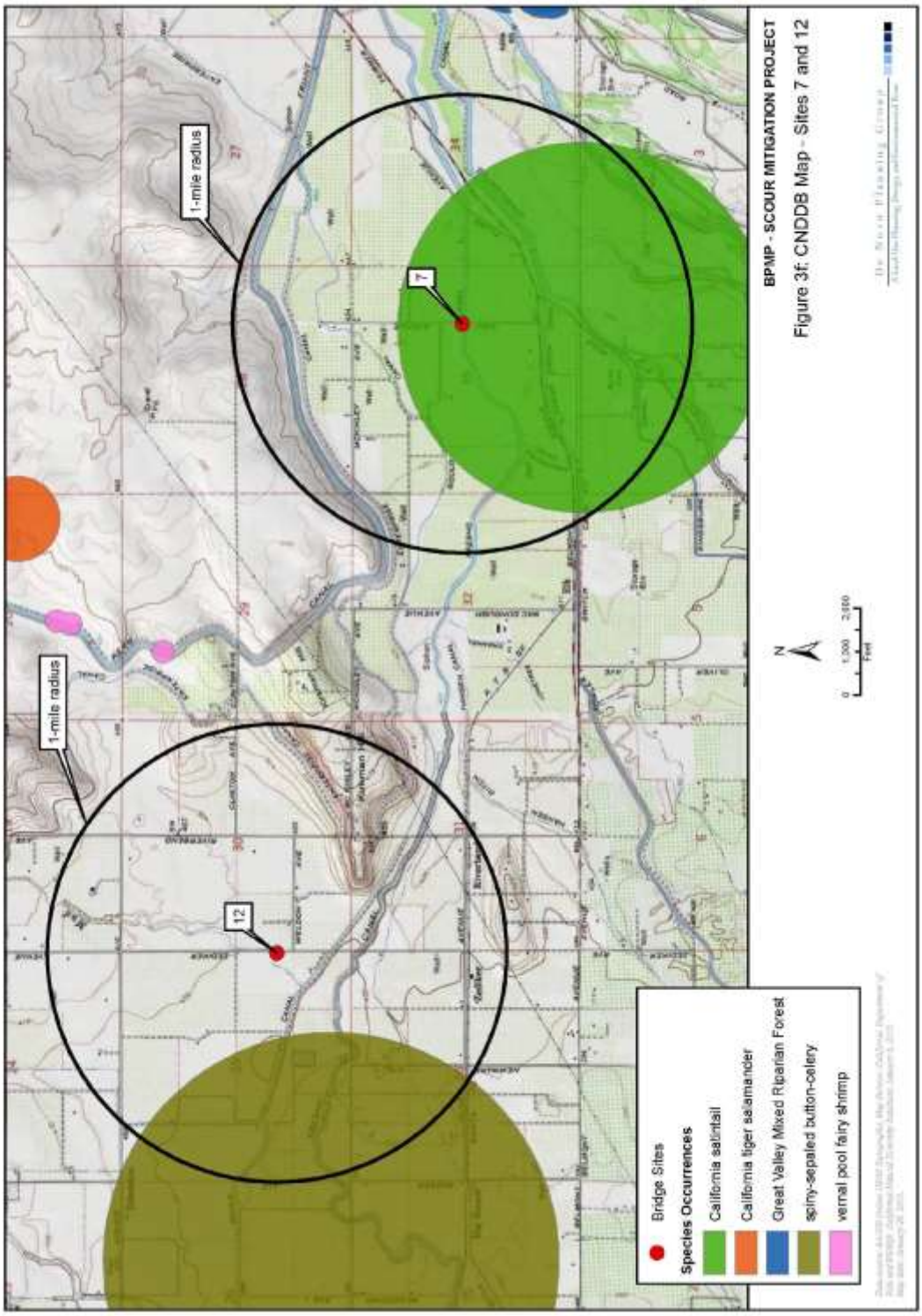


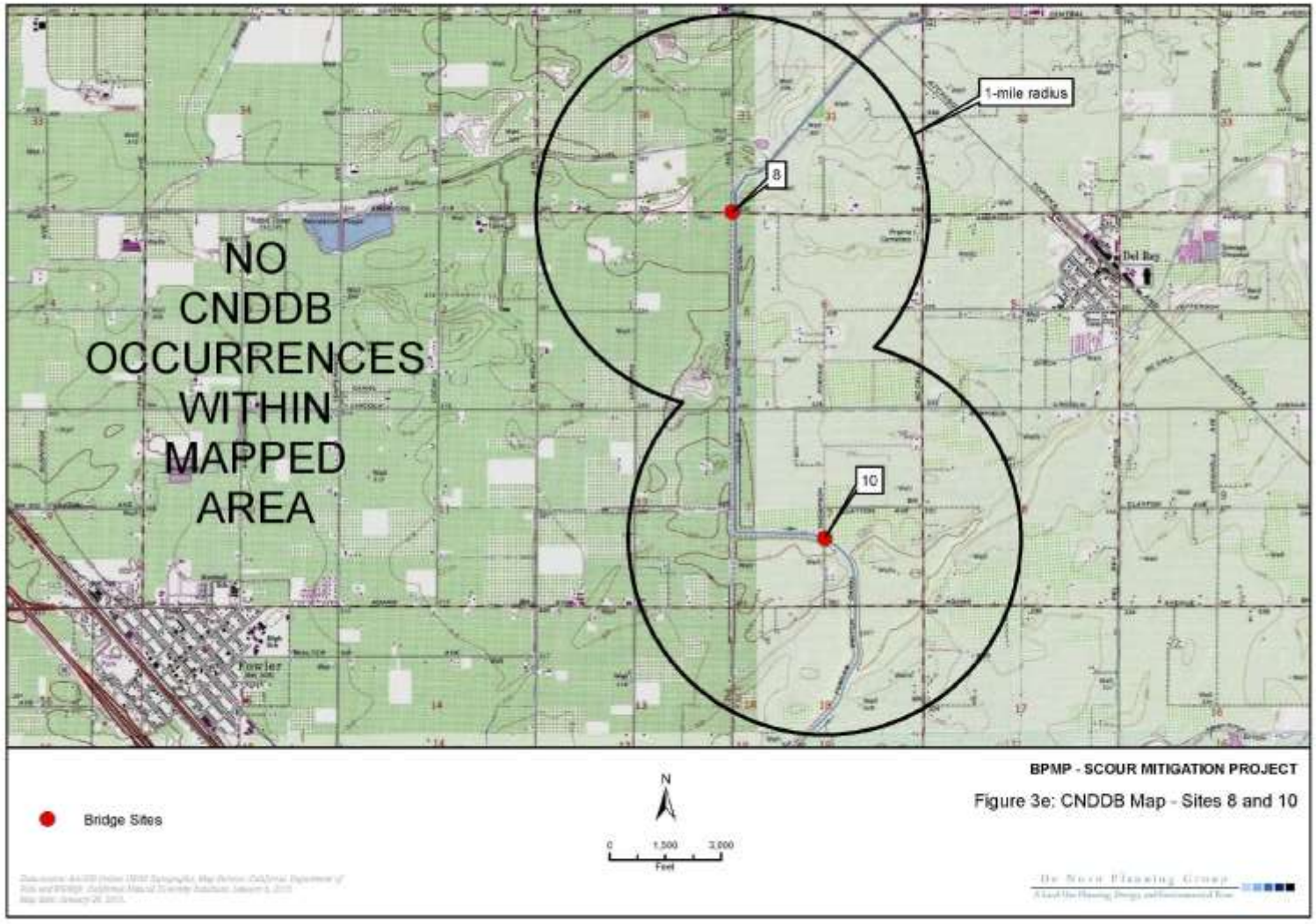
Figure 3f. CNDDB Map - Sites 7 and 12

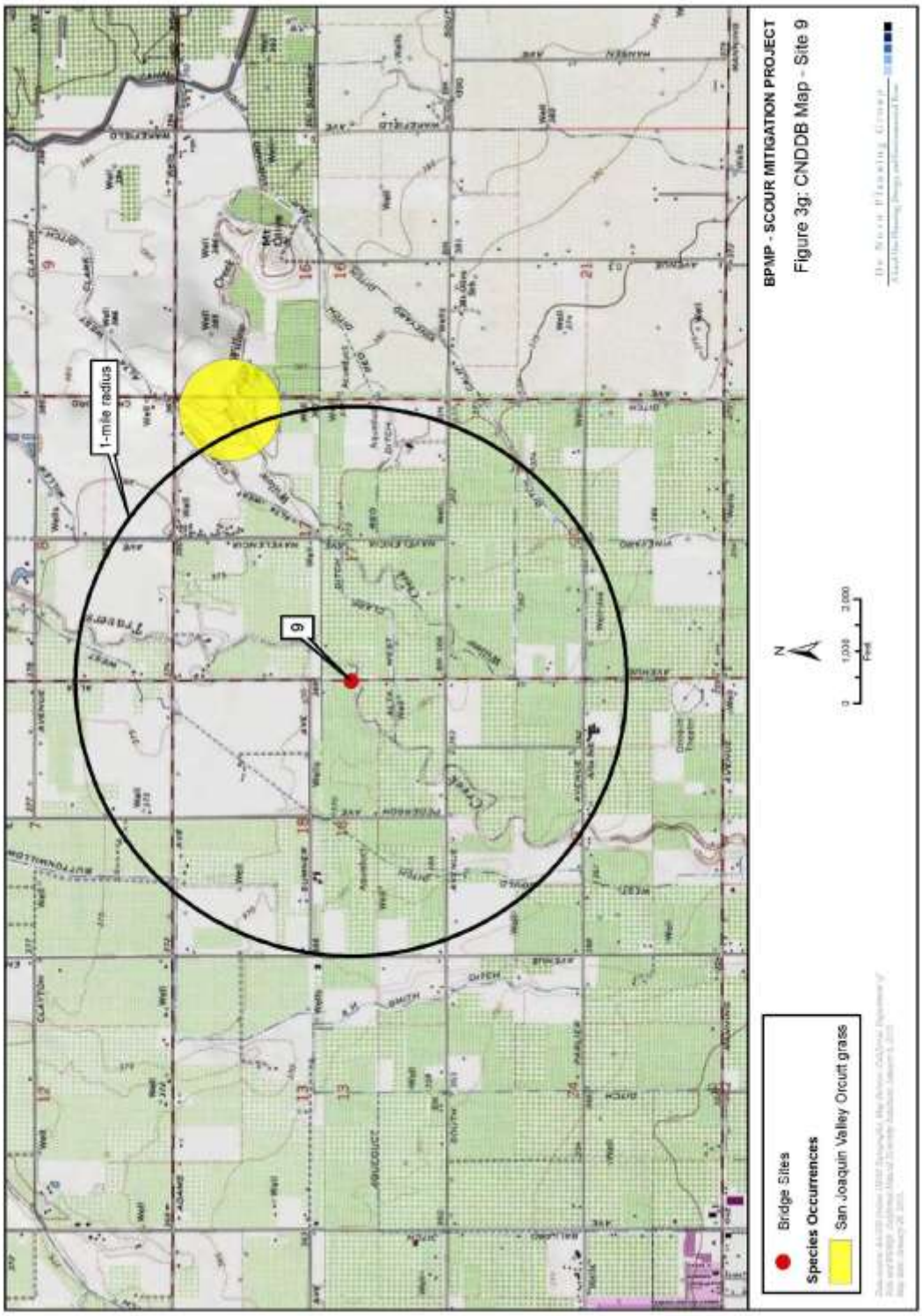
Site 11 (Bridge Number 42C0532 - Fowler Switch Canal at Huntsman Avenue)

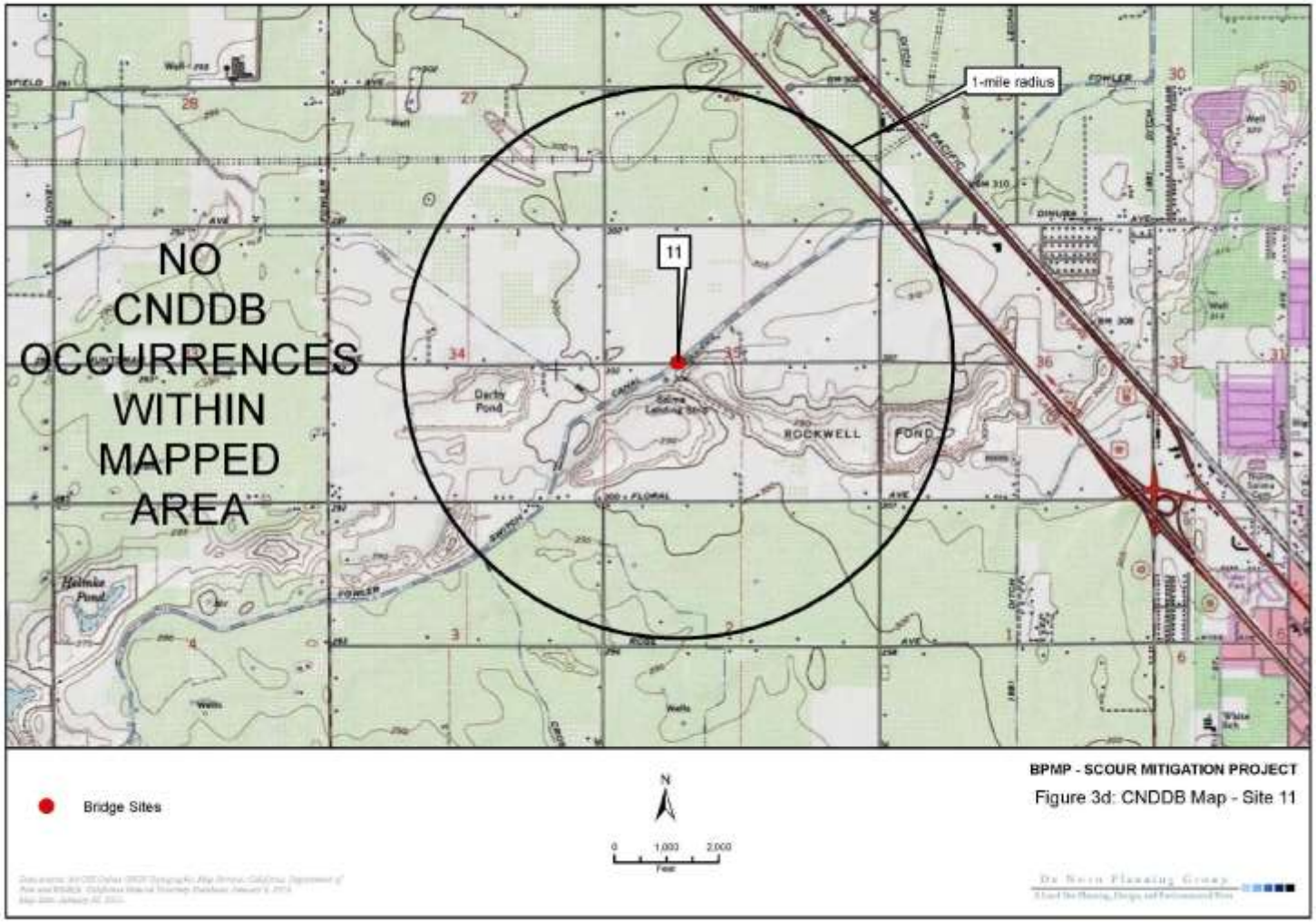
There are no documented special-status wildlife within one mile of the project site. There are no documented special-status plants within one mile of the project site and none were observed during field surveys. There are no CNDDB documented natural communities of special concern within one mile of the project site. A search within ten miles of the project site shows very little documented occurrences, suggesting that there is limited biological diversity within the regional vicinity of this site.

Site 12 (Bridge Number 42C0328 - Mud Creek at Zediker Avenue)

There are no documented special-status wildlife within one mile of the project site. While not documented on the project site or immediate vicinity, the San Joaquin kit fox (*Vulpes macrotis mutica* (FE/CT) is known to occur in the regional vicinity in annual grasslands or grassy open stages with scattered shrubbery vegetation. They need loose textured sandy soils for burrowing, and suitable prey base. Field surveys did not reveal the presence of burrows, either active or not, and this species is not expected to be actively denning within the project site. It is anticipated that this species could travel through the project site at times, as they are highly mobile and will travel for food resources. There are a variety of other special-status wildlife documented within a ten mile radius; however, with the exception of highly mobile wildlife such as birds that could travel through the area, none are expected to be present within the project site based on habitat conditions. There is one documented occurrence of spiny-sepaled button-celery (*Eryngium spinosepalum* (1B) located approximately one mile west of the project site. This species is known to occur in vernal pools, and valley and foothill grasslands, which are not present on the project site. There are no CNDDB documented natural communities of special concern within the project site.


1-mile radius
8
10
NO
CNDDB
OCCURRENCES
WITHIN
MAPPED
AREA
Del Rey
Fowler
Bridge Sites
N
0
1,500
3,000
Feet
BPMP - SCOUR MITIGATION PROJECT
Figure 3e: CNDDB Map - Sites 8 and 10
De Novo Planning Group


1-mile radius
9
BPMP - SCOUR MITIGATION PROJECT
Figure 3g: CNDDB Map - Site 9
N
0
1,000
2,000
Feet
Bridge Sites
Species Occurrences
San Joaquin Valley Orcutt grass


1-mile radius
11
NO
CNDDB
OCCURRENCES
WITHIN
MAPPED
AREA
Derby
Pond
ROCKWELL
POND
Helmke
Pond
Bridge Sites
N
0
1,000
2,000
Feet
BPMP - SCOUR MITIGATION PROJECT
Figure 3d: CNDDB Map - Site 11

4. Project Effects – Wildlife/Plants

4.1. Site 1 (Bridge Number 42C0459 - Los Gatos Creek at Los Gatos Road)

The area of potential effect (attachment) illustrates the area that would be directly and temporarily affected. There are no adverse effects to special status plants or wildlife at this bridge site. Construction activities could cause adverse effects on nesting raptors/migratory birds within 250 feet of this bridge site. Construction activities could also cause adverse effects on cliff swallows or bats if they were using the bridge at the time of construction. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, there would be no adverse effect.

4.2. Site 2 (Bridge Number 42C0458 - Los Gatos Creek at Los Gatos Road)

The area of potential effect (attachment) illustrates the area that would be directly and temporarily affected. There are no adverse effects to special status plants or wildlife at this bridge site. Construction activities could cause adverse effects on nesting raptors/migratory birds within 250 feet of this bridge site. Construction activities could also cause adverse effects on cliff swallows or bats if they were using the bridge at the time of construction. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, there would be no adverse effect.

4.3. Site 3 (Bridge Number 42C0455 - Los Gatos Creek at Los Gatos Road)

The area of potential effect (attachment) illustrated the area that would be directly and temporarily affected. It is conceivable that special status wildlife, including foothill yellow-legged frog (*Rana boylii*) (CSC) and/or western pond turtle (*Emys marmorata*) (CSC) could be in the vicinity of the bridge site, and construction activities could disrupt wildlife if this was to occur. Construction activities could cause adverse effects on nesting raptors/migratory birds within 250 feet of this bridge site. Construction activities could also cause adverse effects on cliff swallows or bats if they were using the bridge at the time of construction. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, there would be no adverse effect.

There is also a special status plant species, including Indian Valley bush-mallow (*Malacothamnus aboriginum*) (1B), documented in the area. This species was not observed on during field surveys, or expected to be on, the project site, and with the implementation of appropriate avoidance and minimization measures, there would be no adverse effect on special status plants.

4.4. Site 4 (Bridge Number 42C0097 - Arroyo Pasajero at El Dorado Avenue)

The area of potential effect (attachment) illustrated the area that would be directly and temporarily affected. There are no adverse effects to special status plants at this bridge site. It is conceivable that special status wildlife, including short-nosed kangaroo rat (*Dipodomys nitratoides brevinasus*) (CSC), San Joaquin pocket mouse (*Perognathus inornatus*) (no formal listing), and/or San Joaquin kit fox (*Vulpes macrotis mutica* (FE/CT) could be in the vicinity of the bridge site, although they were not observed, and construction activities could disrupt wildlife if this was to occur. Construction activities could cause adverse effects on nesting raptors/migratory birds within 250 feet of this bridge site. Construction activities could also cause adverse effects on cliff swallows or bats if they were using the bridge at the time of construction. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, there would be no adverse effect.

4.5. Site 5 (Bridge Number 42C0104 - Fresno Slough at Excelsior Avenue)

The area of potential effect (attachment) illustrated the area that would be directly and temporarily affected. There are no adverse effects to special status plants at this bridge site. An active Swainson's hawk (*Buteo swainsoni*) nest was observed outside the APE, but proximate to this site. In general, this species and other raptors nest from late February and early March through late July and early August, depending on various environmental conditions. Protocol-level surveys for blunt-nosed leopard lizard (*Gambelia sila*) were performed on this site; however, none were found and this species is not expected to be present. Given the absence of appropriate habitat for giant garter snake (*Thamnophis gigas*) (FT/CT), this species is not expected to be present. Construction activities could cause adverse effects on nesting raptors/migratory birds within 250 feet of this bridge site. Construction activities could also cause adverse effects on cliff swallows or bats if they were using the bridge at the time of construction. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, there would be no adverse effect.

4.6. Site 6 (Bridge Number 42C0367 - Fresno Slough Overflow at Excelsior Avenue)

The area of potential effect (attachment) illustrated the area that would be directly and temporarily affected. There are no adverse effects to special status plants at this bridge site. An active Swainson's hawk (*Buteo swainsoni*) nest was observed outside the APE, but proximate to this site. In general, this species and other raptors nest from late February and early March through late July and early August, depending on various environmental conditions. Protocol-level surveys for blunt-nosed leopard lizard (*Gambelia sila*) were performed on this site; however, none were found and this species is not expected to be present. Given the absence of appropriate habitat for giant garter snake (*Thamnophis gigas*) (FT/CT), this species is not

expected to be present. Construction activities could cause adverse effects on nesting raptors/migratory birds within 250 feet of this bridge site. Construction activities could also cause adverse effects on cliff swallows or bats if they were using the bridge at the time of construction. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, there would be no adverse effect.

4.7. Site 7 (Bridge Number 42C0520 - Fresno Canal at Viau Avenue)

The area of potential effect (attachment) illustrated the area that would be directly and temporarily affected. Construction activities could cause adverse effects on nesting raptors/migratory birds within 250 feet of this bridge site. Construction activities could also cause adverse effects on cliff swallows or bats if they were using the bridge at the time of construction. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, there would be no adverse effect.

It is conceivable that special status plants, including California satintail (*Imperata brevifolia*) (1B) located in the immediate vicinity of the project site. This species was not observed on, or expected to be on, the project site. With the implementation of appropriate avoidance and minimization measures, there would be no adverse effect on special status plants.

4.8. Site 8 (Bridge Number 42C0178 - Fowler Switch Canal at American Avenue)

The area of potential effect (attachment) illustrates the area that would be directly and temporarily affected. There are no adverse effects to special status plants or wildlife at this bridge site. Construction activities could cause adverse effects on nesting raptors/migratory birds within 250 feet of this bridge site. Construction activities could also cause adverse effects on cliff swallows or bats if they were using the bridge at the time of construction. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, there would be no adverse effect.

4.9. Site 9 (Bridge Number 42C0179 - Travers Creek at Alta Avenue)

The area of potential effect (attachment) illustrated the area that would be directly and temporarily affected. Construction activities could cause adverse effects on nesting raptors/migratory birds within 250 feet of this bridge site. Construction activities could also cause adverse effects on cliff swallows or bats if they were using the bridge at the time of construction. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, there would be no adverse effect.

It is conceivable that special status plants, including San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*) (FT/CE/1B) located a miles east of the project site. This species was not observed on,

or expected to be on, the project site, and with the implementation of appropriate avoidance and minimization measures, there would be no adverse effect on special status plants.

4.10. Site 10 (Bridge Number 42C0531 - Fowler Switch Canal at Thompson Avenue)

The area of potential effect (attachment) illustrates the area that would be directly and temporarily affected. There are no adverse effects to special status plants or wildlife at this bridge site. Construction activities could cause adverse effects on nesting raptors/migratory birds within 250 feet of this bridge site. Construction activities could also cause adverse effects on cliff swallows or bats if they were using the bridge at the time of construction. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, there would be no adverse effect.

4.11. Site 11 (Bridge Number 42C0532 - Fowler Switch Canal at Huntsman Avenue)

The area of potential effect (attachment) illustrates the area that would be directly and temporarily affected. There are no adverse effects to special status plants or wildlife at this bridge site. Construction activities could cause adverse effects on nesting raptors/migratory birds within 250 feet of this bridge site. Construction activities could also cause adverse effects on cliff swallows or bats if they were using the bridge at the time of construction. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, there would be no adverse effect.

4.12. Site 12 (Bridge Number 42C0328 - Mud Creek at Zediker Avenue)

The area of potential effect (attachment) illustrated the area that would be directly and temporarily affected. Construction activities could cause adverse effects on nesting raptors/migratory birds within 250 feet of this bridge site. Construction activities could also cause adverse effects on cliff swallows or bats if they were using the bridge at the time of construction. With the implementation of avoidance, preconstruction surveys, and establishment of buffers if necessary, there would be no adverse effect.

It is conceivable that special status plants, including spiny-sepaled button-celery (*Eryngium spinosepalum* (1B) located a miles west of the project site. This species was not observed on, or expected to be on, the project site, and with the implementation of appropriate avoidance and minimization measures, there would be no adverse effect on special status plants.

5. Project Effects - Wetlands

5.1. Wetland Assessment

The scope of this NES-MI included an evaluation of wetlands at each site by evaluating the proposed site improvements, temporary access roads, and construction staging areas relative to the creeks/drainages.

Site 1 (Bridge Number 42C0459 - Los Gatos Creek at Los Gatos Road)

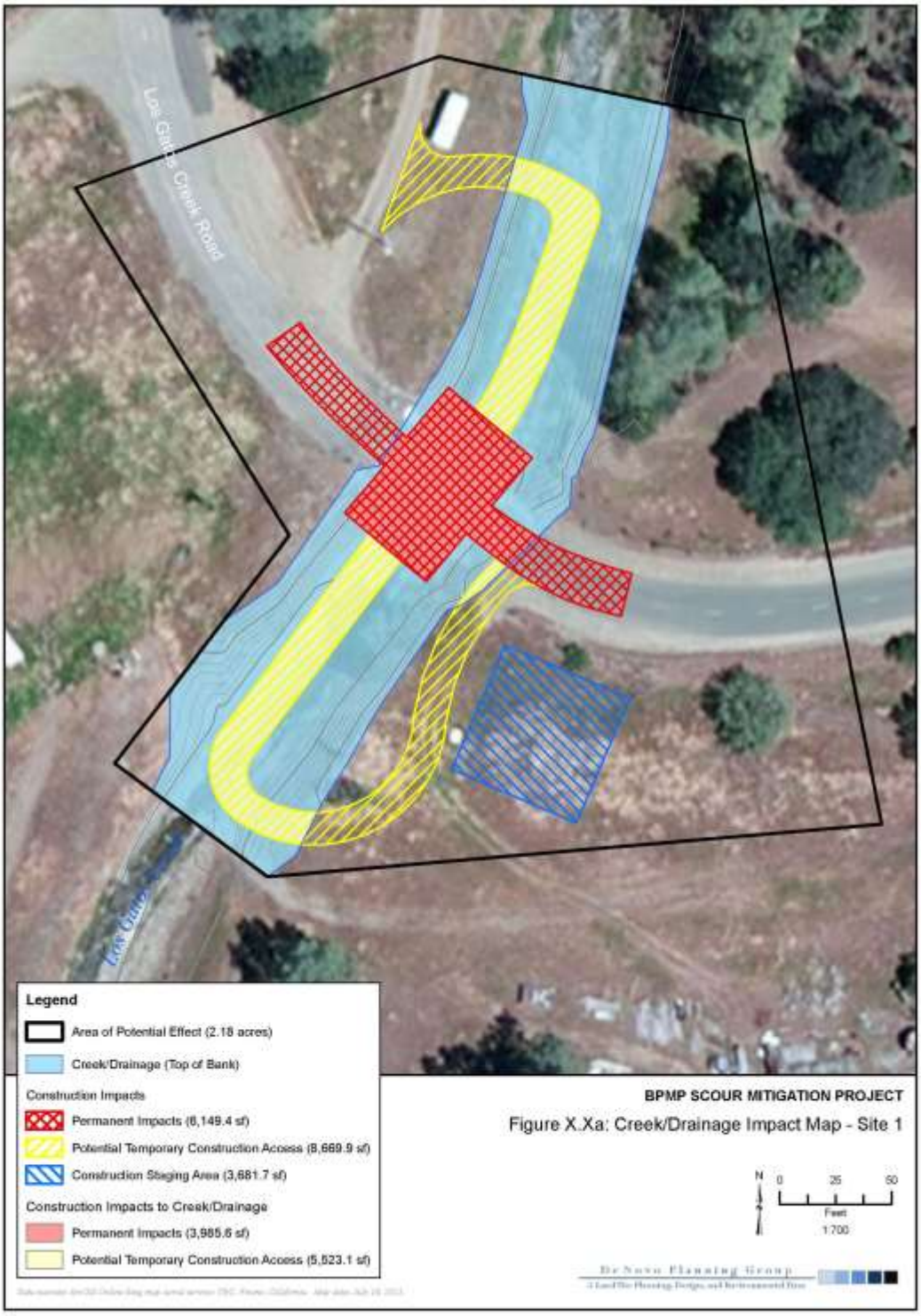
The proposed bridge improvements include impacts to permanent and temporary impacts to Los Gatos Creek. The total APE is 2.18 acres. The total permanent impacts to Los Gatos Creek associated with the bridge is 3,985.6 sf. Most, if not all, of this permanent impact already exists with the existing bridge. The total temporary impacts to Los Gatos Creek associated with the temporary access are 5,523.1 sf. There is no impact associated with the staging area. The total temporary impacts would be new impacts that are not currently present.

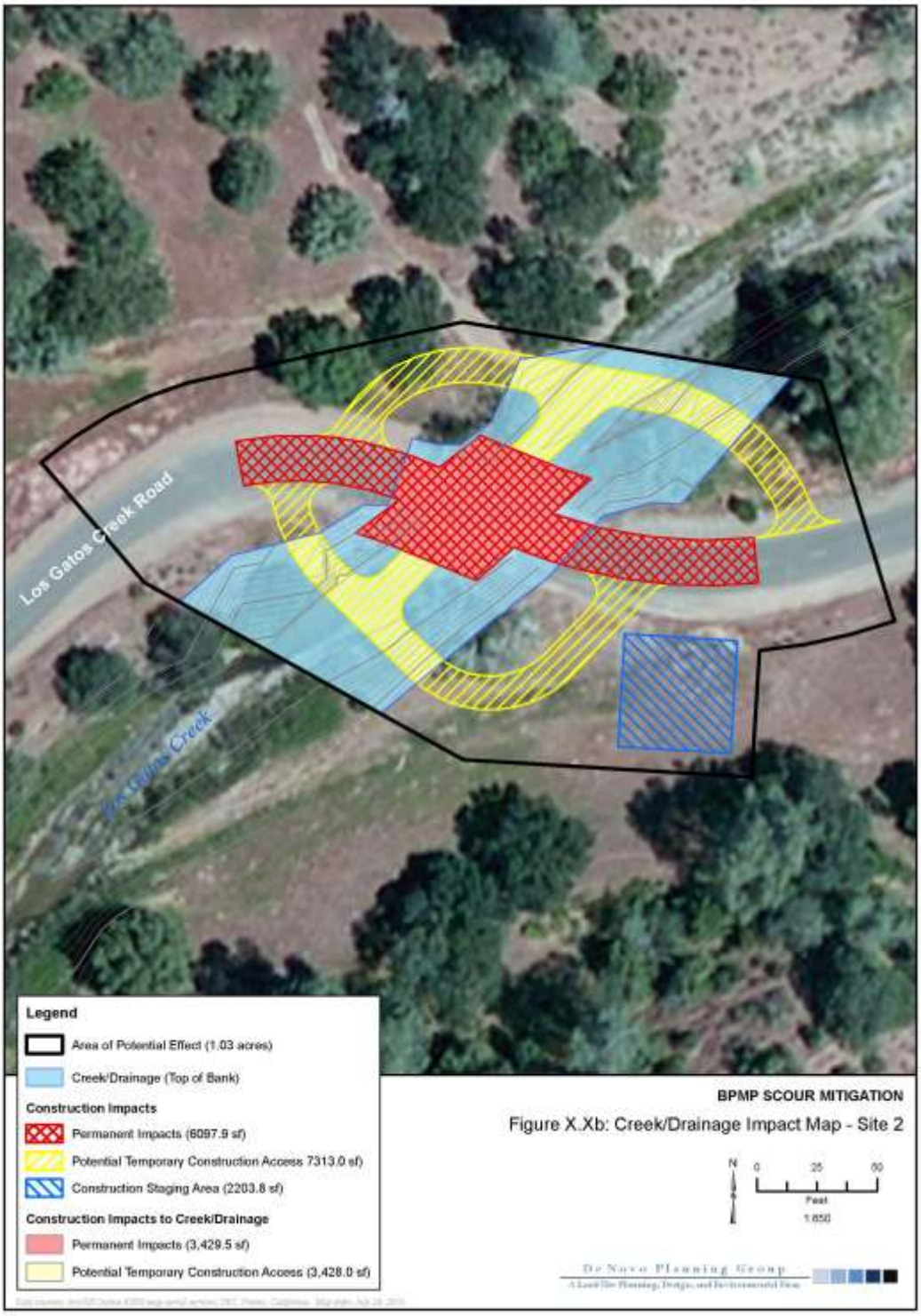
Site 2 (Bridge Number 42C0458 - Los Gatos Creek at Los Gatos Road)

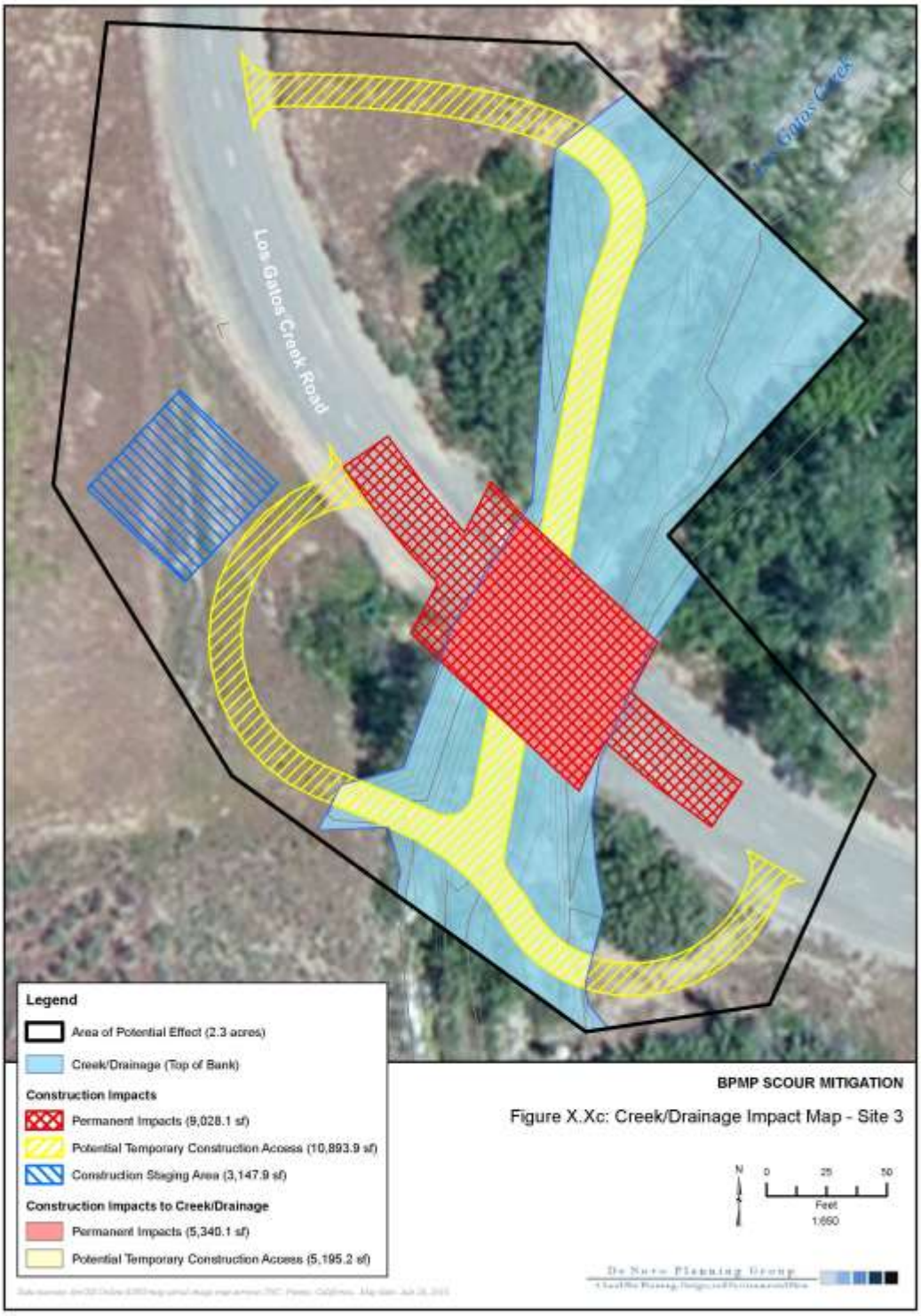
The proposed bridge improvements include impacts to permanent and temporary impacts to Los Gatos Creek. The total APE is 1.03 acres. The total permanent impacts to Los Gatos Creek associated with the bridge are 3,429.5 sf. Most, if not all, of this permanent impact already exists with the existing bridge. The total temporary impacts to Los Gatos Creek associated with the temporary access are 3,428.0 sf. There is no impact associated with the staging area. The total temporary impacts would be new impacts that are not currently present.

Site 3 (Bridge Number 42C0455 - Los Gatos Creek at Los Gatos Road)

The proposed bridge improvements include impacts to permanent and temporary impacts to Los Gatos Creek. The total APE is 2.3 acres. The total permanent impacts to Los Gatos Creek associated with the bridge are 5,340.1 sf. Most, if not all, of this permanent impact already exists with the existing bridge. The total temporary impacts to Los Gatos Creek associated with the temporary access are 5,195.2 sf. There is no impact associated with the staging area. The total temporary impacts would be new impacts that are not currently present.


Los Gatos Creek Road
Legend
Area of Potential Effect (2.18 acres)
Creek/Drainage (Top of Bank)
Construction Impacts
Permanent Impacts (6,149.4 sf)
Potential Temporary Construction Access (8,669.9 sf)
Construction Staging Area (3,681.7 sf)
Construction Impacts to Creek/Drainage
Permanent Impacts (3,985.6 sf)
Potential Temporary Construction Access (5,523.1 sf)
BPMP SCOUR MITIGATION PROJECT
Figure X.Xa: Creek/Drainage Impact Map - Site 1
N
0
25
50
Feet
1:700
De Novo Planning Group


Los Gatos Creek Road
Los Gatos Creek
Legend
Area of Potential Effect (1.03 acres)
Creek/Drainage (Top of Bank)
Construction Impacts
Permanent Impacts (6097.9 sf)
Potential Temporary Construction Access 7313.0 sf)
Construction Staging Area (2203.8 sf)
Construction Impacts to Creek/Drainage
Permanent Impacts (3,429.5 sf)
Potential Temporary Construction Access (3,428.0 sf)
BPMP SCOUR MITIGATION
Figure X.Xb: Creek/Drainage Impact Map - Site 2
N
0
25
50
Feet
1:650
De Novo Planning Group


Los Gatos Creek Road
Los Gatos Creek
Legend
Area of Potential Effect (2.3 acres)
Creek/Drainage (Top of Bank)
Construction Impacts
Permanent Impacts (9,028.1 sf)
Potential Temporary Construction Access (10,893.9 sf)
Construction Staging Area (3,147.9 sf)
Construction Impacts to Creek/Drainage
Permanent Impacts (5,340.1 sf)
Potential Temporary Construction Access (5,195.2 sf)
BPMP SCOUR MITIGATION
Figure X.Xc: Creek/Drainage Impact Map - Site 3
N
0
25
50
Feet
1:650
De Novo Planning Group

Site 4 (Bridge Number 42C0097 - Arroyo Pasajero at El Dorado Avenue)

The proposed bridge improvements include impacts to permanent and temporary impacts to Arroyo Pasajero Creek. The total APE is 3.55 acres. The total permanent impacts to Arroyo Pasajero Creek associated with the bridge are 10,462.3 sf. Most, if not all, of this permanent impact already exists with the existing bridge. The total temporary impact to Arroyo Pasajero Creek associated with the temporary access is 3,643.2 sf. There is no impact associated with the staging area. The total temporary impacts would be new impacts that are not currently present.

Site 5 (Bridge Number 42C0104 - Fresno Slough at Excelsior Avenue)

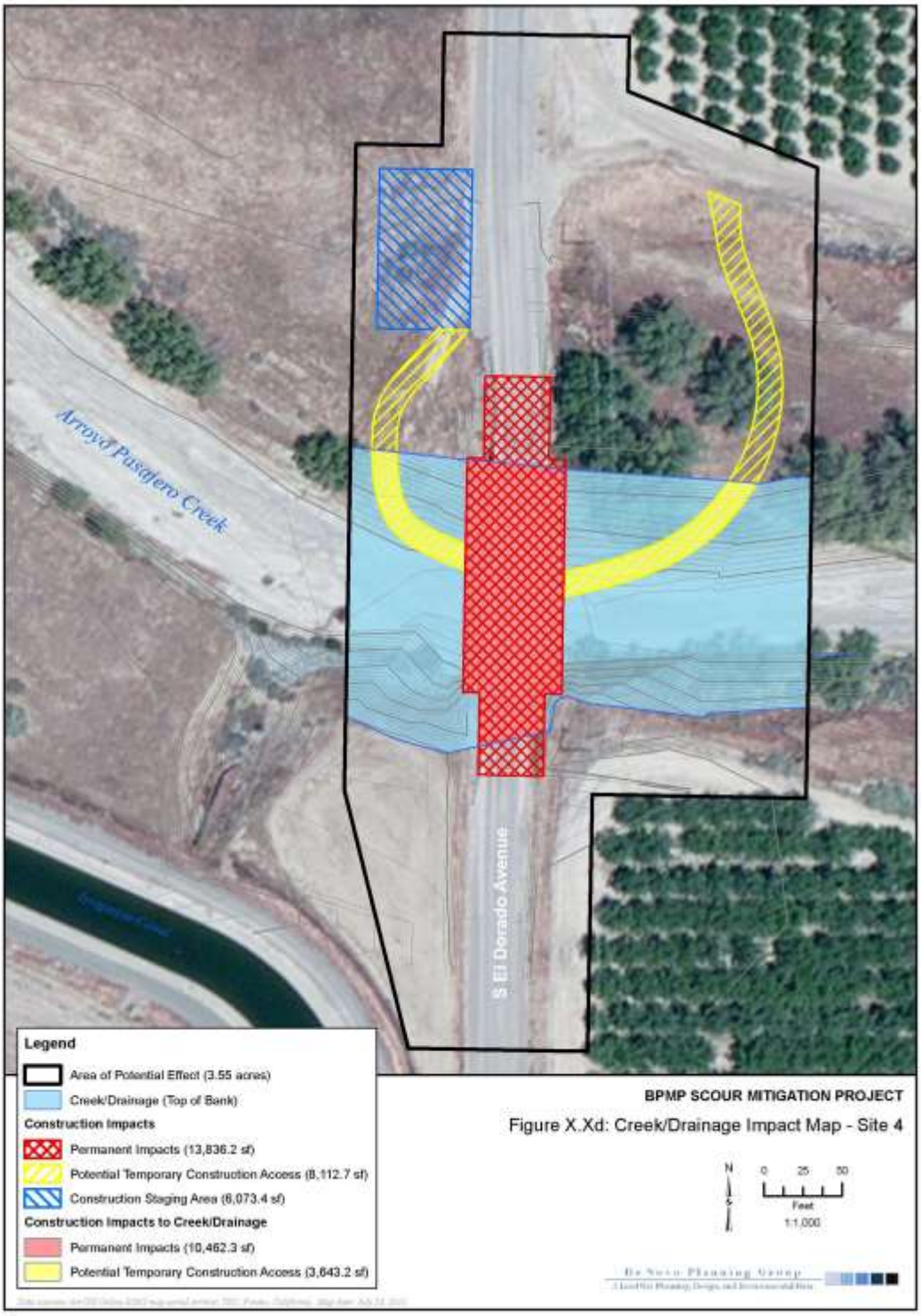
The proposed bridge improvements include impacts to permanent and temporary impacts to the Fresno Slough. The total APE is 3.76 acres. The total permanent impacts to the Fresno Slough associated with the bridge are 7,167.5 sf. Most, if not all, of this permanent impact already exists with the existing bridge. The total temporary impact to the Fresno Slough associated with the temporary access is 4,809.8 sf. There is also a temporary impact to the Fresno Slough associated with the construction staging area, which totals 5,161.5 sf. It is recommended that the construction staging area be moved to a non-wetland area, as there are numerous areas within the region that could be used to avoid these temporary impacts. The total temporary impacts would be new impacts that are not currently present.

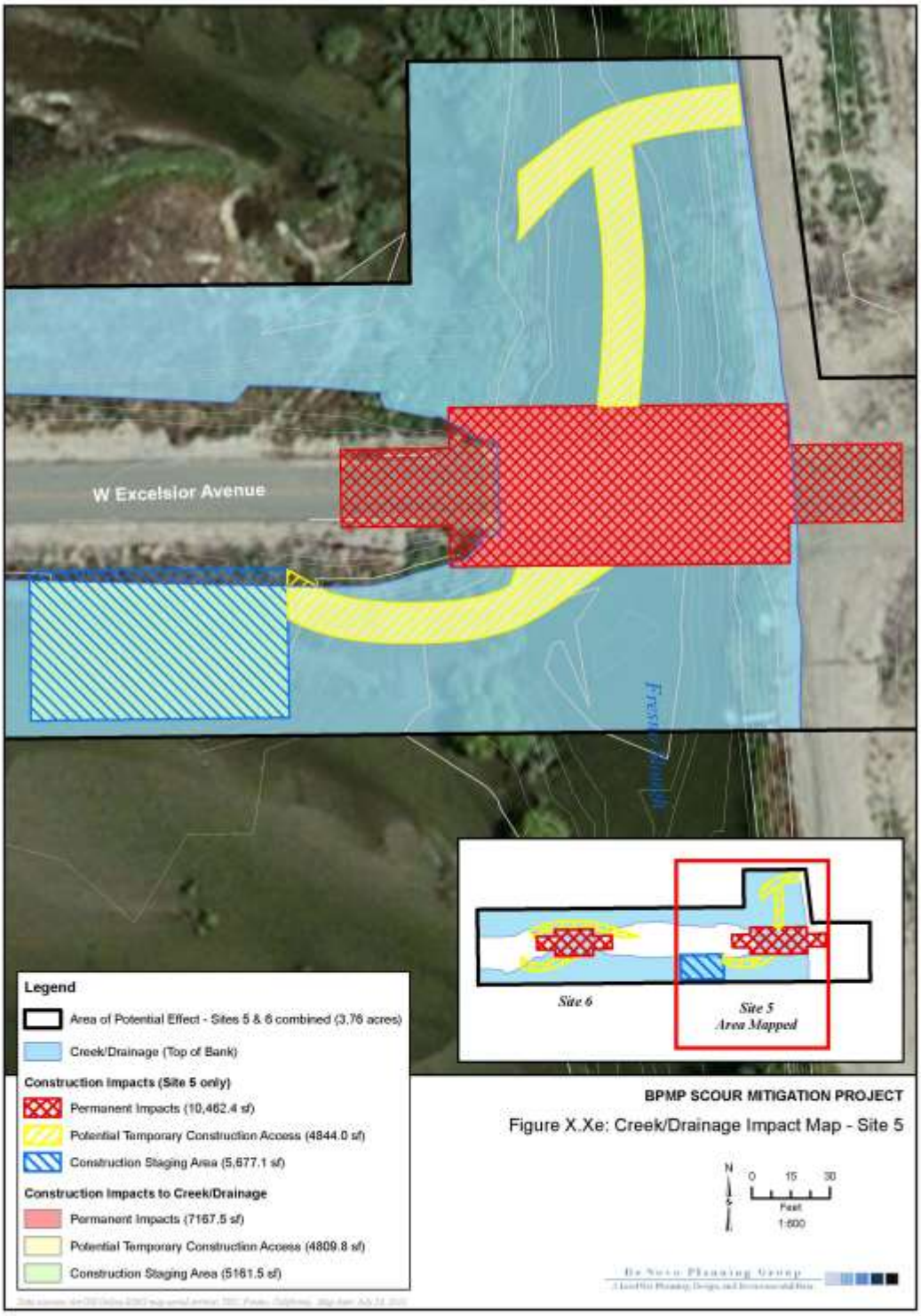
Site 6 (Bridge Number 42C0367 - Fresno Slough Overflow at Excelsior Avenue)

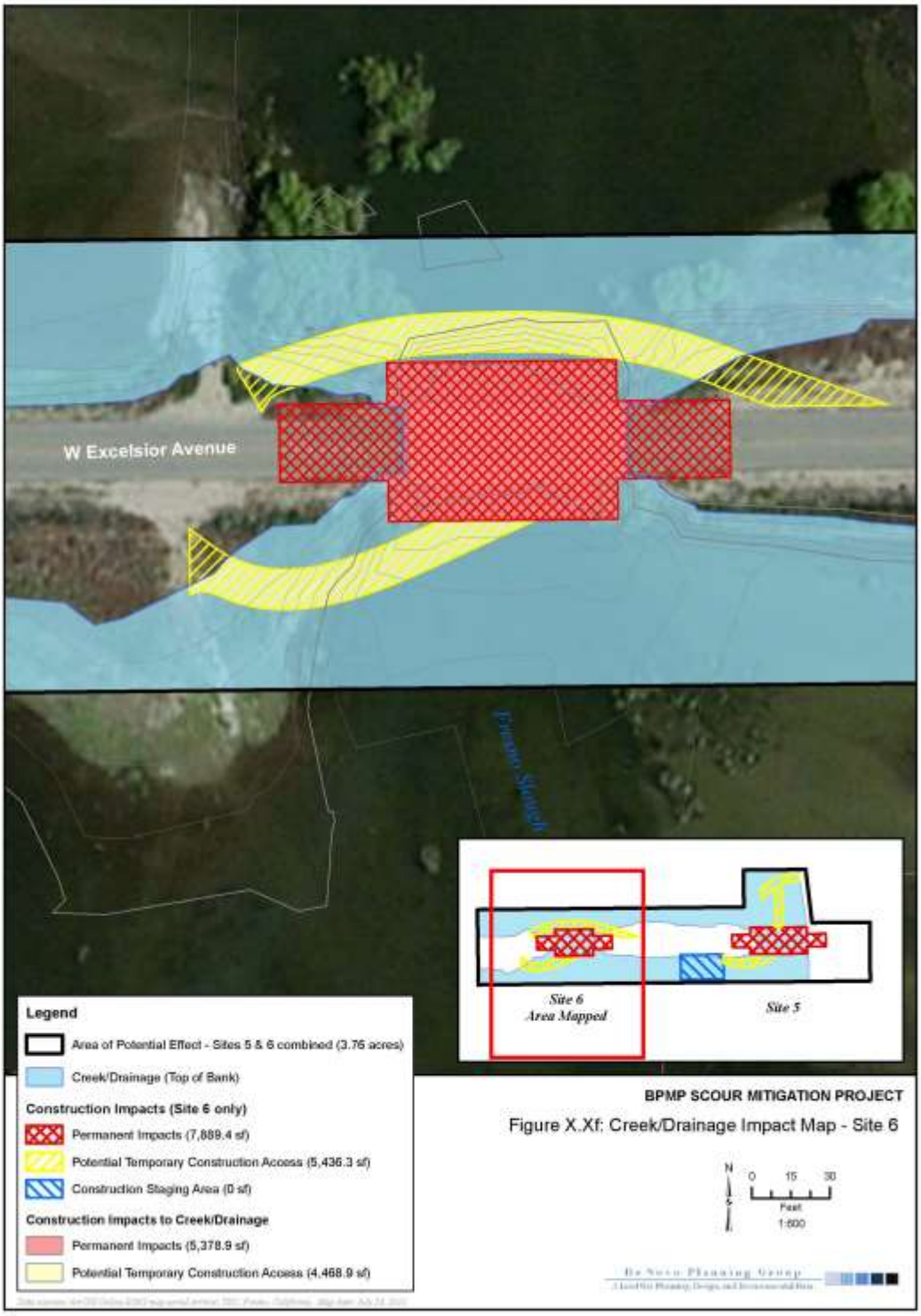
The proposed bridge improvements include impacts to permanent and temporary impacts to the Fresno Slough. The total APE is 3.76 acres. The total permanent impacts to the Fresno Slough associated with the bridge are 5,378.9 sf. Most, if not all, of this permanent impact already exists with the existing bridge. The total temporary impact to the Fresno Slough associated with the temporary access is 4,468.9 sf. There is no impact associated with the staging area. The total temporary impacts would be new impacts that are not currently present.

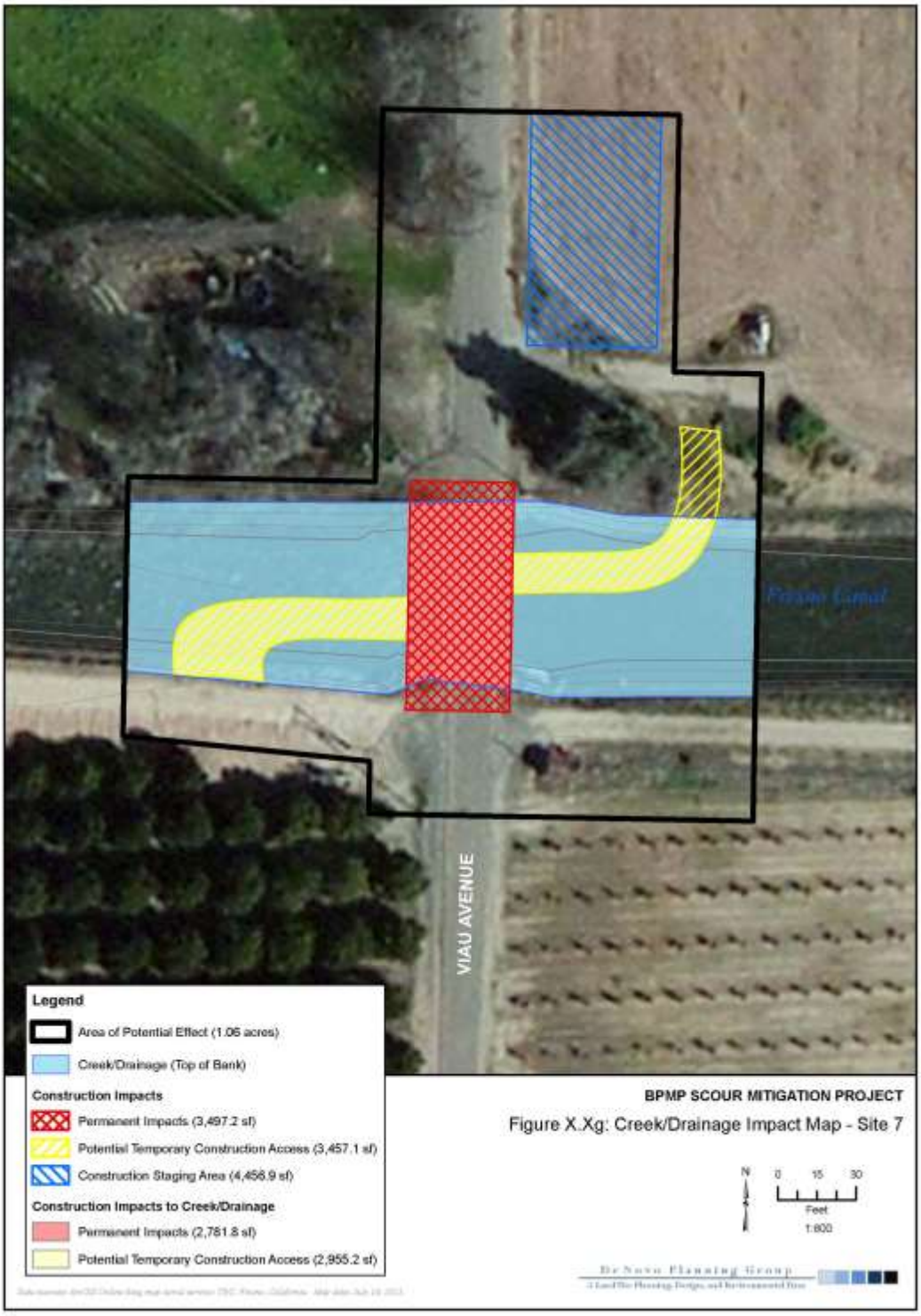
Site 7 (Bridge Number 42C0520 - Fresno Canal at Viau Avenue)

The proposed bridge improvements include impacts to permanent and temporary impacts to the Fresno Canal. The total APE is 1.06 acres. The total permanent impacts to the Fresno Canal associated with the bridge are 2,781.8 sf. Most, if not all, of this permanent impact already exists with the existing bridge. The total temporary impact to the Fresno Canal associated with the temporary access is 2,955.2 sf. There is no impact associated with the staging area. The total temporary impacts would be new impacts that are not currently present.


Arroyo Pasajero Creek
S El Dorado Avenue
Legend
Area of Potential Effect (3.55 acres)
Creek/Drainage (Top of Bank)
Construction Impacts
Permanent Impacts (13,836.2 sf)
Potential Temporary Construction Access (8,112.7 sf)
Construction Staging Area (6,073.4 sf)
Construction Impacts to Creek/Drainage
Permanent Impacts (10,462.3 sf)
Potential Temporary Construction Access (3,643.2 sf)
BPMP SCOUR MITIGATION PROJECT
Figure X.Xd: Creek/Drainage Impact Map - Site 4
N
0
25
50
Feet
1:1,000


W Excelsior Avenue
Site 6
Site 5
Area Mapped
Legend
Area of Potential Effect - Sites 5 & 6 combined (3.76 acres)
Creek/Drainage (Top of Bank)
Construction Impacts (Site 5 only)
Permanent Impacts (10,462.4 sf)
Potential Temporary Construction Access (4844.0 sf)
Construction Staging Area (5,677.1 sf)
Construction Impacts to Creek/Drainage
Permanent Impacts (7167.5 sf)
Potential Temporary Construction Access (4809.8 sf)
Construction Staging Area (5161.5 sf)
BPMP SCOUR MITIGATION PROJECT
Figure X.Xe: Creek/Drainage Impact Map - Site 5
N
0
15
30
Feet
1:600


W Excelsior Avenue
Site 6
Area Mapped
Site 5
Legend
Area of Potential Effect - Sites 5 & 6 combined (3.76 acres)
Creek/Drainage (Top of Bank)
Construction Impacts (Site 6 only)
Permanent Impacts (7,889.4 sf)
Potential Temporary Construction Access (5,436.3 sf)
Construction Staging Area (0 sf)
Construction Impacts to Creek/Drainage
Permanent Impacts (5,378.9 sf)
Potential Temporary Construction Access (4,468.9 sf)
BPMP SCOUR MITIGATION PROJECT
Figure X.Xf: Creek/Drainage Impact Map - Site 6
N
0 15 30
Feet
1:600


Legend
Area of Potential Effect (1.06 acres)
Creek/Drainage (Top of Bank)
Construction Impacts
Permanent Impacts (3,497.2 sf)
Potential Temporary Construction Access (3,457.1 sf)
Construction Staging Area (4,456.9 sf)
Construction Impacts to Creek/Drainage
Permanent Impacts (2,781.8 sf)
Potential Temporary Construction Access (2,955.2 sf)
VIAU AVENUE
BPMP SCOUR MITIGATION PROJECT
Figure X.Xg: Creek/Drainage Impact Map - Site 7
N
0
15
30
Feet
1:600
De Novo Planning Group

Site 8 (Bridge Number 42C0178 - Fowler Switch Canal at American Avenue)

The proposed bridge improvements include impacts to permanent and temporary impacts to the Fowler Switch Canal. The total APE is 1.33 acres. The total permanent impacts to the Fowler Switch Canal associated with the bridge are 3,546.7 sf. Most, if not all, of this permanent impact already exists with the existing bridge. The total temporary impact to the Fowler Switch Canal associated with the temporary access is 4,063.2 sf. There is no impact associated with the staging area. The total temporary impacts would be new impacts that are not currently present.

Site 9 (Bridge Number 42C0179 - Travers Creek at Alta Avenue)

The proposed bridge improvements include impacts to permanent and temporary impacts to Travers Creek. The total APE is 1.07 acres. The total permanent impacts to Travers Creek associated with the bridge are 3,163.1 sf. Most, if not all, of this permanent impact already exists with the existing bridge. The total temporary impact to Travers Creek associated with the temporary access is 3,572.82 sf. There is no impact associated with the staging area. The total temporary impacts would be new impacts that are not currently present.

Site 10 (Bridge Number 42C0531 - Fowler Switch Canal at Thompson Avenue)

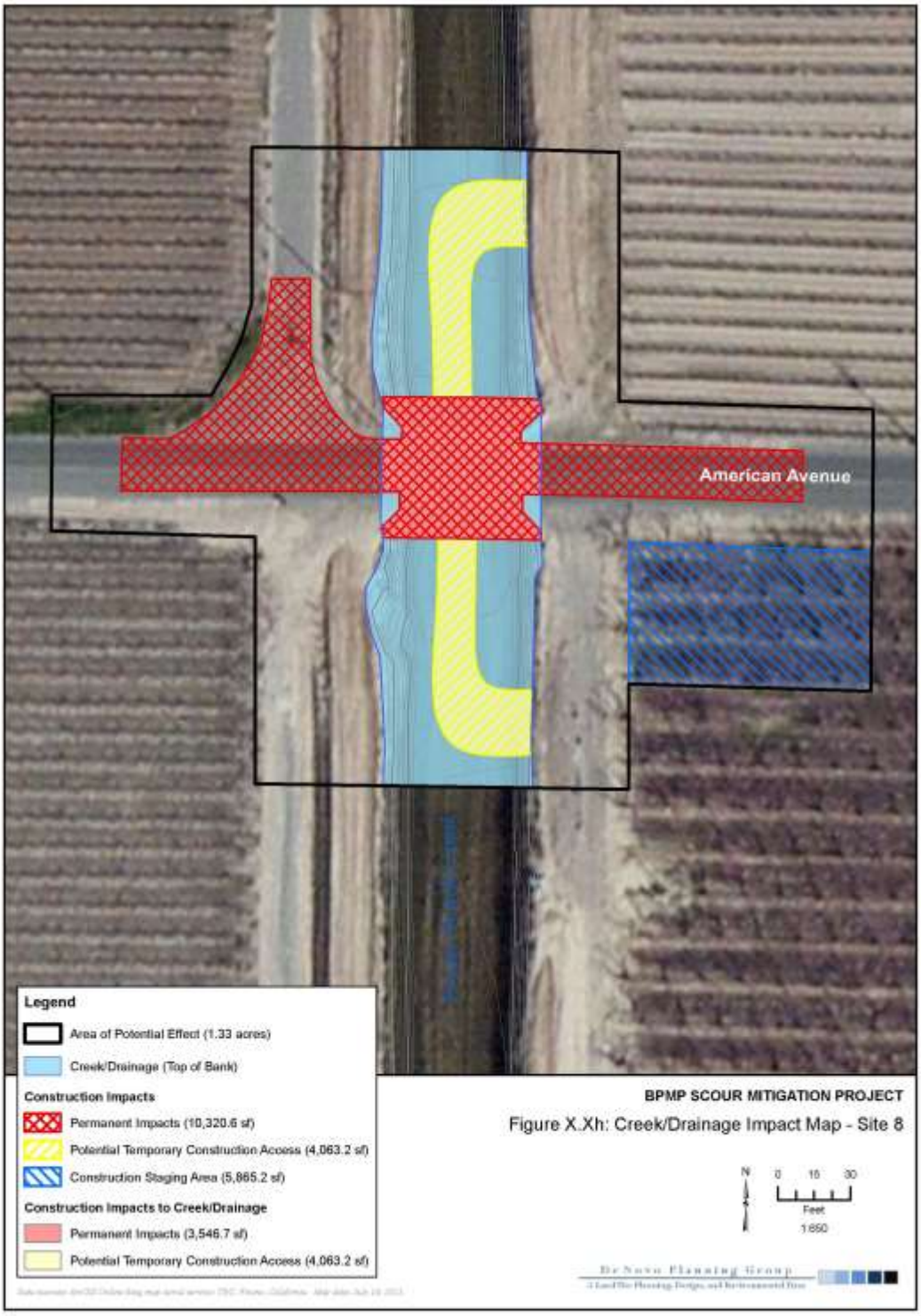
The proposed bridge improvements include impacts to permanent and temporary impacts to Fowler Switch Canal. The total APE is 1.03 acres. The total permanent impacts to Fowler Switch Canal associated with the bridge are 2,653.8 sf. Most, if not all, of this permanent impact already exists with the existing bridge. The total temporary impact to Fowler Switch Canal associated with the temporary access is 2,066.3 sf. There is no impact associated with the staging area. The total temporary impacts would be new impacts that are not currently present.

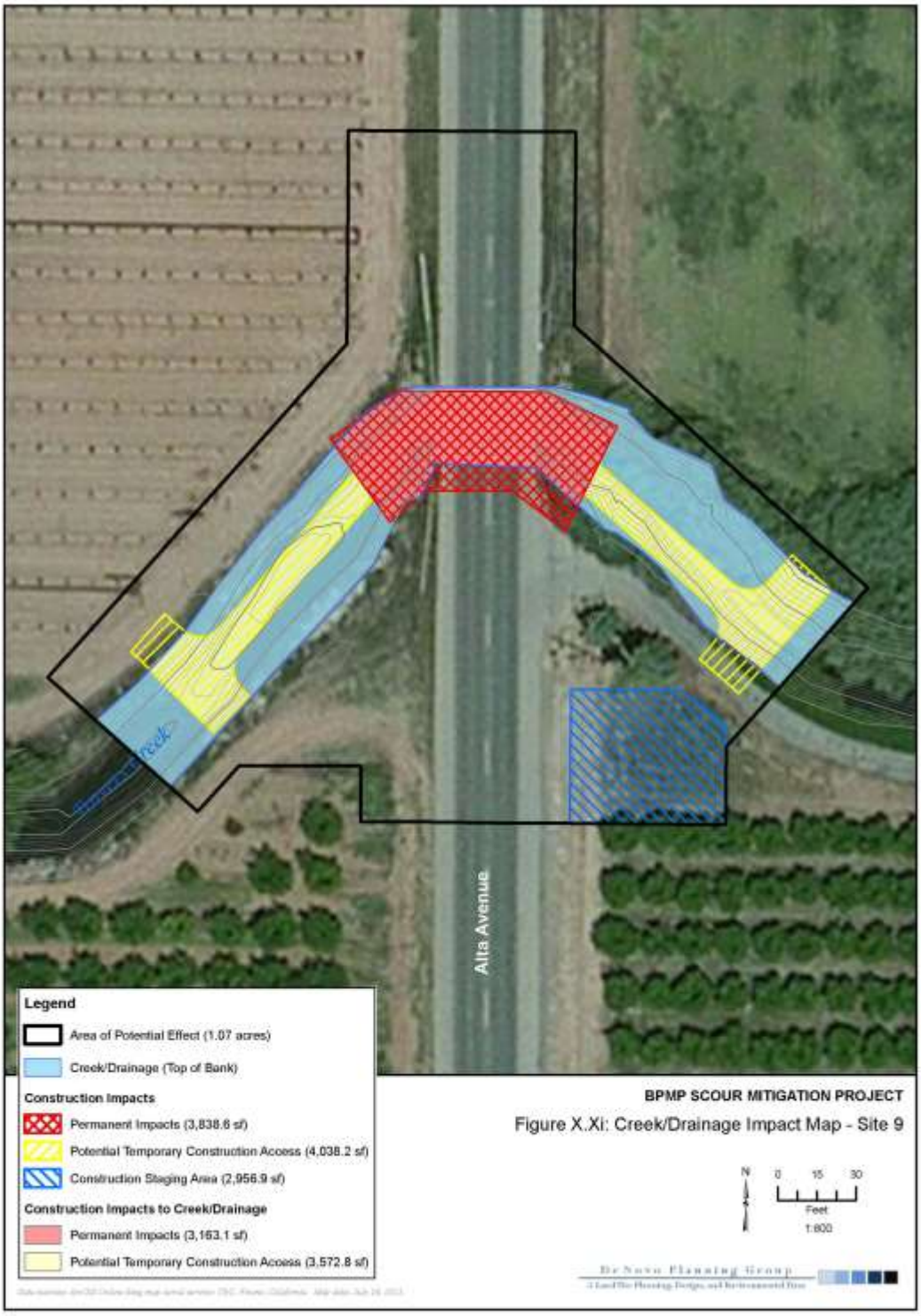
Site 11 (Bridge Number 42C0532 - Fowler Switch Canal at Huntsman Avenue)

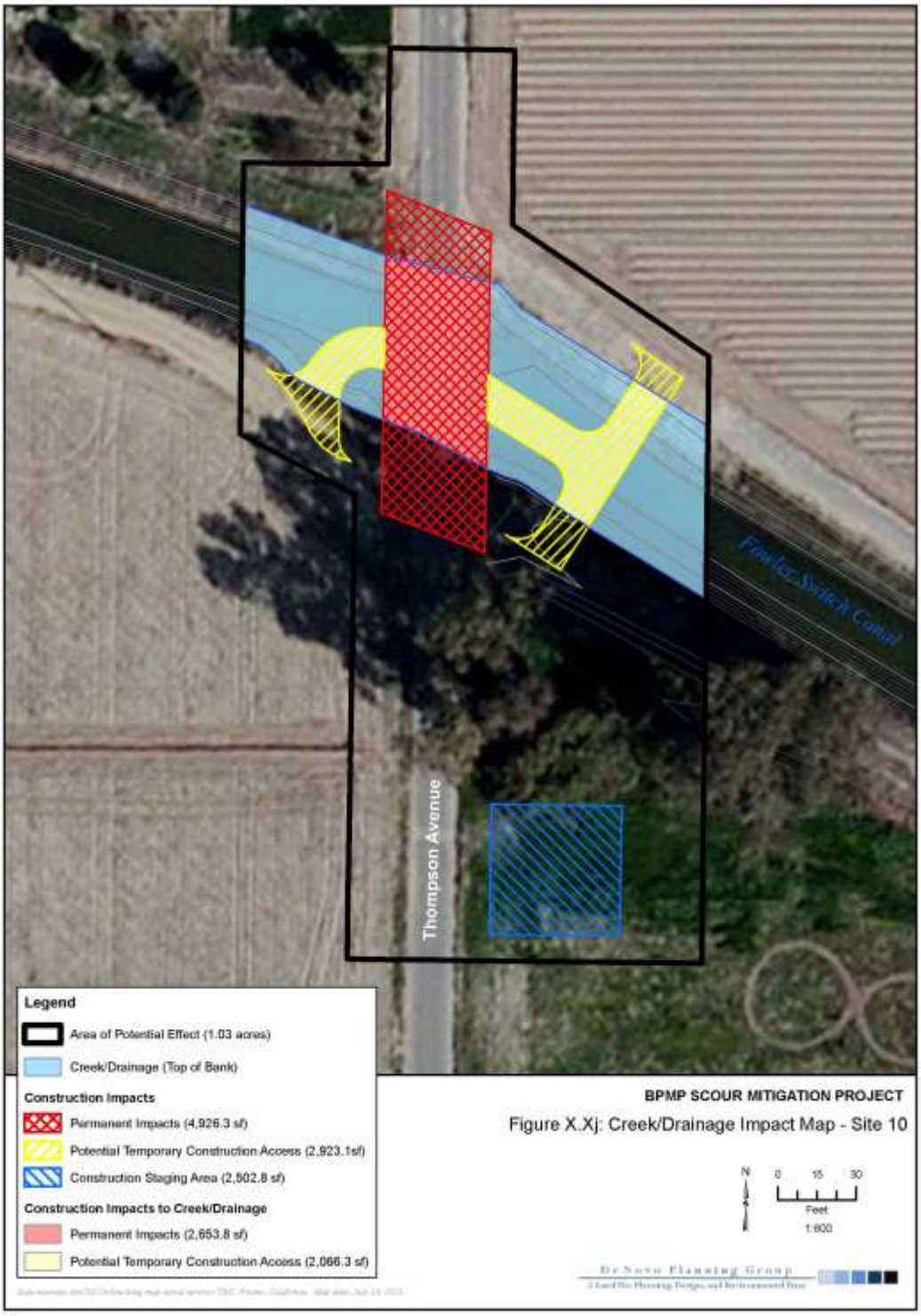
The proposed bridge improvements include impacts to permanent and temporary impacts to Fowler Switch Canal. The total APE is 1.61 acres. The total permanent impacts to Fowler Switch Canal associated with the bridge are 2,898.8 sf. Most, if not all, of this permanent impact already exists with the existing bridge. The total temporary impact to Fowler Switch Canal associated with the temporary access is 4,707.7 sf. There is also a temporary impact to a wetland area associated with the construction staging area. It is recommended that the construction staging area be moved to a non-wetland area, as there are numerous areas within the region that could be used to avoid these temporary impacts. The total temporary impacts would be new impacts that are not currently present.

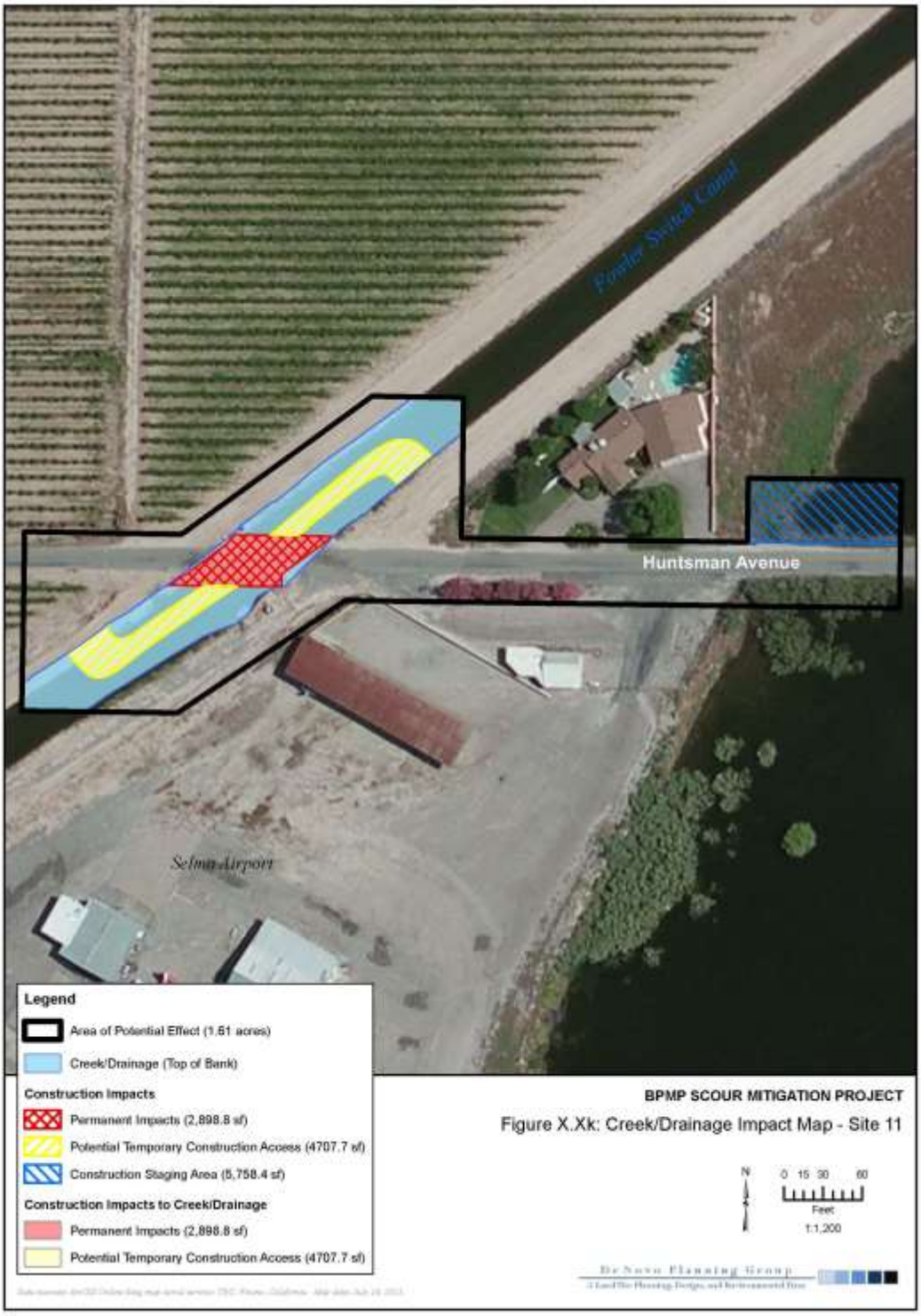
Site 12 (Bridge Number 42C0328 - Mud Creek at Zediker Avenue)

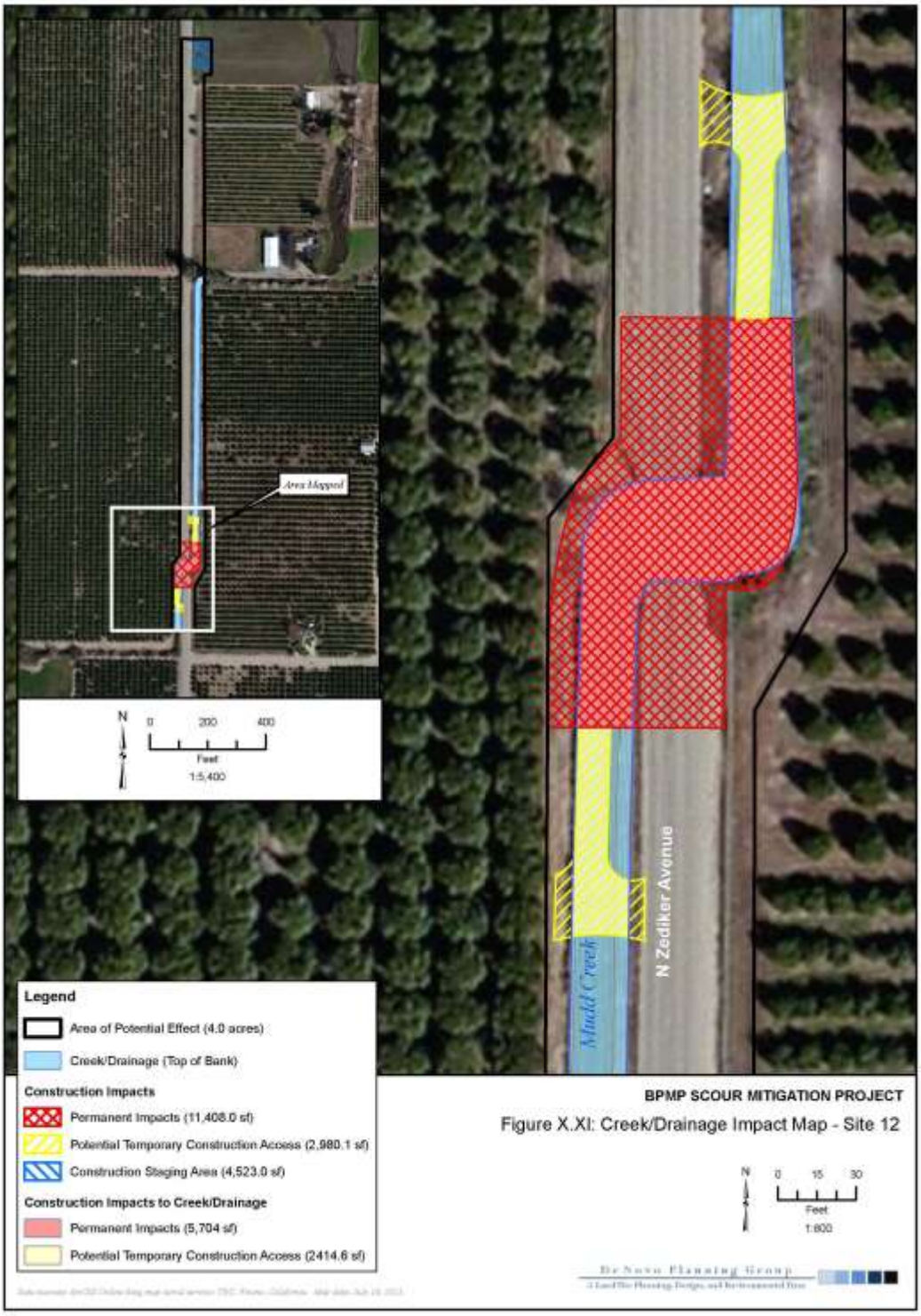
The proposed bridge improvements include impacts to permanent and temporary impacts to Mud Creek. The total APE is 4.0 acres. The total permanent impacts to Mud Creek associated with the bridge are 5,704 sf. Most, if not all, of this permanent impact already exists with the existing bridge. The total temporary impact to Mud Creek associated with the temporary access is 2,414.6 sf. There is no impact associated with the staging area. The total temporary impacts would be new impacts that are not currently present.


American Avenue
Legend
Area of Potential Effect (1.33 acres)
Creek/Drainage (Top of Bank)
Construction Impacts
Permanent Impacts (10,320.6 sf)
Potential Temporary Construction Access (4,063.2 sf)
Construction Staging Area (5,865.2 sf)
Construction Impacts to Creek/Drainage
Permanent Impacts (3,546.7 sf)
Potential Temporary Construction Access (4,063.2 sf)
BPMP SCOUR MITIGATION PROJECT
Figure X.Xh: Creek/Drainage Impact Map - Site 8
N
0 15 30
Feet
1:650
De Novo Planning Group


Alta Avenue
Legend
Area of Potential Effect (1.07 acres)
Creek/Drainage (Top of Bank)
Construction Impacts
Permanent Impacts (3,838.6 sf)
Potential Temporary Construction Access (4,038.2 sf)
Construction Staging Area (2,956.9 sf)
Construction Impacts to Creek/Drainage
Permanent Impacts (3,163.1 sf)
Potential Temporary Construction Access (3,572.8 sf)
BPMP SCOUR MITIGATION PROJECT
Figure X.Xi: Creek/Drainage Impact Map - Site 9
N
0
15
30
Feet
1:600
De Novo Planning Group


Thompson Avenue
Legend
Area of Potential Effect (1.03 acres)
Creek/Drainage (Top of Bank)
Construction Impacts
Permanent Impacts (4,926.3 sf)
Potential Temporary Construction Access (2,923.1sf)
Construction Staging Area (2,502.8 sf)
Construction Impacts to Creek/Drainage
Permanent Impacts (2,653.8 sf)
Potential Temporary Construction Access (2,066.3 sf)
BPMP SCOUR MITIGATION PROJECT
Figure X.Xj: Creek/Drainage Impact Map - Site 10
N
0
15
30
Feet
1:600


Foster Switch Canal
Huntsman Avenue
Selma Airport
Legend
Area of Potential Effect (1.61 acres)
Creek/Drainage (Top of Bank)
Construction Impacts
Permanent Impacts (2,898.8 sf)
Potential Temporary Construction Access (4707.7 sf)
Construction Staging Area (5,758.4 sf)
Construction Impacts to Creek/Drainage
Permanent Impacts (2,898.8 sf)
Potential Temporary Construction Access (4707.7 sf)
BPMP SCOUR MITIGATION PROJECT
Figure X.Xk: Creek/Drainage Impact Map - Site 11
N
0 15 30 60
Feet
1:1,200
De Novo Planning Group


Area Mapped
N
0
200
400
Feet
1:5,400
N Zediker Avenue
Mudd Creek
Legend
Area of Potential Effect (4.0 acres)
Creek/Drainage (Top of Bank)
Construction Impacts
Permanent Impacts (11,408.0 sf)
Potential Temporary Construction Access (2,980.1 sf)
Construction Staging Area (4,523.0 sf)
Construction Impacts to Creek/Drainage
Permanent Impacts (5,704 sf)
Potential Temporary Construction Access (2414.6 sf)
BPMP SCOUR MITIGATION PROJECT
Figure X.XI: Creek/Drainage Impact Map - Site 12
N
0
15
30
Feet
1:600
De Novo Planning Group

Conclusions

It should be noted that the creeks/drainages are jurisdictional facilities and any fill activity associated with construction activities at the bridge sites would require compliance with Section 404 of the Clean Water Act. Pursuant to Section 404 of the Clean Water Act (33 USC 1344) and Federal Regulations (33 CFR 323.4(a)(2)), certain discharges for maintenance have been exempted from requiring a Section 404 permit. Maintenance does not include any modification that changes the character, scope, or size of the original fill design. A Section 404 permit is required if either of the following occurs:

> (1) Any discharge of dredged or fill material resulting from the above activities which contains any toxic pollutant listed under Section 307 of the Clean Water Act shall be subject to any applicable toxic effluent standard or prohibition, and shall require a permit.
>
> (2) Any discharge of dredged or fill material into waters of the United States incidental to the above activities must have a permit if it is part of an activity whose purpose is to convert an area of the waters of the United States into a use to which it was not previously subject, where the flow or circulation of waters of the United States may be impaired or the reach of such waters reduced. Where the proposed discharge will result in significant discernible alterations to flow or circulation, the presumption is that flow or circulation may be impaired by such alteration. For example, a permit will be required for the conversion of a wetland from silvicultural to agricultural use when there is a discharge of dredged or fill material into waters of the United States in conjunction with construction of dikes, drainage ditches, or other works or structures used to effect such conversion. A conversion of a Section 404 wetland to a non- wetland is a change of use of an area of waters of the United States. A discharge which elevates the bottom of waters of the United States without converting it to dry land does not thereby reduce the reach of, but may alter the flow or circulation of, waters of the United States.

If the proposed discharge satisfies all of the above restrictions, it is automatically exempted and no further permit action from the Corps of Engineers is required. If any of the restrictions of this exemption will not be complied with, a permit is required and should be requested. A nationwide permit authorized by the Clean Water Act may be available for the proposed work (i.e. NWP 3 for Maintenance Activities not exempted, or NWP 14 Linear Transportation Projects).

It should also be noted that any work performed for these sites would require a Section 401 Water Quality certification to be issued by the Regional Water Quality Control Board and a Section 1600 Streambed Alteration Agreement to be issued by the California Department of Fish and Wildlife.

6. Mitigation Measures

6.1. Avoidance and Minimization Measures for Sites 1, 2, 8, and 10

Implementation of the following measures at each of the four bridge sites will reduce potential project effects to nesting raptors,migratory birds, and bats to a low to negligible level, and will ensure that each of these bridge projects is in compliance with state and federal laws protecting such species.

- Site 1 (Bridge Number 42C0459 - Los Gatos Creek at Los Gatos Road)
- Site 2 (Bridge Number 42C0458 - Los Gatos Creek at Los Gatos Road)
- Site 8 (Bridge Number 42C0178 - Fowler Switch Canal at American Avenue)
- Site 10 (Bridge Number 42C0531 - Fowler Switch Canal at Thompson Avenue)

Measure 1 – Avoidance (Site 1, 2, 8, and 10): *In order to avoid effects to nesting raptors and migratory birds, including cliff swallows, project activities will occur, where possible, outside the nesting season. The nesting season is generally February 1-August 31.*

Measure 2 – Pre-construction Survey (Site 1, 2, 8, and 10): *If project activities must occur during the nesting season (February 1-August 31), a qualified biologist will conduct pre-construction surveys for active raptor and migratory bird nests within 30 days of the onset of these activities. For migratory birds and raptors, the survey area will include all BSAs and a 250-foot buffer area surrounding each BSA. If no active nests are found within the survey area, no further mitigation is required.*

Measure 3 – Establish Buffers (Site 1, 2, 8, and 10): *Should any active nests be discovered within the survey area, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged. For cliff swallows, if project activities are expected to occur within the nesting season, netting, or another exlusionary device should be installed prior to the nesting season to prevent cliff swallows from nesting under the bridge site. Such netting should be monitored by a qualified biologist periodically during construction to ensure that the netting, or other exllusionary device, is preventing active nesting by cliff swallows.*

Measure 4 – Bats (Site 1, 2, 8, and 10): *To avoid effects to bats, a qualified biologist will conduct pre-construction surveys for bats within the crevices of the bridge structure within 30 days of the onset of construction activities. If no evidence of bats are found within the bridge, no further mitigation is required. If it is determined that bats are using the bridge structure, it should be determined by the biologist whether the use is for maternal roosting (generally May – August). If it is not a maternal roost site, exclusionary devices will be installed so the bats cannot use the bridge for roosting during construction and will relocate. These devices should be installed during the non maternal and non-mating season (generally September – February). After the exclusionary devices have been installed, the contractor must wait seven days before work can commence. By waiting the seven days, the bats can exit the bridge and relocate. Once these devices have been installed, they must be maintained by the contractor and kept in good working order. Work on the bridge deck can occur anytime without work window restrictions.*

Measure 5 – Permit Authorization for Impacts to Jurisdictional Waters (Site 1, 2, 8, and 10): *Prior to any impacts to jurisdictional areas, the project proponent shall consult the USACE, RWQCB, and CDFW for the appropriate autorizations as follows:*

- *Section 404 Compliance: The project is anticipated to be exempt under the Maintenance exemption; however, that determination should be provided by the Army Corps of Engineers. If the Maintenance exemption does not apply, then the project should be eligible for a Nationwide Permit (i.e. NWP 3 Maintenance Activities, or NWP 14 Linear Transportation Projects).*

- *Section 401 Compliance: The project requires a Section 401 Water Quality certification to be issued by the Regional Water Quality Control Board.*

- *Section 1600 Compliance: The project requires a Section 1600 Streambed Alteration Agreement to be issued by the California Department of Fish and Wildlife.*

6.2. Avoidance and Minimization Measures for Site 3 (Bridge Number 42C0455 - Los Gatos Creek at Los Gatos Road):

Implementation of the following measures at bridge Site 3 will reduce potential project effects to nesting raptors, migratory birds, bats, foothill yellow-legged frog, western pond turtle, and Indian Valley bush mallow to a low to negligible level, and will ensure that the bridge project is in compliance with state and federal laws protecting such species.

Measure 1 – Avoidance (Site 3): *In order to avoid effects to nesting raptors and migratory birds, including cliff swallows, project activities will occur, where possible, outside the nesting season. The nesting season is generally February 1-August 31.*

Measure 2 – Pre-construction Survey (Site 3): *If project activities must occur during the nesting season (February 1-August 31), a qualified biologist will conduct pre-construction surveys for active raptor and migratory bird nests within 30 days of the onset of these activities. For migratory birds and raptors, the survey area will include all BSAs and a 250-foot buffer area surrounding each BSA. If no active nests are found within the survey area, no further mitigation is required.*

Measure 3 – Establish Buffers (Site 3): *Should any active nests be discovered within the survey area, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged. For cliff swallows, if project activities are expected to occur within the nesting season, netting, or another exlusionary device should be installed prior to the nesting season to prevent cliff swallows from nesting under the bridge site. Such netting should be monitored by a qualified biologist periodically during construction to ensure that the netting, or other exllusionary device, is preventing active nesting by cliff swallows.*

Measure 4 – Bats (Site 3): *To avoid effects to bats, a qualified biologist will conduct pre-construction surveys for bats within the crevices of the bridge structure within 30 days of the onset of construction activities. If no evidence of bats are found within the bridge, no further mitigation is required. If it is determined that bats are using the bridge structure, it should be determined by the biologist whether the use is for maternal roosting (generally May – August). If it is not a maternal roost site, exclusionary devices will be installed so the bats cannot use the bridge for roosting during construction and will relocate. These devices should be installed during the non maternal and non-mating season (generally September – February). After the exclusionary devices have been installed, the contractor must wait seven days before work can commence. By waiting the seven days, the bats can exit the bridge and relocate. Once these devices have been installed, they must be maintained by the contractor and kept in good working order. Work on the bridge deck can occur anytime without work window restrictions.*

Measure 5 (Site 3): *Preconstruction surveys for foothill yellow-legged frog (Rana boylii) (CSC) and western pond turtle (Emys marmorata) (CSC) shall be conducted no more than 14 days prior to the beginning of ground disturbance and/or construction activities. Written results of preconstruction surveys must be maintained by the County within five days after survey completion and prior to the start of ground disturbance and/or construction activities. If these species are discovered within the project area, the County shall consult with the CDFW to obtain the appropriate guidance to avoid this species.*

Measure 6 (Site 3): *Preconstruction surveys for Indian Valley bush-mallow (Malacothamnus aboriginum) (1B) shall be conducted no more than 14 days prior to the beginning of ground disturbance and/or construction activities. Written results of preconstruction surveys must be maintained by the County within five days after survey completion and prior to the start of ground disturbance and/or construction activities. If this species is found, the plant location(s) will be marked and mapped for avoidance. If avoidance is not possible, the individual plants that can not be avoided will be hand excavated and immediately relocated to a replanting site located just outside the area requiring disturbance, or another acceptable location. The replanting site will contain similar suitable habitat conditions, within the BSA, and will be located outside the proposed construction zone. The surveys, excavation, and replanting will be performed by a qualified botanist. The re-planting area will be fenced to prevent cattle or other undesirable entry into the replanting area. The replanting area will be monitored for three years to determine the success of replanting efforts. Success is determined by the number of relocated plants that survive the transplantation. If the success rate after three years is below 75%, consultation with CDFW will be required to develop appropriate remediation plans.*

Measure 7 – Permit Authorization for Impacts to Jurisdictional Waters (Site 3): *Prior to any impacts to jurisdictional areas, the project proponent shall consult the USACE, RWQCB, and CDFW for the appropriate autorizations as follows:*

- *Section 404 Compliance: The project is anticipated to be exempt under the Maintenance exemption; however, that determination should be provided by the Army Corps of Engineers. If the Maintenance exemption does not apply, then the project should be eligible for a Nationwide Permit (i.e. NWP 3 Maintenance Activities, or NWP 14 Linear Transportation Projects).*

- *Section 401 Compliance: The project requires a Section 401 Water Quality certification to be issued by the Regional Water Quality Control Board.*

- *Section 1600 Compliance: The project requires a Section 1600 Streambed Alteration Agreement to be issued by the California Department of Fish and Wildlife.*

6.3. Avoidance and Minimization Measures for Site 4 (Bridge Number 42C0097 - Arroyo Pasajero at El Dorado Avenue)

Implementation of the following measures at bridge Site 4 will reduce potential project effects to nesting raptors, migratory birds, San Joaquin kit fox, short-nosed kangaroo rat, and San Joaquin pocket mouse to a low to negligible level, and will ensure that the bridge project is in compliance with state and federal laws protecting such species.

Measure 1 – Avoidance (Site 4): *In order to avoid effects to nesting raptors and migratory birds, including cliff swallows, project activities will occur, where possible, outside the nesting season. The nesting season is generally February 1-August 31.*

Measure 2 – Pre-construction Survey (Site 4): *If project activities must occur during the nesting season (February 1-August 31), a qualified biologist will conduct pre-construction surveys for active raptor and migratory bird nests within 30 days of the onset of these activities. For migratory birds and raptors, the survey area will include all BSAs and a 250-foot buffer area surrounding each BSA. If no active nests are found within the survey area, no further mitigation is required.*

Measure 3 – Establish Buffers (Site 4): *Should any active nests be discovered within the survey area, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. For cliff swallows, if project activities are expected to occur within the nesting season, netting, or another exlusionary device should be installed prior to the nesting season to prevent cliff swallows from nesting under the bridge site. Such netting should be monitored by a qualified biologist periodically during construction to ensure that the netting, or other exllusionary device, is preventing active nesting by cliff swallows.*

Measure 4 – Bats (Site 4): *To avoid effects to bats, a qualified biologist will conduct pre-construction surveys for bats within the crevices of the bridge structure within 30 days of the onset of construction activities. If no evidence of bats are found within the bridge, no further mitigation is required. If it is determined that bats are using the bridge structure, it should be determined by the biologist whether the use is for maternal roosting (generally May – August). If it is not a maternal roost site, exclusionary devices will be installed so the bats cannot use the bridge for roosting during construction and will relocate. These devices should be installed during the non maternal and non-mating*

season (generally September – February). After the exclusionary devices have been installed, the contractor must wait seven days before work can commence. By waiting the seven days, the bats can exit the bridge and relocate. Once these devices have been installed, they must be maintained by the contractor and kept in good working order. Work on the bridge deck can occur anytime without work window restrictions.

Measure 5 (Site 4): *Preconstruction surveys for San Joaquin Kit Fox 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. Written results of preconstruction 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 County shall consult with the USFWS to obtain the necessary take authorization/permit.*

Measure 6 (Site 4): *Preconstruction surveys for short-nosed kangaroo rat (Dipodomys nitratoides brevinasus) (CSC) and San Joaquin pocket mouse (Perognathus inornatus) (no formal listing) shall be conducted no more than 14 days prior to the beginning of ground disturbance and/or construction activities. Written results of preconstruction surveys must maintained by the County within five days after survey completion and prior to the start of ground disturbance and/or construction activities. If these species are discovered within the project area, the County shall consult with the CDFW to obtain the appropriate guidance to avoid this species.*

Measure 7 – Permit Authorization for Impacts to Jurisdictional Waters (Site 4): *Prior to any impacts to jurisdictional areas, the project proponent shall consult the USACE, RWQCB, and CDFW for the appropriate autorizations as follows:*

- *Section 404 Compliance: The project is anticipated to be exempt under the Maintenance exemption; however, that determination should be provided by the Army Corps of Engineers. If the Maintenance exemption does not apply, then the project should be eligible for a Nationwide Permit (i.e. NWP 3 Maintenance Activities, or NWP 14 Linear Transportation Projects).*

- *Section 401 Compliance: The project requires a Section 401 Water Quality certification to be issued by the Regional Water Quality Control Board.*

- *Section 1600 Compliance: The project requires a Section 1600 Streambed Alteration Agreement to be issued by the California Department of Fish and Wildlife.*

6.4. Avoidance and Minimization Measures for Site 5 and 6

Implementation of the following measures at bridge Sites 5 and 6 will reduce potential project effects to nesting raptors, including Swainson's hawk, migratory birds, and bats to a low to negligible level, and will ensure that the bridge project is in compliance with state and federal laws protecting such species.

- Site 5 (Bridge Number 42C0104 - Fresno Slough at Excelsior Avenue)
- Site 6 (Bridge Number 42C0367 - Fresno Slough Overflow at Excelsior Avenue)

Measure 1 – Avoidance (Site 5 and 6): *In order to avoid effects to nesting raptors, including Swainson's hawk, and migratory birds, including cliff swallows, project activities will occur, where possible, outside the nesting season. The nesting season is generally February 1-August 31.*

Measure 2 – Pre-construction Survey and Permits (Site 5 and 6): *It is anticipated that the active nest that was observed proximate to the project site may be active in future years. If project activities must occur during the nesting season (February 1-August 31), any disturbance would warrant permit authorization from the CDFW.*

Measure 3 – Establish Buffers (Site 5 and 6): *Should any active nests be discovered within the survey area, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. For cliff swallows, if project activities are expected to occur within the nesting season, netting, or another exlusionary device should be installed prior to the nesting season to prevent cliff swallows from nesting under the bridge site. Such netting should be monitored by a qualified biologist periodically during construction to ensure that the netting, or other exllusionary device, is preventing active nesting by cliff swallows.*

Measure 4 – Bats (Site 5 and 6): *To avoid effects to bats, a qualified biologist will conduct pre-construction surveys for bats within the crevices of the bridge structure within 30 days of the onset of construction activities. If no evidence of bats are found within the bridge, no further mitigation is required. If it is determined that bats are using the bridge structure, it should be determined by the biologist whether the use is for maternal roosting (generally May – August). If it is not a maternal roost site, exclusionary devices will be installed so the bats cannot use the bridge for roosting during construction and will relocate. These devices should be installed during the non maternal and non-mating season (generally September – February). After the exclusionary devices have been installed, the contractor must wait seven days before*

work can commence. By waiting the seven days, the bats can exit the bridge and relocate. Once these devices have been installed, they must be maintained by the contractor and kept in good working order. Work on the bridge deck can occur anytime without work window restrictions.

Measure 5 – Wetland Avoidance (Site 5): *In order to avoid temporary wetland impacts associated with the construction staging area, move the construction staging area to a non-wetland area.*

Measure 6 – Permit Authorization for Impacts to Jurisdictional Waters (Site 5 and 6): *Prior to any impacts to jurisdictional areas, the project proponent shall consult the USACE, RWQCB, and CDFW for the appropriate autorizations as follows:*

- *Section 404 Compliance: The project is anticipated to be exempt under the Maintenance exemption; however, that determination should be provided by the Army Corps of Engineers. If the Maintenance exemption does not apply, then the project should be eligible for a Nationwide Permit (i.e. NWP 3 Maintenance Activities, or NWP 14 Linear Transportation Projects).*

- *Section 401 Compliance: The project requires a Section 401 Water Quality certification to be issued by the Regional Water Quality Control Board.*

- *Section 1600 Compliance: The project requires a Section 1600 Streambed Alteration Agreement to be issued by the California Department of Fish and Wildlife.*

6.5. Avoidance and Minimization Measures for Site 7 (Bridge Number 42C0520 - Fresno Canal at Viau Avenue)

Implementation of the following measures at bridge Site 7 will reduce potential project effects to nesting raptors, migratory birds, bats, and California satintail to a low to negligible level, and will ensure that the bridge project is in compliance with state and federal laws protecting such species.

Measure 1 – Avoidance (Site 7): *In order to avoid effects to nesting raptors and migratory birds, including cliff swallows, project activities will occur, where possible, outside the nesting season. The nesting season is generally February 1-August 31.*

Measure 2 – Pre-construction Survey (Site 7): *If project activities must occur during the nesting season (February 1-August 31), a qualified biologist will conduct pre-construction surveys for active raptor and migratory bird nests within 30 days of the*

onset of these activities. For migratory birds and raptors, the survey area will include all BSAs and a 250-foot buffer area surrounding each BSA. If no active nests are found within the survey area, no further mitigation is required.

Measure 3 – Establish Buffers (Site 7): *Should any active nests be discovered within the survey area, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged. For cliff swallows, if project activities are expected to occur within the nesting season, netting, or another exlusionary device should be installed prior to the nesting season to prevent cliff swallows from nesting under the bridge site. Such netting should be monitored by a qualified biologist periodically during construction to ensure that the netting, or other exllusionary device, is preventing active nesting by cliff swallows.*

Measure 4 – Bats (Site 7): *To avoid effects to bats, a qualified biologist will conduct pre-construction surveys for bats within the crevices of the bridge structure within 30 days of the onset of construction activities. If no evidence of bats are found within the bridge, no further mitigation is required. If it is determined that bats are using the bridge structure, it should be determined by the biologist whether the use is for maternal roosting (generally May – August). If it is not a maternal roost site, exclusionary devices will be installed so the bats cannot use the bridge for roosting during construction and will relocate. These devices should be installed during the non maternal and non-mating season (generally September – February). After the exclusionary devices have been installed, the contractor must wait seven days before work can commence. By waiting the seven days, the bats can exit the bridge and relocate. Once these devices have been installed, they must be maintained by the contractor and kept in good working order. Work on the bridge deck can occur anytime without work window restrictions.*

Measure 5 (Site 7): *Preconstruction surveys for California satintail (Imperata brevifolia) (1B) shall be conducted no more than 14 days prior to the beginning of ground disturbance and/or construction activities. Written results of preconstruction surveys must be maintained by the County within five days after survey completion and prior to the start of ground disturbance and/or construction activities. If this species is found, the plant location(s) will be marked and mapped for avoidance. If avoidance is not possible, the individual plants that can not be avoided will be hand excavated and immediately relocated to a replanting site located just outside the area requiring disturbance, or*

another acceptable location. The replanting site will contain similar suitable habitat conditions, within the BSA, and will be located outside the proposed construction zone. The surveys, excavation, and replanting will be performed by a qualified botanist. The re-planting area will be fenced to prevent cattle or other undesirable entry into the replanting area. The replanting area will be monitored for three years to determine the success of replanting efforts. Success is determined by the number of relocated plants that survive the transplantation. If the success rate after three years is below 75%, consultation with CDFW will be required to develop appropriate remediation plans.

Measure 6 – Permit Authorization for Impacts to Jurisdictional Waters (Site 7): *Prior to any impacts to jurisdictional areas, the project proponent shall consult the USACE, RWQCB, and CDFW for the appropriate autorizations as follows:*

- *Section 404 Compliance: The project is anticipated to be exempt under the Maintenance exemption; however, that determination should be provided by the Army Corps of Engineers. If the Maintenance exemption does not apply, then the project should be eligible for a Nationwide Permit (i.e. NWP 3 Maintenance Activities, or NWP 14 Linear Transportation Projects).*

- *Section 401 Compliance: The project requires a Section 401 Water Quality certification to be issued by the Regional Water Quality Control Board.*

- *Section 1600 Compliance: The project requires a Section 1600 Streambed Alteration Agreement to be issued by the California Department of Fish and Wildlife.*

6.6. Avoidance and Minimization Measures for Site 9 (Bridge Number 42C0179 - Travers Creek at Alta Avenue)

Implementation of the following measures at bridge Site 9 will reduce potential project effects to nesting raptors, migratory birds, bats, and San Joaquin Valley Orcutt grass to a low to negligible level, and will ensure that the bridge project is in compliance with state and federal laws protecting such species.

Measure 1 – Avoidance (Site 9): *In order to avoid effects to nesting raptors and migratory birds, including cliff swallows, project activities will occur, where possible, outside the nesting season. The nesting season is generally February 1-August 31.*

Measure 2 – Pre-construction Survey (Site 9): *If project activities must occur during the nesting season (February 1-August 31), a qualified biologist will conduct pre-*

construction surveys for active raptor and migratory bird nests within 30 days of the onset of these activities. For migratory birds and raptors, the survey area will include all BSAs and a 250-foot buffer area surrounding each BSA. If no active nests are found within the survey area, no further mitigation is required.

Measure 3 – Establish Buffers (Site 9): *Should any active nests be discovered within the survey area, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged. For cliff swallows, if project activities are expected to occur within the nesting season, netting, or another exlusionary device should be installed prior to the nesting season to prevent cliff swallows from nesting under the bridge site. Such netting should be monitored by a qualified biologist periodically during construction to ensure that the netting, or other exllusionary device, is preventing active nesting by cliff swallows.*

Measure 4 – Bats (Site 9): *To avoid effects to bats, a qualified biologist will conduct pre-construction surveys for bats within the crevices of the bridge structure within 30 days of the onset of construction activities. If no evidence of bats are found within the bridge, no further mitigation is required. If it is determined that bats are using the bridge structure, it should be determined by the biologist whether the use is for maternal roosting (generally May – August). If it is not a maternal roost site, exclusionary devices will be installed so the bats cannot use the bridge for roosting during construction and will relocate. These devices should be installed during the non maternal and non-mating season (generally September – February). After the exclusionary devices have been installed, the contractor must wait seven days before work can commence. By waiting the seven days, the bats can exit the bridge and relocate. Once these devices have been installed, they must be maintained by the contractor and kept in good working order. Work on the bridge deck can occur anytime without work window restrictions.*

Measure 5 (Site 9): *Preconstruction surveys for San Joaquin Valley Orcutt grass (Orcuttia inaequalis) (FT/CE/1B) shall be conducted no more than 14 days prior to the beginning of ground disturbance and/or construction activities. Written results of preconstruction surveys must be maintained by the County within five days after survey completion and prior to the start of ground disturbance and/or construction activities. If this species is found, the plant location(s) will be marked and mapped for avoidance. If*

avoidance is not possible, the project shall require authorization to take from the USFWS (Section 7 Consultation) and CDFW (Section 2081) prior to disturbance of this species.

Measure 6 – Permit Authorization for Impacts to Jurisdictional Waters (Site 9): *Prior to any impacts to jurisdictional areas, the project proponent shall consult the USACE, RWQCB, and CDFW for the appropriate autorizations as follows:*

- *Section 404 Compliance: The project is anticipated to be exempt under the Maintenance exemption; however, that determination should be provided by the Army Corps of Engineers. If the Maintenance exemption does not apply, then the project should be eligible for a Nationwide Permit (i.e. NWP 3 Maintenance Activities, or NWP 14 Linear Transportation Projects).*

- *Section 401 Compliance: The project requires a Section 401 Water Quality certification to be issued by the Regional Water Quality Control Board.*

- *Section 1600 Compliance: The project requires a Section 1600 Streambed Alteration Agreement to be issued by the California Department of Fish and Wildlife.*

6.7. Avoidance and Minimization Measures for Site 11 (Bridge Number 42C0532 - Fowler Switch Canal at Huntsman Avenue)

Implementation of the following measures at each of the five bridge sites will reduce potential project effects to nesting raptors,migratory birds, bats, and wetlands to a low to negligible level, and will ensure that each of these bridge projects is in compliance with state and federal laws protecting such species.

Measure 1 – Avoidance (Site 11): *In order to avoid effects to nesting raptors and migratory birds, including cliff swallows, project activities will occur, where possible, outside the nesting season. The nesting season is generally February 1-August 31.*

Measure 2 – Pre-construction Survey (Site 11): *If project activities must occur during the nesting season (February 1-August 31), a qualified biologist will conduct pre-construction surveys for active raptor and migratory bird nests within 30 days of the onset of these activities. For migratory birds and raptors, the survey area will include all BSAs and a 250-foot buffer area surrounding each BSA. If no active nests are found within the survey area, no further mitigation is required.*

Measure 3 – Establish Buffers (Site 11): *Should any active nests be discovered within the survey area, the biologist will determine appropriate construction setback distances*

based on applicable CDFW guidelines and/or the biology of the affected species. Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged. For cliff swallows, if project activities are expected to occur within the nesting season, netting, or another exlusionary device should be installed prior to the nesting season to prevent cliff swallows from nesting under the bridge site. Such netting should be monitored by a qualified biologist periodically during construction to ensure that the netting, or other exllusionary device, is preventing active nesting by cliff swallows.

Measure 4 – Bats (Site 11): *To avoid effects to bats, a qualified biologist will conduct pre-construction surveys for bats within the crevices of the bridge structure within 30 days of the onset of construction activities. If no evidence of bats are found within the bridge, no further mitigation is required. If it is determined that bats are using the bridge structure, it should be determined by the biologist whether the use is for maternal roosting (generally May – August). If it is not a maternal roost site, exclusionary devices will be installed so the bats cannot use the bridge for roosting during construction and will relocate. These devices should be installed during the non maternal and non-mating season (generally September – February). After the exclusionary devices have been installed, the contractor must wait seven days before work can commence. By waiting the seven days, the bats can exit the bridge and relocate. Once these devices have been installed, they must be maintained by the contractor and kept in good working order. Work on the bridge deck can occur anytime without work window restrictions.*

Measure 6 – Wetland Avoidance (Site 11): *In order to avoid temporary wetland impacts associated with the construction staging area, move the construction staging area to a non-wetland area.*

Measure 7 – Permit Authorization for Impacts to Jurisdictional Waters (Site 11): *Prior to any impacts to jurisdictional areas, the project proponent shall consult the USACE, RWQCB, and CDFW for the appropriate autorizations as follows:*

- *Section 404 Compliance: The project is anticipated to be exempt under the Maintenance exemption; however, that determination should be provided by the Army Corps of Engineers. If the Maintenance exemption does not apply, then the project should be eligible for a Nationwide Permit (i.e. NWP 3 Maintenance Activities, or NWP 14 Linear Transportation Projects).*

- *Section 401 Compliance: The project requires a Section 401 Water Quality certification to be issued by the Regional Water Quality Control Board.*

- *Section 1600 Compliance: The project requires a Section 1600 Streambed Alteration Agreement to be issued by the California Department of Fish and Wildlife.*

6.8. Avoidance and Minimization Measures for Site 12 (Bridge Number 42C0328 - Mud Creek at Zediker Avenue)

Implementation of the following measures at bridge Site 12 will reduce potential project effects to nesting raptors, migratory birds, bats, and spiny-sepaled button-celery to a low to negligible level, and will ensure that the bridge project is in compliance with state and federal laws protecting such species.

Measure 1 – Avoidance (Site 12): *In order to avoid effects to nesting raptors and migratory birds, including cliff swallows, project activities will occur, where possible, outside the nesting season. The nesting season is generally February 1-August 31.*

Measure 2 – Pre-construction Survey (Site 12): *If project activities must occur during the nesting season (February 1-August 31), a qualified biologist will conduct pre-construction surveys for active raptor and migratory bird nests within 30 days of the onset of these activities. For migratory birds and raptors, the survey area will include all BSAs and a 250-foot buffer area surrounding each BSA. If no active nests are found within the survey area, no further mitigation is required.*

Measure 3 – Establish Buffers (Site 12): *Should any active nests be discovered within the survey area, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged. For cliff swallows, if project activities are expected to occur within the nesting season, netting, or another exlusionary device should be installed prior to the nesting season to prevent cliff swallows from nesting under the bridge site. Such netting should be monitored by a qualified biologist periodically during construction to ensure that the netting, or other exllusionary device, is preventing active nesting by cliff swallows.*

Measure 4 – Bats (Site 12): *To avoid effects to bats, a qualified biologist will conduct pre-construction surveys for bats within the crevices of the bridge structure within 30*

days of the onset of construction activities. If no evidence of bats are found within the bridge, no further mitigation is required. If it is determined that bats are using the bridge structure, it should be determined by the biologist whether the use is for maternal roosting (generally May – August). If it is not a maternal roost site, exclusionary devices will be installed so the bats cannot use the bridge for roosting during construction and will relocate. These devices should be installed during the non maternal and non-mating season (generally September – February). After the exclusionary devices have been installed, the contractor must wait seven days before work can commence. By waiting the seven days, the bats can exit the bridge and relocate. Once these devices have been installed, they must be maintained by the contractor and kept in good working order. Work on the bridge deck can occur anytime without work window restrictions.

Measure 5 (Site 12): *Preconstruction surveys for spiny-sepaled button-celery (Eryngium spinosepalum) (1B) shall be conducted no more than 14 days prior to the beginning of ground disturbance and/or construction activities. Written results of preconstruction surveys must be maintained by the County within five days after survey completion and prior to the start of ground disturbance and/or construction activities. If this species is found, the plant location(s) will be marked and mapped for avoidance. If avoidance is not possible, the individual plants that can not be avoided will be hand excavated and immediately relocated to a replanting site located just outside the area requiring disturbance, or another acceptable location. The replanting site will contain similar suitable habitat conditions, within the BSA, and will be located outside the proposed construction zone. The surveys, excavation, and replanting will be performed by a qualified botanist. The re-planting area will be fenced to prevent cattle or other undesirable entry into the replanting area. The replanting area will be monitored for three years to determine the success of replanting efforts. Success is determined by the number of relocated plants that survive the transplantation. If the success rate after three years is below 75%, consultation with CDFW will be required to develop appropriate remediation plans.*

Measure 6 – Permit Authorization for Impacts to Jurisdictional Waters (Site 12): *Prior to any impacts to jurisdictional areas, the project proponent shall consult the USACE, RWQCB, and CDFW for the appropriate autorizations as follows:*

- *Section 404 Compliance: The project is anticipated to be exempt under the Maintenance exemption; however, that determination should be provided by the Army Corps of Engineers. If the Maintenance exemption does not apply, then the*

project should be eligible for a Nationwide Permit (i.e. NWP 3 Maintenance Activities, or NWP 14 Linear Transportation Projects).

- *Section 401 Compliance: The project requires a Section 401 Water Quality certification to be issued by the Regional Water Quality Control Board.*
- *Section 1600 Compliance: The project requires a Section 1600 Streambed Alteration Agreement to be issued by the California Department of Fish and Wildlife.*

7. Permits Required

7.1. Plants/Wildlife

There are no permits related to plants/wildlife that are needed for this project based on the surveys and expectation that avoidance and minimization measure are feasible for the project. However, there is a possibility that if construction activities at Site 5 and 6 cannot occur outside the nesting season then a permit would be warranted from the CDFW for incidental take of Swainson's hawk.

7.2. Wetlands

Section 404 Compliance: The project is anticipated to be exempt under the Maintenance exemption; however, that determination should be provided by the Army Corps of Engineers. If the Maintenance exemption does not apply, then the project should be eligible for a Nationwide Permit (i.e. NWP 3 Maintenance Activities, or NWP 14 Linear Transportation Projects).

Section 401 Compliance: The project requires a Section 401 Water Quality certification to be issued by the Regional Water Quality Control Board.

Section 1600 Compliance: The project requires a Section 1600 Streambed Alteration Agreement to be issued by the California Department of Fish and Wildlife.

8. References

Barbour and Major. 1988. Terrestrial vegetation of California.

California Department of Fish and Game. 2015. California Natural Diversity Data Base (CNDDB RareFind 3).

Skinner, Mark W. and Bruce M. Pavlik, Eds. 2001. California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California.

Sawyer, John and Todd Keeler-Wolf. 1995. Manual of California Vegetation.

Hickman, James C. 1993. Jepson Manual: Higher Plants of California.

California Dept. of Fish and Game. 2012. "Special Plants List" Natural Diversity Database.

California Dept. of Fish and Game. 2012. "Special Animals List" Natural Diversity Database.

California Dept. of Fish and Game. 2012. "Special Vascular Plants Bryophytes, and Lichens List" Natural Diversity Database.

Army Corps of Engineers. 1987. Wetland Delineation Manual.

United States Fish and Wildlife Service. 2015. Environmental Conservation Online System (ECOS). Species Reports, "Species by County Report."

9. Appendix A Special Status Species (CNDDB Search and USFWS Official Lists)

Table 1: Special Status Species Lists

SPECIES	*STATUS*	*HABITAT*	*PRESENCE /ABSENCE*	*RATIONAL*
Invertebrates				
Conservancy fairy shrimp *Branchinecta conservatio*	FE; --	Endemic to the grasslands of the northern two thirds of the Central Valley; found in large, turbid pools. Inhabit astatis pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.	Absent	Appropriate vernal pool habitat is not present within the APE.
vernal pool fairy shrimp *Branchinecta lynchi*	FE; --	Endemic to the grasslands of the central valley, central coast mtns, and south coast mtns, in astatic rain-filled pools. Inhabit small, clear-water sandstone-dression pools and grassed swale, earth slump, or basalt-flow depression pools.	Absent	Appropriate vernal pool habitat is not present within the APE.
Amphibians/Reptiles				
California tiger salamander Ambystoma californiense	FT; CT	Needs underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Absent	Not observed during field surveys. No evidence of documented occurrences within APE or immediately adjacent.
Blunt-Nosed Leopard lizard *Gambelia silus*	FE; CE	Sparsely vegetated alkali and desert scrub habitats in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such as fence posts; they do not excavate their own burrows.	Absent	Not observed during field surveys. No suitable habitat present in APE.
California red-legged frog *Rana draytonii*	FT; CSC	Streams, freshwater pools, and ponds with emergent or overhanging vegetation	Absent	Not observed during field surveys. No evidence of documented occurrences within APE or immediately adjacent.
foothill yellow-legged frog *Rana boylii*	-- ; CSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.	Absent	Not observed during field surveys. No evidence of documented occurrences within APE or immediately adjacent.
giant garter snake *Thamnophis gigas*	FT; CT	Freshwater marshes, sloughs, ponds, small lakes or low gradient streams with adjacent upland areas. Also has adapted to drainage canals, irrigation ditches, and agricultural wetlands especially flooded rice fields.	Absent	Not observed during field surveys. Mobile species, with documented occurrences in the region make it possible to be present at any given time.
western pond turtle *Emys marmorata*	-- ; CSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 KM from water for egg-laying.	Absent	Not observed during field surveys. No evidence of documented occurrences within APE or immediately adjacent. Optimal habitat not present.
Birds				
Raptors (birds of prey: falcons, hawks, owls, etc.) and other migratory and resident birds	MBTA; §3503.5 DFG Code	Large trees and riparian woodlands for nesting.	Absent	Not observed during field surveys. No evidence of nesting activity other then what is described for Swainson's hawk. Highly mobile species, with documented occurrences in the region make it possible to be present at any given time.
California condor *Gymnogyps californianus*	FE; CE	Requires vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude.	Absent	Not observed during field surveys. No evidence of nesting activity.

SPECIES	*STATUS*	*HABITAT*	*PRESENCE /ABSENCE*	*RATIONAL*
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT; CE	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers. Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley oak riparian habitats where scrub jays are abundant	Absent	Not observed during field surveys. No evidence of documented occurrences within APE or immediately adjacent. Optimal habitat not present.
Swainson's hawk *Buteo swainsoni*	--/T/Yes	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County	Active nest site present near Site 5 and 6, potentially present at other sites at times	Observed during field surveys at Site 5 and 6. Not observed at other sites. Highly mobile species, with documented occurrences in the region make it possible to be present at any given time.
Fishes				
Delta smelt *Hypomesus transpacificus*	FT; CE	Shallow, tidal water in Sacramento/ San Joaquin River Delta	Absent	No suitable habitat present in APE.
Mammals				
Giant kangaroo rat *Dipodomys ingens*	FE; CE	Occupies dry, sandy grasslands and digs burrows in loose soil. Lives in colonies in isolated areas west of the San Joaquin Valley, including the Carrizo Plain, the Elkhorn Plain, and the Kettleman Hills.	Absent	Not observed during field surveys. No evidence of documented occurrences within APE or immediately adjacent. Optimal habitat not present.
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	FE ; CE	Saltbrush scrub and sink scrub communities in Tulare Lake basin of the southern San Joaquin Valley. Needs soft friable soils which escape seasonal flooding. Digs burrows in elevated soil mounds at bases of shurbs.	Absent	Not observed during field surveys. No evidence of documented occurrences within APE or immediately adjacent. Optimal habitat not present.
Fresno kangaroo rat *Dipodomys nitratoides exilis*	FE ; CE	Alkali sink-open grassland habitats in western Fresno County. Bare alkaline clay-based soils subject to seasonal inundation, with more firable soil mounds around shrubs and grasses.	Absent	Not observed during field surveys. No evidence of documented occurrences within APE or immediately adjacent. Optimal habitat not present.
short-nosed kangaroo rat *Dipodomys nitratoides brevinasus*	-- ; CSC	Western side of San Joaquin Valley in Grassland and desert shrub associations, especially atriplex. Occurs in highly alkaline soils around soda lake. Needs friable soils. Favors flat to gently sloping terrain.	Absent	Not observed during field surveys. No evidence of documented occurrences within APE or immediately adjacent. Optimal habitat not present.
San Joaquin Pocket Mouse *Perognathus inornatus*	-- ; --	Grassland, oak savanna and arid scrubland in the southern Sacramento Valley, Salinas Valley, San Joaquin Valley, and Adja. Associated with fine-textured, sandy, friable soils.	Absent	Not observed during field surveys. No evidence of documented occurrences within APE or immediately adjacent. Optimal habitat not present.
San Joaquin kit fox *Vulpes macrotis mutica*	FE; CT	Annual grasslands or grassy open stages with scattered shrubbery vegetation. Need loose textured sandy soils for burrowing, and suitable prey base.	Possibly present at times	Not observed during field surveys. No evidence of denning activity. Highly mobile species, with documented occurrences in the region make it possible to be present as a transient at any given time.
Plants				
San Mateo thornmint *Acanthomintha duttonii*	FE;CE ; 1B	Chaparral, valley and foothill grassland, uncommon serpentine vertisol clays; in relatively open areas. 50-300 M.	Absent	Not observed during field surveys.
Fleshy owl's-clover (aka succulent owl's clover) *Castilleja campestris ssp. succulenta*	FT;CE;1B	Vernal pools. 50-750 M.	Absent	Not observed during field surveys.
spiny-sepaled button-celery	- ; - ; 1B	Vernal pools, valley and foothill grassland, Some sites on clay soils of	Absent	Not observed during field surveys.

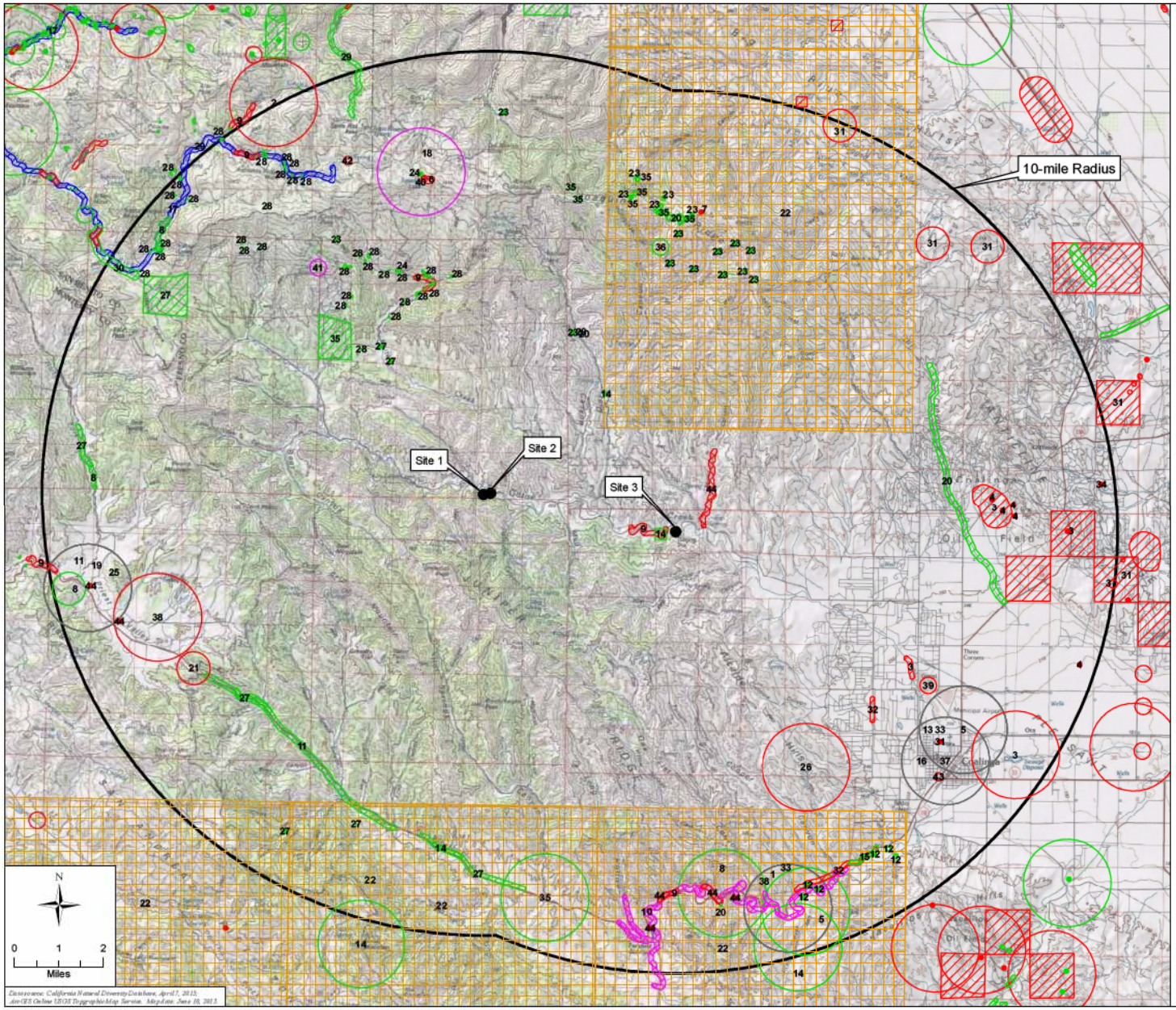
SPECIES	*STATUS*	*HABITAT*	*PRESENCE /ABSENCE*	*RATIONAL*
Eryngium spinosepalum		granitic origin; vernal pools within grassland 80-255M.		
California satintail *Imperata brevifolia*	- ; - ; 1B	Coastal scrub, chaparral, riparian scrub, mojavean scrub, meadows and seeps (alkali), riparian scrub. Mesic sites, alkali sites, riparian areas 0-1215 M.	Absent	Not observed during field surveys.
San Joaquin wooly-threads *Monolopia (=lembertia) congdonii*	FE; - ; 1B	Chenopod, valley and foothill grassland. Alkaline or loamy plains; sandy soils, often with grasses and within chenopod scrub. 60-800 M.	Absent	Not observed during field surveys.
San Joaquin Adobe sunburst *Pseudobahia peirsonii*	FT;CE;1B	Valley and foothill grassland, cismontane woodland. Grassy valley floors and rolling foothills in heavy clay soils. 90-800 M.	Absent	Not observed during field surveys.
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	FT;CE;1B	Vernal pools. 15-660M.	Absent	Not observed during field surveys.
Keck's Checker-mallow *Sidalcea keckii*	FE; - ; 1B	Cismontane woodland, valley and foothill grassland. Grassy slopes in blue oak woodland. 75-650 M.	Absent	Not observed during field surveys.
Greene's tuctoria *Tuctoria greenei*	FE;CR ; 1B	Vernal pools. 30-1070M.	Absent	Not observed during field surveys.
Communities				
Great Valley Mixed Riparian Forest			Absent.	Not observed during field surveys.

SOURCE: CDFW CNDDB, USFWS OFFICIAL SPECIES LIST, 2016

Abbreviations:

FE	Federal Endangered	FT	Federal Threatened
FC	Federal Candidate	FPD	Federal proposed for delisting
FPT	Federal proposed threatened	FD	Federal delisted
MBTA	Protected by Migratory Bird Treaty Act	CE	California Endangered Species
CT	California Threatened	CR	California Rare (Protected by Native Plant Protection Act)
CSC	CDFW Species of Special Concern	CC	State candidate for listing
1B	CNPS - Rare, Threatened, or Endangered		

10. Appendix B CNDDB Search (10-mile)



BMP SCOUR MITIGATION PROJECT

Figure X.X: California Natural Diversity Database
10-mile Radius Search - Sites 1-3

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (80m)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (non-specific)
- Terrestrial Comm. (circular)
- Aquatic Comm. (80m)
- Aquatic Comm. (specific)
- Aquatic Comm. (non-specific)
- Aquatic Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's

Species occurrences within 10-mile radius

Label	Common Name	Count
1	American badger	1
2	big-eared kangaroo rat	1
3	blunt-nosed leopard lizard	5
4	burrowing owl	5
5	California jewelflower	2
6	California linderiella	1
7	coast horned lizard	1
8	Diablo Range hare-leaf	4
9	foothill yellow-legged frog	6
10	Great Valley Mesquite Scrub	1
11	Hernandez spineflower	2
12	Hoover's eriastrum	2
13	Hopping's blister beetle	1
14	Indian Valley bush-mallow	5
15	Lemmon's jewelflower	1
16	Morrison's blister beetle	1
17	North Central Coast Drainage Sacramento Sucker/Roach River	1
18	Northern Vernal Pool	1
19	oval-leaved snapdragon	1
20	pale-yellow layia	4
21	pallid bat	1
22	prairie falcon	5
23	prostrate vernal pool navarretia	15
24	rayless layia	2
25	recurved larkspur	1
26	redheaded sphecid wasp	1
27	round-leaved filaree	8
28	San Benito evening-primrose	18
29	San Benito fritillary	2
30	San Benito pentachaeta	1
31	San Joaquin kit fox	6
32	San Joaquin whipsnake	2
33	San Joaquin woolly threads	2
34	short-nosed kangaroo rat	1
35	showy golden madia	5
36	stinkbells	1
37	Swainson's hawk	1
38	Townsend's big-eared bat	2
39	tricolored blackbird	1
40	two-striped garter snake	1
41	Valley Needlegrass Grassland	1
42	Wasbauer's protodufourea bee	1
43	western mastiff bat	1
44	western pond turtle	7

Data source: California Natural Diversity Database, April 7, 2013;
ArcGIS Online USGS Topographic Map Service. Map date: June 10, 2013.

De Novo Planning Group
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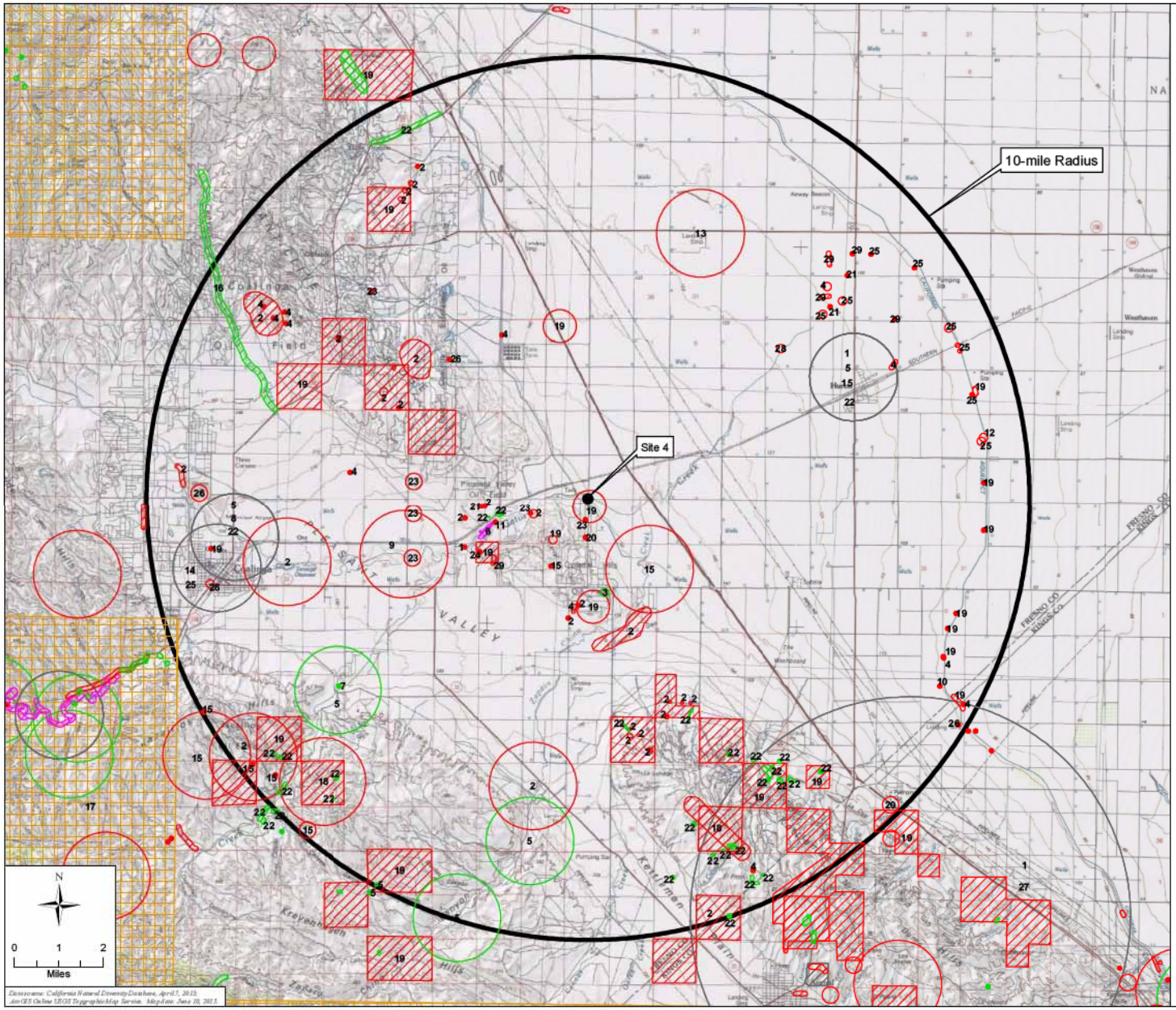


BMP SCOUR MITIGATION PROJECT

Figure X.X: California Natural Diversity Database
10-mile Radius Search - Site 4

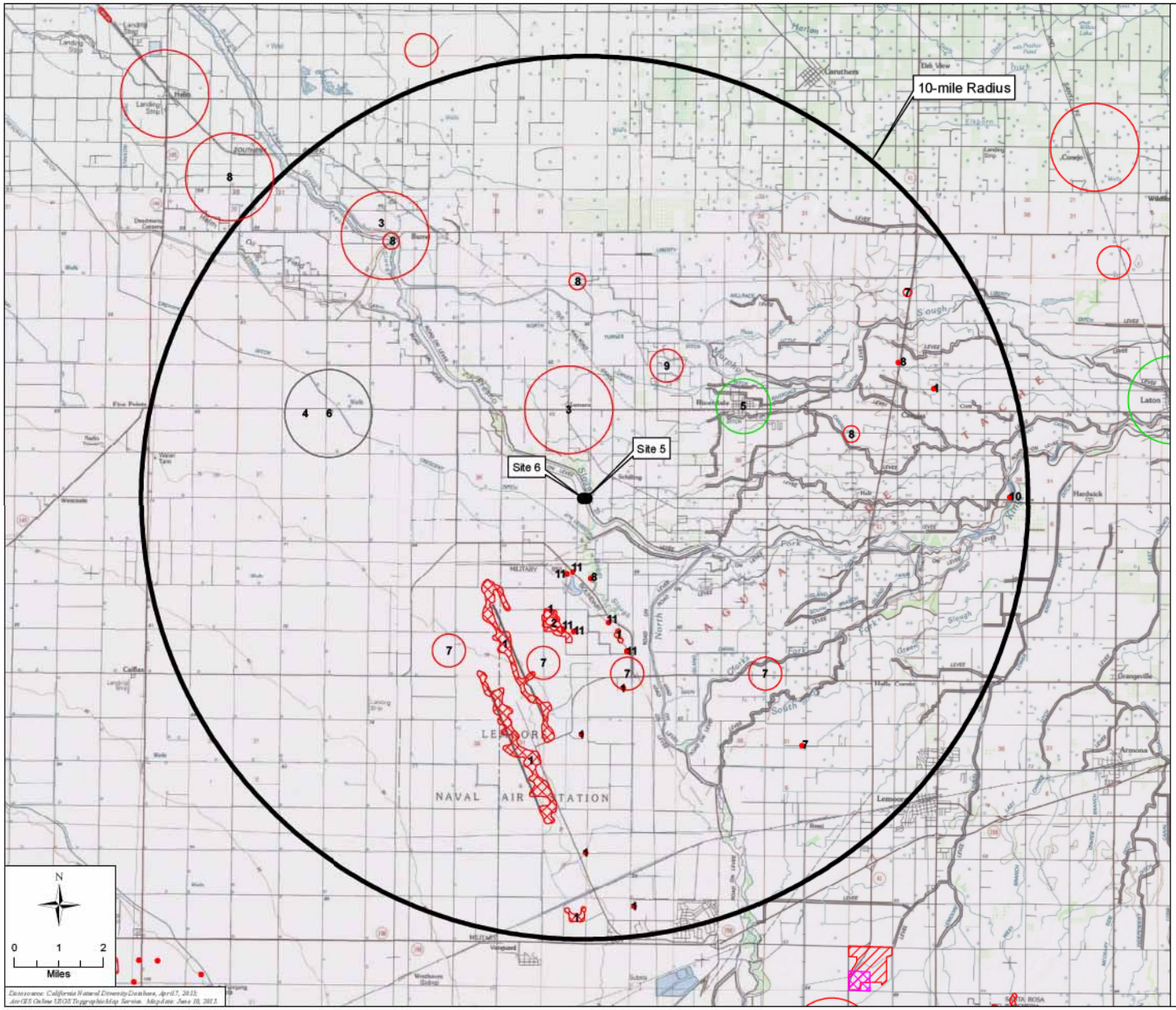
- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (80m)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (non-specific)
- Terrestrial Comm. (circular)
- Aquatic Comm. (80m)
- Aquatic Comm. (specific)
- Aquatic Comm. (non-specific)
- Aquatic Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's

Species occurrences within 10-mile radius

Label	Common Name	Count
1	American badger	3
2	blunt-nosed leopard lizard	22
3	brittlescale	1
4	burrowing owl	t2
5	California jewelflower	6
6	Great Valley Mesquite Scrub	1
7	Hoover's eriastrum	1
8	Hopping's blister beetle	1
9	Le Conte's thrasher	1
10	loggerhead shrike	1
11	long-eared owl	1
12	merlin	1
13	molestan blister beetle	1
14	Morrison's blister beetle	1
15	Nelson's antelope squirrel	8
16	pale-yellow layia	1
17	prairie falcon	1
18	San Joaquin dune beetle	2
19	San Joaquin kit fox	21
20	San Joaquin Pocket Mouse	2
21	San Joaquin whipsnake	3
22	San Joaquin woollythreads	t9
23	short-nosed kangaroo rat	6
24	silvery legless lizard	1
25	Swainson's hawk	9
26	tricolored blackbird	3
27	Tulare grasshopper mouse	1
28	western mastiff bat	2
29	western spadefoot	5

Data source: California Natural Diversity Database, April 7, 2013;
ArcGIS Online USGS Topographic Map Service. Map date: June 10, 2013.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm



BMP SCOUR MITIGATION PROJECT

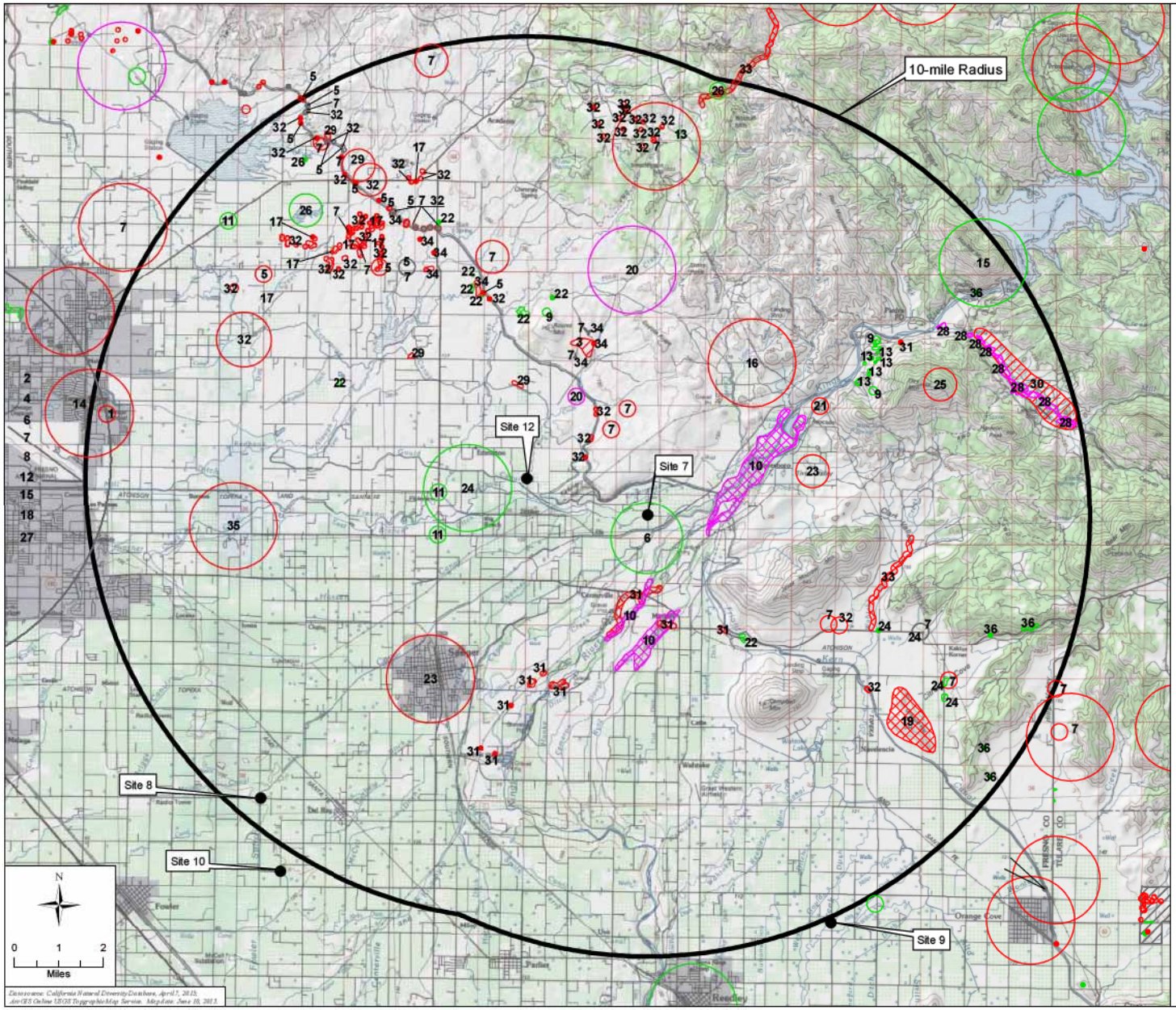
Figure X.X: California Natural Diversity Database
10-mile Radius Search - Sites 5 and 6

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (80m)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (non-specific)
- Terrestrial Comm. (circular)
- Aquatic Comm. (80m)
- Aquatic Comm. (specific)
- Aquatic Comm. (non-specific)
- Aquatic Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's

Species occurrences within 10-mile radius

Label	Common Name	Count
1	burrowing owl	10
2	Fresno kangaroo rat	1
3	giant garter snake	2
4	Munz's tidy-tips	1
5	Panoche pepper-grass	1
6	recurved larkspur	1
7	San Joaquin kit fox	6
8	Swainson's hawk	6
9	tricolored blackbird	1
10	valley elderberry longhorn beetle	1
11	western spadefoot	6

Data source: California Natural Diversity Database, April 7, 2013;
ArcGIS Online USGS Topographic Map Service. Map date: June 10, 2013.



BMP SCOUR MITIGATION PROJECT

Figure X.X: California Natural Diversity Database
10-mile Radius Search - Sites 7 and 12

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (80m)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (non-specific)
- Terrestrial Comm. (circular)
- Aquatic Comm. (80m)
- Aquatic Comm. (specific)
- Aquatic Comm. (non-specific)
- Aquatic Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's

Species occurrences within 10-mile radius

Label	Common Name	Count
1	American badger	1
2	Antioch efferian robberfly	1
3	burrowing owl	1
4	California jewelflower	1
5	California linderiella	15
6	California satintail	2
7	California tiger salamander	22
8	*caper-fruited tropidocarpum*	1
9	forked hare-leaf	3
10	Great Valley Mixed Riparian Forest	3
11	Greene's tuctoria	3
12	Hurd's metapogon robberfly	1
13	Keck's checkerbloom	2
14	least Bell's vireo	1
15	Madera leptosiphon	2
16	marbled harvestman	1
17	midvalley fairy shrimp	4
18	midestan blister beetle	1
19	Moody's gnaphosid spider	1
20	Northern Hardpan Vernal Pool	2
21	Piedra harvestman	1
22	San Joaquin adobe sunburst	6
23	San Joaquin kit fox	2
24	spiny-sepaled button-celery	4
25	spotted bat	1
26	succulent owl's-clover	3
27	Swainson's hawk	1
28	Sycamore Alluvial Woodland	1
29	tricolored blackbird	4
30	Tulare cuckoo wasp	1
31	valley elderberry longhorn beetle	10
32	vernal pool fairy shrimp	22
33	western pond turtle	2
34	western spadefoot	8
35	western yellow-billed cuckoo	1
36	Winter's sunflower	5

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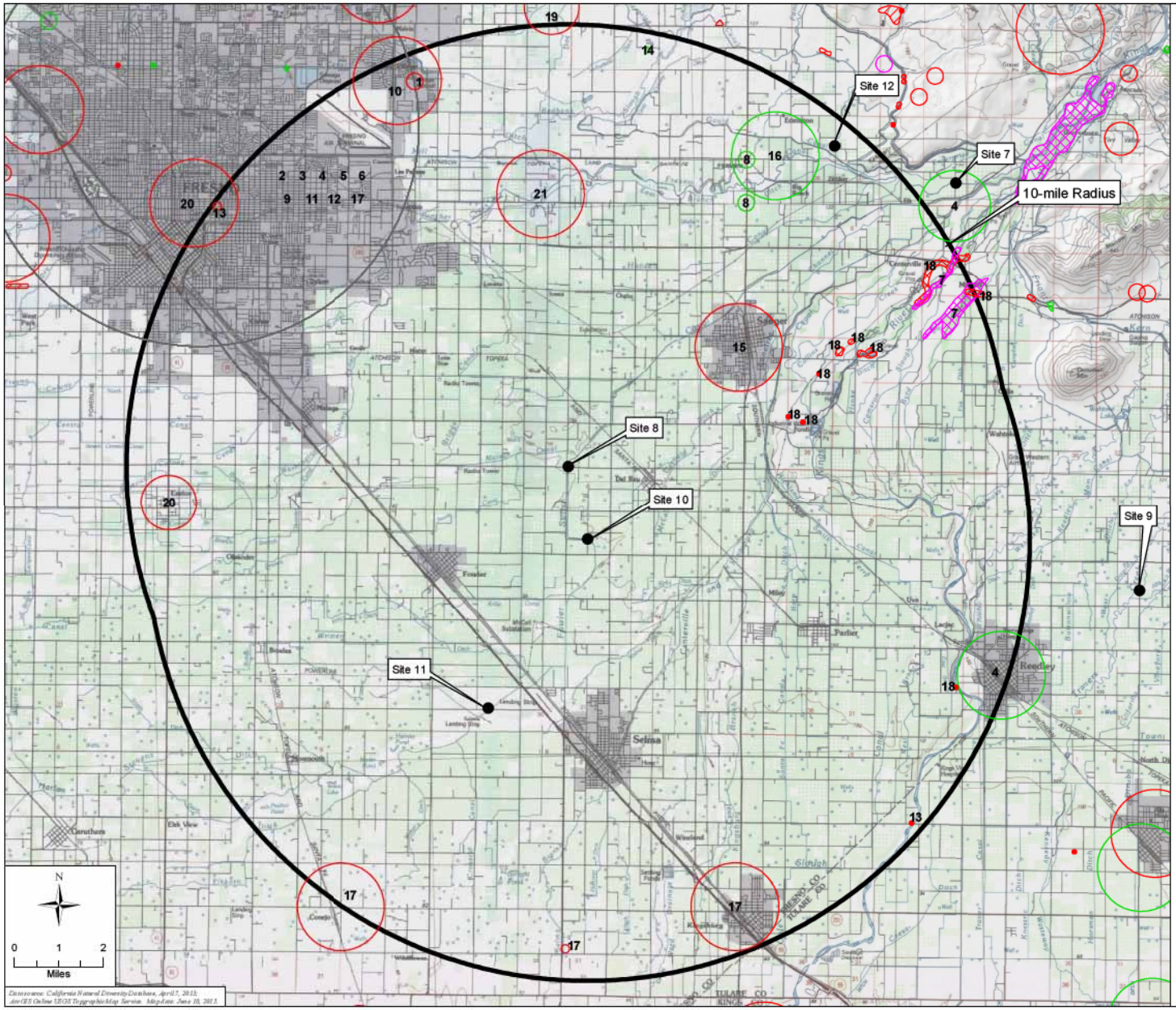


BMP SCOUR MITIGATION PROJECT

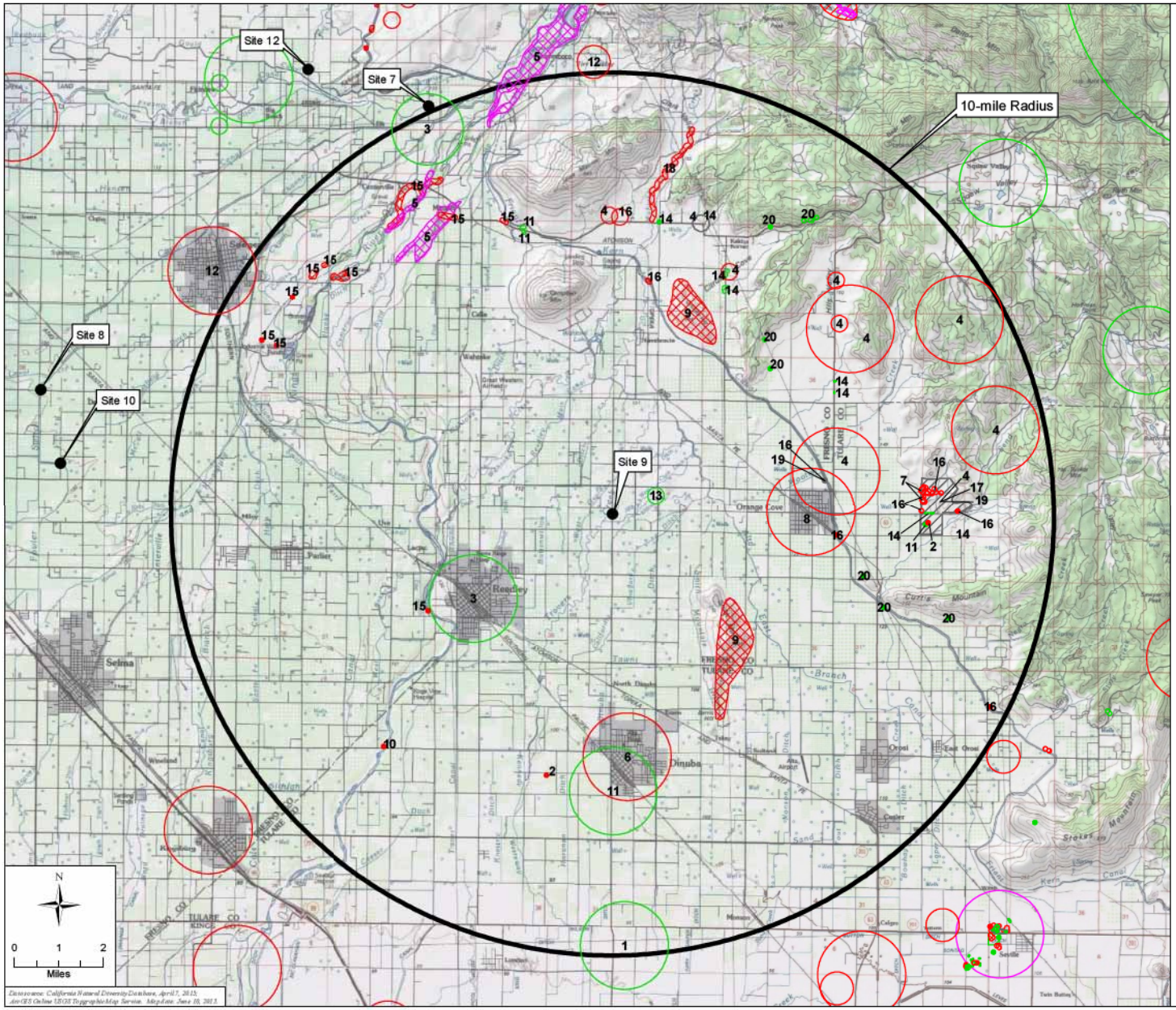
Figure X.X: California Natural Diversity Database
10-mile Radius Search - Sites 8 and 10

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (80m)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (non-specific)
- Terrestrial Comm. (circular)
- Aquatic Comm. (80m)
- Aquatic Comm. (specific)
- Aquatic Comm. (non-specific)
- Aquatic Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's

Species occurrences within 10-mile radius

Label	Common Name	Count
1	American badger	1
2	Antioch efferian robberfly	1
3	California jewelflower	1
4	California seablet	3
5	California tiger salamander	1
6	caper-fruited tropidocarpum	1
7	Great Valley Mixed Riparian Forest	2
8	Greene's tuctoria	2
9	Hurd's metapogon robberfly	1
10	least Bell's vireo	1
11	Madera leptosiphon	1
12	molestan blister beetle	1
13	pallid bat	2
14	San Joaquin adobe sunburst	1
15	San Joaquin kit fox	1
16	spiny-sepaled button-celery	1
17	Swainson's hawk	4
18	valley elderberry longhorn beetle	9
19	vernal pool fairy shrimp	1
20	western mastiff bat	2
21	western yellow-billed cuckoo	1

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm



BMP SCOUR MITIGATION PROJECT

Figure X.X: California Natural Diversity Database
10-mile Radius Search - Site 9

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (80m)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (non-specific)
- Terrestrial Comm. (circular)
- Aquatic Comm. (80m)
- Aquatic Comm. (specific)
- Aquatic Comm. (non-specific)
- Aquatic Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's

Species occurrences within 10-mile radius

Label	Common Name	Count
1	brittlescale	1
2	burrowing owl	2
3	California satintail	2
4	California tiger salamander	10
5	Great Valley Mixed Riparian Forest	3
6	hoary bat	1
7	midvalley fairy shrimp	1
8	molestan blister beetle	1
9	Moody's gnaphosid spider	2
10	pallid bat	1
11	San Joaquin adobe sunburst	3
12	San Joaquin kit fox	2
13	San Joaquin Valley Orcutt grass	1
14	spiny-sepaled button-celery	5
15	valley elderberry longhorn beetle	10
16	vernal pool fairy shrimp	7
17	vernal pool tadpole shrimp	1
18	western pond turtle	1
19	western spadefoot	2
20	Winter's sunflower	7

11. Appendix C USFWS Official 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: 08ESMF00-2016-SLI-1049 March 11, 2016
Event Code: 08ESMF00-2016-E-02286
Project Name: Fresno BPMP Site 1

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: Fresno BPMP Site 1

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: 08ESMF00-2016-SLI-1049
Event Code: 08ESMF00-2016-E-02286

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: Fresno BPMP Site 1
Project Description: Site 1 (Bridge Number 42C0459 - Los Gatos Creek at Los Gatos Road)

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.

United States Department of Interior
Fish and Wildlife Service

Project name: Fresno BPMP Site 1

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-120.54996002642359 36.22758217316043, -120.54941045682693 36.227751312498555, -120.54894925072391 36.227678116262204, -120.54872083918244 36.22681634397326, -120.54965137568982 36.226739519166905, -120.54988629843278 36.22687594166872, -120.54962668823069 36.227159956472306, -120.54996002642359 36.22758217316043)))

Project Counties: Fresno, CA

United States Department of Interior
Fish and Wildlife Service

Project name: Fresno BPMP Site 1

Endangered Species Act Species List

There are a total of 7 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: Entire	Threatened	Final designated	
California tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Birds			
California condor *(Gymnogyps californianus)* Population: Entire, except where listed as an experimental population	Endangered	Final designated	
Crustaceans			
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Entire	Threatened	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)*	Threatened	Final designated	

Population: Entire			
Mammals			
Giant kangaroo rat *(Dipodomys ingens)* Population: Entire	Endangered		
San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: wherever found	Endangered		

United States Department of Interior
Fish and Wildlife Service

Project name: Fresno BPMP Site 1

Critical habitats that lie within your project area

There are no critical habitats within your project area.

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: 08ESMF00-2016-SLI-1050 March 11, 2016
Event Code: 08ESMF00-2016-E-02287
Project Name: Site 2

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: Site 2

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: 08ESMF00-2016-SLI-1050
Event Code: 08ESMF00-2016-E-02287

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: Site 2
Project Description: Site 2 (Bridge Number 42C0458 - Los Gatos Creek at Los Gatos Road)

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.

United States Department of Interior
Fish and Wildlife Service

Project name: Site 2

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-120.54721771496673 36.227754018991256, -120.5470131004589 36.22784732193048, -120.5466273771726 36.22792202907746, -120.54612117213591 36.22786102757097, -120.54601167020225 36.227588528555685, -120.54620133627625 36.227552164775744, -120.54620914102303 36.227407793361614, -120.54661623695404 36.22742223955826, -120.54706978023573 36.227619011081664, -120.54721771496673 36.227754018991256)))

Project Counties: Fresno, CA

United States Department of Interior
Fish and Wildlife Service

Project name: Site 2

Endangered Species Act Species List

There are a total of 7 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: Entire	Threatened	Final designated	
California tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Birds			
California condor *(Gymnogyps californianus)* Population: Entire, except where listed as an experimental population	Endangered	Final designated	
Crustaceans			
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Entire	Threatened	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)*	Threatened	Final designated	

Population: Entire			
Mammals			
Giant kangaroo rat *(Dipodomys ingens)* Population: Entire	Endangered		
San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: wherever found	Endangered		

United States Department of Interior
Fish and Wildlife Service

Project name: Site 2

Critical habitats that lie within your project area

There are no critical habitats within your project area.

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: 08ESMF00-2016-SLI-1051 March 11, 2016
Event Code: 08ESMF00-2016-E-02288
Project Name: Site 3

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: Site 3

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: 08ESMF00-2016-SLI-1051
Event Code: 08ESMF00-2016-E-02288

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

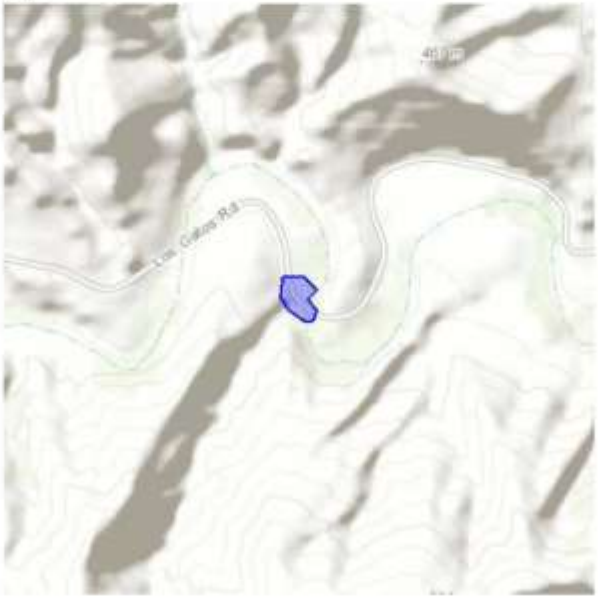
Project Name: Site 3
Project Description: Site 3 (Bridge Number 42C0455 - Los Gatos Creek at Los Gatos Road)

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.

United States Department of Interior
Fish and Wildlife Service

Project name: Site 3

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-120.47132009987628 36.2164897821294, -120.47090503110924 36.216178716055985, -120.471179917512 36.21593020149776, -120.47088434077648 36.21566084892596, -120.47102746336819 36.21539672372076, -120.47128539943671 36.21536198533267, -120.47179015722364 36.21564817469717, -120.47204806908839 36.21597684707537, -120.47198232123708 36.21650548409464, -120.47132009987628 36.2164897821294)))

Project Counties: Fresno, CA

United States Department of Interior
Fish and Wildlife Service

Project name: Site 3

Endangered Species Act Species List

There are a total of 9 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: Entire	Threatened	Final designated	
California tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Birds			
California condor *(Gymnogyps californianus)* Population: Entire, except where listed as an experimental population	Endangered	Final designated	
Crustaceans			
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Entire	Threatened	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)*	Threatened	Final designated	

Population: Entire			
Mammals			
Giant kangaroo rat *(Dipodomys ingens)* Population: Entire	Endangered		
San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: wherever found	Endangered		
Reptiles			
Blunt-Nosed Leopard lizard *(Gambelia silus)* Population: Entire	Endangered		
Giant Garter snake *(Thamnophis gigas)* Population: Entire	Threatened		

United States Department of Interior
Fish and Wildlife Service

Project name: Site 3

Critical habitats that lie within your project area

There are no critical habitats within your project area.

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: 08ESMF00-2016-SLI-1052 March 11, 2016
Event Code: 08ESMF00-2016-E-02289
Project Name: Site 4

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: Site 4

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: 08ESMF00-2016-SLI-1052
Event Code: 08ESMF00-2016-E-02289

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: Site 4
Project Description: Site 4 (Bridge Number 42C0097 - Arroyo Pasajero at El Dorado Avenue)

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.

United States Department of Interior
Fish and Wildlife Service

Project name: Site 4

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-120.21075146762759 36.16731941532797, -120.21035076975396 36.16731757494994, -120.21035180436763 36.16722118762299, -120.20993924004131 36.16709156200059, -120.20994698618473 36.16598394840397, -120.21040977534777 36.165986075456026, -120.21041292949775 36.16553467392998, -120.2108022170629 36.16553646175673, -120.21094732720809 36.16598854385898, -120.21093941087864 36.16712257484336, -120.21075284818755 36.16712171843614, -120.21075146762759 36.16731941532797)))

Project Counties: Fresno, CA

United States Department of Interior
Fish and Wildlife Service

Project name: Site 4

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: Entire	Threatened	Final designated	
California tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Crustaceans			
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Entire	Threatened	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)* Population: Entire	Threatened	Final designated	
Flowering Plants			
San Joaquin wooly-threads *(Monolopia (=lembertia) congdonii)*	Endangered		
San Mateo thornmint *(Acanthomintha*	Endangered		

obovata ssp. duttonii)			
Mammals			
Giant kangaroo rat *(Dipodomys ingens)* Population: Entire	Endangered		
San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: wherever found	Endangered		
Reptiles			
Blunt-Nosed Leopard lizard *(Gambelia silus)* Population: Entire	Endangered		
Giant Garter snake *(Thamnophis gigas)* Population: Entire	Threatened		

United States Department of Interior
Fish and Wildlife Service

Project name: Site 4

Critical habitats that lie within your project area

There are no critical habitats within your project area.

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: 08ESMF00-2016-SLI-1053 March 11, 2016
Event Code: 08ESMF00-2016-E-02290
Project Name: Site 5 and 6

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: Site 5 and 6

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: 08ESMF00-2016-SLI-1053
Event Code: 08ESMF00-2016-E-02290

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: Site 5 and 6
Project Description: Site 5 (Bridge Number 42C0104 - Fresno Slough at Excelsior Avenue)
Site 6 (Bridge Number 42C0367 - Fresno Slough Overflow at Excelsior Avenue)

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.

United States Department of Interior
Fish and Wildlife Service

Project name: Site 5 and 6

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-119.92696028353193 36.4015849782665, -119.9248740018832 36.40161898913269, -119.9248798157816 36.401852173071994, -119.92439389436272 36.40186008936867, -119.92433808204785 36.40152291432018, -119.92388767525748 36.40153025008116, -119.9238784328552 36.40115936326344, -119.92694841164598 36.401109328741924, -119.92696028353193 36.4015849782665)))

Project Counties: Fresno, CA | Kings, CA

United States Department of Interior
Fish and Wildlife Service

Project name: Site 5 and 6

Endangered Species Act Species List

There are a total of 9 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: Entire	Threatened	Final designated	
Crustaceans			
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Entire	Threatened	Final designated	
Vernal Pool tadpole shrimp *(Lepidurus packardi)* Population: Entire	Endangered	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)* Population: Entire	Threatened	Final designated	
Mammals			
Fresno kangaroo rat *(Dipodomys nitratoides exilis)* Population: Entire	Endangered	Final designated	

San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: wherever found	Endangered		
Tipton kangaroo rat *(Dipodomys nitratoides nitratoides)* Population: Entire	Endangered		
Reptiles			
Blunt-Nosed Leopard lizard *(Gambelia sila)* Population: Entire	Endangered		
Giant Garter snake *(Thamnophis gigas)* Population: Entire	Threatened		

United States Department of Interior
Fish and Wildlife Service

Project name: Site 5 and 6

Critical habitats that lie within your project area

There are no critical habitats within your project area.

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: 08ESMF00-2016-SLI-1054 March 11, 2016
Event Code: 08ESMF00-2016-E-02291
Project Name: Site 7

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: Site 7

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: 08ESMF00-2016-SLI-1054
Event Code: 08ESMF00-2016-E-02291

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: Site 7
Project Description: Site 7 (Bridge Number 42C0520 - Fresno Canal at Viau Avenue)

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.

United States Department of Interior
Fish and Wildlife Service

Project name: Site 7

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-119.4705117434284 36.75761299511953, -119.47012301752447 36.75760834731684, -119.47012802314067 36.7573373286768, -119.47001336802697 36.757335957560514, -119.47002207505024 36.7568645672588, -119.47052545163534 36.75687058612567, -119.47052443388145 36.756925706133394, -119.47084772039537 36.756951202523126, -119.47084267842284 36.75722432872283, -119.4705189914327 36.75722045952423, -119.4705117434284 36.75761299511953)))

Project Counties: Fresno, CA

United States Department of Interior
Fish and Wildlife Service

Project name: Site 7

Endangered Species Act Species List

There are a total of 9 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: Entire	Threatened	Final designated	
California tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Crustaceans			
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Entire	Threatened	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)* Population: Entire	Threatened	Final designated	
Flowering Plants			
Keck's Checker-mallow *(Sidalcea keckii)*	Endangered	Final designated	
Mammals			

Fresno kangaroo rat *(Dipodomys nitratoides exilis)* Population: Entire	Endangered	Final designated	
San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: wherever found	Endangered		
Reptiles			
Blunt-Nosed Leopard lizard *(Gambelia silus)* Population: Entire	Endangered		
Giant Garter snake *(Thamnophis gigas)* Population: Entire	Threatened		

United States Department of Interior
Fish and Wildlife Service

Project name: Site 7

Critical habitats that lie within your project area

There are no critical habitats within your project area.

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: 08ESMF00-2016-SLI-1055 March 11, 2016
Event Code: 08ESMF00-2016-E-02292
Project Name: Site 8

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: Site 8

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: 08ESMF00-2016-SLI-1055
Event Code: 08ESMF00-2016-E-02292

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: Site 8
Project Description: Site 8 (Bridge Number 42C0178 - Fowler Switch Canal at American Avenue)

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.

United States Department of Interior
Fish and Wildlife Service

Project name: Site 8

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-119.62831192102462 36.66371770988191, -119.62779080015648 36.6637145547088, -119.62778911310431 36.663430311995995, -119.62742829297221 36.66342353491509, -119.62742990593708 36.66310166267011, -119.62777242022922 36.66310809597162, -119.6277717037174 36.66298736906646, -119.62830138798473 36.66299117662484, -119.62830306085611 36.663272717652305, -119.62859342359899 36.66327835712942, -119.62859188446579 36.663433505566445, -119.62836731957755 36.663433598653185, -119.62834327918965 36.663467452339844, -119.62831086004063 36.66353915304085, -119.62831192102462 36.66371770988191)))

Project Counties: Fresno, CA

United States Department of Interior
Fish and Wildlife Service

Project name: Site 8

Endangered Species Act Species List

There are a total of 9 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: Entire	Threatened	Final designated	
California tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Birds			
Yellow-Billed Cuckoo *(Coccyzus americanus)* Population: Western U.S. DPS	Threatened	Proposed	
Crustaceans			
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Entire	Threatened	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)* Population: Entire	Threatened	Final designated	

Mammals			
Fresno kangaroo rat *(Dipodomys nitratoides exilis)* Population: Entire	Endangered	Final designated	
San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: wherever found	Endangered		
Reptiles			
Blunt-Nosed Leopard lizard *(Gambelia silus)* Population: Entire	Endangered		
Giant Garter snake *(Thamnophis gigas)* Population: Entire	Threatened		

United States Department of Interior
Fish and Wildlife Service

Project name: Site 8

Critical habitats that lie within your project area

There are no critical habitats within your project area.

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: 08ESMF00-2016-SLI-1056 March 11, 2016
Event Code: 08ESMF00-2016-E-02293
Project Name: Site 9

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: Site 9

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: 08ESMF00-2016-SLI-1056
Event Code: 08ESMF00-2016-E-02293

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: Site 9
Project Description: Site 9 (Bridge Number 42C0179 - Travers Creek at Alta Avenue)

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.

United States Department of Interior
Fish and Wildlife Service

Project name: Site 9

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-119.39504244773255 36.62367779393509, -119.39474521642305 36.623677175669116, -119.39474642020355 36.62347320705492, -119.39436076332531 36.62319813735356, -119.39454489824124 36.623030400664, -119.3945451615469 36.62294827073811, -119.39502291794507 36.622949743073114, -119.39502257303997 36.62300821973212, -119.39518210956953 36.62300855130513, -119.39523608486748 36.62295963662066, -119.39543250179564 36.62310045863547, -119.39504316604587 36.623453289923276, -119.39504244773255 36.62367779393509)))

Project Counties: Fresno, CA

United States Department of Interior
Fish and Wildlife Service

Project name: Site 9

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: Entire	Threatened	Final designated	
California tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Crustaceans			
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Entire	Threatened	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)* Population: Entire	Threatened	Final designated	
Flowering Plants			
San Joaquin Adobe sunburst *(Pseudobahia peirsonii)*	Threatened		
San Joaquin Orcutt grass *(Orcuttia*	Threatened	Final designated	

inaequalis)			
Mammals			
Fresno kangaroo rat *(Dipodomys nitratoides exilis)* Population: Entire	Endangered	Final designated	
San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: wherever found	Endangered		
Reptiles			
Blunt-Nosed Leopard lizard *(Gambelia silus)* Population: Entire	Endangered		
Giant Garter snake *(Thamnophis gigas)* Population: Entire	Threatened		

United States Department of Interior
Fish and Wildlife Service

Project name: Site 9

Critical habitats that lie within your project area

There are no critical habitats within your project area.

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: 08ESMF00-2016-SLI-1057 March 11, 2016
Event Code: 08ESMF00-2016-E-02294
Project Name: Site 10

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: Site 10

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: 08ESMF00-2016-SLI-1057
Event Code: 08ESMF00-2016-E-02294

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: Site 10
Project Description: Site 10 (Bridge Number 42C0531 - Fowler Switch Canal at Thompson Avenue)

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.

United States Department of Interior
Fish and Wildlife Service

Project name: Site 10

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-119.61971767760573 36.63964001453239, -119.61955451122175 36.63963843682061, -119.61955576528055 36.63945470553588, -119.61929768118597 36.63931719536916, -119.61930206070366 36.63867793319005, -119.61976607530877 36.63867999687806, -119.61975962894599 36.639169338632115, -119.61990999124855 36.63923257311412, -119.61990803739887 36.6395180960275, -119.61971949600522 36.63951787066415, -119.61971767760573 36.63964001453239)))

Project Counties: Fresno, CA

United States Department of Interior
Fish and Wildlife Service

Project name: Site 10

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: Entire	Threatened	Final designated	
California tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Birds			
Yellow-Billed Cuckoo *(Coccyzus americanus)* Population: Western U.S. DPS	Threatened	Proposed	
Crustaceans			
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Entire	Threatened	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)* Population: Entire	Threatened	Final designated	

Flowering Plants			
Greene's tuctoria *(Tuctoria greenei)*	Endangered	Final designated	
Mammals			
Fresno kangaroo rat *(Dipodomys nitratoides exilis)* Population: Entire	Endangered	Final designated	
San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: wherever found	Endangered		
Reptiles			
Blunt-Nosed Leopard lizard *(Gambelia silus)* Population: Entire	Endangered		
Giant Garter snake *(Thamnophis gigas)* Population: Entire	Threatened		

United States Department of Interior
Fish and Wildlife Service

Project name: Site 10

Critical habitats that lie within your project area

There are no critical habitats within your project area.

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: 08ESMF00-2016-SLI-1058 March 11, 2016
Event Code: 08ESMF00-2016-E-02295
Project Name: Site 11

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: Site 11

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: 08ESMF00-2016-SLI-1058
Event Code: 08ESMF00-2016-E-02295

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: Site 11
Project Description: Site 11 (Bridge Number 42C0532 - Fowler Switch Canal at Huntsman Avenue)

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.

United States Department of Interior
Fish and Wildlife Service

Project name: Site 11

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-119.65908667675586 36.58394585625752, -119.65908941332893 36.58364985575644, -119.65834221447312 36.58364536044607, -119.65834096928103 36.583779906122416, -119.65794057329359 36.583777495323986, -119.65794306506466 36.58350840397678, -119.6593925724587 36.58351712512707, -119.65982964526737 36.583277555677405, -119.66023536160067 36.58327999208041, -119.66023188427647 36.58365672004371, -119.6598214035318 36.58365425502151, -119.65932544133177 36.58394729172831, -119.65908667675586 36.58394585625752)))

Project Counties: Fresno, CA

United States Department of Interior
Fish and Wildlife Service

Project name: Site 11

Endangered Species Act Species List

There are a total of 8 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: Entire	Threatened	Final designated	
California tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Crustaceans			
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Entire	Threatened	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)* Population: Entire	Threatened	Final designated	
Mammals			
Fresno kangaroo rat *(Dipodomys nitratoides exilis)* Population: Entire	Endangered	Final designated	

San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: wherever found	Endangered		
Reptiles			
Blunt-Nosed Leopard lizard *(Gambelia silus)* Population: Entire	Endangered		
Giant Garter snake *(Thamnophis gigas)* Population: Entire	Threatened		

United States Department of Interior
Fish and Wildlife Service

Project name: Site 11

Critical habitats that lie within your project area

There are no critical habitats within your project area.

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: 08ESMF00-2016-SLI-1059 March 11, 2016
Event Code: 08ESMF00-2016-E-02296
Project Name: Site 12

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: Site 12

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: 08ESMF00-2016-SLI-1059
Event Code: 08ESMF00-2016-E-02296

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: Site 12
Project Description: Site 12 (Bridge Number 42C0328 - Mud Creek at Zediker Avenue)

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.

United States Department of Interior
Fish and Wildlife Service

Project name: Site 12

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-119.5200064579229 36.768403144961326, -119.52000620335329 36.76903331409691, -119.51992271688182 36.76911750548091, -119.5199305964488 36.7740148709199, -119.51957832671928 36.774015237225164, -119.51957778396572 36.77367696262326, -119.51966489029897 36.77367685858352, -119.51961643820049 36.76899921480273, -119.51973439521419 36.76883100857338, -119.51973370275857 36.768399943919476, -119.5200064579229 36.768403144961326)))

Project Counties: Fresno, CA

United States Department of Interior
Fish and Wildlife Service

Project name: Site 12

Endangered Species Act Species List

There are a total of 13 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: Entire	Threatened	Final designated	
California tiger Salamander *(Ambystoma californiense)* Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Birds			
Yellow-Billed Cuckoo *(Coccyzus americanus)* Population: Western U.S. DPS	Threatened	Proposed	
Crustaceans			
Conservancy fairy shrimp *(Branchinecta conservatio)* Population: Entire	Endangered	Final designated	
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Entire	Threatened	Final designated	
Fishes			

Delta smelt *(Hypomesus transpacificus)* Population: Entire	Threatened	Final designated	
Flowering Plants			
Fleshy owl's-clover *(Castilleja campestris ssp. succulenta)*	Threatened	Final designated	
Greene's tuctoria *(Tuctoria greenei)*	Endangered	Final designated	
San Joaquin Adobe sunburst *(Pseudobahia peirsonii)*	Threatened		
Mammals			
Fresno kangaroo rat *(Dipodomys nitratoides exilis)* Population: Entire	Endangered	Final designated	
San Joaquin Kit fox *(Vulpes macrotis mutica)* Population: wherever found	Endangered		
Reptiles			
Blunt-Nosed Leopard lizard *(Gambelia silus)* Population: Entire	Endangered		
Giant Garter snake *(Thamnophis gigas)* Population: Entire	Threatened		

United States Department of Interior
Fish and Wildlife Service

Project name: Site 12

Critical habitats that lie within your project area

There are no critical habitats within your project area.

12. Appendix D CNPS List

CNPS California Native Plant Rare and Endangered Plant Inventory

Plant List

189 matches found. *Click on scientific name for details*

Search Criteria

Found in Fresno County

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Acanthomintha lanceolata	Santa Clara thorn-mint	Lamiaceae	annual herb	4.2	S4	G4
Acanthomintha obovata ssp. obovata	San Benito thorn-mint	Lamiaceae	annual herb	4.2	S3S4	G4T3T4
Allium abramsii	Abram's onion	Alliaceae	perennial bulbiferous herb	1B.2	S2S3	G2G3
Amsinckia furcata	forked fiddleneck	Boraginaceae	annual herb	4.2	S4	G4
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	4.2	S3S4	G5?T3T4
Angelica callii	Call's angelica	Apiaceae	perennial herb	4.3	S3	G3
Antennaria pulchella	beautiful pussy-toes	Asteraceae	perennial stoloniferous herb	4.3	S4	G3
Antirrhinum ovatum	oval-leaved snapdragon	Plantaginaceae	annual herb	4.2	S3	G3
Astragalus kentrophyta var. danaus	Sweetwater Mountains milk-vetch	Fabaceae	perennial herb	4.3	S3	G5T3
Astragalus ravenii	Raven's milk-vetch	Fabaceae	perennial herb	1B.3	S2	G2Q
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	1B.2	S2	G3T2
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	4.2	S3	G4T3
Atriplex coronata var. vallicola	Lost Hills crownscale	Chenopodiaceae	annual herb	1B.2	S2	G4T2
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	1B.2	S2	G2
Atriplex minuscula	lesser saltscale	Chenopodiaceae	annual herb	1B.1	S2	G2
Atriplex subtilis	subtle orache	Chenopodiaceae	annual herb	1B.2	S1	G1
Benitoa occidentalis	western lessingia	Asteraceae	annual herb	4.3	S4	G4
Boechera bodiensis	Bodie Hills rockcress	Brassicaceae	perennial herb	1B.3	S2	G2
Boechera tularensis	Tulare rockcress	Brassicaceae	perennial herb	1B.3	S2	G2
Botrychium lineare	slender moonwort	Ophioglossaceae	perennial herb	1B.1	S1	G2G3
Botrychium minganense	Mingan moonwort	Ophioglossaceae	perennial rhizomatous herb	2B.2	S2	G4G5

Botrychium montanum	western goblin	Ophioglossaceae	perennial rhizomatous herb	2B.1	S2	G3
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb	2B.3	S2	G5
Bruchia bolanderi	Bolander's bruchia	Bruchianceae	moss	4.2	S3?	G3
Bryum chryseum	brassy bryum	Bryaceae	moss	4.3	S3	G5
Bulbostylis capillaris	thread-leaved beakseed	Cyperaceae	annual herb	4.2	S3	G5
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.1	S3?	G3?
Calycadenia villosa	dwarf calycadenia	Asteraceae	annual herb	1B.1	S3	G3
Calyptridium pulchellum	Mariposa pussypaws	Montiaceae	annual herb	1B.1	S1	G1
Calyptridium pygmaeum	pygmy pussypaws	Montiaceae	annual herb	1B.2	S2	G2
Calystegia collina ssp. venusta	South Coast Range morning-glory	Convolvulaceae	perennial rhizomatous herb	4.3	S4	G4T4
Calystegia malacophylla var. berryi	Berry's morning-glory	Convolvulaceae	perennial rhizomatous herb	3.3	S2S3	G4G5T2T3Q
Camissonia benitensis	San Benito evening-primrose	Onagraceae	annual herb	1B.1	S2	G2
Camissonia sierrae ssp. alticola	Mono Hot Springs evening-primrose	Onagraceae	annual herb	1B.2	S2	G3T2
Camissonia sierrae ssp. sierrae	Yosemite evening-primrose	Onagraceae	annual herb	4.3	S3	G3T3
Carex congdonii	Congdon's sedge	Cyperaceae	perennial rhizomatous herb	4.3	S4	G4
Carex incuriformis	Mt. Dana sedge	Cyperaceae	perennial rhizomatous herb	4.3	S4	G4G5
Carex limosa	mud sedge	Cyperaceae	perennial rhizomatous herb	2B.2	S3	G5
Carex tahoensis	Tahoe sedge	Cyperaceae	perennial rhizomatous herb	4.3	S4	G5
Carex tompkinsii	Tompkins' sedge	Cyperaceae	perennial rhizomatous herb	4.3	S4	G4
Carlquistia muirii	Muir's tarplant	Asteraceae	perennial rhizomatous herb	1B.3	S2	G2
Carpenteria californica	tree-anemone	Hydrangeaceae	perennial evergreen shrub	1B.2	S1?	G1?
Castilleja campestris var. succulenta	succulent owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S2	G4?T2
Caulanthus californicus	California jewel-flower	Brassicaceae	annual herb	1B.1	S1	G1
Caulanthus lemmonii	Lemmon's jewelflower	Brassicaceae	annual herb	1B.2	S3	G3
Ceanothus fresnensis	Fresno ceanothus	Rhamnaceae	perennial evergreen shrub	4.3	S4	G4
Chloropyron molle ssp. hispidum	hispid bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.1	S2	G2T2
Chloropyron palmatum	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.1	S1	G1

Chorizanthe biloba var. immemora	Hernandez spineflower	Polygonaceae	annual herb	1B.2	S1	G3T1
Chorizanthe ventricosa	potbellied spineflower	Polygonaceae	annual herb	4.3	S4	G4
Cinna bolanderi	Bolander's woodreed	Poaceae	perennial herb	1B.2	S2	G2
Clarkia breweri	Brewer's clarkia	Onagraceae	annual herb	4.2	S4	G4
Claytonia megarhiza	fell-fields claytonia	Montiaceae	perennial herb	2B.3	S2	G5
Claytonia palustris	marsh claytonia	Montiaceae	perennial herb	4.3	S4	G4
Claytonia parviflora ssp. grandiflora	streambank spring beauty	Montiaceae	annual herb	4.2	S3	G5T3
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	4.2	S4	G4
Cordylanthus tenuis ssp. barbatus	Fresno County bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	4.3	S3	G4G5T3
Cryptantha glomeriflora	clustered-flower cryptantha	Boraginaceae	annual herb	4.3	S4	G4Q
Cryptantha rattanii	Rattan's cryptantha	Boraginaceae	annual herb	4.3	S4	G4
Deinandra halliana	Hall's tarplant	Asteraceae	annual herb	1B.1	S2	G2
Delphinium hansenii ssp. ewanianum	Ewan's larkspur	Ranunculaceae	perennial herb	4.2	S3	G4T3
Delphinium inopinum	unexpected larkspur	Ranunculaceae	perennial herb	4.3	S3	G3
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	1B.2	S3	G3
Dicentra nevadensis	Tulare County bleeding heart	Papaveraceae	perennial rhizomatous herb	4.3	S4	G4
Didymodon californicus	California beard-moss	Pottiaceae	moss	4.2	S2S3	G2G3
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	2B.2	S2	GU
Draba incrassata	Sweetwater Mountains draba	Brassicaceae	perennial stoloniferous herb	1B.3	S3	G3
Draba praealta	tall draba	Brassicaceae	perennial herb	2B.3	S3	G5
Draba sharsmithii	Mt. Whitney draba	Brassicaceae	perennial herb	1B.3	S2	G2
Draba sierrae	Sierra draba	Brassicaceae	perennial herb	1B.3	S3	G3
Epilobium howellii	subalpine fireweed	Onagraceae	perennial stoloniferous herb	4.3	S4	G4
Eriastrum hooveri	Hoover's eriastrum	Polemoniaceae	annual herb	4.2	S3	G3
Eriastrum sparsiflorum	few-flowered eriastrum	Polemoniaceae	annual herb	4.3	S3?	G3G4
Eriastrum tracyi	Tracy's eriastrum	Polemoniaceae	annual herb	3.2	S3	G3Q
Erigeron aequifolius	Hall's daisy	Asteraceae	perennial rhizomatous herb	1B.3	S3	G3
Erigeron inornatus var. keilii	Keil's daisy	Asteraceae	perennial herb	1B.3	S1	G5T1
Erigeron multiceps	Kern River daisy	Asteraceae	perennial herb	1B.2	S2	G2
Eriogonum eastwoodianum	Eastwood's buckwheat	Polygonaceae	annual herb	1B.3	S2	G2
Eriogonum gossypinum	cottony buckwheat	Polygonaceae	annual herb	4.2	S3S4	G3G4
		Polygonaceae		1B.2	S2	G5T2

Eriogonum heermannii var. occidentale	western Heermann's buckwheat		perennial deciduous shrub			
Eriogonum nudum var. indictum	protruding buckwheat	Polygonaceae	perennial herb	4.2	S4	G5T4
Eriogonum nudum var. regirivum	Kings River buckwheat	Polygonaceae	perennial herb	1B.2	S2	G5T2
Eriogonum ovalifolium var. monarchense	Monarch buckwheat	Polygonaceae	perennial herb	1B.3	S1	G5T1
Eriogonum polypodum	Tulare County buckwheat	Polygonaceae	perennial herb	4.3	S3	G3
Eriogonum prattenianum var. avium	Kettle Dome buckwheat	Polygonaceae	perennial herb	4.2	S3	G4T3
Eriogonum temblorense	Temblor buckwheat	Polygonaceae	annual herb	1B.2	S2	G2
Eriogonum vestitum	Idria buckwheat	Polygonaceae	annual herb	4.3	S3	G3Q
Eriophyllum lanatum var. obovatum	southern Sierra woolly sunflower	Asteraceae	perennial herb	4.3	S4	G5T4
Eriophyllum mohavense	Barstow woolly sunflower	Asteraceae	annual herb	1B.2	S2	G2
Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	annual / perennial herb	1B.2	S2	G2
Erythranthe sierrae	Sierra Nevada monkeyflower	Phrymaceae	annual herb	4.2	S3	G3
Eschscholzia hypecoides	San Benito poppy	Papaveraceae	annual herb	4.3	S4	G4
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	4.2	S3	G3
Fritillaria pinetorum	pine fritillary	Liliaceae	perennial bulbiferous herb	4.3	S4	G4
Fritillaria viridea	San Benito fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Galium andrewsii ssp. gatense	phlox-leaf serpentine bedstraw	Rubiaceae	perennial herb	4.2	S3	G5T3
Gilia yorkii	Monarch gilia	Polemoniaceae	annual herb	1B.2	S1	G1
Glyceria grandis	American manna grass	Poaceae	perennial rhizomatous herb	2B.3	S2	G5
Goodmania luteola	golden goodmania	Polygonaceae	annual herb	4.2	S3	G3
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	1B.2	S2	G2
Hackelia sharsmithii	Sharsmith's stickseed	Boraginaceae	perennial herb	2B.3	S2S3	G2G3
Helianthus winteri	Winter's sunflower	Asteraceae	perennial shrub	1B.2	S1S2	G1G2
Helodium blandowii	Blandow's bog moss	Helodiaceae	moss	2B.3	S2	G4
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	4.2	S3	G3
		Asteraceae	perennial herb	1B.3	S2	G1

Heterotheca monarchensis	Monarch golden-aster					
Hordeum intercedens	vernal barley	Poaceae	annual herb	3.2	S3S4	G3G4
Hulsea brevifolia	short-leaved hulsea	Asteraceae	perennial herb	1B.2	S3	G3
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	2B.1	S3	G3
Ivesia campestris	field ivesia	Rosaceae	perennial herb	1B.2	S3	G3
Ivesia unguiculata	Yosemite ivesia	Rosaceae	perennial herb	4.2	S3	G3
Jamesia americana var. rosea	rosy-petalled cliffbush	Hydrangeaceae	perennial deciduous shrub	4.3	S4	G5T4
Jensia yosemitana	Yosemite tarplant	Asteraceae	annual herb	3.2	S3	G3
Lagophylla diabolensis	Diablo Range hare-leaf	Asteraceae	annual herb	1B.2	S2S3	G2G3
Lagophylla dichotoma	forked hare-leaf	Asteraceae	annual herb	1B.1	S1	G1
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	4.2	S3	G3
Layia discoidea	rayless layia	Asteraceae	annual herb	1B.1	S1	G1
Layia heterotricha	pale-yellow layia	Asteraceae	annual herb	1B.1	S2	G2
Layia munzii	Munz's tidy-tips	Asteraceae	annual herb	1B.2	S1	G1
Lepidium jaredii ssp. album	Panoche pepper-grass	Brassicaceae	annual herb	1B.2	S2	G2T2
Leptosiphon acicularis	bristly leptosiphon	Polemoniaceae	annual herb	4.2	S3	G3
Leptosiphon oblanceolatus	Sierra Nevada leptosiphon	Polemoniaceae	annual herb	4.3	S4	G4
Leptosiphon serrulatus	Madera leptosiphon	Polemoniaceae	annual herb	1B.2	S3	G3
Lewisia congdonii	Congdon's lewisia	Montiaceae	perennial herb	1B.3	S2	G2
Lewisia disepala	Yosemite lewisia	Montiaceae	perennial herb	1B.2	S2	G2
Lilium humboldtii ssp. humboldtii	Humboldt lily	Liliaceae	perennial bulbiferous herb	4.2	S3	G4T3
Lupinus citrinus var. citrinus	orange lupine	Fabaceae	annual herb	1B.2	S2	G2T2
Madia radiata	showy golden madia	Asteraceae	annual herb	1B.1	S2	G2
Malacothamnus aboriginum	Indian Valley bush-mallow	Malvaceae	perennial deciduous shrub	1B.2	S2	G2
Meesia triquetra	three-ranked hump moss	Meesiaceae	moss	4.2	S4	G5
Meesia uliginosa	broad-nerved hump moss	Meesiaceae	moss	2B.2	S3	G4
Microseris sylvatica	sylvan microseris	Asteraceae	perennial herb	4.2	S4	G4
Mielichhoferia elongata	elongate copper moss	Mielichhoferiaceae	moss	2B.2	S2	G4
Mielichhoferia shevockii	Shevock's copper moss	Mielichhoferiaceae	moss	1B.2	S1	G1
Mimulus acutidens	Kings River monkeyflower	Phrymaceae	annual herb	3	S2?	G2?Q
Mimulus gracilipes	slender-stalked monkeyflower	Phrymaceae	annual herb	1B.2	S2S3	G2G3
Mimulus gravi	Gray's monkeyflower	Phrymaceae	annual herb	4.3	S2S3	G2G3Q

Mimulus inconspicuus	small-flowered monkeyflower	Phrymaceae	annual herb	4.3	S4	G4
Mimulus laciniatus	cut-leaved monkeyflower	Phrymaceae	annual herb	4.3	S4	G4
Mimulus norrisii	Kaweah monkeyflower	Phrymaceae	annual herb	1B.3	S2	G2
Mimulus subsecundus	one-sided monkeyflower	Phrymaceae	annual herb	4.3	S3S4	G3G4Q
Minuartia obtusiloba	alpine sandwort	Caryophyllaceae	perennial herb	4.3	S4	G5
Monardella antonina ssp. antonina	San Antonio Hills monardella	Lamiaceae	perennial rhizomatous herb	3	S1S3	G4T1T3Q
Monardella candicans	Sierra monardella	Lamiaceae	annual herb	4.3	S4	G4
Moneses uniflora	woodnymph	Ericaceae	perennial rhizomatous herb	2B.2	S3	G5
Monolopia congdonii	San Joaquin woollythreads	Asteraceae	annual herb	1B.2	S2	G2
Myurella julacea	small mousetail moss	Pterigynandraceae	moss	2B.3	S1S2	G5
Navarretia nigelliformis ssp. nigelliformis	adobe navarretia	Polemoniaceae	annual herb	4.2	S3	G4T3
Navarretia nigelliformis ssp. radians	shining navarretia	Polemoniaceae	annual herb	1B.2	S2	G4T2
Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	1B.1	S2	G2
Nemacladus gracilis	slender nemacladus	Campanulaceae	annual herb	4.3	S4	G4
Nemophila parviflora var. quercifolia	oak-leaved nemophila	Boraginaceae	annual herb	4.3	S4	G5T4
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Poaceae	annual herb	1B.1	S1	G1
Packera indecora	rayless mountain ragwort	Asteraceae	perennial herb	2B.2	S2?	G5
Peltigera gowardii	western waterfan lichen	Peltigeraceae	foliose lichen (aquatic)	4.2	S3	G3G4
Petrophytum caespitosum ssp. acuminatum	marble rockmat	Rosaceae	perennial evergreen shrub	1B.3	S2	G5T2
Phacelia orogenes	mountain phacelia	Boraginaceae	annual herb	4.3	S3	G3
Piperia colemanii	Coleman's rein orchid	Orchidaceae	perennial herb	4.3	S4	G4
Piperia leptopetala	narrow-petaled rein orchid	Orchidaceae	perennial herb	4.3	S4	G4
Piperia michaelii	Michael's rein orchid	Orchidaceae	perennial herb	4.2	S3	G3
Pityopus californicus	California pinefoot	Ericaceae	perennial herb (achlorophyllous)	4.2	S4	G4G5
Plagiobothrys torreyi var. perplexans	chaparral popcornflower	Boraginaceae	annual herb	4.3	S3	G4T3
Plagiobryoides vinosula	wine-colored tufa moss	Bryaceae	moss	4.2	S2	G3G4
Platanthera yosemitensis	Yosemite bog-orchid	Orchidaceae	perennial herb	1B.2	S2	G2

Poa lettermanii	Letterman's blue grass	Poaceae	perennial herb	2B.3	S3	G4
Pohlia tundrae	tundra thread moss	Mielichhoferiaceae	moss	2B.3	S3	G3
Potamogeton robbinsii	Robbins' pondweed	Potamogetonaceae	perennial rhizomatous herb	2B.3	S3	G5
Pseudobahia bahiifolia	Hartweg's golden sunburst	Asteraceae	annual herb	1B.1	S2	G2
Pseudobahia peirsonii	San Joaquin adobe sunburst	Asteraceae	annual herb	1B.1	S1	G1
Ribes menziesii var. ixoderme	aromatic canyon gooseberry	Grossulariaceae	perennial deciduous shrub	1B.2	S2	G4T2
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb	1B.2	S3	G3
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	2B.2	S2	G3?
Sidalcea keckii	Keck's checkerbloom	Malvaceae	annual herb	1B.1	S1	G1
Solidago guiradonis	Guirado's goldenrod	Asteraceae	perennial rhizomatous herb	4.3	S3S4	G3G4
Sphenopholis obtusata	prairie wedge grass	Poaceae	perennial herb	2B.2	S2	G5
Streptanthus farnsworthianus	Farnsworth's jewel-flower	Brassicaceae	annual herb	4.3	S4	G4
Streptanthus fenestratus	Tehipite Valley jewel-flower	Brassicaceae	annual herb	1B.3	S2	G2
Streptanthus gracilis	alpine jewel-flower	Brassicaceae	annual herb	1B.3	S3	G3
Tauschia howellii	Howell's tauschia	Apiaceae	perennial herb	1B.3	S2	G2
Tonestus peirsonii	Peirson's tonestus	Asteraceae	perennial herb	4.3	S3	G3
Trichostema ovatum	San Joaquin bluecurls	Lamiaceae	annual herb	4.2	S4	G4
Trifolium bolanderi	Bolander's clover	Fabaceae	perennial herb	1B.2	S2S3	G2G3
Tropidocarpum capparideum	caper-fruited tropidocarpum	Brassicaceae	annual herb	1B.1	S1	G1
Tuctoria greenei	Greene's tuctoria	Poaceae	annual herb	1B.1	S1	G1
Utricularia intermedia	flat-leaved bladderwort	Lentibulariaceae	perennial stoloniferous herb (carnivorous)	2B.2	S3	G5
Utricularia minor	lesser bladderwort	Lentibulariaceae	perennial stoloniferous herb (carnivorous)	4.2	S3	G5
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5
Viola pinetorum var. grisea	grey-leaved violet	Violaceae	perennial herb	1B.3	S3?	G4G5T3?
Wyethia elata	Hall's wyethia	Asteraceae	perennial herb	4.3	S4	G4

Suggested Citation

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13. Appendix E Blunt Nosed Leopard Lizard Survey

Livewire Ecological

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Suite #103
Fresno, CA 93704
USA

Phone 559.577.6214
www.LivewireEco.com

15 July 2015

Steve McMurtry
De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762

Subject: Blunt-Nosed Leopard Lizard Survey Results for BPMP Scour Mitigation, Arroyo Pasajero at El Dorado Avenue (Fresno County)

Mr. McMurtry:

This letter documents the results of blunt-nosed leopard lizard (*Gambelia sila*) surveys performed at the Arroyo Pasajero/El Dorado Avenue BPMP Scour Mitigation location in Fresno County. An approximately 12.4 acre survey area (Figure 1) was established to encompass the 3.4 acre Area of Potential Effect that was identified in drawings titled *Figure 2d – Site 4* (dated December 3, 2014), provided by De Novo Planning Group. Surveys were performed according to the California Department of Fish and Wildlife *Approved Survey Methodology for the Blunt-Nosed Leopard Lizard*, May 2004. The required eight days of surveys for operations and maintenance activities were performed on June 10, 12, 16, 17 and 29 and July 13-15, 2015. Surveys were performed by a team of two qualified individuals that included Darren Newman or Justin Jack as the Level II surveyor and Kat Calderala, Preston Whitehead, or Rob Knutson as the Level I surveyor. The surveys were accomplished by two biologists walking parallel transects at approximately 10-20 meter spacing to ensure visual coverage of the survey area, which included non-native grassland vegetation in upland areas and tamarisk (*Tamarix* ssp.), saltbush (*Atriplex* ssp.), and Russian thistle (*Salsola* ssp.) in the wash. Start /finish times and temperatures, as well as target species counts, are included in Table 1. As an off-site blunt-nosed leopard lizard (BNLL) sighting reference during the course of the scour mitigation surveys at the Arroyo Pasajero/El Dorado site, a BNLL was observed in conjunction with an unrelated survey effort on 25, 26 and 30 June. The observations occurred along Panoche Road in eastern San Benito County (36.57441, -120.71867). Although not in close proximity to the El Dorado location, the observation demonstrates that BNLL were generally active during the period in which the El Dorado BNLL surveys occurred.

Results

No blunt-nosed leopard lizards were observed during the course of surveys at the Arroyo Pasajero/El Dorado Avenue site (Table 1). Numerous side-blotched lizards (*Uta stansburiana*) were observed every day that the survey was performed. Other lizard species observed included whiptail (*Aspidoscelis tigris munda*) and yellow-backed spiny lizard (*Sceloperus magister uniformis*). Other wildlife species observed during the course of the 8-day surveys are noted in Table 1 and include: American crow (*Corvus brachyrhynchos*); western kingbird (*Tyrannus verticalis*); cliff swallow (*Petrochelidon pyrrhonota*); California quail (*Callipepla californica*); house finch (*Haemorhous mexicanus*); northern mockingbird (*Mimus polyglottos*); killdeer (*Charadrius vociferous*); American kestrel (*Falco sparverius*); mourning dove (*Zenaida macroura*); loggerhead shrike (*Lanius ludovicianus*); barn owl (*Tyto alba*); common

raven (*Corvus corax*); turkey vulture (*Cathartes aura*); great blue heron (*Ardea herodius*); Eurasian collared dove (*Streptopelia decaocto*); California kingsnake (*Lampropeltis californiae*); Pacific gopher snake (*Pituophis catenifer catenifer*); and desert cottontail (*Sylvilagus audoboni*).

Conclusion

It is unlikely that blunt-nosed leopard lizards are currently present at the proposed work location.

Please contact me with any questions or comments at (559) 577-6214.

Sincerely,

Kathryn Calderala
Senior Biologist
Livewire Ecological Consulting

Figure 1. BNLL survey area (green) in relation to the Area of Potential Effect (red outline).

Figure 2. Survey area, looking southwest toward Arroyo Pasajero, 9 June 2015.

Figure 3. Arroyo Pasajero wash, looking west, 9 June 2015.

Table 1. El Dorado Ave at Arroyo Pasajero Blunt-nosed Leopard Lizard Maintenance Actvity Protocol Survey Results

Survey Date (MM/DD/YY)	06/10/15	06/12/15	06/16/15	06/17/15	06/29/15	07/13/15	07/14/15	07/15/15
Surveyor II	Justin Jack	Justin Jack	Darren Newman	Darren Newman	Darren Newman	Darren Newman	Darren Newman	Darren Newman
Surveyor I	Kat Calderala	Kat Calderala	Kat Calderala	Rob Knutson	Rob Knutson	P Whitehead	Kat Calderala	P Whitehead
Start Time (24-hr time)	0928	0842	0912	0910	0828	0945	0822	0950
Start Percent Cloud Cover	55	5	1	5	50	0	0	0
Start Air Temp (°F)	84.4	80.6	77.0	77.1	77.1	77	77.2	80.1
Start Soil Temp (°F)	97.7	87.6	81.1	81.8	81.3	77.7	82.8	75.7
Start Wind Speed (mph)	6.5	2.2	1	6.2	4	2.0	4.2	3.8
End Time (24-hr time)	1132	1116	1028	1042	0944	1045	0932	1047
End Percent Cloud Cover	25	5	1	10	50	0	0	0
End Air Temp (°F)	90.9	93.7	84.6	87.5	84.4	87.1	82.6	85.3
End Soil Temp (°F)	89.2	95.4	79.9	85.5	84.9	80.5	82.1	85.5
End Wind Speed (mph)	5.9	3.2	3.1	4.4	1.2	4.5	5.2	4.5
# Blunt-nosed Observed	0	0	0	0	0	0	0	0
# Side-blotched Observed	14	51	31	23	49	32	44	30
# Whiptail Observed	4	2	1	0	0	0	0	0
# Other Lizards Observed	2 (*S. m. uniformis*)	4 (*S. m. uniformis*)	(*S. m. uniformis*)	(*S. m. uniformis*)	(*S. m. uniformis*)	(*S. m. uniformis*)	0	2 (*S. m. uniformis*)
# Other Wildlife	AMCR, WEKI, CLSW, CAQU, HOFI, NOMO, KILL, & desert cottontail	AMCR, CLSW, CAQU, AMKE, NOMO, MODO, WEKI, LOSH, BNOW, California kingsnake, & desert cottontail	MODO, CLSW, LOSH, AMCR, & TUVU	WEKI, NOMO, CLSW, MAKE, MODO & gopher snake	CLSW, KILL, GBHE, AMCR, HOFI, CAQU, ECDO & desert cottontail	MODO, HOFI, LOSH, WEKI & CLSW	CAQA, MODO, WEKI, BNOW, CORA & desert cottontail	CLSW, ECDO, MODO & desert cottontail

NW Corner (coordinates):	36.168021, -120.211945
NE Corner (coordinates):	36.168029, -120.210513
NE(2) Corner (coordinates):	36.166791, -120.208893
SE Corner (coordinates):	36.165625, -120.209028
SW Corner (coordinates):	36.166098, -120.211942

CATEGORICAL EXEMPTION/CATEGORICAL EXCLUSION DETERMINATION FORM

06-FRE-County of Fresno		BPMP-5942(240)	
Dist.-Co.-Rte. (or Local Agency)	P.M./P.M.	E.A/Project No.	Federal-Aid Project No. (Local Project)/Project No.

PROJECT DESCRIPTION: (Briefly describe project including need, purpose, location, limits, right-of-way requirements, and activities involved in this box. *Use Continuation Sheet, if necessary.)*

The County of Fresno proposes to conduct maintenance activities on twelve bridges as part of the Bridge Preventative Maintenance Program in Fresno County. The proposed project would extend the service life of the existing structure at each location by installing new or repairing existing scour countermeasures and conducting other maintenance activities at each location. Vegetation and trash will be removed from the channel at each location. Portions of the channel could be excavated to a maximum depth of 3' to install new or repair existing scour countermeasures.

CEQA COMPLIANCE *(for State Projects only)*

Based on an examination of this proposal and supporting information, the following statements are true and exceptions do not apply (See 14 CCR 15300 et seq.):

- If this project falls within exempt class 3, 4, 5, 6 or 11, it does not impact an environmental resource of hazardous or critical concern where designated, precisely mapped and officially adopted pursuant to law.
- There will not be a significant cumulative effect by this project and successive projects of the same type in the same place, over time.
- There is not a reasonable possibility that the project will have a significant effect on the environment due to unusual circumstances.
- This project does not damage a scenic resource within an officially designated state scenic highway.
- This project is not located on a site included on any list compiled pursuant to Govt. Code § 65962.5 ("Cortese List").
- This project does not cause a substantial adverse change in the significance of a historical resource.

CALTRANS CEQA DETERMINATION (Check one)

☐ **Exempt by Statute.** (PRC 21080[b]; 14 CCR 15260 et seq.)

Based on an examination of this proposal, supporting information, and the above statements, the project is:

☐ **Categorically Exempt. Class** . (PRC 21084; 14 CCR 15300 et seq.)

☐ **Categorically Exempt. General Rule exemption.** [This project does not fall within an exempt class, but it can be seen with certainty that there is no possibility that the activity may have a significant effect on the environment (CCR 15061[b][3].)

Print Name: Environmental Branch Chief		Print Name: Project Manager/DLA Engineer	
Signature	Date	Signature	Date

NEPA COMPLIANCE

In accordance with 23 CFR 771.117, and based on an examination of this proposal and supporting information, the State has determined that this project:

- does not individually or cumulatively have a significant impact on the environment as defined by NEPA and is excluded from the requirements to prepare an Environmental Assessment (EA) or Environmental Impact Statement (EIS), and
- has considered unusual circumstances pursuant to 23 CFR 771.117(b).

CALTRANS NEPA DETERMINATION (Check one)

☒ **23 USC 326:** The State has determined that this project has no significant impacts on the environment as defined by NEPA, and that there are no unusual circumstances as described in 23 CFR 771.117(b). As such, the project is categorically excluded from the requirements to prepare an environmental assessment or environmental impact statement under the National Environmental Policy Act. The State has been assigned, and hereby certifies that it has carried out the responsibility to make this determination pursuant to Chapter 3 of Title 23, United States Code, Section 326 and a Memorandum of Understanding dated June 07, 2013, executed between the FHWA and the State. The State has determined that the project is a Categorical Exclusion under:

- ☒ **23 CFR 771.117(c): activity (c)(_28_)**
- ☐ **23 CFR 771.117(d): activity (d)(___)**
- ☐ **Activity ___ listed in Appendix A of the MOU between FHWA and the State**

☐ **23 USC 327:** Based on an examination of this proposal and supporting information, the State has determined that the project is a CE under 23 USC 327.

Shane Gunn		**Jim Perrault**	
Print Name: Environmental Branch Chief		Print Name: Project Manager/DLA Engineer	
Shane Gunn 3/22/2016		Jim Perrault 3/22/16	
Signature	Date	Signature	Date

Date of Categorical Exclusion Checklist completion: 3/22/16

Date of ECR or equivalent : 3/22/16

Briefly list environmental commitments on continuation sheet. Reference additional information, as appropriate (e.g., CE checklist, additional studies and design conditions).

CATEGORICAL EXEMPTION/CATEGORICAL EXCLUSION DETERMINATION FORM
Continuation Sheet

06-FRE-County of Fresno		BPMP-5942(240)	
Dist.-Co.-Rte. (or Local Agency)	P.M./P.M.	E.A/Project No.	Federal-Aid Project No. (Local Project)/Project No.

Continued from page 1:

All avoidance and minimization measures as outlined in the final approved NES(MI) dated 3/11/2016 and ISA dated 6/3/2016 must be adhered to.

The following are a list of the bridges and their approximate locations:

1. Bridge Number 42C0459 - Los Gatos Creek at Los Gatos Road
2. Bridge Number 42C0458 - Los Gatos Creek at Los Gatos Road
3. Bridge Number 42C0455 - Los Gatos Creek at Los Gatos Road
4. Bridge Number 42C0097 - Arroyo Pasajero at El Dorado Avenue
5. Bridge Number 42C0104 - Fresno Slough at Excelsior Avenue
6. Bridge Number 42C0367 - Fresno Slough Overflow at Excelsior Avenue
7. Bridge Number 42C0520 - Fresno Canal at Viau Avenue
8. Bridge Number 42C0178 - Fowler Switch Canal at American Avenue
9. Bridge Number 42C0179 - Travers Creek at Alta Avenue
10. Bridge Number 42C0531 - Fowler Switch Canal at Thompson Avenue
11. Bridge Number 42C0532 - Fowler Switch Canal at Huntsman Avenue
12. Bridge Number 42C0328 - Mud Creek at Zediker Avenue

NEPA/CEQA RE-VALIDATION FORM

DIST./CO./RTE.	06/FRE/Fresno County
PM/PM	
E.A. or Fed-Aid Project No.	BPMP-5942(240)
Other Project No. (specify)	
PROJECT TITLE	Bridge Maintenance
ENVIRONMENTAL APPROVAL TYPE	CE
DATE APPROVED	3/22/2016
REASON FOR CONSULTATION (23 CFR 771.129)	*Check reason for consultation:* ☐ *Project proceeding to next major federal approval* ☒ *Change in scope, setting, effects, mitigation measures, requirements* ☐ *3-year timeline (EIS only)* ☐ ***N/A** (Re-Validation for CEQA only)*
DESCRIPTION OF CHANGED CONDITIONS	*Briefly describe the changed conditions or new information on page 2. Append continuation sheet(s) as necessary. Include a revised Environmental Commitments Record (ECR) when applicable.*

NEPA CONCLUSION - VALIDITY

Based on an examination of the changed conditions and supporting information: [*Check ONE of the three statements below, regarding the validity of the original document/determination (23 CFR 771.129). If document is no longer valid, indicate whether additional public review is warranted and whether the type of environmental document will be elevated.]*

☐ **The original environmental document or CE remains valid. No further documentation will be prepared.**

☒ **The original environmental document or CE is in need of updating; further documentation has been prepared and ☐ is included on the continuation sheet(s) or ☒ is attached. With this additional documentation, the original ED or CE remains valid.**

Additional public review is warranted (23 CFR 771.111(h)(3)) Yes ☐ No ☐

☐ **The original document or CE is no longer valid.**

Additional public review is warranted (23 CFR 771.111(h)(3)) Yes ☐ No ☐

Supplemental environmental document is needed. Yes ☐ No ☐

New environmental document is needed. Yes ☐ No ☐ (If "Yes," specify type: _____)

CONCURRENCE WITH NEPA CONCLUSION

I concur with the NEPA conclusion above.

_____ 4/18/16 _____ 4/18/16

Signature: Environmental Branch Chief — Date — Signature: Project Manager/DLAE — Date

CEQA CONCLUSION : *(Only mandated for projects on the State Highway System.)*

Based on an examination of the changed conditions and supporting information, the following conclusion has been reached regarding appropriate CEQA documentation: *(Check ONE of the five statements below, indicating whether any additional documentation will be prepared, and if so, what kind. If additional documentation is prepared, attach a copy of this signed form and any continuation sheets.)*

☐ **Original document remains valid. No further documentation is necessary.**

☐ **Only minor technical changes or additions to the previous document are necessary. An addendum has been or will be ☐ prepared and is ☐ included on the continuation sheets or ☐ will be attached. It need not be circulated for public review. *(CEQA Guidelines, §15164)***

☐ **Changes are substantial, but only minor additions or changes are necessary to make the previous document adequate. A Supplemental environmental document will be prepared, and it will be circulated for public review. *(CEQA Guidelines, §15163)***

☐ **Changes are substantial, and major revisions to the current document are necessary. A Subsequent environmental document will be prepared, and it will be circulated for public review. *(CEQA Guidelines, §15162)***
(Specify type of subsequent document, e.g., Subsequent FEIR:)

_____

☐ **The CE is no longer valid. New CE is needed. Yes ☐ No ☐**

CONCURRENCE WITH CEQA CONCLUSION

I concur with the CEQA conclusion above.

_____ _____ _____ _____

Signature: Environmental Branch Chief — Date — Signature: Project Manager/DLAE — Date

CONTINUATION SHEET(S)

Address only substantial changes or substantial new information since approval of the original document and only those areas that are applicable. Use the list below as section headings as they apply to the project change(s). Use as much or as little space as needed to adequately address the project change(s) and the associated impacts, minimization, avoidance and/or mitigation measures, if any.

Changes in project design, e.g., substantial scope change; a new alternative; change in project alignment

Changes in environmental setting, e.g., new development affecting traffic or air quality;

The signed final Water Quality Tech memo was received after the CE was written; the CE was written in error.

Changes in environmental circumstances, e.g., a new law or regulation; change in the status of a listed species.

Changes to environmental impacts of the project, e.g., a new type of impact, or a change in the magnitude of an existing impact.

Changes to avoidance, minimization, and/or mitigation measures since the environmental document was approved.

Changes to environmental commitments since the environmental document was approved, e.g., the addition of new conditions in permits or approvals. When this applies, append a revised Environmental Commitments Record (ECR) as one of the Continuation Sheets.

Inter Office Memo

DATE: December 12, 2014

TO: Alexis Rutherford, Design Division,

FROM: Briza Sholars, Development Services Division

SUBJECT: CEQA Determination
Environmental Review No. 6921
Fresno County Bridge Preventative Maintenance Program- Scour Countermeasures

Project Description:

The County of Fresno proposes to conduct maintenance activities on twelve (12) bridges as part of the Bridge Preventive Maintenance Program (See location map and list). The proposed project would extend the service life of the existing structure at each location by installing new or repairing existing scour countermeasures and conducting other maintenance activities at each location.

Vegetation and trash will be removed from the channel at each location. Portions of the channel could be excavated to a maximum depth of three (3) feet to install new or repair existing scour countermeasures. A dead tree overhanging Location No. 3 will be removed. It is the intention of the County to use existing paths to access the channel and not remove any other trees.

Determination:

It has been determined that the proposed project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) Guidelines under Section 15301, Class 1 - Existing facilities.

The following information supports this determination:

1. A Class 1 (c) project consists of the operation, repair, maintenance or minor alteration of existing public facilities involving negligible or no expansion of use including existing highways, streets and sidewalks, gutters, bicycle and pedestrian trails except where such activity will involve removal of a scenic resource including stand of trees, rock outcropping or historic buildings.

2. Swallow and Migratory Bird Contract Provisions would be included in the construction specifications.

3. Temporary construction permits will be required. Right of way acquisition is not anticipated. Further investigation is required; however, utility relocation is not anticipated. Conversion of farmland is not anticipated.

4. Work will be conducted in the channel of all locations. The project could require regulatory permits, including a 1602 Streambed Alteration Agreement from DFW, Section 404 Nationwide Permit from the ACOE, Section 401 Water Quality Certification and/or an NPDES Permit from the RWQCB.

5. Public controversy is not anticipated due to the limited scope of the project. Traffic will be allowed to move through the locations during construction with minimal delay.

6. Per the Fresno County, Code of Ordinances, Title 8, Chapter 8.40 Noise Control, noise sources associated with construction are exempt from the requirements of the ordinance, provided such activities do not take place before six a.m. or after nine p.m. on any day except Saturday or Sunday, or before seven a.m. or after five p.m. on Saturday or Sunday.

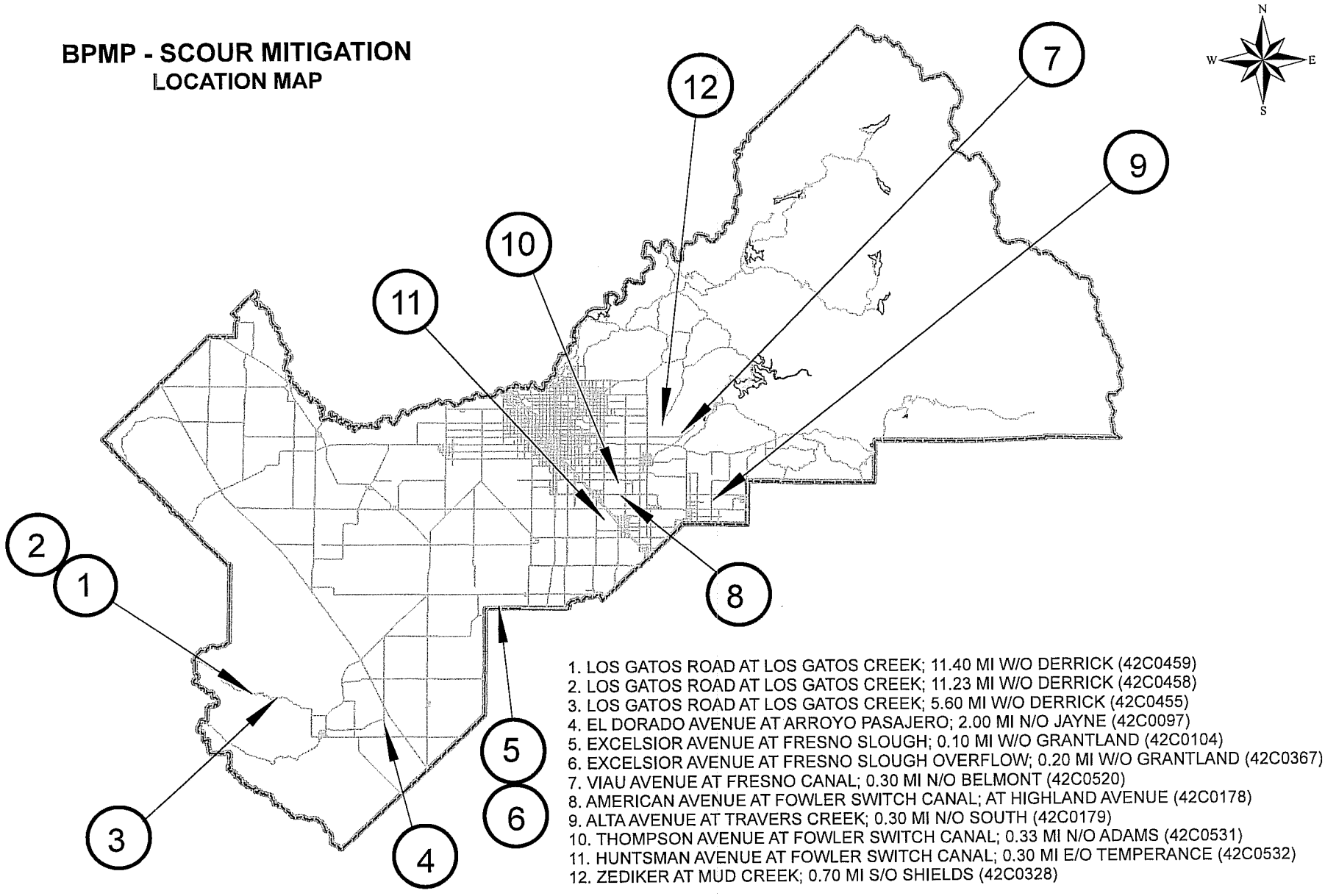
7. Some of the proposed project locations are within the Fresno Sole Source Aquifer. However, the project does not involve a well or sewage disposal and would not result in a threat of aquifer contamination or a hazard to public health. The maximum excavation depth is three feet.

8. Some of the locations are located within Flood Zone A according to FEMA FIRM Maps; however, the project will not impact the floodplain.

Therefore, in accordance with Section 15301, Class 1 - Existing facilities, of the California Environmental Quality Act (CEQA) Guidelines, the proposed project is exempt from the provisions of CEQA.

If you have any questions, please call me at 600-4207.

BPMP - SCOUR MITIGATION
LOCATION MAP



1. LOS GATOS ROAD AT LOS GATOS CREEK; 11.40 MI W/O DERRICK (42C0459)
2. LOS GATOS ROAD AT LOS GATOS CREEK; 11.23 MI W/O DERRICK (42C0458)
3. LOS GATOS ROAD AT LOS GATOS CREEK; 5.60 MI W/O DERRICK (42C0455)
4. EL DORADO AVENUE AT ARROYO PASAJERO; 2.00 MI N/O JAYNE (42C0097)
5. EXCELSIOR AVENUE AT FRESNO SLOUGH; 0.10 MI W/O GRANTLAND (42C0104)
6. EXCELSIOR AVENUE AT FRESNO SLOUGH OVERFLOW; 0.20 MI W/O GRANTLAND (42C0367)
7. VIAU AVENUE AT FRESNO CANAL; 0.30 MI N/O BELMONT (42C0520)
8. AMERICAN AVENUE AT FOWLER SWITCH CANAL; AT HIGHLAND AVENUE (42C0178)
9. ALTA AVENUE AT TRAVERS CREEK; 0.30 MI N/O SOUTH (42C0179)
10. THOMPSON AVENUE AT FOWLER SWITCH CANAL; 0.33 MI N/O ADAMS (42C0531)
11. HUNTSMAN AVENUE AT FOWLER SWITCH CANAL; 0.30 MI E/O TEMPERANCE (42C0532)
12. ZEDIKER AT MUD CREEK; 0.70 MI S/O SHIELDS (42C0328)

THE COUNTY OF FRESNO 1856

DEPARTMENT OF PUBLIC WORKS AND PLANNING

Fresno County

Bridge Preventive Maintenance Program Scour Mitigation Project (12 Locations)

1. Bridge No. 42C0459 - Los Gatos Creek at Los Gatos Road; 11.40 mi w/o Derrick
2. Bridge No. 42C0458 - Los Gatos Creek at Los Gatos Road; 11.23 mi w/o Derrick
3. Bridge No. 42C0455 - Los Gatos Creek at Los Gatos Road; 5.60 mi w/o Derrick
4. Bridge No. 42C0097 - Arroyo Pasajero at El Dorado Avenue; 2.00 mi n/o Jayne
5. Bridge No. 42C0104 - Fresno Slough at Excelsior Avenue; .10 mi w/o Grantland
6. Bridge No. 42C0367 - Fresno Slough Overflow at Excelsior Avenue; .20 mi w/o Grantland
7. Bridge No. 42C0520 - Fresno Canal at Viau Avenue; .30 mi n/o Belmont
8. Bridge No. 42C0178 - Fowler Switch Canal at American Avenue; at Highland Avenue
9. Bridge No. 42C0179 - Travers Creek at Alta Avenue; .30 mi n/o South
10. Bridge No. 42C0531 - Fowler Switch Canal at Thompson Avenue; .33 mi n/o Adams
11. Bridge No. 42C0532 - Fowler Switch Canal at Huntsman Avenue; .30 mi e/o Temperance
12. Bridge No. 42C0328 - Mud Creek at Zediker Avenue; .7 mi s/o Shields

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
ALAN WEAVER
DIRECTOR

NOTICE OF EXEMPTION

TO: ☐ Office of Planning & Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

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

FROM: County of Fresno
Department of Public Works & Planning
2220 Tulare Street
Fresno, CA 93721

PROJECT TITLE: Environmental Review No. 6921 - Fresno County Bridge Preventative Maintenance Program- Scour Countermeasures

PROJECT LOCATION - COUNTY: The project consists of twelve existing bridges in Fresno County.

DESCRIPTION OF PROJECT: The County of Fresno proposes to conduct maintenance activities on twelve (12) bridges as part of the Bridge Preventive Maintenance Program. The proposed project would extend the service life of the existing structure at each location by installing new or repairing existing scour countermeasures and conducting other maintenance activities at each location. Vegetation and trash will be removed from the channel at each location. Portions of the channel could be excavated to a maximum depth of three (3) feet to install new or repair existing scour countermeasures. A dead tree overhanging Location No. 3 will be removed. It is the intention of the County to use existing paths to access the channel and not remove any other trees.

NAME OF PUBLIC AGENCY APPROVING PROJECT: Fresno County Board of Supervisors.

NAME OF PERSON OR AGENCY CARRYING OUT PROJECT: Fresno County Department of Public Works and Planning – Design Division. Contact Person: Alexis Rutherford (559) 600-4530.

EXEMPT STATUS: Section 15301, Class 1(c) – Existing Facilities.

REASONS WHY THE PROJECT IS EXEMPT: The project meets the criteria for Section 15301, Class 1(c), existing facilities, of the California Environmental Quality Act (CEQA).

The following supports this determination:

Under Section 15301, a Class 1(c) exemption consists of the operation, repair, maintenance or minor alteration of existing public facilities involving negligible or no expansion of the use, including existing highways, streets and sidewalks, gutters, bicycle and pedestrian trails, except where such activity will involve removal of a scenic resource including a stand of trees, a rock outcropping or a historic building.

LEAD AGENCY CONTACT PERSON: Briza Sholars **TELEPHONE:** (559) 600-4207

Filing with County Clerk:

1. If filed by Applicant, attach certified document of exemption finding.
2. Will the Notice of Exemption be filed by the public agency approving the project? X Yes ____ No

Signature: _____ Date: 12/12/14 Title: Principal Planner

X Signed by Lead Agency
__Signed by Applicant

Date received for filing at OPR:

==========

County of Fresno
Department of Public Works && Planning
dress: 2220 Tulare Street, 6th Floor Fresno
REG-RECEIPT: 5350 - 62838
CASHIER ID : CIB1113 Dec 10 2014
Date Printed: 12/10/2014 16:46:20

==========

14107763LU	$259.00
SubTotal	$259.00
PST	
GST	
TOTAL DUE	
RECEIVED FROM :	
FRESNO COUNTY OF	
ACCOUNT	$259.00
ACCT 999	
TOTAL TENDERED	$259.00
CHANGE DUE	$0.00

==========

INVOICE

County of Fresno
Department of Public Works & Planning
Mailing Address: 2220 Tulare Street, 6th Floor Fresno, CA 93721
24-HR REQUEST LINE: 600-4131 LOCAL: 600-4560
TOLL FREE: 800-742-1011 FAX: 600-4201

INVOICE TO:

INVOICE NO.: 71976
INVOICE DATE: Dec 10, 2014
PERMIT #: 14 107763 LU
REFERENCE #: ER# 6921
PROJECT LOCATION:
PROJECT DESCRIPTION: THE COUNTY OF FRESNO PROPOSES TO CONDUCT MAINTENANCE ACTIVITIES ON TWELVE (12) BRIDGES AS PART OF THE THE PROPOSED PROJECT WOULD EXTEND THE SERVICE LIFE OF THE EXISTING STRUCTURE AT EAC LOCATION BY INSTALLING NEW OR REPAIRING EXISTING SCOUR COUNTERMEASURES AND CONDUCTING OTHER MAINTENANCE ~~ACTIVITIES AT~~ EACH LOCATION.

FEE DESCRIPTION	AMOUNT
Environmental Review	$259.00
TOTAL	**$259.00**

SUMMARY:

Environmental Review	$259.00
TOTAL	**$259.00**

TOTAL BILLED:	$259.00
PAYMENT RECEIVED:	$0.00
BALANCE DUE:	**$259.00**

EK# 6921

BGS

DEPARTMENT OF PUBLIC WORKS AND PLANNING
COUNTY CHARGE FORM

NAME: Alexis Rutherford PHONE: 04530

DIVISION: Design

PROJECT NAME: BMP- Scour Counter Measures.

WORK ORDER NUMBER: L 11408

FUNDING BUDGET #: 4510

DIVISION #: 000

ACCOUNT #: 7295 / Memo 102 / Activity Code 4709

Take the front copy of this form along with a copyof your cash register validated fee form to Financial Services within 48 hours. Financial Services will prepare and process the proper paperwork to pay this charge.

PWR-1123 (09-02)

Fresno County Department of Public Works and Planning

(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 _____

DESCRITION OF PROPOSED USE OR REQUEST:
The County of Fresno proposes to conduct maintenance activities on twelve (12) bridges as part of the Bridge Preventive Maintenance Program.

CEQA DOCUMENTATION: ☐ *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 Various bridges in Fresno County
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.

Fresno County				
Owner (Print or Type)	Address	City	Zip	Phone
PW&P, Design Division				
Applicant (Print or Type)	Address	City	Zip	Phone
Alexis Rutherford				04530
Representative (Print or Type)	Address	City	Zip	Phone

CONTACT EMAIL:

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

Y:\Projects - Road & Bridge Folders\BPMP Scour Mitigation (L11408)\CEQA, NEPA\CEQA\PWandPlanningApplicationF-8Rvsd-20141110.docm

Application Type / No.: Fee: $
Application Type / No.: Fee: $
Application Type / No.: Fee: $
Application Type / No.: Fee: $
PER/Initial Study No.: 6921 Fee: $ 259.00
Ag Department Review: Fee: $
Health Department Review: Fee: $
Received By: RBS Invoice No.: TOTAL:$

STAFF DETERMINATION: This permit is sought under Ordinance Section:

_____

Related Application(s): _____
Zone District: _____
Parcel Size: _____

(PRINT FORM ON GREEN PAPER)

EL # 6921

LETTER OF TRANSMITTAL

COUNTY OF FRESNO
Department of Public Works and Planning
2220 Tulare Street, 7th Floor
Fresno, CA 93721-2106
Tel: x04530

DATE: 12/10/14

RE: **CEQA REVIEW**
BPMP Scour Countermeasures

TO: Chris Motta
Attn. Briza

WE ARE SENDING: ☒ Attached ☐ Under Separate Cover, via:

THE FOLLOWING ITEMS:

☐ Shop Drawings	☐ Prints	☐ Plans	☐ Specifications
☐ Copy of Letter	☐ Photos	☐ Clarification	☐ Samples
☐ Change Order	☐ Report(s)	☐ BOS Agenda Item	

COPIES	DATE	NO.	DESCRIPTION
1			County Charge Form

REMARKS: PLEASE INITIATE CEQA REVIEW. THE GREEN FORM, IS APP, PROJECT DESCRIPTION AND PROJECT MAP AND ATTACHMENTS ARE AVAILABLE ON THE G DRIVE AT G:\PUBLIC\SCOUR COUNTERMEASURES. THANK YOU.

COPY TO:

SIGNED: *Alexis Rutherford*
Alexis Rutherford, Staff Analyst

Aquatic Resource Delineation Report

for the

Bridge Preventative Maintenance Program (BPMP) Scour Mitigation Project

BPMP 5942(240); Bridge No. 42C0459; 42C058; 42C055; 42C0104; 42C0367; 42C0532; 42C0179; 06-FRE-0-CR

Fresno County, California

Prepared for:

County of Fresno
2220 Tulare Street, 7th Floor
Fresno, CA 93721
Contact: Alexis Rutherford
(559) 600-4530
e-mail: arutherford@co.fresno.ca.us

February 2018

EXECUTIVE SUMMARY

This report provides the results of an aquatic resources delineation study. The purpose of the study was to determine potential waters of the U.S. under the jurisdiction of the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act at seven locations along Los Gatos Creek, Fresno Slough, Fresno Slough Overflow, Travers Creek, and Fowler – Switch Canal as part of a Bridge Preventative Maintenance Program (BPMP) Project (Project). This delineation has been conducted following guidance in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Corps 2008a). The ordinary high water mark (OHWM) of potential other waters of the U.S. was delineated following guidance in *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Corps 2008b), and the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Corps 2010). This report indicates that waters of the U.S. are present in the Project Area. Acreages presented in this report are considered preliminary, subject to review by the Corps during the verification process. Implementation of the Project may require the Project proponent to obtain a Section 404 permit.

As shown below in Table E-1, a total of 3.425 acres of jurisdictional aquatic resources was identified at the 10.921-acre Project Area, comprised of 0.864 acre of wetlands (Valley Foothill Riparian Wetland and Fresh Emergent Wetland) and 2.594 acres of other waters of the U.S. (Ephemeral Stream, Riverine, and Intermittent Channel).

As shown in Table E-2, two other aquatic features comprised of 0.136 acre of wetlands (Valley Foothill Riparian Wetland and Wetland Pond) were also identified and determined to be non-Corps-jurisdictional features which are not regulated under Section 404 of the Clean Water Act (CWA).

Table E-1. Summary of Corps-jurisdictional Aquatic Resources in the Survey Area

Aquatic Resource Name	Aquatic Resource Habitat Type	Aquatic Resource Area (Acres)	Aquatic Resource Size (Linear Feet)
Wetlands			
W-3	Valley Foothill Riparian Wetland	0.005	N/A
W-7	Valley Foothill Riparian Wetland	0.254	N/A
W-8	Valley Foothill Riparian Wetland	0.016	N/A
W-9	Valley Foothill Riparian Wetland	0.080	N/A
W-10	Fresh Emergent Wetland	0.288	N/A
W-11	Valley Foothill Riparian Wetland	0.033	N/A
W-12	Valley Foothill Riparian Wetland	0.036	N/A
W-14	Valley Foothill Riparian Wetland	0.002	N/A
W-15	Valley Foothill Riparian Wetland	0.005	N/A
W-20	Valley Foothill Riparian Wetland	0.032	N/A
W-21	Valley Foothill Riparian Wetland	0.033	N/A
W-22	Valley Foothill Riparian Wetland	0.080	N/A
Wetlands Subtotal		*0.864*	*N/A*
Other Waters			
W-1	Intermittent Channel	0.298	397
W-2	Intermittent Channel	0.163	222
W-4	Intermittent Channel	0.409	339
W-5	Ephemeral Stream	0.019	78
W-6	Riverine	1.081	282
W-13	Riverine	0.091	0
W-16	Intermittent Channel	0.409	383
W-19	Intermittent Channel	0.083	177
W-23	Intermittent Channel	0.041	177
Other Waters Subtotal		*2.594*	*2,055*
Total		**3.425**	**2,055**

Table E-2. Summary of Non-Corps-jurisdictional Aquatic Resources within the Survey Area

Aquatic Resource Name	Aquatic Resource Habitat Type	Aquatic Resource Area (Acres)	Aquatic Resource Size (Linear Feet)
W-17	Wetland Pond	0.078	N/A
W-18	Valley Foothill Riparian Wetland	0.058	N/A
Total		**0.136**	**N/A**

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Acronyms and Abbreviations

BPMP	Bridge Preventative Maintenance Program
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
Corps	U.S. Army Corps of Engineers
County	County of Fresno
CWA	Clean Water Act
°F	Degrees in Fahrenheit
FAC	Facultative Plants
FACU	Facultative Upland Plants
FACW	Facultative Wetland Plants
GIS	Geographic Information System
GPS	Global Positioning System
HUC	USGS Hydrologic Unit Code
NRCS	Natural Resources Conservation Service
--	Not Listed
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NWI	National Wetland Inventory
NWPL	National Wetland Plant List
OBL	Obligate Wetland Plants
OHWM	Ordinary High Water Mark
Project	Bridge Preventative Maintenance Program Scour Mitigation Project
TNW	Traditional Navigable Water
UPL	Obligate Upland Plants
USGS	U.S. Geological Survey
WRCC	Western Regional Climate Center
WGS84	World Geodetic System 1984

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1.0 INTRODUCTION

The County of Fresno (County) requested an aquatic resources delineation be performed at the six bridge locations as part of the Bridge Preventative Maintenance Program (BPMP) Scour Mitigation Project (Project). The six bridge locations or Survey Areas are situated within southern and southwestern Fresno County. Survey Areas 1, 2, and 3 are located in rural areas which are surrounded by naturalized vegetation communities such as Blue Oak-Foothill Pine woodland, Annual Grassland and Valley-Foothill Riparian vegetation communities. Survey Areas 4, 5, and 6 are located in somewhat more developed areas surrounded by rural-residential and agricultural lots.

The County is proposing to complete activities that would extend the service life of the existing structures at each of six locations in Fresno County by installing new, or repairing scour countermeasures and conducting other maintenance activities. The proposed Project will be funded by the Federal Highway Bridge Program and therefore requires both 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 the California Department of Transportation (Caltrans), as authorized under the NEPA Assignment Memorandum of Agreement between Caltrans and the Federal Highway Administration.

This Preliminary Jurisdictional Determination (PJD) report summarizes the results of a delineation to determine potential waters of the U.S. under the jurisdiction of the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act (CWA) at the Project Area, and indicates that waters of the U.S. are present in the Project Area as shown in the delineation maps provided in Appendix A.

The purpose of this report is to identify and describe aquatic resources. This report facilitates efforts to:

1. Avoid or minimize impacts to aquatic resources during the design process.
2. Document aquatic resource boundary determinations for review by regulatory authorities.
3. Provide background information.

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2.0 LOCATION

The 10.921-acre Project Area, which encompasses the permanent and temporary work areas of the Project, is comprised of six Survey Area locations within southern and southwestern Fresno County, California as shown in Figure 1. The descriptions of each Survey Area location are discussed individually below, and are shown on Figures 2 through 9.

Survey Area 1 (Los Gatos Creek Bridge – 42C0459): This site is located approximately 18 miles northwest of Coalinga, California in Fresno County (Figures 2, 5, and Appendix A). To access the Project Area from Fresno, drive west on California (CA) 180 for approximately 10 miles. Take the exit for South Dickerson Road and proceed south on South Dickerson Road/McMullin Grade for 12 miles. South Dickerson/McMullin Grade changes to CA-145 25 miles. Stay straight onto CA-33/CA-198 for 18 miles. Turn west onto West Gale Avenue for 2 miles. Turn north onto South Derrick Boulevard and proceed for 1 mile. Turn west onto Los Gatos Road until you reach the bridge over Los Gatos Creek, approximately 11 miles. The Project Area is located within Section 35, Township 20 South, Range 13 East, of the Sherman Peak U.S. Geological Survey (USGS) 7.5-minute quadrangle topographic map (Figure 5). The approximate center coordinates of the Project Area are Longitude -120.549347 east and Latitude 36.227232 north using the World Geodetic System 1984 (WGS84) datum (USGS 1981).

Survey Area 2 (Los Gatos Creek Bridge – 42C0458): This site is located approximately 18 miles northwest of Coalinga, California in Fresno County (Figures 2, 5, and Appendix A). To access the Project Area from Fresno, drive west on CA-180 for approximately 10 miles. Take the exit for South Dickerson Road and proceed south on South Dickerson Road/McMullin Grade for 12 miles. South Dickerson/McMullin Grade changes to CA-145 in 25 miles. Stay straight onto CA-33/CA-198 for 18 miles. Turn west onto West Gale Avenue for 2 miles. Turn north onto South Derrick Boulevard and proceed for 1 mile. Turn west onto Los Gatos Road until you reach the bridge over Los Gatos Creek, approximately 11 miles. The Project Area is located within Section 35, Township 20 South, Range 13 East, of the Sherman Peak USGS 7.5-minute quadrangle topographic map (Figure 5). The approximate center coordinates of the Project Area are Longitude -120.546551 east and Latitude 36.227679 north using the WGS84 datum (USGS 1981).

Survey Area 3 (Los Gatos Creek Bridge – 42C0455): This site is located approximately 13 miles northwest of Coalinga, California in Fresno County (Figures 2, 6, and Appendix A). To access the Project Area from Fresno, drive west on CA-180 for approximately 10 miles. Take the exit for South Dickerson Road and proceed south on South Dickerson Road/McMullin Grade for 12 miles. South Dickerson/McMullin Grade changes to CA-145 25 miles. Stay straight onto CA-33/CA-198 for 18 miles. Turn west onto West Gale Avenue for 2 miles. Turn north onto South Derrick Boulevard and proceed for 1 mile. Turn west onto Los Gatos Road until you reach the bridge over Los Gatos Creek, approximately 11 miles. The Project Area is located within Section 5, Township 20 South, Range 14 East, of the Alcalde Hills USGS 7.5-minute quadrangle topographic map (Figure 6). The approximate center coordinates of the Project Area are Longitude -119.384784 east and Latitude 36.647293 north using the WGS84 datum (USGS 1978).

Survey Area 4 (Fresno Slough Overflow Bridge – 42C0104 and 42C0367): This site is located approximately 4 miles southwest of Riverdale, California in Fresno County (Figures 3, 7, and

Appendix A). To access the Project Area from Fresno, drive south on CA-41 for approximately 21 miles. Take the exit for West Whitney Avenue and proceed west 6 miles. Turn south onto South Hayes Avenue for 1 mile. Turn west onto West Laguna Avenue for 0.5 mile. Turn south onto South Bryan Avenue for 1 mile. Turn west onto West Excelsior Avenue for 0.6 mile until you reach the bridge over Fresno Slough. The Project Area is located within Section 5, Township 18 South, Range 19 East, of the Burrel USGS 7.5-minute quadrangle topographic map (Figure 7). The approximate center coordinates of the Project Area are Longitude -120.925369 east and Latitude 36.401388 north using the WGS84 datum (USGS 1981).

Survey Area 5 (Fowler Switch Canal Bridge – 42C0532): This site is located approximately 3 miles northwest of Selma, California in Fresno County (Figures 4, 8, and Appendix A). To access the Project Area from Fresno, drive south on State Route (SR) 99 for approximately 11 miles. Take the exit for East Manning Avenue and proceed west for 400 feet and turn south onto Temperance Avenue for 1.5 miles. Turn east onto East Huntsman Avenue for 0.3 mile, until you reach the bridge over Fowler Switch Canal. The Project Area is located within Section 35, Township 15 South, Range 18 East, of the Conejo USGS 7.5-minute quadrangle topographic map (Figure 8). The approximate center coordinates of the Project Area are Longitude -120.659185 east and Latitude 36.583592 north using the WGS84 datum (USGS 1978).

Survey Area 6 (Travers Creek Bridge – 42C0179): This site is located approximately 4 miles northeast of Reedley, California in Fresno County (Figures 4, 9, and Appendix A). To access the Project Area from Fresno, drive east on CA-180 for approximately 19 miles. Take the exit for South Reed Avenue and proceed south on Reed Avenue for 6 miles. Turn east onto East Adams Avenue for 4 miles. Turn south onto Alta Avenue until you reach the bridge over Travers Creek. The Project Area is located within Sections 17 and 18, Township 15 South, Range 24 East, of the Reedley USGS 7.5-minute quadrangle topographic map (Figure 9). The approximate center coordinates of the Project Area are Longitude -119.394866 east and Latitude 36.623237 north using the WGS84 datum (USGS 1981).

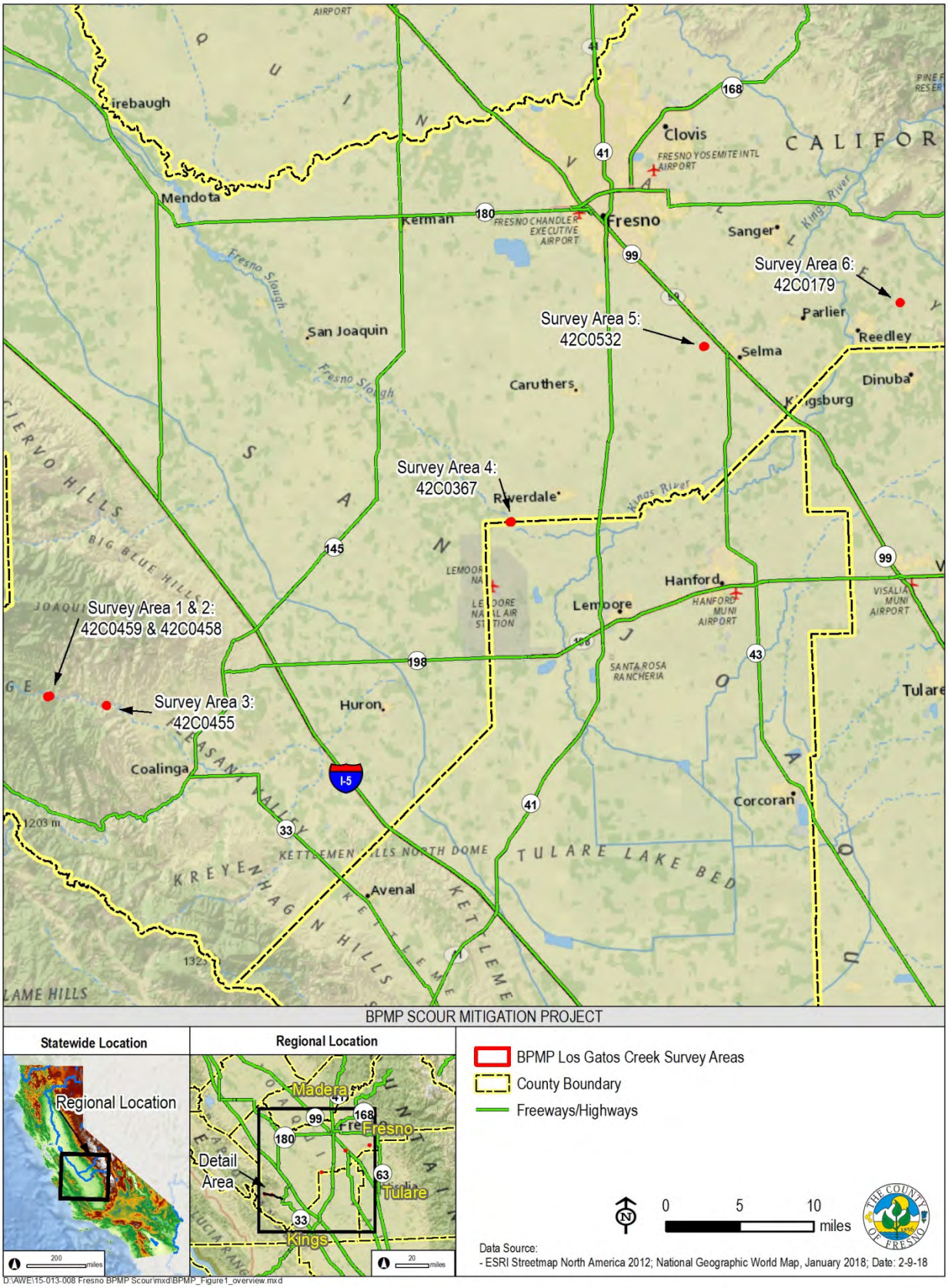

Figure 1. Project Area Overview

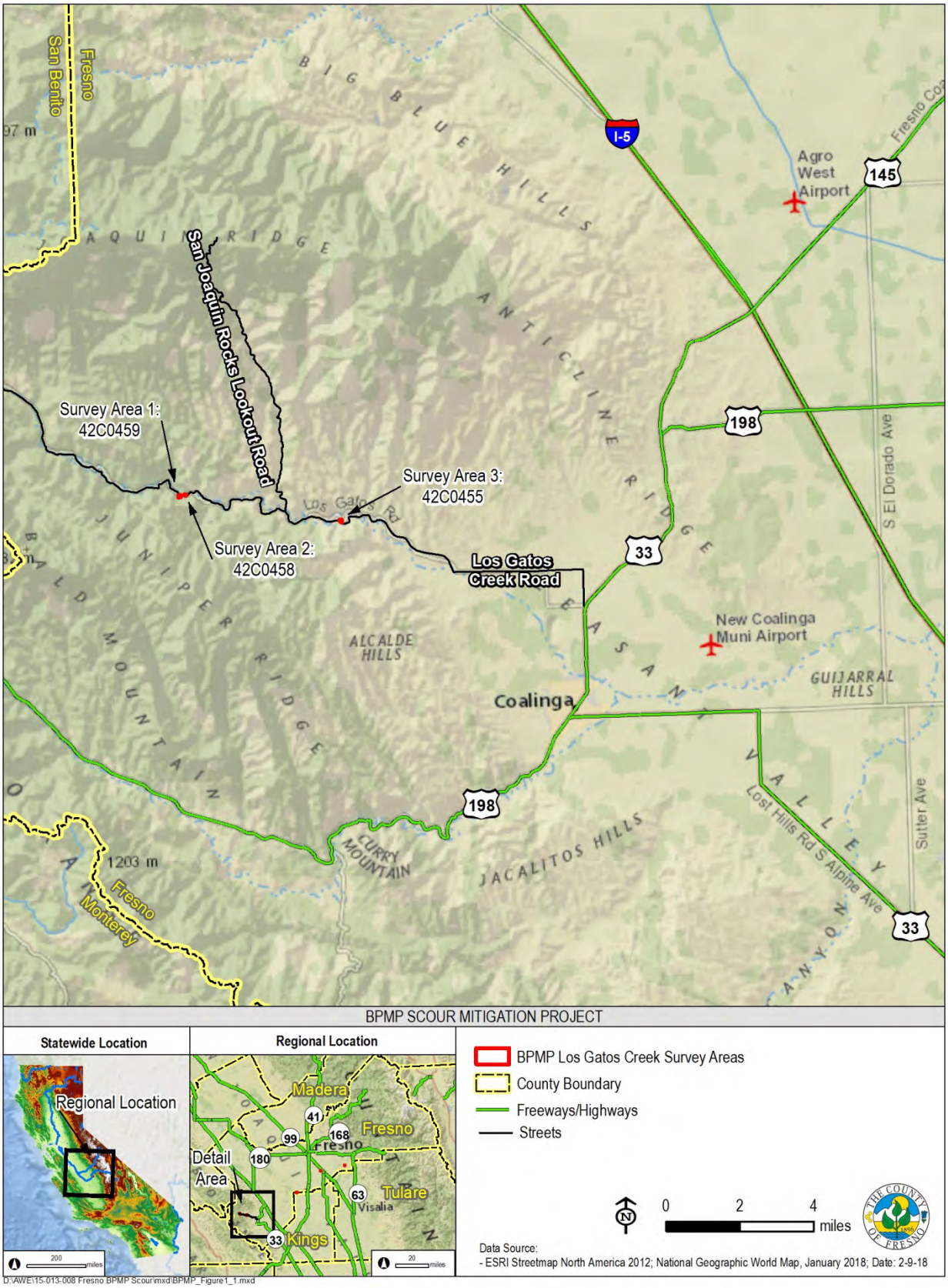

Figure 2. Vicinity Map – Survey Area 1-3

Figure 3. Vicinity Map – Survey Areas 4-5

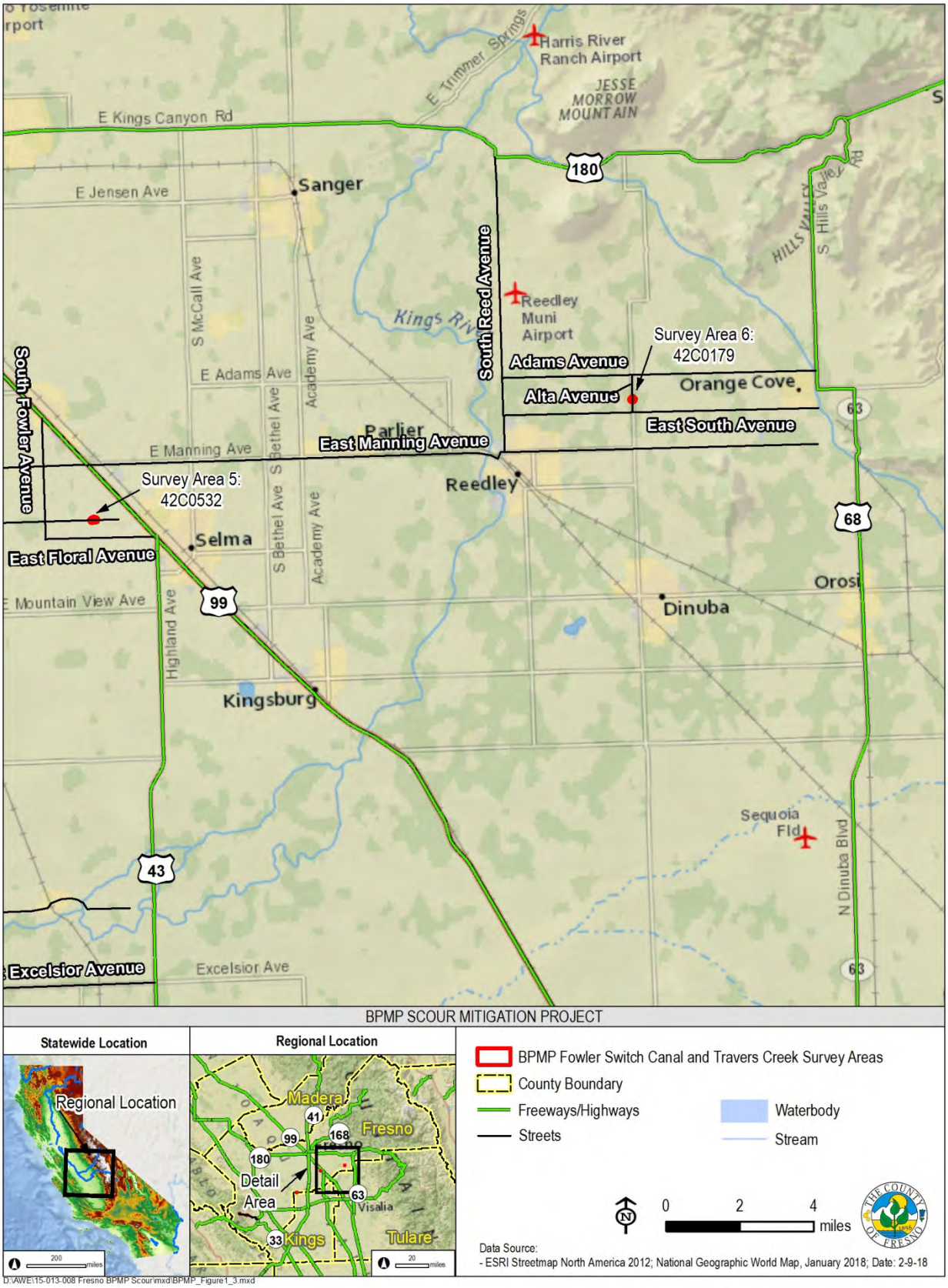

Figure 4. Vicinity Map – Survey Areas 5-6

Figure 5. Location Map – Survey Areas 1-2

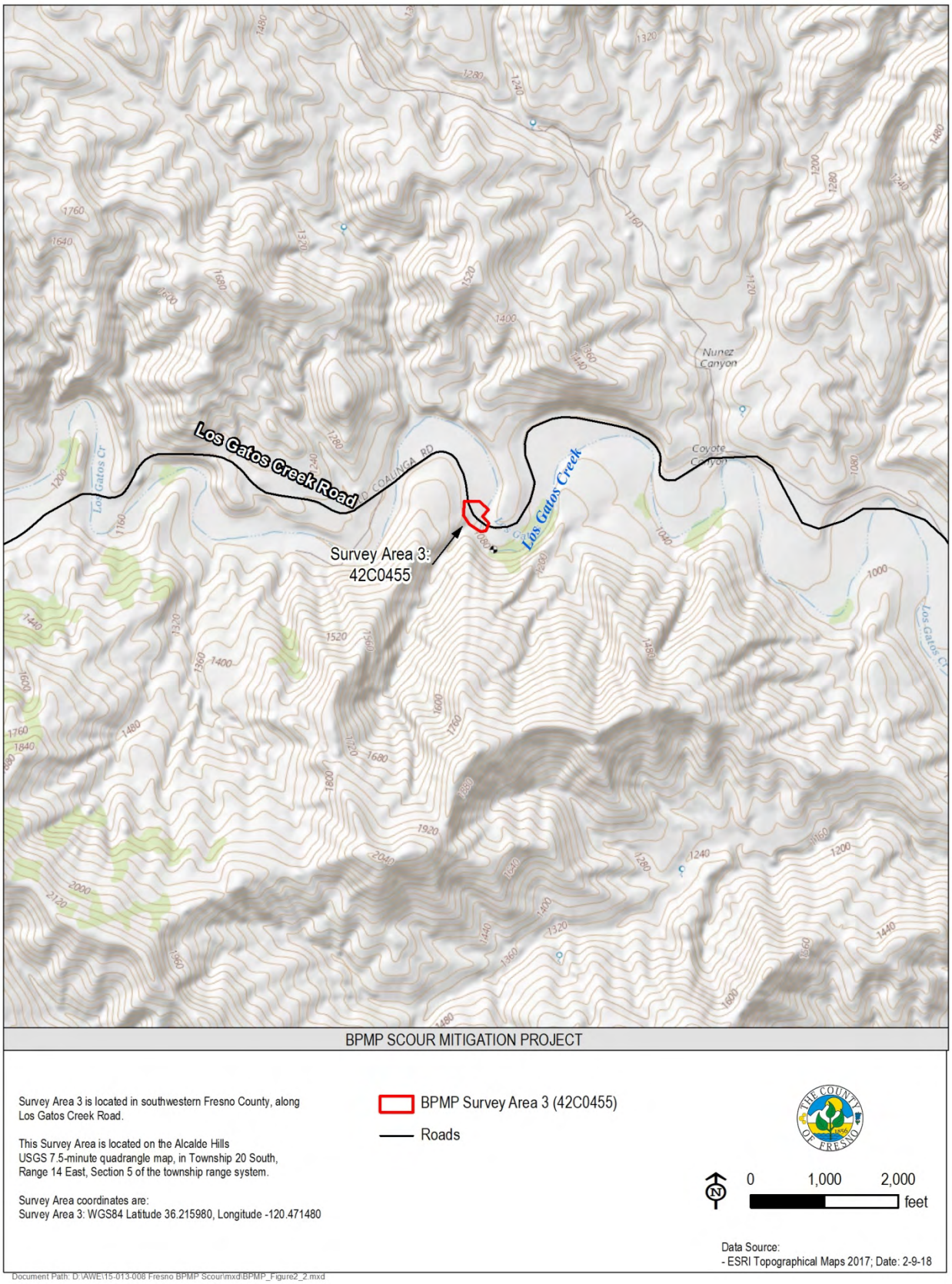

Figure 6. Location Map – Survey Area 3

Figure 7. Location Map – Survey Area 4

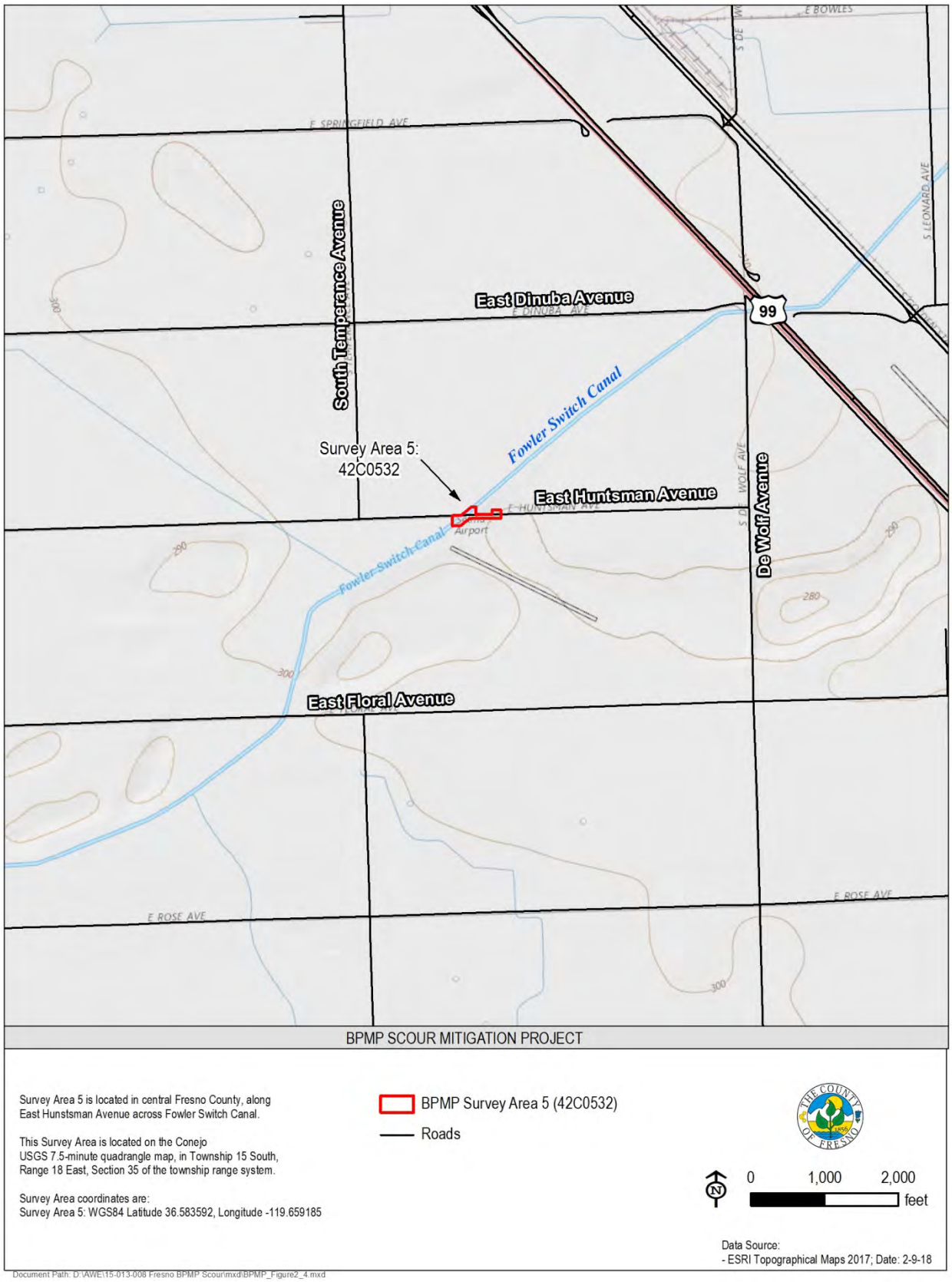

Figure 8. Location Map – Survey Area 5

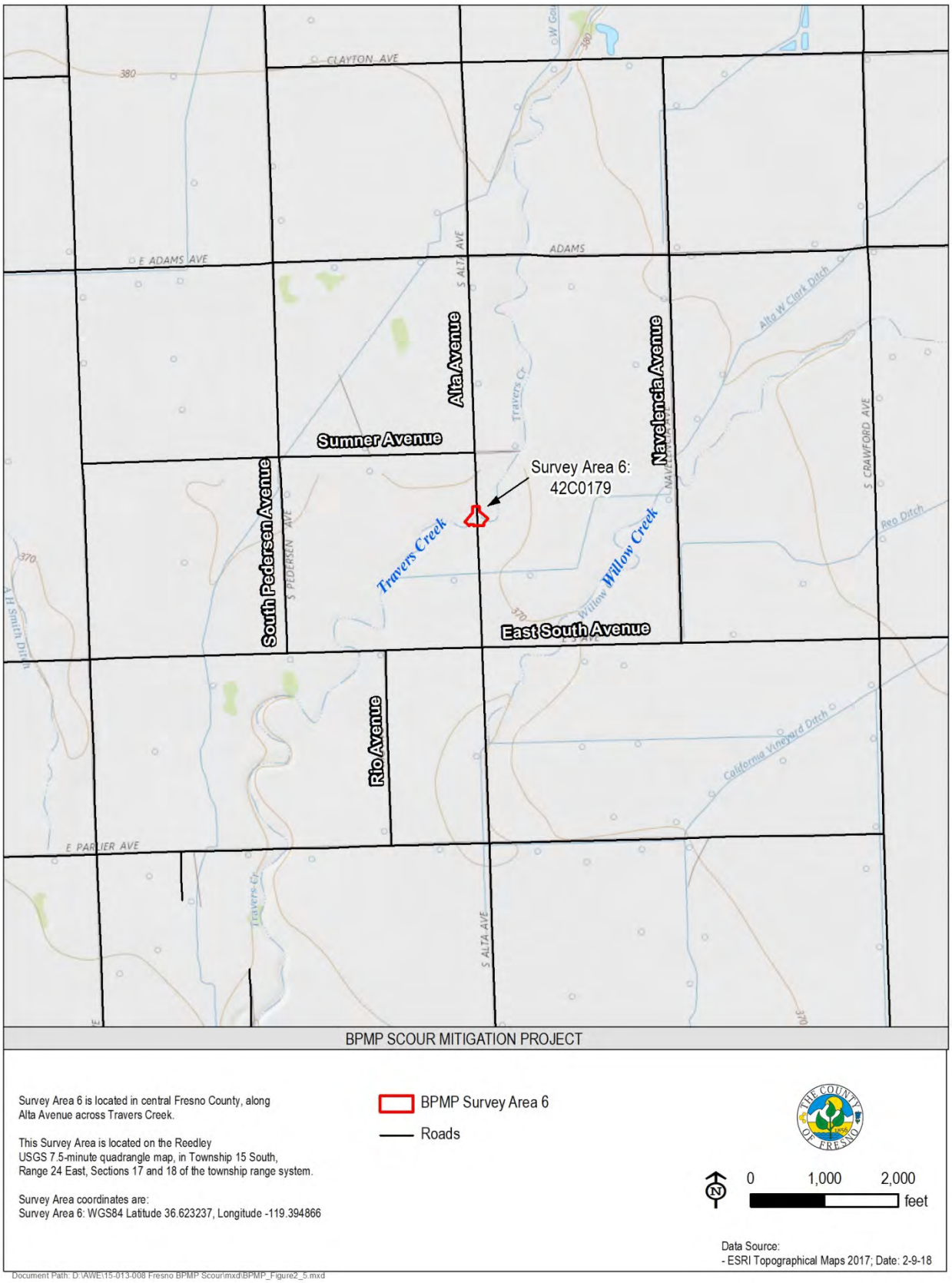

Figure 9. Location Map – Survey Area 6

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3.0 METHODS

Wetlands were delineated using the *U.S. Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Corps 2008a). The OHWM of potential other waters of the U.S. were delineated using *A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States* (Corps 2008b), and the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Corps 2010). Typically, an area must meet criteria for hydrophytic vegetation, hydric soils, and wetland hydrology to be identified as a potential wetland under Corps jurisdiction.

Features that did not meet the hydrophytic vegetation wetland criteria were reviewed to determine if they met the definition of other waters of the U.S. (i.e., had evidence of an OHWM).

Specific details of the delineation methods are described below.

3.1 DEFINITIONS

Certain terms used throughout this report have specific meanings that relate to the wetland delineation process, as specified by the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Corps 2008a). These terms are described briefly below.

3.1.1 Waters of the U.S.

"Waters of the U.S." is the encompassing term for areas that qualify for federal regulation under Section 404 of the CWA. Waters of the U.S. include "wetlands" and "other waters of the U.S." For regulatory purposes, wetlands are defined as:

> Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient 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 (Code of Federal Regulations [CFR] 328.3, 230.3).

3.1.2 Wetlands

Wetlands under Corps jurisdiction must have the following field indicators:

1. A prevalence of vegetation typically adapted for life in saturated soil conditions more than 50 percent of the dominant plants are obligate wetland plants (OBL), facultative wetland plants (FACW) and facultative plants (FAC) (Environmental Laboratory 1987);

   Plant wetland indicator status from The National Wetland Plant List: 2016 Update of Wetland Ratings (NWPL) (Lichvar, et al. 2016) is abbreviated as follows:

- OBL = Obligate wetland plants. Almost always occur in wetlands.
- FACW = Facultative wetland plants. Usually occur in wetlands, but may occur in non-wetlands.
- FAC = Facultative plants. Occur in wetlands and non-wetlands.
- FACU = Facultative upland plants. Usually occur in non-wetlands, but may occur in wetlands.
- UPL = Obligate upland plants. Almost never occur in wetlands.
- For species not listed in the NWPL "Not Listed" (--) is used to indicate their absence in the list. These species can be assumed to be upland species.

2. Hydric soils (soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part) (Natural Resources Conservation Service [NRCS] 2017); and

3. Wetland hydrology (areas that are periodically inundated or have soils saturated to the surface at some time during the growing season; where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively [Environmental Laboratory 1987]).

In the Arid West Region, growing season dates are determined through onsite observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperatures. Season dates may be approximated by using WETS tables available from NRCS National Water and Climate Center to determine the median dates of 28 degrees Fahrenheit (°F) (-2.2 degree Celsius) air temperatures in spring and fall based on long-term records gathered at the nearest appropriate National Weather Service meteorological station (Corps 2008a).

3.1.3 Other Waters of the U.S.

For this report, other waters of the U.S. refer to waterways and other water bodies with a defined bed and bank, such as drainages, ditches, creeks, rivers, and lakes. This translates to the bank-to-bank portion of water bodies, up to the OHWM. Other waters of the U.S. may lack hydrophytic vegetation and/or evidence of hydric soils.

In 33 CFR Part 329.1, the OHWM for non-tidal rivers is defined as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; and the presence of litter and debris. The OHWM for a stream is usually determined through an examination of the recent physical evidence of surface flow in the stream channel. In dry land fluvial systems typical of the desert areas, the most common physical characteristics indicating the OHWM for a channel usually include, but are not limited to, a clear, natural scour line impressed on the bank; recent bank erosion; destruction of native terrestrial vegetation; and the presence of litter and debris (Corps 2008b, 2010).

3.2 PRELIMINARY REVIEW

Before field surveys were conducted, the following information was reviewed:

- General topography was obtained from the Sherman Peak, Alcalde Hills, Burrel, Conejo, and Reedley USGS 7.5 minute topographic quadrangle maps (USGS 1978; USGS 1981) (Figures 5 – 9).
- Soils information from the NRCS Web Soil Survey (NRCS 2018) (Figures 10-15 and Appendix B).
- National Wetland Inventory (NWI) maps (Figures 16-20) (U.S. Fish and Wildlife Service 2018).
- USGS Hydrologic Unit Code (HUC) data for California watershed boundaries (Figure 21).
- Precipitation data and seasonal temperature data from the Western Regional Climate Center (WRCC) (National Oceanic and Atmospheric Administration [NOAA] 2017) (Appendix C).
- Aerial imagery to determine the connectivity of wetlands and other waters of the U.S. to a Traditional Navigable Water (TNW) (Figure 22).
- Location Hydraulic Studies for the BPMP Scour Mitigation Sites (Los Gatos Creek Bridge at Los Gatos Creek Road, Fresno Slough Bridge at Excelsior Avenue, and Travers Creek Bridge at S. Alta Avenue) (Caltrans 2016a).
- Caltrans Bridge Preventative Maintenance Program (BPMP 5942(240)) Scour Mitigation Project Natural Environment Study (Minimal Impacts) (NES MI) (Caltrans 2016b).

3.3 FIELD SURVEY DATES AND METHODS

Biologists Patrick Martin and Callen Keller conducted wetland delineation fieldwork on January 22 – 26, 2018. Fieldwork priorities were to collect data on vegetation, soils, and hydrology of the six Survey Areas within the Project Area to determine which areas could be considered potential waters of the U.S.

Data collected from the Preliminary Review (discussed above) including georeferenced aerial photographs, topographic maps, NRCS soil maps viewed on handheld mobile devices were utilized to target areas with potential waters of the U.S. During fieldwork the Project Area was covered on foot. Data regarding vegetation, soils and hydrology were recorded on Wetland Determination Data Forms (Arid West Region, Version 2, provided in Appendix D) and described below.

3.3.1 Vegetation

The prevalence of hydrophytic vegetation was determined using Corps methods. Plant species not readily identifiable in the field were determined based on diagnostic keys from the *Jepson Manual: Vascular Plants of California (Second Edition)* (Baldwin et al. 2012). The wetland indicator status of plant species was based on *The National Wetland Plant List: 2016 Update of Wetland Ratings* (Lichvar et al. 2016).

The wetland vegetation criterion was considered met when more than 50 percent of the dominant plant species across all strata were rated OBL, FACW, or FAC or if the aerial cover of hydrophytic plant species resulted in a prevalence rating of 3.0 or less. The Corps defines "dominant" plant species as those with at least 20 percent coverage of the total canopy. The Corps defines an area to be vegetated if it has 5 percent or more total plant cover at the peak of the growing season. Those sites supporting either a dominance or prevalence of hydrophytes were further examined for indicators of wetland hydrology and hydric soils discussed below.

Figure 10. Project Area Soils – Survey Area 1

Figure 11. Project Area Soils – Survey Area 2

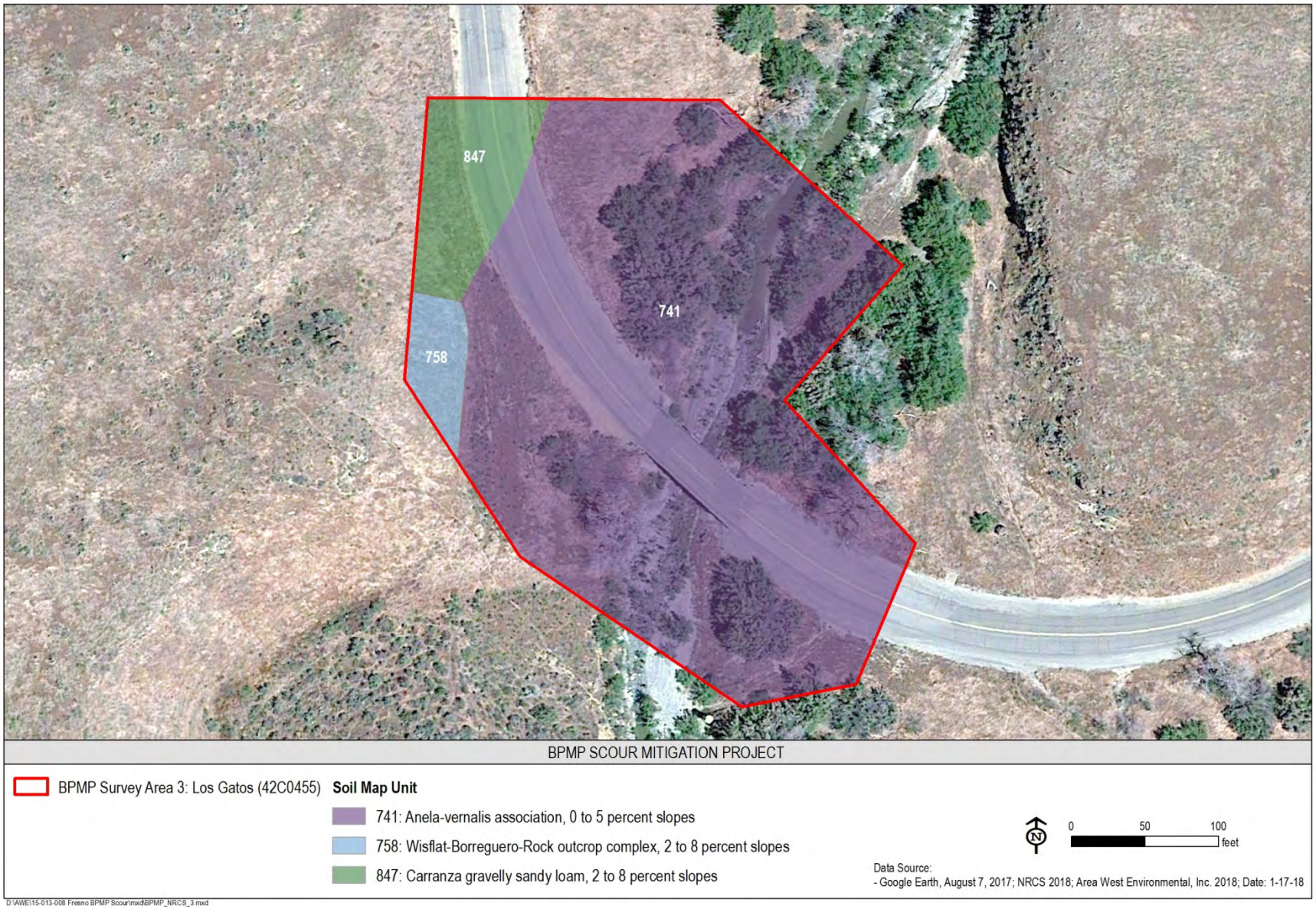

Figure 12. Project Area Soils – Survey Area 3

Figure 13. Project Area Soils – Survey Area 4

Figure 14. Project Area Soils – Survey Area 5

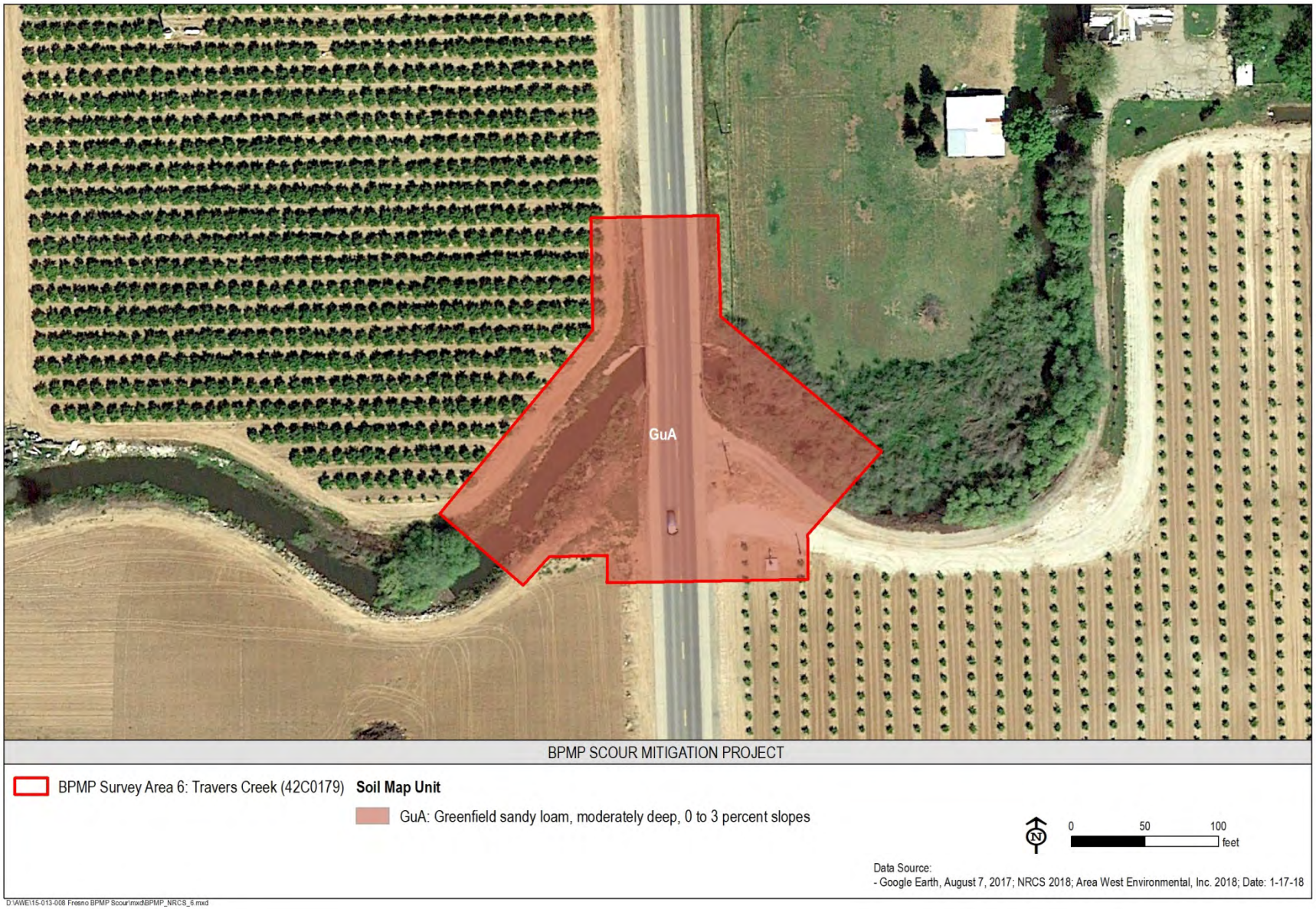

Figure 15. Project Area Soils – Survey Area 6

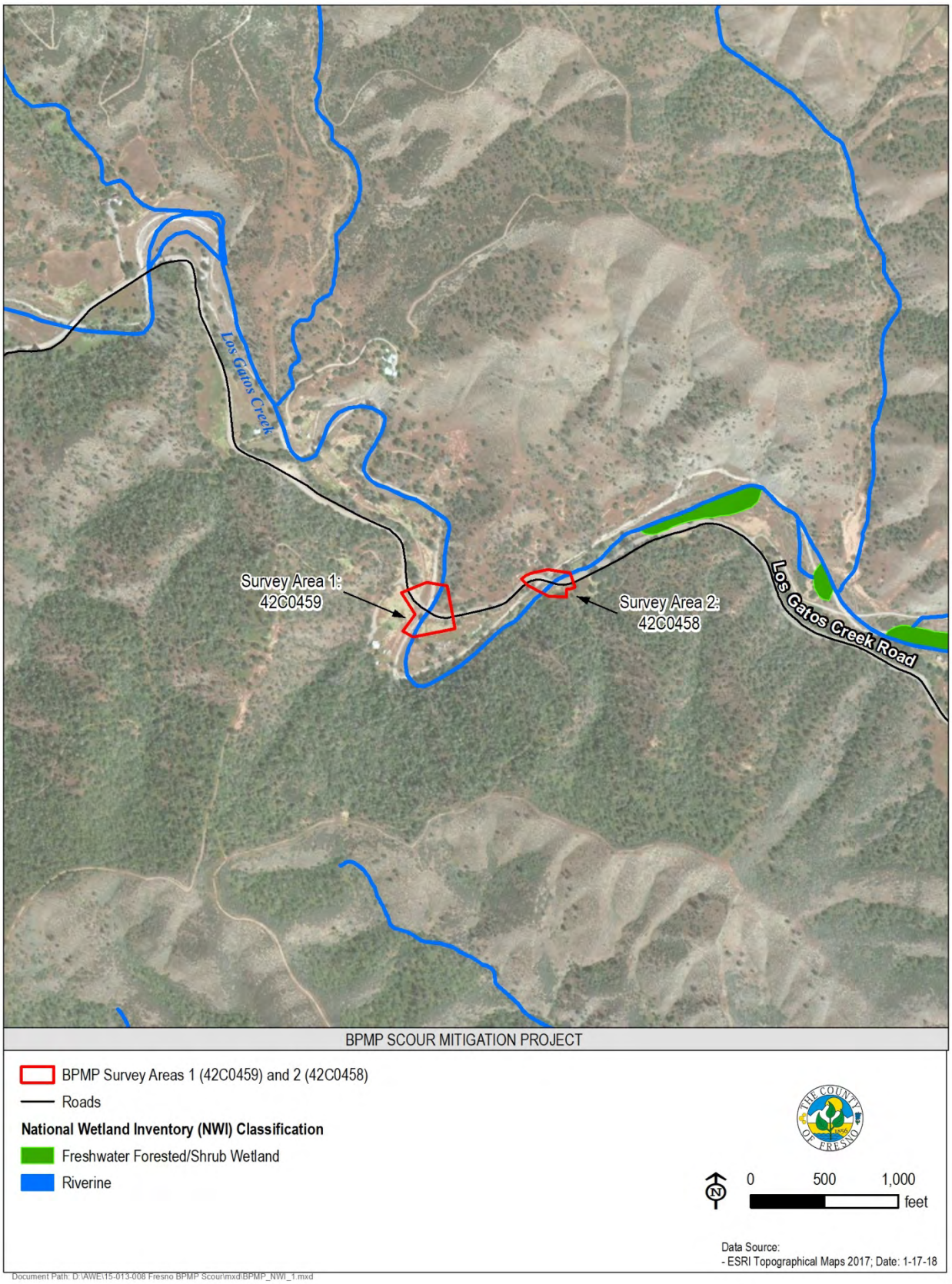

Figure 16. National Wetlands Inventory – Survey Areas 1 and 2

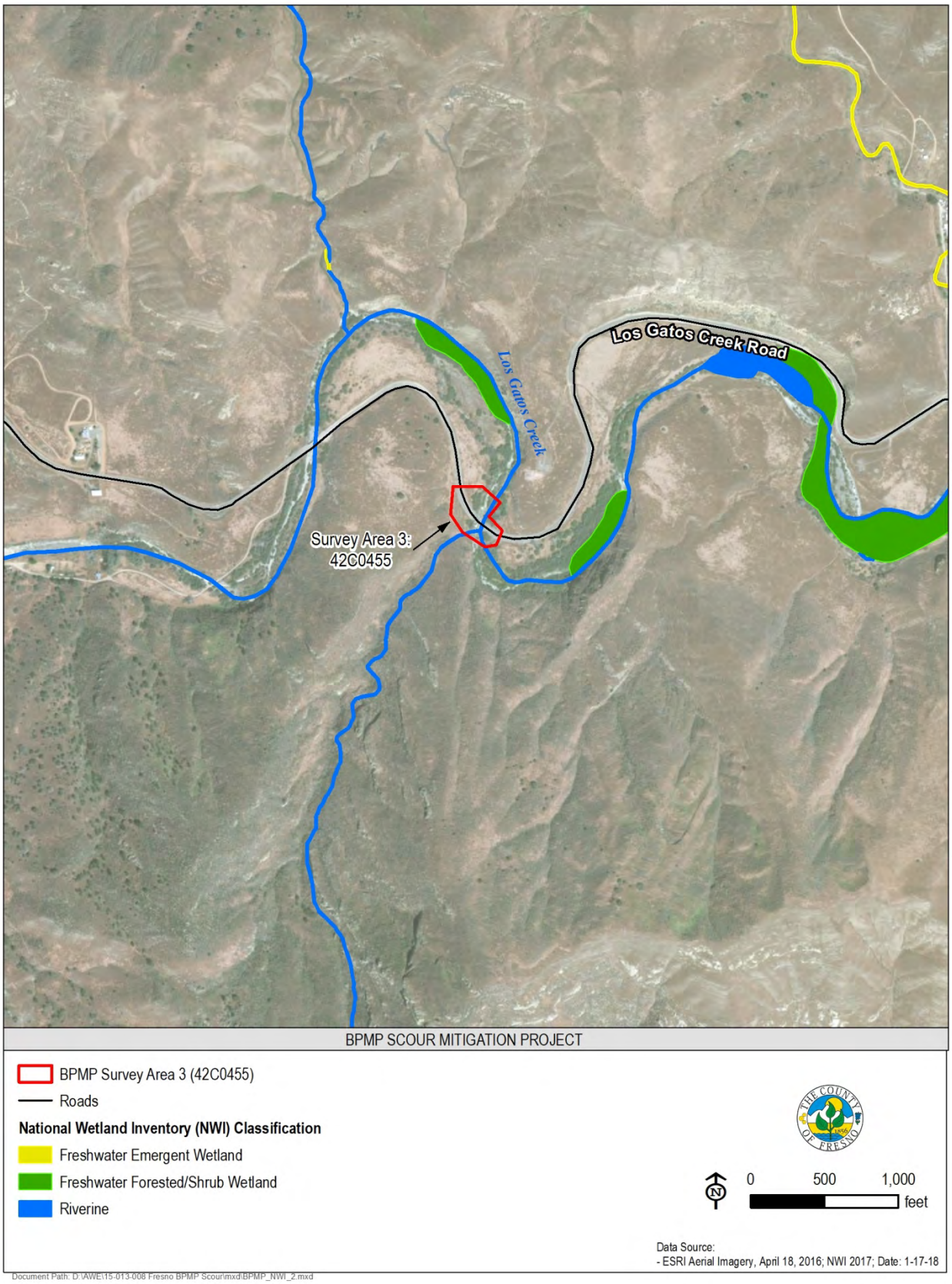

Figure 17. National Wetlands Inventory – Survey Area 3

Figure 18. National Wetlands Inventory – Survey Area 4

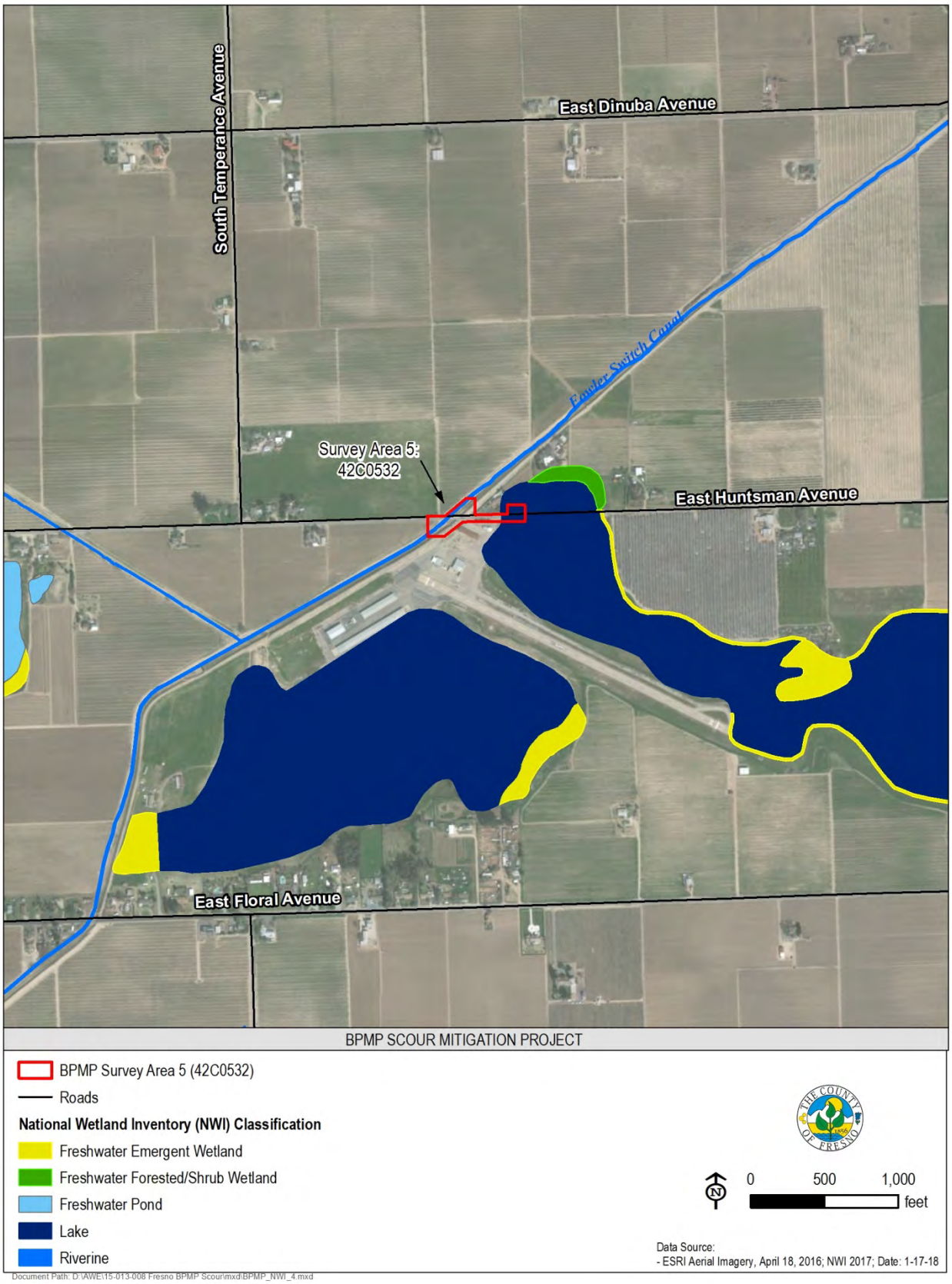

Figure 19. National Wetlands Inventory – Survey Area 5

Figure 20. National Wetlands Inventory – Survey Area 6

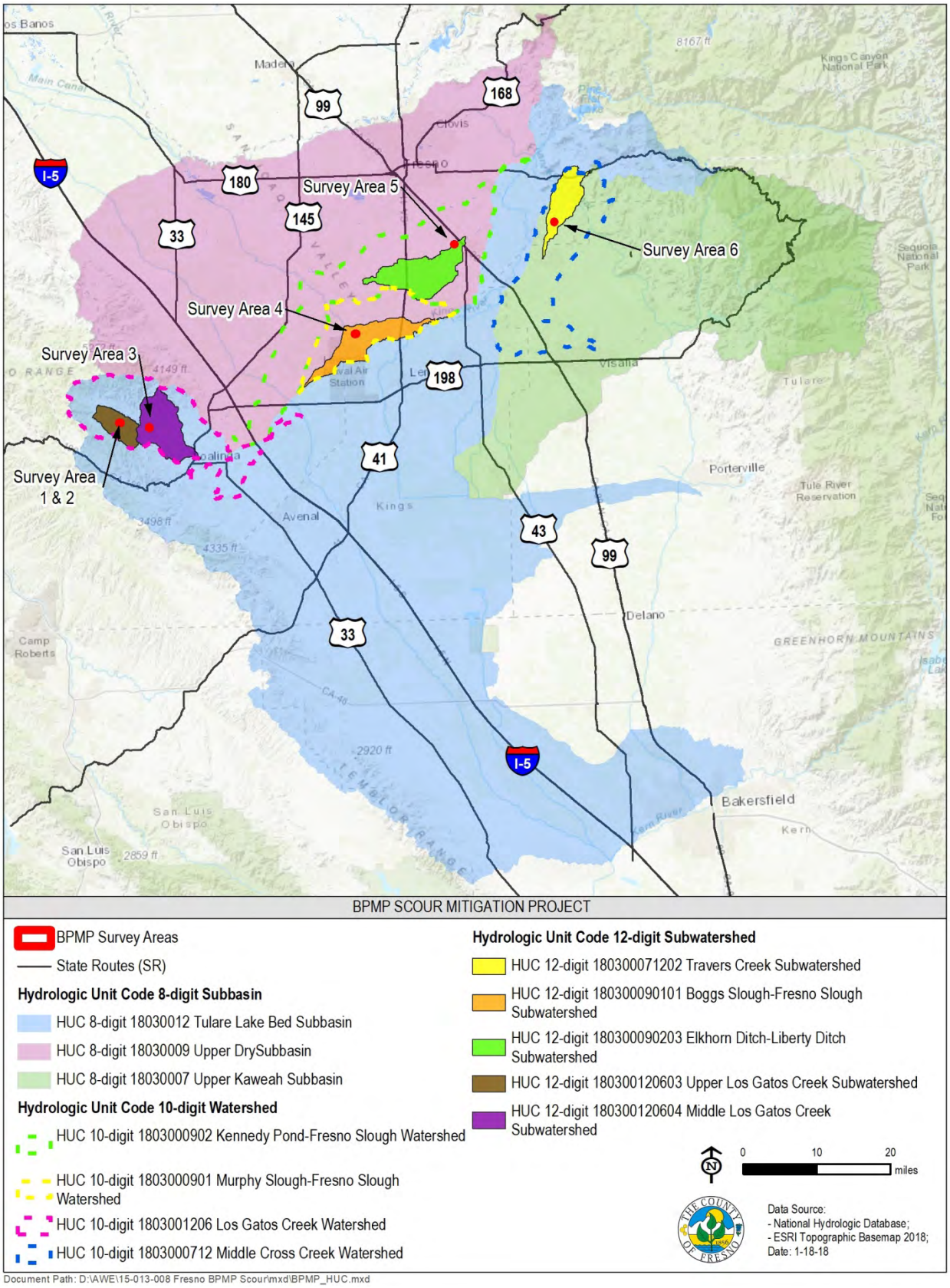

Figure 21. Project Area Hydrologic Unit

3.3.2 Soils

A total of 21 soil pits were excavated and 21 wetland determination data forms were completed (DP1 through DP21) (Appendix D). Soil texture, matrix and mottle colors, the presence of subsoil layers impervious to water infiltration, and their respective depths were documented from the hand-excavated soil pits. The soil pits were excavated up to 18 inches, where possible when soil conditions permitted. Soil pits were not excavated to 18 inches if a restrictive layer was encountered or if soils met hydric soil criteria prior to the 18 inch soil depth. Soils were examined for positive hydric soil indicators such as low chromas, mottles, histic epipedons, organic layers (O and H), manganese concretions, gleization, and sulfidic odor. The color and texture of the soil layers encountered were recorded. Soil color was determined from moist soil peds using *Munsell Soil Color Charts* (Munsell 2009). Alphanumeric soil descriptions provided on the field data forms are based on those in the Munsell soil color charts.

Hydric soil assessments were predominately based on the guidance provided in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Corps 2008a) and the *Field Indicators of Hydric Soils in the U.S., Version 8.1* (NRCS 2018). Supplemental soil information for the regional area was also evaluated from the Web Soil Survey (NRCS 2018) (Appendix B).

3.3.3 Hydrology

Areas supporting a prevalence of hydrophytic vegetation were also further evaluated for indicators of wetland hydrology. Hydrology information was determined through field observations in order to determine the presence/absence of primary and/or secondary hydrological indicators (i.e., surface water, saturation, sediment debris or drift deposits, watermarks, soil cracks, oxidized root channels, biotic or salt crusts, or other hydrologic indicators). Wetland hydrology was also determined based on the presence of ponding (inundation) or saturation, aerial photographic signature, landscape positions, or the presence of other field indicators such as scour marks.

The sites were also surveyed for water bodies (e.g., streams and ponds). A "water body" is defined as any area that in a normal year has water flowing or standing above ground to the extent that evidence of an OHWM is established (Federal Register Volume 67, Number 10, on Tuesday January 15, 2002). Water bodies are not required to be dominated by hydrophytic vegetation or have positive hydric soil indicators to be considered Corps-jurisdictional. OHWM data sheets are found in Appendix E.

3.4 DATA COLLECTION

Data was collected on the general vegetation communities within the Project, categorized by dominant vegetation and hydrology. Data points were collected to document wetlands, other waters, and uplands (Appendix D).

Drainages exhibiting or potentially exhibiting an OHWM were further characterized using forms provided in the *Updated Datasheet for Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Corps 2010) (Appendix E). A total of six OHWM Datasheets, representing two locations along Los Gatos Creek, an ephemeral stream, Fowler Switch Canal, Fresno Slough, and Travers Creek were completed for the Project Area.

Representative photographs of Survey Areas 1 through 6 within the Project Area and the associated features are provided in Appendix F.

3.5 MAPPING AND ACREAGE CALCULATIONS

Mapping was conducted in the field on January 22-26, 2018. Where accessible, the boundaries of potential aquatic features were recorded using a handheld Trimble GeoXH 6000 Global Positioning System (GPS) unit with sub-meter accuracy. Data was collected in latitude/longitude in the WGS84 datum. When community boundaries, or portions thereof, were not accessible, a line was walked using the GPS and an offset was recorded. In a few areas, the feature was hand drawn on an aerial photograph. A GPS point was collected at the OHWM for the OHWM Datasheet location.

GPS data and hand-drawn data were overlain on aerial photographs of the Project using ArcView Geographic Information System (GIS) software. Acreages were calculated for all mapped features in GIS.

4.0 EXISTING CONDITIONS

A total of 3.425 acres of Corps-jurisdictional aquatic resources were identified at the 10.921-acre Project Area, comprised of 0.864 acre of wetlands (Valley Foothill Riparian Wetland and Fresh Emergent Wetland) and 2.594 acres of other waters of the U.S. (Riverine and Intermittent Channel) (Appendices A, D, and E). Two non-Corps-jurisdictional aquatic features were also identified, comprised of 0.136 acre of wetlands (Valley Foothill Riparian Wetland and Wetland Pond) (Appendices A, D, and E). Section 4.3 below describes all of the vegetation community types occurring on-site, including vegetation composition, soils, hydrology, and justification of jurisdictional status.

Acreages and aquatic resource boundaries are preliminary and subject to review and modification by the Corps. Data forms are included in Appendix D. OHWM data sheets are provided in Appendix E, and representative on-site photographs are provided in Appendix F. A list of vascular plant species observed in the Project Area is included in Appendix G. An aquatic resources sheet for all of the documented waters of the U.S. is included in Appendix H.

4.1 LANDSCAPE SETTING

The Survey Area at Sites 1, 2, and 3 is located in western Fresno County, with elevations ranging from 200 to 1,467 feet above mean sea level (amsl). Climate details for the Survey Area are based on historic weather data collected by the WRCC at the Coalinga, California monitoring station, located approximately 12 miles southeast of the Survey Area at Sites 1, 2, and 3. According to the WRCC, temperatures range from an average high temperature in July of 99.6 °F to an average low of 35.7 °F in December (NOAA 2017). The Survey Area receives an average of 10.58 inches of annual precipitation (rain), mostly occurring from October through June (NOAA 2018). Additionally, the average length of the growing season (i.e., number of "frost-free" days) for the Survey Area is 275 days (NOAA 2017). In an average year, the Survey Area would receive approximately 3 to 4 inches of rain since the beginning of the wet-season prior to the site visit (October 1, 2017) (NOAA 2018). Prior to the survey date, precipitation data in the region of the Survey Area since the beginning of the wet-season was unavailable (NOAA 2018).

The Survey Area at Sites 4, 5, 6 and 7 is located in Fresno County, with elevations ranging from 200 to 1,467 feet amsl. Climate details for the Survey Area are based on historic weather data collected by the WRCC at the Yosemite International, California monitoring station, located approximately 20 miles northwest of the Survey Area. According to the WRCC, temperatures range from an average high temperature in July of 98.4 °F to an average low of 37.9 °F in December (NOAA 2017). The Survey Area receives an average of 10.89 inches of annual precipitation (rain), mostly occurring from October through June (NOAA 2018). Additionally, the average length of the growing season (i.e., number of "frost-free" days) for the Survey Area is 322 days (NOAA 2018). Prior to the survey date, 1.23 inches of rain had fallen in the region of the Survey Area since the beginning of the wet-season (October 1, 2016) (NOAA 2018).

At Survey Area 1, 2, and 3, the NWI identified riverine habitat in the Survey Area (Figures 22 and 23). The Survey Area is located near the western portion of the HUC 8-digit Tulare Lake Bed subbasin (HUC 18030012) (Figure 27). Los Gatos Creek originates in the foothills and proceeds from Survey Area 1, 7.2 miles to Survey Area 3, where it drains into the Central Valley and terminates 31.8 miles downstream into uplands. Los Gatos Creek is an isolated stream and it is not

tributary to a (TNW) (Figure 22). During flood events, Los Gatos Creek may flow further, but it still does not connect to any other streams or canals.

At Survey Area 4, the NWI identified riverine in the Survey Area (Figure 18). The Survey Area is located near the northern portion of the HUC 8-digit Upper Dry subbasin (HUC 18030009) (Figure 27). The Fresno Slough drains the Kings River, and proceeds from the Survey Area 46 miles to the San Joaquin River, a TNW (Figure 22).

At Survey Area 5, the NWI identified lake and riverine in the Survey Area (Figure 19). The Survey Area is located near the northern portion of the HUC 8-digit Upper Dry subbasin (HUC 18030009) (Figure 19). Fowler Switch is a part of a network of irrigation to provide water to the Central Valley. Fowler Switch Canal has no visible connection to a TNW or a tributary, but it likely is connected to the Fresno Slough, which is located west of the Survey Area flows to the San Joaquin River, a TNW (Figure 22).

At Survey Area 6, the NWI identified freshwater forested/shrub wetland in the Survey Area (Figure 20). The Survey Area is located near the northern portion of the HUC 8-digit Upper Kaweah subbasin (HUC 18030007) (Figure 21). Travers Creek proceeds from the Survey Area 7.5 miles before being diverted to an unnamed drainage, which diverts flows for agricultural use and eventually drains into the Kings River 13.9 miles downstream. The Kings River divides into several distributaries when it enters the Central Valley, eventually being used for irrigation, with small amounts of flow eventually draining to Tulare Lake. During flood events, the northern distributaries of the Kings River may flow 70 miles before the confluence with the San Joaquin River, a TNW (Figure 22).

4.2 SOILS

There are nine soil map units present within the Survey Area (Appendix B). Each soil map unit present in the Survey Area is described in detail in the NRCS Web Soil Survey, including landform position, horizon textures, depth to restrictive layer, and drainage class (Appendix B). Below is a list of the mapped soil units, symbols and the Survey Area where they occur and their map unit symbols:

- Anela-vernalis association, 0 to 5 percent slopes (741): Survey Area 1, Survey Area 2 and Survey Area 3;
- Lilten-Millsholm association, 30 to 65 percent slopes (744): Survey Area 1 and Survey Area 2;
- Wisflat-Borreguero-Rock outcrop complex, 2 to 8 percent slopes (758): Survey Area 3;
- Carranza gravelly sandy loam, 2 to 8 percent slopes (847): Survey Area 3;
- Armona loam, partially drained (101): Survey Area 4;
- Grangeville fine sandy loam, saline-alkali, partially drained (121): Survey Area 4;
- Delhi loamy sand, 0 to 3 percent slopes, MLRA 17 (DhA): Survey Area 5;
- Delhi loamy sand, 3 to 9 percent slopes (DhB): Survey Area 5;
- Greenfield sandy loam, moderately deep, 0 to 3 percent slopes (GuA): Survey Area 6; and
- Water (181): Survey Area 4, and Survey Area 5.

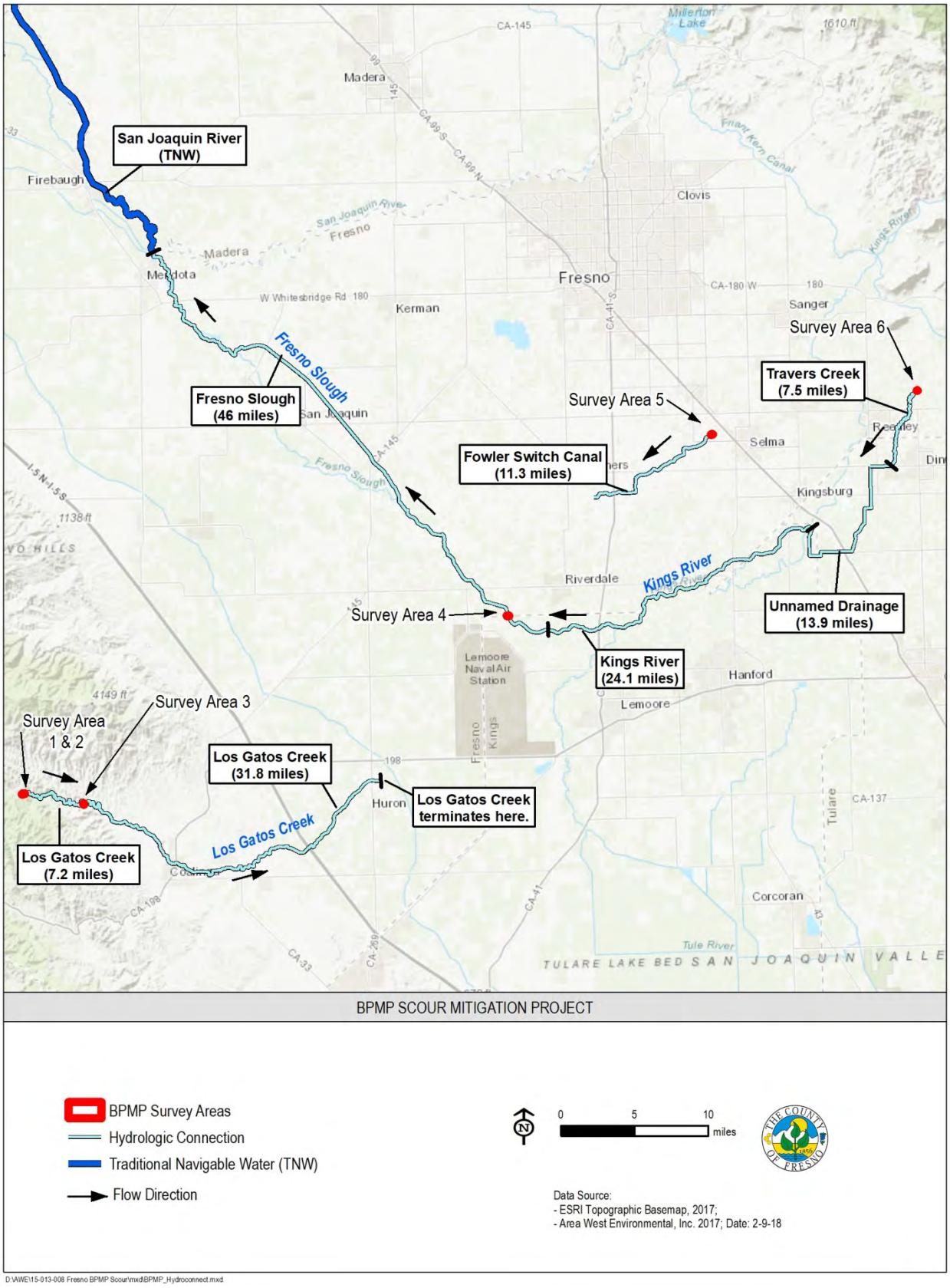

Figure 22. Project Area Hydrologic Connection to Traditional Navigable Water

Of the nine soil map units that occur in the Survey Areas, seven soil map units are listed in the National Hydric Soil List (NRCS 2017), which include the following (Figures 10 through 15):

- Anela-vernalis association, 0 to 5 percent slopes (741);
- Lilten-Millsholm association, 30 to 65 percent slopes (744);
- Wisflat-Borreguero-Rock outcrop complex, 2 to 8 percent slopes (758);
- Carranza gravelly sandy loam, 2 to 8 percent slopes (847);
- Armona loam, partially drained (101);
- Grangeville fine sandy loam, saline-alkali, partially drained (121); and
- Delhi loamy sand, 0 to 3 percent slopes, MLRA 17 (DhA).

4.3 VEGETATION COMMUNITIES INCLUDING AQUATIC RESOURCES

Fourteen vegetation communities are present onsite:

- Developed
- Ruderal
- Irrigated Agriculture
- Annual Grassland
- Blue Oak-Foothill Pine
- Valley-Foothill Riparian – Upland
- Valley-Foothill Riparian – Wetland
- Fresh Emergent Wetland
- Los Gatos Creek – Intermittent Channel
- Ephemeral Stream
- Fresno Slough – Riverine
- Fowler Switch Canal – Riverine
- Wetland Pond
- Travers Creek – Riverine

These communities, along with their vegetation, soil, hydrology, and Justification for Corps-jurisdictional status, are described below. Table 1, located below the vegetation community descriptions, shows each Corps-jurisdictional feature, and coincides with the aquatic resources maps A-1 through A-6 in Appendix A.

4.3.1 Developed

Developed portions of the Project Area are situated within upland areas and characterized by anthropogenic features including paved roads, gravel roadside pull-offs, driveways, and ornamental vegetation (Appendix A). Ornamental vegetation in the developed areas of Survey Area 5 includes horticultural tree and shrub species (Appendix A-5).

Vegetation. Vegetation, when present, is sparse and consists primarily of scattered upland annual grasses and forbs, as well as ornamental vegetation such as oleander (*Nerium oleander*) (--).

Soils. Due to the dominance and prevalence of upland vegetation in this community, soils were not examined for indicators of hydric soils.

Hydrology. No indicators of wetland hydrology were observed in this community.

Justification for Non-jurisdictional Status. The areas classified as Developed are dominated by upland herbaceous species, upland ornamental species, bare ground, and/or areas that are paved. Furthermore, no indicators of wetland hydrology were observed in this community. This community is not considered a wetland or other waters of the U.S., and is not subject to jurisdiction by the Corps.

4.3.2 Ruderal

The Ruderal vegetative community in the Project Area includes areas that have been substantially graded, excavated, or in other ways frequently disturbed by human activities (e.g., mowing, spraying, and/or tilling), resulting in bare ground or weedy annual grasses and forbs. Within the Project Area, this includes unpaved shoulders adjacent to Los Gatos Creek Road in Survey Areas 1–3, West Excelsior Avenue in Survey Area 4, Huntsman Avenue in Survey Area 5, and along Alta Avenue in Survey Area 6. These areas are currently barren or support weedy species such as wild oats (*Avena fatua*) (--), ripgut brome (*Bromus diandrus*) (--), wall barley (*Hordeum murinum*) (FACU), tumbleweed (*Amaranthus albus*) (FACU), puncturevine (*Tribulus terrestris*) (--), and field mustard (*Brassica rapa*) (FACU).

Vegetation. Vegetation in the ruderal areas consists of scattered upland annual grasses and forbs.

Soils. Due to the dominance and prevalence of upland vegetation in this community, soils were not examined for indicators of hydric soils.

Hydrology. No indicators of wetland hydrology were observed in this community.

Justification for Non-jurisdictional Status. The ruderal community type is dominated by upland herbaceous species. Furthermore, no indicators of wetland hydrology were observed in this community. This community is not considered a wetland or other waters of the U.S., and is not subject to jurisdiction by the Corps.

4.3.3 Irrigated Agriculture

The Irrigated Agriculture vegetative community in the Project Area was comprised of irrigated orchard consisting entirely of citrus (*Citrus* spp.) trees. Irrigated orchard is present in Survey Area 5 along the northeastern side of Fowler Switch Canal and in Survey Area 6 in the northwest side and the southeast of Alta Avenue adjacent to Travers Creek (Appendix A-5 and A-6). Citrus trees are arranged in rows and are regularly maintained. The sparse vegetation in the understory of the orchard rows is consistent with ruderal upland community described in Section 4.3.2 above.

Data Point 21 in Appendix D is representative of the vegetation, hydrology, and soils of the irrigated agriculture community in Survey Area 6 is discussed below.

Vegetation. Orchards consisted of rows of citrus trees, with an understory that was mostly barren or comprised of weedy annuals.

Soils. Soils in this community showed distinct redox concentrations within a loam soil with a dark matrix. These conditions fulfill the hydric soil indicator F6 – Redox Dark Surface.

Hydrology. No indicators of wetland hydrology were observed in this community.

Justification for Non-jurisdictional Status. Irrigated agriculture in the Project Area is dominated by upland herbaceous species and citrus trees. Furthermore, no indicators of wetland hydrology were observed in this community. This community is not considered a wetland or other waters of the U.S., and is not subject to jurisdiction by the Corps.

4.3.4 Annual Grassland

The Annual Grassland vegetation community consists primarily of non-native annual grasses with a small forb component. Present outside of the riparian corridor of Los Gatos Creek in Survey Area 3 (Appendix A-3), a large portion of this vegetation community was burned at the time of the survey.

Data Point 7 in Appendix D is representative of the vegetation, hydrology, and soils of the annual grassland community in Survey Area 3 is discussed below.

Vegetation. Plants in this vegetation community were entirely herbaceous and consisted mainly of non-native annual grasses including ripgut brome, foxtail brome (*Bromus madritensis*), and wild oats. When present, forbs included sunflower (*Helianthus annuus*) (FACU), and turkey mullein (*Croton setiger*) (--). Forbs were higher in abundance and cover within the portions of the annual grassland that were mowed or grazed.

Soils. No indicators of hydric soils were observed in this vegetation community.

Hydrology. No indicators of wetland hydrology were observed in this vegetation community.

Justification for Non-jurisdictional Status. Annual grassland represents an upland vegetation community dominated by upland herbaceous species. Furthermore, no indicators of hydric soils or wetland hydrology were observed in this vegetation community. This vegetation community is not considered a wetland or an other waters of the U.S., and is not subject to jurisdiction by the Corps.

4.3.5 Blue Oak – Foothill Pine

The Blue Oak – Foothill Pine vegetation community consists of open canopy blue oak woodland with an understory dominated by annual grasses and forbs with some shrubs typical of coastal scrub communities. This community typically occurs in the foothills surrounding the Central Valley in well-drained soils with a rocky component to the soil. Blue Oak – Foothill Pine is present at Survey Area 1 and Survey Area 2 (Appendix A-1 and A-2) adjacent to Los Gatos Creek and is the dominant community on the landscape.

Data Points 1 and 4 in Appendix D are representative of the vegetation, hydrology, and soils of the Blue Oak – Foothill Pine community in Survey Areas 1 and 2 (Appendix A-1 and A-2) as discussed below.

Vegetation. Blue Oak – Foothill Pine consists of an open canopy woodland comprised of blue oak (*Quercus douglasii*) (--), foothill pine (*Pinus sabiniana*) (--) and California juniper (*Juniperus californica*) (--) in the overstory with an understory dominated by annual grass species as described above in the Annual Grassland vegetation community. Shrubs in the understory included California buckwheat (*Eriogonum fasciculatum*) (--), and interior goldenbush (*Ericameria linearifolia*) (--). Isolated Fremont cottonwood (*Populus fremontii*) (FAC) trees occur along the edges Los Gatos Creek at Survey Area 2.

Soils. Soils in this community near Los Gatos Creek showed prominent redox concentrations along pore linings of living roots in a sandy soil with a depleted matrix. These conditions fulfill the hydric soil indicator S5 – Sandy Redox.

Hydrology. Wetland hydrology was evidenced by primary hydrology indicators; Oxidized Rhizospheres along Living Roots (C3), and secondary hydrology indicators; Sediment Deposits (B2), and Drift Deposits (B3) in low lying areas of this community along the banks of Los Gatos Creek.

Justification for Non-jurisdictional Status. Blue Oak – Foothill Pine represents an upland vegetation community dominated by upland herbaceous species even though the positive indicators of hydric soil and wetland hydrology were observed in this vegetation community. This vegetation community is not considered a wetland or an other waters of the U.S., and is not subject to jurisdiction by the Corps.

4.3.6 Valley-Foothill Riparian – Upland

The Valley-Foothill Riparian - Upland vegetation community consists of a stand of small-flower tamarisk (*Tamarix parviflora*) (FAC) that dominates the banks and the channel of the riparian corridor of Los Gatos Creek in Survey Area 3 (Appendix A-3). This community is typically found in the Central Valley and the surrounding foothills in valleys, alluvial fans, and terraces along waterways. In Survey Area 3, this community occurs in an intermittent channel and along its banks with a clearly defined boundary with the adjacent annual grassland community. At the time of the field survey, this community had been recently had been recently burned and was significantly disturbed by grading and excavating activities.

Data Points 5 and 6 in Appendix D are representative of the vegetation, hydrology, and soils of the riparian upland community in Survey Area 3 is discussed below.

Vegetation. This vegetation community is dominated by a shrub and herbaceous layer and consists mainly of small-flowered tamarix in the shrub layer and rattail sixweeks grass (*Vulpia myuros*) (FACU) and stinkwort (*Dittrichia graveolens*) (--) in the herbaceous layer.

Soils. Prominent redox concentrations are present in the matrix and along pore linings of living roots within in a low chroma clay matrix that is indicative of hydric soil conditions (Environmental Laboratory 1987).

Hydrology. Wetland hydrology was evidenced by primary hydrology indicator, Oxidized Rhizospheres along Living Roots (C3), and secondary hydrology indicators, Sediment Deposits (B2) and Drift Deposits (B3).

Justification for Non-jurisdictional Status. Valley-Foothill Riparian Forest represents an upland vegetation community dominated by upland herbaceous species even though positive indicators of hydric soil and wetland hydrology were observed in this vegetation community. This vegetation community is not considered a wetland or an other waters of the U.S., and is not subject to jurisdiction by the Corps.

4.3.7 Valley-Foothill Riparian – Wetland

Riparian communities are those floodplain, bottomland, and streambank communities that occur along inland waterways. Occurring in transition zones between aquatic and upland communities and in their undisturbed condition, riparian communities are characterized by dominant vegetation types that are tolerant of, and adapted to, relatively high soil moisture content. Riparian communities occur entirely within the 100-year floodplain of streams and rivers. However, most riparian plant species require flooding more frequently than once in every hundred years. Undisturbed riparian woodlands or forests can be thought of having three somewhat distinct layers: overstory, midstory, and understory (Appendix A and H). The Valley-Foothill Riparian vegetation community was observed at three Survey Area locations in the Project Area (Survey Areas 2, 4, and 6), which are each described separately below and shown in Appendix A-2, A-4, and A-6.

Data Point 3 in Appendix D is representative of the vegetation, hydrology, and soils of the Valley-Foothill Riparian vegetation community in Survey Area 2 is discussed below.

Vegetation. This community in the Project Area is characterized by a dominance of herbaceous and sapling hydrophytes, which includes red willow (*Salix laevigata*) (FACW), Fremont cottonwood, stinkwort, rabbitsfoot grass (*Polypogon monspeliensis*) (FACW), and sedge (*Carex* sp.) (FAC).

Soils. Prominent redox concentrations are present in the matrix and along pore linings of living roots in a clay soil with a depleted matrix. These conditions fulfill the hydric soil indicator F3 - Depleted Matrix.

Hydrology. Wetland hydrology was evidenced by primary hydrology indicator, Oxidized Rhizospheres along Living Roots (C3), and secondary hydrology indicators, Sediment Deposits (B2), and Drift Deposits (B3).

Justification for Non-jurisdictional Status. This community within Survey Area 2 and represented by Data Point 3 is considered an isolated wetland, because it supports a dominance of hydrophytic vegetation, wetland hydrology, and hydric soils. This vegetative community is documented by Data Point 3 which lies adjacent to Los Gatos Creek, an intermittent channel, with a well-defined OHWM. Los Gatos Creek does not support interstate or foreign commerce, does not qualify as interstate waters, and is not tributary to a TNW. Although Los Gatos Creek has an OHWM and possesses a well-defined bed and bank, it is not expected to qualify as other waters of the U.S. since it is not tributary to, adjacent to or neighboring waters of the U.S. and it terminates in uplands. Similarly, the Valley-Foothill

Riparian vegetation community along Los Gatos Creek is also not expected to qualify as a Corps-jurisdictional wetland.

Data Point 8 in Appendix D is representative of the vegetation, hydrology, and soils of the Valley-Foothill Riparian vegetation community in Survey Area 4 is discussed below.

Vegetation. This vegetative community in the Project Area is characterized by a dominance of hydrophytes, which includes Fremont cottonwood in the tree stratum, Goodding's black willow (*Salix gooddingii*) (FACW), and common buttonbush (*Cephalanthus occidentalis*) (OBL) in the shrub layer and an understory dominated by mild water-smartweed (*Persicaria hydropiper*) (OBL).

Soils. Soils in this community showed prominent redox concentrations in a depleted matrix of a sandy soil. These conditions fulfill the hydric soil indicator S5 – Sandy Redox.

Hydrology. Wetland hydrology in this community was evidenced by both primary and secondary indicators. Primary indicators of wetland hydrology in the channel included: Saturation (A3), and Oxidized Rhizospheres along Living Roots (C3). Secondary indicators include: Water Marks (B1), Sediment Deposits (B2), and Drift Deposits (B3).

Justification for Corps-jurisdictional Status. This community within Survey Area 4 and represented by Data Point 8 is considered a wetland, because it supports a dominance of hydrophytic vegetation, wetland hydrology, and hydric soils.

Data Point 11 in Appendix D is representative of the vegetation, hydrology, and soils of the Valley-Foothill Riparian vegetation community in Survey Area 4 is discussed below.

Vegetation. This community in the Project Area is characterized by a dominance of hydrophytes, which includes Goodding's black willow in the shrub layer and an understory dominated by Valley redstem (*Ammannia coccinea*) (OBL), Johnsongrass (*Sorghum halepense*) (FACU), and tall flatsedge (*Cyperus eragrostis*) (FACW). Rough cocklebur (*Xanthium strumarium*) (FAC) is also abundant in the surrounding wetland.

Soils. Soils in this community showed prominent redox concentrations in a depleted matrix of a sandy soil. These conditions fulfill the hydric soil indicator S5 – Sandy Redox.

Hydrology. Wetland hydrology was evidenced by both primary and secondary indicators. Primary indicators of wetland hydrology in the channel included: Surface Soil Cracks (B6), and Oxidized Rhizospheres along Living Roots (C3). Secondary indicators include: Water Marks (B1), Sediment Deposits (B2), and Drift Deposits (B3).

Justification for Corps-jurisdictional Status. This community within Survey Area 4 and represented by Data Point 11 is considered a wetland, because it supports a dominance of hydrophytic vegetation, wetland hydrology, and hydric soils.

Data Point 18 in Appendix D is representative of the vegetation, hydrology, and soils of the Valley-Foothill Riparian vegetation community in Survey Area 5 is discussed below.

Vegetation. This vegetative community in the Project Area is characterized by a dominance of hydrophytes, which is comprised Goodding's black willow and western marsh cudweed (*Gnaphlium palustre*) (FACW).

Soils. Soils in this vegetative community showed prominent redox concentrations in a depleted matrix of a sandy soil. These conditions fulfill the hydric soil indicator S5 – Sandy Redox.

Hydrology. Wetland hydrology in this community was evidenced by primary hydrology indicators; Drift Deposits (B3), Biotic Crust (B12), Inundation Visible on Aerial Imagery (B7), and Oxidized Rhizospheres (C3).

Justification for Corps-jurisdictional Status. This community within Survey Area 5 and represented by Data Point 18 is a wetland, because it supports a dominance of hydrophytic vegetation, wetland hydrology, and hydric soils.

Justification for Non-jurisdictional Status. Valley Foothill Riparian at Rockwell Pond is not Corps-jurisdictional. In accordance with 33 CFR 328.3 (b) (6), stormwater control features constructed to convey, treat, or store stormwater constructed in dry land and CFR 328.3 (b) (7) wastewater recycling structures, such as groundwater recharge basins constructed in dry land are not considered waters of the U.S. and are not regulated under Section 404 of the CWA. Therefore, 0.058 acre of Valley Foothill Riparian may meet some of the criteria to qualify as waters of the U.S., upon verification by the Corps they may not be considered Corps -jurisdictional waters of the U.S.

Data Point 20 in Appendix D is representative of the vegetation, hydrology, and soils of the riparian wetland community in Survey Area 6 is discussed below.

Vegetation. This vegetative community in the Project Area is characterized by a dominance of hydrophytes, which is comprised entirely of herbaceous vegetation. Dominant species include; bitter cress (*Cardamine oligosperma*) (FAC), seep monkeyflower (*Mimulus guttatus*) (OBL), and common nettle (*Urtica dioica*) (FAC).

Soils. Several stratified layers of soil starting within 6 inches of the soil surface, with one or more layers with a value of 3 or less with chroma of 1 or less and is mucky peat with sand. These conditions fulfill the hydric soil indicator A5 – Stratified Layers.

Hydrology. Wetland hydrology in this community was evidenced by both primary and secondary indicators. Primary indicator of wetland hydrology consists of inundation visible on aerial imagery (B7). Secondary indicators of wetland hydrology was evidenced by; Water Marks (B1), Sediment Deposits (B2), and Drift Deposits (B3).

Justification for Corps-jurisdictional Status. This community is considered a wetland, because it supports a dominance of hydrophytic vegetation, wetland hydrology, and hydric soils.

4.3.8 Fresh Emergent Wetland

The Fresh Emergent Wetland vegetative community is characterized by a prevalence of perennial monocots, which emerge from the water of permanently or semi-permanently inundated areas. The Fresh Emergent Wetland community in the Project Area occurs in Survey Area 4 within the active floodplain of Fresno Slough (Appendix A-4).

Data Point 13 in Appendix D is representative of the vegetation, hydrology, and soils of the fresh emergent wetland community discussed below.

Vegetation. Fresh emergent wetland community was dominated by hydrophytic vegetation including black medic (*Medicago lupulina*) (FAC) and the obligate hydrophyte seep monkeyflower. Other sub-dominant species associated with this wetland type included common smartweed, Tall tumblemustard (*Sisymbrium altissimum*) (FACU), prostrate pigweed (*Amaranthus blitoides*), umbrella bulrush (*Scirpus diffuses*), curly dock (*Rumex crispus*), and tall flatsedge (*Cyperus eragrostis*).

Soils. Soils were considered hydric since they met the hydric soil indicator F6 – Redox Dark Surface which was exhibited by prominent redox concentrations within the pore linings of living root channels within a dark soil matrix.

Hydrology. The emergent wetland community occurs within the active floodplain of Fresno Slough. This area appears to be inundated for longer duration then adjacent Riparian Wetland (described above). Wetland hydrology was evidenced by primary hydrology indicators; Surface Soil Cracks (B6), Inundation Visible on Aerial Imagery (B7), and Oxidized Rhizospheres along Living Roots (C3), and secondary hydrology indicators; Water Marks (B1), Sediment Deposits (B2), Drift Deposits (B3), and Saturation Visible on Aerial Imagery (C9).

Justification for Corps-jurisdictional Status. This community is considered a wetland, because it supports a dominance of hydrophytic vegetation, wetland hydrology, and hydric soils.

4.3.9 Los Gatos Creek – Intermittent Channel

Los Gatos Creek is an intermittent channel which only has flowing water during the wet season and is dry during the hot summer months. This creek does not support wetland vegetation within its OHWM. Los Gatos Creek originates in the foothills and terminates in the Central Valley in uplands. This stream has not been diverted or rerouted and does not appear to have underground flow. Los Gatos Creek does not support interstate or foreign commerce, does not qualify as interstate waters, and is not tributary to a TNW. This stream does have an OHWM but it is not expected to qualify as other waters of the U.S. This feature is present within Survey Area 1, Survey Area 2, and Survey Area 3.

Data Point 1 and Data Point 5 in Appendix D and OHWM-1 and OHWM-2 datasheets in Appendix E are representative of the vegetation, hydrology, and soils of the Fresh Emergent Wetland community discussed below.

Vegetation. The channel is primarily barren but does support a few species including; mulefat (*Baccharis salicifolia*) (FAC), Bermuda grass (*Cynodon dactylon*) (FACU), and toadrush (*Juncus bufonius*) (FACW). Where vegetation is abundant, it is dominated by upland species, such as at Data Point 5.

Soils. Where soil is present, soil consisted of low chroma of 1 with prominent redox concentrations where are indicative of hydric soil conditions and a fluctuating water table (Corps 1987).

Hydrology. Wetland hydrology was evidenced by both primary and secondary indicators. Primary indicators of wetland hydrology in the channel consisted of, Salt Crust (B11), and secondary indicators included, Water Marks (B1), Sediment Deposits (B2), Drift Deposits (B3), and Saturation Visible on Aerial Imagery (C9).

Justification for Non-jurisdictional Status. Los Gatos Creek is an intermittent channel and has a bed, bank and a well-defined OHWM. Los Gatos Creek does not support interstate or foreign commerce, does not qualify as interstate waters, and is not tributary to a TNW. Although Los Gatos Creek has an OHWM and possesses a well-defined bed and bank, it is not expected to qualify as other waters of the U.S. since it is not tributary to, adjacent to or neighboring waters of the U.S. and it terminates in uplands.

4.3.10 Ephemeral Stream

Only one ephemeral stream is present in the Project Area at Survey Area 3. It is characterized as a narrow waterway that exhibits a scoured channel with a defined bed and bank. Ephemeral streams typically have a brief hydroperiod and only flow during periods of heavy precipitation. In the Survey Area, the ephemeral stream originates in uplands and terminates at Los Gatos Creek. Ephemeral streams typically do not support wetlands since their hydroperiod is brief. Vegetation in ephemeral streams is typically consistent with the surrounding landscape and usually consists of upland vegetation or sparsely vegetated. This stream is unlikely to qualify as Waters of the U.S. since it is tributary to Los Gatos Creek, which is an isolated water that terminates in uplands and is not tributary to a TNW.

OHWM-3 datasheet in Appendix E is representative of the vegetation, hydrology, and soils of the ephemeral stream community discussed below.

Vegetation. The channel is primarily barren but does support a few upland herbaceous plant species.

Soils. Due to the dominance and prevalence of upland vegetation in this community, soils were not examined for indicators of hydric soils.

Hydrology. Wetland hydrology was evidenced by both primary and secondary indicators in addition to the presence of a defined OHWM. Primary indicators of wetland hydrology in the

channel consisted of, Surface Soil Cracks (B6), and secondary indicators included, Sediment Deposits (B2), and Drift Deposits (B3).

Justification for Non-jurisdictional Status. This ephemeral stream has a bed, bank and a well-defined OHWM. It is tributary to Los Gatos Creek, which does not support interstate or foreign commerce, does not qualify as interstate waters, and is not tributary to a TNW. Although this stream has an OHWM and possesses a well-defined bed and bank, it is not expected to qualify as other waters of the U.S. since it is not tributary to, adjacent to or neighboring waters of the U.S.

4.3.11 Fresno Slough – Riverine

The Fresno Slough is documented in the Survey Area as a riverine vegetation community characterized by large waterways that exhibit a well-defined bed and bank and also support riparian wetlands within their active floodplains and riparian community along their banks. Fresno Slough is a semi-perennial waterway that receives water from the Kings River, and carries it to the San Joaquin River, a TNW. Other irrigation water from surrounding agricultural uses also supplies the Fresno Slough with water. The Fresno Slough is situated between two levees and the water flow is dependent upon upstream water availability and use. Typical years with average precipitation fill the active floodplain to bankfull width, which is the entirety of Survey Area 4 (Appendix A-4). Flowing water in the active floodplain is evidenced by large debris deposits of tree trunks and other smaller debris in addition to large sand deposits located throughout the floodplain between the leveed boundaries. Watermarks on the bridge and large riparian trees also indicate the boundaries of the active floodplain. Portions of the active floodplain are also used to grow row crops. Fresno Slough does support wetlands, but significant flows following snowmelt from the Kings River can engorge the active floodplain and cause dramatic shifts in sediment and vegetation within the low flow channels and along the banks.

The OHWM-4 datasheet in Appendix E is representative of the vegetation, hydrology, and soils of the Riverine community in Fresno Slough is discussed below.

Vegetation. Vegetation is mostly absent in the low flow channels of the active floodplain. Between the boundaries of the active floodplain and the low flow channels, both riparian and ruderal vegetation is present.

Soils. Where soil is present, hydric soil indicator S5 – Sandy Redox was exhibited in the active floodplain such as at Data Point 8 and Data Point 11, where prominent redox concentrations were observed in a sandy matrix. Soil indicator F6 – Redox Dark Surface as exhibited at Data Point 13 was also present. Soils in an active floodplain can be problematic and did not always exhibit hydric soil indicators in the presence of hydrophytic vegetation and wetland hydrology. Where this occurred within the active floodplain of the Fresno Slough, hydric soils are assumed to be present.

Hydrology. During the wetland delineation survey, the vegetation community consisted of flowing water, benches, sediment deposits, drift and debris deposits and an OHWM was clearly defined by a break in the bank slope. Water is sourced from the Kings River and water is distributed throughout the area for agricultural uses and is ultimately delivered to the San Joaquin River, a TNW.

Justification for Corps-jurisdictional Status. Fresno Slough represents a Riverine community that supports some riparian wetlands and has a well-defined OHWM. As shown in Appendix A-1 and Table 1, since Fresno Slough has an OHWM and possesses a well-defined bed and bank, it is expected to qualify as an other waters of the U.S.

4.3.12 Fowler Switch Canal – Intermittent Channel

During the time of the wetland delineation survey, the segment of the Fowler Switch Canal located in Survey Area 5 (Appendix A-5) consisted of open, flowing water. Fowler Switch Canal is a managed canal that distributes water within the region for agricultural purposes from the Kings River. The canal is concrete lined and approximately 60 feet wide and had an approximate water depth of 6 feet at the time of the survey. No wetlands or vegetation was present along its banks.

OHWM-5 datasheet in Appendix E is representative of the vegetation, hydrology, and soils of the intermittent channel community discussed below.

Vegetation. Vegetation is mostly absent as the canal is routinely dredged and managed for optimal water distribution. Vegetation present along the banks of the canal consisted of annual herbaceous vegetation mainly upland species including; Tall tumblemustard, Canada horseweed (*Erigeron canadensis*) (FACU), and some wetlands species such as dwarf woollyheads (*Psilocarphus brevissimus*) (FACW). Bermuda grass was observed growing on the bottom portion of the canal.

Soils. Due to the dominance and prevalence of upland vegetation in this community, soils were not examined for indicators of hydric soils.

Hydrology. During the wetland delineation survey, this community consisted of flowing water, and an OHWM that was clearly defined by a break in the bank slope. Water is sourced from the Kings River and then distributed throughout the area for agricultural uses. Within Survey Area 5, water is pumped to Rockwell Ponds, located in east of the canal, which support wetland habitat.

Justification for Corps-jurisdictional Status. Canal vegetation community supports hydric soils, but does not display indicators of wetland vegetation or hydrology, and as such does not meet the three mandatory wetland criteria. The intermittent channel community consists of a well-defined OHWM and drains to a TNW; therefore, this canal was determined to be an other waters of the U.S.

4.3.13 Wetland Pond

During the time of the wetland delineation survey, the wetland pond within Survey Area 5 was dry. The wetland pond is an overflow pond from Rockwell Ponds, which receives its water from storm water control systems and the Fowler Switch Canal. Within Survey Area 5 (Appendix A-5), water from Rockwell Ponds flows through an overflow pipe to fill the wetland pond. The wetland pond is dominated by herbaceous wetland species.

Data Point 15 in Appendix D is representative of the vegetation, hydrology, and soils of the wetland pond community discussed below.

Vegetation. Vegetation in this community consists primarily of herbaceous vegetation including; Valley redstem, Johnsongrass, and rough cocklebur.

Soils. Soil consisted of low chroma of 1 with prominent redox concentrations that are indicative of hydric soil conditions and a fluctuating water table (Environmental Laboratory 1987).

Hydrology. Wetland hydrology was evidenced by primary hydrology indicators; Drift Deposits (B3), Biotic Crust (B12), and Inundation Visible on Aerial Imagery (B7).

Justification for Corps-jurisdictional Status. This community is a wetland because it supports a dominance of hydrophytic vegetation, wetland hydrology, and hydric soils.

Justification for Non-jurisdictional Status. Wetland pond at Rockwell Pond is not Corps-jurisdictional. In accordance with 33 CFR 328.3 (b) (6), stormwater control features constructed to convey, treat, or store stormwater constructed in dry land and CFR 328.3 (b) (7) wastewater recycling structures, such as groundwater recharge basins constructed in dry land are not considered waters of the U.S. and are not regulated under Section 404 of the CWA. Therefore, 0.078 acre of wetland pond may meet some of the criteria to qualify as waters of the U.S., upon verification by the Corps they may not be considered Corps - jurisdictional waters of the U.S.

4.3.14 Travers Creek – Intermittent Channel

Travers Creek is an intermittent channel in the Project Area. The section of Travers Creek within Survey Area 5 is characterized by flowing water that is largely un-vegetated, although some woody riparian vegetation extended below the OHWM (Appendix A-5). Travers Creek is a natural drainage that has been manipulated to convey water to a network of irrigation canals for agricultural purposes.

The OHWM-6 datasheet in Appendix E is representative of the vegetation, hydrology, and soils of the Intermittent Channel community at Travers Creek is discussed below.

Vegetation. Travers Creek is chiefly devoid of vegetation north of the bridge, and supports approximately 5% aerial cover of vegetation. However, occasional small patches of riparian wetland vegetation occur within the OHWM of the stream. Travers Creek east of the bridge within Survey Area 5 falls under the woody riparian canopy, but still is mostly an unvegetated channel. Goodding's black willow is rooted in the OHWM of the stream and provides close to 100% canopy closure over the channel, providing instream shade. Travers Creek west of the bridge within Survey Area 5 consists mostly of herbaceous riparian species with no overhanging canopy cover. The banks of Travers Creek in the Project Area are partially lined with rock slope protection.

Soils. A sandy gleyed matrix was observed between 1-8 inches below the surface which fulfills the hydric soil criteria for hydric soil indicator S4 - Sandy Gleyed Matrix (Environmental Laboratory 1987).

Hydrology. Wetland hydrology was evidenced by both primary and secondary indicators. Primary indicators of wetland hydrology in the channel included, Inundation Visible on Aerial

Imagery (B7), while secondary indicators included, Water Marks (B1), Sediment Deposits (B2), Drift Deposits (B3), and Crayfish Burrows (C8).

Justification for Corps-jurisdictional Status. Travers Creek is an intermittent channel that supports some riparian wetlands and has a well-defined OHWM. As shown in Table 1, since Travers Creek has an OHWM and possesses a well-defined bed and bank, it is expected to qualify as an other waters of the U.S.

Table 2. Potential Aquatic Resources within the Project Area

Feature Number	Community Type	Cowardin Code	Latitude	Longitude	Size (Acres)	Size (Linear Feet)
W-01	Intermittent Channel	RP2FO6	36.22724415	-120.5494036	0.298	397
W-02	Intermittent Channel	RP2FO6	36.22771844	-120.5465699	0.163	222
W-03	Valley Foothill Riparian Wetland	R6	36.22765411	-120.5467594	0.005	--
W-04	Intermittent Channel	R6	36.21591007	-120.4712861	0.409	339
W-05	Ephemeral Stream	R6	36.21562447	-120.4716644	0.019	78
W-06	Open Water	R6	36.40150503	-119.9252361	1.081	282
W-07	Valley Foothill Riparian Wetland	R6	36.401203	-119.925294	0.254	--
W-08	Valley Foothill Riparian Wetland	R6	36.4012557	-119.9244402	0.016	--
W-09	Valley Foothill Riparian Wetland	R6	36.40165628	-119.9244927	0.080	--
W-10	Fresh Emergent Wetland	R6	36.40119619	-119.9260465	0.288	--
W-11	Valley Foothill Riparian Wetland	R6	36.40120671	-119.9264159	0.033	--
W-12	Valley Foothill Riparian Wetland	R6	36.40113374	-119.9267952	0.036	--
W-13	Open Water	R6	36.40151633	-119.9267859	0.091	--
W-14	Valley Foothill Riparian Wetland	R6	36.40149341	-119.9264446	0.002	--
W-15	Valley Foothill Riparian Wetland	R6	36.40157553	-119.9264607	0.005	--
W-16	Intermittent Channel	R6	36.58360623	-119.6596193	0.409	383
W-17	Wetland Pond	R6	36.58373028	-119.658046	0.078	--
W-18	Valley Foothill Riparian Wetland	R6	36.58352146	-119.6581238	0.058	--
W-19	Intermittent Channel	R6	36.62328369	-119.3946278	0.083	177
W-20	Valley Foothill Riparian Wetland	R6	36.62328439	-119.3945285	0.032	--
W-21	Valley Foothill Riparian Wetland	R6	36.62320147	-119.3945709	0.033	--
W-22	Valley Foothill Riparian Wetland	R6	36.6232041	-119.3951139	0.080	--
W-23	Intermittent Channel	R6	36.62316214	-119.3951587	0.041	177

5.0 REFERENCES

Baldwin, B. G., D. H. Goldman, D. J. Kiel, R. Patterson, T. J. Rosatti, and D. H. Wilken. 2012. *The Jepson Manual: Vascular Plants of California*. Second edition, revised and expanded. Berkeley, California: University of California Press.

Caltrans 2017a. *BPMP Scour Mitigation Project (BPMP 5942(240)) Natural Environment Study (Minimal Impacts)*. Prepared by De Novo Planning Group, Sacramento, California. March 2016.

Caltrans 2017a. *BPMP Scour Mitigation Project (BPMP 5942(240)) Location Hydraulic Study at 01 - Los Gatos Creek Bridge at Los Gatos Creek Road*. Prepared by TRC Companies, Inc, Sacramento, California. February 2016.

Caltrans 2017a. *BPMP Scour Mitigation Project (BPMP 5942(240)) Location Hydraulic Study at 02 - Los Gatos Creek Bridge at Los Gatos Creek Road*. Prepared by TRC Companies, Inc, Sacramento, California. February 2016.

Caltrans 2017a. *BPMP Scour Mitigation Project (BPMP 5942(240)) Location Hydraulic Study at 03 - Los Gatos Creek Bridge at Los Gatos Creek Road*. Prepared by TRC Companies, Inc, Sacramento, California. February 2016.

Caltrans 2017a. *BPMP Scour Mitigation Project (BPMP 5942(240)) Location Hydraulic Study at Fresno Slough Bridge at Excelsior Avenue*. Prepared by TRC Companies, Inc, Sacramento, California. February 2016.

Caltrans 2017a. *BPMP Scour Mitigation Project (BPMP 5942(240)) Location Hydraulic Study at Travers Creek Bridge at S. Alta Avenue*. Prepared by TRC Companies, Inc, Sacramento, California. February 2016.

California Department of Transportation. See Caltrans.

Corps. See U.S. Army Corps of Engineers.

Environmental Laboratory, Department of the Army. 1987. Corps of Engineers Wetland Delineation Manual. (Technical Report Y-87-1.) U.S. Army Corps of Engineers. Waterways Experimental Station. Vicksburg, MI.

Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2016. The National Wetland Plant List: 2016 Wetland Ratings. Phytoneuron 2016-30: 1-17.

Munsell. 2009. *Munsell Soil Color Charts - 2009 Revision*. New York, California: Macbeth Division of Kollmorgen Instruments Corporation.

National Oceanic and Atmospheric Administration. 2017. Yosemite International, California: Period of Record Monthly Climate Summary. Available: http://agacis.rcc-acis.org/?fips=06019. Accessed June 13, 2017.

NOAA. *See* National Oceanic and Atmospheric Administration.

NRCS. See U.S. Department of Agriculture, Natural Resources Conservation Service (formerly Soil Conservation Service).

U.S. Army Corps of Engineers, Engineer Research and Development Center. 2008a. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Vicksburg, Michigan. September 2008.

_____. 2008b. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. Available: http://www.spk.usace.army.mil/Portals/12/documents/regulatory/pdf/Ordinary_High_Watermark_Manual_Aug_2008.pdf. Accessed January 19, 2018.

_____. 2010. Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. Available: http://www.spa.usace.army.mil/Portals/16/docs/civilworks/regulatory/Jurisdiction/OHWM%20Arid%20West%20Datasheet.pdf. Accessed January 19, 2018.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2017. Field Indicators of Hydric Soils in the U.S., Version 8.1. G. W. Hurt, L. M. Vasilas and J.F. Berkowitz (eds.). U.S. Department of Agriculture Natural Resources Conservation Service in cooperation with the National Technical Committee for Hydric Soils.

_____. 2018. Web Soil Survey. Available: http://websoilsurvey.nrcs.usda.gov/app/. Accessed January 19, 2018.

_____. 2016. Hydric Soils National List. Available online: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316619.html. Website accessed January 19, 2018.

U.S. Fish and Wildlife Service. 2017. National Wetlands Inventory. Available: http://www.fws.gov/nwi/. Accessed January 19, 2018.

USGS. See U.S. Geological Survey.

U.S. Geological Survey. 1981. *Sherman Peak, Alcalde Hills, Burrel, Conejo, and Reedley U.S. Topographic Quadrangles Maps*. 1:24,000. 7.5 Minute Series (Electronic). Revised 1981. Accessed using ESRI Geographic Information System software January 17, 2018.

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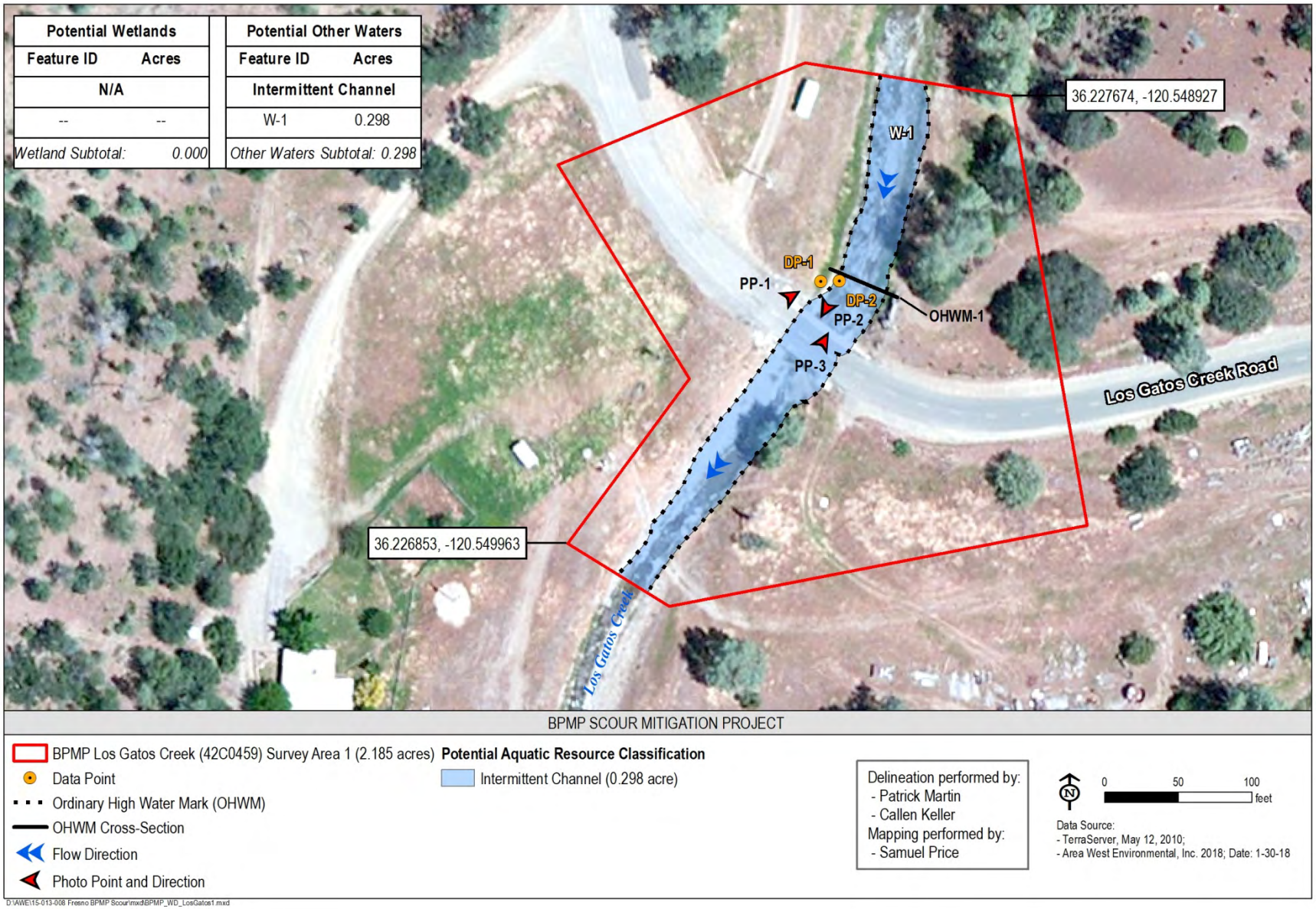
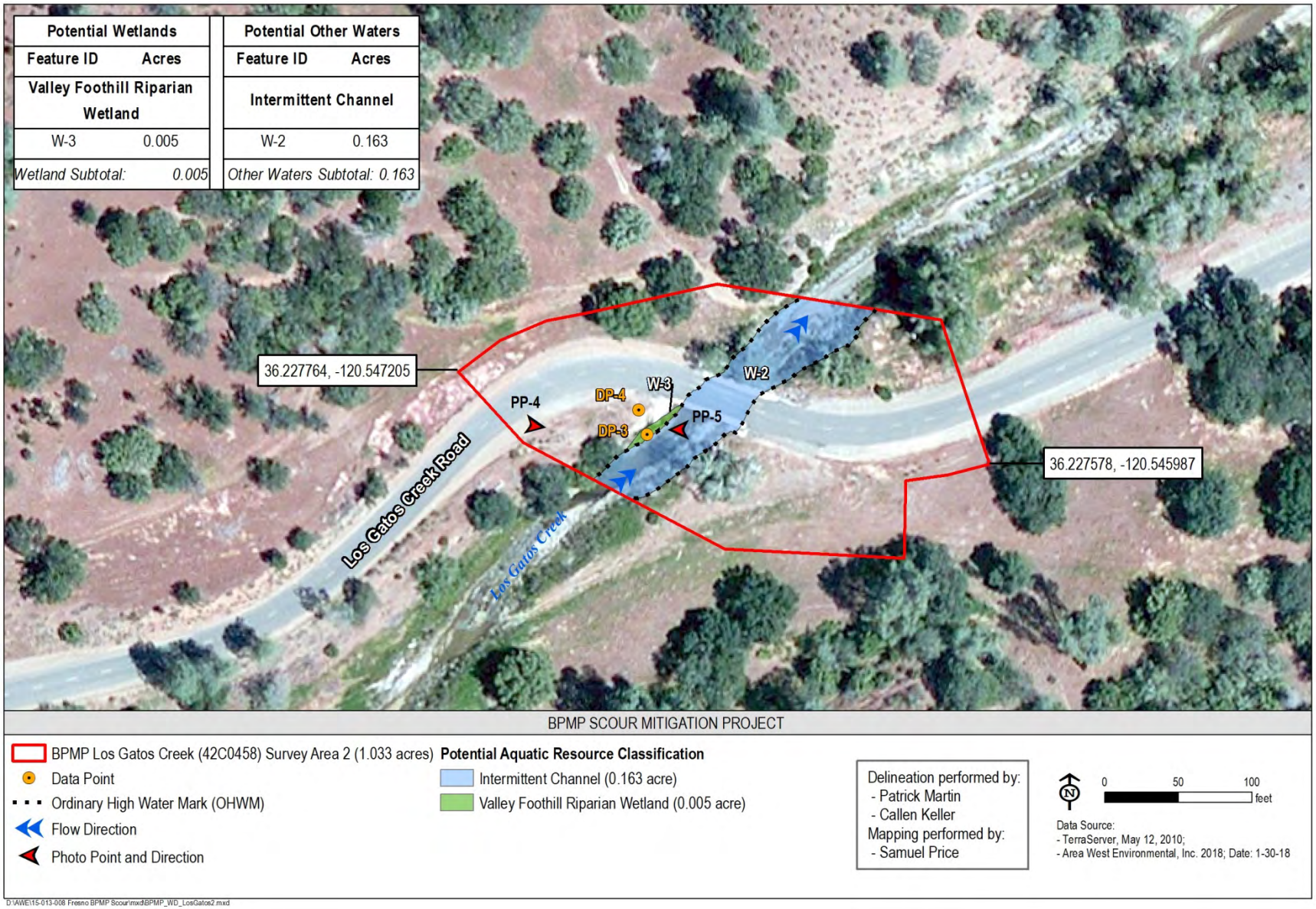
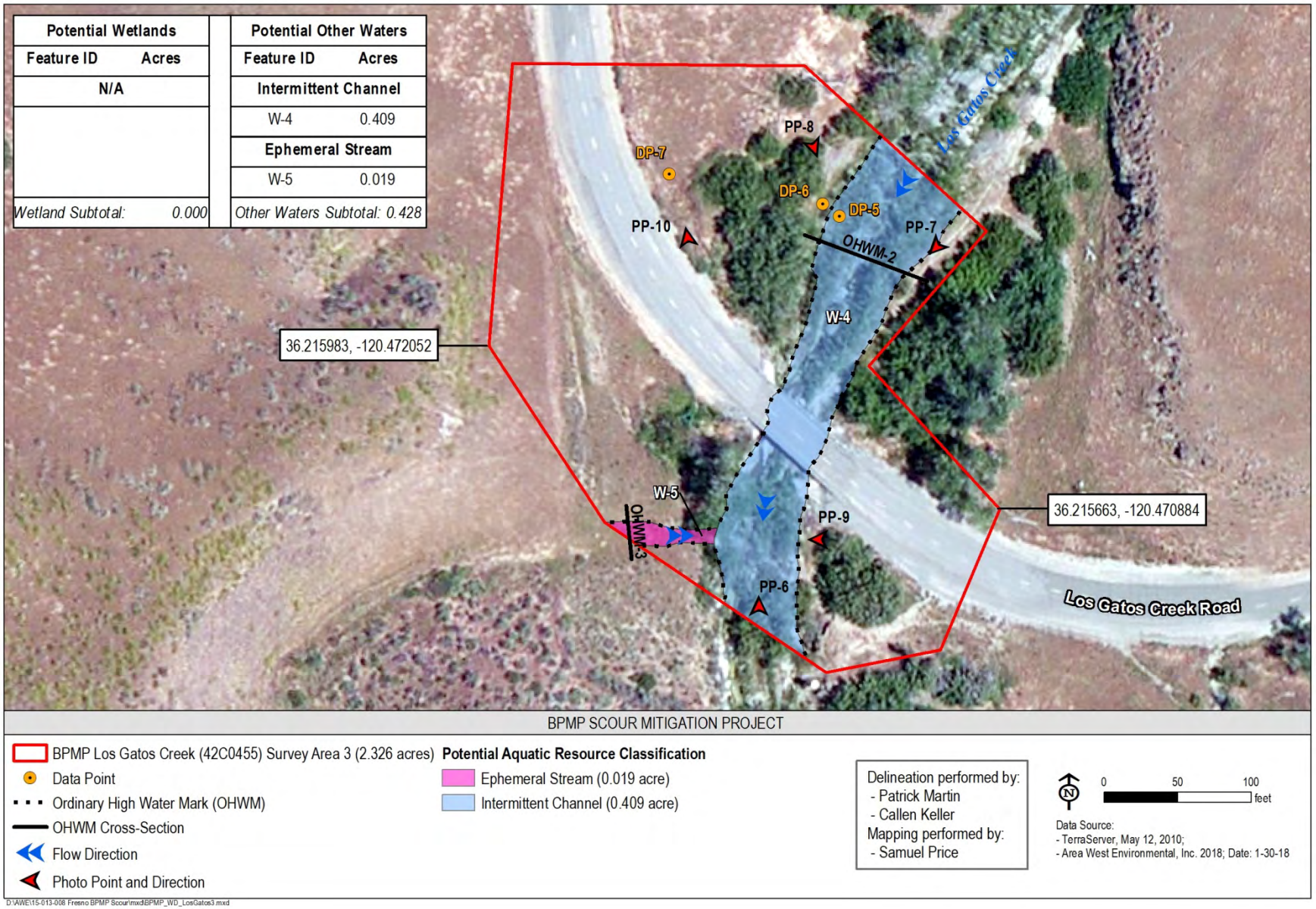
APPENDIX A - AQUATIC RESOURCE DELINEATION MAPS



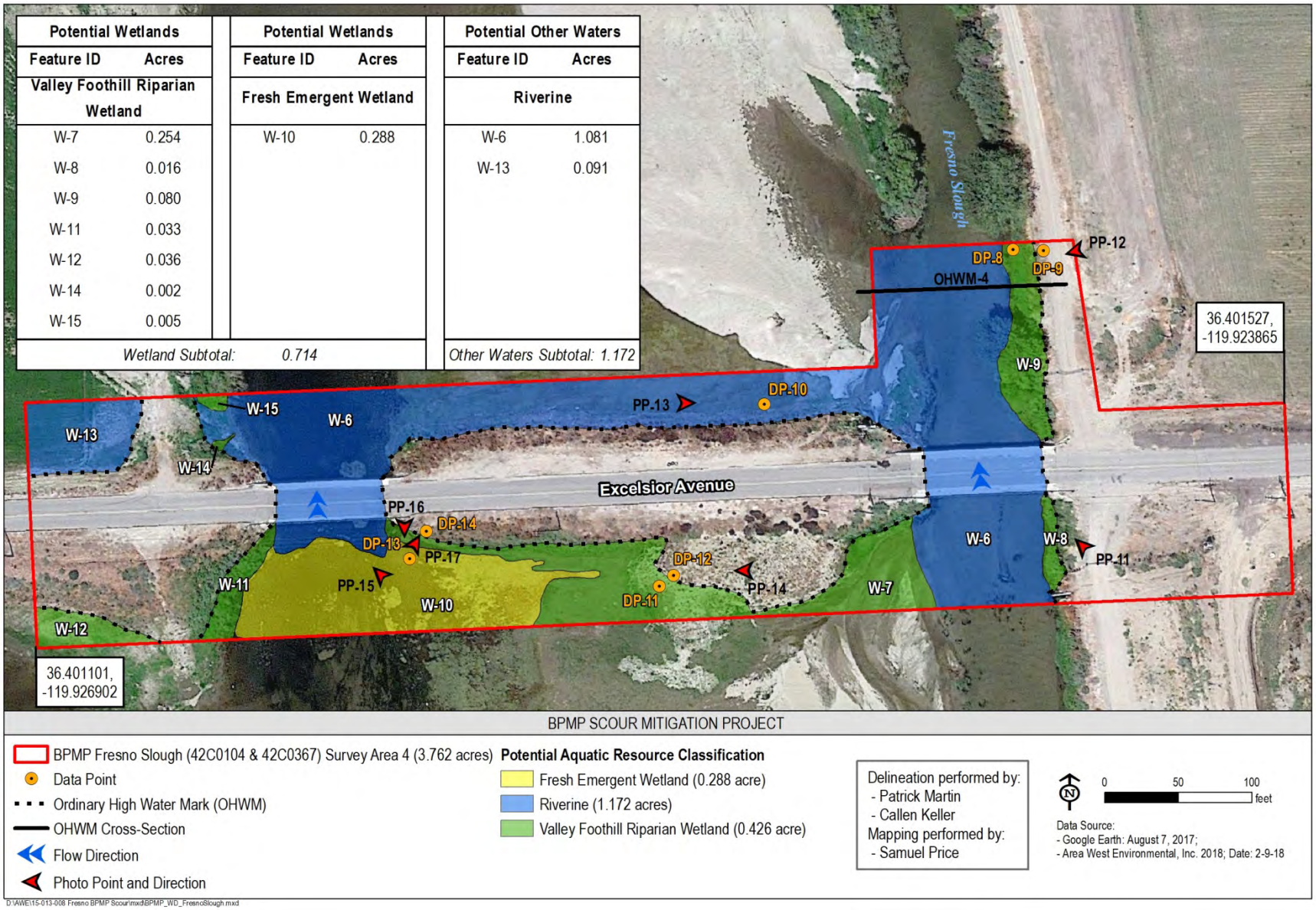
Appendix A-1: Aquatic Resource Delineation Map – Survey Area 1



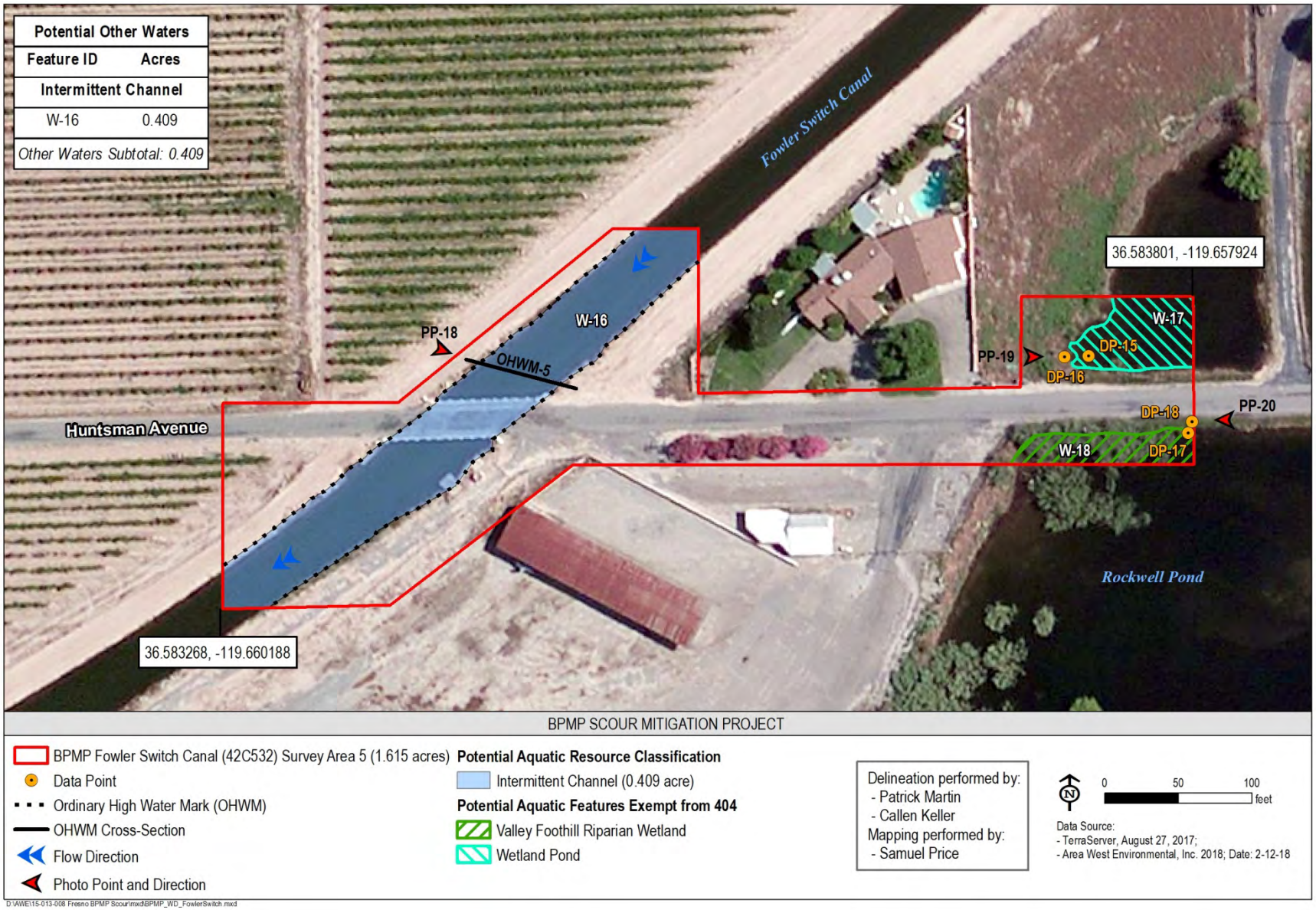
Appendix A-2: Aquatic Resource Delineation Map – Survey Area 2



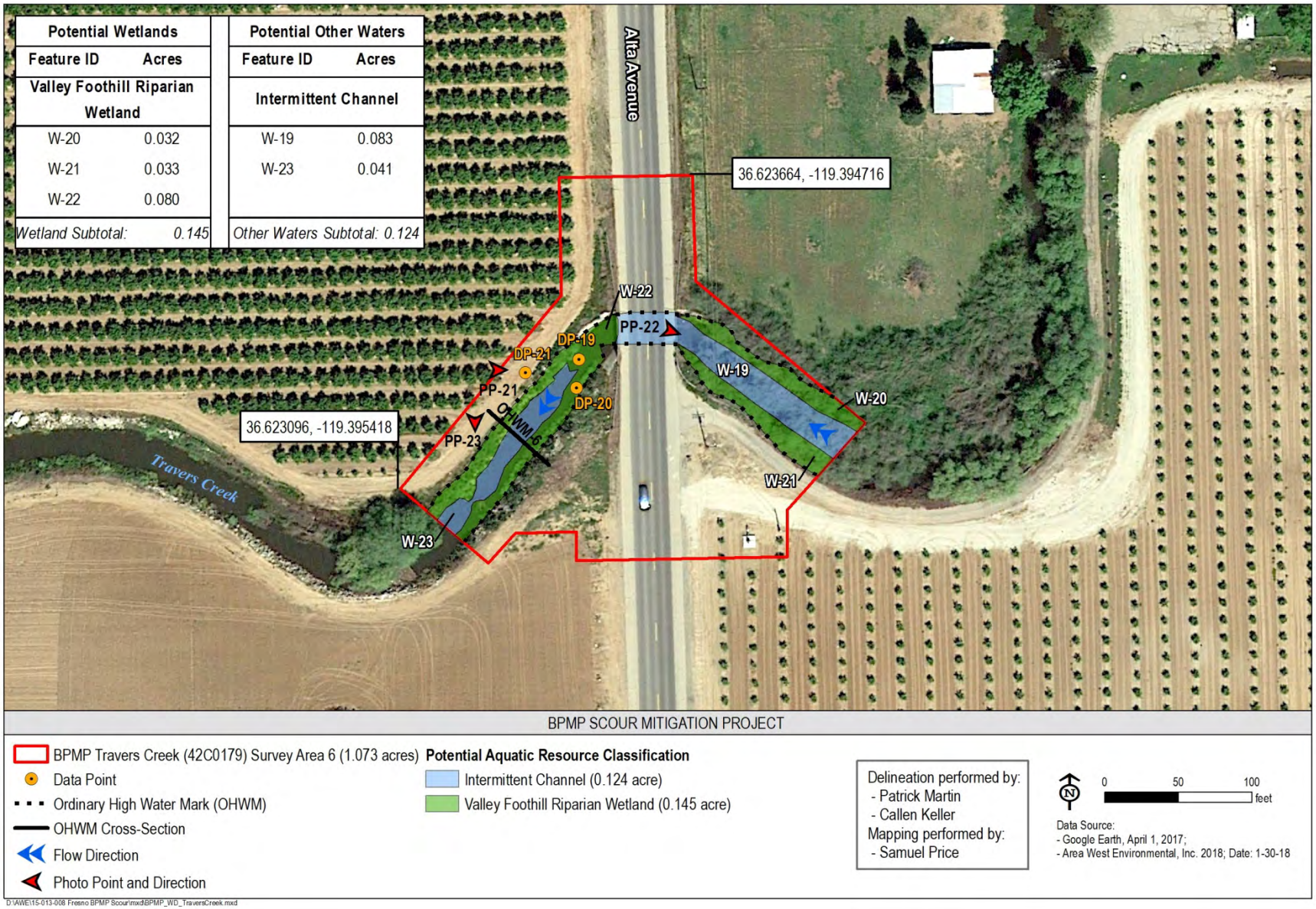
Appendix A-3: Aquatic Resource Delineation Map – Survey Area 3



Appendix A-4: Aquatic Resource Delineation Map – Survey Area 4



Appendix A-5: Aquatic Resource Delineation Map – Survey Area 5



Appendix A-6: Aquatic Resource Delineation Map – Survey Area 6

APPENDIX B - NRCS WEB SOIL SURVEY

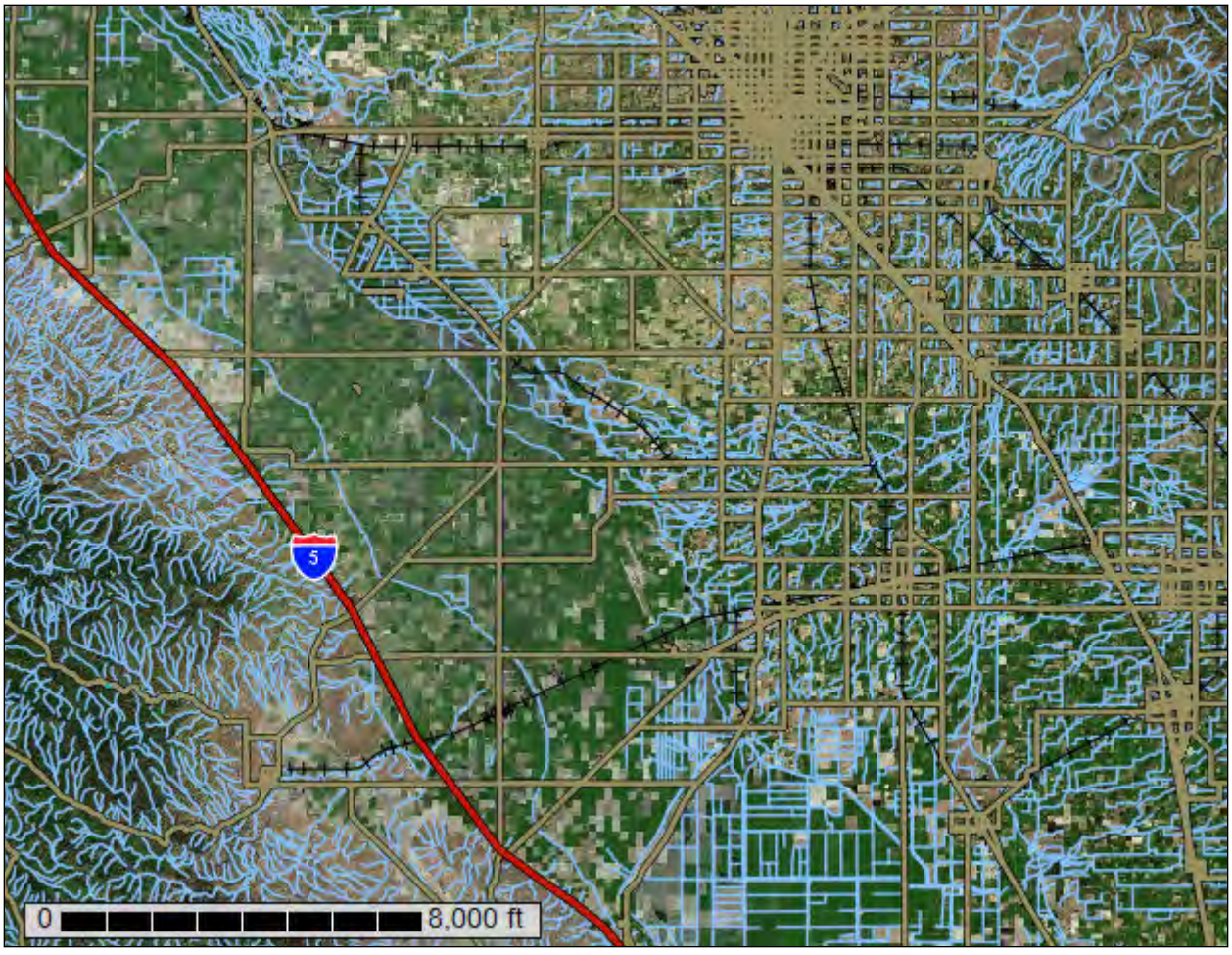
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Eastern Fresno Area, California; Fresno County, California, Western Part; and Kings County, California



January 17, 2018

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

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

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

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

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:
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: Eastern Fresno Area, California
Survey Area Data: Version 10, Oct 4, 2017

Soil Survey Area: Fresno County, California, Western Part
Survey Area Data: Version 12, Sep 8, 2017

Soil Survey Area: Kings County, California
Survey Area Data: Version 13, Sep 6, 2017

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: Jan 1, 1999—Dec 31, 2003

MAP LEGEND

MAP INFORMATION

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DhA	Delhi loamy sand, 0 to 3 percent slopes, MLRA 17	0.6	4.6%
DhB	Delhi loamy sand, 3 to 9 percent slopes	0.3	2.4%
GuA	Greenfield sandy loam, moderately deep, 0 to 3 percent slopes	1.1	8.9%
W	Water	0.8	6.4%
Subtotals for Soil Survey Area		**2.7**	**22.4%**
Totals for Area of Interest		**12.0**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
741	Anela-vernalis association, 0 to 5 percent slopes	4.6	38.6%
744	Lilten-Millsholm association, 30 to 65 percent slopes	0.6	5.3%
758	Wisflat-Borreguero-Rock outcrop complex, 50 to 70 percent slopes	0.1	0.6%
847	Carranza gravelly sandy loam, 2 to 8 percent slopes	0.2	1.6%
Subtotals for Soil Survey Area		**5.5**	**46.2%**
Totals for Area of Interest		**12.0**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
101	Armona loam, partially drained	2.9	24.4%
121	Grangeville fine sandy loam, saline-alkali, partially d rained	0.2	1.8%
181	Water	0.6	5.2%
Subtotals for Soil Survey Area		**3.8**	**31.4%**
Totals for Area of Interest		**12.0**	**100.0%**

Map Unit Descriptions

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, 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*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one 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.

Eastern Fresno Area, California

DhA—Delhi loamy sand, 0 to 3 percent slopes, MLRA 17

Map Unit Setting

National map unit symbol: 2ss8r
Elevation: 30 to 430 feet
Mean annual precipitation: 9 to 16 inches
Mean annual air temperature: 59 to 64 degrees F
Frost-free period: 225 to 310 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Delhi

Setting

Landform: Dunes on fan remnants
Landform position (two-dimensional): Toeslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from sandy alluvium derived from granite

Typical profile

A - 0 to 7 inches: loamy sand
C1 - 7 to 25 inches: loamy sand
C2 - 25 to 60 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Hanford

Percent of map unit: 6 percent
Landform: Depressions on fan remnants

Hydric soil rating: No

Dello

Percent of map unit: 6 percent
Landform: Depressions on fan remnants
Hydric soil rating: Yes

Grangeville

Percent of map unit: 1 percent
Hydric soil rating: No

Hilmar

Percent of map unit: 1 percent
Hydric soil rating: No

Dinuba

Percent of map unit: 1 percent
Hydric soil rating: No

DhB—Delhi loamy sand, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: hl3h
Elevation: 230 to 400 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 225 to 250 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Delhi

Setting

Landform: Dunes on fan remnants
Landform position (two-dimensional): Toeslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from alluvium derived from granite

Typical profile

A - 0 to 7 inches: loamy sand
C1 - 7 to 25 inches: loamy sand
C2 - 25 to 60 inches: loamy sand

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches

Natural drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups
Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Fresno
Percent of map unit: 12 percent
Landform: Fan remnants
Hydric soil rating: No

Unnamed, steeper slopes
Percent of map unit: 3 percent
Landform: Dunes on fan remnants
Hydric soil rating: No

GuA—Greenfield sandy loam, moderately deep, 0 to 3 percent slopes

Map Unit Setting
National map unit symbol: hl5b
Elevation: 250 to 2,000 feet
Mean annual precipitation: 9 to 17 inches
Mean annual air temperature: 60 to 63 degrees F
Frost-free period: 200 to 275 days
Farmland classification: Farmland of statewide importance

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

Description of Greenfield

Setting
Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 16 inches: sandy loam
Bt - 16 to 38 inches: sandy loam
Bqm - 38 to 48 inches: cemented

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 24 to 48 inches to duripan
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Unnamed, moderately sloping

Percent of map unit: 5 percent
Landform: Alluvial fans
Hydric soil rating: No

Hanford

Percent of map unit: 5 percent
Landform: Alluvial fans
Hydric soil rating: No

Unnamed, compact subsoil

Percent of map unit: 5 percent
Landform: Alluvial fans
Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Fresno County, California, Western Part

741—Anela-vernalis association, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hp1n
Elevation: 440 to 2,800 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 60 to 64 degrees F
Frost-free period: 220 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Anela, very gravelly sandy loam, and similar soils: 50 percent
Vernalis, loam, and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Anela, Very Gravelly Sandy Loam

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from sedimentary and/or mixed rock

Typical profile

A - 0 to 7 inches: very gravelly sandy loam
Bt - 7 to 15 inches: very gravelly coarse sandy loam
Btk - 15 to 22 inches: very gravelly coarse sandy loam
2Btk - 22 to 49 inches: very gravelly coarse sandy loam
2Bdk - 49 to 65 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to densic material
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 60 to 72 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 4 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: 1.0
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: A
Ecological site: Very Gravelly Loamy (R017XE101CA)
Hydric soil rating: No

Description of Vernalis, Loam

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone and shale

Typical profile

A - 0 to 7 inches: loam
Bt - 7 to 28 inches: clay loam
Btk - 28 to 50 inches: clay loam
C - 50 to 60 inches: sandy clay loam

Properties and qualities

Slope: 0 to 5 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: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 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: 5.0
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Loamy Fan Remnant 8-10" P.Z. (R017XE061CA)
Hydric soil rating: No

Minor Components

Unnamed, stream channel

Percent of map unit: 5 percent
Landform: Flood plains
Hydric soil rating: Yes

Vernalis, loam, saline

Percent of map unit: 4 percent
Landform: Flood plains
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent

Landform: Flood plains on strath terraces on valleys
Hydric soil rating: No

Borreguero, sandy loam
Percent of map unit: 1 percent
Landform: Mountain slopes
Hydric soil rating: No

Belgarra, clay
Percent of map unit: 1 percent
Landform: Fan remnants
Hydric soil rating: No

Grazer, silty clay
Percent of map unit: 1 percent
Landform: Mountain slopes
Hydric soil rating: No

Unnamed, spring
Percent of map unit: 1 percent
Landform: Flood plains
Hydric soil rating: Yes

744—Lilten-Millsholm association, 30 to 65 percent slopes

Map Unit Setting
National map unit symbol: hp1r
Elevation: 1,160 to 6,520 feet
Mean annual precipitation: 10 to 16 inches
Mean annual air temperature: 58 to 63 degrees F
Frost-free period: 200 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition
Lilten, silty clay loam, and similar soils: 50 percent
Millsholm, clay loam, and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lilten, Silty Clay Loam

Setting
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Marine calcareous shale

Typical profile
A1 - 0 to 2 inches: silty clay loam

A2 - 2 to 8 inches: silty clay loam
A3 - 8 to 18 inches: silty clay loam
C1 - 18 to 28 inches: silty clay loam
C2 - 28 to 41 inches: silty clay loam
Cr - 41 to 60 inches: weathered bedrock

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 3 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: 4.0
Available water storage in profile: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Millsholm, Clay Loam

Setting

Landform: Escarpments on mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Marine sandstone and shale

Typical profile

A - 0 to 7 inches: clay loam
Bt - 7 to 13 inches: gravelly clay loam
Cr - 13 to 16 inches: weathered bedrock
R - 16 to 60 inches: bedrock

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: 10 to 19 inches to paralithic bedrock; 11 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Shallow Loamy Hills 13-16 (R015XE107CA)
Hydric soil rating: No

Minor Components

Altamont, clay

Percent of map unit: 3 percent
Landform: Slides, mountain slopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Clayey Hills 10-14" p.z. (R015XE001CA)
Hydric soil rating: No

Domengine, loam

Percent of map unit: 3 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Loamy Slopes 9-12" p.z. (R015XE026CA)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent
Landform: Mountain slopes
Hydric soil rating: No

Vaquero, clay

Percent of map unit: 2 percent
Landform: Mountain slopes, slides
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Clayey Hills 10-14" p.z. (R015XE001CA)
Hydric soil rating: No

Hentine, very gravelly sandy loam

Percent of map unit: 1 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Shallow Loamy Hills 10-15" P.Z. Gravelly (R015XE077CA)

Hydric soil rating: No

Millsholm, clay loam, very shallow

Percent of map unit: 1 percent
Landform: Escarpments on mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear, concave
Across-slope shape: Linear, convex
Ecological site: Shallow Loamy Hills 13-16 (R015XE107CA)
Hydric soil rating: No

Millsholm, clay loam, moderately deep

Percent of map unit: 1 percent
Landform: Escarpments on mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, linear
Across-slope shape: Convex, linear
Ecological site: Shallow Loamy Hills 13-16 (R015XE107CA)
Hydric soil rating: No

Borreguero, sandy loam

Percent of map unit: 1 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Shallow coarse loamy 10-16 (R015XE080CA)
Hydric soil rating: No

Typic endoaquents, springs

Percent of map unit: 1 percent
Landform: Seeps, drainageways
Down-slope shape: Concave
Across-slope shape: Concave, convex
Hydric soil rating: Yes

758—Wisflat-Borreguero-Rock outcrop complex, 50 to 70 percent slopes

Map Unit Setting

National map unit symbol: hp23
Elevation: 960 to 4,810 feet
Mean annual precipitation: 10 to 20 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 170 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Wisflat, sandy loam, and similar soils: 35 percent
Borreguero, sandy loam, and similar soils: 30 percent
Rock outcrop: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wisflat, Sandy Loam

Setting

Landform: Escarpments on mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Marine sandstone

Typical profile

A - 0 to 6 inches: sandy loam
C - 6 to 14 inches: sandy loam
Cr - 14 to 16 inches: weathered bedrock
R - 16 to 26 inches: bedrock

Properties and qualities

Slope: 50 to 70 percent
Depth to restrictive feature: 10 to 19 inches to paralithic bedrock; 11 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 4 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: 5.0
Available water storage in profile: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Shallow Coarse Loamy 9-13 (R015XF033CA)
Hydric soil rating: No

Description of Borreguero, Sandy Loam

Setting

Landform: Escarpments on mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex

Parent material: Marine sandstone

Typical profile

A - 0 to 2 inches: sandy loam
Bw1 - 2 to 5 inches: sandy clay loam
Bw2 - 5 to 11 inches: sandy clay loam
Cr - 11 to 60 inches: weathered bedrock

Properties and qualities

Slope: 50 to 65 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 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: 4.0
Available water storage in profile: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Shallow coarse loamy 10-16 (R015XE080CA)
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Escarpments on mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Sandstone

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Vernado, sandy loam

Percent of map unit: 2 percent
Landform: Mountain slopes, escarpments
Landform position (two-dimensional): Backslope
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Lilten, silty clay loam

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Domengine, loam

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Vaquero, clay

Percent of map unit: 2 percent
Landform: Slides, mountain slopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Clayey Hills 10-14" p.z. (R015XE001CA)
Hydric soil rating: No

Wisflat, sandy loam, very shallow

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Ecological site: Shallow Coarse Loamy 9-13 (R015XF033CA)
Hydric soil rating: No

Typic endoaquents, springs

Percent of map unit: 1 percent
Landform: Seeps, drainageways
Down-slope shape: Concave
Across-slope shape: Concave, convex
Hydric soil rating: Yes

847—Carranza gravelly sandy loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: hp3h
Elevation: 540 to 1,360 feet
Mean annual precipitation: 8 to 10 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Carranza, Gravelly 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 sandstone and shale

Typical profile

A - 0 to 7 inches: gravelly sandy loam
ABt - 7 to 14 inches: gravelly sandy loam
Bt1 - 14 to 20 inches: gravelly sandy clay loam
Bt2 - 20 to 25 inches: very gravelly sandy clay loam
Bt3 - 25 to 60 inches: gravelly sandy clay loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
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: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 6.0
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Loamy Fan Remnant 8-10" P.Z. (R017XE061CA)
Hydric soil rating: No

Minor Components

Milham, sandy loam

Percent of map unit: 5 percent
Landform: Fan remnants
Hydric soil rating: No

Pedcat, fine sandy loam, eroded

Percent of map unit: 5 percent
Landform: Fan remnants
Hydric soil rating: Yes

Bapos, clay loam

Percent of map unit: 5 percent
Landform: Fan remnants
Hydric soil rating: No

Kings County, California

101—Armona loam, partially drained

Map Unit Setting

National map unit symbol: hhhk
Elevation: 190 to 250 feet
Mean annual precipitation: 7 inches
Mean annual air temperature: 64 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Armona

Setting

Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 14 inches: loam
Cyzg1 - 14 to 41 inches: stratified sandy loam to clay loam
Czg2 - 41 to 60 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 3 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Boggs
Percent of map unit: 5 percent
Landform: Alluvial flats
Hydric soil rating: Yes

Homeland
Percent of map unit: 4 percent
Landform: Basin floors
Hydric soil rating: Yes

Vanguard
Percent of map unit: 3 percent
Landform: Flood plains
Hydric soil rating: Yes

Unnamed, rare flooding
Percent of map unit: 3 percent
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

121—Grangeville fine sandy loam, saline-alkali, partially d rained

Map Unit Setting
National map unit symbol: hhj6
Elevation: 210 to 290 feet
Mean annual precipitation: 7 to 8 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Farmland of statewide importance

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

Description of Grangeville

Setting
Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile
A - 0 to 10 inches: fine sandy loam

C - 10 to 60 inches: stratified sandy loam to fine sandy loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly 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: About 0 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Grangeville

Percent of map unit: 3 percent
Landform: Alluvial fans
Hydric soil rating: Yes

Vanguard

Percent of map unit: 3 percent
Landform: Flood plains
Hydric soil rating: Yes

Nord

Percent of map unit: 3 percent
Hydric soil rating: No

Whitewolf

Percent of map unit: 3 percent
Hydric soil rating: No

Kimberlina

Percent of map unit: 3 percent
Hydric soil rating: No

181—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

APPENDIX C - WETS TABLE

WETS Station: COALINGA, CA

Requested years: 1948 - 2010

Month	Temperature (°F)			Precipitation (inches)				
	Avg daily max	Avg daily min	Avg daily mean	Avg	30% chance will have		Avg number of days with 0.10 inch or more	Average total snowfall
					less than	more than		
Jan	57.9	36.0	46.9	1.69	0.69	2.00	4	0.1
Feb	63.8	39.3	51.6	1.58	0.48	1.84	4	0.0
Mar	69.4	41.8	55.6	1.21	0.38	1.35	3	0.0
Apr	76.3	45.9	61.1	0.55	0.19	0.62	2	0.0
May	85.3	52.6	69.0	0.27	0.00	0.20	1	0.0
Jun	93.1	59.4	76.2	0.04	0.00	0.00	0	0.0
Jul	99.6	65.5	82.5	0.01	0.00	0.00	0	0.0
Aug	97.9	63.5	80.7	0.02	0.00	0.00	0	0.0
Sep	92.7	58.7	75.7	0.22	0.00	0.13	0	0.0
Oct	82.0	49.7	65.8	0.31	0.07	0.27	1	0.0
Nov	68.0	40.7	54.4	0.74	0.25	0.80	2	0.0
Dec	58.3	35.7	47.0	1.25	0.46	1.49	3	0.0
Annual:					5.55	8.66		
Average	78.7	49.1	63.9	-	-	-	-	-
Total	-	-	-	7.89			19	0.1

GROWING SEASON DATES

Requested years of data: 1948 - 2010

Years with missing data:	24 deg = 11	28 deg = 13	32 deg = 12
Years with no occurrence:	24 deg = 27	28 deg = 5	32 deg = 0
Data years used:	24 deg = 52	28 deg = 50	32 deg = 51

Probability	Temperature		
	24 F or higher	28 F or higher	32 F or higher
	Beginning and Ending Dates Growing Season Length		
50 percent *	No occurrence	1/31 to 12/13 316 days	3/9 to 11/23 259 days
70 percent *	No occurrence	1/20 to 12/25 339 days	3/1 to 12/1 275 days

** Percent chance of the growing season occurring between the Beginning and Ending dates.*

STATS TABLE

Total precipitation (inches)

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1942	M1.30	0.41	0.85	1.28	0.13	0.00	0.00	0.00	0.00	0.31	0.20	0.53	5.01
1943	2.63	0.72	2.14	0.45	0.00	0.00	0.00	0.00	0.00	0.31	0.15	1.68	8.08
1944	0.39	3.13	0.15	0.25	0.36	0.43	0.00	0.00	0.00	0.18	0.29	0.31	5.49
1945	0.48	1.70	1.16	0.09	0.85	0.01	0.00	0.07	0.00	0.72	0.40	1.42	6.90
1946	0.27	0.96	1.39	0.01	0.17	0.00	0.03	0.00	T	0.27	1.33	1.30	5.73
1947	0.24	0.41	0.52	0.22	0.15	0.00	0.00	T	T	0.03	0.19	0.22	1.98
1948	0.00	1.01	1.49	1.13	0.16	T	0.00	0.00	0.00	0.09	0.00	1.60	5.48
1949	0.43	0.80	1.71	0.13	0.51	0.00	0.00	T	0.00	0.03	0.17	1.45	5.23
1950	1.05	0.87	1.18	0.45	0.08	0.00	0.08	0.00	0.14	0.46	0.68	0.87	5.86
1951	1.14	0.52	0.08	M0.42	0.11	0.00	0.00	0.00	0.22	0.13	0.98	1.99	5.59

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1952	2.91	0.18	2.58	1.45	T	0.00	0.00	0.00	0.48	0.04	0.97	2.31	10.92
1953	0.51	0.00	0.12	0.41	0.42	T	0.00	0.00	0.00	0.00	1.59	0.03	3.08
1954	2.39	0.75	1.79	0.33	0.04	T	0.00	0.00	0.00	0.00	0.43	0.72	6.45
1955	2.58	1.54	0.27	1.49	1.62	0.00	T	0.00	0.00	T	0.49	4.16	12.15
1956	1.42	0.43	T	0.65	0.57	0.00	T	0.00	0.01	0.96	0.00	0.03	4.07
1957	3.10	1.17	0.31	1.27	0.36	0.27	M0.00	0.00	0.04	0.32	0.72	1.33	8.89
1958	1.36	2.57	3.90	2.00	0.72	T	T	0.00	0.63	0.00	0.27	0.25	11.70
1959	0.77	2.83	0.00	T	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.25	3.88
1960	0.61	1.46	0.42	0.39	0.00	0.00	T	0.00	0.00	0.00	2.70	0.18	5.76
1961	1.20	0.49	0.68	0.25	0.08	0.06	T	T	0.00	0.00	1.40	1.52	5.68
1962	1.25	4.56	0.75	T	0.06	0.00	0.00	0.00	0.00	0.04	T	1.36	8.02
1963	1.85	2.35	0.70	1.25	0.64	M0.08	0.00	0.01	0.17	0.93	1.41	0.09	9.48
1964	1.46	0.01	0.93	0.02	0.07	T	0.00	0.12	0.40	0.73	0.82	1.15	5.71
1965	0.61	0.23	0.94	1.96	0.00	0.00	0.11	T	T	0.00	4.80	1.46	10.11
1966	0.47	0.95	0.10	T	0.20	0.06	0.26	0.00	0.00	0.00	0.78	3.91	6.73
1967	1.81	0.11	1.17	2.08	0.02	0.01	0.00	0.00	0.11	0.22	1.37	0.47	7.37
1968	0.36	0.96	1.22	0.50	0.00	0.00	0.00	T		1.38	1.25	1.22	6.89
1969	5.69	6.43	0.06	0.80	T	T	0.00	0.00	0.11	0.02	0.48	0.16	13.75
1970	1.31	1.50	1.10	0.09	0.00	T	0.00	0.00	0.00	T	1.71	2.24	7.95
1971	0.18	0.02	0.13	0.78	0.72	0.00	0.00	T	0.00	0.10	0.40	2.40	4.73
1972	0.10	0.23	0.00	0.09	0.00	0.00	0.00	0.00			2.85	0.60	3.87
1973	2.66	2.99	1.33	0.00	0.05	0.00	0.00			0.30	0.96	1.92	10.21
1974	3.97	0.02	2.01	0.04	0.00	0.00	T	0.00	0.00	0.41	0.10	1.58	8.13
1975	0.01	1.73	1.75	0.46	0.00	0.00	0.02	0.08	0.19	0.94	0.02	0.00	5.20

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1976	T	2.22	0.72	1.27	T	0.00	0.00	0.32	3.81	0.04	0.79	0.62	9.79
1977	0.39	0.02	0.43	0.00	1.51	0.06	0.00	0.00	0.00	0.10	0.19	4.37	7.07
1978		4.99	3.12	1.39	0.00	0.00	0.00	0.00	1.02	0.00	1.77	0.67	12.96
1979	2.81	1.79	0.59		0.00	0.00	T	0.00	0.04	0.14	0.33		5.70
1980	4.24	3.53	0.95	0.54	0.12	0.00	0.04	0.00		0.10	0.00	0.13	9.65
1981	1.09	0.71	2.90	0.36	0.55	0.00	0.00	0.00	0.00	0.29	1.06	0.05	7.01
1982	M0.99	0.27	2.07	M1.87	0.00	T		0.00	M1.07	0.75	2.42	0.94	10.38
1983	3.24	2.58	2.52	1.15	0.03	0.00	0.00	0.37	M0.58	0.82	0.53	1.81	13.63
1984	0.18	0.14	0.06	0.07	0.00	M0.00	0.00	0.02	0.00	0.35	1.20	1.76	3.78
1985	0.25	0.05	1.27	0.24	0.00	0.00	0.00	0.23	0.40	0.35	1.42	0.68	4.89
1986	1.79	2.75	1.99	0.32	T	0.00	0.03	0.00	0.15	T	M0.10	0.45	7.58
1987	1.51	M1.38	1.54	1.08	0.18	0.78	0.00	0.00	M0.00	1.58	0.47	0.99	9.51
1988	1.58	1.88	0.04	0.41	0.14	0.02	0.00	0.00	0.00	0.00	0.43	2.12	6.62
1989	0.07	0.98	0.23	0.14	0.05	0.00	0.00	0.00	1.03	0.12	0.17	0.03	2.82
1990	1.72	0.51	0.12	0.38	0.84	0.00	0.00	0.00	0.83	0.03	0.02	0.12	4.57
1991	0.55	1.41	5.85	0.09	0.01	0.00	0.00	0.02	MT	0.01		1.89	9.83
1992	1.29	3.60	3.43	0.02		0.00		0.00	0.00	0.96	T	1.76	11.06
1993	6.15	3.51	2.10	0.05	0.13	0.15	0.00	0.00		0.09	0.10	0.79	13.07
1994	1.00	1.95	0.65	0.24	0.43	0.00	0.00	0.00	0.39	0.74	0.96	0.12	6.48
1995	6.07	0.67	6.33	0.36	0.07	0.06	0.00	0.00	0.00	0.00	T	1.24	14.80
1996	2.25	3.07	0.82	0.23	0.08	T	0.00	0.00	0.00	1.51	0.80	2.60	11.36
1997	3.18	0.12	0.01	0.04	0.00	0.00	0.00	0.00	0.02	0.01	1.02	1.27	5.67
1998	0.90	7.74	2.50	0.75	2.30	0.70	0.00	0.00	0.00	0.23	0.75	0.16	16.03
1999	1.48	0.22	0.44	0.81	0.00	0.00	0.00	T	T	0.00	0.07	0.10	3.12

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
2000	1.39	1.32	0.66	0.67	T	0.11	0.00	0.00	0.00	0.88	0.03	0.26	5.32
2001	1.84	2.41	3.32	0.01	0.00	0.00	T	0.00	0.00	0.07	1.45	0.86	9.96
2002	0.20	0.06	0.53	MT	0.11	0.00	0.00	0.00	0.01	0.04	0.91	2.36	4.22
2003	0.25	1.91	1.16	1.16	0.95	0.00	0.00	0.06	0.00	0.06	0.13	1.66	7.34
2004	0.51	2.33	0.35	M0.05	0.00	0.00	0.00	0.00	0.00	1.70	0.54	2.59	8.07
2005	3.23	M1.07	0.60	0.99	1.51	0.00	0.00	0.00	0.53	0.02	M0.09	1.38	9.42
2006	3.08	M0.23	M1.41	0.37	M0.88	0.00	0.02	0.00	0.00	0.05	M0.00	M0.34	6.38
2007	0.75	1.31	M0.02	M0.09	T	0.00	0.00	0.15	0.22	0.31	0.03	1.08	3.96
2008	4.70	0.71	T	0.06	0.01	0.00	0.00	0.00	0.00	0.01	0.11	0.96	6.56
2009	1.77	1.72	0.44	0.33	0.15	0.20	0.00	0.00	0.03	0.56	0.21	1.68	7.09
2010	M2.99	1.69	0.31	M1.10	M0.06	0.00	0.04	0.00	0.00	0.35	M0.66	M4.43	11.63
2011	1.32	M0.14	2.28	0.05	M0.24	0.05	0.00	0.00	0.01	0.32	0.98	T	5.39
2012	0.62	M0.02	1.08	MT	T	0.00	T	0.00	T	M0.01	M0.14		1.87
2013	M0.00	M0.38	T	0.02	M0.01	M0.00	0.00	0.00	0.00	T	0.15	M0.05	0.61
2014	T	1.57	0.59	0.42	M0.00	0.00	0.00	0.00	0.00	0.00	0.56	M2.06	5.20
2015	0.06	0.42	0.26	0.48	0.51	1.67	0.24	0.00	MT	0.70	1.34	0.67	6.35

WETS Station: FRESNO YOSEMITE INT'L, CA

Requested years: 1949 - 2018

Month	Temperature (°F)			Precipitation (inches)				
	Avg daily max	Avg daily min	Avg daily mean	Avg	30% chance will have		Avg number of days with 0.10 inch or more	Average total snowfall
					less than	more than		
Jan	55.0	37.9	46.4	2.12	1.03	2.59	5	0.0
Feb	61.8	41.0	51.4	1.88	0.88	2.27	5	0.0
Mar	67.5	44.2	55.9	1.80	0.66	2.15	4	0.0
Apr	74.6	48.2	61.4	1.07	0.36	1.24	2	0.0
May	83.6	54.6	69.1	0.35	0.10	0.33	1	0.0
Jun	91.9	60.9	76.4	0.15	0.00	0.07	0	0.0
Jul	98.4	66.2	82.3	0.01	0.00	0.00	0	0.0
Aug	96.6	64.5	80.5	0.01	0.00	0.00	0	0.0
Sep	90.8	60.1	75.5	0.15	0.00	0.10	0	0.0
Oct	79.8	51.6	65.7	0.52	0.14	0.49	1	0.0
Nov	65.5	42.8	54.1	1.12	0.45	1.31	3	0.0
Dec	55.1	37.4	46.2	1.65	0.74	1.97	4	0.0
Annual:					8.65	12.47		
Average	76.7	50.8	63.8	-	-	-	-	-
Total	-	-	-	10.83			26	0.1

GROWING SEASON DATES

Requested years of data: 1949 - 2018

Years with missing data:	24 deg = 2	28 deg = 2	32 deg = 2
Years with no occurrence:	24 deg = 60	28 deg = 30	32 deg = 2
Data years used:	24 deg = 68	28 deg = 68	32 deg = 68

Probability	Temperature		
	24 F or higher	28 F or higher	32 F or higher
	Beginning and Ending Dates Growing Season Length		
50 percent *	No occurrence	12/31 to 1/6 371 days	2/8 to 12/4 299 days
70 percent *	No occurrence	No occurrence	1/28 to 12/16 322 days

** Percent chance of the growing season occurring between the Beginning and Ending dates.*

STATS TABLE

Total precipitation (inches)

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1949								MT	0.00	T	0.46	0.78	1.24
1950	3.01	1.84	1.84	0.82	0.05	0.00	0.02	T	0.13	1.19	1.85	1.60	12.35
1951	1.94	1.60	0.31	1.58	0.02	0.06	0.00	0.00	0.00	0.33	1.03	2.82	9.69
1952	3.59	0.53	3.57	2.07	T	0.01	T	0.00	0.09	0.02	1.61	4.05	15.54
1953	1.49	0.09	0.59	0.96	0.48	0.32	T	T	0.00	0.18	1.51	0.51	6.13
1954	1.80	1.13	2.90	0.48	0.09	0.29	T	0.00	0.00	0.00	1.32	1.82	9.83
1955	3.51	1.46	0.07	1.47	0.63	0.00	T	T	0.00	T	1.34	6.73	15.21
1956	2.41	0.65	0.08	1.38	0.81	0.00	T	0.00	T	1.00	0.00	0.31	6.64
1957	1.75	1.51	0.53	1.38	1.56	0.16	T	0.00	0.19	0.43	1.02	1.90	10.43
1958	2.03	4.11	5.79	2.71	0.79	0.02	0.02	0.01	0.46	T	0.21	0.32	16.47

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1959	1.47	3.66	0.09	0.54	0.09	0.00	0.00	0.01	0.92	0.00	0.00	0.43	7.21
1960	2.08	2.37	0.67	1.50	0.02	0.00	T	0.00	0.02	0.09	2.75	0.07	9.57
1961	1.52	0.40	1.04	0.57	0.40	0.01	T	0.10	T	T	1.60	1.32	6.96
1962	1.12	5.97	1.04	0.02	0.20	T	T	0.00	T	0.73	0.03	0.48	9.59
1963	2.16	2.01	2.10	3.66	0.39	0.03	0.00	0.01	0.15	0.95	2.54	0.27	14.27
1964	0.66	T	1.27	0.50	0.35	0.06	T	0.25	0.00	1.23	1.49	2.63	8.44
1965	1.05	0.43	2.38	1.74	T	T	T	0.02	0.00	0.30	2.69	1.73	10.34
1966	0.53	0.54	0.01	0.15	0.10	0.07	0.03	0.00	0.03	0.00	1.57	3.04	6.07
1967	2.21	0.22	3.15	4.41	0.19	0.14	T	T	T	0.07	1.55	1.04	12.98
1968	1.05	1.10	1.49	0.70	0.24	0.00	T	T	0.00	1.54	1.94	2.44	10.50
1969	8.56	5.60	1.16	1.64	0.06	0.04	0.04	0.00	0.04	0.06	0.80	1.14	19.14
1970	3.83	1.27	1.65	0.21	0.00	0.08	T	0.00	0.00	0.01	2.30	2.51	11.86
1971	0.40	0.29	0.58	1.04	1.40	0.00	T	T	0.04	0.03	0.65	2.56	6.99
1972	0.37	0.67	0.00	0.27	0.15	0.60	T	0.00	0.29	0.22	3.50	1.40	7.47
1973	1.91	3.69	2.84	0.09	T	T	0.00	T	0.00	1.02	1.39	1.74	12.68
1974	2.82	0.25	2.56	0.64	0.00	0.00	T	T	0.00	1.44	0.34	1.26	9.31
1975	0.69	0.97	2.44	0.55	T	0.00	T	0.05	0.22	1.07	0.20	0.14	6.33
1976	0.04	4.72	0.44	0.93	T	0.37	0.01	0.21	1.19	1.55	0.87	0.71	11.04
1977	0.68	0.09	1.04	0.04	1.16	0.06	T	T	T	0.01	0.46	3.02	6.56
1978	3.16	4.41	4.25	2.85	0.00	0.00	T	T	1.05	0.00	1.34	0.62	17.68
1979	2.71	2.53	2.27	0.07	0.06	0.00	0.08	0.00	T	0.48	1.01	0.74	9.95
1980	3.83	3.30	2.05	0.25	0.18	T	0.01	0.00	0.00	0.03	0.14	0.49	10.28
1981	2.67	1.29	2.59	1.01	T	0.00	0.00	0.00	0.00	0.58	1.22	0.65	10.01
1982	2.11	0.58	4.76	0.89	0.00	0.31	0.00	T	1.10	1.58	3.16	1.59	16.08

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1983	5.14	3.70	4.53	2.76	0.01	0.00	0.00	0.09	1.03	0.09	2.51	1.75	21.61
1984	0.15	1.05	0.48	0.25	0.02	0.20	T	T	0.00	0.70	1.94	1.98	6.77
1985	0.43	0.71	1.73	0.12	0.00	0.33	0.04	0.02	0.43	0.85	3.02	0.72	8.40
1986	2.12	3.66	3.42	0.36	0.16	0.00	T	0.00	0.38	0.00	0.01	2.30	12.41
1987	1.93	1.36	2.39	0.07	0.87	0.01	0.00	0.00	T	0.85	0.52	1.19	9.19
1988	1.52	0.83	0.27	2.41	0.45	0.03	0.00	0.00	0.00	0.00	1.42	2.46	9.39
1989	0.48	1.18	2.25	0.05	0.89	0.00	0.00	0.03	1.11	0.42	0.50	0.00	6.91
1990	2.82	1.33	0.67	0.92	1.65	0.00	T	0.00	0.15	0.05	0.46	0.68	8.73
1991	0.13	1.01	7.24	0.02	0.03	T	0.00	T	T	0.80	0.04	1.22	10.49
1992	1.94	4.73	2.14	0.18	T	T	0.22	T	T	2.19	T	2.68	14.08
1993	5.18	2.44	1.76	0.20	0.25	1.61	0.00	0.00	0.00	0.12	1.16	1.03	13.75
1994	1.15	1.92	0.52	1.36	1.30	0.00	T	0.00	0.20	0.77	1.57	1.33	10.12
1995	5.42	0.93	5.88	1.08	1.19	0.66	0.01	T	0.00	0.00	T	2.08	17.25
1996	2.07	3.57	1.52	1.17	0.38	0.08	T	0.00	0.00	1.97	1.94	4.27	16.97
1997	3.53	0.17	0.10	T	T	0.01	T	0.00	0.15	0.07	2.66	0.99	7.68
1998	3.40	4.89	3.44	1.26	1.37	1.93	0.00	0.00	0.15	0.16	0.43	0.62	17.65
1999	2.82	1.18	0.49	0.93	0.03	0.20	0.00	0.01	T	T	0.48	0.03	6.17
2000	3.15	6.12	1.35	1.16	0.05	0.56	0.00	T	0.32	2.45	0.01	0.07	15.24
2001	2.66	2.22	0.96	1.87	0.00	0.00	0.08	0.00	T	0.29	1.99	1.95	12.02
2002	0.76	0.40	0.95	0.21	0.38	0.02	0.00	0.00	T	0.00	1.78	2.25	6.75
2003	0.40	1.22	0.63	2.84	0.68	0.00	T	0.04	T	T	0.40	2.93	9.14
2004	0.88	1.69	1.54	0.03	0.07	0.00	0.00	0.00	0.00	2.45	0.81	3.16	10.63
2005	2.42	2.30	2.51	0.56	1.62	0.01	0.00	T	0.04	0.05	0.17	2.00	11.68
2006	3.40	0.54	4.73	3.27	0.36	0.00	T	0.00	0.00	0.08	0.23	1.33	13.94

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
2007	0.59	2.29	0.97	0.49	0.05	0.00	T	0.02	0.02	0.20	0.09	2.31	7.03
2008	3.32	2.12	0.02	T	0.30	0.00	0.01	0.00	0.00	0.23	1.37	1.09	8.46
2009	1.02	2.43	0.24	0.72	0.46	0.20	0.00	T	0.01	1.39	0.20	2.41	9.08
2010	2.05	2.94	0.96	2.19	0.21	0.00	T	0.00	0.00	0.44	1.80	5.92	16.51
2011	1.71	1.60	3.46	0.32	0.35	1.91	T	0.00	T	0.90	0.67	0.00	10.92
2012	1.38	0.75	2.43	2.02	0.00	T	T	T	0.00	0.25	1.11	2.03	9.97
2013	0.58	0.89	0.65	0.09	0.07	T	T	T	0.01	0.03	0.54	0.15	3.01
2014	0.57	2.11	0.62	0.74	0.04	0.00	0.01	T	0.18	0.50	0.40	2.29	7.46
2015	0.21	1.13	0.06	1.25	0.57	0.01	0.43	0.00	0.12	0.49	1.74	2.97	8.98
2016	4.42	0.33	2.93	1.06	0.29	0.06	0.00	0.00	0.00	0.67	1.38	2.51	13.65
2017	5.50	2.52	1.08	3.42	0.12	0.00	0.00	T	0.16	0.09	0.28	0.04	13.21
2018	M0.82												0.82

Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.
Data missing for all days in a month or year is blank.

Creation date: 2018-01-17

APPENDIX D - DATA POINT SHEETS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0459 City/County: Coalinga, Fresno County Sampling Date: 1/23/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP1

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S35, T19S, R13E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): C Lat: 36.227333 Long: -120.549369 Datum: WGS84

Soil Map Unit Name: Anela-vernalis association, 0 to 5 percent slopes NWI classification: Riverine

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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Vegetated bank above Los Gatos Creek represents uplands in blue oak-foothill pine woodland. Hydric soils and wetland hydrology are present although location is dominated by upland plants.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10' x 30')			
1. Hordeum murinum	15	Y	FACU
2. Erodium botrys	15	Y	FACU
3. Croton setiger	10	N	--
4. Vulpia myuros	15	Y	FACU
5. Bromus tectorum	15	Y	--
6. Cynodon dactylon	3	N	FACU
7. Baccharis salicifolia	2	N	FACW
8.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = 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: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	0	x 3 =	0
FACU species	48	x 4 =	192
UPL species	25	x 5 =	125
Column Totals:	75 (A)		321 (B)

Prevalence Index = B/A = 4.28

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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Vegetation along bank dominated by annual grasses.

SOIL

Sampling Point: DP1

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
0-4	10 YR 4/1	100					Sandy loa	
4-8	10 YR 4/1	90	10 YR 3/6	10	C	PL	Loamy sa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: 8"

Depth (inches): Bedrock

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

A four-inch thick layer of soil that starts in the top six inches of soil with prominent redox concentrations (greater than 2%) along pore linings of living root channels. Conditions fulfill Sandy Redox (S5)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

Oxidized rhizospheres are present in the top 12 inches of soil and fulfill wetland hydrology (C3). Sediment Deposits (B2) and Drift Deposits (B3) are present, indicating that the site floods.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0459 City/County: Coalinga, Fresno County Sampling Date: 1/23/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP2

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S35, T19S, R13E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): Mediterranean California Lat: 36.227333 Long: -120.549327 Datum: WGS84

Soil Map Unit Name: Anela-vernalis association, 0 to 5 percent slopes NWI classification: Riverine

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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Los Gatos Creek does not support wetland vegetation, but it has an ordinary high water mark and qualifies as other waters of the U.S.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10' x 30')			
1. Cynodon dactylon	2	N	FACU
2. Baccharis salicifolia	1	N	FAC
3. Juncus bufonicus	1	N	FACW
4.			
5.			
6.			
7.			
8.			
	4 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 96 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (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	0	x 1 =	0
FACW species	1	x 2 =	2
FAC species	1	x 3 =	3
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	4 (A)		13 (B)

Prevalence Index = B/A = 3.25

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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Stream channel mostly barren.

SOIL

Sampling Point: DP2

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
								No soil present.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Bedrock/cobble

Depth (inches): 0

Hydric Soil Present? Yes ✓ No ___

Remarks:

No soil present since the data point is located in a stream with bedrock and cobble substrate.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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): Bedrock

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

Evidence of flowing water in Los Gatos Creek is represented by Water Marks (B1), Sediment Deposits (B2), Drift Deposits (B3) and Salt Crust (B11). Saturation is also visible on aerial imagery.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0458 City/County: Coalinga, Fresno County Sampling Date: 1/23/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP3

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S35, T19S, R13E

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

Subregion (LRR): C Lat: 36.227642 Long: -120.546775 Datum: WGS84

Soil Map Unit Name: Lilten-Millsholm association, 30 to 35 percent slopes NWI classification: Riverine

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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Primarily herbaceous riparian wetland along the bank of Los Gatos Creek and above the ordinary high water mark (OHWM) fulfills wetland criteria. Riparian wetland periodically floods.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' x 30')			
1. Salix laevigata (sapling)	2	Y	FACW
2. Populus fremontii (=P. deltoides) (saplings)	5	Y	FAC
3.			
4.			
5.			
	7	= Total Cover	
Herb Stratum (Plot size: 10' x 30')			
1. Carex sp.	10	N	FAC
2. Dittrichia graveolens	25	Y	--
3. Polypogon monspeliensis	10	N	FACW
4. Avena fatua	3	N	--
5. Cynodon dactylon	5	N	FACU
6. Xanthium strumarium	2	N	FAC
7.			
8.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Vegetation growing along bank above OHWM.

SOIL

Sampling Point: DP3

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
0-3	10 YR 4/1	100					Loamy sa	
3-15	2.5 Y 4/1	85	5 YR 3/4	15	C	M/PL	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: rock

Depth (inches): 15

Hydric Soil Present? Yes ✓ No ___

Remarks:

Prominent redox concentrations are present in the matrix and along pore linings of living roots in a clay soil. Conditions fulfill a Depleted Matrix (F3).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

Redox concentrations along living root channels in the top 12 inches of soil fulfills Oxidized Rhizospheres (C3). Sediment Deposits (B2) and Drift Deposits (B3) are also present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0458 City/County: Coalinga, Fresno County Sampling Date: 1/23/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP4

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S35, T19S, R13E

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

Subregion (LRR): C Lat: 36.227688 Long: -120.546794 Datum: WGS84

Soil Map Unit Name: Lilten-Millsholm association, 30 to 35 percent 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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Data point represents upland in blue oak-foothill pine woodland. No wetland criteria are fulfilled.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' x 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus douglasii	10	Y	--
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' x 30')			
1. Senecio flaccidus	5	Y	--
2. Juniper californica	5	Y	--
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 10' x 30')			
1. Vulpia myuros	45	Y	FACU
2. Melilotus albus	10	N	--
3. Centaurea melitensis	5	N	--
4. Erodium botrys	5	N	FACU
5.			
6.			
7.			
8.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 15 % 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: 4 (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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Dominated by upland vegetation.

SOIL

Sampling Point: DP4

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
0-4	10 YR 4/3	100					Rocky loa	Rocky loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: 4"

Depth (inches): Rocky

Hydric Soil Present? Yes ____ No ✓

Remarks:

No hydric soil indicators detected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

No wetland hydrology indicators detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0455 City/County: Coalinga, Fresno County Sampling Date: 1/23/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP5

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S5, T20S, R14E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: 36.216211 Long: -120.471243 Datum: WGS84

Soil Map Unit Name: Anela-vernalis association, 0 to 5 percent slopes NWI classification: Riverine

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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Data point is in an active floodplain of Los Gatos Creek dominated by tamarisk shrubs. Portions of Los Gatos Creek have been graded and rock placed on banks. Does not meet wetland criteria.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' x 30')			
1. Tamarix parviflora	60	Y	FAC
2.			
3.			
4.			
5.			
	60 = Total Cover		
Herb Stratum (Plot size: 10' x 30')			
1. Dittrichia graveolens	2	Y	--
2. Vulpia myuros	10	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	12 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 28 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 60	x 3 = 180
FACU species 10	x 4 = 40
UPL species 2	x 5 = 10
Column Totals: 72 (A)	230 (B)

Prevalence Index = B/A = 3.19

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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Dominated by upland vegetation.

SOIL

Sampling Point: DP5

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
0-5	2.5 Y 4/3	100					Sand	
5-8	2.5 Y 4/1	95	10YR 3/6	5	C	M/PL	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rock

Depth (inches): 8

Hydric Soil Present? Yes ✓ No ___

Remarks:

Prominent redox concentrations (mottles) are present in the matrix and along pore linings in clay soil with a low chroma of 1. Conditions with a low chroma and mottles are indicative of hydric soils (Corps 1987).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

Oxidized rhizospheres (C3) are present and fulfill wetland hydrology. Evidence of flowing water in Los Gatos Creek is represented by Sediment Deposits (B2) and Drift Deposits (B3). Data point is in a floodplain.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0455 City/County: Coalinga, Fresno County Sampling Date: 1/23/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP6

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S5, T20S, R14E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR): C Lat: 36.216235 Long: -120.471281 Datum: WGS84

Soil Map Unit Name: Anela-vernalis association, 0 to 5 percent slopes NWI classification: Riverine

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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Data point represents upland riparian dominated by upland grasses and tamarisk. Data point is situated above the ordinary high water mark (OHWM) of Los Gatos Creek.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10' x 30')			
1. Tamarix parviflora	10	Y	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 10' x 30')			
1. Vulpia myuros	20	Y	FACU
2. Centaurea melitensis	2	N	--
3. Avena fatua	3	N	--
4. Bromus madritensis	10	Y	UPL
5.			
6.			
7.			
8.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 55 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: DP6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5 Y 4/3	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rock

Depth (inches): 8

Hydric Soil Present? Yes ____ No ✓

Remarks:

No hydric soil indicators detected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

No wetland hydrology indicators detected. On bank above OHWM of active floodplain.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0455 City/County: Coalinga, Fresno County Sampling Date: 1/23/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP7

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S5, T20S, R14E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: 36.216296 Long: -120.471632 Datum: WGS84

Soil Map Unit Name: Anela-vernalis association, 0 to 5 percent 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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Data point represents annual grassland in uplands.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 30' x 30')			
1. Avena fatua	55	Y	--
2. Croton setiger	15	N	--
3. Bromus diandrus	30	Y	--
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Dominated by uplands in annual grassland.

SOIL

Sampling Point: DP7

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
0-6	2.5 Y 4/3	100					Sandy loa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky

Depth (inches): 6"

Hydric Soil Present? Yes ____ No ✓

Remarks:

No hydric soils detected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

No wetland hydrology indicators detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0104 & 42C0367 City/County: Fresno County Sampling Date: 1/24/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP8

Investigator(s): P. Martin/C. Keller Section, Township, Range: S32, T17S, R19E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 3

Subregion (LRR): C Lat: 36.401836 Long: -119.924516 Datum: WGS84

Soil Map Unit Name: Water NWI classification: Riverine

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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Riparian wetland along the bank of the levee of the Fresno Slough is in the active floodplain and floods in a typical rain year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'x30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus fremontii	15	Y	FAC
2.			
3.			
4.			
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10'x30')			
1. Salix gooddingii	10	Y	FACW
2. Cephalanthus occidentalis	10	Y	OBL
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 10'x30')			
1. Persicaria hydropiper	35	Y	OBL
2. Cyperus eragrostis	5	N	FACW
3. Sorghum halepense	5	N	FACU
4. Mimulus guttatus	13	Y	OBL
5. Sisymbrium altissimum	7	N	FACU
6. Baccharis salicifolia	10	N	FAC
7. Gnaphalium palustre	5	N	FACW
8.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Dominated by hydrophytic vegetation.

SOIL

Sampling Point: DP8

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
0-18	10 YR 4/1	80	10 YR 3/6	20	C	M/PL	Loamy sa	with organic material

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes ✓ No ___

Remarks:

Prominent redox concentrations are present in the matrix along pore linings of living root channels. Conditions fulfill Sandy Redox - S5.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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): 6

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

Wetland hydrology is evidenced by Saturation (A3), Oxidized Rhizospheres (C3), Water Marks (B1), Sediment Deposits (B2), and Drift Deposits (B3).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0104 & 42C0367 City/County: Fresno County Sampling Date: 1/24/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP9

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S32, T17S, R19E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 3

Subregion (LRR): C Lat: 36.401834 Long: -119.924443 Datum: WGS84

Soil Map Unit Name: Water 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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland point from riparian wetland. Point taken on bank of levee above the ordinary high water mark.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10' x 30')			
1. Sorghum halepense	20	Y	FACU
2. Tribulus terrestris	2	N	--
3. Salsola australis	8	N	--
4.			
5.			
6.			
7.			
8.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 70 % 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: 1 (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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Dominated by upland vegetation.

SOIL

Sampling Point: DP9

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
0-14	10 YR 3/2	100					Sandy loa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: rocky

Depth (inches): 14

Hydric Soil Present? Yes ____ No ✓

Remarks:

No hydric soil indicators detected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

No wetland hydrology detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0104 & 42C0367 City/County: Fresno County Sampling Date: 1/24/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP10

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S32, T17S, R19E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): C Lat: 36.401546 Long: -119.925127 Datum: WGS84

Soil Map Unit Name: Armona loam, partially drained NWI classification: Riverine

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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Active channel does not fulfill wetland criteria. Data point is in the active channel of the Fresno Slough. The active channel is used for row crops. Active channel is an other waters of the U.S. and not a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10' x 30')			
1. Sorghum halepense	48	Y	FACU
2. Gnaphalium palustre	2	N	FACW
3. Sisymbrium altissimum	5	N	FACU
4. Cyperus eragrostis	20	Y	FACW
5. Xanthium strumarium	5	N	FAC
6. Persicaria hydropiper	10	N	OBL
7. Baccharis salicifolia	3	N	FAC
8. Datura wrightii	2	N	UPL
	95	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	22	x 2 =	44
FAC species	8	x 3 =	21
FACU species	53	x 4 =	212
UPL species	2	x 5 =	10
Column Totals:	95 (A)		297 (B)

Prevalence Index = B/A = 3.13

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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Dominated by upland vegetation.

SOIL

Sampling Point: DP10

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
0-3	10 YR 3/3	100					Clay loam	
3-12	10 YR 4/1	95	10 YR 3/6	5	C	M	Loamy sa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes ✓ No ___

Remarks:

Prominent redox concentrations in a sandy soil matrix fulfills Sandy Redox (S5).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

An encised bank on a levee with Drift Deposits (B3), Sediment Deposits (B2), and Water Marks (B1). Surface Soil Cracks (B6) also present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0104 & 42C0367 City/County: Fresno County Sampling Date: 1/24/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP11

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S32, T18S, R19E

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 36.401194 Long: -119.925391 Datum: WGS84

Soil Map Unit Name: Armona loam, partially drained NWI classification: Riverine

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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Riparian wetland point in the active floodplain of the Fresno Slough.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Salix gooddingii	15	Y	FACW
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Sorghum halepense	15	Y	FACU
2. Cyperus eragrostis	15	Y	FACW
3. Xanthium strumarium	10	N	FAC
4. Ammannia coccinea	20	Y	OBL
5.			
6.			
7.			
8.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Dominated by hydrophytic vegetation.

SOIL

Sampling Point: DP11

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
0-2	10 YR 4/1	90	10 YR 3/6	10	C	PL	Sandy loa	
2-14	10 YR 5/3	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes ✓ No ___

Remarks:

Prominent redox concentrations along pore linings in a depleted matrix fulfills Depleted Matrix (F3) in the top two inches of soil. Soil pit depth was not excavated deeper since hydric soil criteria was met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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 is fulfilled by Surface Soil Cracks (B6), Oxidized Rhizospheres (C3), Drift Deposits (B3), Sediment Deposits (B2), and Water Marks (B1).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0104 & 42C0367 City/County: Fresno County Sampling Date: 1/24/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP12

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S32, T18S, R19E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR): C Lat: 36.401214 Long: -119.925357 Datum: WGS84

Soil Map Unit Name: Armona loam, partially drained 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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland in sandy island from riparian wetland along the road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Salsola australis	20	Y	--
2. Xanthium strumarium	8	N	FAC
3. Helianthus annuus	2	N	FACU
4. Amaranthus albus	15	Y	FACU
5. Erigeron canadensis	5	N	FACU
6.			
7.			
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 50 % 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Dominated by upland vegetation.

SOIL

Sampling Point: DP12

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
0-16+	10 YR 5/4	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky

Depth (inches): 14

Hydric Soil Present? Yes ____ No ✓

Remarks:

No hydric soil indicators detected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

No wetland hydrology indicators detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0104 & 42C0367 City/County: Fresno County Sampling Date: 1/24/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP13

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S32, T18S, R19E

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 36.401260 Long: -119.925994 Datum: WGS84

Soil Map Unit Name: Armona loam, partially drained NWI classification: Riverine

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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Fresh emergent wetland is present in the active floodplain of Fresno Slough. Fresh emergent wetland supports obligate hydrophytes and appears to be inundated for longer duration than adjacent riparian wetland. Fulfills all wetland criteria.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Persicaria hydropiperoides	10	N	OBL
2. Medicago lupulina	30	Y	FAC
3. Mimulus guttatus	25	Y	OBL
4. Cyperus eragrostis	2	N	FACW
5. Rumex crispus	3	N	FAC
6. Sisymbrium altissimum	10	N	FACU
7. Amaranthus blitoides	5	N	FACU
8. Scopus diffusus	5	N	FACW
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10 % 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Dominated by hydrophytic vegetation.

SOIL

Sampling Point: DP13

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
0-10	10YR 3/1	90	10 YR 3/6	10	C	PL	SCL	Sandy clay loam
10-14+	10YR 3/1	100					SCL	Sandy clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

Soils were considered hydric since they met the hydric soil indicator F6 – Redox Dark Surface which was exhibited by prominent redox concentrations along the pore linings of living root channels within a dark soil matrix. Soil pit depth was not excavated deeper since hydric soil criteria was met in both soil layers.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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 was evidenced by primary hydrology indicators; Surface Soil Cracks (B6), Inundation Visible on Aerial Imagery (B7), and Oxidized Rhizospheres along Living Roots (C3), and secondary hydrology indicators; Water Marks (B1), Sediment Deposits (B2), Drift Deposits (B3), and Saturation Visible on Aerial Imagery (C9).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0104 & 42C0367 City/County: Fresno County Sampling Date: 1/24/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP14

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S32, T18S, R19E

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

Subregion (LRR): C Lat: 36.401312 Long: -119.925953 Datum: WGS84

Soil Map Unit Name: Armona loam, partially drained 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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland from emergent wetland area along the roadside.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Helianthus annuus	20	Y	FAC
2. Sorghum halepense	10	N	FACU
3. Erigeron canadensis	20	Y	FACU
4. Cyperus eragrostis	3	N	FACW
5. Datura wrightii	2	N	UPL
6. Salsola australis	5	N	--
7.			
8.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 40 % 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Dominated by upland vegetation.

SOIL

Sampling Point: DP14

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
0-5	10 YR 3/3	100					Loamy sa	Rocky roadside and hard soil.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rocky

Depth (inches): 5

Hydric Soil Present? Yes ____ No ✓

Remarks:

No hydric soil indicators detected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

No wetland hydrology indicators detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C532 City/County: Selma/Fresno County Sampling Date: 1/25/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP15

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S35, T15S, R21E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 36.583695 Long: -119.658168 Datum: WGS84

Soil Map Unit Name: water NWI classification:

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? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Pond is a part of Rockwell Pond complex and supports wetland conditions. Pond appears to fill when Rockwell Pond overflows. This pond is a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Xanthium strumarium	15	Y	FAC
2. Gnaphalium palustre	3	N	FACW
3. Salsola australis	2	N	--
4. Ammannia coccinea	20	Y	OBL
5. Sorghum halepense	5	Y	FACU
6.			
7.			
8.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 50

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

Vegetation is dominated by hydrophytes.

SOIL

Sampling Point: DP15

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
0-6	10 YR 3/1	100					Loamy sa	
6-18	10 YR 5/3	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes ✓ No ___

Remarks:

A low chroma matrix of 1 or less is indicative of hydric soil conditions (Corps 1987).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

Biotic Crust (B12) and Drift Deposits (B3) in a pond are indicative of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C532 City/County: Fresno County Sampling Date: 1/25/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP16

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S35, T15S, R21E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): C Lat: 36.583695 Long: -119.658223 Datum: WGS84

Soil Map Unit Name: water NWI classification: Lake

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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland point adjacent to wetland pond supports ruderal vegetation.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10' x 30')			
1. Helianthus annuus	30	Y	FACU
2. Datura wrightii	2	N	--
3. Bromus diandrus	50	Y	--
4. Salsola australis	3	N	--
5. Amaranthus albus	2	N	FACU
6. Erigeron canadensis	8	N	FACU
7.			
8.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 5 % 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Vegetation is dominated by upland vegetation.

SOIL

Sampling Point: DP16

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
0-16+	10 YR 3/2	100					Loamy sa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators detected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

No wetland hydrology indicators detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C532 City/County: Fresno County Sampling Date: 1/25/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP17

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S35, T15S, R21E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): C Lat: 36.583547 Long: -119.657942 Datum: WGS84

Soil Map Unit Name: water NWI classification: Lake

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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Rockwell Pond riparian bank. Man-made pond receives water from Fowler Switch canal and supports valley foothill riparian wetland along the banks of the pond.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Salix gooddingii	100	Y	FACW
2.			
3.			
4.			
5.			
	100 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Gnaphalium palustre	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Vegetation is dominated by hydrophytes.

SOIL

Sampling Point: DP17

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
0-8	10 YR 4/2	95	10 YR 3/6	5	C	M	Loamy sa	
8-18	10 YR 5/3	98	10 YR 3/6	2	C	M	Loamy sa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

Prominent redox concentrations in the matrix fulfill criteria for Sandy Redox (S5) in the top 8 inches of soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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 is evidenced by Drift Deposits (B3), Biotic Crust (B12) and Oxidized Rhizospheres (C3).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C532 City/County: Fresno County Sampling Date: 1/25/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP18

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S35, T15S, R21E

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

Subregion (LRR): C Lat: 36.583568 Long: -119.657932 Datum: WGS84

Soil Map Unit Name: water NWI classification: Lake

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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland point from Rockwell Pond documents uplands and is not a wetland. Ruderal vegetation dominates the herbaceous layer.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Salix gooddingii	30	Y	FACW
2.			
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 7' x 30')			
1. Gnaphalium palustre	14	Y	FACW
2. Salsola australis	10	Y	--
3. Sorghum halepense	10	Y	FACU
4. Nicotiana glauca	1	N	FAC
5. Datura wrightii	10	Y	--
6. Erigeron canadensis	2	N	FACU
7. Cyperus eragrostis	3	N	FACW
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20 % 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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Supports some hydrophytic vegetation, but dominated by upland species.

SOIL

Sampling Point: DP18

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
0-3	10 YR 2/1	100					Sandy loa	
3-12	10 YR 5/2	80	10 YR 4/6	20	C	M	Loamy sa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

Prominent redox concentrations in the matrix fulfill criteria for Sandy Redox (S5). Soil pit depth was not excavated deeper since hydric soil criteria was met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

No wetland hydrology detected.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0179 City/County: Reedley, Fresno County Sampling Date: 1/25/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP19

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S18, T15S, R24E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C Lat: 36.623324 Long: -119.394993 Datum: WGS84

Soil Map Unit Name: Greenfield sandy loam, moderately deep, 0 to 3 percent slopes NWI classification: Freshwater Forested Sh

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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Point represents the bottom of the Travers Creek channel, which is dominated by herbaceous hydrophytes. Creek meets wetland criteria and is classified as a wetland where all criteria are met.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 20' x 30')			
1. Polypogon monspeliensis	10	Y	FACW
2. Veronica anagallis-aquatica	5	N	OBL
3. Rumex crispus	3	N	FAC
4. Mimulus guttatus	5	N	OBL
5. Cynodon dactylon	10	Y	FACU
6. Polygonum aviculare	15	Y	FAC
7. Cyperus eragrostis	2	N	FACW
8.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 50 % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Moss growing on rocks, ~20% cover.

SOIL

Sampling Point: DP19

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1	10 YR 3/1	100					Sand	
1-8	Gley 1 4/N	100					Coarse sa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rock

Depth (inches): 8

Hydric Soil Present? Yes ✓ No ___

Remarks:

Sandy Gleyed Matrix (S4) is present from 1-8" below the surface and fulfills hydric soil criteria.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ✓ 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): 6

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

Data point is in Travers Creek, which has evidence of wetland hydrology via Water Marks (B1), Drift/Sediment Deposits (B2/B3), and Crayfish Burrows (C8). The creek is also inundated on Aerial Imagery (B7) dated August 7, 2017.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0179 City/County: Reedley, Fresno County Sampling Date: 1/25/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP20

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S18, T15S, R24E

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

Subregion (LRR): C Lat: 36.623271 Long: -119.395000 Datum: WGS84

Soil Map Unit Name: Greenfield sandy loam, moderately deep, 0 to 3 percent slopes NWI classification: Freshwater Forested Sh

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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Riparian bank of Travers Creek above the ordinary high water mark. Riparian vegetation consists of herbaceous species and varies between herbaceous and woody vegetation along the banks.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10' x 30')			
1. Cardamine oligosperma	10	Y	FAC
2. Mimulus guttatus	10	Y	OBL
3. Urtica dioica	10	Y	FAC
4. Rumex crispus	3	N	FAC
5. Avena fatua	1	N	--
6. Epilobium ciliatum	1	N	FACW
7. Brassica rapa	5	N	FACU
8.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Data point is dominated by hydrophytes.

SOIL

Sampling Point: DP20

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
0-3	10 YR 3/1	100					Sandy loa	peat
3-8	10 YR 4/2	100					Sandy loa	
8-13	10 YR 3/2	100					Mucky pe	mucky peat with sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes ✓ No ___

Remarks:

A low chroma matrix of 1 or less is indicative of hydric soil conditions (Corps 1987). Stratified Layers (A5) is also present with layers consisting of peat and mucky-peat with one layer consisting of a low chroma of 1 and the remaining layers consisting of a low chroma of 2. Soil pit depth was not excavated deeper since hydric soil criteria was met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

Data point is in Travers Creek, which has evidence of wetland hydrology via Water Marks (B1), and Drift/Sediment Deposits (B2/B3). The creek is also inundated on Aerial Imagery (B7) dated August 7, 2017.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BPMP Scour Mitigation/42C0179 City/County: Reedley, Fresno County Sampling Date: 1/25/2018

Applicant/Owner: Fresno County State: CA Sampling Point: DP21

Investigator(s): P. Martin/ C. Keller Section, Township, Range: S18, T15S, R24E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: 36.623301 Long: -119.395118 Datum: WGS84

Soil Map Unit Name: Greenfield sandy loam, moderately deep, 0 to 3 percent 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? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Upland point for Travers Creek adjacent to irrigated agriculture dominated by citrus trees.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 7' x 30')			
1. Urtica dioica	5	N	FAC
2. Erigeron canadensis	10	Y	FACU
3. Bromus diandrus	10	Y	--
4. Epilobium ciliatum	10	Y	FACW
5. Brassica rapa	3	N	FACU
6. Sonchus asper	2	N	FAC
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Dominated by upland vegetation.

SOIL

Sampling Point: DP21

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	7.5 YR 3/2	95	7.5 YR 3/4	5	C	M	Sandy loa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): N/A

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

Distinct redox concentrations are present on a dark surface that fulfills hydric soil criteria Redox Dark Surface (F6). Soil pit depth was not excavated deeper since hydric soil criteria was met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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)
- ___ 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:

No wetland hydrology detected.

APPENDIX E - OHWM DATA SHEETS

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: BPMP Scour Mitigation Project
Project Number: 42C0459
Stream: Los Gatos Creek - OHWM 1
Investigator(s): P. Martin/C. Keller

Date: 1/23/2018 **Time:** 08:45
Town: Coalinga **State:** CA
Photo begin file#: **Photo end file#:**
IMG_20180123_092408422_HDR

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ■ Is the site significantly disturbed?

Location Details:
Los Gatos Creek Road

Projection: **Datum:** NAD83
Coordinates: 36.227330, -120.549271

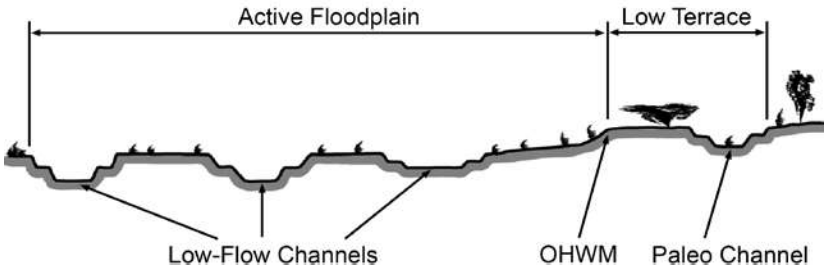
Potential anthropogenic influences on the channel system:
Cattle ranching activities and road crossings. Road maintenance activities.

Brief site description:
Intermittent stream with very seasonal flow on cattle ranching land. Likely only flows during precipitation events. Los Gatos Creek carries water from the surrounding foothills to the Central Valley where it terminates in uplands. Los Gatos Creek is not tributary to a traditional navigable water and occurs entirely within the state of California.

Checklist of resources (if available):

- ■ Aerial photography
  Dates: August 7, 2017
- ■ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

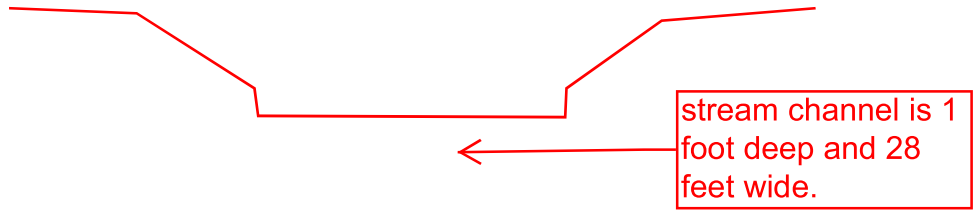


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ■ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ■ GPS
   - ☐ Other:

Project ID: 42C0459 **Cross section ID:** OHWM-1 **Date:** 20180123 **Time:** 0845

Cross section drawing:



OHWM

GPS point: 36.227330, -120.549271

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Almost barren channel with some Bermuda grass, mulefat, and toad rush in the OHWM, but less than 5% dominant.

Floodplain unit:

- [ ] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: 36.227330, -120.549271

Characteristics of the floodplain unit:

Average sediment texture: fine sediment to cobble with bedrock

Total veg cover: 4 % Tree: _____% Shrub: 3 % Herb: 1 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [x] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Scoured channel likely has brief hydroperiod during rain events. Mostly barren but supports some shrubs. Some salt crust on rocks in the channel.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: BPMP Scour Mitigation Project
Project Number: 42C0455
Stream: Los Gatos Creek - OHWM-2
Investigator(s): P. Martin/C. Keller

Date: 1/23/2018 **Time:** 12:30
Town: Coalinga **State:** CA
Photo begin file#: **Photo end file#:** IMG_20180123_125420265_HDR

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details: OHWM-2

Projection: **Datum:** NAD83
Coordinates: 36.216133, -120.471183

Potential anthropogenic influences on the channel system:

Most of the creek has been recently graded and graveled. Stream channel has been burned and manipulated by heavy equipment recently. Exact locations of the active channel are estimated.

Brief site description:

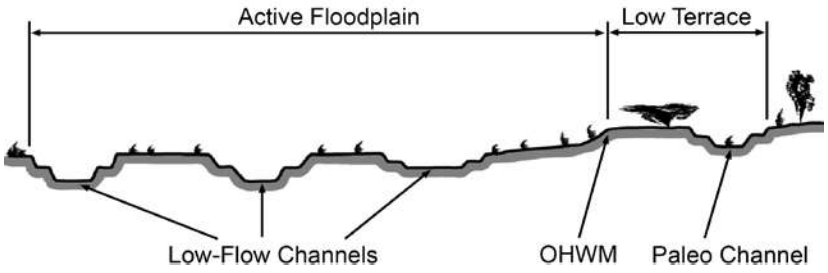
Los Gatos Creek is an intermittent stream with a meandering low flow channel in the active channel. Tamarisk dominates the vegetation, although riparian vegetation does not meet wetland criteria. Channel and floodplain are heavily disturbed from maintenance and fire. The floodplain and active channel in the Survey Area is full of foreign gravel and filled with sediment from erosion from rain and burn scars. Los Gatos Creek carries water from the surrounding foothills to the Central Valley where it terminates in uplands. Los Gatos Creek is not tributary to a traditional navigable water and occurs entirely within the state of California.

Checklist of resources (if available):

- ■ Aerial photography
  Dates: August 7, 2017
- ■ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

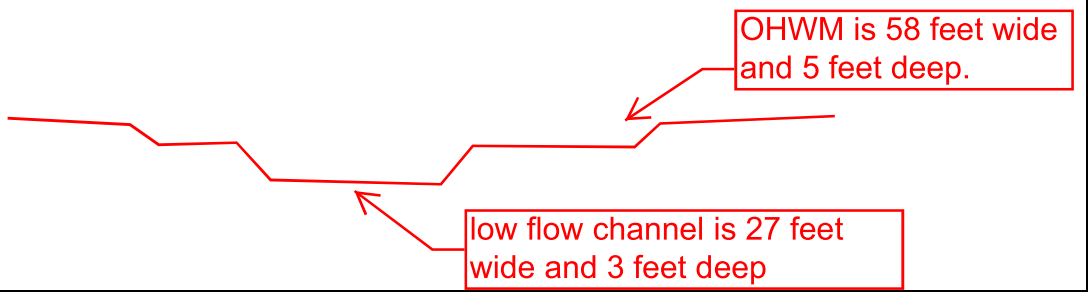


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ■ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ■ GPS
   - ☐ Other:

Project ID: 42C0455 **Cross section ID:** OHWM-2 **Date:** 1-23-2018 **Time:** 12:30

Cross section drawing:



OHWM

GPS point: 36.216132, -120.471183

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Active channel is dominated by tamarisk, with no vegetation in the low flow channel. Recently graded/graveled section of active channel is devoid of vegetation. Exact locations of the active channel are estimated as evidenced by upstream and downstream indicators of water marks on the trees, flood gauge, and bridge in addition to break in bank slope and drift and sediment deposits.

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: 36.216089, -120.471151

Characteristics of the floodplain unit:

Average sediment texture: sandy/cobble (recently graveled)

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [x] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Water is present and flowing: shallow, ~2-3" deep with some slightly deeper sections. Low flow channel is not vegetated. Small fish are present.

Project ID: 42C0455 **Cross section ID:** OHWM 2 **Date:** 1-23-2018 **Time:** 12:30

Floodplain unit: ☐ Low-Flow Channel ■ Active Floodplain ☐ Low Terrace

GPS point: 36.216133, -120.471183

Characteristics of the floodplain unit:

Average sediment texture: sand

Total veg cover: 72 % Tree: 0 % Shrub: 60 % Herb: 12 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ■ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ■ Drift and/or debris
- ■ Presence of bed and bank
- ■ Benches
- ■ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Vegetation dominated by Tamarisk and upland annual grasses where it is not disturbed. Section of active channel recently graded/graveled is devoid of vegetation.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: BPMP Scour Mitigation Project
Project Number: 42C0455
Stream: Ephemeral Stream - OHWM-3
Investigator(s): P. Martin/C. Keller

Date: 1/23/2018 **Time:** 13:30
Town: Coalinga **State:** CA
Photo begin file#: **Photo end file#:** IMG_20180123_132154730_HDR

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details: OHWM-3

Projection: **Datum:** NAD83
Coordinates: 36.215629, -120.471740

Potential anthropogenic influences on the channel system:
Stream channel has been burned and is full of sediment from erosion on a burn scar.

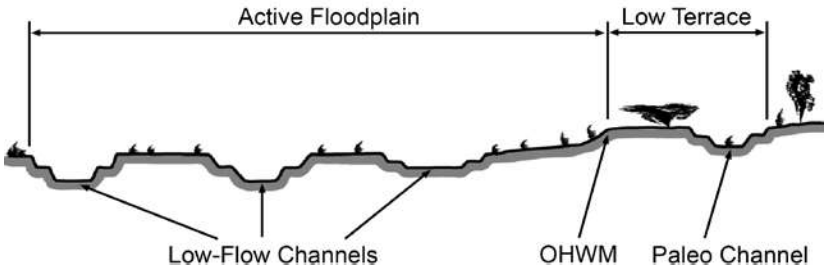
Brief site description:
This ephemeral stream drains to Los Gatos Creek in the Survey Area and carries water from the surrounding foothills south of the Survey Area to Los Gatos Creek. Los Gatos Creek carries water from the Survey Area to the Central Valley where it terminates in uplands. Los Gatos Creek is not tributary to a traditional navigable water and occurs entirely within the state of California. The ephemeral stream is devoid of vegetation with some new growth. Channel is heavily disturbed from erosion and fire. The active channel in the Survey Area is full of sediment from erosion from rain and burn scars.

Checklist of resources (if available):

- ■ Aerial photography
  Dates: August 7, 2017
- ■ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ■ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

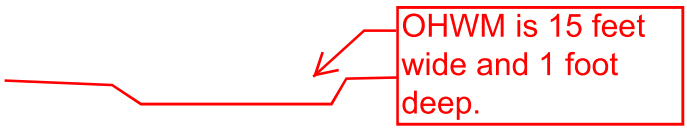


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ■ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ■ GPS
   - ☐ Other:

Project ID: 42C0455 **Cross section ID:** OHWM-3 **Date:** 1-23-2018 **Time:** 13:30

Cross section drawing:



OHWM

GPS point: 36.215629, -120.471740

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

This ephemeral stream is filled with sediment as a result of precipitation events washing out sediment from a recent burn scar upstream. The stream is also devoid of vegetation.

Floodplain unit:

- [x] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: 36.215629, -120.471740

Characteristics of the floodplain unit:

Average sediment texture: sand

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [x] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Barren low flow channel is the extent of this feature. It is full of sediment with some early herbaceous annuals growing in the channel. All other vegetation is burned and indistinguishable. This stream drains foothills and emerges from a steep walled canyon south of the Survey Area and likely floods frequently during precipitation events.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: BPMP Scour Mitigation Project
Project Number: 42C0104 & 42C0367
Stream: Fresno Slough - Riverine - OHWM-4
Investigator(s): P. Martin, C. Keller

Date: 1/24/2018 **Time:** 1400
Town: Fresno County **State:** CA
Photo begin file#: IMG_20180124_103018537 **Photo end file#:**

Y [x] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [x] Is the site significantly disturbed?

Location Details: OHWM-4

Projection: **Datum:** NAD83
Coordinates: 36.401765, -119.924643

Potential anthropogenic influences on the channel system:
Areas of the active channel are actively used for agriculture and include row crops north of Excelsior Avenue. The active channel is heavily disturbed from tilling or grading, trash dumping and agricultural use.

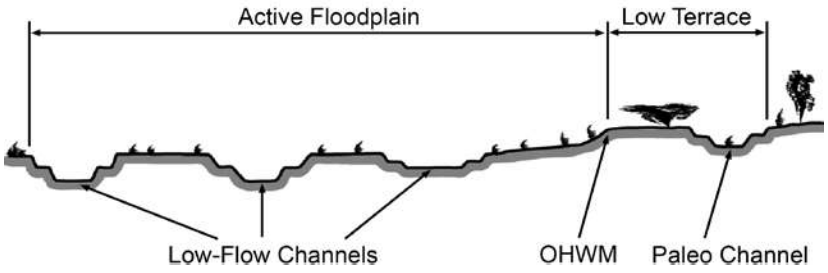
Brief site description:
Active channel of Fresno Slough is evidenced by drift/sediment deposits, water marks on trees and structures, scour marks, and benches. Fresno Slough drains South Fork Kings River to the San Joaquin River, a traditional navigable water. The active floodplain contains wetlands and low flow channels that are highly transient.

Checklist of resources (if available):

- [■] Aerial photography
  Dates: August 7, 2017
- [■] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [■] Global positioning system (GPS)
- [ ] Other studies

- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

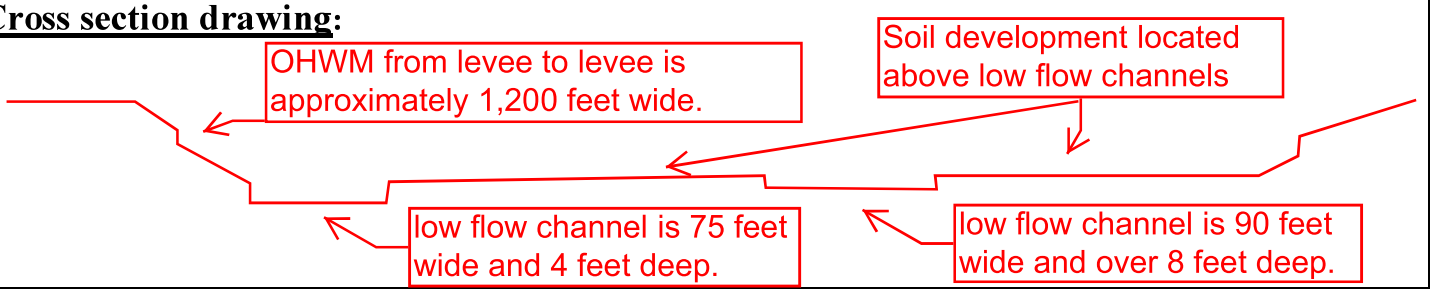


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [■] Mapping on aerial photograph
   - [■] GPS
   - [ ] Digitized on computer
   - [ ] Other:

Project ID: 42C0104 & 42C0367 **Cross section ID:** OWHM-4 **Date:** 20180124 **Time:** 1400

Cross section drawing:



OHWM

GPS point: 36.401765, -119.924643

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

OHWM is located on levees and has a distinct break in bank slope. Riparian wetlands and fresh emergent wetlands occur in the active floodplain in addition to meandering low flow channels. Large soil development in the form of sand dunes up to several feet tall and hundreds of feet wide are distributed throughout the active floodplain indicating the volume of water that flows through this system. Upland areas are also present in the active floodplain in addition to row crops.

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: 36.401789, -119.924522

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 4 % Tree: 0 % Shrub: 0 % Herb: 4 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [x] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Low flow channel is mostly barren with some herbaceous riparian species on the edge of riparian wetlands that are rooted in the active floodplain. The low flow channels in the Fresno Slough system are formed by sand and appear to be highly transient and change from year to year depending on the flow of water received from the Kings River and other inputs upstream.

42C0104 &

Project ID: 42C0367 **Cross section ID:** OHWM-4 **Date:** 20180124 **Time:** 1400

Floodplain unit: ☐ Low-Flow Channel ■ Active Floodplain ☐ Low Terrace

GPS point: 36.401765, -119.924643

Characteristics of the floodplain unit:

Average sediment texture: Fine sand some cobble

Total veg cover: 0 % Tree: 15 % Shrub: 20 % Herb: 30 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ■ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ■ Drift and/or debris
- ■ Presence of bed and bank
- ■ Benches
- ■ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Active channel is present along a defined break in bank slope along levees. Large areas of deposited sand are scattered in the Survey Area and in the surrounding area throughout the floodplain and between the levees that bound the Fresno Slough. Uplands, riparian wetland, fresh emergent wetland and crops (winter wheat) are present in the active channel and primarily above the low flow channel.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: BPMP Scour Mitigation
Project Number: 42C0532
Stream: Fowler Switch Canal - OHWM 5
Investigator(s): P. Martin/C. Keller

Date: 1/25/2018 **Time:** 8:00
Town: Selma **State:** CA
Photo begin file#: **Photo end file#:**
IMG_20180125_080810260_HDR

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ■ Is the site significantly disturbed?

Location Details: OHWM-5

Projection: **Datum:** NAD83
Coordinates: 36.583689, -119.659481

Potential anthropogenic influences on the channel system:

Fowler Switch is a managed canal that distributes water from the Kings River to agricultural uses. The canal is dredged and managed for vegetation.

Brief site description:

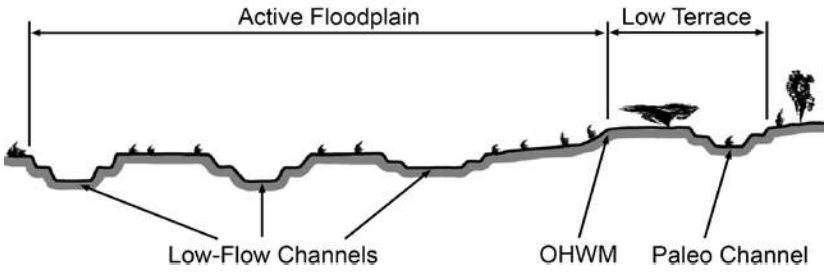
Fowler Switch is a managed canal that distributes water to agricultural uses from the Kings River. It has a pump that delivers water to Rockwell Ponds, which support wetlands. Water in the irrigation network likely joins Fresno Slough to the west, which drains other irrigation networks and is tributary to the San Joaquin River, a traditional navigable water.

Checklist of resources (if available):

- ■ Aerial photography
  Dates: August 7, 2017
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

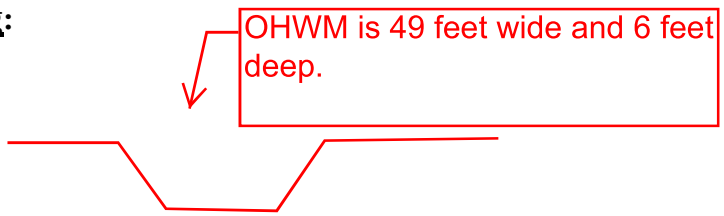


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ■ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ■ GPS
   - ☐ Other:

Project ID: 42C0532 **Cross section ID:** OHWM 5 **Date:** 1-25-2018 **Time:** 8:00

Cross section drawing:



OHWM

GPS point: 36.583689, -119.659481

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Managed canal with defined break in bank slope. Vegetation is mostly absent and managed for optimal water distribution.

Floodplain unit:

☒ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: 36.583689, -119.659481

Characteristics of the floodplain unit:

Average sediment texture: loamy sand

Total veg cover: 20 % Tree: _____% Shrub: _____% Herb: 20 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Vegetation along banks consists of annual herbaceous species, mainly upland species tumble mustard (Sisymbrium altissimum), Canada horseweed (Erigeron canadensis) and some wetland species woolly marbles (Psilocarphus brevissimus). Bermuda grass (Cynodon dactylon) is growing on the bottom of canal.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: BPMP Scour Mitigation Project
Project Number: 42C0179
Stream: Travers Creek - Intermittent Channel
Investigator(s): P. Martin, C. Keller

Date: 1/25/2018 **Time:** 1300
Town: Reedley **State:** CA
Photo begin file#: IMG_20180125_132715406 **Photo end file#:**

Y [x] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [x] Is the site significantly disturbed?

Location Details:
OHWM-6

Projection: **Datum:** NAD83
Coordinates: 36.623181, -119.395138

Potential anthropogenic influences on the channel system:

Creek banks are armored with broken concrete and concrete-lined banks. Riparian vegetation in channel has been trimmed.

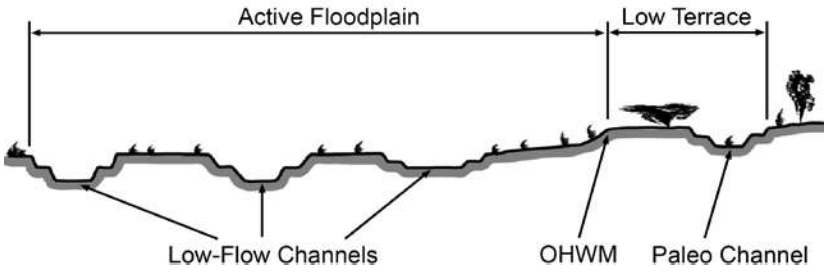
Brief site description:

Travers Creek is a managed natural drainage that distributes water for agricultural use and drains to the Kings River. The Kings River is tributary to the San Joaquin River, a traditional navigable water. Portions of the bank are lined with riparian vegetation that varies between woody and herbaceous riparian. Some parts of the bank are lined with concrete.

Checklist of resources (if available):

- [■] Aerial photography
  Dates: August 7, 2017
- [■] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
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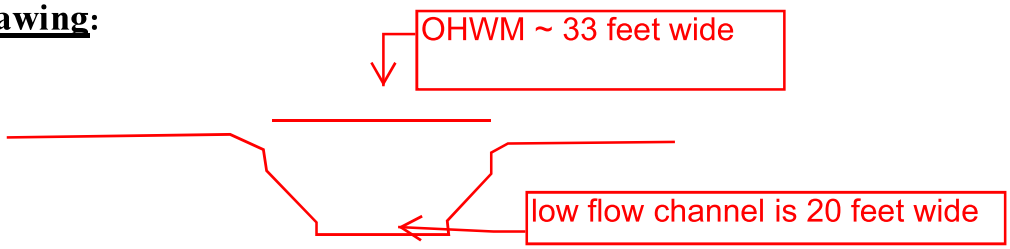
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [■] Mapping on aerial photograph
   - [■] GPS
   - [ ] Digitized on computer
   - [ ] Other:

Project ID: 42C0179 **Cross section ID:** OHWM-6 **Date:** 20180125 **Time:** 1300

Cross section drawing:



OHWM

GPS point: 36.623181, -119.395138

Indicators:

- ☐ Change in average sediment texture
- ☑ Change in vegetation species
- ☑ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Abrubt break in bank slope. Species of plants consists of more hydrophytes at the OHWM boundary and in the active channel.

Floodplain unit:

☑ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 36.623230, -119.395074

Characteristics of the floodplain unit:

Average sediment texture: sand to cobble

Total veg cover: 50 % Tree: 0 % Shrub: 0 % Herb: 50 %

Community successional stage:

- ☐ NA
- ☑ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☑ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Consists primarily of herbaceous hydrophytes. Other portions of the active channel support willow (Salix spp.) and are documented as valley foothill riparian wetland.

Project ID: 42C0179 **Cross section ID:** OHWM-6 **Date:** 20180125 **Time:** 1300

Floodplain unit: ☐ Low-Flow Channel ■ Active Floodplain ☐ Low Terrace

GPS point: 36.623181, -119.395138

Characteristics of the floodplain unit:

Average sediment texture: sand - fine to coarse

Total veg cover: 40 % Tree: 0 % Shrub: 0 % Herb: 40 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ■ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ■ Drift and/or debris
- ■ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Consists of similar vegetation as low flow channel but supports some shrubs including willow and common buttonwillow. Active channel upstream of the bridge and this cross section data point consists of dense woody riparian vegetation.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

APPENDIX F - REPRESENTATIVE PHOTOGRAPHS

Photo Point 1. View of Data Point 1 (shovel) in Survey Area 1, facing north. This point is representative of the Blue Oak – Foothill Pine community and Data Point 2 representative of intermittent channel. Taken on January 23, 2018.

Photo Point 2. View of Bridge 42C0459 over Los Gatos Creek in Survey Area 1, facing south. This point is representative of the Intermittent Channel community. Taken on January 23, 2018.

Photo Point 3. View of OHWM-1, facing north, which is representative of the Intermittent Channel community. Taken on January 23, 2018.

Photo Point 4. View of Bridge 42C0458 over Los Gatos Creek in Survey Area 2, facing east. This point is representative of the Intermittent Channel community. The area above the channel is representative of Blue Oak– Foothill Pine community. Location of Data Point 4 is shown at red arrow. Taken on January 23, 2018.

Photo Point 5. View of Data Point 3 (shovel) located in Survey Area 2, facing west. This point is representative of the Valley-Foothill Riparian-Wetland community. Taken on January 23, 2018.

Photo Point 6. View of Bridge 42C0455 over Los Gatos Creek in Survey Area 3, facing north. This point is representative of the Intermittent Channel community. Taken on January 23, 2018.

Photo Point 7. View of OHWM-2 (red-dashed line) located in Survey Area 3, facing southwest. This point is representative of the Intermittent Channel community. Taken on January 23, 2018.

Photo Point 8. View of Data Point 5 (shovel), facing south, and Data Point 6 (red arrow) located in Survey Area 3. These points are both representative of the Valley-Foothill Riparian – Upland community in and along the banks of Los Gatos Creek. Taken on January 23, 2018.

Photo Point 9. View of OHWM-3 located in Survey Area 3, facing west (red-dashed line). This point is representative of the Ephemeral Stream community in Survey Area 3 at its confluence with Los Gatos Creek. Taken on January 23, 2018.

Photo Point 10. View of Data Point 7 located in Survey Area 3, facing north. This point is representative of the Annual Grassland community. Taken on January 23, 2018.

Photo Point 11. View of Bridge 42C0367 over Fresno Slough in Survey Area 4, facing northwest. This point is representative of the Riverine community in the active floodplain. Taken on January 24, 2018.

Photo Point 12. View of OHWM-4, facing west. This point is representative of the Fresno Slough floodplain. Also shown are Data Point 8 (green arrow) located in the Valley-Foothill Riparian – Wetland community and Data Point 9 (red arrow) located in the Developed community. Taken on January 24, 2018.

Photo Point 13. View of Data Point 10 in Survey Area 4, facing east. This point depicts uplands within the OHWM of the Fresno Slough. Taken on January 24, 2018.

Photo Point 14. View of Data Point 11 in Survey Area 4, facing west. The point is representative of the Valley-Foothill Riparian – Wetland community (shovel) and lies adjacent to Data Point 12, which is representative of ruderal uplands. Taken on January 24, 2018.

Photo Point 15. View of Bridge 42C0104 over Fresno Slough in Survey Area 4, facing northwest. The point is representative of the Riverine community in the OHWM. Taken on January 24, 2018.

Photo Point 16. View of Data Point 13 in Survey Area 4, facing south. The point is representative of the Fresh Emergent Wetland community that supports obligate hydrophytes. Taken on January 24, 2018.

Photo Point 17. View of Data Point 14 in Survey Area 4, facing northeast, which is representative of the Ruderal community in the uplands. Taken on January 24, 2018.

Photo Point 18. View of Bridge 42C532 over Fowler Switch Canal in Survey Area 5, facing east. Location of OHWM-5 which is representative of the Intermittent Channel community. Taken on January 25, 2018.

Photo Point 19. View of Data Point 15 (green arrow) in Survey Area 5, facing east. This point is representative of the Wetland Pond community. Data Point 16 (red arrow) is representative of the Ruderal community. Taken on January 25, 2018.

Photo Point 20. View of Data Point 17 (green arrow) in Survey Area 5, facing west. This point is representative of the Valley-Foothill Riparian – Wetland community. Data Point 18 (red arrow) shows the adjacent upland point. Taken on January 25, 2018.

Photo Point 21. View of Bridge 42C0179 in Survey Area 6, facing east. This view depicts the OHWM-6 for Travers Creek, shown as red-dashed line, Data Points 19 and 20, shown as green arrows, representing the Valley-Foothill Riparian – Wetland community and Data Point 21, shown as a red arrow, representing uplands in orchard. Taken on January 25, 2018.

Photo Point 22. View of Travers Creek in Survey Area 6, facing east. This point is representative of dense vegetation within the Valley-Foothill Riparian – Wetland community along the banks of an intermittent channel. Taken on January 25, 2018.

Photo Point 23. View of Travers Creek within Survey Area 6, facing south. This point is representative of herbaceous vegetation within the Valley-Foothill Riparian – Wetland community along the banks of an intermittent channel. Taken on January 25, 2018.

APPENDIX G - PLANT LIST

Wetland Indicator Status for Plant Species Observed in the Delineation Area

Scientific Name	Common Name	Wetland Indicator Status[a]	Lost Gatos Creek (3 Sites)	Fresno Slough (2 Sites)	Fowler Switch Canal	Travers Creek
Achillea millefolium	Common yarrow	FACU				x
Amaranthus albus	Tumbleweed	FACU		x		x
Amaranthus blitoides	Mat amaranth	FACU		x		
Ammannia coccinea	Valley redstem	OBL		x		x
Amsinckia intermedia	Common fiddleneck	--		x		
Avena fatua	Wild oat	--	x		x	
Baccharis salicifolia	Mule's-fat	FAC	x	x		
Brassica rapa	Field mustard	FACU			x	
Bromus diandrus	Ripgut brome	--	x		x	x
Bromus madritensis	Foxtail brome	UPL	x			x
Bromus tectorum	Cheatgrass	--	x			
Callitriche heterophylla	Greater water-starwort	OBL			x	
Cardamine oligosperma	Little western bittercress	FAC			x	x
Carduus pycnocephalus	Italian thistle	--			x	
Carex spp.	Sedge	FAC	x	x		
Centaurea solstitialis	Yellow star thistle	--	x			
Cephalanthus occidentalis	Common buttonbush	OBL		x		
Citrus spp.	Orange tree	--			x	
Croton setiger	Turkey-mullein	--	x			x
Cynodon dactylon	Bermuda grass	FACU	x		x	x
Cynosurus echinatus	Annual dogtail grass	--				x
Cyperus eragrostis	Tall flatsedge	FACW		x	x	x
Datura wrightii	Sacred thorn apple	UPL		x		x
Dittrichia graveolens	Stinkwort	--		x		
Ephedra viridis	Mormon tea	--	x			
Epilobium brachycarpum	Annual fireweed	--			x	
Epilobium ciliatum	Fringed willowherb	FACW			x	
Equisetum laevigatum	Smooth scouring-rush	FACW				x
Ericameria linearifolia	Interior goldenbush	--	x			
Erigeron canadensis	Canada horseweed	FACU		x	x	x
Eriodictyon tomentosum	Woolly yerba santa	--	x			
Eriogonum fasciculatum	California buckwheat	--	x			
Erodium botrys	Long-beak stork's-bill	FACU	x	x		
Erodium cicutarium	Red-stemmed filaree	--			x	x

Scientific Name	Common Name	Wetland Indicator Status[a]	Lost Gatos Creek (3 Sites)	Fresno Slough (2 Sites)	Fowler Switch Canal	Travers Creek
Euphorbia maculata	Spotted sandmat	UPL		x		x
Gnaphalium palustre	Western marsh cudweed	FACW		x	x	x
Helianthus annuus	Common sunflower	FACU		x		x
Hordeum murinum	Wall barley	FACU	x			
Juncus bufonius	Toad rush	FACW	x			x
Juncus spp.	Rush	FACW		x		
Juniperus californica	California juniper	--	x			
Lactuca serriola	Prickly lettuce	FACU			x	
Lemna spp.	Duckweed	OBL		x		
Ludwigia peploides	Floating primrose-willow	OBL		x		
Malva parviflora	Cheeseweed mallow	--		x	x	
Marrubium vulgare	White horehound	FACU				x
Medicago polymorpha	Toothed medick	FACU		x		
Medicago polymorpha	Bur clover	FACU			x	
Melilotus albus	White sweetclover	--	x			
Mimulus guttatus	Seep monkeyflower	OBL		x	x	x
Nerium oleander	Oleander	--				x
Nicotiana glauca	Tree tobaccoo	FAC		x		x
Persicaria hydropiper	Mild water-smartweed	OBL		x		
Pinus sabiniana	Foothill pine	--	x			
Poa annua	Annual bluegrass	FAC		x		
Polygonum aviculare	Prostrate knotweed	FAC			x	
Polypogon monspeliensis	Rabbitsfoot grass	FACW	x		x	
Populus fremontii	Fremont cottonwood	FAC	x	x		
Prunus dulcis	Domestic almond	--				X
Psilocarphus brevissimus	Dwarf woollyheads	FACW				x
Quercus douglasii	Blue oak	--	x			
Rhamnus crocea	Redberry buckthorn	--	x			
Rhaphiolepis indica	Indian hawthorn	--				x
Ribes aureum	Golden currant	FAC	x			
Ribes quercetorum	Foothill gooseberry	--	x			
Rorippa curvisiliqua	Curve-pod yellowcress	OBL				x
Rosa spp.	Ornamental rose	--				x
Rubus armeniacus	Himalayan blackberry	FAC			x	
Rumex crispus	Curly dock	FAC		x	x	

Scientific Name	Common Name	Wetland Indicator Status[a]	Lost Gatos Creek (3 Sites)	Fresno Slough (2 Sites)	Fowler Switch Canal	Travers Creek
Salix gooddingii	Goodding's black willow	FACW		x	x	x
Salix laevigata	Polished willow	FACW	x			
Salsola australis	Russian thistle	--	x	x		x
Scirpus spp.	Bulrush	OBL		x		
Senecio flaccidus	Bush groundsel	--	x			
Senecio vulgaris	Old-man-in-the-spring	FACU			x	x
Sisymbrium altissimum	Tall tumblemustard	FACU		x		x
Sonchus asper	Sow thistle	FAC		x	x	
Sorghum halepense	Johnsongrass	FACU		x	x	x
Tamarix parviflora	Small-flower tamarisk	FAC	x			
Tribulus terrestris	Puncturevine	--		x		
Triticum aestivum	Common wheat	--		x		
Urtica dioica	Stinging nettle	FAC		x	x	
Veronica anagallis-aquatica	Blue water speedwell	OBL			x	
Vitis spp.	Cultivated grape	--				x
Vulpia myuros	Rattail sixweeks grass	FACU	x			x
Xanthium stumarium	Rough cocklebur	FAC	x	x	x	x

Sources: Baldwin et al. 2012., Lichvar 2016

[a] Indicator Status Definitions:

OBL = Obligate, almost always occurs in wetlands (>99% probability of occurrence)
FACW=Facultative wetland, usually occurs in wetlands (66%–99% probability)
FAC = Facultative, equally likely to occur in wetlands or nonwetlands (34%–66% probability)
FACU = Facultative upland, usually occurs in nonwetlands but occasionally in wetlands (1%–33% probability)
UPL = Obligate upland, almost never occurs in wetlands (<1% probability)

-- = Not listed and can be assumed to be upland (NWPL 2016)

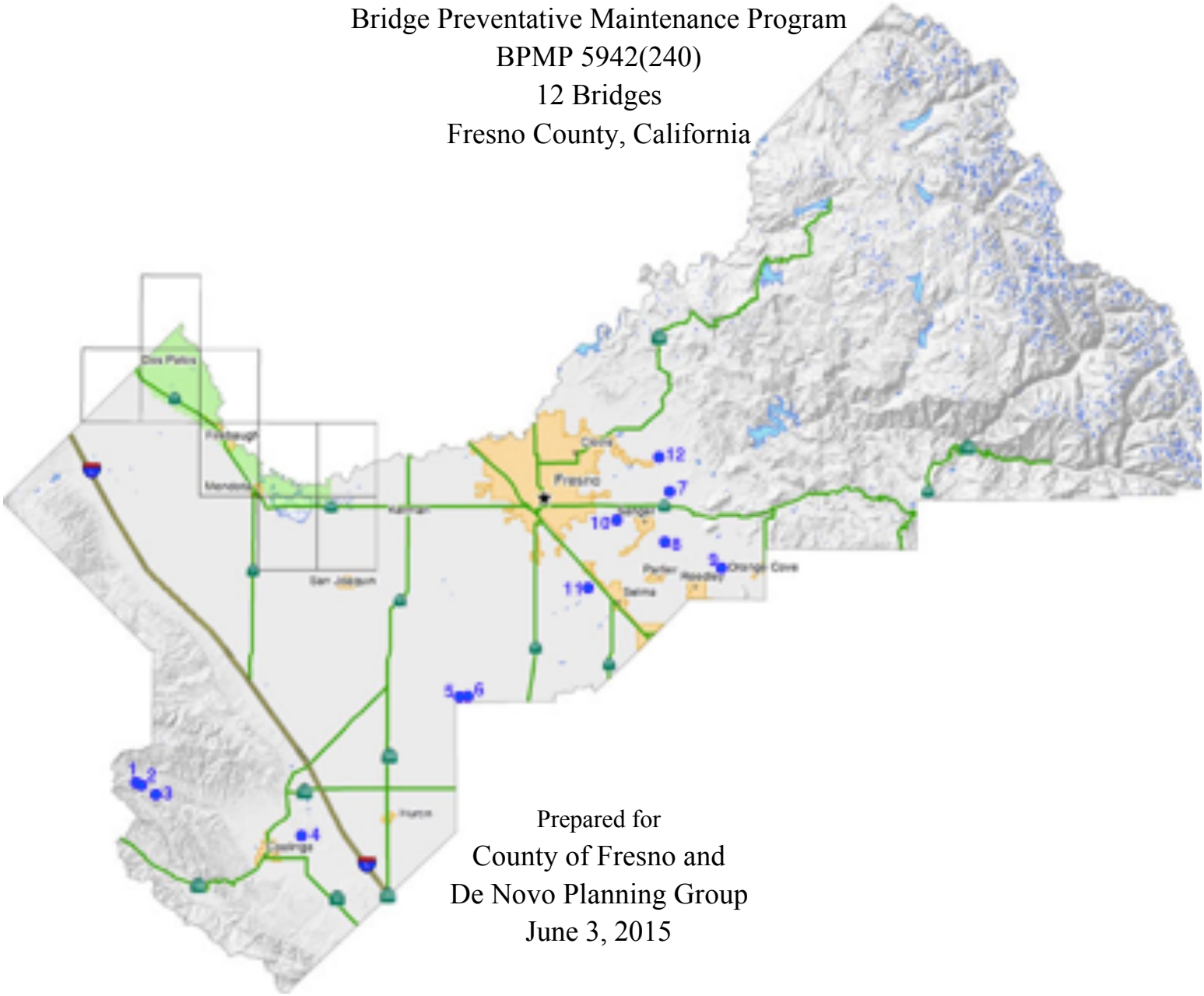
APPENDIX H - AQUATIC RESOURCE TABLE

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
W-01	CALIFORNIA	R4		Area	0.298	ACRE	DELINEATE	36.22724415	-120.5494036	
W-02	CALIFORNIA	R4		Area	0.163	ACRE	DELINEATE	36.22771844	-120.5465699	
W-03	CALIFORNIA	RP1		Area	0.005	ACRE	DELINEATE	36.22765411	-120.5467594	
W-04	CALIFORNIA	R4		Area	0.409	ACRE	DELINEATE	36.21591007	-120.4712861	
W-05	CALIFORNIA	R6		Area	0.019	ACRE	DELINEATE	36.21562447	-120.4716644	
W-06	CALIFORNIA	R5		Area	1.081	ACRE	DELINEATE	36.40150503	-119.9252361	
W-07	CALIFORNIA	RP1		Area	0.254	ACRE	DELINEATE	36.401203	-119.925294	
W-08	CALIFORNIA	RP1		Area	0.016	ACRE	DELINEATE	36.4012557	-119.9244402	
W-09	CALIFORNIA	RP1		Area	0.08	ACRE	DELINEATE	36.40165628	-119.9244927	
W-10	CALIFORNIA	RP1EM		Area	0.288	ACRE	DELINEATE	36.40119619	-119.9260465	
W-11	CALIFORNIA	RP1		Area	0.033	ACRE	DELINEATE	36.40120671	-119.9264159	
W-12	CALIFORNIA	RP1		Area	0.036	ACRE	DELINEATE	36.40113374	-119.9267952	
W-13	CALIFORNIA	R5		Area	0.091	ACRE	DELINEATE	36.40151633	-119.9267859	
W-14	CALIFORNIA	RP1		Area	0.002	ACRE	DELINEATE	36.40149341	-119.9264446	
W-15	CALIFORNIA	RP1		Area	0.005	ACRE	DELINEATE	36.40157553	-119.9264607	
W-16	CALIFORNIA	R5		Area	0.409	ACRE	DELINEATE	36.58360623	-119.6596193	
W-17	CALIFORNIA	PEM		Area	0.078	ACRE	DELINEATE	36.58373028	-119.658046	
W-18	CALIFORNIA	R2		Area	0.058	ACRE	DELINEATE	36.58352146	-119.6581238	
W-19	CALIFORNIA	R4		Area	0.083	ACRE	DELINEATE	36.62328369	-119.3946278	
W-20	CALIFORNIA	RP1		Area	0.032	ACRE	DELINEATE	36.62328439	-119.3945285	
W-21	CALIFORNIA	RP1		Area	0.033	ACRE	DELINEATE	36.62320147	-119.3945709	
W-22	CALIFORNIA	RP1		Area	0.08	ACRE	DELINEATE	36.6232041	-119.3951139	
W-23	CALIFORNIA	R4		Area	0.041	ACRE	DELINEATE	36.62316214	-119.3951587	

Adanta

Initial Site Assessment

Bridge Preventative Maintenance Program
BPMP 5942(240)
12 Bridges
Fresno County, California



Prepared for
County of Fresno and
De Novo Planning Group
June 3, 2015

Adanta, Inc. Project A1274-1

Prepared for:

County of Fresno and
De Novo Planning Group

INITIAL SITE ASSESSMENT
Bridge Preventative Maintenance Program
12 Bridges
Fresno County, California

Project: A1274-1
Date: March 23, 2015

Adanta, Inc.
Native American woman-owned
DOT-Certified SMBE / UDBE

828 School Street
Napa, California 94559
Tel. (707) 709-8894

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EXECUTIVE SUMMARY

The County of Fresno proposes to conduct maintenance activities on the twelve bridges that are a part of this ISA. These bridges represent Study Areas that are located throughout the Fresno County. This ISA is conducted as a part of the County of Fresno Bridge Preventive Maintenance Program (BPMP).

The proposed project would extend the service life of the existing structure at each location by installing new or repairing existing scour countermeasures and conducting other maintenance activities. Vegetation and trash will be removed from the channel at each location. Portions of the channel could be excavated to a maximum depth of three feet to install new or repair existing scour countermeasures. A dead tree overhanging Location No. 3 will be removed. It is the intention of Fresno County to use existing paths to access the channel and not remove any other trees. Temporary construction permits will be required.

No direct evidence of hazardous substances or petroleum products on the Study Area under conditions that would significantly affect the feasibility or cost of the proposed project was observed or obtained during the course of this Initial Site Assessment.

Conditions that indicate a potential for contamination that might possibly affect a given project are recognized. Not all of the following conditions affect every Study Area. The noted conditions include the following:

LEAD-BASED PAINT

- It is probable that existing paint striping on the surface of roads spanning the bridges and the white paint on the concrete structures on either side of the bridges contain lead, as well as chromium and zinc. It should be noted that not all of the roads spanning the bridges have paint striping. However, each bridge was observed to have some painted surfaces, some in poor condition with deteriorating paint.

TREATED WOOD

- Bridge 10 – Thompson Avenue at Fowler Switch Canal and Bridge 11 Huntsman Avenue at Fowler Switch Canal were constructed with treated wood beam supports. The bridge railings were also constructed with a horizontal treated wood beam, attached to the decking by treated wood supports. Treated wood was not observed in the other 11 bridges.

ASBESTOS

- The California Air Resources Board and the San Joaquin Valley Air Pollution District have taken the position that concrete has the potential to contain asbestos. Concrete structures that are intended for demolition need to be sampled for asbestos content. The bridge should be inspected for asbestos-containing materials (including shims, pads, and concrete). This asbestos assessment will require a Certified Asbestos Consultant.

AERIALLY DEPOSITED LEAD (ADL)

- ADL primarily originates from vehicle emissions settling on soil adjacent to older railways. All but two of the Study Areas have average daily vehicle traffic of less than 800 cars. However, Bridge 8 – American Avenue over Fowler Switch Canal had average daily traffic of 1,800 vehicles based on a 2006 study, and Bridge 9 – Alta Avenue over Travers Creek had average daily traffic of 4,240 vehicles based on a 2002 study. It is possible, that these two study areas may have ADL in the soil on either sides of the roadway in the near vicinity of each bridge.

De Minimis Conditions

AERIALLY DEPOSITED LEAD

- As indicated above, ten of the Study Areas are lightly traveled enough to assume that ADL is not an environmental concern. Although it is possible that ADL is in the near surface soil of the Study Areas, it is unlikely to be in quantities that would be hazardous, based on State hazardous waste criteria.

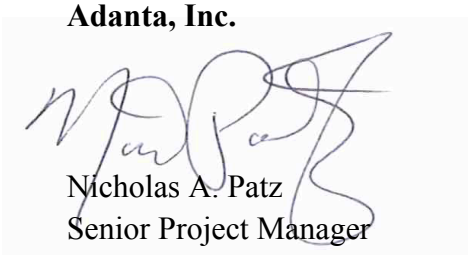
AGRICULTURAL CHEMICALS

- The majority of the project area has been used for agricultural purposes for many years. Therefore, there is the potential that pesticides, herbicides, and/or fertilizers were applied to soils, or stored at, the Study Area.

Refer to Appendix D of this report for Caltrans Standard Special Provisions (SSPs) when handling contaminants or meeting specialized hazardous waste regulatory or safety requirements.

Please call if you have any questions on this report or conditions at the site. We have appreciated this opportunity to be of service.

Sincerely,
Adanta, Inc.



Nicholas A. Patz
Senior Project Manager

1.0 INTRODUCTION

At the request of De Novo Planning Group (De Novo), Adanta, Inc. (Adanta) conducted an Initial Site Assessment (ISA) in cooperation with the Bridge Preventative Maintenance Program of Fresno County, California. Twelve bridges are a part of this study. The bridges are located throughout Fresno County.

The following are the twelve bridges and their approaches that were designated as Study Areas for this ISA:

Bridge 1 (42C0459) Los Gatos Road at Los Gatos Creek, 11.4 miles west of Derrick Road
Bridge 2 (42C0458) Los Gatos Road at Los Gatos Creek, 11.23 miles west of Derrick Road
Bridge 3 (42C0455) Los Gatos Road at Los Gatos Creek, 5.6 miles west of Derrick Road
Bridge 4 (42C0097) El Dorado Avenue at Arroyo Pasajero, 2.0 miles north of Jayne Street
Bridge 5 (42C0104) Excelsior Avenue at Fresno Slough: 0.10 miles west of Grantland Avenue
Bridge 6 (42C0367) Excelsior Avenue at Fresno Slough Overflow, 0.2 miles west of Grantland Avenue
Bridge 7 (42C0520) Viau Avenue at Fresno Canal, 0.3 miles north of Belmont Avenue
Bridge 8 (42C0178) American Avenue at Fowler Switch Canal, at Highland Avenue
Bridge 9 (42C 0179) Alta Avenue at Travers Creek, 0.3 miles north of South Avenue
Bridge 10 (42C0531) Thompson Avenue at Fowler Switch Canal, 0.33 miles north of Adams Avenue.
Bridge 11 (42C0532) Huntsman Avenue at Fowler Switch Canal, 0.3 miles east of Temperance Avenue
Bridge 12 (42C0328) Zediker at Mud Creek, 0.7 miles south of Shields Avenue

Please refer to Figure 1 – Study Area Location Map for the approximate location of each bridge.

1.1 STUDY PURPOSE

The following report summarizes an environmental ISA conducted by Adanta for 12 bridges involved in the Bridge Preventative Maintenance Program in Fresno County, California that will be used as a preliminary document in preparation for conducting maintenance work on existing bridges.

This report was prepared in accordance with a request by De Novo to identify, based on readily available and accessible information and direct observation, the presence or likely presence of hazardous substances or petroleum products in the immediate area of each bridge (Study Area) that is a part of this program. Environmental conditions were researched and observed that could significantly affect the feasibility or cost of the proposed project. This study is intended for use in meeting the Caltrans requirements for preparation of the Project Report and Environmental Document. Additional limitations of this assessment are discussed in Section 5 of this report.

1.2 STUDY SCOPE

This ISA was conducted according to the California Department of Transportation (Caltrans) guidelines as explained in the Caltrans Standard Environmental Reference, Chapter 10, Hazardous Materials, Hazardous Waste, and Contamination. In addition the ISA substantially meets the requirements of ASTM E1527-13 and the US EPA All Appropriate Inquiry rule, as a Phase I Environmental Site Assessment.

The research for this ISA included a Study Area and adjacent sites survey, interviews with informed persons, reviews of public records, an environmental database search report, review of previous reports (when obtained), and collection and review of current and historical ground level as well as current and historical aerial photographs.

This ISA study included the following tasks:

- A search of federal, state, and local regulatory agency databases for records of known or potential hazardous waste storage or release sites on or near the Study Areas was conducted by Adanta. Search distances varied for different databases, with a minimum search distance of 1⁄4-mile from the Study Area.

- File reviews with California Regional Water Quality Control Board (CRWQCB), California Department of Toxic Substances Control (DTSC), and Fresno County Environmental Health Department for sites identified in the various databases, that could potentially impact the environmental integrity of the Study Area.

- A review of available literature (including information from the Adanta air photo and map library, and in the collection at Environmental Record Search) regarding regional or local physical setting, including topography, geology and hydrogeology.

- Online search for relevant current and historical information.

- Identify obvious past uses of the Study Area and adjoining sites, including review of reasonably available reports, historical maps, and aerial photography.
- Conduct Study Area reconnaissance, including a driving and walking survey of each area to make visual observations for evidence of current land uses, past uses, focusing on potential areas of environmental concern.
- Prepare a report presenting findings and professional opinions.

This report has been prepared under the supervision of an individual who meets the U.S. EPA's requirements for an Environmental Professional.

2.0 PROPERTY AND SURROUNDING AREA DESCRIPTIONS

To facilitate a working knowledge of the physical appearance of the Study Areas, it was necessary to research the intent of proposed project, and to conduct walking and driving visual surveys of the Study Areas and immediate surrounding areas.

2.1 PROJECT DESCRIPTION

The County of Fresno proposes to conduct maintenance activities on the twelve bridges that are a part of this ISA. These bridges represent Study Areas that are located throughout the Fresno County. This ISA is conducted as a part of the County of Fresno Bridge Preventive Maintenance Program (BPMP).

The proposed project would extend the service life of the existing structure at each of the 12 bridge locations by installing new or repairing existing scour countermeasures and conducting other maintenance activities. Vegetation and trash will be removed from the channel at each location. Portions of the channel could be excavated to a maximum depth of three feet to install new or repair existing scour countermeasures. A dead tree overhanging Location No. 3 will be removed. It is the intention of Fresno County to use existing paths to access the channel and not remove any other trees. Temporary construction permits will be required.

Maintenance activities may include one or more of the following for each bridge.

1) Joint Seal Replacement

2) Methacrylate Deck Treatment

3) Polyester Concrete Overlay

4) Deck AC Replacement/New Installation

5) Restore/Replace Existing Bearings

6) Repair/Restore/Strengthen Beams, Piers, and End Caps to Reduce Need for Load Posting or to Mitigate Further Fatigue Damage

7) Repair/Supplement/Replace Timber Structural Elements such as Timber Decking and Stringers

8) Repair/Replace Movable Bridge Components

9) Retrofit Repairs to Fatigue Prone Details of Steel Girders

10) Spot Painting of Structural Steel Elements

11) Rehab/New Installation of Deck Drainage Elements

12) Replace Deteriorated Bridge Railings due to Environmental Conditions

13) Embankment Erosion Control and Repair of Existing Scour Countermeasures to Protect the Structural Integrity of the Bridge

14) Approach Slab Rehab/Replace/New Installation Based on Extensive Maintenance History

15) ASR Mitigation, Corrosion Management Systems, Fracture Critical Element Replacement/Rehab

16) Development of BPMP

17) Other Case-by-Case Type of Works that Meet PM Objectives; Need to Contact DLAE for Assistance.

2.2 STUDY AREA and SURROUNDING AREA DESCRIPTIONS

Nick Patz of Adanta, conducted a walking survey of each bridge Study Area on March 2 and 3, 2015. Mr. Patz was not accompanied by other personnel during the surveys. The area surrounding each bridge was observed from the approximate boundaries of the Study Area (where accessible) and during a drive-by survey of the area. Most of the Study Areas had boundaries that were not accessible, however all were visible. On the days that Adanta conducted the Study Area surveys, the weather conditions were predominantly cool and partly cloudy. Weather conditions did not inhibit visual observation of Study Area and surrounding area conditions.

During the walking survey, the Study Areas were observed for evidence of hazardous substances that may have an effect on the environmental quality of each Study Area and adjacent sites. Adanta observed the Study Areas for evidence of aboveground and underground storage tanks, surface staining, hazardous materials containers, ponds, pits, and other indications of potential environmental concern. If conditions were observed that indicated potential environmental concerns, Adanta marked their relative locations on a map drawn in the field (refer to Figure B1 – B12 Study Area Maps).

BRIDGE 1 (42C0459) Los Gatos Road at Los Gatos Creek, 11.4 miles west of Derrick Road

STUDY AREA DESCRIPTION
Bridge 1 is in a rural area of west Fresno County, in the Alcalde Hills northwest of Coalinga. Los Gatos Road over Los Gatos Creek is a two-lane roadway with traffic lanes divided by double yellow line paint striping. The bridge railing is a horizontal metal structure supported by metal channels attached to the concrete deck of the bridge. Barbed-wire fencing was present on both sides of Los Gatos Road making access to the creek bed difficult.

Wooden fencing has been constructed adjacent to the bottom of the bridge, at the surface of the creek bed, in an apparent attempt to prevent livestock from crossing under the bridge. At the time of the Study Area survey Los Gatos Creek was a dry creek bed.

The average daily traffic (2005) for the Study Area is reported as 200 vehicles per day.

SURROUNDING AREA DESCRIPTION
Surrounding the Study Area is land that is apparently used for livestock grazing. Approximately 500 feet from the north side of the bridge is a residence and various structures that appear to support ranching. A windmill that may be used to drive a water well is near Los Gatos Road adjacent to the north side of the Study Area.

Refer to Photographs 1-1 – 1-6, located in the Attachment – Study Area Photographs. Obvious indications of environmental concern likely to significantly impact the project were not observed.

BRIDGE 2 (42C0458) Los Gatos Road at Los Gatos Creek, 11.23 miles west of Derrick Road

STUDY AREA DESCRIPTION
Bridge 2 is in a rural area of west Fresno County in the Alcalde Hills northwest of Coalinga. Bridge 2 is about 1,000 feet east of Bridge 1. Los Gatos Road over Los Gatos Creek is a two-lane roadway with traffic lanes divided by double yellow line paint striping. The bridge railing is a horizontal metal structure supported by metal channels attached to the concrete deck of the bridge. Barbed-wire fencing was present on both sides of Los Gatos Road, making access to the creek bed difficult.

Fencing has been constructed adjacent to the bottom of the bridge at the surface of the creek bed in an apparent attempt to prevent livestock from crossing under the bridge. At the time of the

Study Area survey, Los Gatos Creek was a dry creek bed. A large tree is in the creek bed, and is leaning toward the bridge. The tree did not have green vegetation at the time of the survey, and appeared to be dead.

The average daily traffic (2005) for the Study Area is reported as 200 vehicles per day.

SURROUNDING AREA DESCRIPTION
Surrounding the Study Area is land that is apparently used for livestock grazing.

Refer to Photographs 2-1 – 2-6, located in the Attachment – Study Area Photographs. Obvious indications of environmental concern likely to significantly impact the project were not observed..

BRIDGE 3 (42C0455) Los Gatos Road at Los Gatos Creek, 5.6 miles west of Derrick Road

STUDY AREA DESCRIPTION
Bridge 3 is in a rural area of west Fresno County, in the Alcalde Hills northwest of Coalinga. Los Gatos Road over Los Gatos Creek is a two-lane roadway with traffic lanes divided by double yellow line paint striping on Los Gatos Road and the bridge crossing. There has been some asphalt repair conducted on the bridge that has obliterated a portion of the paint striping on the bridge. The bridge railing is a horizontal metal structure supported by metal channels that are attached to the concrete deck of the bridge. Barbed-wire fencing was present on both sides of Los Gatos Road making access to the creek bed difficult.

At the time of the Study Area survey Los Gatos Creek was a dry creek bed.

The average daily traffic (2005) over the bridge is reported as 200 vehicles per day.

SURROUNDING AREA DESCRIPTION
Surrounding the Study Area is land that is apparently used for livestock grazing. Livestock were not observed at the time of the survey.

Refer to Photographs 3-1 – 3-6, located in the Attachment – Study Area Photographs. Obvious indications of environmental concern likely to significantly impact the project were not observed..

BRIDGE 4 (42C0097) El Dorado Avenue at Arroyo Pasajero, 2.0 miles north of Jayne Avenue

STUDY AREA DESCRIPTION

Bridge 4 is in a rural area of west Fresno County east of Coalinga and west of US Interstate 5. El Dorado Avenue over Arroyo Pasajero is a two-lane roadway with traffic lanes divided by dashed yellow line paint striping. The paint striping appeared to have been relatively recently applied, while other faded dashed striping was also evident on the roadway. The bridge railing is a painted-white concrete structure attached to the concrete deck of the bridge. The white paint shows significant signs of deterioration. A portion of the railing adjacent to El Dorado Avenue is constructed of treated wood. Signage was observed in the area near the bridge for a gas pipeline that appears to be within the Study Area.

Arroyo Pasajero is the deepest of the 12 channels observed during this study. The channel was dry at the time of the Study Area Survey. A dirt road leading from El Dorado Avenue on the north side of the Arroyo Pasajero provided access to the channel surface.

The average daily vehicle traffic (2011) over the Study Area bridge is reported as 800 vehicles per day.

SURROUNDING AREA DESCRIPTION

The immediate area surrounding the Study Area is undeveloped land, although there is some orchard use in the general vicinity.

Refer to Photographs 4-1 – 4-6, located in the Attachment – Study Area Photographs. Obvious indications of environmental concern likely to significantly impact the project were not observed..

BRIDGE 5 (42C0104) Excelsior Avenue at Fresno Slough: 0.10 miles west of Grantland Avenue

STUDY AREA DESCRIPTION

Bridge 5 is in a rural area of south central Fresno County. The south side of Excelsior Avenue marks the boundary between Fresno and Kings Counties.

Excelsior Avenue over Fresno Slough is a two-lane roadway with lanes divided by double yellow line paint striping. The bridge railing is a horizontal metal structure supported by metal channels attached to the concrete deck of the bridge. Fresno Slough was a dry channel at the time of the Study Area survey. There was debris in the channel bed that included the carcasses of

several small goats, as well as general trash that included several various size cans of paint, mattresses, box springs, and other discarded furniture. The debris in the channel was only observed from the bridge surface, and was not observed up close. Poles carrying electrical wires are within the Study Area. In addition, it appeared that an irrigation well is located within the Study Area. Staining was not observed in the area of the well.

The average daily traffic (2004) over the bridge in the Study Area is reported as 90 vehicles per day.

SURROUNDING AREA DESCRIPTION
Surrounding the Study Area is land that is apparently used for row crop agriculture.

Refer to Photographs 5-1 – 5-6, located in the Attachment – Study Area Photographs. Obvious indications of environmental concern likely to significantly impact the project were not observed.. However, the observed paint cans could have liquid contents and may need to be disposed of as household hazardous waste.

BRIDGE 6 (42C0367) Excelsior Avenue at Fresno Slough Overflow, 0.20 miles west of Grantland Avenue

STUDY AREA DESCRIPTION
Bridge 6 is in a rural area of south central Fresno County, and is less than 500 feet east of Bridge 5. As stated above, the boundary between Fresno County and Kings County is just south of Excelsior Avenue.

Excelsior Avenue over Fresno Slough is a two-lane roadway with traffic lanes divided by double yellow line paint striping. The bridge railing is a horizontal metal structure supported by metal channels attached to the concrete deck of the bridge. The shoulder area of the bridge is exposed concrete, while the roadway is asphalt pavement.

Debris was noted under the bridge, including a box springs and general household-type waste. Fresno Slough had some standing water under the bridge at the time of the Study Area survey. A small area of what appeared to be burned debris was observed on the west side of the bridge along Excelsior Avenue.

The average daily traffic (2004) over the bridge in the Study Area is reported as 90 vehicles per day.

SURROUNDING AREA DESCRIPTION
Surrounding the Study Area is land that is apparently used for row crop agriculture, and undeveloped land.

Refer to Photographs 6-1 – 6-6, located in the Attachment – Study Area Photographs. Obvious indications of environmental concern likely to significantly impact the project were not observed.

BRIDGE 7 (42C0520) Viau Avenue at Fresno Canal, 0.3 miles north of Belmont Avenue

STUDY AREA DESCRIPTION
Bridge 7 is located in a rural area of central Fresno County, east of the city of Fresno. North Viau Avenue is a two-lane roadway that is not divided by paint striping in the area of Bridge 7. Viau Avenue on both sides of the bridge is asphalt paved, however, the bridge deck itself is exposed concrete. The bridge railing is a horizontal metal structure supported by metal channels attached to the concrete deck of the bridge.

There was a small amount of water in the Fowler Switch Canal under Bridge 7 at the time of the Study Area survey. Irrigation wells were observed within the Study Area.

The average daily traffic (2010) for the bridge of the Study Area is reported as 250 vehicles per day.

SURROUNDING AREA DESCRIPTION
The area to the south of the bridge is improved with orange groves. Adjacent to the northwest of the bridge and North Viau Avenue is a single-family residence, with storage of farm equipment in the yard. Row-crop agriculture is adjacent to the northeast of the bridge and Viau Avenue. Approximately 500 feet north of the Study Area is a farm site listed on a State Water Resources Control Board website called Geotracker as having a leaking underground storage tank. It is unlikely that contamination from the reported site will affect the Study Area. The site has received regulatory closure from the RWQCB, as well as a "no further action" letter in 2004.

Refer to Photographs 7-1 – 7-6, located in the Attachment – Study Area Photographs. Obvious indications of environmental concern likely to significantly impact the project were not observed.

BRIDGE 8 (42C0178) American Avenue at Fowler Switch Canal, at Highland Avenue

STUDY AREA DESCRIPTION

Bridge 8 is located in a rural area of Fresno County just west of Del Rey. American Avenue is a two-lane asphalt roadway as it crosses over the Fowler Switch Canal. A single solid yellow painted line and a dashed yellow painted line divide the traffic lanes on the roadway and over the bridge. The shoulder area of the bridge is exposed concrete, while the main portion of the bridge has been asphalt paved. The bridge railing is painted concrete on the roadway side of the bridge and exposed concrete of the side of the railing facing the canal. The white paint has been significantly degraded. Fowler Switch Canal was dry at the time of the Study Area survey.

A pile of debris was noted on the south side of American Avenue adjacent to the bridge structure. The debris appeared to be metal wire pulled from vehicle tires as well as tire pieces, fabric, and other miscellaneous debris, some of which had apparently been burned. A warning sign was noted adjacent to the bridge that an underground cable belonging to Pacific Telephone is in the area.

SURROUNDING AREA DESCRIPTION

Highland Avenue is a narrow single-lane asphalt paved road that parallels the east side of Fowler Switch Canal north of American Avenue and terminates at American Avenue. The general area surrounding the Study Area is improved with orchards and vineyards. The average daily traffic (2006) is reported as 1,800 vehicles

Refer to Photographs 8-1 – 8-6, located in the Attachment – Study Area Photographs. Obvious indications of environmental concern likely to significantly impact the project were not observed.

BRIDGE 9 (42C 0179) Alta Avenue at Travers Creek, 0.3 miles north of South Avenue

STUDY AREA DESCRIPTION

Bridge 9 is located between Reedley and Orange Cove in rural Fresno County. Alta Avenue, within the Study Area, is a two-lane roadway. The traffic lanes on the bridge and roadway are divided by dashed yellow paint striping. Travers Creek forms a narrow channel under the bridge that contained water during the Study Area survey. A portion of the sidewalls of the channel adjacent to the bridge, are covered with concrete. The concrete bridge has a railing made of a horizontal metal beam supported by metal channels that are attached to the concrete deck of the bridge. A sign near the bridge warns of the presence of an underground telephone cable.

The average daily traffic (2002) is reported as 4,240 vehicles.

SURROUNDING AREA DESCRIPTION
The Study Area is in an agricultural and rural area of Fresno County. Adjacent sites are in agricultural use as orange orchards and vineyards. During the survey of the surrounding area, it appeared that a well was in the process of being constructed on land being prepared for planting. Residences were observed northeast of the Study Area.

Refer to Photographs 9-1 – 9-6, located in the Attachment – Study Area Photographs. Obvious indications of environmental concern likely to significantly impact the project were not observed..

BRIDGE 10 (42C0531) Thompson Avenue at Fowler Switch Canal, 0.33 miles north of Adams Street

STUDY AREA DESCRIPTION
Bridge 10 is located east of Fowler. Thompson Avenue is a two-lane road that is not divided by paint striping. Although Thompson Avenue is topped by asphalt pavement, the bridge over Fowler Switch Canal is exposed concrete. There is a metal railing on either side of the bridge that is supported by metal channels attached to the side of the treated wood decking of the bridge. The bridge appears to be constructed with treated wood topped by a concrete deck. The concrete deck of the bridge is supported by treated wood beams.

The canal was substantially dry with sporadic puddles of water at the time of the Study Area survey. Debris was observed beneath the bridge in the form of trash and dead vegetation. There is some white paint on the support structures of the bridge.

The average daily traffic (1999) for the bridge in the Study Area is reported as 300 vehicles per day.

SURROUNDING AREA DESCRIPTION
Adjacent to the north side of the canal on the west side of Thompson Avenue is a single-family residence. The remainder of the surrounding area was in fallow agricultural use during the survey of the surrounding area.

Refer to Photographs 10-1 – 10-6, located in the Attachment – Study Area Photographs. Obvious indications of environmental concern likely to significantly impact the project were not observed..

BRIDGE 11 (42C0532) Huntsman Avenue at Fowler Switch Canal, 0.3 miles east of Temperance Avenue

STUDY AREA DESCRIPTION

Bridge 11 is located in a rural portion of Fresno County on the west side of Highway 99, between Fowler and Selma. Huntsman Avenue is a two-lane roadway that is not divided by paint striping within the Study Area. The bridge over the Fowler Switch Canal is constructed with treated wood beams supporting a concrete deck. The railing for the bridge is comprised of treated wood supports with horizontal treated wood rails. The bridge railing and supports have severely degraded white paint. Fowler Switch Canal was dry at the time of the Study Area survey. There are apparent storm drain outflow pipes from the adjacent airport into Fowler Switch Canal nearby the bridge.

The average daily traffic (2010) crossing the bridge in the Study Area is reported as 300 vehicles per day.

SURROUNDING AREA DESCRIPTION

The Selma Aerodome is adjacent to the east side of the canal and south of Huntsman Avenue. The airport appears to be primarily used by small single and twin-engine aircraft, and has historically been used by crop dusters. The airport is listed on Geotracker as having been a leaking underground storage tank site. The RWQCB required cleanup of petroleum contamination at the site, as well as assessment for possible pesticide contamination. The RWQCB granted regulatory closure for the facility in 2008, and no further action related to environmental consideration is necessary at this time. The airport has several buildings that appear to be mostly for airplane storage. On the west side of the canal and the north side of Huntsman Avenue is a single-family house. On the east side of the canal are vineyards.

Refer to Photographs 11-1 – 11-6, located in the Attachment – Study Area Photographs. Obvious indications of environmental concern likely to significantly impact the project were not observed..

BRIDGE 12 (42C0328) Zediker at Mud Creek, 0.7 miles south of Shields Street

STUDY AREA DESCRIPTION

Bridge 12 is located in central Fresno County east of Fresno, in the near vicinity of Bridge 7. Zedicker Avenue is a two-lane roadway that has traffic lanes divided by solid and dashed yellow paint striping. The bridge over Mud Creek has a metal railing with supports attached to the concrete decking of the bridge. Mud Creek contained water at the time of the Study Area Survey. Mud Creek is a narrow channelized creek that parallels Zediker Avenue on the east, makes a sharp turn to the west under Zediker Avenue, and then parallels Zediker Avenue on the west. The concrete deck of the bridge appears to have been painted, however the paint is significantly degraded.

The average daily traffic (2010) over the bridge of the Study Area is reported as 375 vehicles per day.

SURROUNDING AREA DESCRIPTION

The Study Area vicinity is improved with orange orchards.

Refer to Photographs 12-1 – 12-6, located in the Attachment – Study Area Photographs. Obvious indications of environmental concern likely to significantly impact the project were not observed..

3.0 RECORDS, AND HISTORICAL REVIEW

Adanta compiled information concerning the current and historical environmental conditions at the Property by accessing and reviewing readily available records and conducting interviews with informed persons, where applicable and accessible.

3.1 REGULATORY CONTACTS

As part of the ISA, Adanta contacted the following individuals and/or agencies:

- Adanta contacted the Fresno County Assessor's Office with a request to review information for the Study Area. The agency provided assessor parcel maps of the Study Areas and basic tax information for sites in the near vicinity.

- Adanta reviewed the State of California Water Resources Control Board Geotracker online database to review files for the Property and adjacent sites. After review of the database information, it was found that the Study Areas were not listed in the database. Nearby sites to the Study Areas were also not listed except for one site in the vicinity of Bridge 7 and one site in the vicinity of Bridge 11. Sites of environmental concern are not within distances that would likely impact the Study Area. At Bridge 11 an adjacent site is listed as a leaking underground storage tank site. However, the contamination has been mitigated and the site has a closure letter from the Regional Water Quality Control Board. At Bridge 7 a nearby site was listed as a leaking underground storage tank site. This site has received regulatory closure and a "no further action" letter.

- Adanta reviewed the State of California Department of Toxic Substances Control Envirostor online database to review files for the Study Area and adjacent sites. After review of the database information, it was found that none of the Study Areas were listed in the database and sites of environmental concern were not found within distances that would likely impact the Study Area.

- Adanta contacted the Fresno County Environmental Health Department with a request to review files for the Study Area. According to the agency, information for the Study Areas was not found.

3.2 HISTORY OF STUDY AREA USE

The following historical Study Area use summary was compiled using the historical data gathered during the various activities of this assessment as referenced in Section 3.5.

Bridges 1, 2, and 3 Little Dry Creek Road over Little Dry Creek, west of Derrick Road
Based upon information found in the National Bridge Inventory website (www.uglybridges.com) the bridges were originally constructed in 1974. Based upon observation of an historical aerial photograph, Los Gatos Road was present through the Study Areas in 1919, so it is likely that the current bridge constructed in 1974 is a replacement of a previous bridge. Various historical aerial photographs and topographic maps were reviewed for this assessment. It does not appear that the area of the three bridges has substantially changed except for road and bridge improvements since 1919.

Bridge 4 El Dorado Avenue at Arroyo Pasajero
Based upon information found in the National Bridge Inventory website (www.uglybridges.com) the bridge was originally constructed in 1970. A 1922 topographic map of the area was reviewed and it was found that El Dorado Avenue had not yet been constructed at that time. Land development was not observed in the area of Arroyo Pasajero. A 1937 topographic map also did not depict El Dorado Avenue or development in the area of Arroyo Pasajero. A 1956 topographic map indicated that El Dorado Avenue had been constructed. North of Jayne Avenue on El Dorado Avenue was an area referred to as Guijarral Hills Oil Fields. The oil fields are about a mile south of the Study Area. The Study Area has been substantially unchanged since 1956.

Bridges 5 and 6 Excelsior Avenue at Fresno Slough
Based upon information found in the National Bridge Inventory website (www.uglybridges.com) the bridges were both originally constructed in 1975. A 1924 historical topographic map of the area was reviewed. Neither roads nor development were depicted in the Study Areas. By 1954 Excelsior Road had been constructed over Fresno Slough, the road apparently was also called Parkhurst Avenue on the topographic map. It was likely then that the bridge constructed in 1975 was a replacement for an earlier bridge constructed at an unknown date. A 1981 topographic map did not depict development on or around the Study Area. The Study Area has substantially remained unchanged since that time.

Bridge 7 Viau Avenue at Fresno Canal
Based upon information found in the National Bridge Inventory website (www.uglybridges.com) the bridge was originally constructed in 1925. Adanta reviewed a 1942 topographic map that depicted Viau Avenue crossing the Fresno Canal. A residence was depicted at the northwest corner of the intersection of the Fresno Canal and Viau Avenue. A 1944 topographic map

revealed that Viau Avenue was a "loose gravel" road. Except for paving of Viau Avenue, the Study Area has not substantially changed since 1944.

Bridge 8 American Avenue at Fowler Switch Canal
Based upon information found in the National Bridge Inventory website (www.uglybridges.com) the bridge was originally constructed in 1921 and reconstructed in 1951. Adanta found a topographic map dated 1921 that depicted American Avenue (which was called Washington Avenue in 1921) crossing over Fowler Switch Canal. Through 1964 the Study Area remained undeveloped, as did the surrounding area. The Study Area appeared substantially similar during the Study Area survey as noted on the 1964 topographic map.

Bridge 9 Alta Avenue at Travers Creek
Based upon information found in the National Bridge Inventory website (www.uglybridges.com) the bridge was originally constructed in 1971. The oldest available historical resource found for the area was a 1924 historic topographic map. The map depicted Alta Avenue over Travers Creek. It is suspected that a bridge was in place at the time to facilitate that crossing. Residences were depicted on the map on Alta Avenue about 500 feet south and north of the Study Area The 1949 topographic map depicted Alta Avenue over Travers Creek, the surrounding area was shown to be agricultural. The 1966 topographic map depicted specific use as orchards. It appears that the Study Area has not significantly changed since that time, except for the construction of Bridge 9.

Bridge 10 Thompson Avenue at Fowler Switch Canal
Based upon information found in the National Bridge Inventory website (www.uglybridges.com) the bridge was originally constructed in 1941 and reconstructed in 1978. The oldest historical resource found was a 1923 topographic map. This map depicts Thompson Avenue crossing the Fowler Switch Canal. The map also depicted three residential-type structures on the northwest corner of the intersection of Thompson Avenue and Fowler Switch Canal. Two of the residential structures previously noted were no longer depicted in 1947. Apparently the current bridge, which was constructed in 1941, was a replacement for a previously constructed bridge. The Study Area appeared basically similar in 1947 as it was at the time of the Study Area survey.

Bridge 11 Huntsman Avenue at Fowler Switch Canal
Based upon information found in the National Bridge Inventory website (www.uglybridges.com) the bridge was originally constructed in 1941. The oldest readily available historical information was a 1924 historical topographic map. At that time, Huntsman Avenue crossed Fowler Switch Canal, and so the current bridge is probably a replacement for an older bridge. On the east side of the Study Area was a fairly large body of water referred to as Rockwell Pond. Several other smaller "ponds" were noted in the area. On the 1947 topographic map Rockwell Pond appeared

to be mostly dry except for one small area north of Huntsman Avenue and adjacent to the east side of the canal. On the 1963 topographic map, Rockwell Pond was depicted as being dry. A feature labeled as Selma Landing Strip was noted adjacent to the southeast of the intersection of Huntsman Avenue and the Fowler Switch Canal (this is likely the current day Selma Aerodrome). On the 1978 topographic map, the Study Area appeared to be substantially the same as it was at the time of the Study Area survey.

Bridge 12 Zediker at Mud Creek
Based upon information found in the National Bridge Inventory website (www.uglybridges.com) the bridge was originally constructed in 1930. The oldest readily available historical data found for this Study Area was a 1922 topographic map. Zediker Avenue was not depicted in the area of Mud Creek. The 1944 topographic map depicts Zediker Avenue crossing Mud Creek, which is depicted as an intermittent stream on the map. Mud Creek, at that time, was in the approximate configuration noted during the Study Area survey. The Study Area and surroundings were noted to be in use as orchards on the 1944 topographic map. During the Study Area survey, the area appeared substantially similar to that noted on the 1944 topographic map.

3.3 ENVIRONMENTAL DATABASES

The following environmental databases were researched for listed sites within the Study Areas and within designated distances from the Study Areas, as indicated below. These are the lists that typically contain sites that may occasionally have soil and/or groundwater contamination that can occasionally travel beyond the boundaries of the contaminated site.

Leaking Underground Storage Tank Sites List
The State Water Resources Control Board (SWRCB) maintains lists of sites having leaking underground storage tanks that have been reported to have affected either soil or groundwater or both. The list reflects both closed and currently open sites. This list was reviewed for potential sites within ½ mile of the Study Area. **Please refer to descriptions for Bridges 7 and 11 below**.

Permitted Underground Storage Tank (UST) Facilities
The SWRCB maintains a list of sites that have been permitted to use underground storage tanks (USTs). The listing includes both USTs that are currently being used and older USTs that may or may not be in current use. This list was reviewed for potential sites within ¼ mile of the Study Area. Often rural sites have USTs that will not be found on this list because of a previous exemption from the necessity to permit certain size USTs used for agriculture. **Refer to descriptions for Bridges 7 and 11 below**.

Land Disposal Sites

This list is maintained by the SWRCB is for sites having regulated waste discharge to land for treatment, storage, and disposal in waste management units, which might include: waste piles, surface impoundments, and landfills. This list was reviewed for potential sites within ½ mile of the Study Areas. **This list did not contain sites within the designated distance from the Study Areas.**

Military Sites

The California Water Resources Control Board and local RWQCBs as well as DTSC offices work in conjunction with the United States Department of Defense (DOD) through a cooperative agreement to clean up DOD military bases in California. The RWQCB and DTSC maintain a list of these facilities as well as many of the reports of assessment and remediation work that have been conducted there. This list was reviewed for sites within one mile of the Study Area. **This list did not contain sites within the designated distance from the Study Areas.**

Department of Toxic Substances Control (DTSC) Cleanup Sites

The DTSC cleans up or oversees approximately 220 hazardous substance release sites at any given time, throughout the state. This list of DTSC cleanup sites includes current and former sites on which the DTSC has provided oversight or cleanup assistance. This list was reviewed for sites within ½ mil of the Study Area. **This list did not contain sites within the designated distance from the Study Areas.**

DTSC Hazardous Waste Permits

DTSC grants permits for hazardous waste generators. This list was reviewed for sites adjacent to the Study Area. **This list did not contain sites within the designated distance from the Study Areas.**

DTSC School Cleanup and Evaluation Sites

DTSC oversees assessment and cleanup of new or previously contaminated schools. Each school site goes through an evaluation process to determine the potential of contamination at the site. If contamination is found DTSC will either oversee the cleanup or perform the cleanup. This list was reviewed for sites within ¼ mile of the Study Area. **This list did not contain sites within the designated distance from the Study Areas.**

CERCLA Sites List

The United States Environmental Protection Agency (US EPA) evaluates sites for inclusion onto the National Priorities List (NPL) of the most contaminated sites in the country. Sites on the list are either in the process of being evaluated, have been removed for consideration on the NPL, or have been evaluated and found to not meet NPL criteria. This list was reviewed for sites within

½ mile of the Study Area. **This list did not contain sites within the designated distance from the Study Areas.**

National Priorities List

The NPL is a list of the most contaminated sites in the United States that are a national priority to clean up. Currently there are 1321 sites on the list. This list was reviewed for sites within one mile of the Study Area. Fresno County has four sites on the NPL. **This list did not contain sites within the designated distance from the Study Area.**

RCRA Corrective Action Sites

The RCRA Corrective Action Program works with facilities that have treated, store, or disposed of hazardous wastes. This list was reviewed for sites within one mile of the Study Area. **This list did not contain sites within the designated distance from the Study Area.**

None of the 12 Study Areas was found on the above-mentioned lists. Sites adjacent to the Study Area were not found for 11 of the Study Areas in the environmental database. Only one reported site was found within search parameters of the 12 Study Areas. Sites in the near vicinity of the Study Area found on the databases are not thought to be of environmental concern to the Study Areas based on their type of listing or their location from the Study Area relative to anticipated groundwater flow direction.

Bridge 7 Viau Avenue at Fresno Canal

Piedra Ranch is located at 1575 North Viau Road, in the near vicinity of Study Area 7, and is listed as a LUST cleanup site. The original listing was in 1993 for a leaking UST. Very little information is available for the site on Geotracker, however, the site did receive regulatory closure and a "no further action letter" in 2004.

Bridge 11 Huntsman Avenue over Fowler Switch Canal

A site adjacent to Study Area 11 was found in the Geotracker database. The site referred to as the **Selma Aerodrome** had four USTs removed in 1992. The site has been primarily used by crop dusters since the 1970s. The Regional Water Quality Control Board (RWQCB) required environmental assessments at the site to confirm that contamination was not present from petroleum products and pesticides. A regulatory closure letter was received from the RWQCB in 2008.

Adanta did not find information in the environmental database that would suggest sites in the near vicinity of the Study Areas have impacted the environmental integrity of the Study Areas.

3.4 FILE REVIEWS AND REPORTS

Files reviewed at local regulatory agencies or found online are summarized in Sections 3.1 and 3.2 and copies of available readily accessible documents can be found in Appendix B - Regulatory Data and Other Reports. Not all regulatory documents are readily available to be included in this ISA.

Fresno County conducted a Preliminary Environmental Study (PES) for the Study Area that was provided to Adanta. PES 240 provided a considerable amount of information concerning the Study Area that did not include environmental concerns related to this ISA. Other environmental reports concerning the Study Area were not provided and were not found during this ISA.

Bridge 7 Viau Avenue at Fresno Canal
Specific reports were not found detailing the contamination at this site. However, the Geotracker database did indicate that the site had a leaking underground storage tank, contamination was mitigated and that regulatory closure had occurred.

Bridge 11 Huntsman Avenue over Fowler Switch Canal
Geotracker contained several reports with information concerning a site near Bridge 11. Adjacent to the bridge is the Selma Aerodrome, Inc. In 1992, two 10,000 gallon and two 1,000 gallon gasoline underground storage tanks (USTs) were removed. Initial soil sampling at the time of UST removal revealed that there was some residual soil contamination for leaks in the USTs. However, further investigation was not required until 2008. The airport has been used by crop duster aircraft since the 1970s. The RWQCB required additional assessment of the site in 2008. As directed by the RWQCB, soil was analyzed for pesticides and petroleum compounds. A closure letter was granted for the site in 2008.

3.5 SOURCES OF DATA

Adanta contacted regulatory agencies and other potentially knowledgeable persons and information sources concerning the Study Area. Copies of maps, permits, and other documents, if available, are in Appendix B - Regulatory Data and Other Reports.

The following are the primary information sources utilized by Adanta for to compile this ISA report:

Information Sources

- Fresno County Environmental Health Department
- Fresno County Assessor's Office
- State of California Regional Water Quality Control Board – Fresno Office
- Environmental Records Search, RecCheck Environmental Database Report
- State Water Resources Control Board, Geotracker online database
- Department of Toxic Substances Control, Envirostor online database
- United States Geological Survey (USGS) 7.5-minute Topographic Quadrangle: Alcalde Hills 1969; Biola 1920, Bullard 1921, 1924, Burrel 1927, 1950, 1954, 1981 Clovis 1921; Coalinga 1944, 1956; Conejo 1924, 1947, 1963; Friant 1919; Guijarral Hills 1937; Kearney Park 1920; Reedley 1924, 1949, 1951, 1966, 1981; Round Mountain 1922; Sanger 1923, 1947, 1965; Tufts Ranch 1920
- USGS 15-miniute Topographic Quadrangle Maps: Coalinga 1910, 1944 Dinuba 1922; Kaiser 1904, 1939; Malaga 1921, 1946, 1964, Panoche 1920; Watts Valley 1942, 1944;
- USDA Natural Resources Conservation Service, Soil Survey of East Fresno County, California
- USDA Natural Resources Conservation Service, Soil Survey of West Fresno County, California
- Sanborn Fire Insurance Maps were not produced within the Study Areas of this ISA
- Aerial Photographs and Satellite Images, dated 1940, 1946, 1994, 1998, 2002, 2005, 2010, and 2014
- www.uglybridges.com National Bridge Inventory Data
- Preliminary Environmental Study (PES 240), by County of Fresno, March 14, 2013

4.0 PHYSICAL SETTING

Information sources were reviewed to identify the geographic situation of the Property that might suggest how surface and subsurface flows occur at the Property and in its general area.

No specific continuing contamination sources were found for the Study Areas, either onsite or adjacent offsite. The purpose of the Physical Setting section of the ISA report is to identify how contamination onsite might affect nearby sites, and/or how contamination sources offsite might affect the Study Area.

4.1 SURFACE DESCRIPTION

TOPOGRAPHY

Bridges 1, 2, and 3 Los Gatos Road over Los Gatos Creek, west of Derrick Road
These three Study Areas are approximately five miles apart from each other and reside in the canyon created by Los Gatos Creek. Bridge 1 is at an approximate elevation of 1400 feet above mean sea level (AMSL) with the nearby surrounding Alcalde Hills at nearby elevations of greater than 2400 feet AMSL. Bridge 3 is at an elevation of about 1,000 feet AMSL, and hills in the near vicinity are more than 2,000 feet in elevation. Typical surface flow in the area appears to be to the southeast.

Bridge 4 El Dorado Avenue at Arroyo Pasajero
The surface elevation of the bridge at the Study Area is approximately 490 feet AMSL. The channel beneath El Dorado Avenue is about 20 feet deep. The Guijarra Hills to the southeast have elevations greater than 700 feet AMSL. South of the Study Area is the Guijarra Hills Oil Fields. El Dorado Road goes through the oil fields north of Jayne Avenue. Surface flow in the area appears to be to the northeast.

Bridges 5 and 6 Excelsior Avenue at Fresno Slough
The surface of the Study area is at an elevation of approximately 207 feet AMSL. The area surrounding the Study Area is substantially flat, with a general very gentle surface slope toward the south.

Bridge 7 Viau Avenue at Fresno Canal

The surface of the Study Area is approximately 430 feet AMSL. The area is substantially flat. Within approximately one mile of the Study Area is the Fowler Switch Canal on the south, and the Gould Canal and the Friant Kern Canal on the north. General surface flow appears to be to the southwest.

Bridge 8 American Avenue at Fowler Switch Canal
The surface of the Study Area lies at an elevation of approximately 332 feet AMSL. The surrounding area is in agricultural use, and is relatively flat. General surface flow of the area is apparently to the southwest in this mostly flat portion of Fresno County.

Bridge 9 Alta Avenue at Travers Creek
The Study Area has a surface elevation of about 365 feet AMSL. Willow Creek is less than ½ mile southeast of the Study Area. The surrounding area is relatively flat with an apparent gentle surface slope to the southwest.

Bridge 10 Thompson Avenue at Fowler Switch Canal
The surface elevation of the Study Area is about 325 feet AMSL. The surrounding area is substantially flat with a gentle surface slope to the west. In the immediate area the slope is less than five feet per half mile.

Bridge 11 Huntsman Avenue at Fowler Switch Canal
The Study Area lies at an elevation of approximately 310 feet AMSL. The surrounding area has historically had several ponds that were about 25-35 feet deep, however they are no longer present. The ponds have created depressions in the surrounding sites of the Study Area of as much as 35 feet of elevation when compared to the Study Area.

Bridge 12 Zediker at Mud Creek
The Study Area is in a relatively flat topographic area and lies at an elevation of about 405 feet AMSL The Study Area is north of Weldon Avenue. Mud Creek is a channelized waterway that parallels Zediker Avenue on the east side before being channeled under the road and the paralleling Zediker Avenue on the west side of the road.

NEAREST SURFACE WATER
A surface water channel was observed at each Study Area. Most channels were dry at the time of the Study Area surveys. However, each of these channels has, at least, intermittent water flow.

4.2 SOIL DESCRIPTION

Bridges 1, 2, and 3 Little Dry Creek Road over Little Dry Creek, west of Derrick Road
The soil in the Study Areas is listed as Carranza gravelly sandy loam, which is typical of valley soils in the area. Surface runoff is rated as medium.

Bridge 4 El Dorado Avenue at Arroyo Pasajero
Soil in Arroyo Pasajero is listed as Excelsior, sandy substratum-Westhaven Association, which allows for occasional ponding and flooding. The soils are typical of alluvial fans. Below 20 inches soil becomes a silty clay loam. Surrounding areas have a similar soil described as Excelsior Sandy Loam.

Bridges 5 and 6 Excelsior Avenue at Fresno Slough
The soil in the Study Area is Aroma Loam and is typical of a San Joaquin Valley Soil. It has low surface runoff, with a water table typically within six feet. Flooding is rare. There are minor clay components to the soil

Bridge 7 Viau Avenue at Fresno Canal
Soil in the Study Area is described as Ramona loam, gravelly substratum. This soil has a thick bed of pebbles and cobblestones from two to four feet beneath the surface.

Bridge 8 American Avenue at Fowler Switch Canal
The USDA describes the soil near Bridge 8 as a Delhi loamy sand, a soil that has a very low capacity to hold water.

Bridge 9 Alta Avenue at Travers Creek
Greenfield sand loam is the surface soil of the Study Area. This soil overlies a weakly cemented sandy soil at a depth of two to four feet. Water capacity is low to moderate.

Bridge 10 Thompson Avenue at Fowler Switch Canal
Soil in the area is comprised of Hanford fine sandy loam. Silty material may be encountered to more than six feet. The soil has a high capacity to retain water.

Bridge 11 Huntsman Avenue at Fowler Switch Canal
The soil at the Study Area is Delhi loamy sand. It is a somewhat excessively drained soil. Runoff is very slow.

Bridge 12 Zediker at Mud Creek

The soil at the Study Area is Ramona loam, hard substratum. The substratum (referred to as pack sand) is weekly cemented, is several feet thick and typically starts between two and four feet below surface. Cementation caused by iron and silica.

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The data gathered during this assessment was compiled in order to draw conclusions concerning the current and former uses of the various Study Areas, with regard to potential environmental impairment of the surface of the Study Area, the surrounding ground surface, and the groundwater of the area due to hazardous chemicals (including lead and asbestos) and petroleum substances.

5.1 SUMMARY

Twelve Study Areas were assessed during this ISA, as an initial step in conducting future maintenance on the bridges of the Study Areas. Existing bridges at the Study Areas were of various ages, constructed from 1930 through 1975. Based upon historical information reviewed during this ISA, it is likely that many of these bridges were replacements for previously constructed bridges.

Each study area consists of a two-lane roadway with a bridge over a waterway channel. Most of the channels were dry at the time of the surveys. All 12 Study Areas were in rural-agricultural portions of Fresno County. None of the Study Areas were listed on the environmental databases reviewed for this ISA.

Only two of the 12 Study Areas were found to have environmental contamination on a nearby site. Nearby Bridge 7 on North Viau Avenue over Fresno Canal is a ranch site that had a leaking underground storage tank. The site has been cleaned up and has received regulatory closure. Bridge 11 on Huntsman Avenue is adjacent to the Selma Aerodrome, that has been used by crop dusters since the 1970s and had four USTs removed in 1992. Subsequent environmental assessment resulted in a “closure letter” for the site that was provided by the RWQCB. Other environmentally impaired sites were not found during this assessment.

Debris was noted under Bridge 5 that included household hazardous wastes, as well as various size paint containers. Many other channels had vegetation debris under the bridges.

Primarily most of the bridges were in rural areas with minimal average daily traffic. Only two of the bridges were reported to be crossed by more than 1,000 vehicles per day: Bridge 8 on American Avenue over the Fowler Switch Canal is reported to have average daily traffic of 1,800 vehicles in a study conducted in 2006, Bridge 9 on Alta Avenue over Travers Creek was reported to have average daily traffic in a study conducted in 2002 of 4,240 vehicles per day. Each of the remaining Study Areas had 800 or fewer vehicles crossing the bridges on a daily basis.

5.2 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are made from the onsite surveys and document information reviewed for this ISA. Only information that was readily accessible was reviewed. Concluding from the information found for this assessment, each Study Area appeared to be free of the kinds of environmental concerns that would substantially affect the Study Areas.

Below is a listing of each Study Area with a list of the topics of potential environmental concerns. The topics are explained in further detail following the Study Area listings.

Bridge 1 (42C0459) Los Gatos Road at Los Gatos Creek, 11.4 miles west of Derrick Road

Lead-based paint (striping and surfaces); Asbestos; Air Quality Compliance

Bridge 2 (42C0458) Los Gatos Road at Los Gatos Creek, 11.23 miles west of Derrick Road

Lead-based paint (striping and surfaces); Asbestos; Air Quality Compliance

Bridge 3 (42C0455) Los Gatos Road at Los Gatos Creek, 5.6 miles west of Derrick Road

Lead-based paint (striping and surfaces); Asbestos,;Air Quality Compliance

Bridge 4 (42C0097) El Dorado Avenue at Arroyo Pasajero, 2.0 miles north of Jayne Street

Lead-based paint (striping and surfaces); Treated Wood; Asbestos; Air Quality Compliance

In addition, there is a Pacific Gas and Electric Company gas pipeline in the Study Area. Any subsurface work must be conducted with caution around the gas pipeline.

Bridge 5 (42C0104) Excelsior Avenue at Fresno Slough: 0.10 miles west of Grantland Avenue

Lead-based paint (striping and surfaces); Asbestos; Air Quality Compliance

In addition, various size paint cans and other potential hazardous materials containers were noted in the channel. Because of safety concerns these cans were not observed closely. However, if they contain paints or other chemicals that are of a hazardous nature, they must be disposed in accordance with existing disposal regulations.

Bridge 6 (42C0367) Excelsior Avenue at Fresno Slough Overflow, 0.2 miles west of Grantland Avenue

Lead-based paint (striping and surfaces); Asbestos; Air Quality Compliance

Bridge 7 (42C0520) Viau Avenue at Fresno Canal, 0.3 miles north of Belmont Avenue

Agricultural Chemicals, Lead-based paint (surfaces); Asbestos; Air Quality Compliance

Bridge 8 (42C0178) American Avenue at Fowler Switch Canal, at Highland Avenue

Agricultural Chemicals; Aerially Deposited Lead; Lead-based paint (striping and surfaces); Asbestos; Air Quality Compliance

Bridge 9 (42C 0179) Alta Avenue at Travers Creek, 0.3 miles north of South Avenue

Agricultural Chemicals; Aerially Deposited Lead; Lead-based paint (striping and surfaces); Asbestos; Air Quality Compliance

Bridge 10 (42C0531) Thompson Avenue at Fowler Switch Canal, 0.33 miles north of Adams Avenue.

Agricultural Chemicals; Lead-based paint (surfaces); Treated Wood; Asbestos; Air Quality Compliance

Bridge 11 (42C0532) Huntsman Avenue at Fowler Switch Canal, 0.3 miles east of Temperance Avenue

Agricultural Chemicals; Treated Wood; Lead-based paint (surfaces); Asbestos; Air Quality Compliance

Bridge 12 (42C0328) Zediker at Mud Creek, 0.7 miles south of Shields Avenue

Agricultural Chemicals; Lead-based paint (striping and surfaces); Asbestos; Air Quality Compliance

ENVIRONMENTAL CONCERN DESCRIPTIONS

Agricultural Chemicals

It is possible that near surface soil has been affected by environmentally persistent pesticides from the long-term agricultural use of the area. If excess soil is produced, the soil should be sampled for heavy metals and environmentally persistent pesticides.

Lead-Based Paint

It is likely that the paint striping in the middle of the street and the paint on the concrete railings of some of the bridges contain lead-based paint, and may contain excess concentrations of chromium and zinc as well. As such, a plan to properly remove, handle and dispose of the paint from various surfaces in the Study Area should be implemented prior to construction of the new bridge under Standard Special Provision (SSP) 14-11.08.

Any work that disturbs the existing paint system may expose workers to health hazards and can produce debris containing heavy metal in amounts that exceed the thresholds established in Titles 8 and 22 of the California Code of Regulations and produce toxic fumes when disturbed or heated. All debris disturbed or produced while working on the structure must be contained. For bridges over water, the containment system must include a skimming boom consisting of a float with a skirt to collect floating debris.

Prior to starting work that disturbs the existing paint system, and when revisions to the compliance program are required, the contractor must submit a lead compliance plan per guidance of SSPs 14-11.07 and 14-11.08, "Lead Compliance Plan," of the Standard Specifications. The Contractor must make necessary arrangements to test the debris as required by the disposal facility and as specified. Testing must include at a minimum:

- Total Lead using US EPA Method 6010B
- Soluble Lead using the California Waste Extraction Test (WET)
- Soluble Lead using the Toxicity Characteristic Leaching Procedure (TCLP)

Asbestos

As a guidance the Non-Standard Special Provision - Removal of Asbestos Containing Materials should be included to address removal of Asbestos Containing Materials (ACM) for the

identified bridge (See 14-11.11 in Appendix C). ACM, is defined in section 1529, "Asbestos," of the Construction Safety Orders, Title 8, of the California Code of Regulations. The U.S. Air Resource Board requires that a regulated facility has been thoroughly inspected (which includes concrete) as well as any other suspect material associated with a bridge, subject to demolition or renovation operations. The structures potentially having ACM should be tested prior to demolition or renovation.

Treated Wood

The treated wood beams that will be removed must be handled according to specific regulations. Caltrans has issued a memorandum on the subject: Treated Wood Waste-Alternative Management Standards, and has issued a standard special provision 14-11-09, which can be found in Appendix D.

Aerially Deposited Lead (ADL)

Daily vehicle traffic on Bridge 8 and Bridge 9 appears to be significant enough to raise a concern for the possibility of ADL in the near surface soil on either side of American Avenue and Alta Avenue respectively. Additionally, due to the condition of the pain on several bridges adjacent soil could have elevated concentrations of lead as a result of sand blasting and/or flaking, deteriorating paint.

If excess soil needs to be off-hauled from the Study Area it may be necessary to collect soil samples for analysis of lead content. If collected, the soil samples should be analyzed by US EPA method 6010B. Resulting concentrations greater than 50 milligrams per kilogram (mg/Kg) would require a waste extraction test to find the solubility of the lead. Any concentration above 1000 mg/Kg or any concentrations above 5 mg/L (solubility) would require treating the soil as a California hazardous waste.

Air Quality Compliance

A guidance specification - Air Quality NESHAP Notification should be included for air quality compliance (See attached 5-1 Air Quality – NESHAP notification in Appendix C). The Contractor must notify the appropriate agencies as required by the National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR Part 61, Subpart M, and California Health and Safety Code section 39658(b)(1). Notification must take place a minimum of 10 working days prior to starting demolition or renovation activities as defined in the NESHAP regulations.

Refer to Appendix D of this report for Caltrans guidance Standard Special Provisions (SSPs) and recommended Non-Standard Special Provisions (NSSPs) when handling contaminants or meeting specialized hazardous waste regulatory or safety requirements.

DE MINIMIS CONDITIONS

Aerially Deposited Lead (ADL)

Environmental conditions noted in the Study Areas that appear to be of minimal impact include the possibility that ADL would be in the near surface soil on either side of the roadway approaching the bridges. Reports of average daily traffic in the more remote Study Areas ADL would appear to be unlikely even though there has been long-term exposure to the soil from vehicle emissions. The Study Areas where de minimis conditions for ADL are present include: Bridges 1, 2, 3, 4, 5, 6, 7, 10, 11, and 12.

6.0 LIMITATIONS

This Initial Site Assessment was conducted according to industry standards and guidelines established under Chapter 10 of the Caltrans Standard Environmental Reference.

This assessment cannot fully eliminate the possibility that the Study Area has environmental impairments. Even with today's technology, no amount of assessment can certify that the Study Area is completely free of environmental concern. It is possible undocumented or concealed conditions of the Study Area could exist beyond what was found during this ISA. This report does not cover any Study Area conditions beyond the date the Study Area survey was conducted.

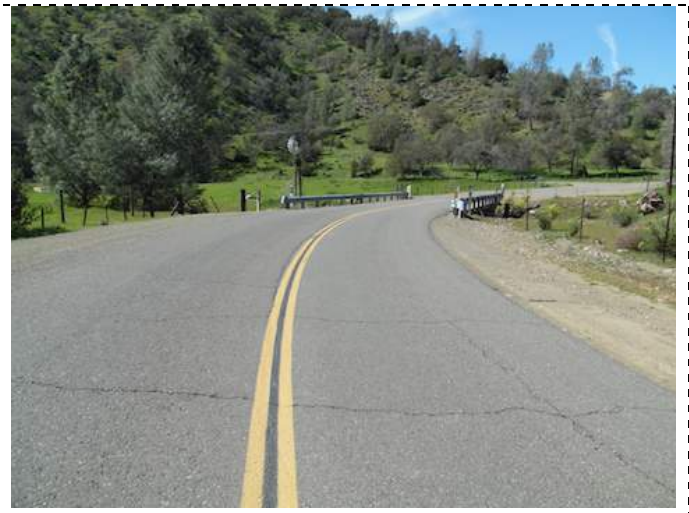
Physical setting information provided in this report is for drawing conclusions, by Adanta, within the context and timing of this report only. This information is preliminary and should not be used for any subsequent purposes.

Much of the information, upon which the conclusions and recommendations of this ISA are based, comes from data provided by others. Adanta is not responsible for the accuracy or completeness of this information. Inaccurate data, or information that was not found or made available to Adanta, may result in a modification of the stated conclusions and recommendations.

Any estimates of the scope of recommendations are based only on the information found during this assessment. Actual scope may vary upon refining data during proposal preparation, with changes in economic conditions, or as additional information becomes available.

This report is not a legal opinion and does not offer warranties or guarantees.

PHOTOGRAPHS



Photograph 1-1 - Approaching Bridge 1 from the south

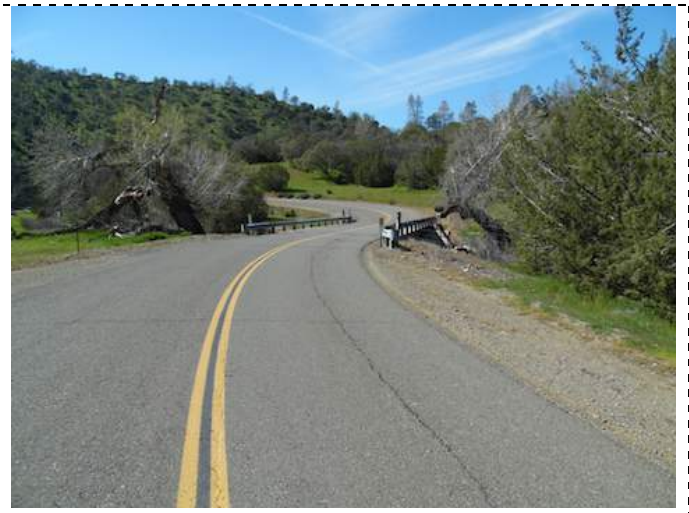
Photograph 1-2 - Bridge Railing

Photograph 1-3 – Barbed wire fencing leading up to bridge.

Photograph 1-4 – Dry creek bed.

Photograph 1-5 – Livestock fencing under bridge.

Photograph 1-6 - Concrete deck and embankment of bridge



Photograph 2-1 - Approach from south of bridge.

Photograph 2-2 - Close up of bridge with barbed wire fencing.

Photograph 2-3 – Dead tree leaning toward bridge.

Photograph 2-4 – Bridge railing and Los Gatos Creek channel.

Photograph 2-5 – Los Gatos Creek channel and bridge

Photograph 2-6 - Dead tree in close proximity to bridge.

Photograph 3-1 - Approaching bridge from east.

Photograph 3-2 - North side of bridge.

Photograph 3-3 – South side of bridge.

Photograph 3-4 – Los Gatos Creek channel looking north.

Photograph 3-5 –North side of bridge.

Photograph 3-6 - Los Gatos Creek channel looking south.

Photograph 1 – El Dorado Avenue look north at Bridge 4

Photograph 2 - Signage for PG&E natural gas pipeline.

Photograph 3 - Looking southward from dirt road leading to bottom of channel.

Photograph 4 – Looking east from bottom of Arroyo Pasajero.

Photograph 5 – Dry channel bed of Arroyo Passajero.

Photograph 6 - Looking south on El Dorado Avenue.

Photograph 5-1 – Excelsior Road looking west.

Photograph 5-2 - Bridge 5 looking south.

Photograph 5-3 – Looking east on north side of bridge at debris in channel.

Photograph 5-4 – Some of the channel debris.

Photograph 5-5 – South side of bridge and dry canal.

Photograph 5-6 - South bridge railing.

Photograph 6-1 - Excelsior Road looking west toward Bridge 6.

Photograph 6-2 – North side of Bridge 6. Note that the channel ends on the left of the photograph. Ponded water under bridge.

Photograph 6-3 – Additional photo of north side of bridge.

Photograph 6-4 – South side of pridge.

Photograph 6-5 – Mattress under south side of bridge.

Photograph 6-6 - Excelsior Road looking east at Bridge 6.

Photograph 7-1 – Bridge 7 with no asphalt on the concrete deck.

Photograph 7-2 - View looking northwest. Beyond bridge is single-family residence.

Photograph 7-3 - View looking about east.

Photograph 7-4 - Railing of Bridge 7

Photograph 7-5 – Canal looking east.

Photograph 7-6 - Viau Avenue looking south.

Photograph 8-1 - Looking approximately northeast across American Avenue at Fowler Switch Canal.

Photograph 8-2 - Debris adjacent to American Avenue.

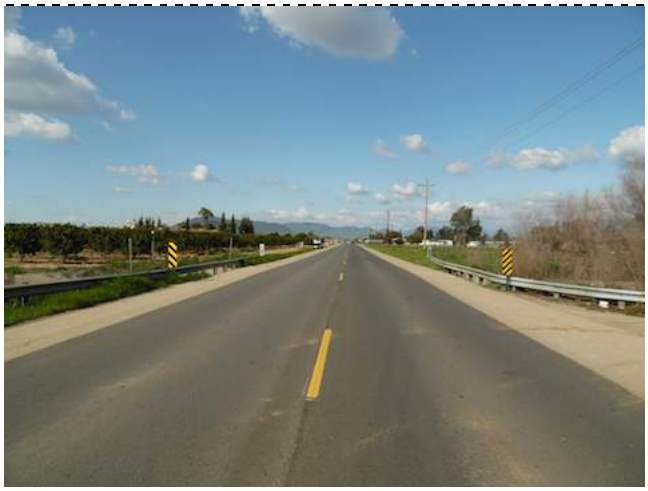
Photograph 8-3 - Fowler Switch Canal channel looking south.

Photograph 8-4 – Undercarriage of bridge deck.

Photograph 8-5 – Signage warning due to an underground telephone cable.

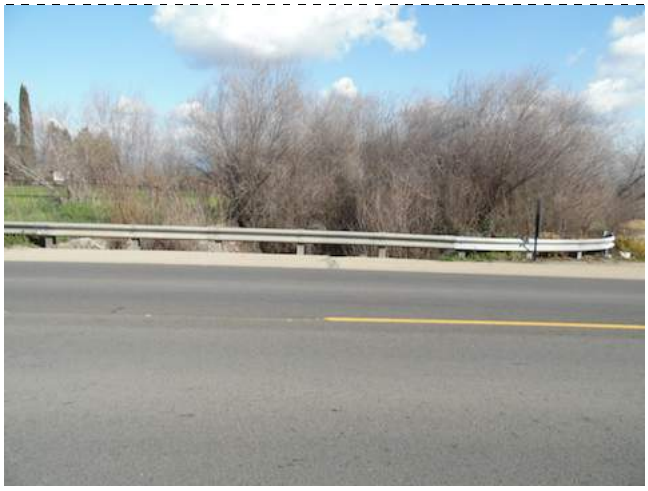
Photograph 8-6 - American Avenue looking west.

Photograph 9-1 - Looking approximately north at Bridge 9.



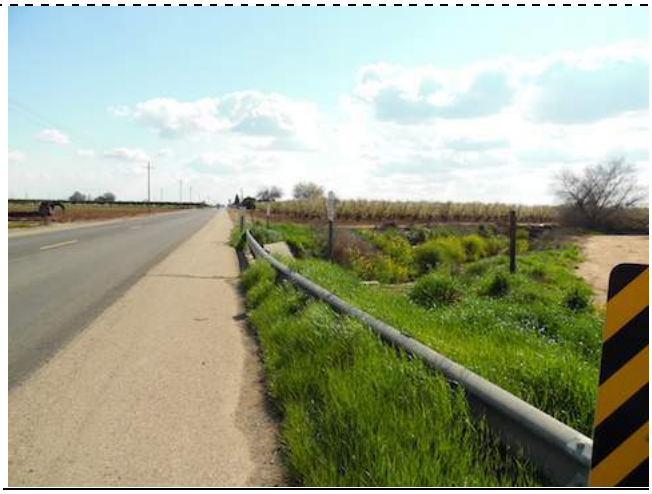
Photograph 9-2 - Looking north on Alta Avenue.

Photograph 9-3 - Travers Creek under Bridge 9.



Photograph 9-4 - Looking east across Alta Avenue on Bridge 9.

Photograph 9-5 – Signage for underground telephone cable.



Photograph 6 - Looking south at west side of Bridge 9.

Photograph 10-1 - Looking north along Thompson Avenue at Bridge 10.

Photograph 10-2 – East rail of Bridge 10.

Photograph 10-3 – Looking west across Bridge 10.

Photograph 10-4 – Fowler Switch Canal under Thompson Avenue

Photograph 10-5 – Treated wood support for concrete decking of bridge.

Photograph 10-6 - Looking west at east side of bridge.

Photograph 11-1 - Wood railing with deteriorated white paint.

Photograph 11-2 - Wood beam base of concrete deck.

Photograph 11-3 – Looking north from channel bottom.

Photograph 11-4 – Note drain inflow across channel.

Photograph 11-5 – Huntsman Avenue with vineyards in background.

Photograph 11-6 - Selma Aerodrome is across the channel.

Photograph 11-7 – Huntsman Avenue looking south.

Photograph 11-8 - Water well in study area.

Photograph 11-9 – Channel looking east.

Photograph 11-10 – Well and drains from Selma Aerodrome.

Photograph 11-11 – Adjacent residence.

Photograph 11-12 - Bridge 11 looking north.

Photograph 12-1 – Looking approximately northwest on Zediker Avenue at Bridge 12.

Photograph 12-2 - Mud Creek on west side of Zediker Avneu.

Photograph 12-3 - Mud Creek is aligned with Zediker Road before it heads east under the bridge.

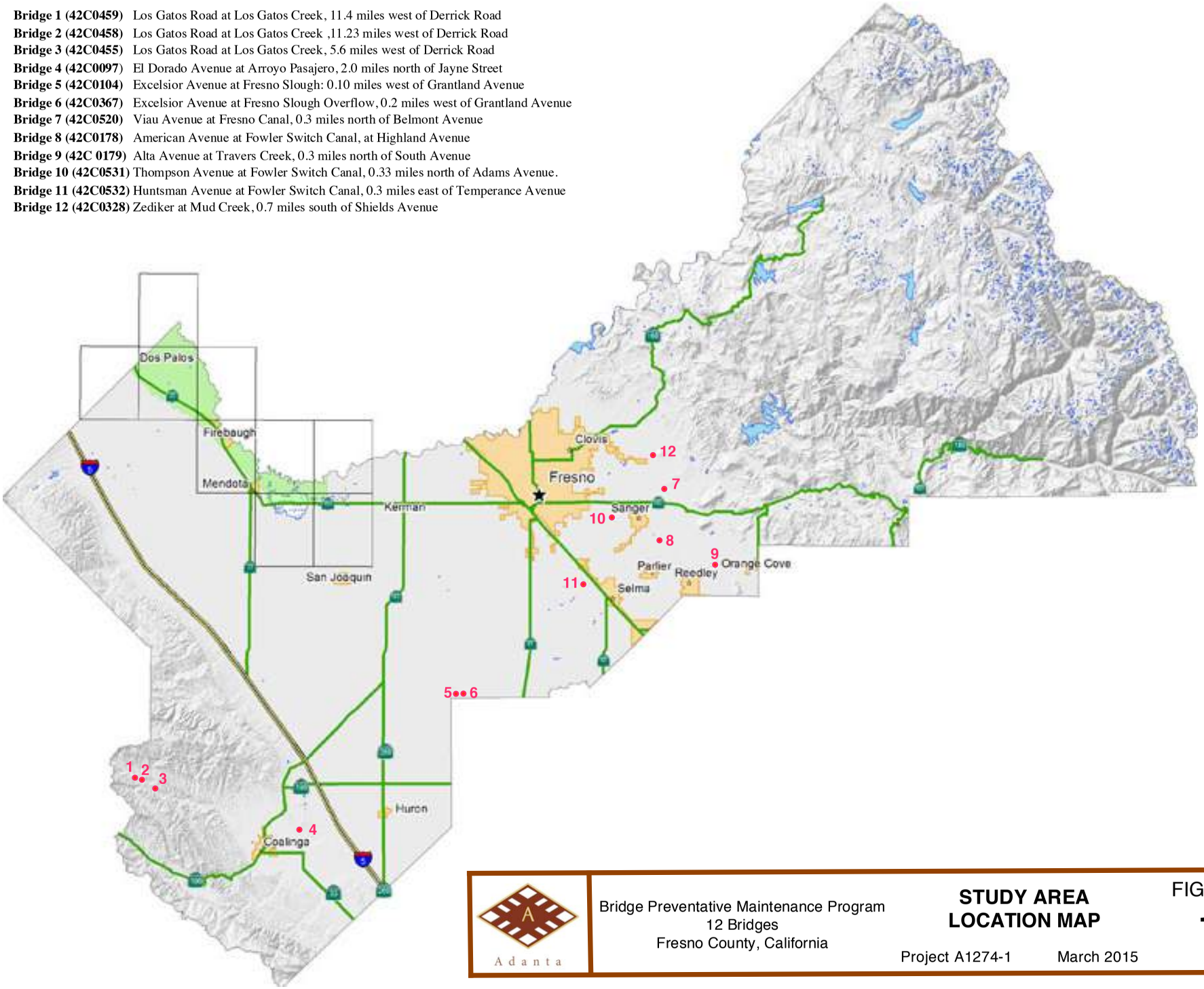
Photograph 12-4 – Mud Creek on east side of Zediker Avenue.

Photograph 12-5 - Looking at Bridge 12.

Photograph 12-6 - Mud Creek is on left obscured by vegetation.

FIGURES

Bridge 1 (42C0459) Los Gatos Road at Los Gatos Creek, 11.4 miles west of Derrick Road
Bridge 2 (42C0458) Los Gatos Road at Los Gatos Creek ,11.23 miles west of Derrick Road
Bridge 3 (42C0455) Los Gatos Road at Los Gatos Creek, 5.6 miles west of Derrick Road
Bridge 4 (42C0097) El Dorado Avenue at Arroyo Pasajero, 2.0 miles north of Jayne Street
Bridge 5 (42C0104) Excelsior Avenue at Fresno Slough: 0.10 miles west of Grantland Avenue
Bridge 6 (42C0367) Excelsior Avenue at Fresno Slough Overflow, 0.2 miles west of Grantland Avenue
Bridge 7 (42C0520) Viau Avenue at Fresno Canal, 0.3 miles north of Belmont Avenue
Bridge 8 (42C0178) American Avenue at Fowler Switch Canal, at Highland Avenue
Bridge 9 (42C 0179) Alta Avenue at Travers Creek, 0.3 miles north of South Avenue
Bridge 10 (42C0531) Thompson Avenue at Fowler Switch Canal, 0.33 miles north of Adams Avenue.
Bridge 11 (42C0532) Huntsman Avenue at Fowler Switch Canal, 0.3 miles east of Temperance Avenue
Bridge 12 (42C0328) Zediker at Mud Creek, 0.7 miles south of Shields Avenue



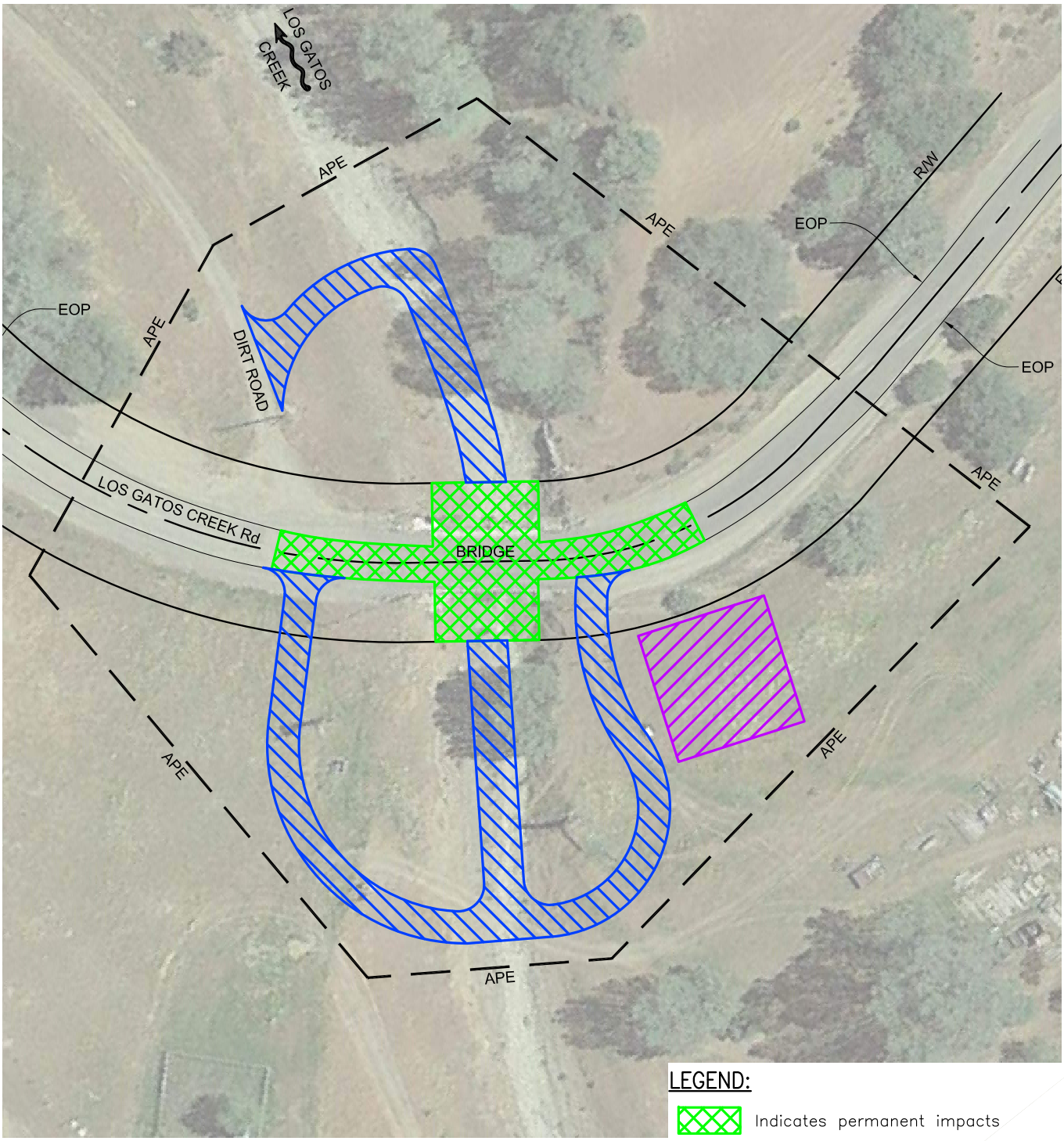
Adanta

Bridge Preventative Maintenance Program
12 Bridges
Fresno County, California

STUDY AREA LOCATION MAP

Project A1274-1 March 2015

FIGURE **1**



LEGEND:

- Indicates permanent impacts
- Indicates construction staging area
- Indicates potential temporary construction access

Taken from drawing by TRC:
BPMP Scour Mitigation
Area of Potential Effect (APE)

Adanta

PBMP
12 Bridges
Fresno County, California
Project A1274-1 March 2015

STUDY AREA MAP
BRIDGE 1

FIGURE
B-1

LEGEND:

- Indicates permanent impacts
- Indicates construction staging area
- Indicates potential temporary construction access

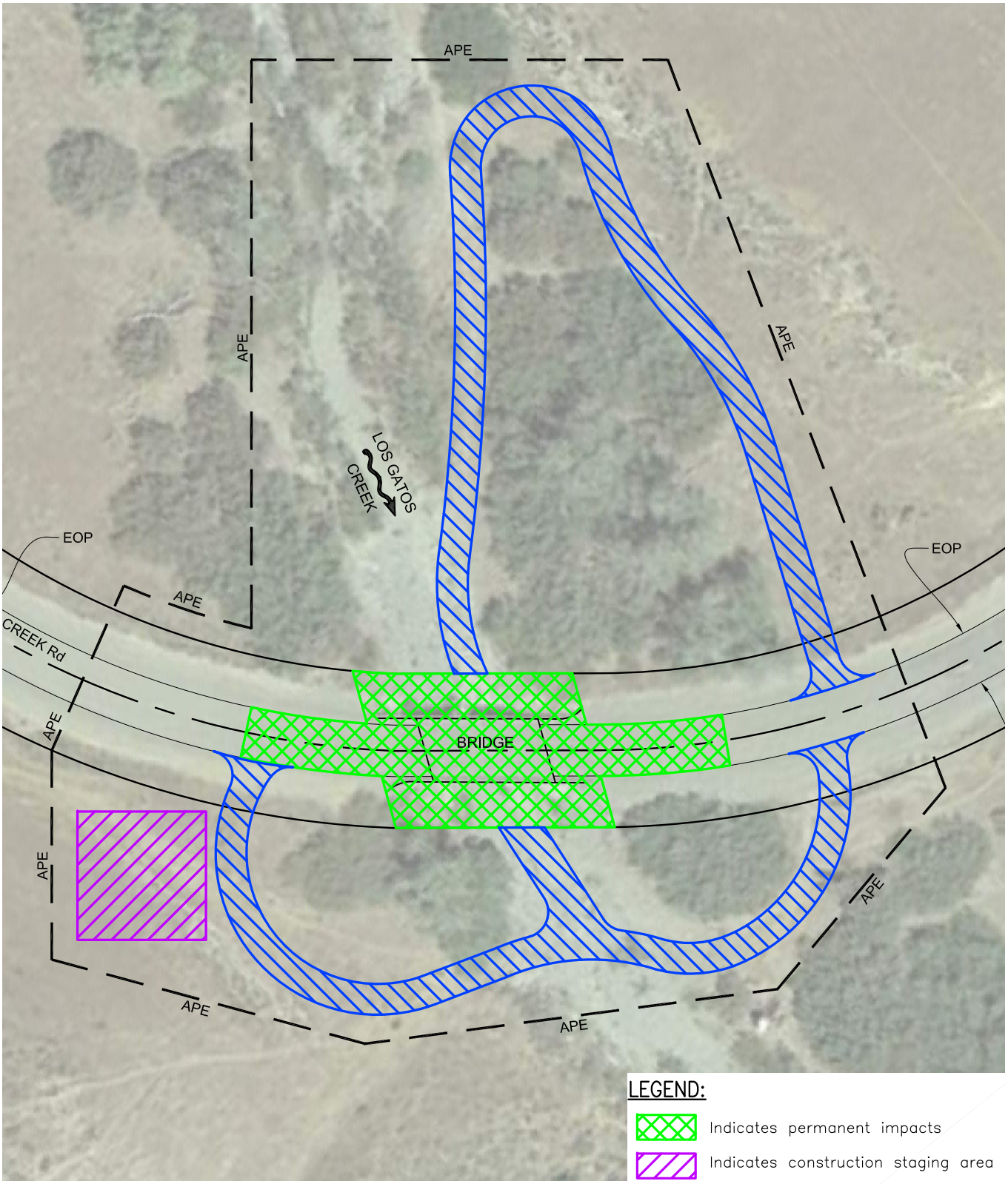
Taken from drawing by TRC:
BPMP Scour Mitigation
Area of Potential Effect (APE)

Adanta

PBMP
12 Bridges
Fresno County, California
Project A1274-1 March 2015

STUDY AREA MAP
BRIDGE 2

FIGURE
B-2



Taken from drawing by TRC:
BPMP Scour Mitigation
Area of Potential Effect (APE)

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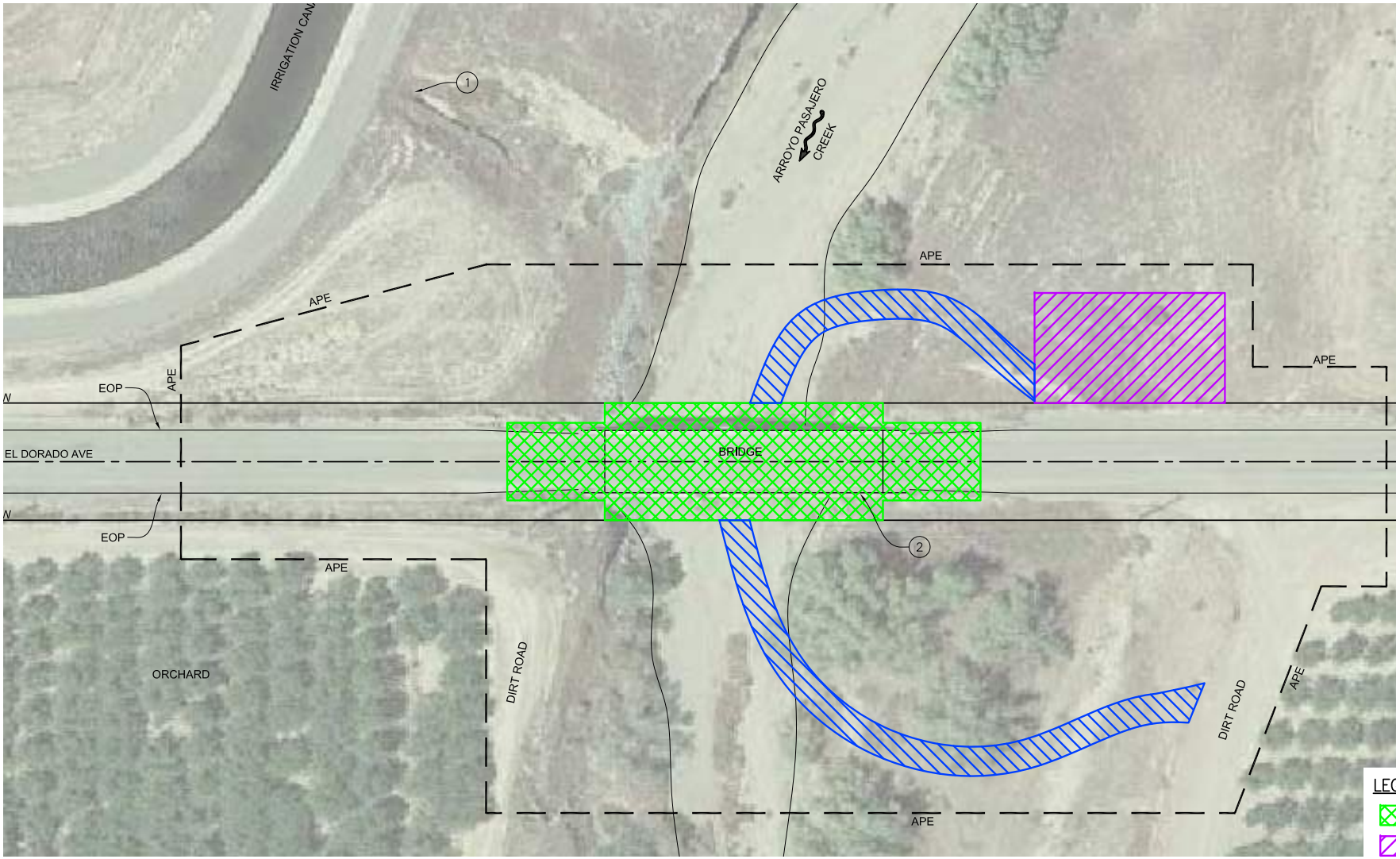
PBMP
12 Bridges
Fresno County, California
Project A1274-1 March 2015

STUDY AREA MAP
BRIDGE 3

FIGURE
B-3



Taken from drawing by TRC:
BPMP Scour Mitigation
Area of Potential Effect (APE)

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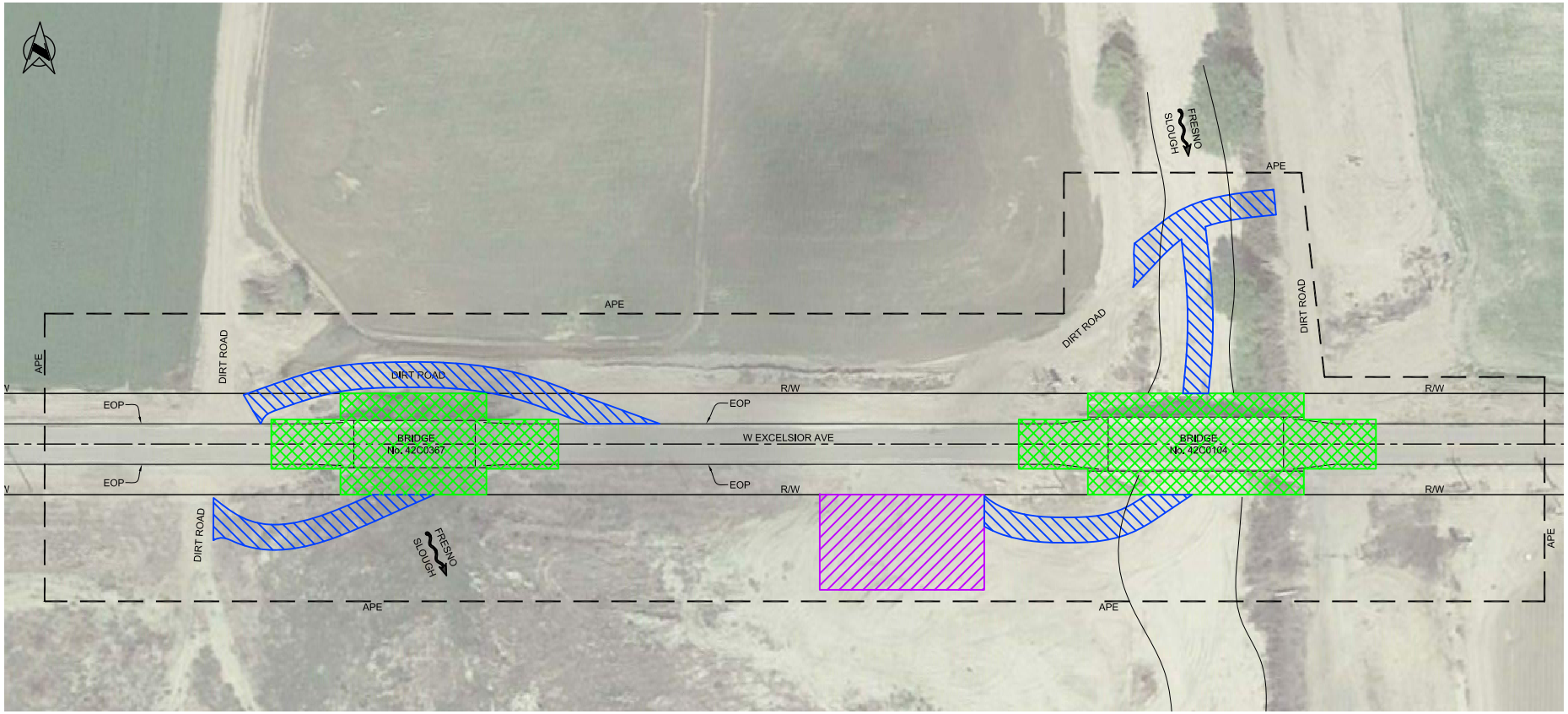
12 Bridges
Fresno County, California
Project A1274-1 March 2015

STUDY AREA MAP
BRIDGE 4

FIGURE
B-4



LEGEND:

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- Indicates potential temporary construction access

Taken from drawing by TRC:
BPMP Scour Mitigation
Area of Potential Effect (APE)

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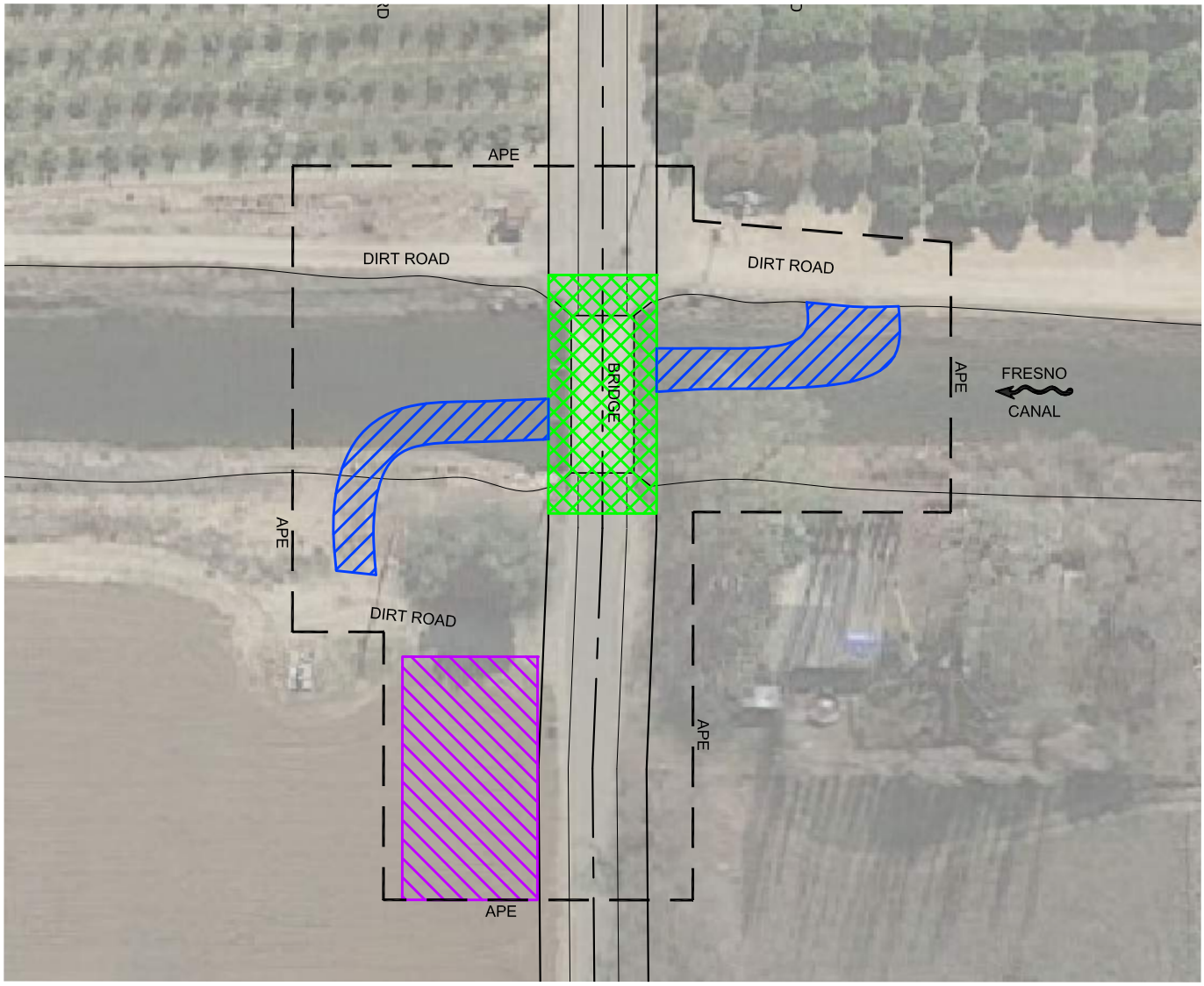
PBMP
12 Bridges
Fresno County, California
Project A1274-1 March 2015

STUDY AREA MAP
BRIDGES 5&6

FIGURE
B-5&6

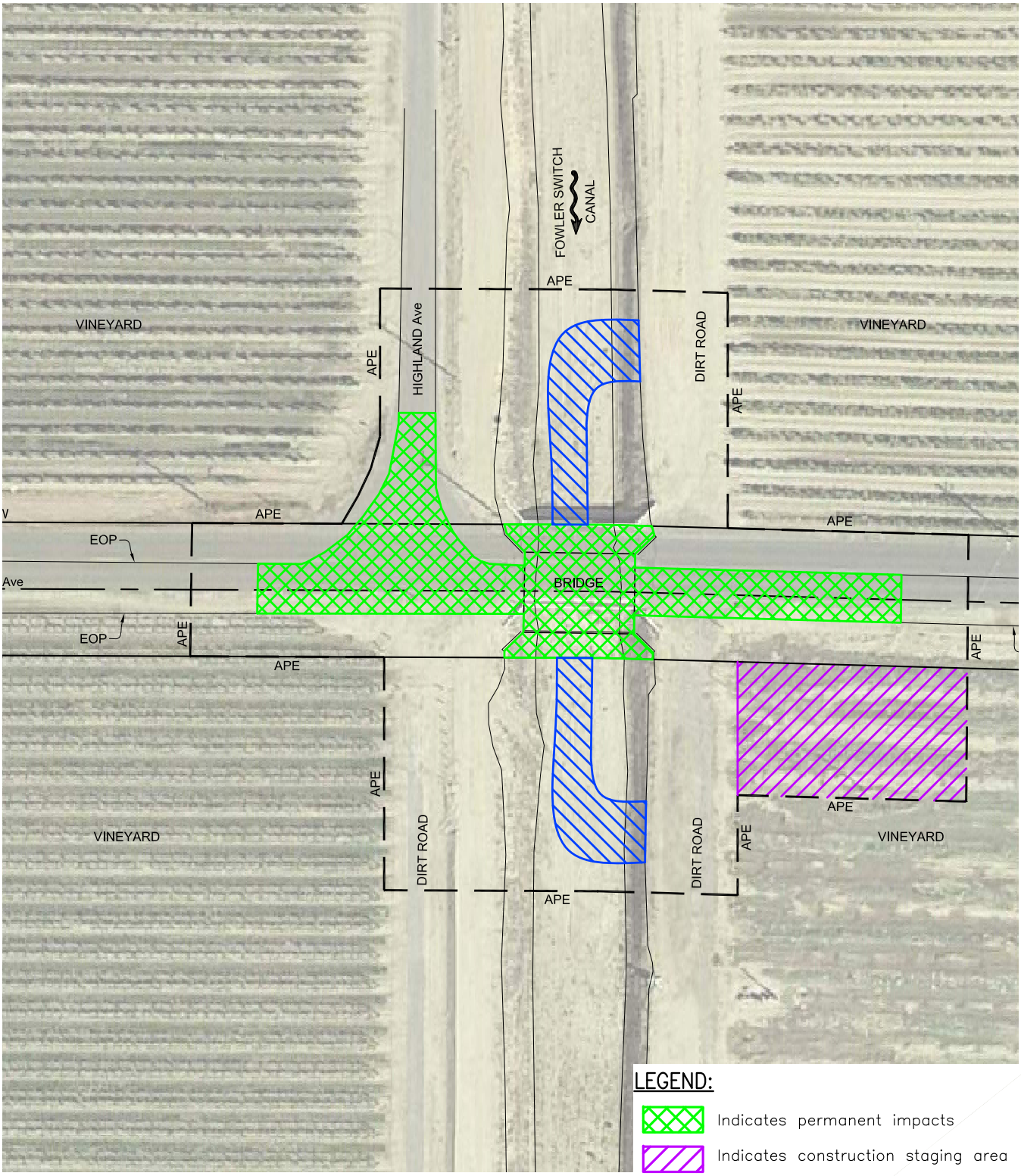


LEGEND:

- Indicates permanent impacts
- Indicates construction staging area
- Indicates potential temporary construction access

Taken from drawing by TRC:
BPMP Scour Mitigation
Area of Potential Effect (APE)

Adanta	PBMP 12 Bridges Fresno County, California Project A1274-1 March 2015	**STUDY AREA MAP** **BRIDGE 7**	FIGURE **B-7**



Taken from drawing by TRC:
BPMP Scour Mitigation
Area of Potential Effect (APE)

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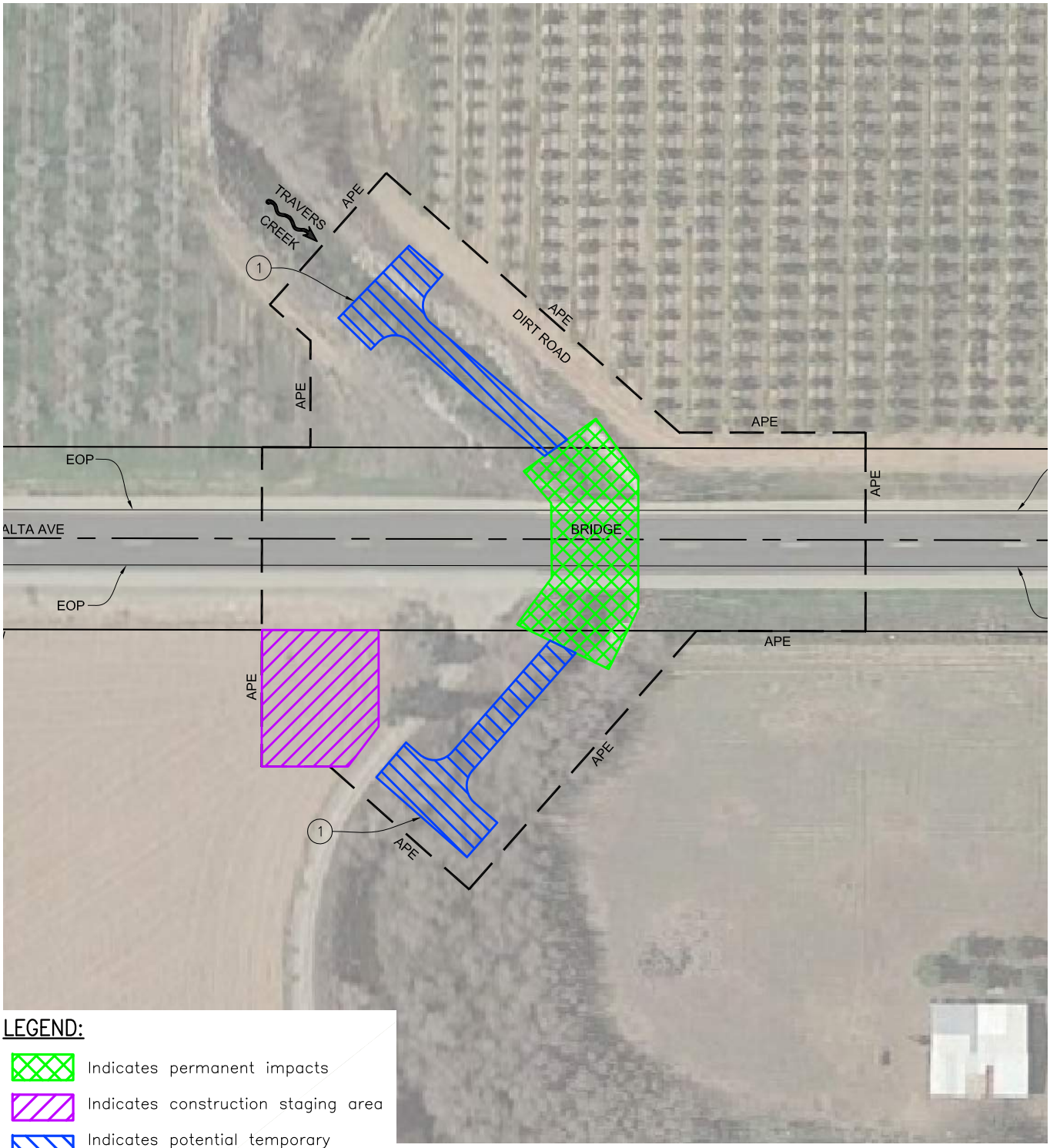
12 Bridges
Fresno County, California
Project A1274-1 March 2015

STUDY AREA MAP
BRIDGE 8

FIGURE
B-8



Taken from drawing by TRC:
BPMP Scour Mitigation
Area of Potential Effect (APE)

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PBMP
12 Bridges
Fresno County, California
Project A1274-1 March 2015

STUDY AREA MAP
BRIDGE 9

FIGURE
B-9

LEGEND:

- Indicates permanent impacts
- Indicates construction staging area
- Indicates potential temporary construction access

Taken from drawing by TRC:
BPMP Scour Mitigation
Area of Potential Effect (APE)

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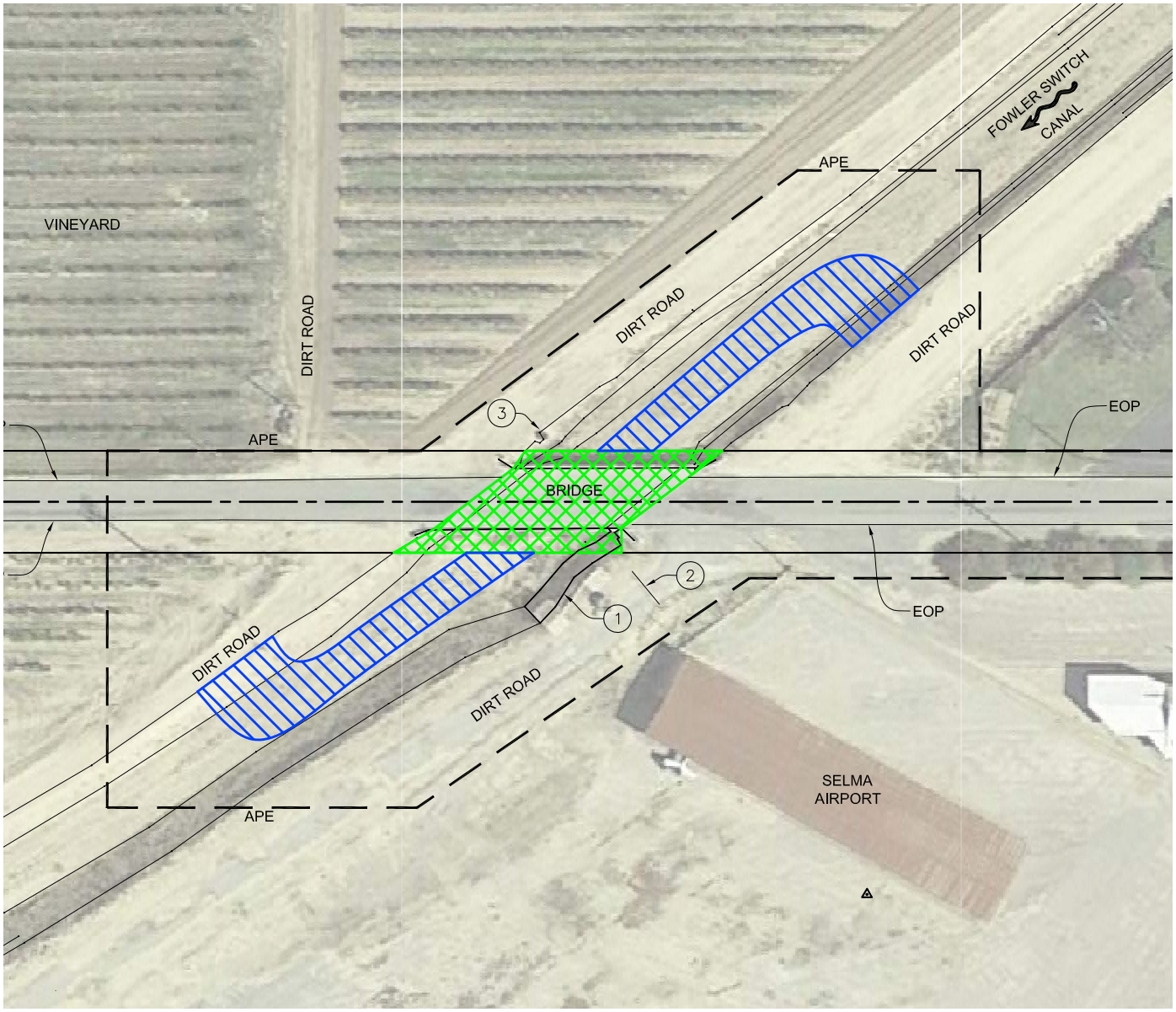
12 Bridges
Fresno County, California
Project A1274-1 March 2015

STUDY AREA MAP
BRIDGE 11

FIGURE
B-10



LEGEND:

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- Indicates potential temporary construction access

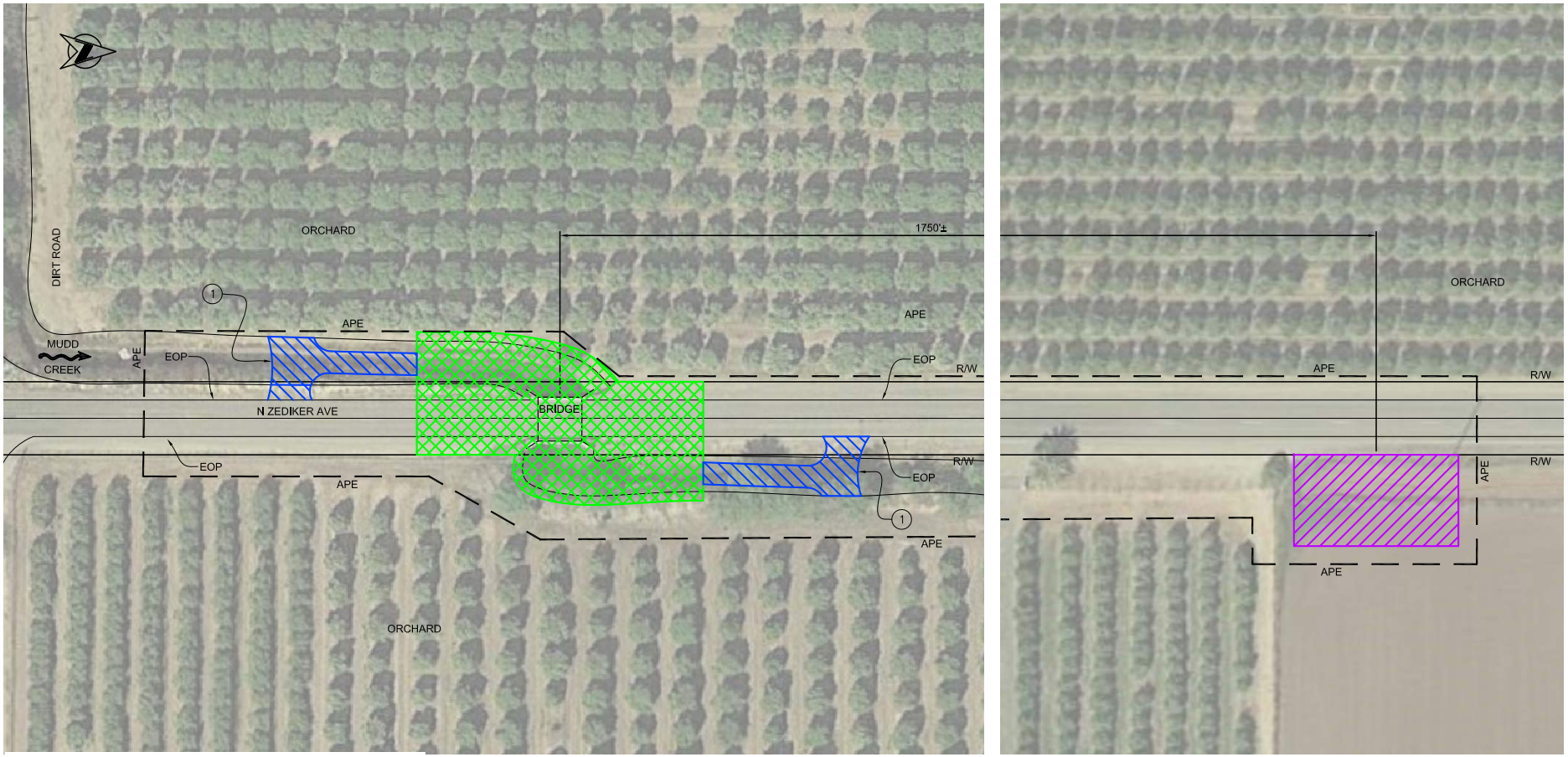
Taken from drawing by TRC:
BPMP Scour Mitigation
Area of Potential Effect (APE)

Adanta

PBMP
12 Bridges
Fresno County, California
Project A1274-1 March 2015

STUDY AREA MAP
BRIDGE 11

FIGURE
B-11



LEGEND:

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- Indicates construction staging area
- Indicates potential temporary construction access

Taken from drawing by TRC:
BPMP Scour Mitigation
Area of Potential Effect (APE)

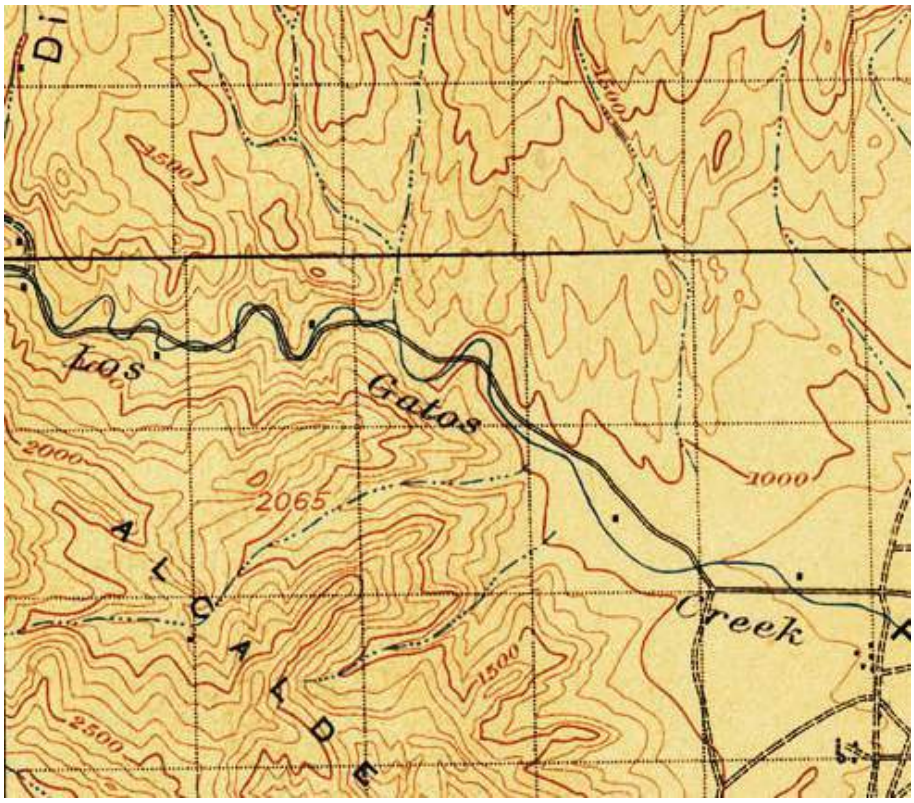
Adanta

PBMP
12 Bridges
Fresno County, California
Project A1274-1 March 2015

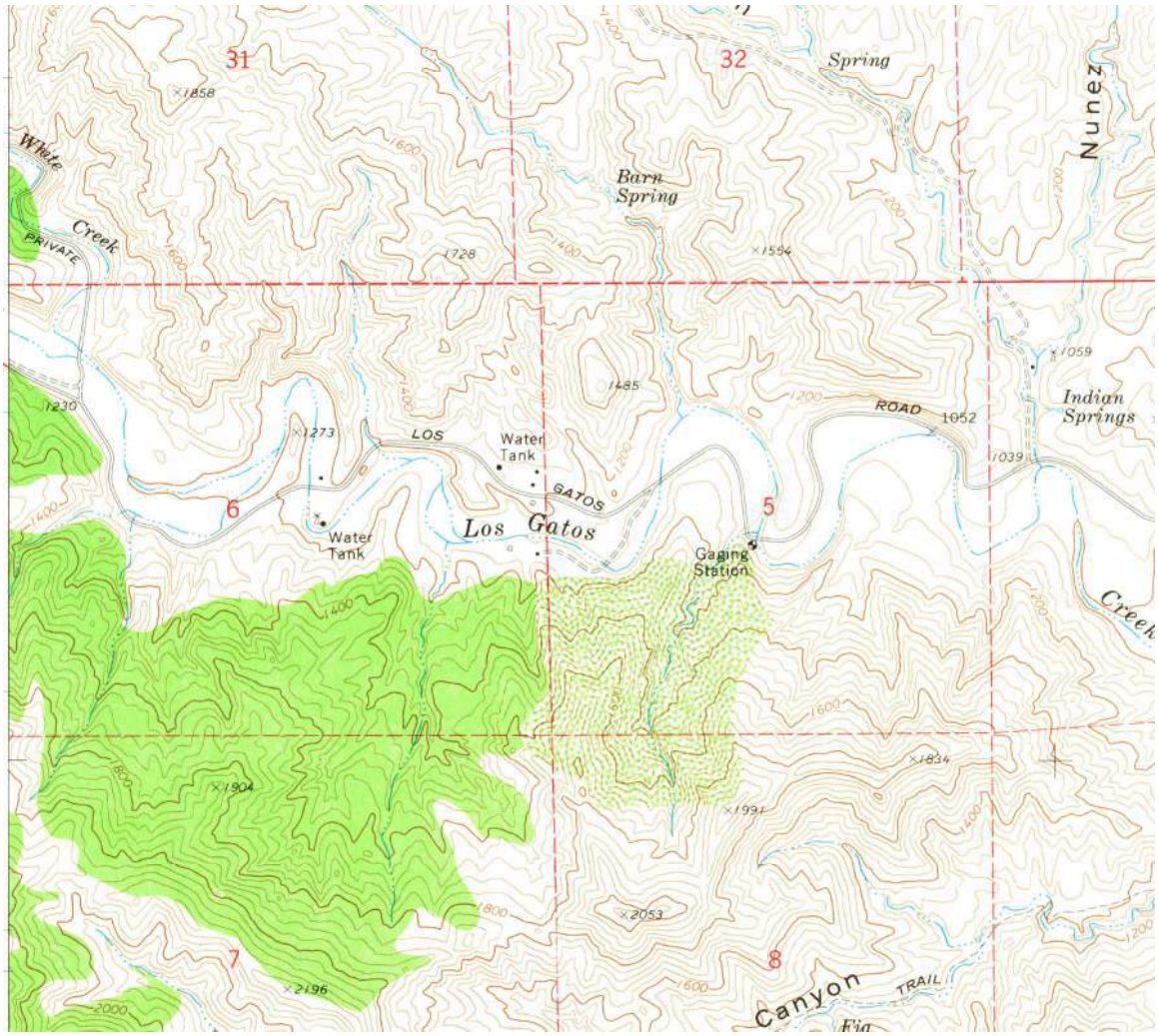
STUDY AREA MAP
BRIDGE 12

FIGURE
B-12

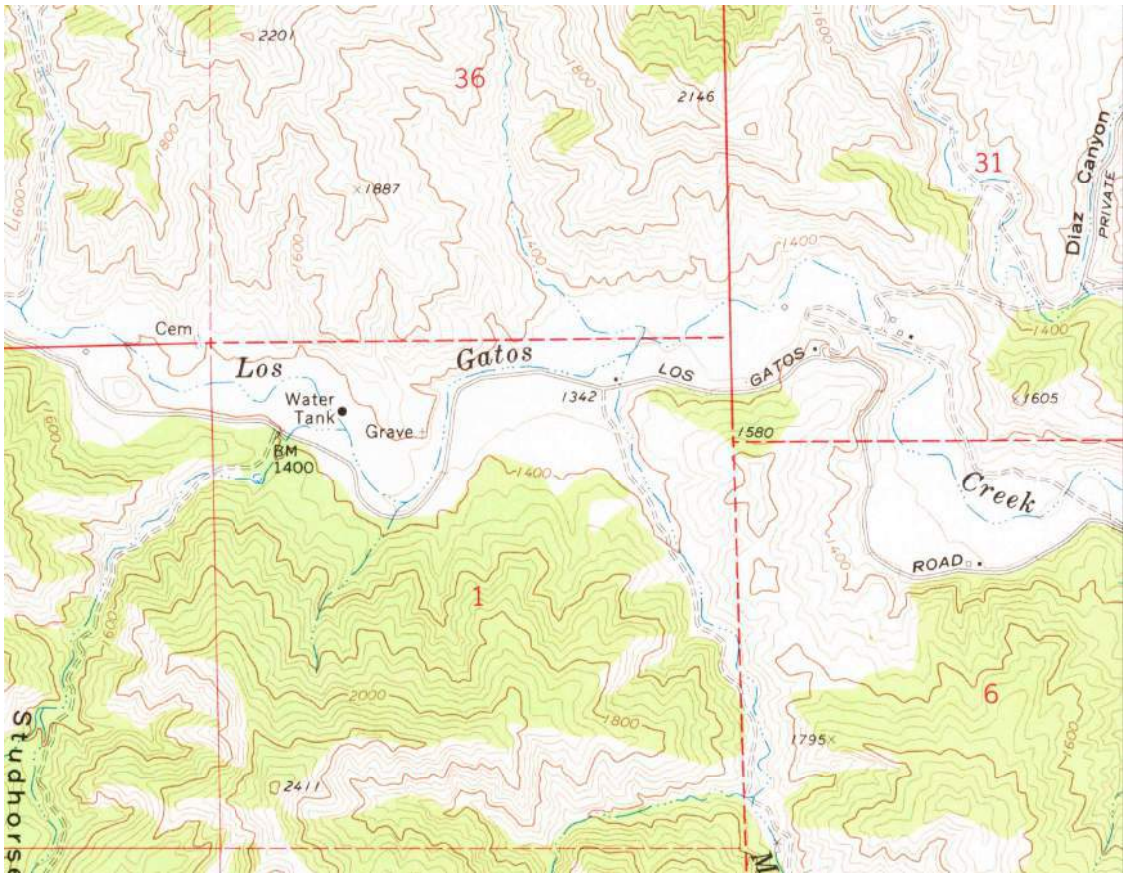
APPENDIX A
HISTORICAL DOCUMENTATION



1910 (1,2,3)


31
32
Spring
Nunez
White
Creek
PRIVATE
Barn
Spring
1858
1728
1554
1059
1485
1230
1273
LOS
Water
Tank
GATOS
ROAD
1052
Indian
Springs
1039
6
5
Water
Tank
Los Gatos
Gaging
Station
Creek
1834
1904
1934
2053
7
2196
8
Canyon
TRAIL

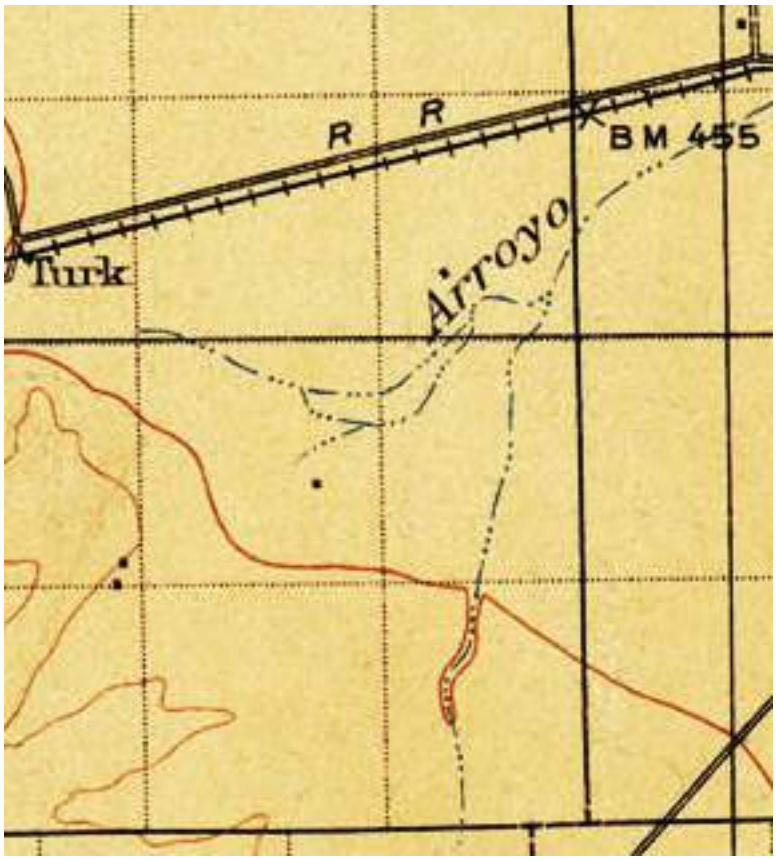
1968 (1)


36
31
1
6
2201
2146
1887
Díaz Canyon
PRIVATE
Cem
Los Gatos
LOS GATOS
Water Tank
Grave
BM 1400
1342
1605
1580
Creek
ROAD
2000
1795
2411

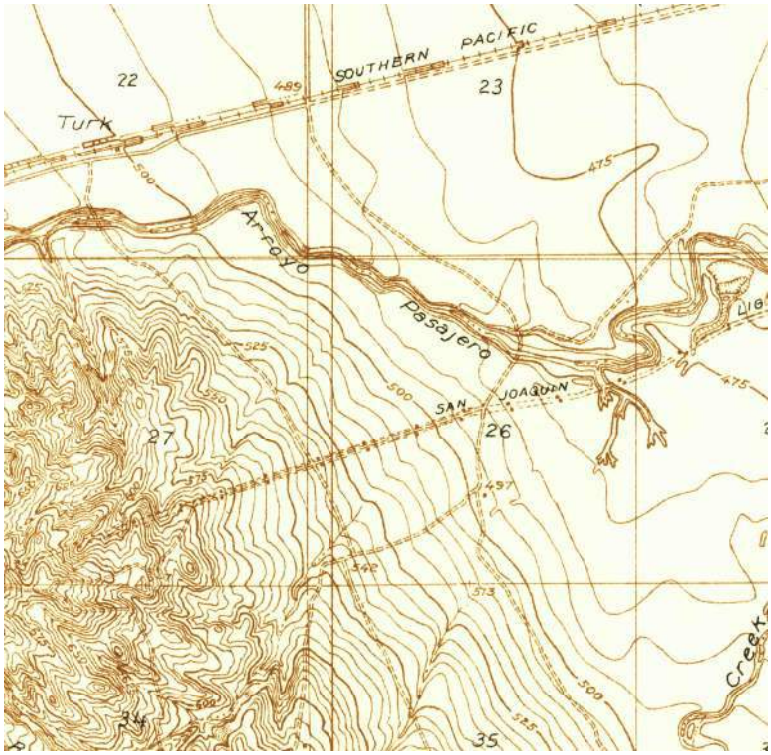
1969 (2,3)

1994 (1,2,3)

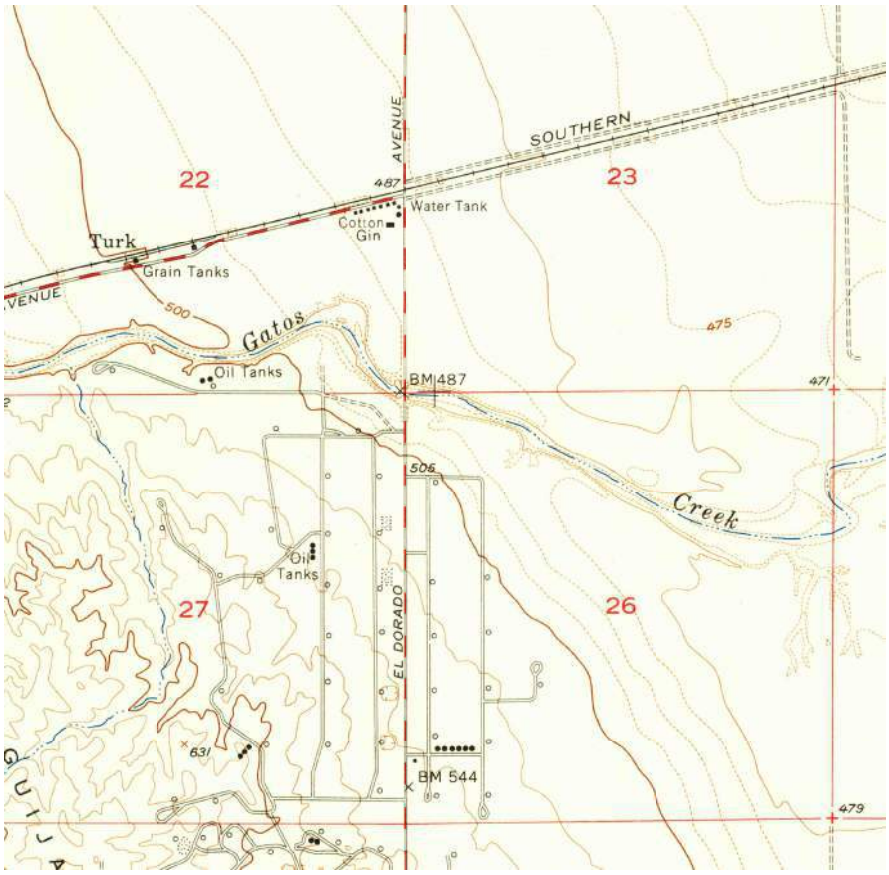
2013 (1,2,3)


R R
BM 455
Turk
Arroyo

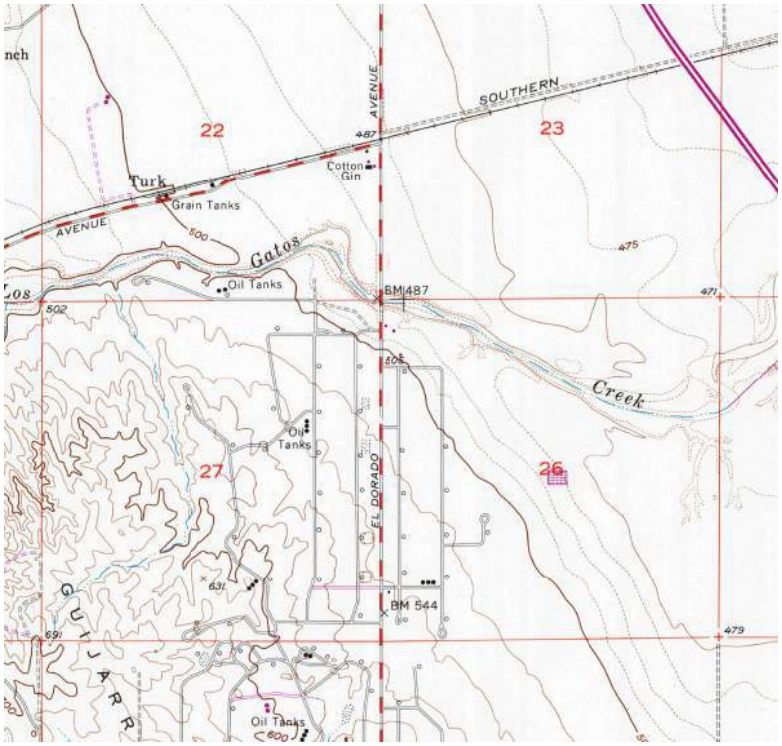
1910 (4)


SOUTHERN PACIFIC
22
23
Turk
Arroyo
Pasajero
SAN JOAQUIN
26
27
475
500
525

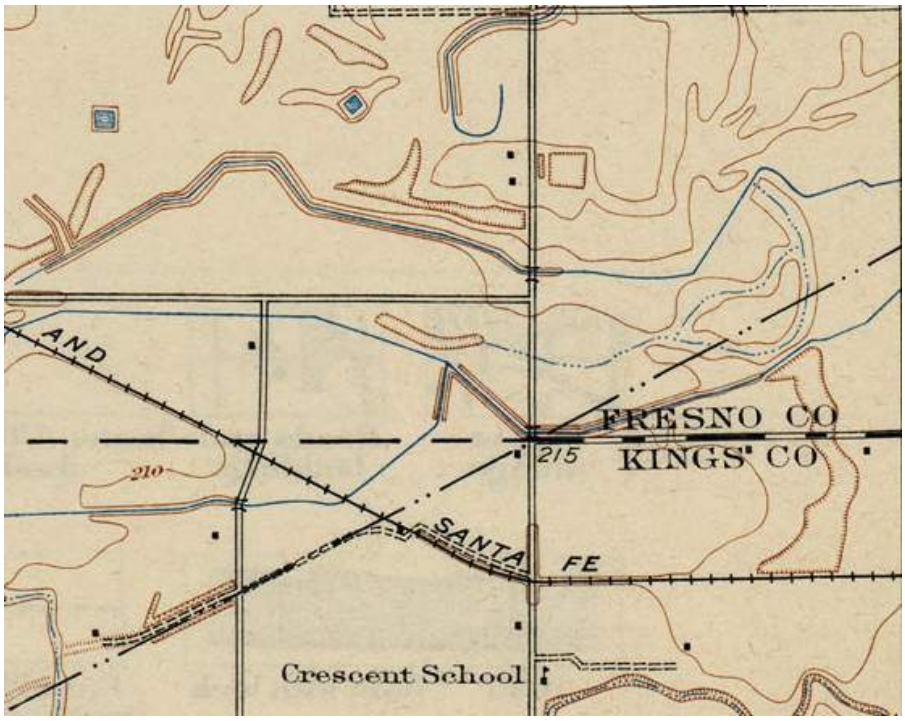
1937 (4)


22
23
26
27
SOUTHERN
AVENUE
487
Water Tank
Cotton Gin
Turk
Grain Tanks
500
Gatos
Oil Tanks
BM 487
471
475
505
Creek
Oil Tanks
EL DORADO
631
BM 544
479

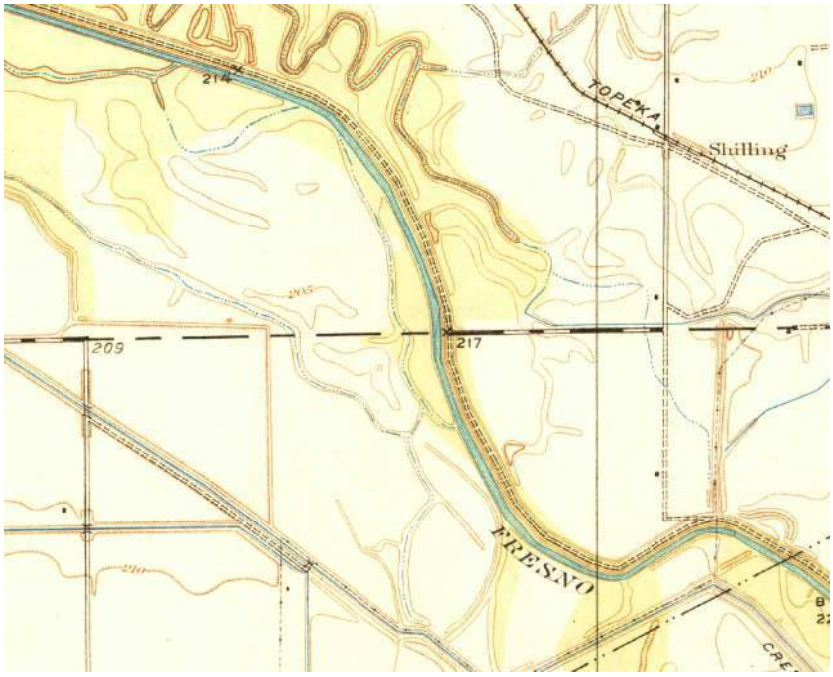
1956 (4)


22
23
26
27
SOUTHERN
AVENUE
487
Cotton Gin
Turk
Grain Tanks
500
Gatos
Oil Tanks
BM 487
471
475
502
505
Creek
Oil Tanks
EL DORADO
631
BM 544
479
600

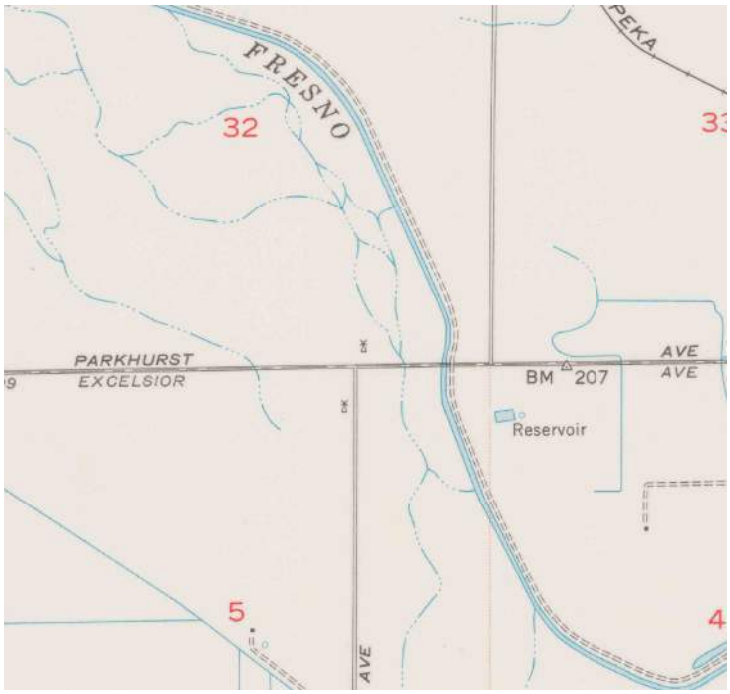
1971 (4)


AND
FRESNO CO
KINGS CO
215
210
SANTA
FE
Crescent School

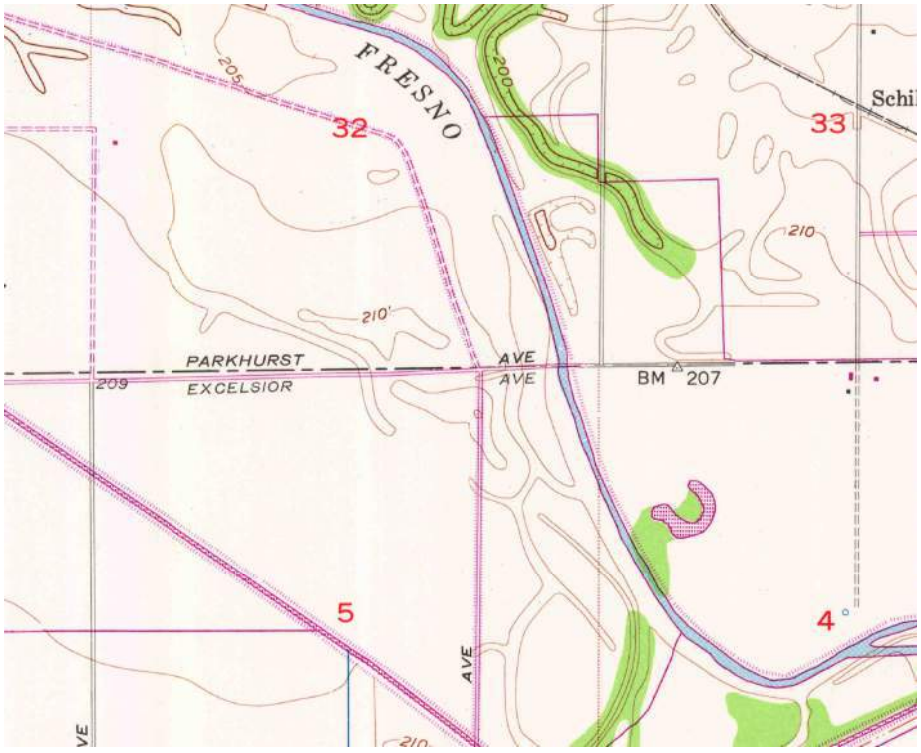
1924 (5,6)


214
TOPEKA
Shilling
210
215
209
217
FRESNO

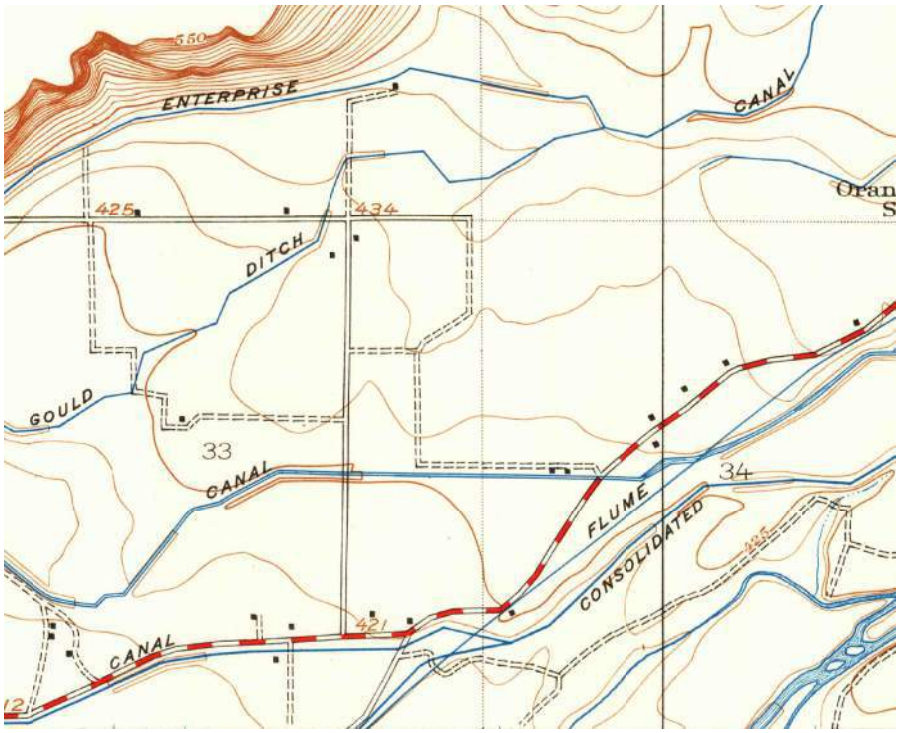
1927



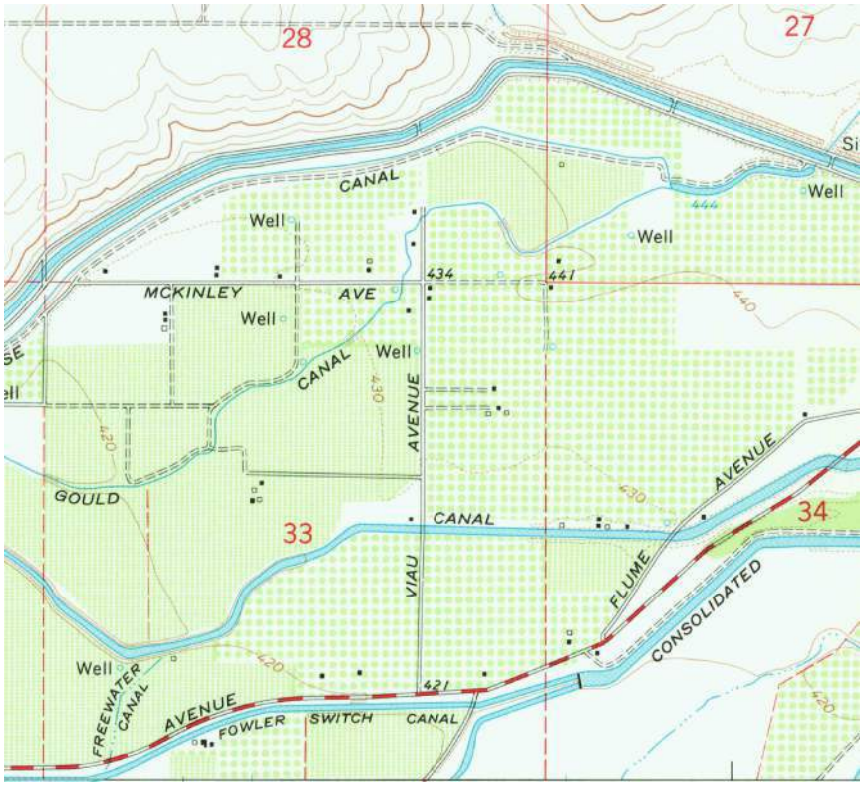
1954 (5,6)



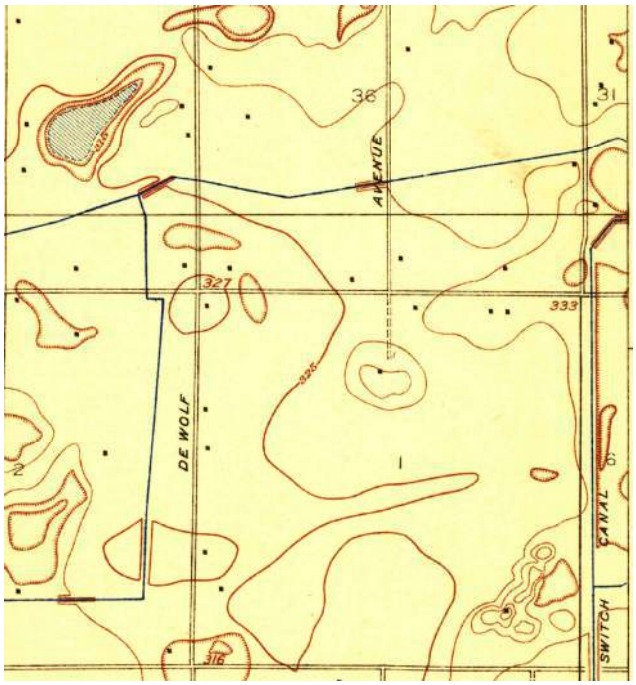
1981(5,6)


ENTERPRISE
CANAL
425
434
DITCH
GOULD
33
CANAL
34
FLUME
CONSOLIDATED
CANAL
421

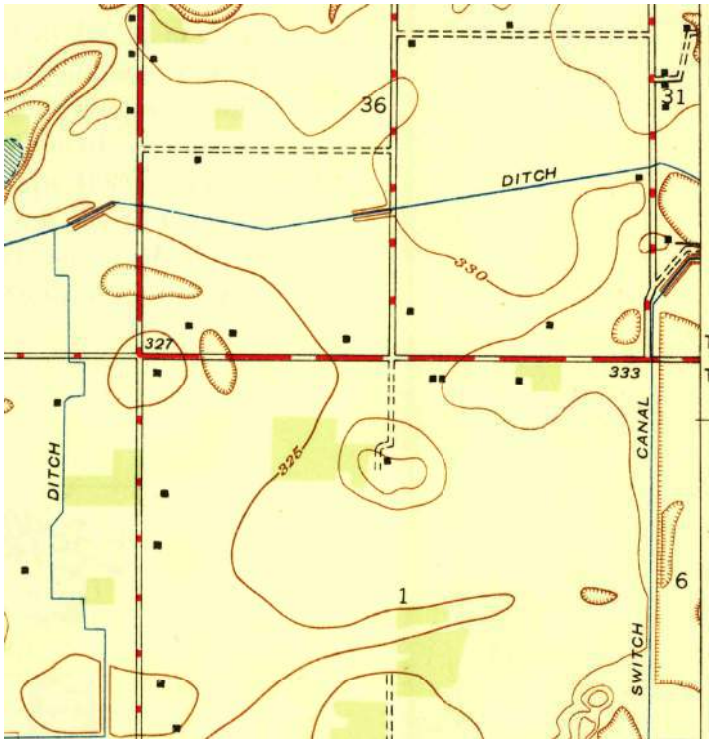
1920 (7)


28
27
CANAL
Well
Well
Well
434
441
MCKINLEY
AVE
Well
CANAL
Well
AVENUE
GOULD
33
CANAL
34
AVENUE
VIAU
FLUME
CONSOLIDATED
Well
FREEWATER
CANAL
AVENUE
FOWLER
SWITCH
CANAL
421

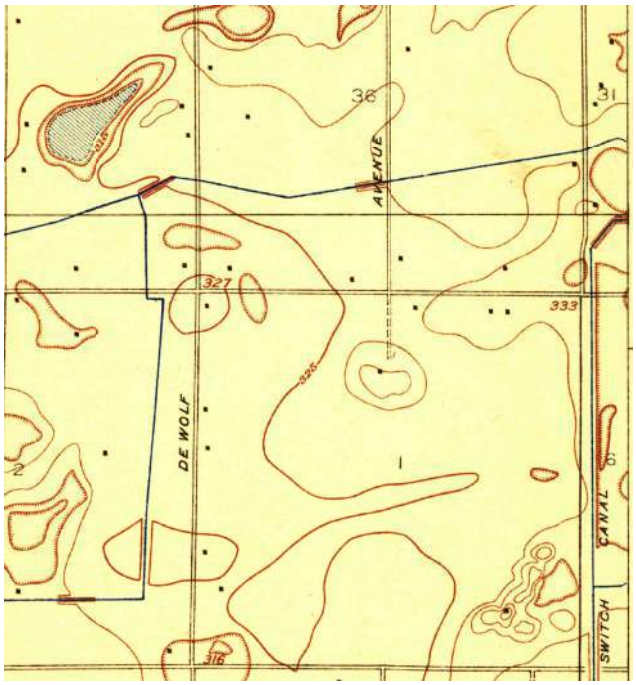
1965 (7)


36
31
AVENUE
327
333
325
DE WOLF
1
CANAL
SWITCH
318

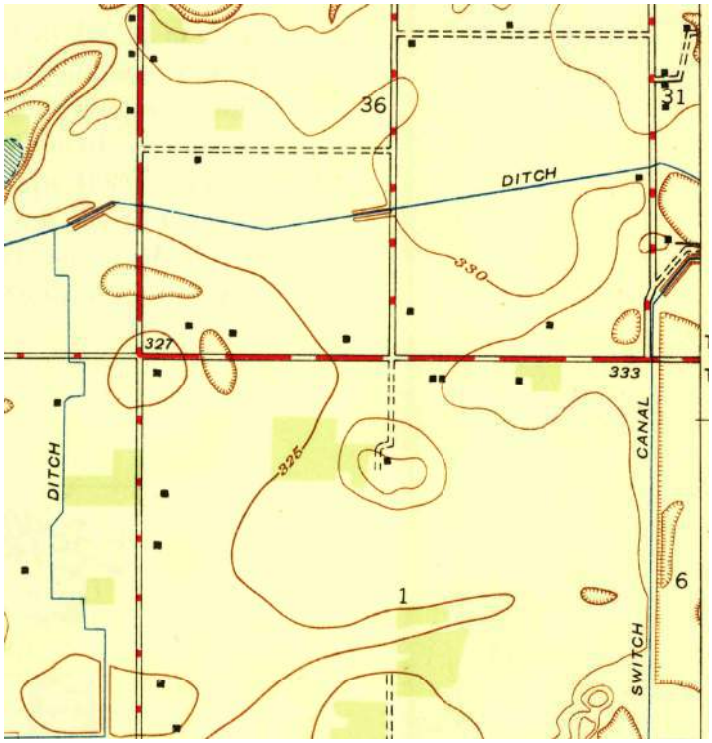
1923 (8)


36
31
DITCH
330
327
333
DITCH
325
CANAL
1
6
SWITCH

1947 (8)


36
31
AVENUE
327
333
325
DE WOLF
1
CANAL
SWITCH
318

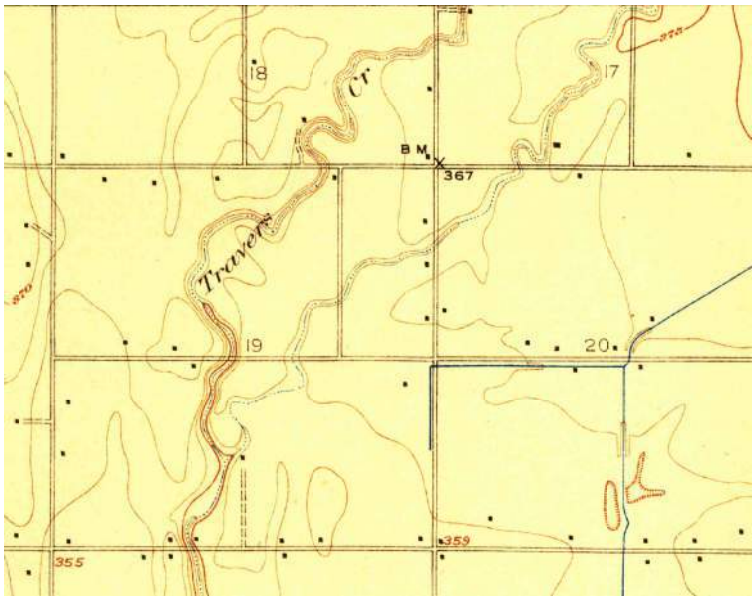
1923 (8)


36
31
DITCH
330
327
333
DITCH
325
CANAL
1
6
SWITCH

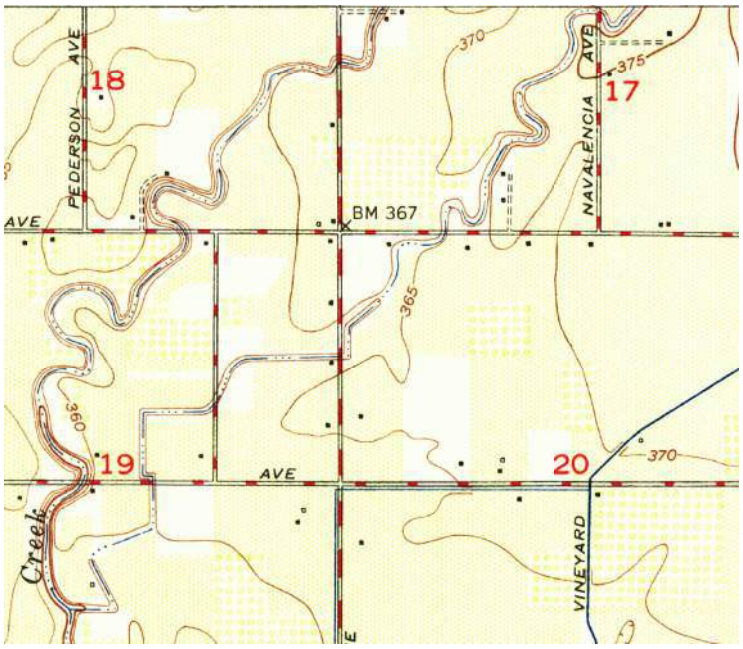
1947 (8)

Well
332
325
CANAL
331
AVE
AVE
325
AVE
324
332
Well
325
CANAL
325

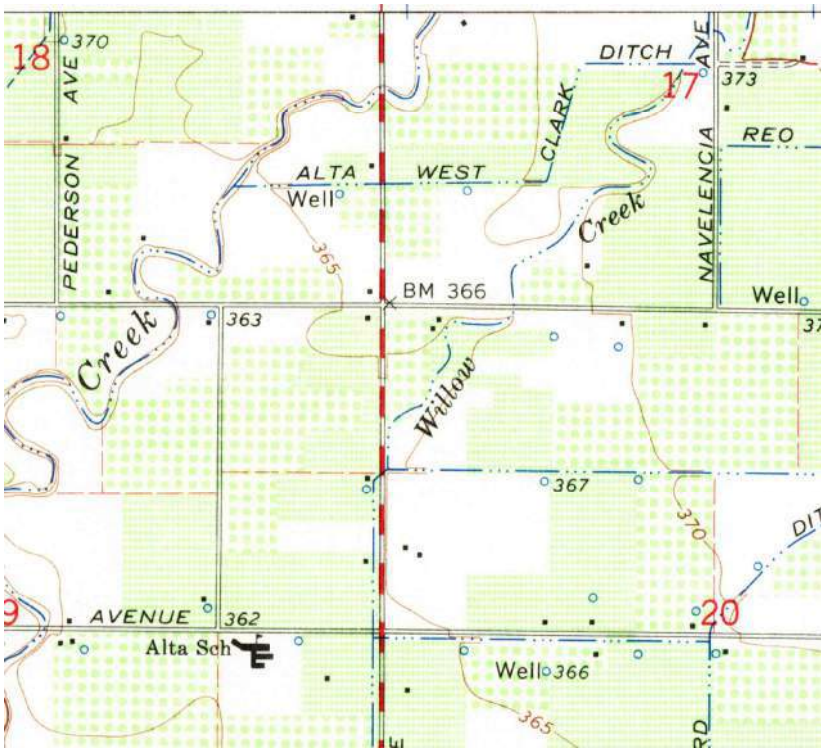
1981 (8)


18
Cr
17
B M
367
Travers
19
20
359
355

1924 (9)


18
PEDERSON AVE
AVE
BM 367
370
375
17
NAVALENCIA AVE
365
360
19
AVE
20
370
Creek
VINEYARD

1949 (9)


18
370
PEDERSON AVE
DITCH
17
373
REO
ALTA
WEST
Well
CLARK
Creek
NAVALENCIA AVE
365
BM 366
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363
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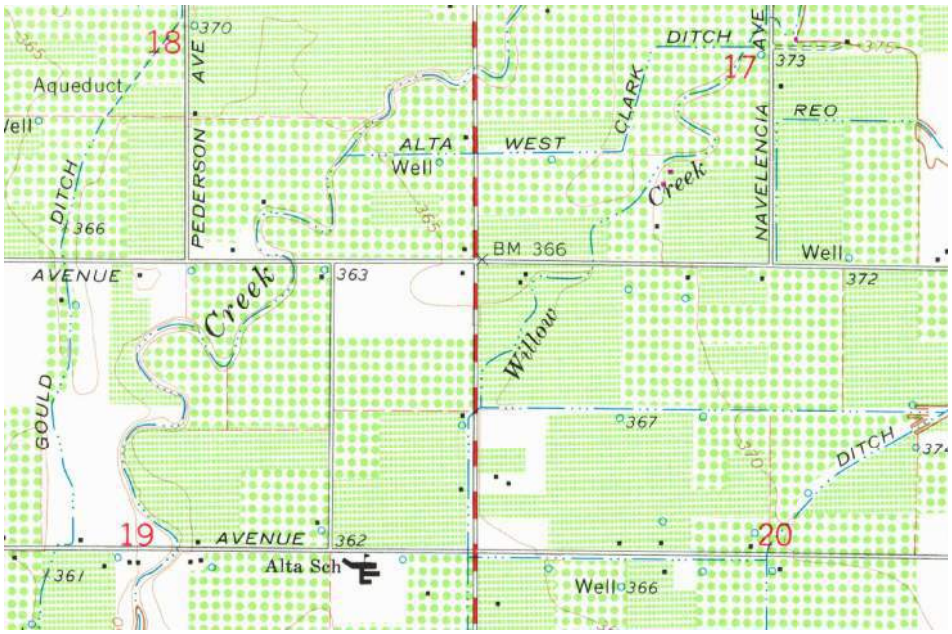
367
370
AVENUE
362
20
Alta Sch
Well 366
365

1966 (9)



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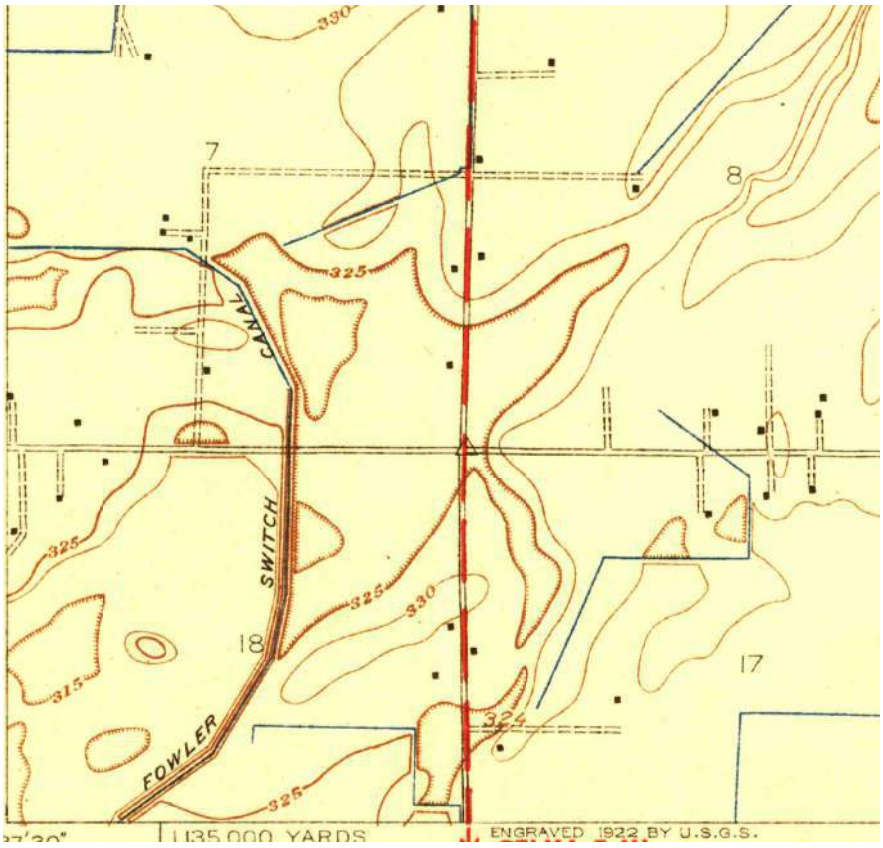

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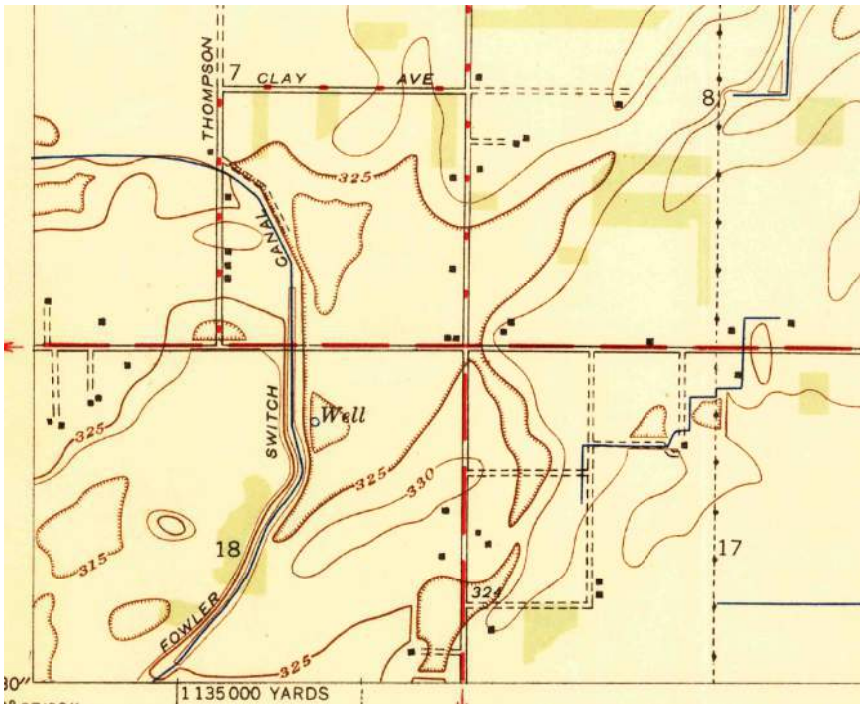
THOMPSON
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CLAY
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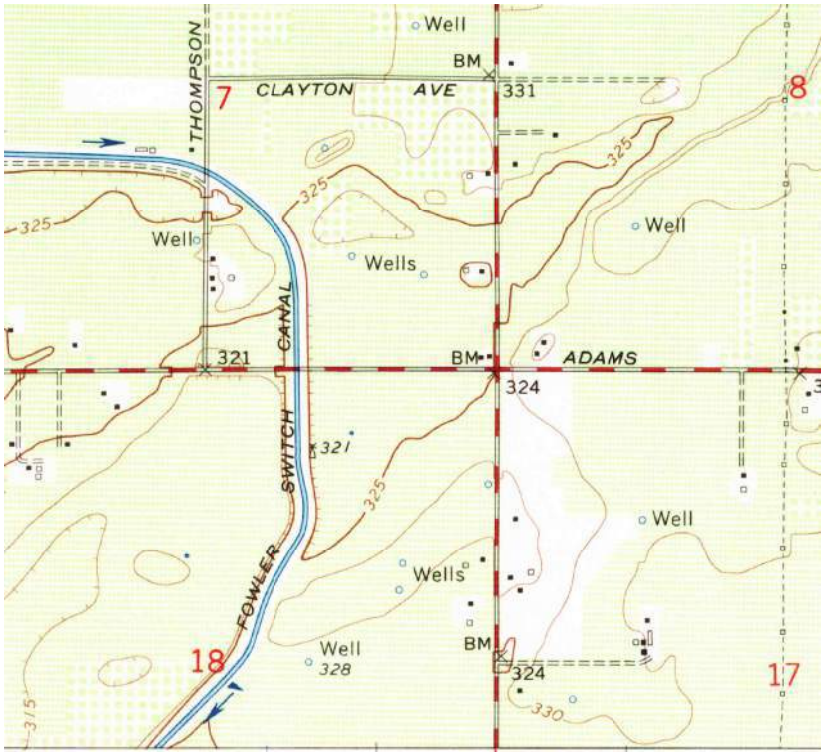
FOWLER
325
1 135 000 YARDS

1947 (10)


Well
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THOMPSON
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CANAL
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ADAMS
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SWITCH
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Well
Wells
FOWLER
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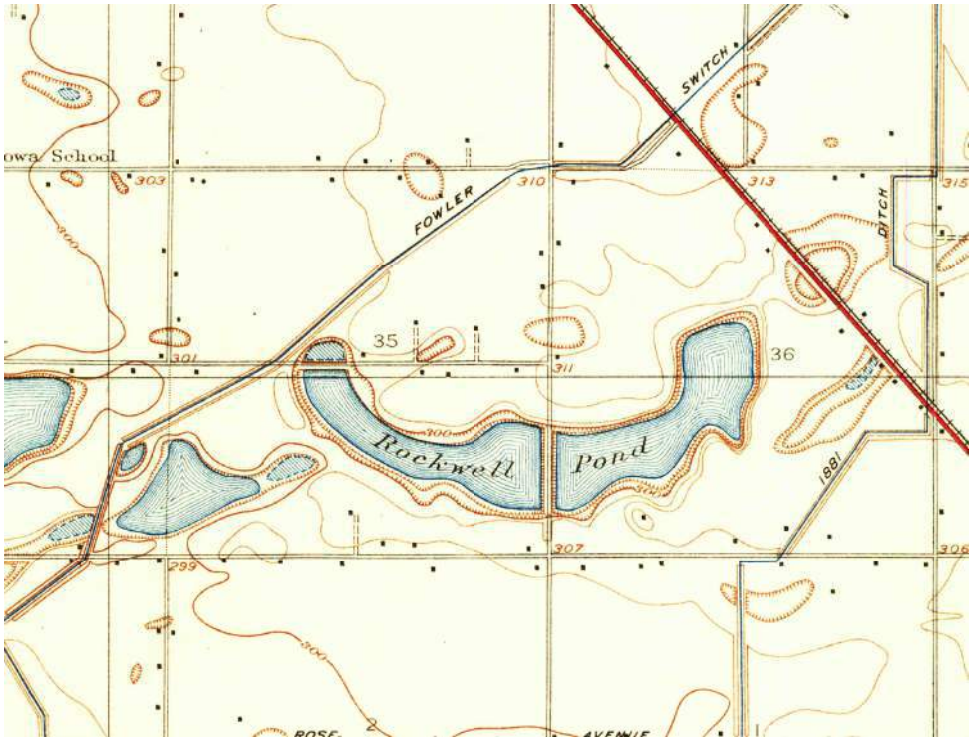
Well
328
BM
324
17
330
315

1965

1981 (10)



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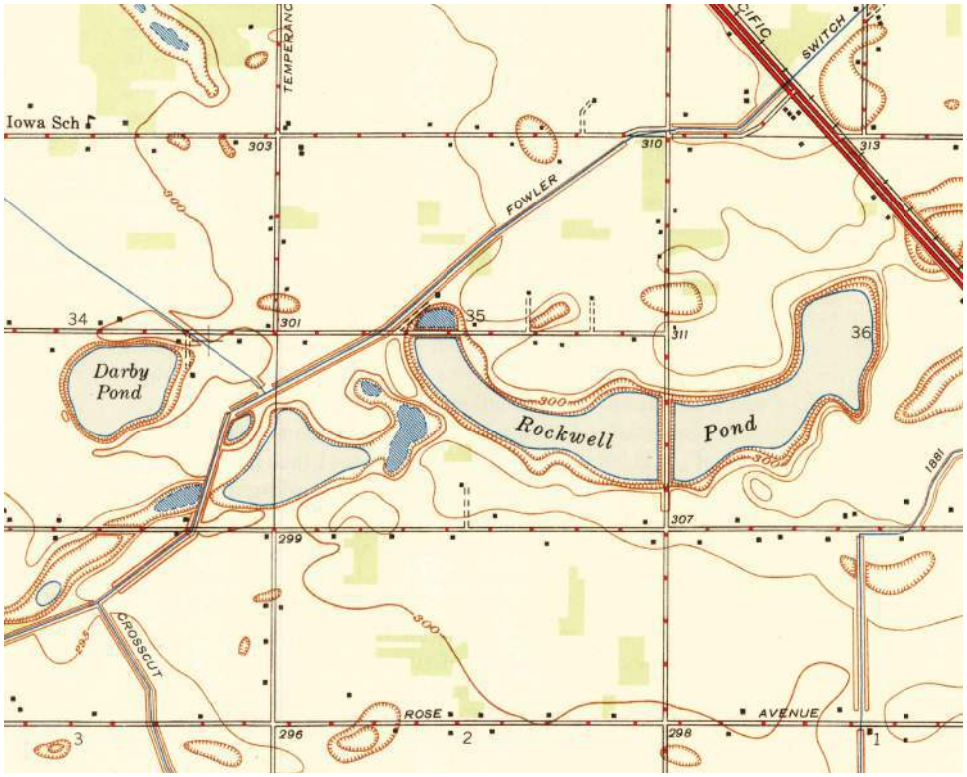

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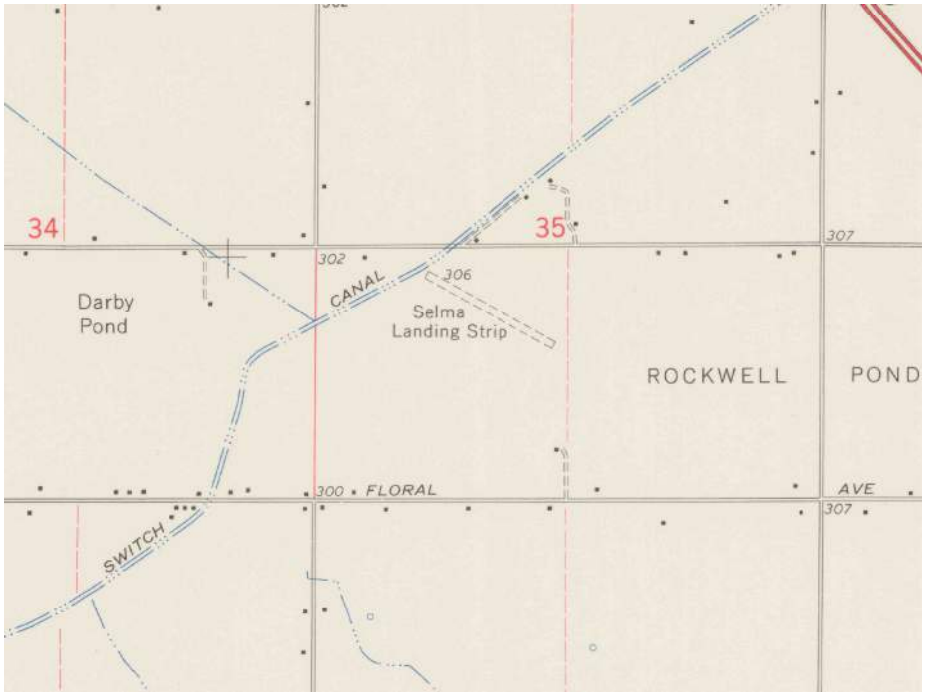

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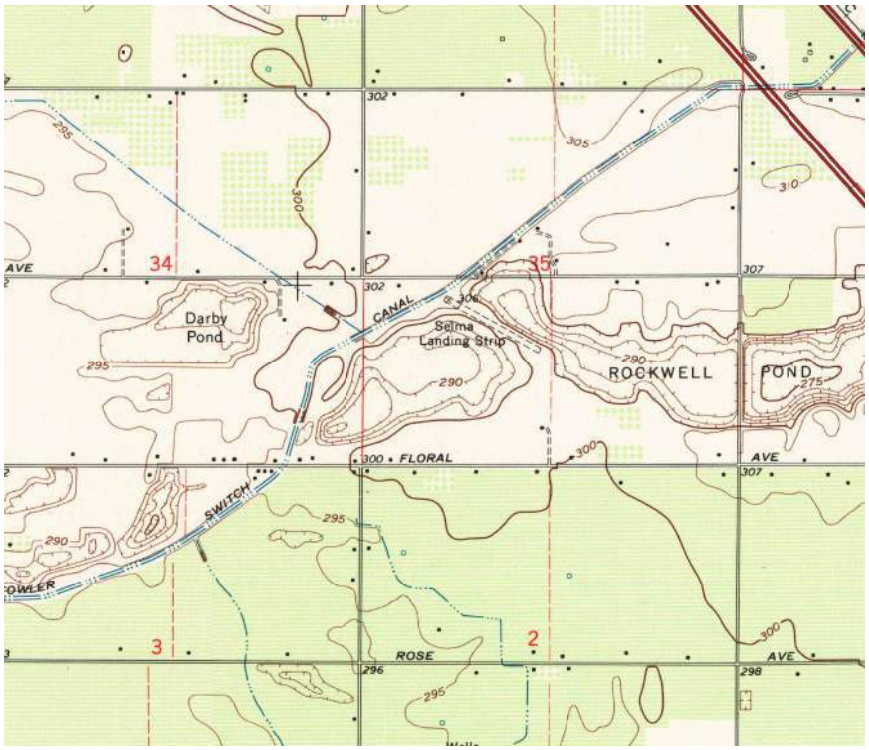
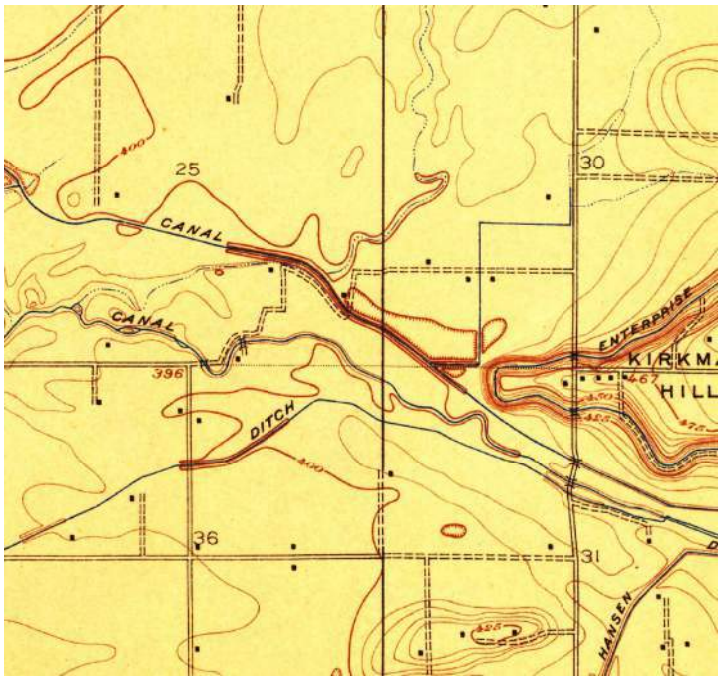


1978 (11)

1998 (11)

2013 (11)



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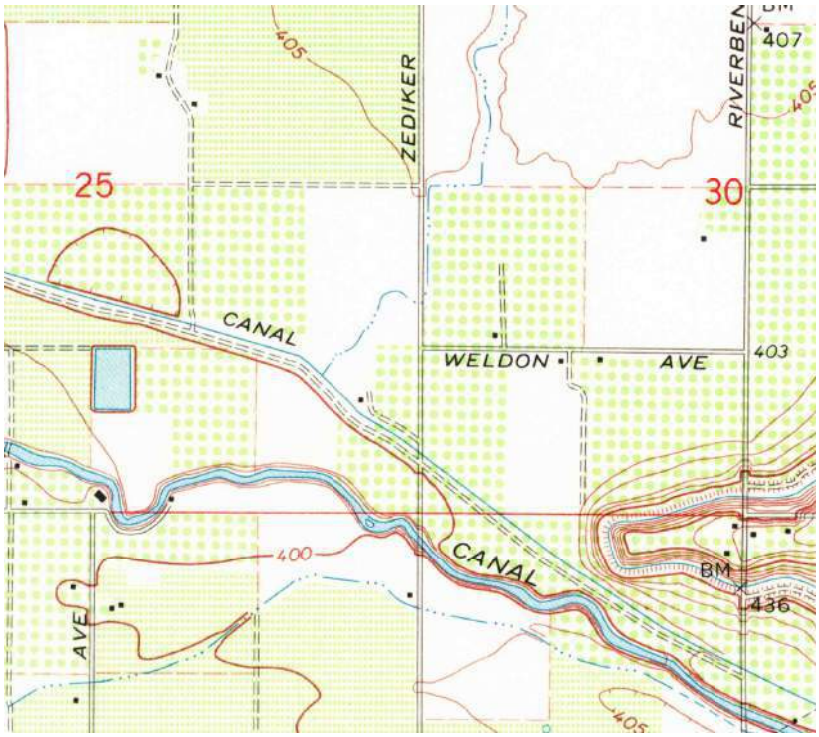

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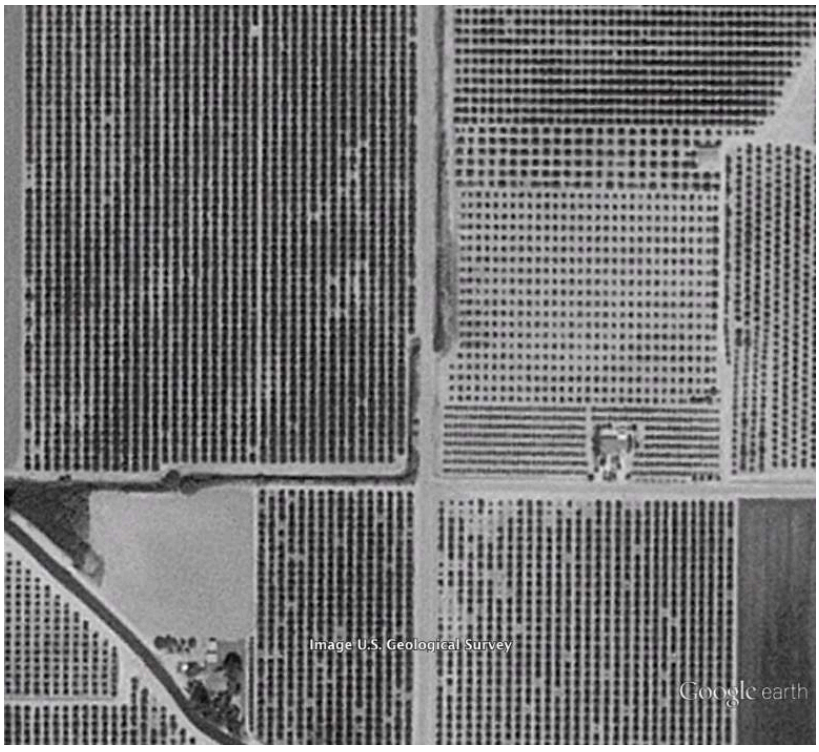

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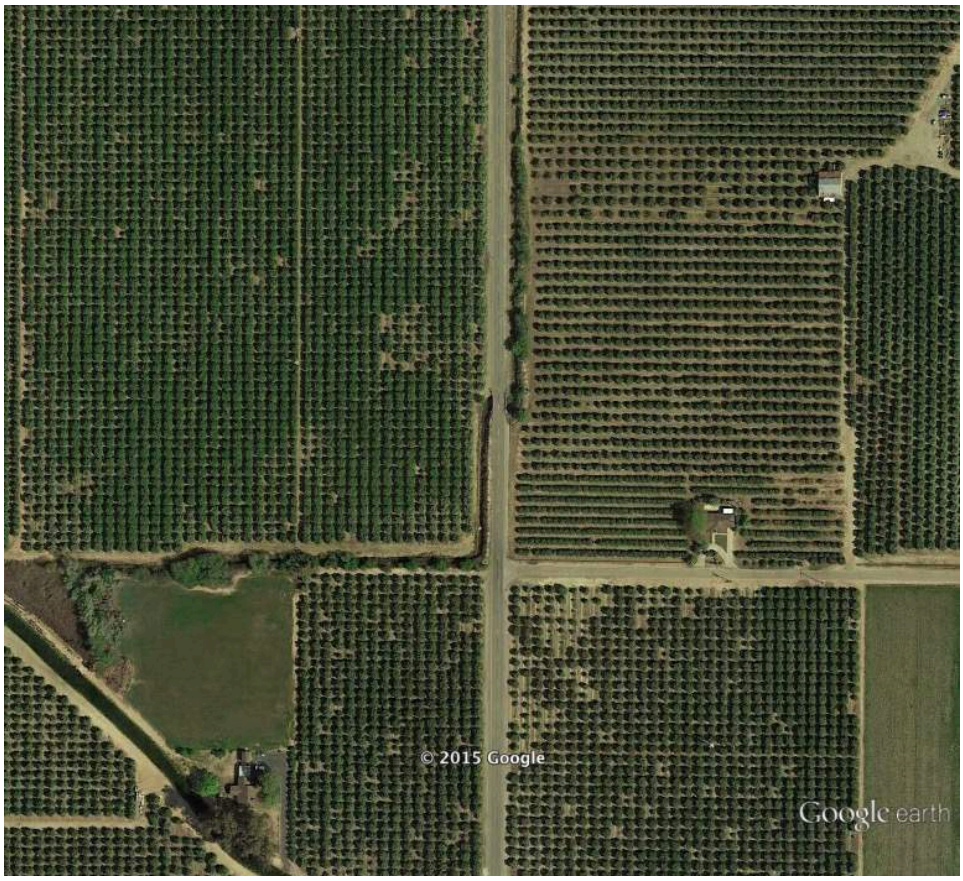


2013 (12)

APPENDIX B
REGULATORY DATA AND OTHER REPORTS

EXHIBIT 6-A PRELIMINARY ENVIRONMENTAL STUDY (PES)

Federal Project No.: BPMP-5942(240) *(Federal Program Prefix-Project No., Agreement No.)* **Final Design:** 2015 *(Expected Start Date)*

To: James Perrault *(District Local Assistance Engineer)*
Caltrans District 6 *(District)*
855 M Street, Suite 200
Fresno, CA 93721 *(Address)*
James.Perrault@dot.ca.gov *(Email Address)*

From: County of Fresno *(Local Agency)*
Erin Haagenson, Senior Staff Analyst
(559) 600-4528 *(Project Manager's Name and Telephone No.)*
2220 Tulare Street, 6th Floor
Fresno, CA 93721 *(Address)*
ehaagenson@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: See Attachment A *(Currently Adopted Plan Date)* See 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	
13/14 *(Fiscal Year)*	$ 395,000 *(Dollars)*	N/A *(Fiscal Year)*	$ N/A *(Dollars)*	14/15 *(Fiscal Year)*	$ 3,262,000 *(Dollars)*

Project Description as Shown in RTP and FSTIP: PM00009, Bridge Preventative Maintenance Program, various locations. See Caltrans Local Assistance HBP website for backup list bridges.

Detailed Project Description: *(Describe the following, as applicable: purpose and need, project location and limits, required right of way acquisition, proposed facilities, staging areas, disposal and borrow sites, construction activities, and construction access.)*
See attached Notes

(Continue description on "Notes" sheet, last page of this Exhibit, if necessary)

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 3' max	☐	☒	Temporary access road/detour
☐	☒	Capacity increasing—other (e.g., channelization)	☐	☒	Drainage/culverts	☐	☒	Utility relocation
☐	☒	Realignment	☐	☒	Flooding protection	☐	☒	Right of way acquisition (if yes, attach map with APN)
☐	☒	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:

DEC 10 2014
DIST. 06 ... NCE

☒ 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		
☐ 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)	12/19/14 *(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)	DEC 10, 2014 *(Date)*	600-4584 *(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 ☐ _____ ☐ _____

☐ 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. Chatham — *(Signature of Professionally Qualified Staff)*
1/13/2015 — *(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)*
1/13/2015 — *(Date)*
5594456447 — *(Telephone No.)*
G. William Norris III — *(Name)*

_____ — *(Signature of District Local Assistance Engineer or Designee)*
1/13/15 — *(Date)*
559 445-5417 — *(Telephone No.)*
Jim Perrault — *(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)

Brief Explanation of How Project Complies, or Will Comply with Applicable Federal Mandate (Part A):

The County of Fresno proposes to conduct maintenance activities on twelve (12) bridges as part of the Bridge Preventive Maintenance Program (See Attachment B for location map and list). The proposed project would extend the service life of the existing structure at each location by installing new or repairing existing scour countermeasures and conducting other maintenance activities at each location (See Attachments C and D for work items, aerial photos and APE maps of each location). Vegetation and trash will be removed from the channel at each location. Portions of the channel could be excavated to a maximum depth of 3' to install new or repair existing scour countermeasures. A dead tree overhanging Location No. 3 will be removed. It is the intention of the County to use existing paths to access the channel and not remove any other trees. Temporary construction permits will be required.

1. The proposed project would not require future construction to fully utilize the design capabilities.

2. Public controversy is not anticipated due to the limited scope of the project. Traffic will be allowed to move through the locations during construction with minimal delay.

3. The proposed project is not a Type 1 project as defined in 23 CFR 772.5(h).

4. The Fresno County Noise Control Ordinance is intended to protect persons from excessive levels of noise within or near a residence, school, church, hospital or public library. The noise ordinance, as it applies to the project, includes noise measurement criteria, exterior noise standards, interior noise standards, noise source exemptions and a violation-enforcement provision.

   Per the Fresno County, Code of Ordinances, Title 8, Chapter 8.40 Noise Control, noise sources associated with construction are exempt from the requirements of the ordinance, provided such activities do not take place before six a.m. or after nine p.m. on any day except Saturday or Sunday, or before seven a.m. or after five p.m. on Saturday or Sunday.

   A residence is located adjacent to Location Nos. 7 and 10 (See Attachment D for aerial photos of the locations). Although construction activities are exempt according to the County's Noise Ordinance, a noise technical memorandum will be prepared to determine the level of noise impacts on these residences due to their proximity to the project. The proposed maintenance work is not expected to have adverse noise impacts due to the scope and duration of work at these locations.

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. The County's consultant will prepare a Phase 1 Initial Site Assessment for the project. If required, the County will include worker safety specifications in the construction contract for asbestos and lead.

10. Yes. Work will be conducted in the channel of all locations. The project could require a 1602 Streambed Alteration Agreement from DFW, Section 404 Nationwide Permit from the ACOE, a Section 401 Water Quality Certification and an NPDES Permit from the RWQCB.

11. Some of the proposed project locations are within the Fresno Sole Source Aquifer. However, the project does not involve a well or sewage disposal and would not result in a threat of aquifer contamination or a hazard to public health. The project will be processed as a CE and is therefore exempt from a project-by-project review by the EPA.

12. The proposed project is not within the State Coastal Zone.

13. Some of the locations are located within Flood Zone A according to FEMA FIRM Maps (See Attachment E).

14. The project is not within ¼ mile of a Wild and Scenic River System according the National Wild and Scenic Rivers website.

15. To be determined. The County's consultant will prepare a NESMI for the project.

16. Yes. Vegetation and trash will be cleared from the channel. A dead tree overhanging Location No. 3 will be removed. It is the intent of the County to not remove other trees. Swallow and Migratory Bird Contract Provisions would be included in the construction specifications.

17. Impacts to wetlands are not anticipated; however, an NESMI will be prepared for the project.

18. Impacts to agricultural wetlands are not anticipated.

19. Any required hydroseeding would be conducted per Caltrans requirements.

20. The surrounding land is privately owned (See Attachment F).

21. No.

22. Impacts to visual resources are not anticipated (See Attachment G).

23. The proposed project would not require relocation of a residence or business.

24. Further investigation is required; however temporary construction permits are anticipated.

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. It is anticipated that the roads will remain open during construction.

30. Access control to the State Highway System would not change.

31. Traffic will be routed through the project locations during construction activities.

32. The project would not affect available parking.

33. The project would not encroach on state or federal lands.

34. Conversion of farmland is not anticipated.

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

LSTMP032 — ADOPTION: 14-00

Project Title:FRE040501 - Bridge Preventative Maintenance Program
Project Description: PM00009, Bridge Preventative maintenance Program, various locations. See Caltrans Local Assistance HBP web site for backup list of bridges.

CALTRANS_FED_ID:5942 (200)

Sys: Local Rt: TCM: No Model #: CI:N Exempt Category: Safety - Non capacity widening or bridge reconstruction.

Cost Difference: $14,812,500 Est Total Cost: $14,812,500 Open to Traffic: JAN/01/2015

	Phase	PRIOR	14/15	15/16	16/17	17/18	18/19 BEYOND		TOTAL
Highway Bridge Program - State - Bridge - State (HBRR)	PE	$874,234	$263,819	$458,585	$97,383	$228,407	$324,905		$2,247,333
	RW								
	CON		$4,383,120	$2,890,505	$479,833	$1,527,143	$1,585,572		$10,866,173
	TOTAL	$874,234	$4,646,939	$3,349,090	$577,216	$1,755,550	$1,910,477		$13,113,506
Loc Funds - Agency	PE	$113,266	$34,181	$59,415	$12,617	$29,593	$42,095		$291,167
	RW								
	CON		$567,880	$374,495	$62,167	$197,857	$205,428		$1,407,827
	TOTAL	$113,266	$602,061	$433,910	$74,784	$227,450	$247,523		$1,698,994
	TOTAL PE	$987,500	$298,000	$518,000	$110,000	$258,000	$367,000	$0	$2,538,500
	TOTAL RW	$0	$0	$0	$0	$0	$0	$0	$0
	TOTAL CON	$0	$4,951,000	$3,265,000	$542,000	$1,725,000	$1,791,000	$0	$12,274,000
	TOTAL TOTAL	$987,500	$5,249,000	$3,783,000	$652,000	$1,983,000	$2,158,000		$14,812,500

ral Fiscal Year 2014/2015

RIED	FEATURE INTERSECTED	LOCATION	SR	SD/ FO	WORK CODE	WORK DESCRIPTION	INSPECTION DATE	DECK AREA (SF)	PE COST	CONST COST	CONTINGENCIES	CE	TOTAL CONSTRUCTION	TOTAL COST	UNIT COST ($/SF DECK)
					16	ANNUAL DEVELOPMENT & MAINTENANCE OF BPMP BRIDGE LIST			$25,000					$25,000	
OAD	LOS GATOS CREEK	11.40 MI. W/O DERRICK	90.1		2	METHACRYLATE	1/31/2014	1476	$277	$5,530	$1,384	$1,097.51	$7,957	$8,233	5.58
OAD	LOS GATOS CREEK	11.40 MI. W/O DERRICK	90.1		4	DECK AC REPLACEMENT	1/31/2014	1476	$1,094	$21,865	$5,471	$4,103.44	$31,440	$32,554	22.06
OAD	LOS GATOS CREEK	11.40 MI. W/O DERRICK	90.1		13	INSTALL SCOUR COUNTERMEASURES TO EXISTING	1/31/2014	1476	$2,775	$55,500	$13,875	$10,406.25	$79,781	$82,556	55.93
OAD	LOS GATOS CREEK	11.40 MI. W/O DERRICK	90.1		17	OTHER (CLEAR VEGETATION)	1/31/2014	1476	$50	$1,000	$250	$187.50	$1,438	$1,488	1.01
OAD	LOS GATOS CREEK	11.23 MI. W/O DERRICK	85.3		2	METHACRYLATE	1/30/2014	1542	$269	$5,763	$1,441	$1,081.31	$8,313	$8,582	5.56
OAD	LOS GATOS CREEK	11.23 MI. W/O DERRICK	85.3		3	POLYESTER CONCRETE DECK OVERLAY OR SIMILAR	1/30/2014	1542	$771	$15,420	$3,855	$2,891.25	$22,166	$22,923	14.81
OAD	LOS GATOS CREEK	11.23 MI. W/O DERRICK	85.3		4	GRIND AC APPROACHES	1/30/2014	1542	$356	$7,128	$1,781	$1,335.94	$10,242	$13,017	8.44
OAD	LOS GATOS CREEK	11.23 MI. W/O DERRICK	85.3		13	INSTALL SCOUR COUNTERMEASURES TO EXISTING	1/30/2014	1542	$2,775	$55,500	$13,875	$10,406	$79,781	$82,556	53.54
OAD	LOS GATOS CREEK	11.23 MI. W/O DERRICK	85.3		17	REMOVE OVERHANGING DEAD TREE	1/30/2014	1542	$125	$2,500	$625	$469	$3,594	$3,719	2.41
OAD	LOS GATOS CREEK	5.60 MI. W/O DERRICK	85.3		2	METHACRYLATE	2/4/2014	1516	$264	$5,685	$1,421	$1,066	$8,172	$8,456	5.58
OAD	LOS GATOS CREEK	5.60 MI. W/O DERRICK	85.3		3	POLYESTER CONCRETE DECK OVERLAY OR SIMILAR	1/30/2014	1516	$1,895	$37,900	$9,475	$7,106	$54,481	$56,376	37.19
OAD	LOS GATOS CREEK	5.60 MI. W/O DERRICK	85.3		4	DECK AC REPLACEMENT	12/2/2009	1516	$1,098	$21,965	$5,491	$4,118	$31,575	$32,673	21.55
OAD	LOS GATOS CREEK	5.60 MI. W/O DERRICK	85.3		13	INSTALL SCOUR COUNTERMEASURES TO EXISTING	12/2/2009	1516	$2,903	$58,250	$14,813	$11,109	$85,172	$88,134	58.14
OAD	LOS GATOS CREEK	5.60 MI. W/O DERRICK	85.3		17	OTHER (CLEAR VEGETATION)	12/2/2009	1516	$50	$1,000	$250	$188	$1,438	$1,488	0.98
ENUE	ARROYO PASAJERO	2.00 MI. N/O JAYNE	99.7		2	METHACRYLATE	11/20/2011	5134	$702	$14,037	$3,509	$2,632	$20,178	$20,880	4.07
ENUE	ARROYO PASAJERO	2.00 MI. N/O JAYNE	99.7		3	POLYESTER CONCRETE DECK OVERLAY OR SIMILAR	11/20/2011	5134	$4,679	$93,580	$23,395	$17,546	$134,521	$139,200	27.11
ENUE	ARROYO PASAJERO	2.00 MI. N/O JAYNE	99.7		4	DECK AC REPLACEMENT	11/20/2011	5134	$2,210	$44,197	$11,049	$8,287	$63,533	$65,743	12.81
ENUE	ARROYO PASAJERO	2.00 MI. N/O JAYNE	99.7		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	11/20/2011	5134	$225	$4,500	$1,125	$844	$6,469	$6,694	1.30
ENUE	ARROYO PASAJERO	2.00 MI. N/O JAYNE	99.7		13	INSTALL SCOUR COUNTERMEASURES TO EXISTING	11/20/2011	5134	$16,810	$336,200	$84,050	$63,038	$483,288	$500,098	97.41
ENUE	FRESNO SLOUGH	0.10 MI. W/O GRANTLAND	96.9		2	METHACRYLATE	1/29/2012	3478	$522	$10,434	$2,609	$1,956	$14,999	$15,521	4.46
ENUE	FRESNO SLOUGH	0.10 MI. W/O GRANTLAND	96.9		4	DECK AC REPLACEMENT	1/29/2012	3478	$1,391	$27,824	$6,956	$5,217	$39,997	$41,388	11.90
ENUE	FRESNO SLOUGH	0.10 MI. W/O GRANTLAND	96.9		13	INSTALL SCOUR COUNTERMEASURES TO EXISTING	1/29/2012	3478	$6,240	$124,800	$31,200	$23,400	$179,400	$185,640	53.38
ENUE	FRESNO SLOUGH	0.10 MI. W/O GRANTLAND	96.9		14	APPROACH SLAB	1/29/2012	3478	$6,240	$124,800	$31,200	$23,400	$179,400	$185,640	53.38
ENUE	FRESNO SLOUGH	0.10 MI. W/O GRANTLAND	96.9		17	OTHER (REPAVE APPROACHES, REDIRECT ROADWAY DRAINAGE)	1/29/2012	3478	$3,550	$71,000	$17,750	$13,313	$102,063	$105,613	30.37
ENUE	FRESNO SLOUGH OVERFLOW	0.20 MI. W/O GRANTLAND	95.9		2	METHACRYLATE	1/29/2012	2477	$372	$7,431	$1,858	$1,393	$10,682	$11,054	4.46
ENUE	FRESNO SLOUGH OVERFLOW	0.20 MI. W/O GRANTLAND	95.9		4	DECK AC REPLACEMENT	1/29/2012	2477	$1,276	$25,516	$6,379	$4,784	$36,679	$37,955	15.32
ENUE	FRESNO SLOUGH OVERFLOW	0.20 MI. W/O GRANTLAND	95.9		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	1/29/2012	2477	$75	$1,500	$375	$281	$2,156	$2,231	0.90
ENUE	FRESNO SLOUGH OVERFLOW	0.20 MI. W/O GRANTLAND	95.9		13	INSTALL SCOUR COUNTERMEASURES TO EXISTING	1/29/2012	2477	$4,780	$95,600	$23,900	$17,925	$137,425	$142,205	57.41
ENUE	FRESNO SLOUGH OVERFLOW	0.20 MI. W/O GRANTLAND	95.9		17	OTHER (REDIRECT ROADWAY DRAINAGE, CLEAR VEGETATION)	1/29/2012	2477	$450	$9,000	$2,250	$1,688	$12,938	$13,388	5.40
JE	FRESNO CANAL	0.3 MI N/O BELMONT	72		2	METHACRYLATE	2/8/2011	1418	$268	$5,318	$1,330	$997	$7,645	$7,911	5.58
JE	FRESNO CANAL	0.3 MI N/O BELMONT	72		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	2/8/2011	1418	$1,794	$35,880	$8,970	$6,728	$51,578	$53,372	37.64
JE	FRESNO CANAL	0.3 MI N/O BELMONT	72		13	RESTORE FAILING SCOUR PROTECTION	2/8/2011	1418	$2,890	$57,800	$14,450	$10,838	$83,088	$85,978	60.63
ENUE	FOWLER SWITCH CANAL	AT HIGHLAND AVE	72		2	METHACRYLATE	2/7/2012	1674.4	$257	$5,145	$1,286	$965	$7,396	$7,653	4.57
ENUE	FOWLER SWITCH CANAL	AT HIGHLAND AVE	72		3	POLYESTER CONCRETE DECK OVERLAY	2/7/2012	1674.4	$1,715	$34,300	$8,575	$6,431	$49,306	$51,021	30.47
ENUE	FOWLER SWITCH CANAL	AT HIGHLAND AVE	72		4	DECK AC REPLACEMENT	2/7/2012	1674.4	$1,931	$38,625	$9,656	$7,242	$55,523	$57,455	34.31
ENUE	FOWLER SWITCH CANAL	AT HIGHLAND AVE	72		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	2/7/2012	1674.4	$1,865	$33,300	$8,325	$6,244	$47,869	$49,534	29.58
ENUE	FOWLER SWITCH CANAL	AT HIGHLAND AVE	72		13	IMPROVE SCOUR PROTECTION	2/7/2012	1674.4	$3,875	$79,500	$19,875	$14,906	$114,281	$118,256	70.63
JE	TRAVERS CREEK	0.30 MI. N/O SOUTH	88.8		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	7/23/2011	895	$680	$13,200	$3,300	$2,475	$18,975	$19,635	21.94
JE	TRAVERS CREEK	0.30 MI. N/O SOUTH	88.8		13	INSTALL SCOUR COUNTERMEASURES TO EXISTING	7/23/2011	895	$2,450	$49,000	$12,250	$9,188	$70,438	$72,888	81.44
JE	TRAVERS CREEK	0.30 MI. N/O SOUTH	88.8		17	OTHER (CLEAR VEGETATION)	7/23/2011	895	$250	$5,000	$1,250	$938	$7,188	$7,438	8.31
ENUE	FOWLER SWITCH CANAL	0.33 MI. N/O ADAMS	65.8		2	METHACRYLATE	2/7/2012	1560	$351	$7,020	$1,755	$1,316	$10,091	$10,442	6.69
ENUE	FOWLER SWITCH CANAL	0.33 MI. N/O ADAMS	65.8		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	2/7/2012	1560	$903	$18,060	$4,515	$3,386	$25,961	$26,864	17.22
ENUE	FOWLER SWITCH CANAL	0.33 MI. N/O ADAMS	65.8		13	PLACE ADDITIONAL SLOPE PROTECTION/SCOUR COUNTERMEASURES	2/7/2012	1560	$2,680	$53,600	$13,400	$10,050	$77,050	$79,730	51.11
ENUE	FOWLER SWITCH CANAL	0.33 MI. N/O ADAMS	65.8		17	OTHER (CLEAR VEGETATION, CRACK SEAL APPROACHES)	2/7/2012	1560	$600	$12,000	$3,000	$2,250	$17,250	$17,850	11.44
VE	FOWLER SWITCH CANAL	0.3 MI E/O TEMPERANCE	58		2	METHACRYLATE	1/25/2012	1723	$323	$6,461	$1,615	$1,211	$9,288	$9,611	5.58
VE	FOWLER SWITCH CANAL	0.3 MI E/O TEMPERANCE	58		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	1/25/2012	1723	$1,095	$21,900	$5,475	$4,106	$31,481	$32,576	18.91
VE	FOWLER SWITCH CANAL	0.3 MI E/O TEMPERANCE	58		13	IMPROVE SCOUR PROTECTION	1/25/2012	1723	$3,500	$70,000	$17,500	$13,125	$100,625	$104,125	60.43
NUE	MUD CREEK	0.7 MI S/O SHIELDS	62		2	METHACRYLATE	2/9/2011	576	$181	$3,210	$803	$602	$4,614	$4,775	8.29
NUE	MUD CREEK	0.7 MI S/O SHIELDS	62		3	POLYESTER CONCRETE DECK OVERLAY	2/9/2011	576	$1,070	$21,400	$5,350	$4,013	$30,763	$31,833	55.26
NUE	MUD CREEK	0.7 MI S/O SHIELDS	62		4	DECK AC REPLACEMENT	2/9/2011	576	$214	$4,280	$1,070	$803	$6,153	$6,367	11.05
NUE	MUD CREEK	0.7 MI S/O SHIELDS	62		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	2/9/2011	576	$960	$19,200	$4,800	$3,600	$27,600	$28,560	49.58
NUE	MUD CREEK	0.7 MI S/O SHIELDS	62		13	PROVIDE SCOUR PROTECTION	2/9/2011	576	$1,750	$35,000	$8,750	$6,563	$50,313	$52,063	90.39
NUE	MUD CREEK	0.7 MI S/O SHIELDS	62		17	DREDGE OUT SPAN 1 AND CLEAR THE DOWNSTREAM CHANNEL TO PROVIDE ADEQUATE WATERWAY	2/9/2011	576	$1,000	$20,000	$5,000	$3,750	$28,750	$29,750	51.65
NUE	MUD CREEK	0.7 MI S/O SHIELDS	62		17	OTHER (REPAVE APPROACHES)	2/9/2011	576	$4,800	$96,000	$24,000	$18,000	$138,000	$142,800	247.92
JE	COLONY MAIN CANAL	0.30 MI. N/O SHAIN	84.4		3	DECK RESURFACE	7/9/2014	933	$ 6,737				$ -	$6,737	9.36
NUE	MAIN OUTSIDE CANAL	3.00 MI. N/O NEES	95.7		14	APPROACH SLAB	12/19/2011	2403	$ 10,500				$ -	$10,500	4.37
NUE	MAIN OUTSIDE CANAL	3.00 MI. N/O NEES	95.7		2	METHACRYLATE	12/19/2011	2403	$ 918				$ -	$918	0.38
NUE	DELTA MENDOTA CANAL	1.30 MI. N/O NEES	79.9		1	JOINT SEAL	7/9/2014	3962	$ 1,913				$ -	$1,913	0.48
NUE	DELTA MENDOTA CANAL	1.30 MI. N/O NEES	79.9		3	DECK RESURFACE	7/9/2014	3962	$ 36,569				$ -	$36,569	9.23
NUE	THIRD LIFT CANAL	0.29 MI. N/O HERNDON	78.0		3	DECK RESURFACE	7/9/2014	548	$ 3,196				$ -	$3,196	5.85
UE	DELTA MENDOTA CANAL	0.25 MI. N/O BULLARD	91.1		1	JOINT SEAL	7/9/2014	4508	$ 3,258				$ -	$3,258	0.72
JE	OUTSIDE CANAL	0.48 MI. N/E SSR 33	88.1	SD	2	METHACRYLATE	7/9/2014	2995	$ 2,394				$ -	$2,394	0.80
JE	MAIN CANAL	0.75 MI. N/E SSR 33	87.0	SD	2	METHACRYLATE	12/20/2011	2884	$ 1,103				$ -	$1,103	0.38
AD	LOS GATOS CREEK	6.86 MI. W/O DERRICK	73.2		6	CRACK SEALING	11/19/2011	1234	$ 1,543				$ -	$1,543	1.25
NUE	HERNDON CANAL	0.01 MI. N/O BARSTOW	65.5		3	DECK RESURFACE	2/5/2013	576	$ 6,196				$ -	$6,196	10.76
NUE	FRESNO SLOUGH OVERFLOW	0.20 MI. E/O ELKHORN GRADE	95.3		2	METHACRYLATE	7/7/2014	2376	$ 2,113				$ -	$2,113	0.89
	MURPHY SLOUGH	1.00 MI. N/O HARLAN	74.8		6	CRACK SEALING	1/29/2012	2733	$ 3,416				$ -	$3,416	1.25
UE	MURPHY SLOUGH	0.26 MI. W/O BRAWLEY	96.9		3	DECK RESURFACE	7/7/2014	1118	$ 4,363				$ -	$4,363	3.90

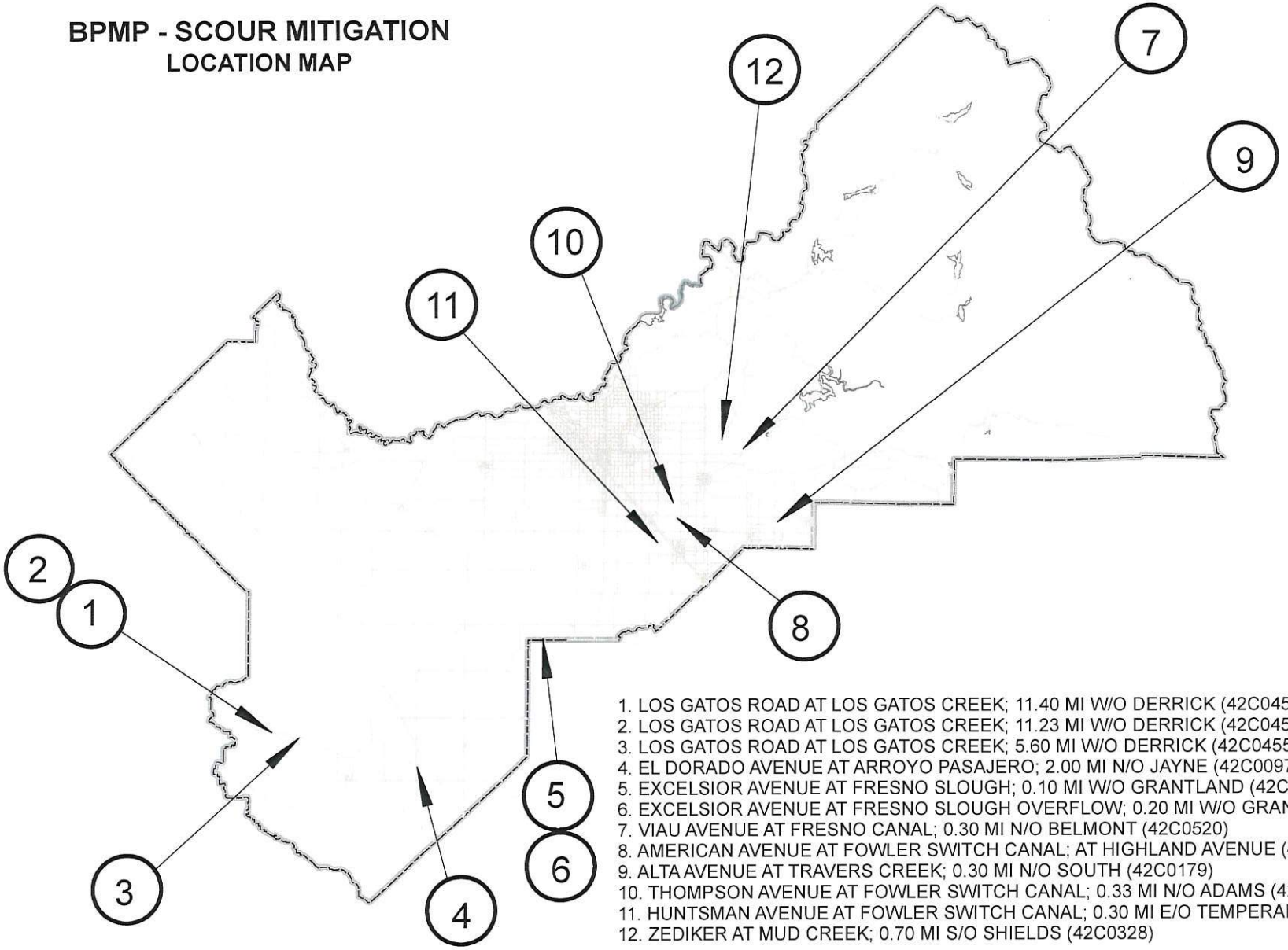
NUE	LIBERTY DITCH	0.50 MI. E/O FOWLER	83.5		3	DECK RESURFACE	7/7/2014	615	$ 3,296				$ -	$3,296	5.36
ENUE	RIVERDALE DITCH	0.02 MI. E/O WALNUT	57.0		3	DECK RESURFACE	7/7/2014	1044	$ 9,199				$ -	$9,199	8.81
ENUE	COLE SLOUGH	0.02 MI. NW/O RIVERDALE	98.4		2	METHACRYLATE	7/7/2014	4172	$ 2,851				$ -	$2,851	0.68
AD	LITTLE DRY CREEK	5.38 MI. N/O COPPER	85.2		2	METHACRYLATE	2/6/2013	3547	$ 7,235				$ -	$7,235	2.04
UE	CENTERVILLE-KINGSBURG CAN	0.07 MI. N/O SSR 180	87.1		6	MEMBER REPLACEMENT	2/6/2012	1131	$ 2,500				$ -	$2,500	2.21
S ROAD	KINGS RIVER (@EAST END OF PINE FLAT LAKE	14.00 MI. E/O MAXSON	78.0		2	METHACRYLATE	7/2/2014	6384	$ 4,144				$ -	$4,144	0.65
S ROAD	KINGS RIVER (@EAST END OF PINE FLAT LAKE	14.00 MI. E/O MAXSON	78.0		1	JOINT SEAL	7/2/2014	6384	$ 6,389				$ -	$6,389	1.00
S ROAD	KINGS RIVER (@EAST END OF PINE FLAT LAKE	14.00 MI. E/O MAXSON	78.0		14	APPROACH SLAB	7/2/2014	6384	$ 8,167				$ -	$8,167	1.28
S ROAD	FRIANT-KERN CANAL	1.50 MI. E/O BELMONT	75.2		3	DECK PATCHING	7/2/2014	2928	$ 3,604				$ -	$3,604	1.23
NUE	FOWLER SWITCH CANAL	AT CENTRAL	95.9		6	CRACK SEALING	2/7/2012	2201	$ 2,751				$ -	$2,751	1.25
ENUE	FOWLER SWITCH CANAL	W/O DEL REY	88.3		3	DECK PATCHING	7/3/2014	1409	$ 3,225				$ -	$3,225	2.29
ENUE	GOLDEN STATE BLVD	AT GOLDEN STATE BLVD	99.0		1	JOINT SEAL	7/7/2014	29204	$ 9,768				$ -	$9,768	0.33
ENUE	GOLDEN STATE BLVD	AT GOLDEN STATE BLVD	99.0		2	METHACRYLATE	7/7/2014	29204	$ 15,596				$ -	$15,596	0.53
NUE	ALTA MAIN CANAL	N/E PEDERSON	96.8		1	JOINT SEAL	7/7/2014	2946	$ 2,227				$ -	$2,227	0.76
NUE	ALTA MAIN CANAL	N/E PEDERSON	96.8		2	METHACRYLATE	7/7/2014	2946	$ 2,715				$ -	$2,715	0.92
NUE	ALTA MAIN CANAL	N/E PEDERSON	96.8		14	APPROACH SLAB	7/7/2014	2946	$ 13,667				$ -	$13,667	4.64
JE	FRIANT-KERN CANAL	.85 MI N/O AMERICAN AVE	75.2		6	SPALL REPAIR	7/3/2014	4874	$ 625				$ -	$625	0.13
JE	FRIANT-KERN CANAL	.85 MI N/O AMERICAN AVE	75.2		1	JOINT SEAL	7/3/2014	4874	$ 2,156				$ -	$2,156	0.44
ENUE	FRIANT-KERN CANAL	1.5 MI WEST OF SR 63	78.9		1	JOINT SEAL	7/3/2014	3559	$ 4,285				$ -	$4,285	1.20
NUE	FRIANT-KERN CANAL	1.5 MI WEST OF SR 63	78.9		14	APPROACH SLAB	7/3/2014	3559	$ 13,000				$ -	$13,000	3.65
ENUE	NO NAME DITCH	0.6 MI WEST OF SR 63	71.4		6	CRACK SEALING	2/7/2013	498	$ 623				$ -	$623	1.25
E ROAD	BIG CREEK	6.45 MI. N/O SSR 168	98.4		6	CRACK SEALING	6/13/2012	6713	$ 8,391				$ -	$8,391	1.25
ROAD	WATTS CREEK TRIBUTARY	0.01 MI. W/O MAXON	94.7	SD	2	METHACRYLATE	7/2/2014	856	$ 1,614				$ -	$1,614	1.89
						TOTAL			**$340,850**	**$2,031,666**	**$507,917**	**$380,937**	**$2,920,520**	**$3,263,374**	
	: FOR HBP REIMBURSEMENT UNDER PREVENTATIVE MAINTENANCE:						**Round up**		$150	$334	$84	$63	$480	-$1,374	
									$341,000	**$2,032,000**	**$508,000**	**$381,000**	**$2,921,000**	$3,262,000	

REPLACEMENT

MILAR PROTECTIVE DECK OVERLAYS
ION
OR BEARING SUPPORTS
NS, PIERS, AND END CAPS TO REDUCE THE NEED FOR BRIDGE WEIGHT LIMIT POSTING, MITIGATE FURTHER FATIGUE DAMAGE.
STRUCTURAL ELEMENTS SUCH AS TIMBER DECKING AND STRINGERS.
IECHANICAL/ELECTRICAL COMPONENTS
DETAILS OF STEEL GIRDERS
ELEMENTS WHERE THE PAINT CONDITION INDEX (PCI) IS GREATER THAN 65
DECK DRAINAGE ELEMENTS
IE RAILINGS DUE TO ENVIRONMENTAL CONDITIONS
EPAIR OF EXISTING SCOUR COUNTERMEASURES TO PROTECT THE STRUCTURAL INTEGRITY OF THE BRIDGE.
CEMENT AND NEW INSTALLATION BASED EXTENSIVE MAINTENANCE HISTORY
ACTIVE AGGREGATE MITIGATION, CORROSION MANAGEMENT SYSTEMS, FRACTURE CRITICAL ELEMENT REPLACEMENT/REHABILITATION
E MAINTENANCE PLANS (BPMP)
ORKS THAT MEET PREVENTATIVE MAINTENANCE OBJECTIVES; NEED TO CONTACT DLAE FOR ASSISTANCE.

Attachment B

BPMP - SCOUR MITIGATION
LOCATION MAP



1. LOS GATOS ROAD AT LOS GATOS CREEK; 11.40 MI W/O DERRICK (42C0459)
2. LOS GATOS ROAD AT LOS GATOS CREEK; 11.23 MI W/O DERRICK (42C0458)
3. LOS GATOS ROAD AT LOS GATOS CREEK; 5.60 MI W/O DERRICK (42C0455)
4. EL DORADO AVENUE AT ARROYO PASAJERO; 2.00 MI N/O JAYNE (42C0097)
5. EXCELSIOR AVENUE AT FRESNO SLOUGH; 0.10 MI W/O GRANTLAND (42C0104)
6. EXCELSIOR AVENUE AT FRESNO SLOUGH OVERFLOW; 0.20 MI W/O GRANTLAND (42C0367)
7. VIAU AVENUE AT FRESNO CANAL; 0.30 MI N/O BELMONT (42C0520)
8. AMERICAN AVENUE AT FOWLER SWITCH CANAL; AT HIGHLAND AVENUE (42C0178)
9. ALTA AVENUE AT TRAVERS CREEK; 0.30 MI N/O SOUTH (42C0179)
10. THOMPSON AVENUE AT FOWLER SWITCH CANAL; 0.33 MI N/O ADAMS (42C0531)
11. HUNTSMAN AVENUE AT FOWLER SWITCH CANAL; 0.30 MI E/O TEMPERANCE (42C0532)
12. ZEDIKER AT MUD CREEK; 0.70 MI S/O SHIELDS (42C0328)

THE COUNTY OF FRESNO 1856

DEPARTMENT OF PUBLIC WORKS AND PLANNING

Attachment B

Fresno County

Bridge Preventive Maintenance Program Scour Mitigation Project (12 Locations)

1. Bridge No. 42C0459 - Los Gatos Creek at Los Gatos Road; 11.40 mi w/o Derrick
2. Bridge No. 42C0458 - Los Gatos Creek at Los Gatos Road; 11.23 mi w/o Derrick
3. Bridge No. 42C0455 - Los Gatos Creek at Los Gatos Road; 5.60 mi w/o Derrick
4. Bridge No. 42C0097 - Arroyo Pasajero at El Dorado Avenue; 2.00 mi n/o Jayne
5. Bridge No. 42C0104 - Fresno Slough at Excelsior Avenue; .10 mi w/o Grantland
6. Bridge No. 42C0367 - Fresno Slough Overflow at Excelsior Avenue; .20 mi w/o Grantland
7. Bridge No. 42C0520 - Fresno Canal at Viau Avenue; .30 mi n/o Belmont
8. Bridge No. 42C0178 - Fowler Switch Canal at American Avenue; at Highland Avenue
9. Bridge No. 42C0179 - Travers Creek at Alta Avenue; .30 mi n/o South
10. Bridge No. 42C0531 - Fowler Switch Canal at Thompson Avenue; .33 mi n/o Adams
11. Bridge No. 42C0532 - Fowler Switch Canal at Huntsman Avenue; .30 mi e/o Temperance
12. Bridge No. 42C0328 - Mud Creek at Zediker Avenue; .7 mi s/o Shields

WORK CODES:

1) Joint Seal Replacement
2) Methacrylate Deck Treatment
3) Polyester Concrete Overlay
4) Deck AC Replacement/New Installation
5) Restore/Replace Existing Bearings
6) Repair/Restore/Strengthen Beams, Piers, and End Caps to Reduce Need for Load Posting or to Mitigate Further Fatigue Damage
7) Repair/Supplement/Replace Timber Structural Elements such as Timber Decking and Stringers
8) Repair/Replace Movable Bridge Components
9) Retrofit Repairs to Fatigue Prone Details of Steel Girders
10) Spot Painting of Structural Steel Elements
11) Rehab/New Installation of Deck Drainage Elements
12) Replace Deteriorated Bridge Railings due to Environmental Conditions
13) Embankment Erosion Control and Repair of Existing Scour Countermeasures to Protect the Structural Integrity of the Bridge
14) Approach Slab Rehab/Replace/New Installation Based on Extensive Maintenance History
15) ASR Mitigation, Corrosion Management Systems, Fracture Critical Element Replacement/Rehab
16) Development of BPMP
17) Other Case by Case Type of Works that Meet PM Objectives; Need to Contact DLAE for Assistance

APPENDIX C
CALTRANS STANDARD and NON-STANDARD SPECIAL PROVISIONS (SSPs & NSSPs)

L./

Replace "Reserved" in section 14-11.08 with:

14-11.08A General

Section 14-11.08 includes specifications relating to the disturbance of existing paint systems.

The existing paint system on bridge number _____ contains _____. Any work that disturbs the existing paint system exposes workers to health hazards and produces:

1. Debris containing heavy metal in amounts that exceed the thresholds established in 8 CA Code of Regs and 22 CA Code of Regs. This debris is a Department-generated hazardous waste.
2. Toxic fumes when heated.

Grime and detritus already on the bridge before the start of work may also contain lead. Consider this grime and detritus part of the existing paint system. The Department is the hazardous waste generator if the Engineer accepts waste-characterization test results demonstrating that the debris is a hazardous waste.

Contain all debris produced when the existing paint system is disturbed. If containment measures are inadequate to contain and collect debris produced when the existing paint system is disturbed, stop the work and do not perform additional work until:

1. Revised debris containment and collection plan has been authorized
2. Released material has been collected and contained

Handle, store, transport, and dispose of debris produced when the existing paint system is disturbed under applicable federal, state, and local hazardous waste laws.

14-11.08B Submittals

14-11.08B(1) General

Not Used

14-11.08B(2) Debris Containment and Collection Plan

Submit a debris containment and collection plan. The plan must:

1. Identify materials, equipment, and methods to be used when the existing paint system is disturbed
2. Include shop drawings of:
   2.1. Containment systems complying with section 59-2.03B(3)
   2.2. Components that provide ventilation, air movement, and visibility for worker safety
3. Include the name and location of the analytical laboratory that will perform the analyses
4. Identify the hazardous waste transporter that will haul the debris and provide documentation of
   4.1 Current DTSC registration
   4.2 Compliance with the CA Highway Patrol Biennial Inspection of Terminals Program
5. Include the name and location of the disposal facility that will accept the hazardous waste

Allow 20 days for review.

If required, submit a revised debris containment and collection plan.

14-11.08B(3) Lead Compliance Plan

Submit a lead compliance plan under section 7-1.02K(6)(j)(ii).

14-11.08B(4) Air Monitoring Reports

Air monitoring reports, including test results for samples taken after corrective action, must be prepared by the CIH and submitted:

1. Verbally within 48 hours after sampling
2. As an informational submittal within 5 days after sampling

Air monitoring reports must include:

1. Date and location of sample collection, sample number, contract number, bridge number, full name of the structure, and District-County-Route-Post mile
2. Name and address of the certified laboratory that performed the analyses
3. Chain of custody documentation
4. List of emission control measures in place when air samples were taken
5. Air sample results compared to the appropriate permissible exposure limit (PEL)
6. Corrective action recommended by the CIH to ensure exposure to airborne metals outside containment systems and work areas is within specified limits
7. Signature of the CIH who reviewed the data and made recommendations

Not Used

14-11.08B(5) Soil Sampling Results for Debris Containment Verification

Submit test results of soil analysis verifying debris containment, including results for soil samples taken after corrective action:

1. Verbally within 48 hours after sampling
2. Within 5 days after sampling

Soil sampling results must include:

1. Date and location of sample collection, sample number, contract number, bridge number, full name of the structure and District-County-Route-Post mile
2. Concentrations of heavy metals expressed in mg/kg and mg/L
3. Name and address of the certified laboratory that performed the analyses
4. Chain of custody documentation

Not Used

14-11.08B(6) Waste-Characterization Test Results

Submit waste-characterization test results for the debris and chain of custody documentation before:

1. Requesting the Engineer’s signature on the disposal facility's waste profile document
2. Requesting a generator's EPA Identification Number
3. Removing the debris from the site

14-11.08B(7) Request for U.S. Environmental Protection Agency Identification Number

Submit a request for the generator's EPA Identification Number when the Engineer accepts waste-characterization test results documenting that the debris is a hazardous waste.

14-11.08B(8) Disposal Documentation

Submit documentation from the receiving landfill or recycling facility confirming proper disposal within 5 business days of transporting debris from the project.

14-11.08C Safety and Health Provisions

14-11.08C(1) General

Comply with 8 CA Code of Regs, including § 1532.1.

14-11.08C(2) Protective Work Clothing and Washing Facilities

Supply clean protective work clothing for 5 Department personnel:

1. Whenever there is possible exposure to heavy metals or silica dust
2. During application of paint undercoats

Replace protective work clothing as needed.

Protective work clothing and washing facilities must be inspected and authorized for use by Department personnel before starting any activity with the potential for lead exposure.

Protective work clothing remains your property upon completion of the Contract.

14-11.08D Work Area Monitoring

14-11.08D(1) General

Monitor the ambient air and soil in and around the work area to verify the effectiveness of the containment system. Work area monitoring includes:

1. Collecting, analyzing, and reporting air and soil test results
2. Recommending corrective action when specified air or soil concentrations are exceeded

Collect air and soil samples at locations designated by the Engineer.

Not Used

14-11.08D(2) Air Monitoring

Air monitoring must be performed under the direction of a CIH.

Collect and analyze air samples to detect lead under the National Institute of Occupational Safety and Health (NIOSH) Method 7082 using a detection limit of at least 0.05 $\mu g/m^3$. Collect and analyze air samples to detect other metals under NIOSH Method 7300 using a detection limit of at least 1 percent of the appropriate PEL specified by Cal/OSHA. You may use alternative methods of sampling and analysis with equivalent detection limits.

Concentrations of airborne metals outside containment systems and work areas must not exceed any of the following:

1. Average of 1.5 $\mu g/m^3$ of air per day and 0.15 $\mu g/m^3$ per day on a rolling 90-day basis. Calculate average daily concentrations based on monitoring to date and projections based on monitoring trends for the next 90 days or to the end of work subject to the lead compliance plan if less than the specified averaging period.
2. 10 percent of the action level specified for lead by 8 CA Code of Regs §1532.1.
3. 10 percent of the appropriate PELs specified for other metals by Cal/OSHA.

Collect air samples daily during work activities that disturb the existing paint system. Air samples must be analyzed within 48 hours by a facility accredited by the Environmental Lead Laboratory Accreditation Program of the American Industrial Hygiene Association. If concentrations of airborne metals exceed allowable levels, modify the containment system or work activities to prevent further release of metals. If the CIH recommends corrective action, collect and analyze additional samples after implementing the corrective action unless directed otherwise.

Not Used

14-11.08D(3) Soil Sampling for Debris Containment

Collect ___ soil samples before starting work and collect ____ soil samples within 36 hours after cleaning existing steel. A soil sample consists of 5 plugs, each 3/4 inch in diameter and 1/2 inch deep, taken at each corner and center of a 1 sq yd area. Analyze soil samples for:

1. Total _____ by US EPA Method 6010B or US EPA Method 7000 Series
2. Soluble _____ by California Waste Extraction Test (CA WET)

The laboratory that analyzes the samples must be certified by CDPH's Environmental Laboratory Accreditation Program (ELAP) for all analyses to be performed.

Concentrations of heavy metals in the work area soil must not increase when the existing paint system is disturbed. If soil sampling shows an increase in the concentrations of heavy metals after completing the work:

1. Clean the affected area
2. Resample until soil sampling and testing shows concentrations of heavy metals less than or equal to the concentrations collected before the start of work

In areas without exposed soil, the concentrations of heavy metals in the work area must not increase when the existing paint system is disturbed. Any visible increase in the concentrations of heavy metals must be removed.

14-11.08E Debris Management

14-11.08E(1) Debris Storage

Debris produced when the existing paint system is disturbed must not be temporarily stored on the ground. Before the end of each work shift, remove accumulated debris from the containment system. Store the debris as a hazardous waste.

14-11.08E(2) Debris Waste Characterization

Perform waste characterization testing on the debris as required by the disposal facility including:

1. Total _____ by US EPA Method 6010B
2. Soluble _____ by California Waste Extraction Test (CA WET)
3. Soluble _____ by Toxicity Characteristic Leaching Procedure (TCLP)

From the first 220 gal of hazardous waste or portion thereof, if less than 220 gal of hazardous waste are produced, a minimum of 4 randomly selected samples must be taken and analyzed individually. Samples must not be composited. From each additional 880 gal of hazardous waste or portion thereof, if less than 880 gal are produced, a minimum of 1 additional random sample must be taken and analyzed.

Use chain of custody procedures consistent with chapter 9 of US EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) while transporting samples from the job site to the analytical laboratory. The laboratory must be certified by the CDPH's Environmental Laboratory Accreditation Program (ELAP) for all analyses to be performed.

Before performing the analyses, the laboratory must homogenize each sample. The homogenization process must not include grinding of the samples. A sample aliquot must be:

1. Obtained in an amount large enough for all analyses to be performed
2. Homogenized a 2nd time
3. Used for the total and soluble analyses after the 2nd homogenization

14-11.08E(3) Debris Transport and Disposal

14-11.08E(3)(a) General

For bidding purposes, assume the debris is a hazardous waste.

14-11.08E(3)(b) Hazardous Waste Debris

After the Engineer accepts the waste-characterization test results, dispose of the debris:

1. Within __ days after accumulating 220 lb of debris
2. At an appropriately permitted Class I facility located in California

Make all arrangements with the operator of the disposal facility.

If less than 220 lb of hazardous waste is generated in total, dispose of it within __ days after the start of accumulation of the debris.

Use a hazardous waste manifest and a transporter using vehicles with current DTSC registration certificate when transporting hazardous waste. The Engineer provides the generator's EPA Identification Number and signs all manifests as the hazardous waste generator within 2 business days of accepting the waste-characterization test results and receiving your request for the generator's EPA Identification Number.

14-11.08E(3)(c) Nonhazardous Waste Debris

If waste characterization test results demonstrate that the debris is a nonhazardous waste and the Engineer accepts the results, dispose of the debris at an appropriately permitted CA Class II or CA Class III facility or recycle it. Make all arrangements with the operator of the disposal facility and comply with the facility's requirements.

You may dispose of nonhazardous debris at a facility equipped to recycle the debris if:

1. Copper slag abrasive blended by the supplier with a calcium silicate compound is used for blast cleaning.
2. You make all arrangements with the recycling facility's operator and perform any facility-required testing of the debris.

The Department does not adjust payment for disposal of nonhazardous debris at a recycling facility.

December 14, 2012

GUIDANCE FOR SSP 14-11.07 – REMOVE YELLOW TRAFFIC STRIPE AND PAVEMENT MARKING WITH HAZARDOUS WASTE RESIDUE

BACKGROUND

Current Caltrans paint specifications require yellow paints and all other colors of paint (e.g.,white, blue, black, etc) to have lead concentrations less than 20 mg/kg but do not require them to be completely lead free. Old non-yellow paints (e.g. white, blue, black, etc.) had higher concentrations of lead but not high enough for removed paint to be a hazardous waste. Residue from the removal of these paints is a non-hazardous waste. Yellow traffic paint used prior to 1999 in District 1 and prior to 1997 in all other districts contained high concentrations of lead. Application of yellow thermoplastic material containing high concentrations of lead was phased out during 2004 to 2006. The lead concentrations in the older yellow paint and yellow thermoplastic are high enough to make these materials hazardous wastes when they are removed. It will be several years before all of the high lead concentration yellow paint and yellow thermoplastic paint has been removed from California's highways. In addition, in many areas there are new low lead concentration paints on top of older yellow high lead concentration paints. If in doubt, assume that yellow paints have high concentrations of lead. Cal/OSHA requires a lead compliance plan when lead is known to be present.

USEAGE

The purpose of SSP 14-11.07 is to require the Contractor to properly manage removed stripe and pavement marking as a hazardous waste and to have and implement a lead compliance plan prepared by a Certified Industrial Hygienist (CIH). SSP 14-11.07 must be used whenever the project will include separate removal of yellow paint or yellow thermoplastic paint when the residue will be a **hazardous waste** (total lead equal to or greater than 1,000 mg/kg and soluble lead equal to or greater than 5 mg/l). If unsure of the yellow paint and yellow thermoplastic paint history of the roadway or if new yellow paint or yellow thermoplastic paint may have been layered on top of older high lead concentration yellow paints or yellow thermoplastic paints, assume the paint residue will be a hazardous waste and use SSP 14-11.07.

If you are sure (as a result of testing or complete painting records) that the yellow paint or yellow thermoplastic paint residue will be a non-hazardous waste, or if colors other than yellow are being removed, do not use SSP 14-11.07. Instead use SSP 15-2.02C(2) which only requires a lead compliance plan.

If the project includes both high lead yellow paint and/or yellow thermoplastic paint as well as other low lead paints (new paints or other colors of paint) and the different types of paints are adequately separated, use both 14-11.07 and 15-2.02C(2). However if both high lead concentration and low lead concentration paints can not realistically be removed separately or can not be adequately differentiated, use 14-11.07 for all of the paint removal.

When grinding or cold planing do not use 14-11.07 if the following are all true:

- yellow paint or yellow thermoplastic paint containing high concentrations of lead is being removed while grinding the entire pavement surface,
- the project does not require the paint or thermoplastic paint to be removed before grinding begins, and
- calculations show that the grinding residue will NOT be a hazardous waste.

Instead use SSP 15-1.03B which only requires a lead compliance plan.

Contact the District Hazardous Waste Technical Specialist for assistance in determining whether to use SSP 14-11.07, SSP 15-2.02C(2), or 15-1.03B.

BID ITEMS

Use the following bid items with 14-11.07:

070030 - Lead Compliance Plan: This bid item is always used with 14-11.07. The actual text containing the requirements for the lead compliance plan is found in the Standard Specifications in Section 7-1.02K(6)(j)(ii). Note that just one lead compliance plan that addresses all types of lead exposures on the project is to be prepared, so this is paid as a lump sum. This reduces unnecessary costs and duplicative efforts.

Traffic Stripe and Pavement Marking: Four bid item codes can be used with 14-11.07 as appropriate. They are:

141101 - Remove Yellow Painted Traffic Stripe (Hazardous Waste)
Measured by linear foot

141102 - Remove Yellow Painted Pavement Marking (Hazardous Waste)
Measured in square feet

141103 - Remove Yellow Thermoplastic Traffic Stripe (Hazardous Waste)
Measured by linear foot

141104 - Remove Yellow Thermoplastic Pavement Marking (Hazardous Waste)
Measured in square feet

These bid items are used for removal of yellow paint and yellow thermoplastic paint when they are known or suspected to contain hazardous waste concentrations of lead. Show the type, location, and quantities of yellow traffic stripe and pavement marking to be removed on the Pavement Delineation Sheet. Stripe and pavement marking are estimated and paid separately.

When using paragraph 3 of 14-11.07 use supplemental work item code **066600 - Disposal of Yellow Painted Traffic Stripe** to pay for the additional cost of disposal of RCRA waste.

EDITING

DO NOT edit to match item descriptions. Contractors are instructed to ignore inapplicable items.

Paragraph 3

Older yellow paints could have high enough soluble lead concentrations to be classified as a RCRA hazardous waste. This is only true of yellow paints, not yellow thermoplastic paints which are highly insoluble. Paragraph 3 is used if there is any reason to believe that the paint residue removed may be a RCRA waste. This paragraph addresses the additional RCRA hazardous waste disposal costs that may be incurred. Use this paragraph when yellow traffic paint applied before 1999 in District 1 or before 1997 in all other districts is being removed. If unsure of the age of the paint, use this paragraph. If you're confident that the residue will not be a RCRA waste this paragraph can be deleted. Consult with your District Hazardous Waste Technical Specialist for assistance in making this determination. When using paragraph 3 use supplemental work item code 066600 Disposal of Yellow Painted Traffic Stripe to pay for the additional cost of RCRA waste disposal.

Paragraph 7

If not specified the Contractor is allowed 15 days to submit the work plan. This is the standard for all submittals in the 2010 specifications. At the district construction office's direction, this may be shortened to 7 days for less complex projects, fast-track projects, or short construction periods. To shorten the allowed time simply add a sentence to this paragraph stipulating that the removal work plan must be submitted within 7 days.

Paragraph 18

Paragraph 18 specifies how long the hazardous waste can be stored prior to disposal. Contact the District Hazardous Waste Technical Specialist for assistance in determining the specific time limit for disposal of accumulated residue on each project. Determine days based on time needed for analysis, disposal facility location, and legally allowed storage time for hazardous waste. Allow time for landfill scheduling requirements. The minimum recommended storage time is 30 days, and the maximum storage time allowed by law is 90 days. If the job is very short you can specify less than 30 days, however be aware that the Contractor will need enough time to have the analyses completed, evaluate the results, and schedule transport and disposal, so it would NOT be advisable to specify less than 20 days.

Paragraph 19

Paragraph 19 specifies how long the hazardous waste can be stored prior to disposal when the total amount of residue generated is less than 220 pounds. The recommended number of days to insert is 30 (by law the material can not be stored longer than 90 days). If the job is very short you can specify fewer than 30 days, however be aware that the Contractor will need enough time to have the analyses completed, evaluate the results, and schedule transport and disposal so it would NOT be advisable to specify less than 20 days.

IMPLEMENTATION TIPS

Submittals

In SSP 14-11.07 the request for an Environmental Protection Agency (EPA) Generator number is a submittal so the request must be made in writing. This is to ensure that the RE is properly notified that the hazardous waste is ready for disposal. Receiving landfill documentation of proper disposal is also a submittal. This ensures that the Contractor is not paid for the work until the paint residue is disposed of properly.

Storage Location of Hazardous Waste

In the 2010 specifications, storage requirements for Department generated hazardous waste are located in the Standard Specifications sections 14-11.02B Hazardous Waste Management Practices and 14-11.02F(2) Department-Generated Hazardous Waste – Hazardous Waste Storage. They are not repeated in SSP 14-11.07. If a location for hazardous waste storage needs to be specified, a 14-11.02F(2) SSP must be prepared to add this language to the contract (SSP in preparation – in the interim use the NSSP template available on the Hazardous Waste Specifications webpage).

A storage location needs to be specified when storage space will not be available within the project limits, when a specific storage location within the project limits is preferred, or when a consolidation point is necessary (e.g. stripe removal on several individual bridges). If specifying an off-site location (outside of the project limits), it must be a secure storage facility on Caltrans property permitted by the Department of Toxic Substances Control (DTSC). Likely storage locations are Maintenance Stations or Shops that have hazardous waste storage areas. You must coordinate and get permission from Maintenance prior to designating a Maintenance location in SSP 14-11.02F(2).

If it will be necessary to transport waste to a consolidation point on the project or to a permitted storage location on Caltrans property, the transport for consolidation exemption in Health & Safety Code Section 25110 et seq can be applied to legally move the waste.

For more information regarding hazardous waste storage during project construction visit the Hazardous Waste Construction Topics webpage.

Storage Requirement

Section 14-11.02B of the Standard Specifications requires that all hazardous waste be stored in United States Department of Transportation (US DOT) approved **metal** containers. Cardboard boxes are NOT allowed. This applies to residue from removal of yellow thermoplastic and yellow painted traffic stripe and pavement marking and all other hazardous wastes stored on Caltrans' job sites, so this language does not need to be repeated in SSP 14-11.07.

Analytical Testing

The analytical test methods specified to determine whether the residue is a hazardous waste were reviewed and updated for the 2010 specifications, based upon consultation with the DTSC Environmental Chemistry Laboratory in Berkeley.

(The resulting changes described below were also made to the 2006 version of the specification (14-001)).

Method 6010 In General: Although 6010C is the most recent US EPA inductively coupled plasma-atomic emission spectrometry (ICP-AES) method for metals analysis, it has not been incorporated into California hazardous waste laws and regulations. As a result, 6010B is still the method being certified and run in California labs and our specifications have been adjusted to reflect this.

Method 6010B for Chromium: Method 6010B, rather than the 7000 series, is now recommended as the best and most appropriate method for total chromium analysis. Our specifications have been adjusted accordingly.

Testing Demonstrates That Residue is a Non-hazardous Waste

In the past, when testing demonstrated that paint or thermoplastic paint residue was a non-hazardous waste, the RE was instructed to prepare a Contract Change Order (CCO) instructing the Contractor to dispose of the material at a landfill for non-hazardous waste disposal and to recoup the resulting cost savings. Construction has requested that we assist in the reduction of CCOs, so paragraph 22 of SSP 14-11.07 states:

If analytical test results demonstrate that the residue is a non-hazardous waste and the Engineer agrees, dispose of the residue at an appropriately permitted CA Class II or CA Class III facility. The Department does not adjust payment for this disposal.

This tells the Contractor what to do if the residue is non-hazardous and avoids the need for a change order because the Contractor is allowed to retain any cost savings.

5-1.__ AIR QUALITY – NESHAP NOTIFICATION

In compliance with Standard Specifications Section 14-9.02, the Contractor must notify the following agencies as required by the National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR Part 61, Subpart M, and California Health and Safety Code section 39658(b)(1). A copy of the notification form and attachments must be provided to the Engineer prior to submittal. Notification must take place a minimum of 10 working days prior to starting demolition or renovation activities as defined in the NESHAP regulations. Notification forms and other information are available from the California Air Resources Board web site at:

http://www.arb.ca.gov/enf/asbestos/asbestos.htm

The Contractor must mail the original notification form with any necessary attachments to:

U.S. EPA, Region IX
Asbestos NESHAP Notification (Air-5)
75 Hawthorne Street
San Francisco, CA 94105

The Contractor must mail a copy, or send a fax, of the notification form and any necessary attachments, to:

California Air Resources Board
Enforcement Division
Asbestos NESHAP Notification
P. O. Box 2815
Sacramento, CA 95812
Facsimile: (916) 445-7986

The Contractor must also notify other local permit agencies and utility companies prior to starting any demolition activities. A copy of the notification form and attachments must be provided to the Engineer a minimum of 30 days prior to the start of work.

If the Contractor does not receive direction from the Engineer within 20 days after submittal that changes to the notification are required, or written confirmation of receipt and approval by the US EPA and the CARB, then an extension of time commensurate with the delay in completion of the work thus caused will be granted and the Contractor will be relieved from any claim for liquidated damages, or engineering and inspection charges or other penalties for the period covered by that extension of time; provided that the Contractor notifies the Engineer in writing of the causes of delay within 15 days from the beginning of the delay. The Engineer will ascertain the facts and the extent of the delay, and the Engineer's findings thereof must be final and conclusive.

Full compensation for complying with requirements of this section, including the payment of any notification fees, will be included in the contract price paid for the items involved, and no additional compensation will be allowed therefor.

In compliance with Standard Specifications Section 14-9.02, the Contractor must notify the Air Pollution Control District (APCD) or Air Quality Management District (AQMD) identified below as required by the National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR Part 61, Subpart M, and California Health and Safety Code section 39658(b)(1). A copy of the notification form and attachments must be provided to the Engineer prior to submittal. Notification must take place a minimum of 10 working days prior to starting demolition or renovation activities as defined in the NESHAP regulations. Notification forms and other information are available from the air district at the address below.

Forms and information may also be obtained from the air district's web site at:

_____

The Contractor must mail or otherwise deliver the original notification form with any necessary attachments to:

_____

The Contractor must also notify other local permit agencies and utility companies prior to starting any demolition activities. A copy of the notification form and attachments must be provided to the Engineer a minimum of 30 days prior to the start of work.

If the Contractor does not receive direction from the Engineer within 20 days after submittal that changes to the notification are required, or written confirmation of receipt and approval by the local APCD or AQMD, then an extension of time commensurate with the delay in completion of the work thus caused will be granted and the Contractor will be relieved from any claim for liquidated damages, or engineering and inspection charges or other penalties for the period covered by that extension of time; provided that the Contractor notifies the Engineer in writing of the causes of delay within 15 days from the beginning of the delay. The Engineer will ascertain the facts and the extent of the delay, and the Engineer's findings thereof must be final and conclusive.

Full compensation for complying with requirements of this section, including the payment of any notification fees, will be included in the contract price paid for the items involved, and no additional compensation will be allowed therefor.

Replace section 14-11.11 with:

14-11.11 MANAGEMENT OF ASBESTOS-CONTAINING MATERIALS IN BRIDGES

14-11.11A General

14-11.11A(1) Summary

Section 14-11.11 includes specifications for _____ asbestos-containing material (ACM) in bridges.

The removal and disposal of materials containing asbestos must comply with:

1. Health and Safety Code, Div 20, Ch 6.5, "Hazardous Waste Control"
2. 8 CA Code of Regs, § 5208
3. 8 CA Code of Regs § 1529 and § 341
4. 22 CA Code of Regs, Div 4.5
5. 29 CFR 26
6. 40 CFR 61 Subpart M

A certified asbestos consultant must be registered under Labor Code § 6501.5 and certified under Bus & Prof Code § 7058.6.

An asbestos survey was performed for bridge no._____. A part of the asbestos survey report is included in the *Information Handout*. The complete report is available at the Department's Division of Construction office located at:

_____
_____
_____
_____

Asbestos-containing material is present at the locations and in the types and amounts shown in the following table:

Locations, Types, and Amounts of ACM

Bridge location	Type of asbestos	Amount of asbestos

Friable ACM generated as part of this project is Department-generated hazardous waste as specified in section 14-11.02F.

14-11.11A(2) Definitions.

asbestos: Any of several minerals that readily separate into long flexible fibers. Includes chrysotile, amosite, crocidolite, tremolite, anthrophyllite, actinolite and any of these minerals that has been chemically treated, altered, or both.

asbestos-containing material (ACM): Building material, including asbestos cement pipe, containing commercial asbestos in an amount greater than 1 percent by weight, area, or count under 40 CFR §61.145.

certified asbestos consultant: Asbestos consultant certified by Cal/OSHA under 8 CA Code of Regs § 341.15 and § 1529.

friable ACM: Material containing more than 1 percent asbestos as determined by Polarized Light Microscopy (PLM) that, when dry, can be crumbled, pulverized, or reduced to power by hand pressure as defined in 22 CCR §66261.24.

nonfriable ACM: Material containing more than 1 percent asbestos by area with asbestos fibers that:

1. Are tightly bound into the matrix of the material
2. Should not become an airborne hazard as long as the material remains intact and undamaged and is not sawed, sanded, drilled or otherwise abraded during removal

regulated asbestos-containing material (RACM) as defined under 40 CFR §61.145(b)**:** Material containing more than 1 percent of any of the following in excess of 260 linear ft., 160 sq. ft., or 35 cu. ft.:

1. Friable asbestos, as determined using polarized light microscopy (PLM), that can be crumbled, pulverized, or reduced to powder by hand pressure when dry
2. Category I nonfriable ACM that has become friable or will be subjected to sanding, grinding, cutting or abrading
3. Category II nonfriable ACM that may become or has become friable

14-11.11A(3) Submittals

Submit a work plan for asbestos surveying and sampling before starting bridge removal or renovation. The plan must be prepared and signed by a certified asbestos consultant and include:

1. ACM sampling procedures, complying with US EPA, SW-846, "Test Methods for Evaluating Solid Waste," Volume II: Field Manual, Physical/Chemical, Chapter 9, Section 9.1
2. Method for analyzing samples under 40 CFR 763 Subpart F, appendix A, Polarized Light Microscopy, Analytical Method 600/R-93-116
3. Name and address of the laboratory that will perform the asbestos analyses and a copy of the laboratory's CDPH Environmental Laboratory Accreditation Program (ELAP) certification
4. Procedures for handling and preserving samples

Submit a sampling and analysis report within 10 days of sampling ACM. The report must be prepared and signed by a certified asbestos consultant and include:

1. Sampling protocols
2. Photographs of the structures and of the locations where samples were taken
3 Classification of the ACM as friable or nonfriable
4. Quantification of ACM
5. Recommendations for the removal and disposal of confirmed ACM
6. Documentation of the chain of custody
7. Laboratory test data

Allow 15 days for review. Submit a revised sampling and analysis report within 5 days of receiving the Department's comments. Submit 2 copies of the final report.

Submit a copy of the NESHAP Notification of Demolition and Renovation form and attachments before submittal to the AQMD or APCD under 40 CFR §61.145(b).

Submit an asbestos compliance plan for preventing or minimizing workers' exposure to asbestos during demolition or renovation activities. Submit the plan at least 15 days before starting bridge demolition or renovation activities in areas containing or suspected to contain asbestos. The plan must be prepared by a CIH and include:

1. Identification of key personnel for the project
2. Scope of work and equipment to be used
3. Job hazard analysis for work assignments
4. Summary of risk assessment
5. Description of personal protective equipment
6. Delineation of work zones at the job site
7. Decontamination procedures

8. General safe work practices
9. Security measures
10. Emergency response plans
11. Worker training
12. Certification of completed safety training for personnel before starting work in areas containing or suspected to contain asbestos

Submit a work plan for the removal, storage, transportation, and disposal of ACM. The work plan must include:

1. Locations at the perimeters of abatement work areas where asbestos warning signs will be installed
2. Summary of methods and techniques for handling, packaging, labeling, storing, transporting, and disposing of waste materials
3. Instructions for wetting asbestos materials with sprayers
4. Description and locations of disposal bins to be used for temporary storage of ACM until removal from the job site
5. Name and address of the hazardous waste transporter registered with the DTSC that will transport the ACM to a DTSC permitted hazardous waste facility. The transporter must be registered to transport hazardous waste in California under the Health and Safety Code, Div 20, Ch 6.5 and 22 CA Code of Regs, Div 4.5.
6. Name and address of the disposal facility in California permitted for the disposal of ACM
7. Documentation of compliance with federal, state, and local requirements for asbestos work, transport, and disposal

Submit an asbestos removal report documenting your compliance with the asbestos removal work plan. Submit the report to the Engineer and the APCD or AQMD within 30 days after removing ACM from the job site.

Submit a copy of the hazardous waste manifest for each shipment of ACM.

Within 5 business days of transporting hazardous and nonhazardous ACM waste, submit documentation of proper disposal from the receiving disposal facility.

14-11.11A(4) Quality Control and Assurance

The laboratory that performs the asbestos analysis must be certified by the CDPH ELAP for all analyses to be performed.

Sampling and analysis must comply with US EPA's “Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance.”

Collect a minimum of 3 samples for each part of the bridge, such as the deck or railing, where ACM is suspected to be present. For pipes and other linear parts, collect enough samples to determine the suspected asbestos content of the material.

Collect samples of:

1. Exposed suspected ACM on the structure
2. Bridge concrete that will be disturbed during demolition or renovation. Identify the samples by:
    2.1. Concrete color
    2.2. Concrete texture
    2.3. Type of structure component to be impacted
3. Suspected ACM encapsulated in concrete when exposed during demolition

Transport ACM samples under chain of custody to the authorized laboratory within 24 hours of sampling. The laboratory must test the samples within 48 hours of receiving them.

14-11.11B Materials

Not Used

14-11.11C Construction

14-11.11C(1) General

Before starting work in areas containing or suspected to contain asbestos, provide safety training complying with 8 CA Code of Regs § 1529 to State personnel who may enter the work area.

Provide training, personal protective equipment, and medical surveillance as required by the asbestos compliance plan to __ State personnel.

Notify the APCD or AQMD of changes in work locations or conditions.

14-11.11C(2) Discovery of Unanticipated ACM

If you discover unanticipated during demolition or renovation, stop work in that area and notify the Engineer. Removal and disposal of ACM not identified in the ACM survey before demolition or renovation is change order work.

Notify the APCD or the AQMD of changes to removal or demolition plans, including discovery of ACM during demolition, within 2 days of the change.

14-11.11C(3) Removal of ACM

Remove ACM under 8 CA Code of Regs § 1529 and 341. Remove friable ACM using the wetting method. Remove and handle nonfriable ACM such that you prevent breakage.

You are not required to remove ACM encased in concrete or similar structural material before demolition, but the ACM must be adequately wetted whenever exposed during demolition. Prevent visible emissions from ACM removal activities.

Mark regulated work areas with the warning information, "Danger, Asbestos, Cancer and Lung Disease Hazard, Authorized Personnel Only."

14-11.11C(4) Packaging and Temporary Storage of ACM

Package and label removed ACM under 22 CA Code of Regs § 66262.30 et seq. Place the removed ACM in minimum 0.06-inch-thick, double-ply, plastic bags with clearly visible labels affixed to the bags. The labels must have legible lettering with the information, "Danger/ Contains Asbestos Fibers/ Avoid Creating Dust/ Cancer and Lung Disease Hazard."

Place removed ACM directly into a covered, lockable, roll-off or drop box that has the same caution label affixed on all sides.

14-11.11C(5) Transport and Disposal of ACM

Dispose of friable and nonfriable ACM at a California disposal facility operating under a DTSC permit. Notify the facility at least 5 days before delivery of ACM.

The Engineer provides the Department's EPA Identification Number for hazardous waste disposal.

The Engineer signs the hazardous waste manifests. Notify the Engineer 5 days before the manifests are to be signed.

All transporters of friable ACM must have current DTSC registration for transporting hazardous waste and must have a US EPA Identification Number. Vehicles used to transport the hazardous waste must carry a valid registration during transport.

Transport nonhazardous, nonfriable ACM to the disposal facility with a shipping document or waste shipment record.

Within 5 days of transporting hazardous and nonhazardous ACM waste, submit documentation of proper disposal from the receiving disposal facility.

14-11.11D Payment

Not Used

Replace section 14-11.09 with:

14-11.09 TREATED WOOD WASTE

14-11.09A General

14-11.09A(1) Summary

Section 14-11.09 includes specifications for handling, storing, transporting, and disposing of treated wood waste (TWW).

Wood removed from _____ is TWW. Manage TWW under 22 CA Code of Regs, Div. 4.5, Chp. 34.

14-11.09A(2) Submittals

For disposal of TWW, submit as an informational submittal a copy of each completed shipping record and weight receipt within 5 business days.

14-11.09B Materials

Not Used

14-11.09C Construction

14-11.09C(1) General

Not Used

14-11.09C(2) Training

Provide training to personnel who handle TWW or may come in contact with TWW. Training must include:

1. Applicable requirements of 8 CA Code of Regs
2. Procedures for identifying and segregating TWW
3. Safe handling practices
4. Requirements of 22 CA Code of Regs, Div. 4.5, Chp. 34
5. Proper disposal methods

Maintain records of personnel training for 3 years.

14-11.09C(3) Storage

Store TWW before disposal using the following methods:

1. Elevate on blocks above a foreseeable run-on elevation and protect from precipitation for no more than 90 days.
2. Place on a containment surface or pad protected from run-on and precipitation for no more than 180 days.
3. Place in water-resistant containers designed for shipping or solid waste collection for no more than 1 year.
4. Place in a storage building as defined in 22 CA Code of Regs, Div. 4.5, Chp. 34, § 67386.6(a)(2)(C).

Prevent unauthorized access to TWW using a secured enclosure such as a locked chain-link-fenced area or a lockable shipping container located within the job site.

Resize and segregate TWW at a location where debris from the operation including sawdust and chips can be contained. Collect and manage the debris as TWW.

Provide water-resistant labels that comply with 22 CA Code of Regs, Div. 4.5, Chp. 34, §67386.5, to clearly mark and identify TWW and accumulation areas. Labels must include:

1. Caltrans, District number, Construction, Construction Contract number
2. District office address
3. Engineer's name, address, and telephone number
4. Contractor's contact name, address and telephone number
5. Date placed in storage

14-11.09C(4) Transporting and Disposal

Before transporting TWW, obtain an agreement from the receiving facility that the TWW will be accepted. Protect shipments of TWW from loss and exposure to precipitation. For projects with 10,000 lb or more of TWW, request a generator's EPA Identification Number at least 5 business days before the 1st shipment. Each shipment must be accompanied by a shipping record such as a bill of lading or invoice that includes:

1. Caltrans with district number
2. Construction Contract number
3. District office address
4. Engineer's name, address, and telephone number
5. Contractor's contact name and telephone number
6. Receiving facility name and address
7. Waste description: Treated Wood Waste with preservative type if known or unknown/mixture
8. Project location
9. Estimated quantity of shipment by weight or volume
10. Date of transport
11. Date of receipt by the receiving TWW facility
12. Weight of shipment as measured by the receiving TWW facility
13. Generator's EPA Identification Number for projects with 10,000 lb or more of TWW

The shipping record must be at least a 4-part carbon or carbonless 8-1/2-by-11-inch form to allow retention of copies by the Engineer, transporter, and disposal facility.

Dispose of TWW at an approved TWW facility. A list of currently approved TWW facilities is available at:

http://www.dtsc.ca.gov/HazardousWaste/upload/lanfillapr11pdated1.pdf

Dispose of TWW within:

1. 90 days of generation if stored on blocks
2. 180 days of generation if stored on a containment surface or pad
3. 1 year of generation if stored in a water-resistant container or within 90 days after the container is full, whichever is shorter
4. 1 year of generation if storing in a storage building as defined in 22 CA Code of Regs, Div. 4.5, Chp. 34, § 67386.6(a)(2)(C)

14-11.09D Payment

Not Used

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: DISTRICT DIRECTORS

Date: November 2, 2007

From: RICHARD D. LAND
Chief Engineer

MICHAEL MILES
Deputy Director
Maintenance and Operations

Subject: Treated Wood Waste-Alternative Management Standards

On July 1, 2007 the Department of Toxic Substances Control (DTSC) adopted new regulations (Attachment 1) establishing alternative management standards for treated wood waste (TWW) to prevent releases of hazardous constituents, prevent scavenging, and prevent harmful exposure of people, aquatic life and animals. This memo summarizes the new alternative management standards. Responsibilities for affected Caltrans Divisions and the Districts are described in Attachment 2.

Treated wood means wood that has been treated with a chemical preservative to protect the wood from insects, microorganisms, fungi and other environmental conditions that can lead to wood decay. Some chemical preservatives commonly applied to protect wood under the Federal Insecticide, Fungicide, and Rodenticide ACT (FIFRA) are: creosote, pentachlorophenol, copper azole (CA-B), copper boron azole (CBA), chromated copper arsenate (CCA), ammoniacal copper zinc arsenate (ACZA), copper naphthenate, and alkaline copper quaternary (ACQ). Common coatings applied to wood such as paint, varnish and oil stain are not considered wood preservatives.

The new regulations allow more flexibility for TWW disposal. As TWW may now be handled as a solid waste, testing and sampling of TWW is not required. Instead of disposal in a Class 1 hazardous waste landfill, TWW may now be disposed in a composite-lined portion of a solid waste landfill unit that meets all requirements applicable to disposal of municipal solid waste in California and that is regulated by waste discharge requirements (WDRs) issued for discharges of designated waste or TWW. The current list of TWW landfills certified by the Regional Water Quality Control Board (RWQCB) is included in Attachment 3, and may be viewed at: www.dtsc.ca.gov/Hazardous Waste/upload/TWW_landfill_list.pdf.

Additional facilities may be in the certification process. You may want to contact other local landfills to see if they are accepting treated wood waste.

The new regulations:

- Prohibit burning, storage in contact with the ground, treatment, commingling with other waste prior to land disposal and scavenging.
- Prohibit recycling, with or without treatment, unless:
  - Reused on the job site,
  - Reuse is consistent with a FIFRA approved use of the preservative with which the TWW was treated,
  - Prior to reuse, the TWW is handled in compliance with all applicable alternative management standards of these regulations.
- Require labeling of each area designated for accumulation of TWW.
- Require record keeping for at least 3 years for each shipment of TWW to a disposal facility. DTSC is currently developing a TWW Tracking System (TWWS), scheduled to be on-line in Fall 2007, for tracking shipments of TWW. Caltrans staff will be informed when the system is available. For consistency in the TWW Tracking System, in the TWW Generator Name field use "Caltrans" followed by Dist. #, and division, maintenance station, or project name. Do not use "Department of Transportation" or some other variation. Also use "Caltrans" on any logs, invoices, shipping and receipt forms or bills of lading. Guidelines for preparation of a bill of lading is shown in Attachment 4.
- Require a one–time submittal to DTSC for those sites generating more than 10,000 pounds per calendar year of treated wood waste within 30 days after exceeding the 10,000-pound threshold. TWW weight estimates can be based on wood supplier's information, actual scale tickets or any other "reasonable" method of estimation. Whatever method or assumptions are used should be recorded in the generator records. Notification forms can be submitted via the DTSC website at: http://www.dtsc.ca.gov/HazardousWaste/TWW_Notification.cfm.
- Require training for those employees that may reasonably be expected to handle TWW. A record of training with the signature of the employee included shall be maintained for a period of 3 years and available for review. Training shall include:
  - All applicable requirements of the California Occupational Safety sand Health Act (OSHA) of 1973 (ch.1, part 1 commencing with section 6300 of the Labor Code), including all rules, regulations, and orders relating to hazardous waste,
  - Procedures for identifying and segregating TWW,
  - Safe handling practices,
  - Requirements of the Alternative Management Standards, and
  - Proper disposal methods.

For questions regarding TWW, please contact Ranny Eckstrom, Chief, Office of Hazardous Waste and Noise at (916) 653-1303. For technical information, contact Carlos Lopez, Engineering Geologist at (916) 653-3548.

Attachments:

1) DTSC Alternative Management Standards for Treated Wood Waste
2) District and Division Responsibilities for Treated Wood Waste Alternative Management Standards
3) RWQCB Certified List of Treated Wood Waste Landfills
4) Bill of Lading, Typical Information

ATTACHMENT 1

TEXT OF FINAL REGULATIONS

Alternative Management Standards for Treated Wood Waste – R-2005-04

§66261.9.5. Requirements for Treated Wood Waste

Treated wood waste as defined in section 67386.4 when managed as specified in chapter 34 is exempt from the management requirements of chapter 12 through 20.

NOTE: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Section 25150.7, Health and Safety Code.

Appendix XII of the California Code of Regulations title 22, division 4.5, chapter 11.

Amended Appendix XII and inserted the new California Waste Code for Treated Wood Waste. California Waste code 614 has been inserted both in numerical and alphabetical order within the existing section.

***

(b) List of California Hazardous Waste Code arranged in numerical order:

***

614 Treated wood waste

***

(c) List of California Hazardous Waste Codes in arranged alphabetically within each numbered category in this subdivision:

***

614 Treated wood waste

***

NOTE: Authority cited: Sections 25150 and 58012, Health and Safety Code. Reference: Sections 25117.9, 25122.7, and 25150, Health and Safety Code.

Chapter 34. Alternative Management Standards for Treated Wood Waste

§ 67386.1 Scope

(e) This chapter provides an alternative set of management standards in lieu of the requirements for hazardous waste pursuant to articles 6, 6.5, and 9, chapter 6.5, division 20, Health and Safety Code, and chapters 12, 13, 14, 15, 16, 18, and 20 of this division for a person managing treated wood waste (TWW). All other chapters of this division, and section 66264.101, chapter 14, division 4.5, title 22, apply to persons managing TWW.
(b) Nothing in this chepter is a limitation on the power of this or any other governmental agency to adopt or enforce additional requirements related to the management of TWW.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.

§ 67386.2 Applicability

(a) The alternative management standards of this chapter apply only to wood weste that meets all of the following:
(1) is a hazardous waste pursuent to chapter 11 of this division;
(2) is a hazardous waste solely due to the presence of a preservative in or on the wood that is registered in accordance with the Federal insecticide, Fungicide, and Rodenticide Act (FIFRA) for use as a wood preservative; and
(3) is not subject to regulation as a hazardous waste under the federal Resource Conservation and Recovery Act (RCRA).
(b) The alternative management standards of this chapter do not apply to wood waste exempted from hazardous waste management standards pursuant to Heelth and Safety Code section 25143.1.5.
(c) The following wood wastes are not eligible for the alternative manegement stenderds of this chapter:
(1) wood waste that is hazardous due to the presence of coatings, peint, or other treatments that ere not registered in accordance with FIFRA for use as a wood preservative; or
(2) wood waste when designated to be burned.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25143.1.5, 25150.7 and 25150.8, Health and Safety Code.

§ 67386.3 Prohibited Activities

(a) TWW managed in accordance with the alternative management standards of this chapter shall not be:
(1) burned;
(2) scavenged;

(3) commingled with other waste prior to disposal, if previously segregated;
(4) stored in contact with the ground;
(5) recycled, with or without treatment, except as provided for in subsection (c)
(6) treated except in compliance with section 67386.10; and
(7) disposed to land except in compliance with section 67386.11.

(b) Any label or mark that identifies the wood waste as TWW shall not be intentionally removed, obliterated, defaced, or destroyed prior to disposal in a landfill.

(c) TWW may be recycled only by reuse pursuant to conditions specified in (1) – (3) of this subsection. During reuse, the TWW is not subject to sections 67386.5 through 67386.11. TWW may only be reused when all of the following apply:
(1) reuse is onsite;
(2) at the time of reuse, reuse is consistent with a FIFRA approved use of the preservative with which the TWW has been treated; and
(3) prior to reuse, the TWW is handled in compliance with all applicable management standards of this chapter.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Refarence: Sections 25150.7 and 25150.8, Health and Safety Code.

§ 67386.4 Definitions

The definitions set forth in section 66260.10 of this division shall apply unless otherwise defined. The following definitions shall apply to the terms used in this chapter:

"Agent" means a person hired by a generator for the removal, collection, or transportation of TWW.

"Class 1 hazardous waste landfill" means a landfill as defined in section 66260.10, which is also authorized as part of a permitted facility as defined in section 66260.10.

"Composting Facility" means a facility that produces compost as defined in Public Resources Code, section 40116 and is authorized to operate pursuant to division 30 of Public Resources Code (commencing with § 40000).

"Gasification Facility" means a facility that utilizes a gasification process as defined in Public Resources Code, section 40117 and is authorized to operate pursuant to division 30 of Public Resources Code (commencing with § 40000).

"Limited Volume Transfer Operation" means an operation that receives less than 60 cubic yards, or 15 tons of solid waste per operating day for the purpose of storing the waste prior to transferring the waste to another solid waste operation or facility and which does not conduct processing activities, but may conduct limited salvaging activities and volume reduction by the operator and is authorized to operate pursuant to division 30 of Public Resources Code (commencing with § 40000).

"Resizing" means the minimal cutting, breaking, or sawing, but does not include planing, grinding, chipping, sanding, shredding, mulching, or other mechanical handling or any other treatment.

"Small Volume Construction and Demolition/Inert (CDI) Debris Processing Operation" means a site thet receives less than 25 tons of any combination of construction and demolition debris and Type A inert debris per operating day for the purposes of storage, handling, transfer, or processing that is authorized to operate pursuant to division 30 of Public Resources Code (commencing with § 40000).

"Solid Waste Landfill" means a facility as defined in Public Resources Code, section 40195.1 that is authorized to operate pursuant to division 30 of Public Resources Code (commencing with § 40000).

"Transfer or Processing Station" means a facility as defined in Public Resources Code, section 40200 that is authorized to operate pursuant to division 30 of Public Resources Code (commencing with § 40000).

"Transformetion Facility" means a fecility that utllizes a transformation process as defined in Public Resources Code, section 40201 and is authorized to operate pursuant to division 30 of Public Resources Code (commencing with § 40000).

"Treated wood" means wood that hes been treated with a chemical preservative for purposes of protecting the wood against attacks from insects, microorgenisms, fungi, and other environmental conditions that can lead to decay of the wood and the chemical preservative is registered pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. § 136 and following).

"Treated Wood Waste" means a waste that meets the requirements of section 67386.2(a).

"TWW" means "Treated Wood Waste."

"TWW approved landfill" means either a class 1 hazardous waste landfill, or a composite-lined portion of a solid waste landfill unit that meets all requirements applicable to disposal of municipal solid waste in Califomia after October 9, 1993, and that is regulated by waste dischargo requirements issued pursuant to division 7 (commencing with § 13000) of the Water Code for dischergos of designeted waste, as defined in section 13173 of the Water Code, or treated wood waste and thet is in compliance with this chapter.

"TWW facility" meens either:

(a) a solid waste landfill, as defined in this section, that is in compliance with this chapter; or

(b) a transfer or processing station, as defined in this section, that is in compliance with this chapter; or

(c) a gasification facility, as defined in this section, that is in compliance with this chapter; or
(d) a TWW approved landfill, as defined in this section, that is in compliance with this chapter; or
(e) a cless 1 hazardous waste landfill; or
(f) Small Volume Construction and Demolition/Inert (CDI) Dabris Processing Operation, as defined in this section, that is in compliance with this chepter; or
(g) Limited Voluma Transfar Operation, as defined in this section, that is in compliance with this chapter.

TWW Facility shall not include composting facilities, or transformation facilities.

"TWW handler" means a person who generates, handles, collects, processes, accumulates, stores, transfers, transports, treats, recycles, or disposes of TWW.

"Unit" means a pile, stack, container, bundle, or other discernable aggregation of TWW for purposes of this chaptar.

"Wood waste" means all waste timber products and failed timber products including solid sawn lumber and anginaarad wood products, offcuts, shavings and sawdust that meet the definition of "waste" pursuant to Health and Safety Code section 25124. "Wood Waste" does not mean forast residues, green waste, or garden weste materials such as branches, bushes and tree stumps.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code; Sections 40116, 40117, 40195.1, 40200, and 40201, Public Resources Code; and Section 13173 Water Code.

§ 67386.5 Labeling

(a) TWW ganarated, accumulated, stored, or trensported within California shall be cleerly marked end visible for inspection. The person menaging the TWW shall ensure that each unit and/or area designated for accumulation of TWW is labeled. The area designated for accumulation of TWW shall be clearly identified and used solely for the accumulation of TWW.
(b) In order to clearly identify the nature of the waste to the receiving party and/or any observer, the TWW shall ba labeled or marked with the following:

"TREATED WOOD WASTE –Do not burn or scavenge.

TWW Handler Name and Address: _____

_____

Accumulation Data: _____".

(c) The TWW handler shall ensure that labels are maintained in compliance with the requirements of subsections (a) and (b) during transport.

(d) TWW accumuleted for a period not to exceed thirty (30) days by a household at the site of generation in compliance with the requirements of section 67386.6 is exempt from the labeling requirements of this section.
(e) TWW generated by a household while being self-transported to an approved TWW facility is exempt from the lebeling requirements of this section if the TWW is identified to the TWW facility as TWW.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.

§ 67386.6 Accumulation

(a) TWW shall be maintained in a manner that prevents unauthorized access and minimizes release to the environment.

(1) Unauthorized access shall be prevented by means of visual control or a physical barrier when not under the direct control of the person responsible for the TWW.

(2) The TWW shall be accumulated in a manner that is protected from run-on and run-off, and placed on a surface sufficiently impervious to prevent, to the extent practical, contact with and laaching to soil or water, which may be eccomplished by one of the following:

(A) Block and Tarp:
The TWW may be accumulated when all tha following requirements are met;

1. TWW is elevated to prevent contact with the soil and to protect from reasonably foreseeable run-on;
2. TWW is covered to protect from precipitation; and
3. TWW is accumulated no longer than 90 days from the date the TWW is generated or received from another handler.

(B) Containerize:
The TWW may be accumulated in containers no longer then one year from the date the TWW is generated or received from another handler. The containers shall be;

1. designed, constructed, maintained, filled, its contents so limited, and closed, so that under conditions normally incidental to handling, there will be no identifiable release of TWW meterials or its constituents to the environment; and
2. water-resistant if exposed to precipitation, run-on or run-off under reasonably foreseeable conditions.
3. (reserved)

(C) Storage Building:
The TWW shall be accumulated no longer than one year from the date the TWW is generated or received from another handler in a structurally sound building with a water-resistant floor designed to prevent the movement of water into or out of the building.

(D) Containment Pad:

The TWW may be accumulated no longer than 180 days from the date the TWW is generated or received from another handler on a containment surface and all the following requirements ara met;

1. TWW does not contact soil;
2. TWW is protected from reasonably foreseeable run-on;
3. TWW is covared to protect from precipitation; and
4. TWW managed in accordance with this subsection may be accumulated uncovered if the contalnment surfece is desigred and operated to contain all precipitation and the resulting weter is meneged in accordance with all applicable laws and reguletions.

(E) Other:

The TWW may be accumulated no longer than 90 days from the date the TWW is generated or received from another handler In any other manner in which the TWW handler can clearly demonstrate that the TWW is protected from run-on and run-off, and placed on a surface sufficiently impervious to prevent, to the extent practical, contact with and leaching to soil or water.

(b) Except as provided in subsection (c), in no case shall TWW be accumulated for more than one year from the date of generation or the date received from another handler.

(c) A handler may accumulate TWW for longer than one year from the date the TWW is generated or received from another handler, if the eccumulation is solely for the purpose of accumulation of quantities of TWW necessary to facilitate disposal pursuant to section 67386.11. However, the handler bears the burden of proving that the accumulation was solely for the purpose of accumulation of quantlties of TWW necessery to facilitate proper disposal.

(d) A person who accumulates TWW shall be able to demonstrate the length of time the TWW has been accumulated from the date it becomes a waste or is received.

(e) TWW generated incidental to the maintenance of a household end accumulated by the rasident of the household at the site of generation is exempt from the accumulation requirements of this section if all of the followlng requirements are met;

(1) TWW is not physically altered except as provided in section 67386.10; and
(2) TWW is accumulated no longer than thirty (30) days.

(f) TWW generated incidental to the operation of a business accumulated at the site of generation for a period not to exceed thirty (30) days is exempt from the accumulation requirements of this section if:

(1) TWW is not physically altered except as provided in section 67386.10; and
(2) the business accumulates no more than 1,000 pounds of TWW.

Note: Authority cited: Seclions 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.

§ 67386.7 Offsite Shipments

(a) Except as provided in subsection (c), a TWW handler is prohibited from sanding or taking TWW to a place other than a TWW facility, or a TWW approved landfill.

(b) Prior to sending a shipment of TWW to another TWW handler, the originating handler shall ensure that the receiving handler agrees to receive the shipment.
(c) A TWW handler who initially collects TWW at a remote site may transport that TWW to a consolidation site operated by the generator if all the following conditions are met;

(1) the TWW is transported by the generator, employees of the generator or by the generator's agent;

(2) a shipping document containing all of the following information accompanies the TWW while in transport;

(A) the quantity, by weight or volume, of TWW being transported;

(B) the location of the remote site where the TWW was initially collected;

(C) the date that the generator first began to eccumulate the TWW at the remote site, the date that the shipment leaves the remote site, and the date that the shipment arrives at the consolidetion site;

(D) the name, address, and telephone number of the generator, and, if different, the address and telephone number of the consolidation site to which the TWW is being transported; and

(E) the name of the individual or individuals who transport the TWW from the remote site to the consolidation site; and

(3) the TWW handler shall retain the shipping document described in subsection (c)(2) of this section for at least three years from the dete the TWW leaves the TWW consolidation site.

(d) TWW shall be shipped and/or transported in a manner that prevents unauthorized access; protects the TWW from precipitation; and prevents loss, dispersion, and leaching of TWW constituents.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.

§ 67386.8 Tracking Shipments

(a) Shipments off-site. A TWW hendler shall keep a record of each shipment of TWW sent from the handler to TWW facilities. The record may take the form of a log, invoice, manifest, bill of lading, shipping document, or receipt from a TWW facility. The record for each shipment of TWW shall include the following informetion:

(1) name and address of the TWW facility to which the TWW was sent;

(2) weight of TWW, the estimated weight of TWW, or the weight of the TWW as measured by the receiving TWW facility (An estimated welght may be used when a scale is unavailable or weighing is impractical. Assumptions required for weight estimates shall be recorded in the shipment records.); and

(3) date the shipment of TWW left the handler.

(b) Receipt of shipments. A TWW handler shall keep a record of each shipment of TWW received at the facility. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document. The record for each shipment of TWW received shall include the following information:

(1) name and address of the originating TWW generator from whom the TWW was sent;

(2) weight of TWW or the estimated weight of TWW (An estimated weight may be used when a scale is unavailable or weighing is impractical. Assumptions required for weight estimates shall be recorded in the shipment records.); and
(3) date of receipt of the shipment of TWW.

(c) Reporting receipt of shipments. A TWW facility or a TWW approved landfill that receives TWW shall submit, to the department, semi annual reports for the periods ending June 30 and Decembar 31 of each yaar. Reports shall be required beginning December 31, 2007 and shall be submitted in an elactronic format provided by the department within 30 days of the end of each raporting period. Each semi annual report shall include the following Information:

(1) reporting facility information;
1. Facility name, location address, contact person's name, and telephone number; and
2. Identification Number.

(2) for all TWW shipments received, other than those reportad under subsections (3), (4), and (5) the TWW facility shall report the following information;
1. generator's Identification Number, or, if the generator does not have an Identification Number, the name, addrass, contact person's name, mailing address, and telephone number of the generator;
2. dates of shipments; and
3. weight of TWW per shipment.

(3) TWW household information;
1. weight summary of all TWW quantities received that were generated by households.

(4) TWW load check information;
1. Weight summary of all TWW quantities discovered and separated from solid waste as part of an on-site load checking program.

(5) for shipments received from another TWW facility tha following information shall be reported by the receiving TWW facility;
1. TWW facility's Identification Number or the name, address, contact person's name, mailing address, and telephone number of the TWW facllity;
2. dates of shipments; and
3. weight of TWW per shipment.

(d) The department shall maka all of the information in the semi annual reports submitted pursuant to this subdivision available to the public, through its usual means of disclosure, except the department shall not disclose the association between any specific TWW handlers and specific facilities. The list of TWW handlers served by a facility shall be deemed to be a trade secret and confidential business information for purposes of Health and Safety Code section 25173 and section 66260.2 of title 22 of the California Code of Regulations.

(e) Record retention.

(1) a TWW handler shall retain the records described in subsection (a) of this section for at least three years from the date the shipment left the handler; and
(2) a TWW facility shall retain the records described in subsection (b) of this section for at least three years from the date of receipt of a shipment.

(f) Households are exempt from the recordkeeping requirements of this section when the TWW is generated incidental to that household.

Note: Authority cited: Sections 25150, 25150.7, aod 58012, Health and Safety Code. Raference: Sections 25150.7, 25150.8 and 25173, Health and Safety Code.

§ 67386.9 Notification

(a) In any calendar year that a TWW handler generetes more than 10,000 pounds of TWW, the TWW hendler shall obtain or maintein an Identification Number within 30 days of exceeding the weight threshold.
(b) In any calendar year that a TWW hendler generates more than 10,000 pounds of TWW the handler shall send written notification to the Department within 30 days of exceeding the 10,000 pound limit.
(c) The notification shall include;

(1) TWW handler's neme end mailing address;
(2) generator's Identification Number;
(3) name and business telephone number of the person at the TWW handler's site who should be contacted regarding TWW management activities;
(4) address or physical location of the TWW management activities;
(5) date the TWW handler exceeded the 10,000 pound limit; and
(6) a statement indicating that the handler is generating more than 10,000 pounds of TWW per calendar year.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.

§ 67388.10 Treatment

(a) Treatment, as defined in Health and Safety Code section 25123.5, of treated wood waste managed in accordance with the alternative menagement standards of this chapter is prohibited except as provided in subsections (b) and (c).

(b) Resizing is exempt from the permitting requirements of this division when resized to fecilitate transport or reuse and the following requirements ere met;

(1) TWW shall be handled in e manner that prevents the uncontrolled release of hazardous constituents to the environment; and
(2) if size reduction of the TWW results in sewdust, particles, or other meterial smaller than one cubic inch, the material shall be captured and managed as TWW.

(c) Sorting and segregeting are both exempt from the permitting requirements of this division. The TWW shall be handled in a menner that prevents the uncontrolled release of hazardous constituents to the environment.

(d) An employer resizing, sorting, or segregating TWW shall provide training for all employees handling TWW and all employees that may reasonably be expected to

contact TWW. A record of the training shall be maintained for a period of three years and available for review. The training shall include:

(1) all applicable requirements of the Califomia Occupational Safety end Health Act of 1973 (ch. 1, part 1, div. 5 (commencing with § 6300) of the Labor Code), including all rules, regulations, and orders releting to hazardous waste;
(2) procedures for identifying and segregating TWW;
(3) safe handling practices;
(4) requirements of the altemative management standards; and
(5) proper disposal methods.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.

§ 67386.11 Disposal

(a) When disposed to land, TWW shall be disposed in either a Class I hazardous waste landfill, or in a composite-lined portion of a solid waste landfill unit that meets all requirements applicable to disposal of municipal solid waste in California efter October 9, 1993, and thet is regulated by weste discherge requirements issued pursuent to division 7 (commencing with § 13000) of the Water Code for discharges of designated waste, as defined in section 13173 of the Water Code, or TWW.
(b) A solid waste landfill that eccepts TWW shall:

(1) comply with the prohibitions in section 67386.3 for handling TWW;
(2) ensure that any management of the TWW at the solid waste landfill prior to disposal complies with the applicable requirements of this chepter;
(3) monitor the composite-lined portion of a landfill unit at which TWW has been disposed. When a release is verified, cease discharge of TWW to that landfill unit until corrective action results in cessetion of the release. The landfill shall notify the department that TWW is no longer be discharged to that landfill unit and when corrective action results in cessetion of the release; end
(4) handle TWW in e manner consistent with all applicable requirements of the California Occupational Safety and Health Act of 1973 (ch. 1, part 1, div. 5 (commencing with § 6300) of the Labor Code), including all rules, reguletions, end orders relating to hazardous waste.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code; and Section 13173 Water Code.

§ 67386.12 Training

(a) An employer managing TWW shall provide training for ell employees handling TWW and all employees that may reasonably be expected to contact TWW. A record of the training shall be mainteined for e period of three years end availeble for review. The training shall include:

(1) all applicable requirements of the California Occupational Safety and Health Act of 1973 (ch. 1, part 1, div. 5 (commencing with § 6300) of the Labor Code), including all rules, regulations, and orders relating to hazardous waste;
(2) procedures for identifying and segregating TWW;
(3) safe handling practices;
(4) requirements of the alternative management standards; and
(5) proper disposal methods.

Note: Authority cited: Sections 25150, 25150.7, and 58012, Health and Safety Code. Reference: Sections 25150.7 and 25150.8, Health and Safety Code.

ATTACHMENT 2

District and Division Responsibilities
For
Treated Wood Waste Alternative Management Standards
(Title 22, Sections 67386.1-12)

Divisions of Maintenance, Construction, Right of Way, Materials Engineering and Testing Services (METS):

- Notify District and Division staff and ensure Caltrans compliance with Department of Toxic Substances Control (DTSC) Alternative Management Standards, July 1, 2007.
- Develop and update policies and procedures where treated wood waste (TWW) impact Caltrans operations.
- Update Business Plans to incorporate DTSC Alternative Management Standards.
- Ensure Caltrans actions are consistent with DTSC Alternative Management Standards prohibiting burning, ground contact storage, unspecified recycling, treatment, land disposal and scavenging, (Section 67386.3).
- Ensure that each area designated for accumulation of TWW is labeled (Section 67386.5).
- Maintain records and documentation of TWW accumulation time (Section 67386.6).
- Ensure that TWW is shipped offsite to an approved disposal facility and that the receiving facility will accept TWW (Section 67386.7).
- Maintain records (3 years) of TWW shipments (Section 67386.8).
- Ensure that sites generating more than 10,000 pounds of TWW per calendar year from January 1st to December 31st, submit a one–time notification to DTSC. TWW weight estimates can be based on wood supplier's information, actual scale tickets, or any other "reasonable" method of estimation. Whatever method is used should be recorded in the generator records. Notification tonnage should match up with the records. The Notification Form shall be submitted, 30 days after exceeding the 10,000 pounds threshold facility, and shall include an EPA ID number (Section 67386.9).
- TWW notification forms can be submitted via the DTSC website at:

http://www.dtsc.ca.gov/HazardousWaste/TWW_Notification.cfm

- Ensure TWW is either disposed in a hazardous waste landfill or in an approved composite-lined solid-waste landfill (Section 67386.11).
- Ensure TWW training for employees. Maintain records of training for 3 years, for those employees expected to be in contact with TWW. Ensure that records are available for review by DTSC (Section 67386.12).
- Implement standard special provisions (SSPs) and non-standard special provisions (nSSPs) as appropriate *(This requirement applicable to Division of Construction only).*

Division of Administration, Office of Health and Safety

- Develop and provide training to Caltrans employees in the safe handling, disposal and legal management practices of TWW (Section 67386.12).

Division of Environmental Analysis

- Liaison with DTSC to interpret regulations.
- Coordinate implementation of the new Alternative Management Standards among impacted Divisions.
- Develop SSPs as needed.
- Approve nSSPs as appropriate.

RWQCB Certified List of Treated Wood Waste Landfills

Facility Name	Facility's Site Address	City	Zip Code	Facility Contact Number	County
Altamont Landfill and Resource Recovery Faci	10840 Altamont Pass Road	Livermore	94551	(800)449-6349	Alameda
Rock Creek Solid Waste Facility	12021 Hunt Road	Milton	95230	(209) 754-6402	Calavaras
Keller Canyon Landfill	901 Bailey Road	Pittsburg	94565	(925)625-4711	Contra Costa
American Avenue Disposal Site	18950 W American Avenue	Kerman	93830	(559)846-6138	Fresno
Allied Imperial Landfill	104 East Robinson Road	Imperial	92251	780)355-0004	Imperial
Waste Management Inc. McKittrick Site	56533 Highway 58 West	McKittrick	93251	(661)762-7366	Kern
CWMI Kettleman Hills Facility	35251 Old Skyline Road	Kettleman City	93239	(559) 386-9711	Kings
Eastlake Sanitary Landfill	16015 Davis Ave	Clearlake	95422	(707)994-5888	Lake
Bradley Landfill West and West Extension	9227 Tujunga Avenue	Sun Valley (In	91352	(818) 767-6180	Loa Angeles
Burbank Landfill (Stough Park)	1600 N. Bel Aire Dr.	Burbank	91504	(818) 238-3915 City	Los Angelas
Calabasas Sanitary Landfill	2800 S. Workman Mill Rd	Whittier	90601	(562)699-6026x6005	Loa Angelea
Chiquita Canyon Landfill	29201 Henry Mayo Dr.	Valencia (In Santa Clarita)	91355	661-257-3655	Los Angeles
Puente Hills Landfill #6	13130 Crossroads Pkwy South	Industry	91746	(562) 699-7411, Gary Arm	Los Angeles
Sevage Canyon Landfill	13919 East Penn Street	Whittier	90602	(562)907-7750	Los Angeles
Highway 59 Disposal Site	Hwy 59; 8 Mi N Merced	Merced	95348	(209) 385-7388	Merced
Crazy Horse Sanitary Landfill	350 Crazy Horse Canyon Road	Salinas	93907	(831)663-2796	Monterey
Johnson Canyon Sanitary Landfill	31400 Johnson Canyon Road	Gonzales	93928	(831)675-2165	Monterey
MRWMD Monterey Peninsula Landfill/Marina	14201 Del Monte Blvd	Marina	93933	(831) 384-5313	Monterey
Prima Deshecha Sanitary Landfill	32250 La Pata Avenue	San Juan Capistrano	92675	(714) 834-4000	Oranga
Western Regional Landfill	3195 Athens Road Ap #17-060-02	Lincoln	95648	(916) 543-3960	Placer
Badlands Sanitary Landfill	31125 Ironwood Ave.	Moreno Valley	92553	(951) 486-3200	Riverside
Lamb Canyon Sanitary Landfill	16411 Lamb Canyon Rd.	Beaumont	92223	(951) 486-3200	Riverside

RWQCB Certified List of Treated Wood Waste Landfills

Facility Name	Facility's Site Address	City	Zip Code	Facility Contact Number	County
Fontana Refuse Disposal Site/Mid Valley Sanitary				(900)722-8004	San Bernadino
Mid-Valley Sanitary Landfill	2390 Alder Avenue	Rialto (Fontana)		(800)722-8004 x 2	San Bernadino
San Onofre Landfill	52 Area & Basilone Road	Camp Pendleto	92055	xx(790) 725-3869	San Diego
West Miramar Landfill	5180 Convoy Street	San Diego	92111	(958)492-8100	San Diego
Otay Landfill	1700 Maxwell Rd	Chula Vista	91911	(919) 449-4053	San Diego
Ramona Landfill	20630 Pamo Rd	Ramona	92065	(760)799-3410	San Diego
Sycamore Sanitary Landfill	8514 Mast Boulevard	San Diego	92071	(619)562-9426	San Diego
Forward Inc.	9999 S. Austin Road	Manteca	95336	(900) 204-4242	San Joaquin
Chicago Grade Landfill	2290 Homestead Road	Templeton	93465	(905) 466-2985	San Luis Obispo
Cold Canyon Landfill Solid Waste Disposal Sit	2299 Carpenter Canyon Road	San Luis Obispo	93401	(805) 549-8363	San Luis Obispo
Ox Mountain (Corinda Los Trancos) Landfill	2 Mi N-E Half Moon Bay Off Hwy 92	Half Moon Bay	94019	(619)421-3773	San Mateo
Guadalupe Rubbish Disposal Company	15999 Guadalupe Mines Road	San Jose	95120	(408) 268-1970	Santa Clara
Kirby Canyon Recycling and Disposal Facility	910 Coyote Creek Golf Drive	Morgan Hill	95038	409)779-2206	Santa Clara
Newby Island Landfill	1601 Dixon Landing Road	Milpitas(SJ)	95035	(408) 262-1401	Santa Clara
Buena Vista Drive Sanitary Landfill	1231 Bruena Vista Drive	Watsonville	95076	(931)454-2430	Santa Cruz
City of Watsonville Landfill	730 San Andreas Road	Watsonville	95076	(931)768-3131 City	Santa Cruz
Santa Cruz Class III Landfill	605 Dimeo Lane	Santa Cruz	95060	(931) 420-5180	Santa Cruz
Anderson Landfill	Approx. 1/4 mile NW of W Anderson Drive	Anderson	9600	(916) 378-6637	Shasta
West Central Landfill	14095 Clear Creek Road	Igo	96047	(530)396-2555	Shasta
B&J Drop Box/Hay Road Landfill	6426 Hay Road; 1/4 Mi W Hwy 113	Vacaville	95687	(707) B78-4718	Solano
Simi Valley Landfill & Recycling Center	2801 Madera Road	Simi Valley	93065	(905) 522-7023	Ventura
Toland Road Sanitary Landfill	3500 North Toland Road	Santa Paula	93060	(905) 658-4674	Ventura
Ostrom Road Landfill	5900 Ostrom Road	Wheatland	95692	(530)743-6321	Yuba

RWQCB Certified List of Treated Wood Waste Landfills

Facility Name	Facility's Site Address	City	Zip Code	Facility Contact Number	County
Buena Vista Landfill				(209) 223-6429	Amador
Union Mine Disposal Site				(530) 295-0429	El Dorado
City of Clovis Landfill				(559) 324-2614	Fresno
Metropolitan Bakersfield (Bena) Sanitary Landfill				(661) 862-8900	Kern
Shafter-Wasco Sanitary Landfill				(661) 862-8900	Kern
Lancaster Landfill and Recycling Center				(661) 223-3437	Los Angeles
Sunshine Canyon Sanitary Landfill County Extension				(818) 504-3017	Los Angeles
Fairmead Solid Waste Disposal Site				(559) 665-3099	Madera
Clover Flat Landfill				(707) 942-4473	Napa
Frank R. Bowerman Sanitary Landfill				(714) 834-4000	Orange
Olinda Alpha Sanitary Landfill				(714) 834-4000	Orange
El Sobrante Landfill				(909) 277-1740	Riverside
Sacramento County Landfill (Kiefer)				(916) 875-6789	Sacramento
San Timoteo Solid Waste Disposal Site				(909) 386-8735	San Bernadino
Fort Irwin Sanitary Landfill				(760) 380-3410	San Bernadino
Antelope Valley Landfill				(626) 430-5541	San Bernardino
Landers Disposal Site				(909) 386-8735	San Bernardino
Las Pulgas Landfill				(760) 725-3868	San Diego
Foothill Sanitary Landfill				(209) 468-3000	San Joaquin
North County Recycling Center and Sanitary LF				(209) 468-3000	San Joaquin
City of Paso Robles Landfill				(805) 237-3861	San Luis Obispo
Hillside Class III Disposal Site				(650) 755-6978	San Mateo
Santa Maria Landfill				(805) 925-0951	Santa Barbara
Pacheco Pass Sanitary Landfill				(408) 847-4142	Santa Clara
Potrero Hills Landfill				(707) 429-9600	Solano
Central Landfill				(707) 565-7940	Sonoma
Fink Road Landfill				(209) 837-4801	Stanislaus
Visalia Landfill				(559) 733-6291	Tulare
Woodville Disposal Site				(559) 733-6291	Tulare
Yolo County Central Landfill				(530) 666-8852	Yolo

ATTACHMENT 4: Bill of Lading Typical Information

STATE OF CALIFORNIA – GENERAL SERVICES PROCUREMENT DIVISION

TWW Alternative Management Standards

NOTICE: *Shippers of hazardous materials must enter 24-hour emergency response telephone number under "Hazardous Materials Articles."*

STRAIGHT BILL OF LADING - SHORT FORM - ORIGINAL - Not Negotiable

STD. 254 (REV. 6/2005)

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth in the applicable motor carrier classification or tariff.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

FROM CONSIGNOR

Caltrans, Dist #, Division, MS or project name

Street address of facility or PM # or similar description

Site Contact Person

TO CONSIGNEE

BILL OF LADING NO	DATE
SHIPPER NO	IS THIS BILL OF LADING PART OF A MASTER BILL? ☐ NO ☐ YES ☐ NO. OF DROPS

☐ TO BE PREPAID — BILL TO:

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement. The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

☐ FREIGHT COLLECT — SIGNATURE OF CONSIGNOR

CARRIER NAME

CARRIER FEDERAL IDENTIFICATION NUMBER

NO. AND TYPE OF PACKAGES	TYPE OF PACKAGE, DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS HAZARDOUS MATERIALS ARTICLES *For 24-hour emergency response, call:*	LINE ITEM CLASS NO.	CLASS	LINE ITEM WT. (Subj. to Correct)
	This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.			
Ex. 1-20 c.y.	T. W. W.			
0	TOTAL NO. OF PIECES		TOTAL WEIGHT	0

SHIPPER'S SIGNATURE — DATE SHIPPED

DRIVER'S SIGNATURE — DATE SHIPPED

April 4, 2016

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

SUBJECT: **Water Quality Avoidance, Minimization, and/or Mitigation Strategies for the Twelve Bridge Projects under the Bridge Preventive Maintenance Program Scour Mitigation Program**

Dear Ms. Rutherford:

This letter includes a brief discussion about Water Quality, Avoidance, Minimization, and/or Mitigation Strategies that should be implemented during construction activities to ensure that water quality is maintained. If you have any questions regarding the enclosed please feel free to give me a call.

Sincerely,

DE NOVO PLANNING GROUP
Steve McMurtry, Principal/Biologist

INTRODUCTION

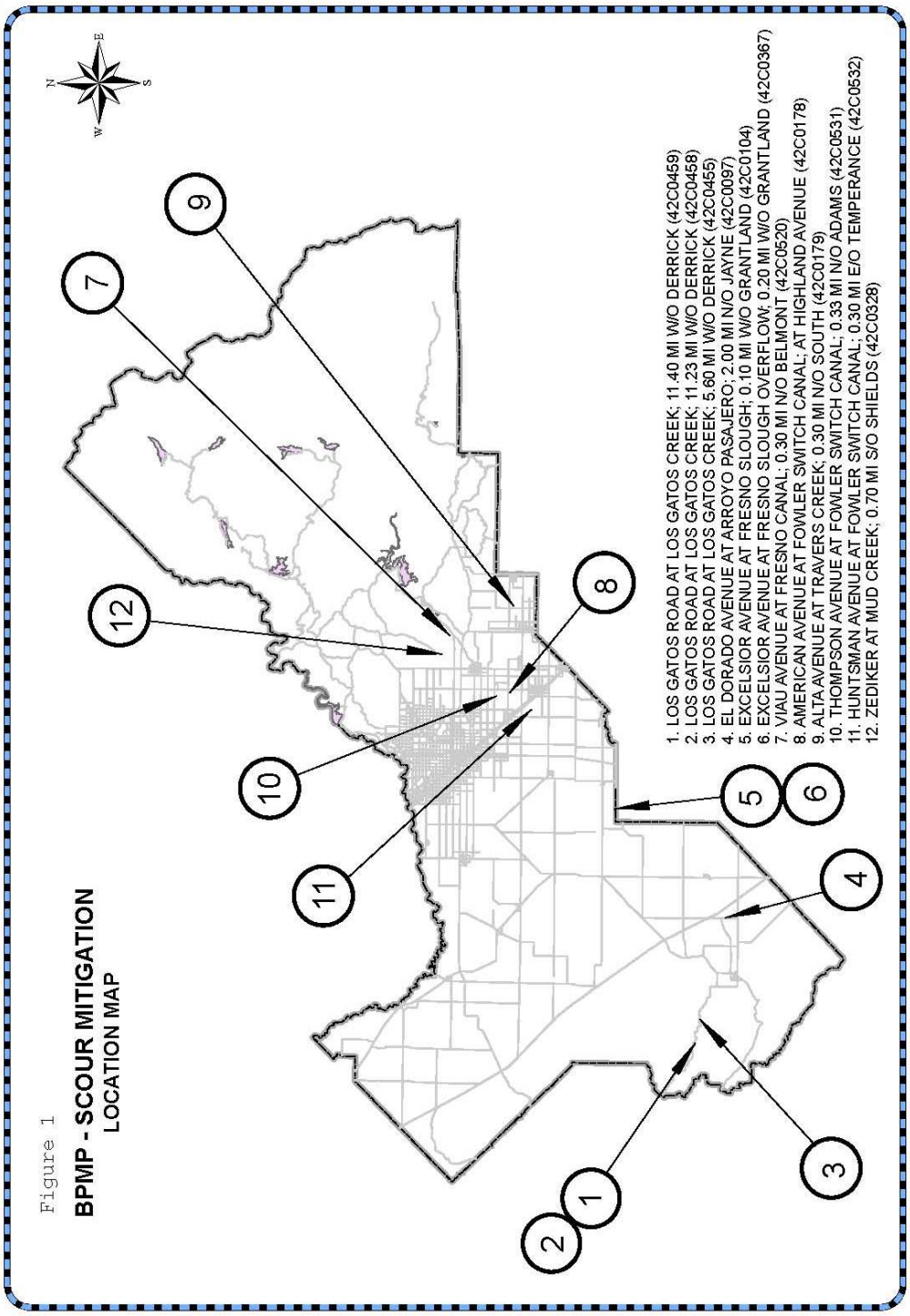
PROJECT DESCRIPTION

The County of Fresno with the California Department of Transportation proposes to conduct maintenance activities on twelve (12) bridges as part of its Bridge Preventive Maintenance Program (BPMP). A map depicting the location of these bridges is included a Figure 1. The proposed project would extend the service life of the existing structure at each location by installing new or repairing existing scour countermeasures and conducting other maintenance activities at each location (See Appendix A for the detailed scope of work specific to each bridge). Vegetation and trash will be removed from the channel at each location. Portions of the channel could be excavated to a maximum depth of 3' to install new or repair the existing scour countermeasures. A dead tree overhanging bridge site 3 will be removed. It is the intention of the County to use existing paths to temporarily access the channel and not remove any trees as depicted in the APE maps. Permits may be required to facilitate the contractor's temporary access the channel at some locations during construction. Construction is anticipated to occur within the existing right of way.

PROJECT LOCATION

The County of Fresno proposes to conduct maintenance activities, through its BPMP program, on the twelve (12) bridges listed below. A map depicting the location of these bridges is included a Figure 1.

1. Bridge Number 42C0459 - Los Gatos Creek at Los Gatos Road
2. Bridge Number 42C0458 - Los Gatos Creek at Los Gatos Road
3. Bridge Number 42C0455 - Los Gatos Creek at Los Gatos Road
4. Bridge Number 42C0097 - Arroyo Pasajero at El Dorado Avenue
5. Bridge Number 42C0104 - Fresno Slough at Excelsior Avenue
6. Bridge Number 42C0367 - Fresno Slough Overflow at Excelsior Avenue
7. Bridge Number 42C0520 - Fresno Canal at Viau Avenue
8. Bridge Number 42C0178 - Fowler Switch Canal at American Avenue
9. Bridge Number 42C0179 - Travers Creek at Alta Avenue
10. Bridge Number 42C0531 - Fowler Switch Canal at Thompson Avenue
11. Bridge Number 42C0532 - Fowler Switch Canal at Huntsman Avenue
12. Bridge Number 42C0328 - Mud Creek at Zediker Avenue



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smcmurtry@denovoplanning.com | TEL 916 580 9818

WATER QUALITY

1. **Bridge Number 42C0459 - Los Gatos Creek at Los Gatos Road**

   The Project is located within the jurisdiction of the Central Valley Region of the Regional Water Quality Control Board, in the Coast Range Hydraulic Unit in the Juniper Ridge Hydrologic Area and Hydraulic sub-area 559.20 (CalWater Watershed).

   Watersheds associated with Los Gatos Creek near the APE include the Los Gatos Creek Watershed, and Upper Los Gatos Creek Sub-Watershed (Hydrologic Unit Code 180300120603).

   The Environmental Protection Agency (EPA) lists certain water bodies as being impaired for sediment/siltation or turbidity, referred to as 303(d) water bodies. There are no impaired waters within the APE therefore this water body is considered to be a low risk. The most recent 303d list for waterbodies within or near the watershed and Water Quality Objectives by waterbody are available below (Attachment A).

   Standard conditions including the preparation of a Storm Water Pollution Prevention Plan (SWPPP), adherence to the Fresno County grading and earthmoving standards (Ordinance Code, Chapter 15.28 Grading and Excavation), compliance with NPDES permits, and the implementation of Best Management Practices BMP's, would ensure that the impacts related to erosion and runoff and pollutants entering the watercourse would be reduced to less than significant levels.

2. **Bridge Number 42C0458 - Los Gatos Creek at Los Gatos Road**

   The Project is located within the jurisdiction of the Central Valley Region of the Regional Water Quality Control Board, in the Coast Range Hydraulic Unit in the Juniper Ridge Hydrologic Area and Hydraulic sub-area 559.20 (CalWater Watershed).

   Watersheds associated with Los Gatos Creek near the APE include the Los Gatos Creek Watershed, and Upper Los Gatos Creek Sub-Watershed (Hydrologic Unit Code 180300120603).

   There are no impaired waters within the APE therefore this water body is considered to be a low risk. The most recent 303d list for waterbodies within or near the watershed and Water Quality Objectives by waterbody are available below (Attachment A).

   Standard conditions including the preparation of a SWPPP, adherence to the Fresno County grading and earthmoving standards, compliance with NPDES permits, and the implementation of BMP's, would ensure that the impacts related to erosion and runoff and pollutants entering the watercourse would be reduced to less than significant levels.

3. **Bridge Number 42C0455 - Los Gatos Creek at Los Gatos Road**

The Project is located within the jurisdiction of the Central Valley Region of the Regional Water Quality Control Board, in the Coast Range Hydraulic Unit in the Juniper Ridge Hydrologic Area and Hydraulic sub-area 559.20 (CalWater Watershed).

Watersheds associated with Los Gatos Creek near the APE include the Los Gatos Creek Watershed, and Middle Los Gatos Creek Sub-Watershed (Hydrologic Unit Code 180300120604).

There are no impaired waters within the APE therefore this water body is considered to be a low risk. The most recent 303d list for waterbodies within or near the watershed and Water Quality Objectives by waterbody are available below (Attachment B).

Standard conditions including the preparation of a SWPPP, adherence to the Fresno County grading and earthmoving standards, compliance with NPDES permits, and the implementation of BMP's, would ensure that the impacts related to erosion and runoff and pollutants entering the watercourse would be reduced to less than significant levels.

4. Bridge Number 42C0097 - Arroyo Pasajero at El Dorado Avenue

The Project is located within the jurisdiction of the Central Valley Region of the Regional Water Quality Control Board, in the South Valley Floor Hydraulic Unit in the Kettleman Hydrologic Area and Hydraulic sub-area 558.50 (CalWater Watershed).

Watersheds associated with the Arroyo Pasajero near the APE include the Los Gatos Creek Watershed, and Lower Los Gatos Creek Sub-Watershed (Hydrologic Unit Code 180300120606).

There are no impaired waters within the APE therefore this water body is considered to be a low risk. The most recent 303d list for waterbodies within or near the watershed and Water Quality Objectives by waterbody are available below (Attachment C).

Standard conditions including the preparation of a SWPPP, adherence to the Fresno County grading and earthmoving standards, compliance with NPDES permits, and the implementation of BMP's, would ensure that the impacts related to erosion and runoff and pollutants entering the watercourse would be reduced to less than significant levels.

5. Bridge Number 42C0104 - Fresno Slough at Excelsior Avenue

The Project is located within the jurisdiction of the Central Valley Region of the Regional Water Quality Control Board, in the South Valley Floor Hydraulic Unit in the Lower Kings River Hydrologic Area and Hydraulic sub-area 551.80 (CalWater Watershed).

Watersheds associated with the Fresno Slough near the APE include the Murphy Slough/Fresno Slough, and Boggs Slough/Fresno Slough Sub-Watershed (Hydrologic Unit Code 180300090101).

The Environmental Protection Agency (EPA) lists certain water bodies as being impaired for sediment/siltation or turbidity, referred to as 303(d) water bodies. The most recent 303d list for

waterbodies within or near the watershed and Water Quality Objectives by waterbody are available below (Attachment D). Additionally, Table 1 below presents Causes of Impairment within the Fresno Slough. As shown in Table 1 the Fresno Slough is impaired by pollutants Chlorpyrifos and an Unknown Toxicity along the 15 mile stretch from Graham Road to James Bypass in Fresno County.

Where a project discharges directly into a 303(d) water body listed for sediment or turbidity, the Stormwater Pollution Prevention Plan (SWPPP) must include a sampling and analysis plan (SAP) that will determine whether water quality objectives are impacted by direct storm water discharges from the project. However, the Fresno Slough is not considered a Sediment Sensitive Waterbody.

Standard conditions including the preparation of a SWPPP, adherence to the Fresno County grading and earthmoving standards, compliance with NPDES permits, and the implementation of BMP's, would ensure that the impacts related to erosion and runoff and pollutants entering the watercourse would be reduced to less than significant levels.

Table-1: Causes of Impairment Fresno Slough at Excelsior Avenue (From Graham Road to James Bypass)

Pollutant	Source	Size	Status
Chlorpyrifos	Source Unknown	15 Miles	TMDL required
Unknown Toxicity	Source Unknown	15 Miles	TMDL required

6. Bridge Number 42C0367 - Fresno Slough Overflow at Excelsior Avenue

The Project is located within the jurisdiction of the Central Valley Region of the Regional Water Quality Control Board, in the South Valley Floor Hydraulic Unit in the Lower Kings River Hydrologic Area and Hydraulic sub-area 551.80 (CalWater Watershed).

Watersheds associated with the Fresno Slough Overflow near the APE include the Murphy Slough/Fresno Slough, and Boggs Slough/Fresno Slough Sub-Watershed (Hydrologic Unit Code 180300090101).

The EPA lists certain water bodies as being impaired for sediment/siltation or turbidity, referred to as 303(d) water bodies. The most recent 303d list for waterbodies within or near the watershed and Water Quality Objectives by waterbody are available below (Attachment D).

Where a project discharges directly into a 303(d) water body listed for sediment or turbidity, the Stormwater Pollution Prevention Plan (SWPPP) must include a sampling and analysis plan (SAP) that will determine whether water quality objectives are impacted by direct storm water

discharges from the project. However, the Fresno Slough, and associated Overflow is not considered a Sediment Sensitive Waterbody.

Standard conditions including the preparation of a SWPPP, adherence to the Fresno County grading and earthmoving standards, compliance with NPDES permits, and the implementation of BMP's, would ensure that the impacts related to erosion and runoff and pollutants entering the watercourse would be reduced to less than significant levels.

7. Bridge Number 42C0520 - Fresno Canal at Viau Avenue

The Project is located within the jurisdiction of the Central Valley Region of the Regional Water Quality Control Board, in the South Valley Floor Hydraulic Unit in the Fresno Hydrologic Area and Hydraulic sub-area 551.30 (CalWater Watershed).

Watersheds associated with the Fresno Canal near the APE include the Fancher Creek/Fancher Creek Canal Watershed, and Mud Creek Sub-Watershed (Hydrologic Unit Code 180300090302).

There are no impaired waters within the APE therefore this water body is considered to be a low risk. The most recent 303d list for waterbodies within or near the watershed and Water Quality Objectives by waterbody are available below (Attachment E).

Standard conditions including the preparation of a SWPPP, adherence to the Fresno County grading and earthmoving standards, compliance with NPDES permits, and the implementation of BMP's, would ensure that the impacts related to erosion and runoff and pollutants entering the watercourse would be reduced to less than significant levels.

8. Bridge Number 42C0178 - Fowler Switch Canal at American Avenue

The Project is located within the jurisdiction of the Central Valley Region of the Regional Water Quality Control Board, in the South Valley Floor Hydraulic Unit in the Consolidated Hydrologic Area and Hydraulic sub-area 551.70 (CalWater Watershed).

Watersheds associated with the Fowler Switch Canal near the APE include the Kennedy Pond/Fresno Slough Watershed, and Benight Pond Sub-Watershed (Hydrologic Unit Code 180300090201).

There are no impaired waters within the APE therefore this water body is considered to be a low risk. The most recent 303d list for waterbodies within or near the watershed and Water Quality Objectives by waterbody are available below (Attachment F).

Standard conditions including the preparation of a SWPPP, adherence to the Fresno County grading and earthmoving standards, compliance with NPDES permits, and the implementation of BMP's, would ensure that the impacts related to erosion and runoff and pollutants entering the watercourse would be reduced to less than significant levels.

9. Bridge Number 42C0179 - Travers Creek at Alta Avenue

The Project is located within the jurisdiction of the Central Valley Region of the Regional Water Quality Control Board, in the South Valley Floor Hydraulic Unit in the Alta Hydrologic Area and Hydraulic sub-area 551.60 (CalWater Watershed).

Watersheds associated with Travers Creek near the APE include the Middle Cross Creek Watershed, and Travers Creek Sub-Watershed (Hydrologic Unit Code 180300071202).

There are no impaired waters within the APE therefore this water body is considered to be a low risk. The most recent 303d list for waterbodies within or near the watershed and Water Quality Objectives by waterbody are available below (Attachment G).

Standard conditions including the preparation of a SWPPP, adherence to the Fresno County grading and earthmoving standards, compliance with NPDES permits, and the implementation of BMP's, would ensure that the impacts related to erosion and runoff and pollutants entering the watercourse would be reduced to less than significant levels.

10. Bridge Number 42C0531 - Fowler Switch Canal at Thompson Avenue

The Project is located within the jurisdiction of the Central Valley Region of the Regional Water Quality Control Board, in the South Valley Floor Hydraulic Unit in the Consolidated Hydrologic Area and Hydraulic sub-area 551.70 (CalWater Watershed).

Watersheds associated with the Fowler Switch Canal near the APE include the Kennedy Pond/Fresno Slough Watershed, and Benight Pond Sub-Watershed (Hydrologic Unit Code 180300090201).

There are no impaired waters within the APE therefore this water body is considered to be a low risk. The most recent 303d list for waterbodies within or near the watershed and Water Quality Objectives by waterbody are available below (Attachment H).

Standard conditions including the preparation of a SWPPP, adherence to the Fresno County grading and earthmoving standards, compliance with NPDES permits, and the implementation of BMP's, would ensure that the impacts related to erosion and runoff and pollutants entering the watercourse would be reduced to less than significant levels.

11. Bridge Number 42C0532 - Fowler Switch Canal at Huntsman Avenue

The Project is located within the jurisdiction of the Central Valley Region of the Regional Water Quality Control Board, in the South Valley Floor Hydraulic Unit in the Consolidated Hydrologic Area and Hydraulic sub-area 551.70 (CalWater Watershed).

Watersheds associated with the Fowler Switch Canal near the APE include the Kennedy Pond/Fresno Slough Watershed, and Elkhorn Ditch/Liberty Ditch Sub-Watershed (Hydrologic Unit Code 180300090203).

There are no impaired waters within the APE therefore this water body is considered to be a low risk. The most recent 303d list for waterbodies within or near the watershed and Water Quality Objectives by waterbody are available below (Attachment I).

Standard conditions including the preparation of a SWPPP, adherence to the Fresno County grading and earthmoving standards, compliance with NPDES permits, and the implementation of BMP's, would ensure that the impacts related to erosion and runoff and pollutants entering the watercourse would be reduced to less than significant levels.

12. Bridge Number 42C0328 - Mud Creek at Zediker Avenue

The Project is located within the jurisdiction of the Central Valley Region of the Regional Water Quality Control Board, in the South Valley Floor Hydraulic Unit in the Fresno Hydrologic Area and Hydraulic sub-area 551.30 (CalWater Watershed).

Watersheds associated with Mud Creek near the APE include the Fancher Creek/Fancher Creek Canal Watershed, and Mud Creek Sub-Watershed (Hydrologic Unit Code 180300090302).

There are no impaired waters within the APE therefore this water body is considered to be a low risk. The most recent 303d list for waterbodies within or near the watershed and Water Quality Objectives by waterbody are available below (Attachment J).

Standard conditions including the preparation of a SWPPP, adherence to the Fresno County grading and earthmoving standards, compliance with NPDES permits, and the implementation of BMP's, would ensure that the impacts related to erosion and runoff and pollutants entering the watercourse would be reduced to less than significant levels.

Avoidance, Minimization, and/or Mitigation Strategies

Local, state, and federal agencies require the development of practical measures in response to the potential impacts of construction activities and ongoing project operations that discharge sediment and other undesirable elements to existing waterways. The measures considered for the BPMP have been categorized as standard conditions. Standard conditions include the regulatory requirements dictated by local, state and/or federal mandates. These include the required compliance with NPDES permit requirements, preparation of a Stormwater Pollution Prevention Plan (SWPPP), as well as County ordinances (e.g., erosion and grading ordinance). Project design features are currently unknown as the project is in the design phase, however, standard conditions include the application of Best Management Practices (BMPs) to include measures that can be incorporated into the design of the project to avoid, minimize, or reduce potential environmental impacts to the waterways affected by the BPMP.

Standard Conditions

Fresno County Ordinance Code, Chapter 15.28 Grading and Excavation: The Fresno County grading and excavation ordinance establishes standards for grading and excavation within unincorporated Fresno County; sets forth rules and regulations to control excavation, grading, and earthwork construction, including fills and embankments; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of grading construction.

Storm Water Pollution Prevention Plan (SWPPP): Dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre, but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed structures, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list specific Best Management Practices (BMPs) the discharger will use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP.

Implementation of a SWPPP is the responsibility of the construction contractor's Qualified SWPPP Practitioner (QSP) or designee. As part of that responsibility, the effectiveness of construction BMPs must be monitored before and after storm events. Records of these inspections and monitoring results are submitted to the SWRCB/RWQCB as part of the annual report required by the Statewide Construction General Permit. Development of the SWPPP shall include and address the following standards and practices:

- The SWPPP shall include measures to avoid creating contaminants, minimize the release of contaminants, and water quality control measures to minimize contaminants from entering surface water or percolating into the ground.
- The SWPPP measures shall address both construction and operation periods.
- The SWPPP shall include best management practices as appropriate, given the specific circumstances of the site and/or project. The RWQCB may request to comment and approve the SWPPP.

- A spill prevention and countermeasure plan shall be incorporated into the SWPPP.

National Pollutant Discharge Elimination System (NPDES): National Pollutant Discharge Elimination System (NPDES) permits are required for discharges of pollutants to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The SWRCB issues general permits for stormwater runoff from industrial and construction sites statewide. Stormwater discharges from construction activities can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB, by submitting a Notice of Intent with the SWPPP to the RWQCB.

Applicable Best Management Practices (BMP's)

The SWPPP for each individual BPMP project is to be designed with Best Management Practices (BMPs) that the RWQCB has deemed as effective at reducing erosion, controlling sediment, and managing runoff. These can include: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. Sediment control BMPs include installing silt fences or placing straw wattles below slopes, installing berms and other temporary run-on and runoff diversions. The BMPs listed below are examples of what could be considered and does not preclude new or innovative approaches currently available or being developed. The SWPPP, including the monitoring log, must be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.

- Work within the channel of waterways should be limited to avoid the rainy season.

- Land disturbing activities and the installation of erosion and sedimentation control devices shall be coordinated to reduce on-site erosion and off-site sedimentation. These measures may include mulches (above the mean high water line only), soil binders and erosion control blankets, and silt fencing.

- Existing vegetation shall be protected where feasible to provide an effective form of erosion and sediment control, as well as watershed protection, dust and pollution control.

- The area of construction and disturbance should be limited to as small an area as feasible. Stabilizing material, such as water, shall be applied to the soil surface to prevent the movement of dust at the project site due to traffic, wind, and grading activities.

- Area of construction and disturbance shall be returned to pre-construction contours and revegetated with native species. Hydroseeding could be implemented as a temporary measure, if feasible.

- Provide berms along the tops of slopes to prevent water from running uncontrolled down the slopes and entering the channel.
- All construction related materials shall be hauled off-site after completion of construction.
- All erosion control measures and storm water control measures shall be properly maintained until the site has returned to a pre-construction state.
- All construction roadway areas shall be properly protected to prevent excess erosion, sedimentation, and water pollution.
- All vehicle and equipment maintenance procedures shall be conducted off-site. In the event of an emergency, any maintenance shall occur away from the channel.
- All concrete curing activities shall be conducted to minimize spray drift and prevent curing compounds from entering the waterway directly or indirectly.
- All construction materials, vehicles, stockpiles, and staging areas shall be situated outside of the stream channel and as far away from the watercourse as feasible. All stockpiles shall be covered, as quickly as feasible after the stockpiles are created.

Attachment A: Water Quality and Hydrologic Area Map Bridge Number 42C0459 & 42C0458 - Los Gatos Creek at Los Gatos Road

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smcmurtry@denovoplanning.com | TEL 916 580 9818

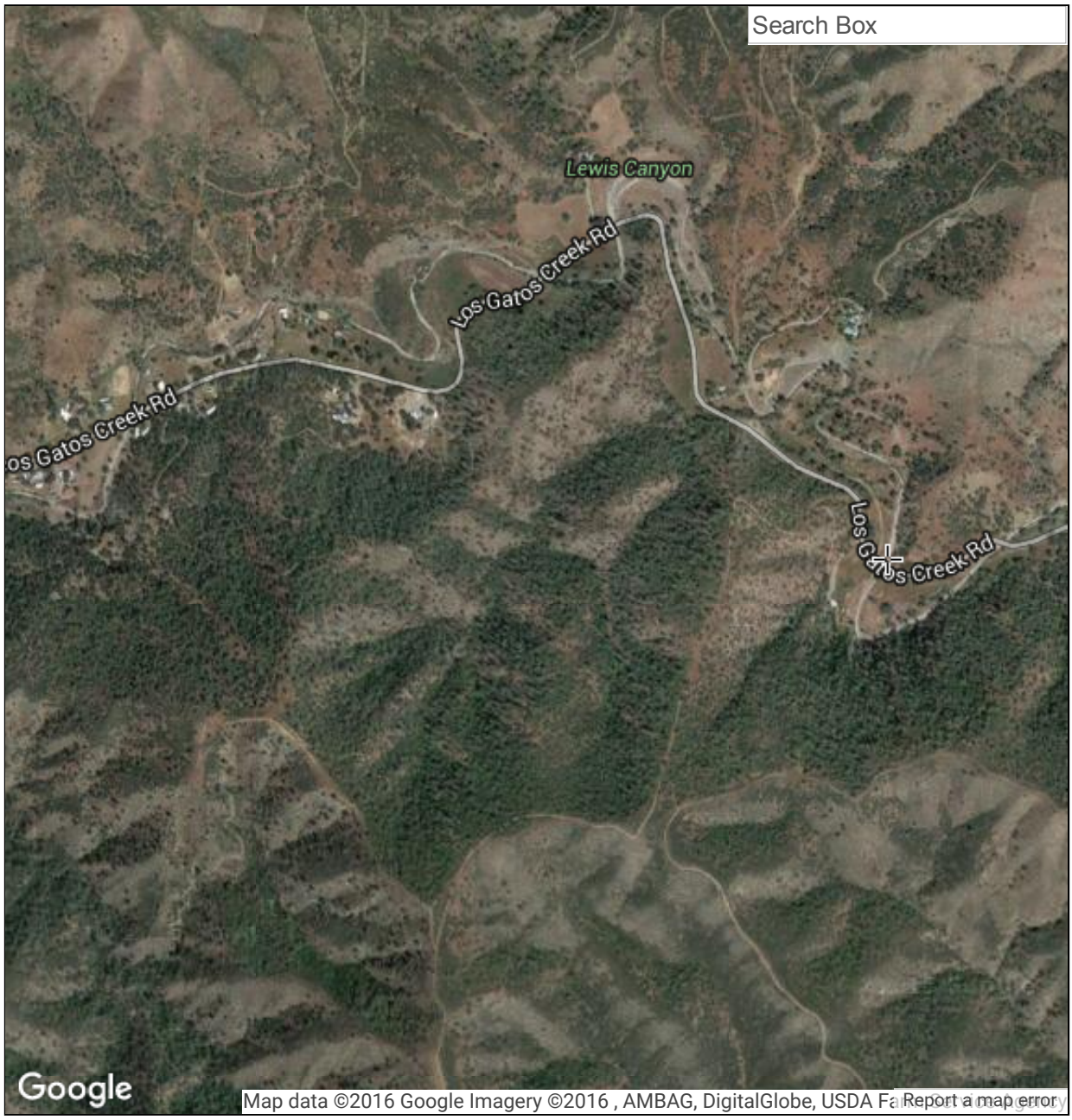
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Caltrans > DEA > Stormwater > **Water Quality Planning Tool**

Layers

- 303(d) List and TMDL 2012(Lege
- Areas of Special Biological Significanc
- Arid and Semi-Arid Regions
- Caltrans Districts
- Caltrans Facilities (Legend)
- Caltrans T 1 Monitorir Sites
- Calwater Watershed
- Coastal Zc
- Counties
- Geologic Map

Information
Hover over a layer name for a description. Additional information, tables, coordinates, and links are below the map.
Help



Watershed Information

CALWATER WATERSHED

Hydrologic Unit	COAST RANGE	Hydrologic Area	Juniper Ridge	Hydrologic Sub-Area #	559.20
Hydrologic Sub-Area Name	undefined	Planning Watershed	7559200102	HSA Area (acres)	221890
Latitude, Longitude	36.2274, -120.5493				

WATERSHED BOUNDARY DATASET

Watershed	Los Gatos Creek	Subwatershed	Upper Los Gatos Creek	Hydrologic Unit Code	180300120603
Average Annual Precipitation (inches)	14.22				

TMDLs & 303(d) Listed Water Bodies (2012 List)

Key: Water body on 303(d) list Water body with a TMDL

Name	Pollutant	Size	Status

No listings found.

Water Quality Objectives

The following waterbodies are in or near HSA 559.20. Click on the waterbody to get information on water quality objectives and beneficial uses

Waterbody Name	Beneficial Uses	Sediment-Sensitive Waterbody
Alamo Creek	AGR, COLD, COMM, GWR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Almos Anchorage Canyon Creek	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Andee Clark Bird Refuge	BIOL, COMM, RARE, REC1, REC2, SHELL, WARM, WILD	False
Ano Nuevo Creek	AGR, BIOL, COLD, COMM, EST, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Antonellis Pond	COMM, GWR, MIGR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Aqua Caliente Canyon	AGR, COLD, COMM, GWR, IND, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Arlington Canyon Creek	AGR, BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Arroyo Bulito	AGR, COMM, EST, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Arroyo Burro Estuary	COMM, EST, REC1, REC2, SPWN, WARM, WILD	False
Arroyo De Los Frejoles Creek	AGR, BIOL, COLD, COMM, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Arroyo de los Frejoles Reservoir	AGR, COLD, COMM, FRSH, GWR, MUN, NAV, REC1, REC2, WARM, WILD	False
Arroyo Laguna	COLD, COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WILD	False
Arroyo Quenado	AGR, COLD, COMM, EST, FRSH, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Atascadero Creek	AGR, COLD, COMM, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Atascadero Lake	COLD, COMM, GWR, MUN, NAV, REC1, REC2, SPWN, WARM, WILD	False
Baldwin Creek Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	True
Barka Slough	COMM, EST, GWR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Bennett Slough/Estuary	BIOL, COLD, COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False

Big Pocket Lake (Dunes Lakes)	COMM, GWR, RARE, REC2, WILD	False
Big Sandy Creek	AGR, BIOL, COMM, GWR, MUN, RARE, REC1, REC2, WARM, WILD	False
Big Twin Lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Bird Creek	AGR, BIOL, COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Black Hawk Canyon Creek	COMM, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Black Lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Bolsa Chico Lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Boulder Creek	AGR, COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Bracken Brae Creek	COLD, COMM, GWR, MUN, RARE, REC1, REC2, WILD	False
Bumett Creek	AGR, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Burnett Creek	AGR, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Camadero Creek	COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, WARM, WILD	False
Cameros Creek	AGR, COLD, COMM, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Canada Alegria	COMM, EST, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Canada Aqua Viva	COMM, EST, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Canada del Agua Caliente	AGR, COLD, COMM, EST, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Canada del Puerta (Prisoner Harbor)	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Canada Honda Creek Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	True
Canada Larga Creek	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Canada Lobos Creek	AGR, BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Canada San Onofre	COLD, COMM, EST, FRSH, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Carmel River Estuary	BIOL, COLD, COMM, EST, GWR, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
Carpinteria Marsh (El Estero Marsh)	BIOL, COMM, EST, MIGR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Cascade Creek Lagoon/Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
Cave Gulch	COLD, COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Celery Lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Chalome Cr	AGR, COMM, GWR, MUN, RARE, REC1, REC2, WARM, WILD	False
Chalone Cr	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Chalone Cr	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Cherry Canyon Creek	AGR, BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Clapp Springs	AGR, BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Clear Creek	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WET, WILD	True
Clipper Gulch	COLD, COMM, GWR, MUN, REC1, REC2, WILD	False

Coches Prieto Canyon Creek	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Cookhouse Gulch	COLD, COMM, GWR, MUN, REC1, REC2, WILD	False
Corcoran Lagoon	COMM, EST, GWR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Cow Canyon Creek	AGR, BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WET, WILD	False
Davis Creek	COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Davis Creek Reservoir	COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Deer Creek	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Del Monte Lake	COMM, MUN, REC1, REC2, WARM, WILD	False
Devereaux Creek	COMM, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Devereaux Ranch Lagoon	BIOL, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Devil's Canyon Creek, north fork	BIOL, COLD, COMM, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Devil's Canyon Creek, south fork	BIOL, COLD, COMM, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Devils Canyon, middle fork	BIOL, COLD, COMM, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Drew Lake	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Dune Lakes Marsh Area	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
El Estero Lake	COLD, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Elkhorn Slu	AQUA, BIOL, COLD, COMM, EST, MIGR, NAV, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	True
Espinosa Lake	COMM, REC1, REC2, WARM, WILD	False
Espinosa Slough	COMM, REC1, REC2, WARM, WILD	False
Estrella R	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Estrella R	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Fitch Creek	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Franklin Creek	AGR, COMM, GWR, MUN, REC1, REC2, WILD	False
Gabilan Cr	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Gabilan Cr	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Gallighan Slough	COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Gobemador Creek	COLD, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Goleta Point Marsh	BIOL, COMM, RARE, REC1, REC2, SPWN, WARM, WILD	False
Goleta Slough/Estuary	BIOL, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Graves Wetland	COMM, REC1, REC2, SPWN, WARM, WILD	False
Green Oaks Creek Lagoon/Estuary	COLD, COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WILD	False
Hames Creek	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Hanson Slough	BIOL, COMM, EST, RARE, REC1, REC2, SHELL, WARM, WILD	False
Harkins Slough	BIOL, COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Hernandez Reservoir	AGR, COMM, FRSH, GWR, MUN, NAV, REC1, REC2, SPWN, WARM, WILD	False
Hilton Creek	AGR, COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN,	True

	WILD	
Hopkins Gulch	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Hospital Lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Huerhuero Creek	AGR, COMM, GWR, MUN, RARE, REC1, REC2, WARM, WILD	False
Indian Creek	AGR, BIOL, COLD, COMM, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Indian Creek	AGR, BIOL, COLD, COMM, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Islay Creek	AGR, BIOL, COLD, COMM, EST, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Jack Creek	AGR, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Jalama Creek Estuary	BIOL, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Kelly Lake	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Lady's Harbor Canyon Creek	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Laguna Creek	AGR, COLD, COMM, FRSH, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Laguna Creek Estuary	COLD, COMM, EST, GWR, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
Laguna Grande/Roberts Lake	COLD, COMM, MUN, REC1, REC2, WARM, WILD	False
Las Palmas Creek	COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Las Tablas Creek	AGR, COLD, COMM, GWR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Las Tablas Creek, north fork	AGR, COLD, COMM, GWR, MUN, RARE, REC1, REC2, SPWN, WILD	False
Las Tablas Creek, south fork	AGR, COLD, COMM, GWR, MUN, RARE, REC1, REC2, SPWN, WILD	False
Liddell Creek, east branch	AGR, COLD, COMM, GWR, IND, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Liddell Creek, west branch	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Limeklin Creek	AGR, BIOL, COLD, COMM, EST, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Little Cholame Creek	AGR, COMM, GWR, MUN, RARE, REC1, REC2, WARM, WILD	False
Little Pico Creek	AGR, COLD, COMM, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Little Pico Creek Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
Lockhart Gulch Creek	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Los Cameros Creek	COLD, COMM, FRSH, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Los Caneros	AGR, COMM, FRSH, GWR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Los Caneros Wetland	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Los Padres Reservoir	COLD, COMM, FRSH, GWR, MIGR, MUN, NAV, REC1, REC2, SPWN, WARM, WILD	True
Lucerne Lake	AGR, COLD, COMM, FRSH, MUN, REC1, REC2, WILD	False

Lucerne Lake Estuary	BIOL, COLD, COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WILD	False
Marina Pond #1	BIOL, COLD, COMM, GWR, RARE, REC1, REC2, SPWN, WILD	False
Marina Pond #2	BIOL, COLD, COMM, GWR, RARE, REC1, REC2, WILD	False
Marina Pond #3	BIOL, COLD, COMM, GWR, RARE, REC1, REC2, WILD	False
Marina Pond #4/5	BIOL, COLD, COMM, GWR, RARE, REC1, REC2, WILD	False
Marina Pond #6	BIOL, COLD, COMM, GWR, RARE, REC1, REC2, WILD	False
Marina Pond #7	BIOL, COLD, COMM, GWR, RARE, REC1, REC2, SPWN, WILD	False
McClusky Slough	COMM, GWR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
McDonald Gulch	BIOL, COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Mill Creek (Bonnie Doon)	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Mill Creek (Cape San Martin)	COLD, COMM, EST, FRSH, MIGR, MUN, REC1, REC2, SPWN, WARM, WILD	True
Mill Creek (Scott Creek)	AGR, COLD, COMM, FRSH, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Mill Creek (SLR)	COLD, COMM, GWR, MUN, REC1, REC2, WILD	False
Mill Creek Res.	COLD, COMM, FRSH, MIGR, MUN, NAV, REC1, REC2, SPWN, WARM, WILD	True
Miners Creek	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Moore Creek	AGR, BIOL, COLD, COMM, FRSH, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Moran Lake	COMM, GWR, REC1, REC2, SPWN, WARM, WILD	False
Moro Cojo Slough	BIOL, COLD, COMM, EST, GWR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Morro Bay Estuary	AQUA, BIOL, COLD, COMM, EST, IND, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
Mud Lake	COMM, FLD, GWR, RARE, REC1, REC2, SPWN, WARM, WILD, WQE	False
Nacimiento Reservoir	AGR, COLD, COMM, FRSH, GWR, MUN, NAV, RARE, REC1, REC2, SPWN, WARM, WILD	False
Nacimiento River, dwnstrm Res.	AGR, COLD, COMM, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Nacimiento River, upstream of Res.	AGR, COLD, COMM, FRSH, GWR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Neary's Lagoon	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Oceano Lagoon	BIOL, COMM, RARE, REC1, REC2, SPWN, WARM, WILD	False
Old Creek, dwnstrm	AGR, COMM, EST, FRSH, GWR, MUN, RARE, REC1, REC2, WARM, WILD	False
Old Creek, upstream	AGR, COLD, COMM, FRSH, GWR, IND, MUN, PROC, RARE, REC1, REC2, SPWN, WARM, WILD	False
Old Ranch Canyon Creek	AGR, BIOL, COMM, FRSH, MUN, RARE, REC1, REC2, WARM, WILD	False
Old Ranch Canyon Creek Estuaries	AGR, BIOL, COMM, EST, RARE, REC1, REC2, SPWN, WARM, WILD	False
Old Ranch House Canyon Creek	AGR, BIOL, COMM, FRSH, MUN, RARE, REC1, REC2, WARM, WILD	False
Old Salinas River Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	True

Palm Beach Pond	COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Paloma Creek	AGR, COLD, COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Pancho Rico Cr	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Parsons Slough	BIOL, COLD, COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WILD	False
Paso Robles Creek	AGR, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Pico Creek Estuary	BIOL, COLD, COMM, EST, GWR, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	True
Pico Creek, north fork	AGR, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Pico Creek, south fork	AGR, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Pine Creek	BIOL, COLD, COMM, GWR, IND, MIGR, MUN, REC1, REC2, SPWN, WARM, WILD	True
Pipeline Lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Pismo Creek Estuary	BIOL, COLD, COMM, EST, GWR, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
Pismo Marsh (Lake)	BIOL, COMM, GWR, RARE, REC1, REC2, WARM, WILD	False
Rattlesnake Canyon	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WARM, WILD	True
Rogers Creek	BIOL, COLD, COMM, MUN, REC1, REC2, WILD	False
Romero Creek	COMM, EST, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
S.L.O. Crk, above W. Marsh St.	AGR, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
S.L.O. Crk, below W. Marsh St.	AGR, COLD, COMM, FRSH, GWR, MIGR, MUN, REC1, REC2, SPWN, WARM, WILD	True
Salinas R., Nacimiento R.-S. Margarita Res.	AGR, COLD, COMM, GWR, MIGR, MUN, PROC, RARE, REC1, REC2, SPWN, WARM, WILD	True
Salinas Reclamation Canal	COMM, REC1, REC2, WARM, WILD	False
Salinas Reservoir-Headwaters	AGR, COLD, COMM, FRSH, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Salinas River	ALL	False
Salinas River Lagoon (North)	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	True
Salinas River Refuge Lagoon, south	BIOL, COLD, COMM, MIGR, RARE, REC1, REC2, SHELL, WARM, WILD	False
Salinas River, Chualar - Nacimiento River	ALL	False
Salinas River, Chualar-Nacimiento River	AGR, COLD, COMM, GWR, IND, MIGR, MUN, PROC, RARE, REC1, REC2, SPWN, WARM, WILD	True
Salinas River, Spreckels Gage-Chualar	AGR, COLD, COMM, GWR, IND, MIGR, MUN, PROC, REC1, REC2, WARM, WILD	False
Salmon Creek	COLD, COMM, EST, FRSH, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Salsipuedes Creek	AGR, COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
San Antonio River, dwnstrm from Reservoir	AGR, COMM, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False

San Antonio River, upstrm from Reservoir	AGR, COLD, COMM, FRSH, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
San Benito River	AGR, COMM, FRSH, GWR, IND, MUN, REC1, REC2, SPWN, WARM, WILD	False
San Carpoforo Creek Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
San Felipe Lake	AGR, COLD, COMM, FRSH, GWR, MIGR, MUN, NAV, REC1, REC2, WARM, WILD	False
San Jose Creek (Sbarbara County)	AGR, COLD, COMM, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
San Jose Creek Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
San Juan Cr	AGR, COMM, GWR, MUN, RARE, REC1, REC2, WARM, WILD	False
San Lorenzo Cr	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
San Lorenzo River Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
San Marcos Cr	AGR, COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
San Pedro Creek	AGR, COLD, COMM, FRSH, GWR, MIGR, MUN, REC1, REC2, WARM, WILD	False
San Simeon Creek Estuary	BIOL, COLD, COMM, EST, GWR, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
San Ysidro Creek	COMM, EST, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Santa Lucia Canyon Creek	AGR, COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Santa Lucia Creek	AGR, BIOL, COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WARM, WILD	True
Santa Margarita Reservoir (Lake)	AGR, COLD, COMM, FRSH, GWR, IND, MUN, NAV, POW, RARE, REC1, REC2, SPWN, WARM, WILD	False
Santa Rosa Creek	AGR, COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WARM, WILD	True
Santa Ynez River Estuary	BIOL, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Sauces Canyon Creek	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Schwan Lake	BIOL, COMM, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Sempervirens Res.	BIOL, COLD, COMM, FRSH, MUN, REC1, REC2, SHELL, WILD	False
Shingle Mill Gulch	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Silver Creek	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Small Twin Lake	COMM, RARE, REC1, REC2, SPWN, WARM, WILD	False
Solvang	ALL	False
Soquel Lagoon	COLD, COMM, EST, MIGR, RARE, REC1, REC2, SPWN, WILD	True
Spring Creek	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Spring Creek Gulch	COLD, COMM, GWR, MUN, REC1, REC2, WILD	False
Struve Slough	BIOL, COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Sycamore Creek	AGR, COLD, COMM, EST, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Tecolote Creek	AGR, COLD, COMM, EST, FRSH, GWR, IND, MIGR, MUN, PROC, RARE, REC1, REC2, SPWN, WARM, WILD	True
	COLD, COMM, FRSH, GWR, MIGR, MUN, REC1, REC2, WARM,	

Tecolotito Creek	WILD	False
Tequisquita Slough	COMM, GWR, REC1, REC2, SPWN, WARM, WILD	False
Tie Gulch	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Toro Canyon Creek	COMM, EST, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Tree Pinos Creek	AGR, COMM, GWR, IND, MUN, REC1, REC2, SPWN, WARM, WILD	False
Twin Harbors Canyon Ck, (E. Fork)	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Tynan Lake	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Upper Pozo Canyon Creek	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Valencia Lagoon	COMM, RARE, REC1, REC2, SPWN, WARM, WILD	False
Valley Floor Waters	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False
Valley Floor Waters	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False
Vineyard Canyon Creek	AGR, COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Waddell Creek Estuary	BIOL, COLD, COMM, EST, GWR, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
Waddell Creek, East Branch	BIOL, COLD, COMM, FRSH, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Waddell Creek, west branch	BIOL, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Wagner Creek	AGR, COLD, COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Wamer Lake	AGR, COMM, GWR, MUN, REC2, WILD	False
Warden Lake Wetland	AGR, COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Waste Slough	COMM, GWR, REC1, REC2, SPWN, WARM, WILD	False
West Side Streams	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False
White lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
White Rock Lake	COLD, COMM, MIGR, MUN, NAV, REC1, REC2, SPWN, WARM, WILD	True
Wilder Creek Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	True
Willow Canyon Creek	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Willow Creek	AGR, COLD, COMM, EST, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Willow Lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Woods Lagoon	COMM, EST, MIGR, REC1, REC2, SHELL, SPWN, WILD	False
Younger's Lagoon	BIOL, COLD, COMM, GWR, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Zaca Lake	COLD, COMM, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Zayanta Creek	AGR, COLD, COMM, GWR, IND, MIGR, MUN, REC1, REC2, SPWN, WILD	True

Caltrans Facilities

MAINTENANCE STATIONS

Name Address

FREEWAYS AND HIGHWAYS

Route Length (miles)

33	6.8
198	21.2

PARK & RIDE LOTS

Name	District	County	Route	Post Mile

REST AREAS

Name	District	County	Route	Post Mile

Additional Information

Help for the Water Quality Planning Tool

TMDL information from the SWRCB

Construction General Permit information from the SWRCB

Groundwater Depth information from the California Department of Water Resouces

R Factor erosivity calculations

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Attachment B: Water Quality and Hydrologic Area Map Bridge Number 42C0455 - Los Gatos Creek at Los Gatos Road

CALIFORNIA DEPARTMENT OF TRANSPORTATION

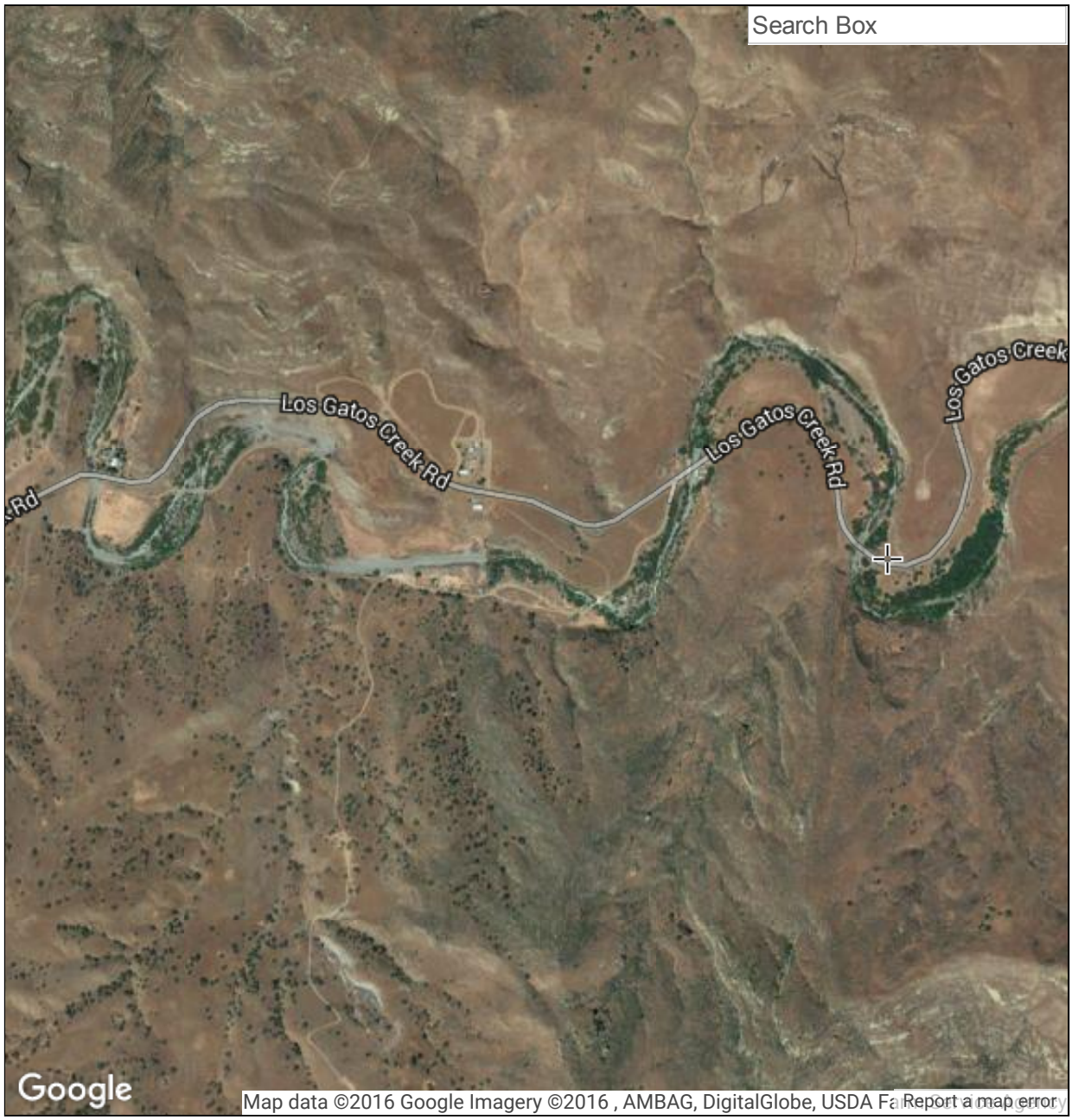
Caltrans > DEA > Stormwater > **Water Quality Planning Tool**

- Counties
- Geologic Map (Legend)
- High Risk Receiving Watershed
- Monthly Precipitatic
- MS4 Areas
- Post Miles
- RWQCB Boundaries
- USGS Top Maps Watershed
- Boundary Dataset
- Zip Codes

Soil Loss Factors

- Erosivity Index
- Soils (K Factors)

Information
Hover over a layer name for a description. Additional information, tables, coordinates, and links are below the map.
Help



Watershed Information

CALWATER WATERSHED

Hydrologic Unit	COAST RANGE	Hydrologic Area	Juniper Ridge	Hydrologic Sub-Area #	559.20
Hydrologic Sub-Area Name	undefined	Planning Watershed	7559200303	HSA Area (acres)	221890
Latitude, Longitude	36.2156, -120.4707				

WATERSHED BOUNDARY DATASET

Watershed	Los Gatos Creek	Subwatershed	Middle Los Gatos Creek	Hydrologic Unit Code	180300120604
Average Annual Precipitation (inches)	9.04				

TMDLs & 303(d) Listed Water Bodies (2012 List)

Key: Water body on 303(d) list Water body with a TMDL

Name	Pollutant	Size	Status

No listings found.

Water Quality Objectives

The following waterbodies are in or near HSA 559.20. Click on the waterbody to get information on water quality objectives and beneficial uses

Waterbody Name	Beneficial Uses	Sediment-Sensitive Waterbody
Alamo Creek	AGR, COLD, COMM, GWR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Almos Anchorage Canyon Creek	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Andee Clark Bird Refuge	BIOL, COMM, RARE, REC1, REC2, SHELL, WARM, WILD	False
Ano Nuevo Creek	AGR, BIOL, COLD, COMM, EST, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Antonellis Pond	COMM, GWR, MIGR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Aqua Caliente Canyon	AGR, COLD, COMM, GWR, IND, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Arlington Canyon Creek	AGR, BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Arroyo Bulito	AGR, COMM, EST, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Arroyo Burro Estuary	COMM, EST, REC1, REC2, SPWN, WARM, WILD	False
Arroyo De Los Frejoles Creek	AGR, BIOL, COLD, COMM, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Arroyo de los Frejoles Reservoir	AGR, COLD, COMM, FRSH, GWR, MUN, NAV, REC1, REC2, WARM, WILD	False
Arroyo Laguna	COLD, COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WILD	False
Arroyo Quenado	AGR, COLD, COMM, EST, FRSH, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Atascadero Creek	AGR, COLD, COMM, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Atascadero Lake	COLD, COMM, GWR, MUN, NAV, REC1, REC2, SPWN, WARM, WILD	False
Baldwin Creek Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	True
Barka Slough	COMM, EST, GWR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Bennett Slough/Estuary	BIOL, COLD, COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False

Big Pocket Lake (Dunes Lakes)	COMM, GWR, RARE, REC2, WILD	False
Big Sandy Creek	AGR, BIOL, COMM, GWR, MUN, RARE, REC1, REC2, WARM, WILD	False
Big Twin Lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Bird Creek	AGR, BIOL, COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Black Hawk Canyon Creek	COMM, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Black Lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Bolsa Chico Lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Boulder Creek	AGR, COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Bracken Brae Creek	COLD, COMM, GWR, MUN, RARE, REC1, REC2, WILD	False
Bumett Creek	AGR, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Burnett Creek	AGR, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Camadero Creek	COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, WARM, WILD	False
Cameros Creek	AGR, COLD, COMM, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Canada Alegria	COMM, EST, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Canada Aqua Viva	COMM, EST, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Canada del Agua Caliente	AGR, COLD, COMM, EST, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Canada del Puerta (Prisoner Harbor)	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Canada Honda Creek Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	True
Canada Larga Creek	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Canada Lobos Creek	AGR, BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Canada San Onofre	COLD, COMM, EST, FRSH, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Carmel River Estuary	BIOL, COLD, COMM, EST, GWR, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
Carpinteria Marsh (El Estero Marsh)	BIOL, COMM, EST, MIGR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Cascade Creek Lagoon/Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
Cave Gulch	COLD, COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Celery Lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Chalome Cr	AGR, COMM, GWR, MUN, RARE, REC1, REC2, WARM, WILD	False
Chalone Cr	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Chalone Cr	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Cherry Canyon Creek	AGR, BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Clapp Springs	AGR, BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Clear Creek	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WET, WILD	True
Clipper Gulch	COLD, COMM, GWR, MUN, REC1, REC2, WILD	False

Coches Prieto Canyon Creek	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Cookhouse Gulch	COLD, COMM, GWR, MUN, REC1, REC2, WILD	False
Corcoran Lagoon	COMM, EST, GWR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Cow Canyon Creek	AGR, BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WET, WILD	False
Davis Creek	COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Davis Creek Reservoir	COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Deer Creek	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Del Monte Lake	COMM, MUN, REC1, REC2, WARM, WILD	False
Devereaux Creek	COMM, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Devereaux Ranch Lagoon	BIOL, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Devil's Canyon Creek, north fork	BIOL, COLD, COMM, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Devil's Canyon Creek, south fork	BIOL, COLD, COMM, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Devils Canyon, middle fork	BIOL, COLD, COMM, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Drew Lake	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Dune Lakes Marsh Area	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
El Estero Lake	COLD, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Elkhorn Slu	AQUA, BIOL, COLD, COMM, EST, MIGR, NAV, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	True
Espinosa Lake	COMM, REC1, REC2, WARM, WILD	False
Espinosa Slough	COMM, REC1, REC2, WARM, WILD	False
Estrella R	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Estrella R	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Fitch Creek	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Franklin Creek	AGR, COMM, GWR, MUN, REC1, REC2, WILD	False
Gabilan Cr	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Gabilan Cr	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Gallighan Slough	COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Gobemador Creek	COLD, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Goleta Point Marsh	BIOL, COMM, RARE, REC1, REC2, SPWN, WARM, WILD	False
Goleta Slough/Estuary	BIOL, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Graves Wetland	COMM, REC1, REC2, SPWN, WARM, WILD	False
Green Oaks Creek Lagoon/Estuary	COLD, COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WILD	False
Hames Creek	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Hanson Slough	BIOL, COMM, EST, RARE, REC1, REC2, SHELL, WARM, WILD	False
Harkins Slough	BIOL, COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Hernandez Reservoir	AGR, COMM, FRSH, GWR, MUN, NAV, REC1, REC2, SPWN, WARM, WILD	False
Hilton Creek	AGR, COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN,	True

	WILD	
Hopkins Gulch	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Hospital Lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Huerhuero Creek	AGR, COMM, GWR, MUN, RARE, REC1, REC2, WARM, WILD	False
Indian Creek	AGR, BIOL, COLD, COMM, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Indian Creek	AGR, BIOL, COLD, COMM, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Islay Creek	AGR, BIOL, COLD, COMM, EST, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Jack Creek	AGR, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Jalama Creek Estuary	BIOL, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Kelly Lake	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Lady's Harbor Canyon Creek	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Laguna Creek	AGR, COLD, COMM, FRSH, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Laguna Creek Estuary	COLD, COMM, EST, GWR, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
Laguna Grande/Roberts Lake	COLD, COMM, MUN, REC1, REC2, WARM, WILD	False
Las Palmas Creek	COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Las Tablas Creek	AGR, COLD, COMM, GWR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Las Tablas Creek, north fork	AGR, COLD, COMM, GWR, MUN, RARE, REC1, REC2, SPWN, WILD	False
Las Tablas Creek, south fork	AGR, COLD, COMM, GWR, MUN, RARE, REC1, REC2, SPWN, WILD	False
Liddell Creek, east branch	AGR, COLD, COMM, GWR, IND, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Liddell Creek, west branch	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Limeklin Creek	AGR, BIOL, COLD, COMM, EST, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Little Cholame Creek	AGR, COMM, GWR, MUN, RARE, REC1, REC2, WARM, WILD	False
Little Pico Creek	AGR, COLD, COMM, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Little Pico Creek Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
Lockhart Gulch Creek	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Los Cameros Creek	COLD, COMM, FRSH, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Los Caneros	AGR, COMM, FRSH, GWR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Los Caneros Wetland	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Los Padres Reservoir	COLD, COMM, FRSH, GWR, MIGR, MUN, NAV, REC1, REC2, SPWN, WARM, WILD	True
Lucerne Lake	AGR, COLD, COMM, FRSH, MUN, REC1, REC2, WILD	False

Lucerne Lake Estuary	BIOL, COLD, COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WILD	False
Marina Pond #1	BIOL, COLD, COMM, GWR, RARE, REC1, REC2, SPWN, WILD	False
Marina Pond #2	BIOL, COLD, COMM, GWR, RARE, REC1, REC2, WILD	False
Marina Pond #3	BIOL, COLD, COMM, GWR, RARE, REC1, REC2, WILD	False
Marina Pond #4/5	BIOL, COLD, COMM, GWR, RARE, REC1, REC2, WILD	False
Marina Pond #6	BIOL, COLD, COMM, GWR, RARE, REC1, REC2, WILD	False
Marina Pond #7	BIOL, COLD, COMM, GWR, RARE, REC1, REC2, SPWN, WILD	False
McClusky Slough	COMM, GWR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
McDonald Gulch	BIOL, COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Mill Creek (Bonnie Doon)	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Mill Creek (Cape San Martin)	COLD, COMM, EST, FRSH, MIGR, MUN, REC1, REC2, SPWN, WARM, WILD	True
Mill Creek (Scott Creek)	AGR, COLD, COMM, FRSH, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Mill Creek (SLR)	COLD, COMM, GWR, MUN, REC1, REC2, WILD	False
Mill Creek Res.	COLD, COMM, FRSH, MIGR, MUN, NAV, REC1, REC2, SPWN, WARM, WILD	True
Miners Creek	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Moore Creek	AGR, BIOL, COLD, COMM, FRSH, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Moran Lake	COMM, GWR, REC1, REC2, SPWN, WARM, WILD	False
Moro Cojo Slough	BIOL, COLD, COMM, EST, GWR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Morro Bay Estuary	AQUA, BIOL, COLD, COMM, EST, IND, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
Mud Lake	COMM, FLD, GWR, RARE, REC1, REC2, SPWN, WARM, WILD, WQE	False
Nacimiento Reservoir	AGR, COLD, COMM, FRSH, GWR, MUN, NAV, RARE, REC1, REC2, SPWN, WARM, WILD	False
Nacimiento River, dwnstrm Res.	AGR, COLD, COMM, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Nacimiento River, upstream of Res.	AGR, COLD, COMM, FRSH, GWR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Neary's Lagoon	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Oceano Lagoon	BIOL, COMM, RARE, REC1, REC2, SPWN, WARM, WILD	False
Old Creek, dwnstrm	AGR, COMM, EST, FRSH, GWR, MUN, RARE, REC1, REC2, WARM, WILD	False
Old Creek, upstream	AGR, COLD, COMM, FRSH, GWR, IND, MUN, PROC, RARE, REC1, REC2, SPWN, WARM, WILD	False
Old Ranch Canyon Creek	AGR, BIOL, COMM, FRSH, MUN, RARE, REC1, REC2, WARM, WILD	False
Old Ranch Canyon Creek Estuaries	AGR, BIOL, COMM, EST, RARE, REC1, REC2, SPWN, WARM, WILD	False
Old Ranch House Canyon Creek	AGR, BIOL, COMM, FRSH, MUN, RARE, REC1, REC2, WARM, WILD	False
Old Salinas River Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	True

Palm Beach Pond	COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Paloma Creek	AGR, COLD, COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Pancho Rico Cr	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Parsons Slough	BIOL, COLD, COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WILD	False
Paso Robles Creek	AGR, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Pico Creek Estuary	BIOL, COLD, COMM, EST, GWR, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	True
Pico Creek, north fork	AGR, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Pico Creek, south fork	AGR, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Pine Creek	BIOL, COLD, COMM, GWR, IND, MIGR, MUN, REC1, REC2, SPWN, WARM, WILD	True
Pipeline Lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Pismo Creek Estuary	BIOL, COLD, COMM, EST, GWR, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
Pismo Marsh (Lake)	BIOL, COMM, GWR, RARE, REC1, REC2, WARM, WILD	False
Rattlesnake Canyon	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WARM, WILD	True
Rogers Creek	BIOL, COLD, COMM, MUN, REC1, REC2, WILD	False
Romero Creek	COMM, EST, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
S.L.O. Crk, above W. Marsh St.	AGR, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
S.L.O. Crk, below W. Marsh St.	AGR, COLD, COMM, FRSH, GWR, MIGR, MUN, REC1, REC2, SPWN, WARM, WILD	True
Salinas R., Nacimiento R.-S. Margarita Res.	AGR, COLD, COMM, GWR, MIGR, MUN, PROC, RARE, REC1, REC2, SPWN, WARM, WILD	True
Salinas Reclamation Canal	COMM, REC1, REC2, WARM, WILD	False
Salinas Reservoir-Headwaters	AGR, COLD, COMM, FRSH, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Salinas River	ALL	False
Salinas River Lagoon (North)	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	True
Salinas River Refuge Lagoon, south	BIOL, COLD, COMM, MIGR, RARE, REC1, REC2, SHELL, WARM, WILD	False
Salinas River, Chualar - Nacimiento River	ALL	False
Salinas River, Chualar-Nacimiento River	AGR, COLD, COMM, GWR, IND, MIGR, MUN, PROC, RARE, REC1, REC2, SPWN, WARM, WILD	True
Salinas River, Spreckels Gage-Chualar	AGR, COLD, COMM, GWR, IND, MIGR, MUN, PROC, REC1, REC2, WARM, WILD	False
Salmon Creek	COLD, COMM, EST, FRSH, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Salsipuedes Creek	AGR, COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
San Antonio River, dwnstrm from Reservoir	AGR, COMM, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False

San Antonio River, upstrm from Reservoir	AGR, COLD, COMM, FRSH, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
San Benito River	AGR, COMM, FRSH, GWR, IND, MUN, REC1, REC2, SPWN, WARM, WILD	False
San Carpoforo Creek Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
San Felipe Lake	AGR, COLD, COMM, FRSH, GWR, MIGR, MUN, NAV, REC1, REC2, WARM, WILD	False
San Jose Creek (Sbarbara County)	AGR, COLD, COMM, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
San Jose Creek Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
San Juan Cr	AGR, COMM, GWR, MUN, RARE, REC1, REC2, WARM, WILD	False
San Lorenzo Cr	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
San Lorenzo River Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
San Marcos Cr	AGR, COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
San Pedro Creek	AGR, COLD, COMM, FRSH, GWR, MIGR, MUN, REC1, REC2, WARM, WILD	False
San Simeon Creek Estuary	BIOL, COLD, COMM, EST, GWR, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
San Ysidro Creek	COMM, EST, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Santa Lucia Canyon Creek	AGR, COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Santa Lucia Creek	AGR, BIOL, COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WARM, WILD	True
Santa Margarita Reservoir (Lake)	AGR, COLD, COMM, FRSH, GWR, IND, MUN, NAV, POW, RARE, REC1, REC2, SPWN, WARM, WILD	False
Santa Rosa Creek	AGR, COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WARM, WILD	True
Santa Ynez River Estuary	BIOL, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Sauces Canyon Creek	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Schwan Lake	BIOL, COMM, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Sempervirens Res.	BIOL, COLD, COMM, FRSH, MUN, REC1, REC2, SHELL, WILD	False
Shingle Mill Gulch	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Silver Creek	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Small Twin Lake	COMM, RARE, REC1, REC2, SPWN, WARM, WILD	False
Solvang	ALL	False
Soquel Lagoon	COLD, COMM, EST, MIGR, RARE, REC1, REC2, SPWN, WILD	True
Spring Creek	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Spring Creek Gulch	COLD, COMM, GWR, MUN, REC1, REC2, WILD	False
Struve Slough	BIOL, COMM, EST, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Sycamore Creek	AGR, COLD, COMM, EST, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Tecolote Creek	AGR, COLD, COMM, EST, FRSH, GWR, IND, MIGR, MUN, PROC, RARE, REC1, REC2, SPWN, WARM, WILD	True
	COLD, COMM, FRSH, GWR, MIGR, MUN, REC1, REC2, WARM,	

Tecolotito Creek	WILD	False
Tequisquita Slough	COMM, GWR, REC1, REC2, SPWN, WARM, WILD	False
Tie Gulch	COLD, COMM, GWR, MIGR, MUN, REC1, REC2, SPWN, WILD	True
Toro Canyon Creek	COMM, EST, FRSH, GWR, MUN, REC1, REC2, WARM, WILD	False
Tree Pinos Creek	AGR, COMM, GWR, IND, MUN, REC1, REC2, SPWN, WARM, WILD	False
Twin Harbors Canyon Ck, (E. Fork)	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Tynan Lake	AGR, COMM, GWR, MUN, REC1, REC2, SPWN, WARM, WILD	False
Upper Pozo Canyon Creek	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Valencia Lagoon	COMM, RARE, REC1, REC2, SPWN, WARM, WILD	False
Valley Floor Waters	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False
Valley Floor Waters	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False
Vineyard Canyon Creek	AGR, COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Waddell Creek Estuary	BIOL, COLD, COMM, EST, GWR, MIGR, RARE, REC1, REC2, SHELL, SPWN, WILD	True
Waddell Creek, East Branch	BIOL, COLD, COMM, FRSH, GWR, IND, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Waddell Creek, west branch	BIOL, COLD, COMM, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WILD	True
Wagner Creek	AGR, COLD, COMM, GWR, MUN, REC1, REC2, WARM, WILD	False
Wamer Lake	AGR, COMM, GWR, MUN, REC2, WILD	False
Warden Lake Wetland	AGR, COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Waste Slough	COMM, GWR, REC1, REC2, SPWN, WARM, WILD	False
West Side Streams	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False
White lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
White Rock Lake	COLD, COMM, MIGR, MUN, NAV, REC1, REC2, SPWN, WARM, WILD	True
Wilder Creek Estuary	BIOL, COLD, COMM, EST, MIGR, RARE, REC1, REC2, SHELL, SPWN, WARM, WILD	True
Willow Canyon Creek	BIOL, COMM, MUN, RARE, REC1, REC2, WARM, WILD	False
Willow Creek	AGR, COLD, COMM, EST, FRSH, GWR, MIGR, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	True
Willow Lake	COMM, GWR, RARE, REC1, REC2, SPWN, WARM, WILD	False
Woods Lagoon	COMM, EST, MIGR, REC1, REC2, SHELL, SPWN, WILD	False
Younger's Lagoon	BIOL, COLD, COMM, GWR, REC1, REC2, SHELL, SPWN, WARM, WILD	False
Zaca Lake	COLD, COMM, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Zayanta Creek	AGR, COLD, COMM, GWR, IND, MIGR, MUN, REC1, REC2, SPWN, WILD	True

Caltrans Facilities

MAINTENANCE STATIONS

Name Address

FREEWAYS AND HIGHWAYS

Route Length (miles)

33	6.8
198	21.2

PARK & RIDE LOTS

Name	District	County	Route	Post Mile

REST AREAS

Name	District	County	Route	Post Mile

Additional Information

Help for the Water Quality Planning Tool

TMDL information from the SWRCB

Construction General Permit information from the SWRCB

Groundwater Depth information from the California Department of Water Resouces

R Factor erosivity calculations

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Attachment C: Water Quality and Hydrologic Area Map Bridge Number 42C0097 - Arroyo Pasajero at El Dorado Avenue

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smcmurtry@denovoplanning.com | TEL 916 580 9818

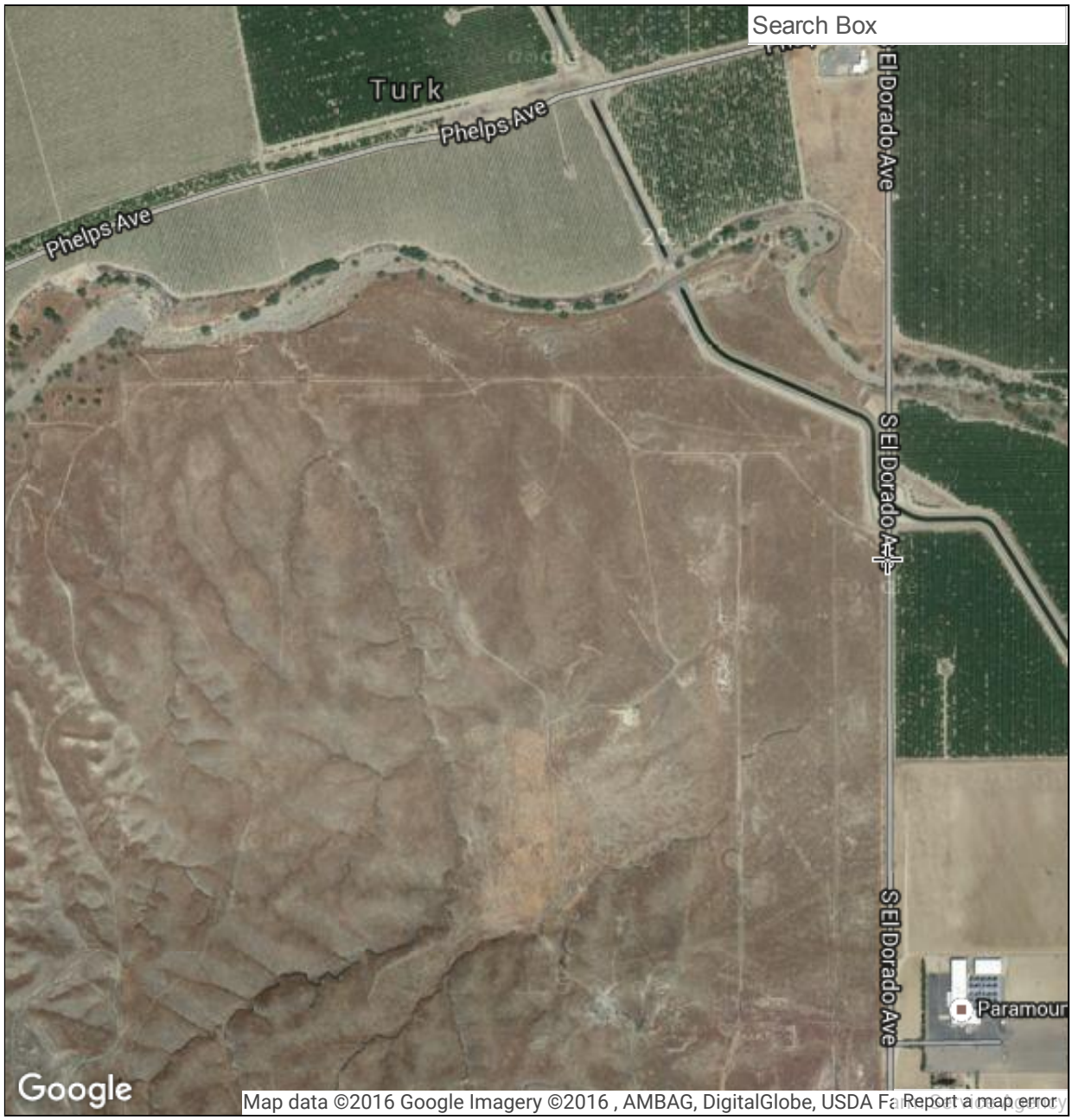
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Caltrans > DEA > Stormwater > **Water Quality Planning Tool**

Layers

- 303(d) List and TMDL 2012(Lege
- Areas of Special Biological Significanc
- Arid and Semi-Arid Regions
- Caltrans Districts
- Caltrans Facilities (Legend)
- Caltrans T 1 Monitorir Sites
- Calwater Watershed
- Coastal Zc
- Counties
- Geologic Map

Information
Hover over a layer name for a description. Additional information, tables, coordinates, and links are below the map.
Help



Watershed Information

CALWATER WATERSHED

Hydrologic Unit	SOUTH VALLEY FLOOR	Hydrologic Area	Kettleman	Hydrologic Sub-Area #	558.50
Hydrologic Sub-Area Name	undefined	Planning Watershed	7558500106	HSA Area (acres)	203392
Latitude, Longitude	36.163, -120.2106				

WATERSHED BOUNDARY DATASET

Watershed	Los Gatos Creek	Subwatershed	Lower Los Gatos Creek	Hydrologic Unit Code	180300120606
Average Annual Precipitation (inches)	6.86				

TMDLs & 303(d) Listed Water Bodies (2012 List)

Key: Water body on 303(d) list Water body with a TMDL

Name	Pollutant	Size	Status

No listings found.

Water Quality Objectives

The following waterbodies are in or near HSA 558.50. Click on the waterbody to get information on water quality objectives and beneficial uses

Waterbody Name	Beneficial Uses	Sediment-Sensitive Waterbody
Valley Floor Waters	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False
Valley Floor Waters	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False
West Side Streams	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False

Caltrans Facilities

MAINTENANCE STATIONS

Name	Address
Coalinga	30933 W Gale Avenue

FREEWAYS AND HIGHWAYS

Route	Length (miles)
5	12.8
33	36.6
41	15.3
198	3.3
269	5.8

PARK & RIDE LOTS

Name	District	County	Route	Post Mile

REST AREAS

Name	District	County	Route	Post Mile

Additional Information

Help for the Water Quality Planning Tool

TMDL information from the SWRCB

Construction General Permit information from the SWRCB

Groundwater Depth information from the California Department of Water Resouces

R Factor erosivity calculations

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Attachment D: Water Quality and Hydrologic Area Map 5.Bridge Number 42C0104 and 42C0367 - Fresno Slough and Fresno Slough Overflow at Excelsior Avenue Fresno Slough at Excelsior Avenue

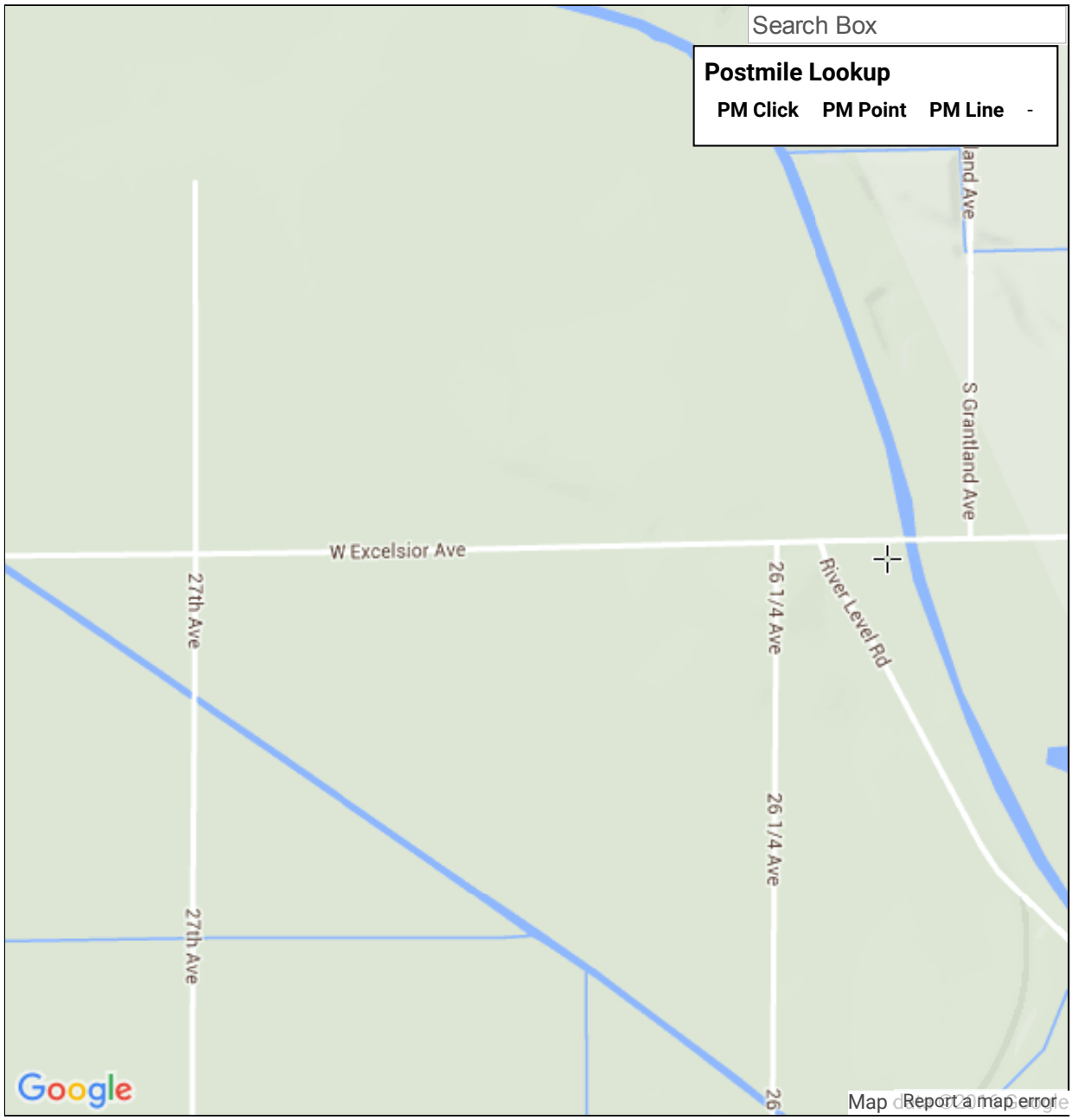
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Caltrans > DEA > Stormwater > **Water Quality Planning Tool**

Layers

- 303(d) List and TMDL 2012(Lege
- Areas of Special Biological Significanc
- Arid and Semi-Arid Regions
- Caltrans Districts
- Caltrans Facilities (Legend)
- Caltrans T 1 Monitorir Sites
- Calwater Watershed
- Coastal Zc
- Counties
- Geologic Map

Information
Hover over a layer name for a description. Additional information, tables, coordinates, and links are below the map.
Help



Watershed Information

CALWATER WATERSHED

Hydrologic Unit	SOUTH VALLEY FLOOR	Hydrologic Area	Lower Kings River	Hydrologic Sub-Area #	551.80
Hydrologic Sub-Area Name	undefined	Planning Watershed	7551800000	HSA Area (acres)	176180
Latitude, Longitude	36.401, -119.925				

WATERSHED BOUNDARY DATASET

Watershed	Murphy Slough-Fresno Slough	Subwatershed	Boggs Slough-Fresno Slough	Hydrologic Unit Code	180300090101
Average Annual Precipitation (inches)	7.36				

TMDLs & 303(d) Listed Water Bodies (2012 List)

Key: Water body on 303(d) list Water body with a TMDL

Name	Pollutant	Size	Status
Fresno Slough (from Graham Road to James Bypass, Fresno County)	Chlorpyrifos	15 Miles	TMDL required
Fresno Slough (from Graham Road to James Bypass, Fresno County)	Unknown Toxicity	15 Miles	TMDL required
Kings River, Lower (Island Weir to Stinson and Empire Weirs)	Electrical Conductivity	35.92 Miles	TMDL required
Kings River, Lower (Island Weir to Stinson and Empire Weirs)	Molybdenum	35.92 Miles	TMDL required
Kings River, Lower (Island Weir to Stinson and Empire Weirs)	Toxaphene	35.92 Miles	TMDL required
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Chlorpyrifos	76 Miles	TMDL required
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Unknown Toxicity	76 Miles	TMDL required

Water Quality Objectives

The following waterbodies are in or near HSA 551.80. Click on the waterbody to get information on water quality objectives and beneficial uses

Waterbody Name	Beneficial Uses	Sediment-Sensitive Waterbody
Iron Gate Reservoir	MUN	False
Kings River- Friant Kern to Peoples Weir	AGR, GWR, MUN, PROC, REC1, REC2, WARM, WILD	False
Kings River- Kirch Flat to Pine Flat Dam- (Pine Flat Reservoir)	COLD, FRSH, POW, REC1, REC2, WARM, WILD	False
Kings River- Main Fork, above Kirch Flat	COLD, FRSH, MUN, RARE, REC1, REC2, SPWN, WARM, WILD	False
Kings River- North fork, Upper	COLD, FRSH, POW, RARE, REC1, REC2, SPWN, WARM, WILD	False
Kings River- Peoples Weir to Stinson Weir on North Fork and to Empire Weir No. 2 on South Fork	AGR, GWR, REC1, REC2, WARM, WILD	False
Kings River- Pine Flat Dam to Friant-Kern	AGR, COLD, FRSH, GWR, MUN, POW, REC1, REC2, SPWN, WARM, WILD	False
Post Creek	MUN	False
Prosser Reservoir	MUN	False
Valley Floor Waters	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False

Caltrans Facilities

MAINTENANCE STATIONS

Name	Address

FREEWAYS AND HIGHWAYS

Route	Length (miles)
41	8.9

145	8.6
198	0.4

PARK & RIDE LOTS

Name	District	County	Route	Post Mile

REST AREAS

Name	District	County	Route	Post Mile

Additional Information

Help for the Water Quality Planning Tool

TMDL information from the SWRCB

Construction General Permit information from the SWRCB

Groundwater Depth information from the California Department of Water Resouces

R Factor erosivity calculations

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Attachment E: Water Quality and Hydrologic Area Map Bridge Number 42C0520 - Fresno Canal at Viau Avenue

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CALIFORNIA DEPARTMENT OF TRANSPORTATION

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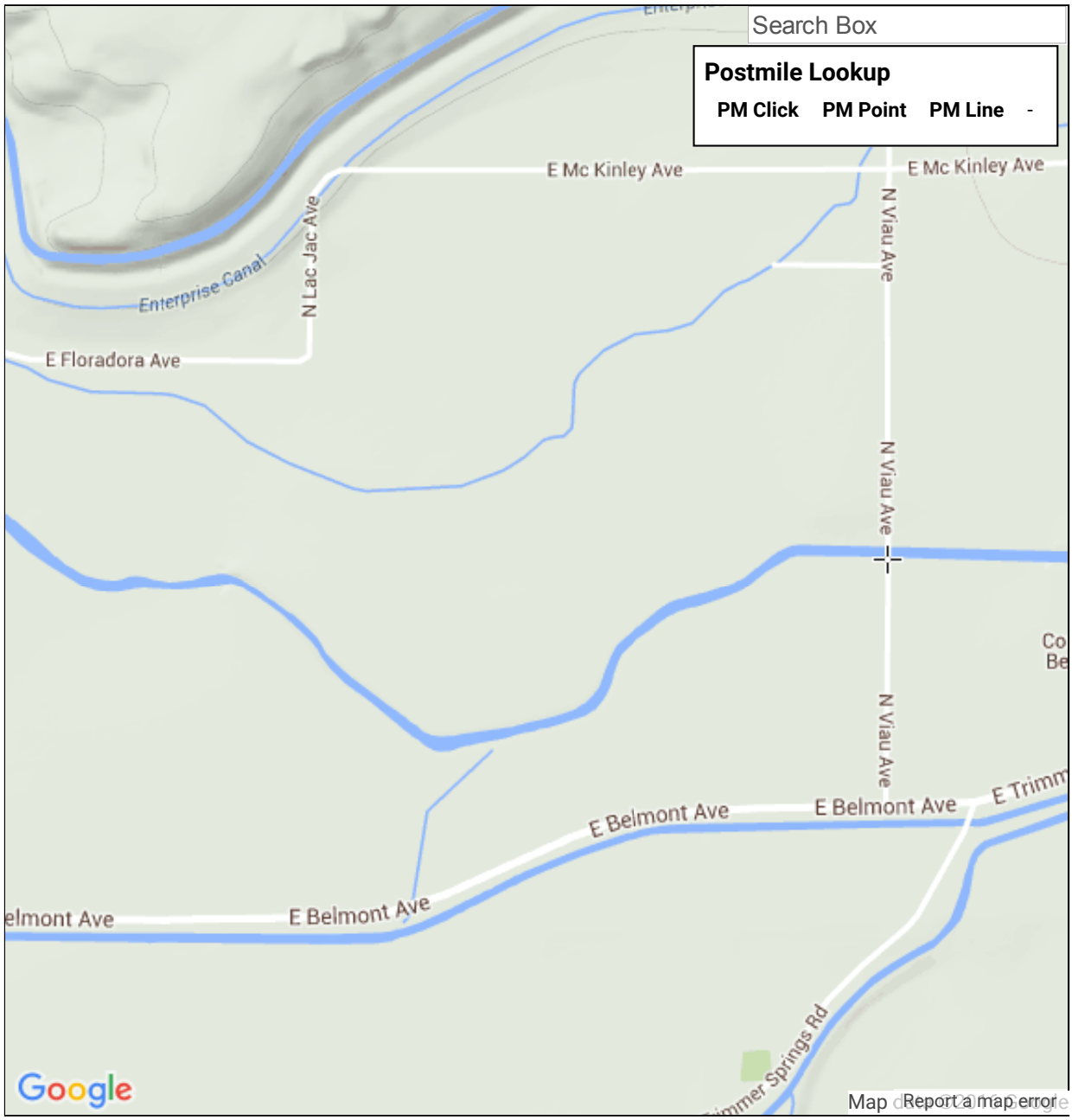
Layers

- 303(d) List and TMDL 2012(Lege
- Areas of Special Biological Significanc
- Arid and Semi-Arid Regions
- Caltrans Districts
- Caltrans Facilities (Legend)
- Caltrans T 1 Monitorir Sites
- Calwater Watershed
- Coastal Zc
- Counties
- Geologic Map

Information
Hover over a layer name for a description. Additional information, tables, coordinates, and links are below the map.
Help



Watershed Information

CALWATER WATERSHED

Hydrologic Unit	SOUTH VALLEY FLOOR	Hydrologic Area	Fresno	Hydrologic Sub-Area #	551.30
Hydrologic Sub-Area Name	undefined	Planning Watershed	7551300000	HSA Area (acres)	252603
Latitude, Longitude	36.757, -119.4704				

WATERSHED BOUNDARY DATASET

Watershed	Fancher Creek-Fancher Creek Canal	Subwatershed	Mud Creek	Hydrologic Unit Code	180300090302
Average Annual Precipitation (inches)	13.09				

TMDLs & 303(d) Listed Water Bodies (2012 List)

Key: Water body on 303(d) list Water body with a TMDL

Name	Pollutant	Size	Status
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Chlorpyrifos	76 Miles	TMDL required
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Unknown Toxicity	76 Miles	TMDL required
San Joaquin River (Friant Dam to Mendota Pool)	Invasive Species	70 Miles	TMDL required

Water Quality Objectives

The following waterbodies are in or near HSA 551.30. Click on the waterbody to get information on water quality objectives and beneficial uses

Waterbody Name	Beneficial Uses	Sediment-Sensitive Waterbody
Chowchilla River - Buchanan Dam to San Joaquin River	AGR, MUN, PROC, REC1, REC2, WARM, WILD	False
Fresno River - Hidden Reservoir to San Joaquin River	AGR, MUN, REC1, REC2, WARM, WILD	False
Other East Side Streams	AGR, COLD, FRSH, GWR, MUN, POW, REC1, REC2, WARM, WILD	False
San Joaquin River - Friant Dam to Mendota Pool	AGR, COLD, MIGR, MUN, PROC, REC1, REC2, SPWN, WARM, WILD	True
San Joaquin River - Mendota Dam to Sack Dam	AGR, MIGR, MUN, PROC, REC1, REC2, SPWN, WARM, WILD	False
Valley Floor Waters	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False

Caltrans Facilities

MAINTENANCE STATIONS

Name	Address
West Avenue	1283 N West Avenue
District 6 Office	1352 Olive Avenue
Fresno and North Region	1635 W Pine Avenue

FREEWAYS AND HIGHWAYS

Route	Length (miles)
41	17.1
99	18.1
145	8.6
168	15.9
180	37.7

PARK & RIDE LOTS

Name	District	County	Route	Post Mile

REST AREAS

Name	District	County	Route	Post Mile

Additional Information

Help for the Water Quality Planning Tool

TMDL information from the SWRCB

Construction General Permit information from the SWRCB

Groundwater Depth information from the California Department of Water Resouces

R Factor erosivity calculations

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Attachment F: Water Quality and Hydrologic Area Map Bridge Number 42C0178 - Fowler Switch Canal at American Avenue

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Layers

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- Caltrans Districts
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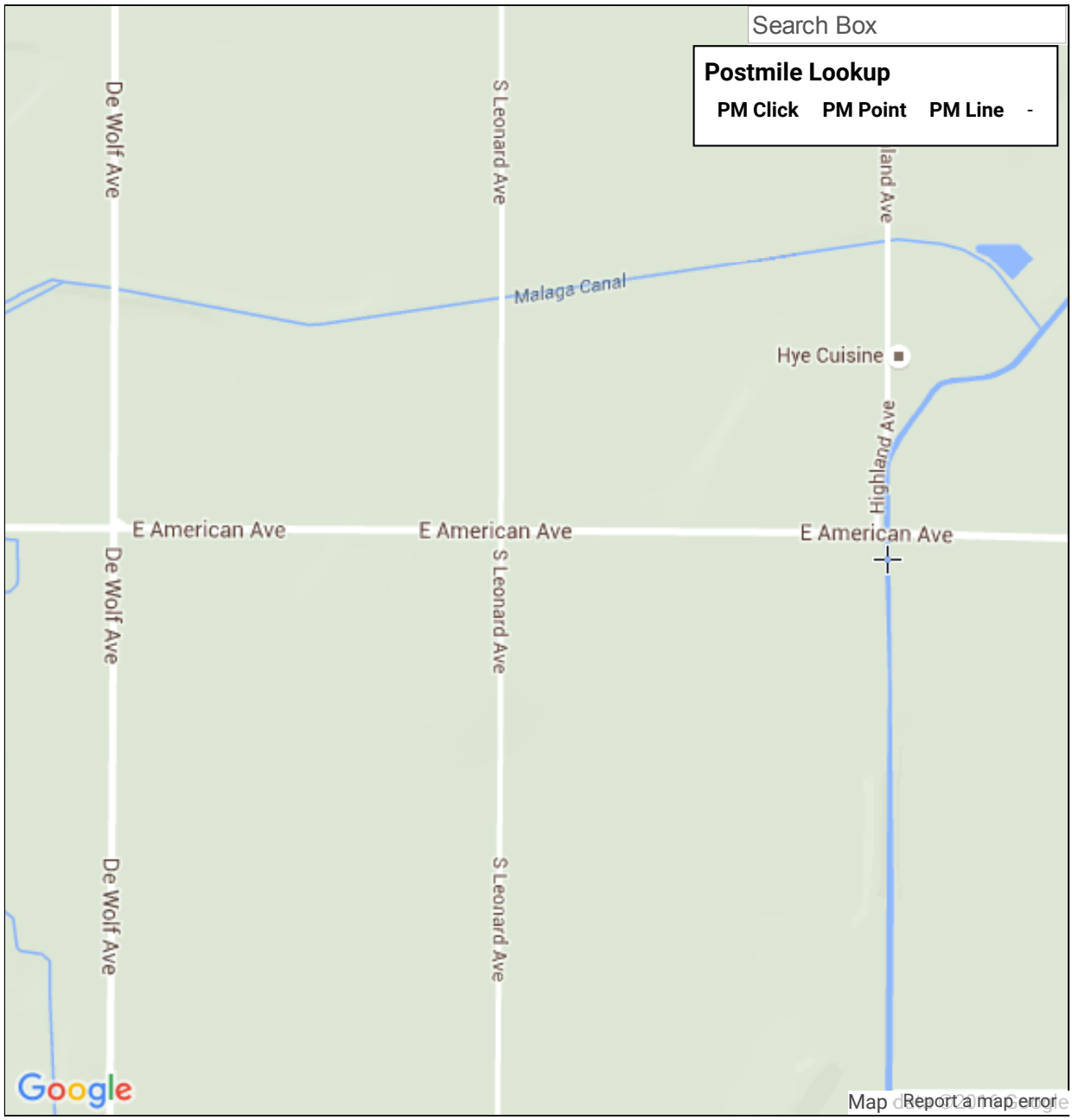
- Caltrans T 1 Monitorir Sites
- Calwater Watershed
- Coastal Zc
- Counties
- Geologic Map

Information
Hover over a layer name for a description. Additional information, tables, coordinates, and links are below the map.
Help



Watershed Information

CALWATER WATERSHED

Hydrologic Unit	SOUTH VALLEY FLOOR	Hydrologic Area	Consolidated	Hydrologic Sub-Area #	551.70
Hydrologic Sub-Area Name	undefined	Planning Watershed	7551700000	HSA Area (acres)	176301
Latitude, Longitude	36.6629, -119.628				

WATERSHED BOUNDARY DATASET

Watershed	Kennedy Pond-Fresno Slough	Subwatershed	Benight Pond	Hydrologic Unit Code	180300090201
Average Annual Precipitation (inches)	10.37				

TMDLs & 303(d) Listed Water Bodies (2012 List)

Key: Water body on 303(d) list Water body with a TMDL

Name	Pollutant	Size	Status
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Chlorpyrifos	76 Miles	TMDL required
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Unknown Toxicity	76 Miles	TMDL required

Water Quality Objectives

The following waterbodies are in or near HSA 551.70. Click on the waterbody to get information on water quality objectives and beneficial uses

Waterbody Name	Beneficial Uses	Sediment-Sensitive Waterbody
Valley Floor Waters	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False

Caltrans Facilities

MAINTENANCE STATIONS

Name	Address

FREEWAYS AND HIGHWAYS

Route	Length (miles)
41	6.7
43	5.9
99	14.8
180	5
201	3

PARK & RIDE LOTS

Name	District	County	Route	Post Mile

REST AREAS

Name	District	County	Route	Post Mile

Additional Information

Help for the Water Quality Planning Tool

TMDL information from the SWRCB

Construction General Permit information from the SWRCB

Groundwater Depth information from the California Department of Water Resouces

R Factor erosivity calculations

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Attachment G: Water Quality and Hydrologic Area Map Bridge Number 42C0179 - Travers Creek at Alta Avenue

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CALIFORNIA DEPARTMENT OF TRANSPORTATION

Caltrans > DEA > Stormwater > **Water Quality Planning Tool**

Layers

- 303(d) List and TMDL 2012(Lege
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- Arid and Semi-Arid Regions
- Caltrans Districts
- Caltrans Facilities (Legend)
- Caltrans T 1 Monitorir Sites
- Calwater Watershed
- Coastal Zc
- Counties
- Geologic Map

Information
Hover over a layer name for a description. Additional information, tables, coordinates, and links are below the map.
Help

Watershed Information

CALWATER WATERSHED

Hydrologic Unit	SOUTH VALLEY FLOOR	Hydrologic Area	Alta	Hydrologic Sub-Area #	551.60
Hydrologic Sub-Area Name	undefined	Planning Watershed	7551600000	HSA Area (acres)	144911
Latitude, Longitude	36.6231, -119.3949				

WATERSHED BOUNDARY DATASET

Watershed	Middle Cross Creek	Subwatershed	Travers Creek	Hydrologic Unit Code	180300071202
Average Annual Precipitation (inches)	12.87				

TMDLs & 303(d) Listed Water Bodies (2012 List)

Key: Water body on 303(d) list Water body with a TMDL

Name	Pollutant	Size	Status
Cross Creek (Kings and Tulare Counties)	Unknown Toxicity	32 Miles	TMDL required
Elbow Creek (from Mathews Ditch to Cottonwood Creek, Tulare County)	Chlorpyrifos	11 Miles	TMDL required
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Chlorpyrifos	76 Miles	TMDL required
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Unknown Toxicity	76 Miles	TMDL required

Water Quality Objectives

The following waterbodies are in or near HSA 551.60. Click on the waterbody to get information on water quality objectives and beneficial uses

Waterbody Name	Beneficial Uses	Sediment-Sensitive Waterbody
Other East Side Streams	AGR, COLD, FRSH, GWR, MUN, POW, REC1, REC2, WARM, WILD	False
Valley Floor Waters	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False
Valley Floor Waters	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False

Caltrans Facilities

MAINTENANCE STATIONS

Name	Address

FREEWAYS AND HIGHWAYS

Route	Length (miles)
63	9.2
99	7
180	4.7
201	16.3

PARK & RIDE LOTS

Name	District	County	Route	Post Mile

REST AREAS

Name	District	County	Route	Post Mile
C.H. WARLOW	6	TUL	99	51.800

Additional Information

Help for the Water Quality Planning Tool

TMDL information from the SWRCB

Construction General Permit information from the SWRCB

Groundwater Depth information from the California Department of Water Resouces

R Factor erosivity calculations

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Attachment H: Water Quality and Hydrologic Area Map Bridge Number 42C0531 - Fowler Switch Canal at Thompson Avenue

CALIFORNIA DEPARTMENT OF TRANSPORTATION

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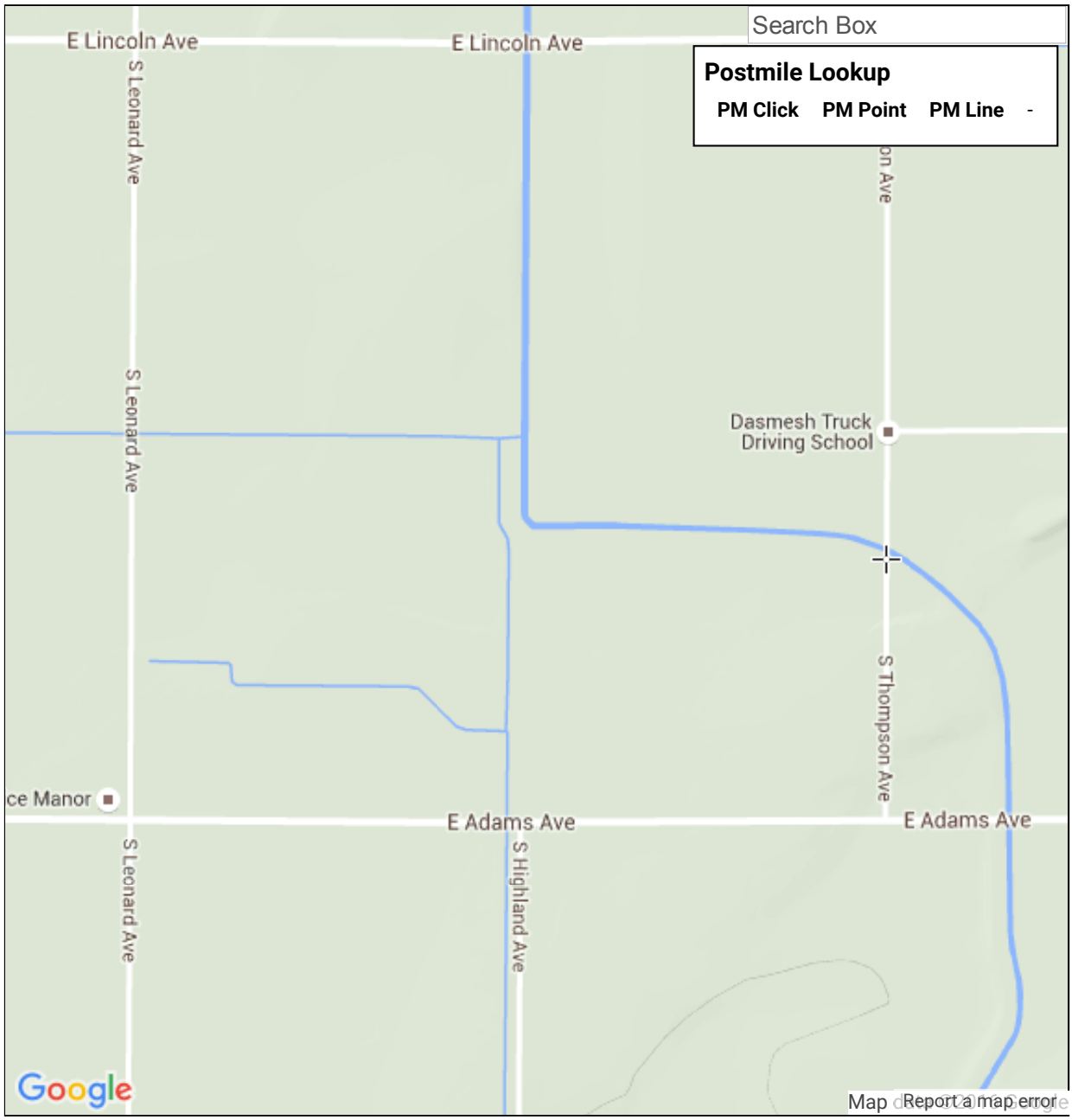
Layers

- 303(d) List and TMDL 2012(Lege
- Areas of Special Biological Significanc
- Arid and Semi-Arid Regions
- Caltrans Districts
- Caltrans Facilities (Legend)
- Caltrans T 1 Monitorir Sites
- Calwater Watershed
- Coastal Zc
- Counties
- Geologic Map

Information
Hover over a layer name for a description. Additional information, tables, coordinates, and links are below the map.
Help



Watershed Information

CALWATER WATERSHED

Hydrologic Unit	SOUTH VALLEY FLOOR	Hydrologic Area	Consolidated	Hydrologic Sub-Area #	551.70
Hydrologic Sub-Area Name	undefined	Planning Watershed	7551700000	HSA Area (acres)	176301
Latitude, Longitude	36.6392, -119.6196				

WATERSHED BOUNDARY DATASET

Watershed	Kennedy Pond-Fresno Slough	Subwatershed	Benight Pond	Hydrologic Unit Code	180300090201
Average Annual Precipitation (inches)	10.37				

TMDLs & 303(d) Listed Water Bodies (2012 List)

Key: Water body on 303(d) list Water body with a TMDL

Name	Pollutant	Size	Status
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Chlorpyrifos	76 Miles	TMDL required
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Unknown Toxicity	76 Miles	TMDL required

Water Quality Objectives

The following waterbodies are in or near HSA 551.70. Click on the waterbody to get information on water quality objectives and beneficial uses

Waterbody Name	Beneficial Uses	Sediment-Sensitive Waterbody
Valley Floor Waters	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False

Caltrans Facilities

MAINTENANCE STATIONS

Name	Address

FREEWAYS AND HIGHWAYS

Route	Length (miles)
41	6.7
43	5.9
99	14.8
180	5
201	3

PARK & RIDE LOTS

Name	District	County	Route	Post Mile

REST AREAS

Name	District	County	Route	Post Mile

Additional Information

Help for the Water Quality Planning Tool

TMDL information from the SWRCB

Construction General Permit information from the SWRCB

Groundwater Depth information from the California Department of Water Resouces

R Factor erosivity calculations

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Attachment I: Water Quality and Hydrologic Area Map Bridge Number 42C0532 - Fowler Switch Canal at Huntsman Avenue

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CALIFORNIA DEPARTMENT OF TRANSPORTATION

Caltrans > DEA > Stormwater > **Water Quality Planning Tool**

Layers

- 303(d) List and TMDL 2012(Lege
- Areas of Special Biological Significanc
- Arid and Semi-Arid Regions
- Caltrans Districts
- Caltrans Facilities (Legend)
- Caltrans T 1 Monitorir Sites
- Calwater Watershed
- Coastal Zc
- Counties
- Geologic Map

Information
Hover over a layer name for a description. Additional information, tables, coordinates, and links are below the map.
Help

Watershed Information

CALWATER WATERSHED

Hydrologic Unit	SOUTH VALLEY FLOOR	Hydrologic Area	Consolidated	Hydrologic Sub-Area #	551.70
Hydrologic Sub-Area Name	undefined	Planning Watershed	7551700000	HSA Area (acres)	176301
Latitude, Longitude	36.5836, -119.6596				

WATERSHED BOUNDARY DATASET

Watershed	Kennedy Pond-Fresno Slough	Subwatershed	Elkhorn Ditch-Liberty Ditch	Hydrologic Unit Code	180300090203
Average Annual Precipitation (inches)	8.81				

TMDLs & 303(d) Listed Water Bodies (2012 List)

Key: Water body on 303(d) list Water body with a TMDL

Name	Pollutant	Size	Status
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Chlorpyrifos	76 Miles	TMDL required
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Unknown Toxicity	76 Miles	TMDL required

Water Quality Objectives

The following waterbodies are in or near HSA 551.70. Click on the waterbody to get information on water quality objectives and beneficial uses

Waterbody Name	Beneficial Uses	Sediment-Sensitive Waterbody
Valley Floor Waters	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False

Caltrans Facilities

MAINTENANCE STATIONS

Name	Address

FREEWAYS AND HIGHWAYS

Route	Length (miles)
41	6.7
43	5.9
99	14.8
180	5
201	3

PARK & RIDE LOTS

Name	District	County	Route	Post Mile

REST AREAS

Name	District	County	Route	Post Mile

Additional Information

Help for the Water Quality Planning Tool

TMDL information from the SWRCB

Construction General Permit information from the SWRCB

Groundwater Depth information from the California Department of Water Resouces

R Factor erosivity calculations

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Attachment J: Water Quality and Hydrologic Area Map Bridge Number 42C0328 - Mud Creek at Zediker Avenue

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CALIFORNIA DEPARTMENT OF TRANSPORTATION

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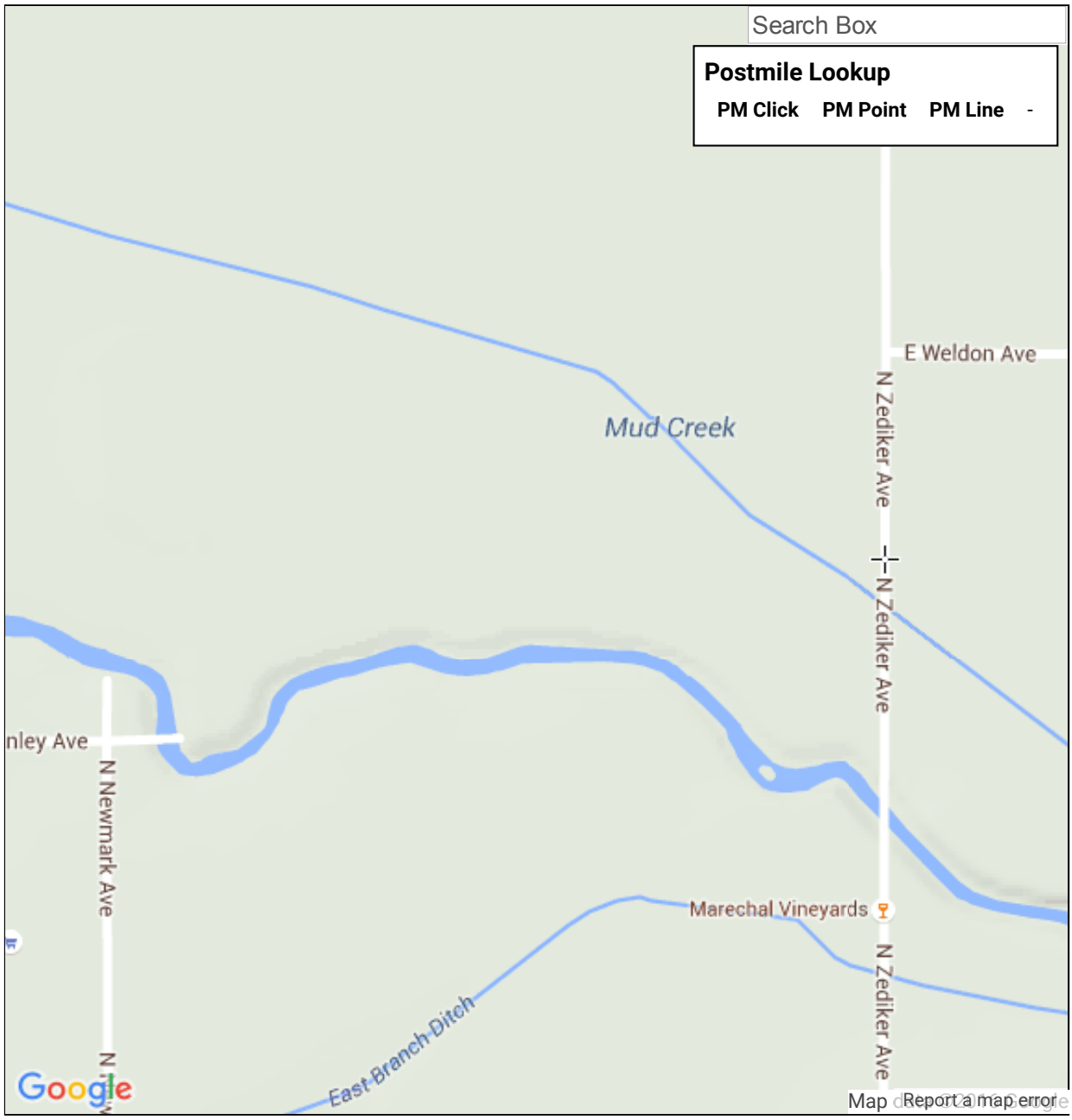
Information
Hover over a layer name for a description. Additional information, tables, coordinates, and links are below the map.
Help



Watershed Information

CALWATER WATERSHED

Hydrologic Unit	SOUTH VALLEY FLOOR	Hydrologic Area	Fresno	Hydrologic Sub-Area #	551.30
Hydrologic Sub-Area Name	undefined	Planning Watershed	7551300000	HSA Area (acres)	252603
Latitude, Longitude	36.7662, -119.5198				

WATERSHED BOUNDARY DATASET

Watershed	Fancher Creek-Fancher Creek Canal	Subwatershed	Mud Creek	Hydrologic Unit Code	180300090302
Average Annual Precipitation (inches)	13.09				

TMDLs & 303(d) Listed Water Bodies (2012 List)

Key: Water body on 303(d) list Water body with a TMDL

Name	Pollutant	Size	Status
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Chlorpyrifos	76 Miles	TMDL required
Kings River, Lower (Pine Flat Reservoir to Island Weir)	Unknown Toxicity	76 Miles	TMDL required
San Joaquin River (Friant Dam to Mendota Pool)	Invasive Species	70 Miles	TMDL required

Water Quality Objectives

The following waterbodies are in or near HSA 551.30. Click on the waterbody to get information on water quality objectives and beneficial uses

Waterbody Name	Beneficial Uses	Sediment-Sensitive Waterbody
Chowchilla River - Buchanan Dam to San Joaquin River	AGR, MUN, PROC, REC1, REC2, WARM, WILD	False
Fresno River - Hidden Reservoir to San Joaquin River	AGR, MUN, REC1, REC2, WARM, WILD	False
Other East Side Streams	AGR, COLD, FRSH, GWR, MUN, POW, REC1, REC2, WARM, WILD	False
San Joaquin River - Friant Dam to Mendota Pool	AGR, COLD, MIGR, MUN, PROC, REC1, REC2, SPWN, WARM, WILD	True
San Joaquin River - Mendota Dam to Sack Dam	AGR, MIGR, MUN, PROC, REC1, REC2, SPWN, WARM, WILD	False
Valley Floor Waters	AGR, GWR, IND, PROC, RARE, REC1, REC2, WARM, WILD	False

Caltrans Facilities

MAINTENANCE STATIONS

Name	Address
West Avenue	1283 N West Avenue
District 6 Office	1352 Olive Avenue
Fresno and North Region	1635 W Pine Avenue

FREEWAYS AND HIGHWAYS

Route	Length (miles)
41	17.1
99	18.1
145	8.6
168	15.9
180	37.7

PARK & RIDE LOTS

Name	District	County	Route	Post Mile

REST AREAS

Name	District	County	Route	Post Mile

Additional Information

Help for the Water Quality Planning Tool

TMDL information from the SWRCB

Construction General Permit information from the SWRCB

Groundwater Depth information from the California Department of Water Resouces

R Factor erosivity calculations

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Archaeological Survey Report for the Bridge Preventative Maintenance Program Scour Mitigation Project (12 Locations), Fresno County, California

BPMP-5942(240)

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Prepared For
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May 2015

USGS 7.5-min. quadrangles: Alcalde Hills, Burrel, Guijarral Hills, Malaga, Piedra, Reedley, Round Mountain, Sherman Peak, and Conejo , CA
Acres: See Table 1
Keywords: Bridges 42C0097, 42C0104, 42C0178, 42C0179, 42C0328, 42C0367, 42C0455, 42C0458, 42C0459, 42C0520, 42C0531, and 42C0532; petroglyphs (AE-3093-01); windmill (AE-3093-02)

SUMMARY OF FINDINGS

The County of Fresno (County) in conjunction with the California Department of Transportation (Caltrans) and the Federal Highways Administration, proposes to conduct scour countermeasure and other preventative maintenance activities at 12 bridges (42C0097, 42C0104, 42C0178, 42C0179, 42C0328, 42C0367, 42C0455, 42C0458, 42C0459, 42C0520, 42C0531, and 42C0532) within Fresno County as part of the Bridge Preventative Maintenance Program Scour Mitigation Project.

The project is considered a federal undertaking (per 36 CFR 800.16[y]) subject to the National Historic Preservation Act of 1966, as amended (NHPA). However, because it is limited to the type of activity listed in Attachment 2 (Screened Undertakings) of the Section 106 Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation; Caltrans required a field review only to determine the potential for effects on cultural resources. All of the bridges are documented as Category 5 and not eligible for the National Register of Historic Places in the Caltrans Bridge Inventory, updated in 2013. Furthermore, according to Caltrans' District 6 environmental specialist John Whitehouse, the canals are excluded from the Area of Potential Effects, as per the guidance provided in *Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures* prepared by JRP Historical Consulting and Caltrans in 2000.

On behalf of the County, Applied EarthWorks, Inc. (*Æ*) conducted an archaeological survey at each bridge location to determine if cultural resources were present and whether they had the potential to be affected by the proposed work. The investigation included a records search to identify previously recorded resources and prior studies in the vicinity of each bridge, a review of the Native American Heritage Commission's Sacred Lands File and initiation of Native American consultation, and a pedestrian survey of the Area of Potential Effects (APE) at each bridge location.

No cultural resources were identified within any of the proposed APEs during the course of this study. Two cultural resources, a prehistoric site containing rock art and a historical windmill, were identified in a wider study area at two of the bridge locations (42C0459 and 42C0455, respectively); however, the County reconfigured the APE in each location to ensure that these resources lie a sufficient distance beyond the project limits and will not be adversely affected by the proposed project.

It is Caltrans' policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed.

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21 Survey Coverage: Bridge 42C0520
22 Survey Coverage: Bridge 42C0179

1 INTRODUCTION

The County of Fresno (County) in conjunction with the California Department of Transportation (Caltrans) and the Federal Highways Administration, proposes to conduct scour countermeasure and other preventative maintenance activities at 12 bridges (42C0097, 42C0104, 42C0178, 42C0179, 42C0328, 42C0367, 42C0455, 42C0458, 42C0459, 42C0520, 42C0531, and 42C0532) within Fresno County as part of the Bridge Preventative Maintenance Program Scour Mitigation Project (Maps 1 and 2).

Because the project involves federal funding, it is subject to the cultural resources provisions of the National Environmental Policy Act and Section 106 of the National Historic Preservation Act (NHPA), as implemented through the January 1, 2014 *Amended Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance With Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (Section 106 PA), which mandates that government agencies consider the effects of their actions on significant cultural resources. The project is limited to the type of activity listed in Attachment 2 (Screened Undertakings) of the Section 106 PA; however, Caltrans required a field review to determine the potential for effect on cultural resources.

The County retained Applied EarthWorks, Inc. (*Æ*) to complete the cultural resources studies in support of the project. Consequently, *Æ* requested and reviewed the results of the records search, initiated Native American consultation, and completed an archaeological survey of the Area of Potential Effects (APE) surrounding each bridge location on March 6, 9, 10 and April 15, 2015 (Maps 3–22). *Æ* Senior Archaeologist Mary Clark Baloian served as project manager, providing technical and administrative oversight for all aspects of the project. She holds a doctoral degree in anthropology from Southern Methodist University (2003) and is a Registered Professional Archaeologist (RPA) with more than 25 years of experience in California archaeology. *Æ* Associate Archaeologist Katie Asselin (M.A., RPA) supervised the pedestrian survey. Asselin has 7 years of experience in the Central Valley, Sierra Nevada, and Great Basin. The survey crew included Josh Tibbet (B.A., 4 years California experience), Kathleen Jernigan (14 years California experience), Chuck Pansarosa (B.A., 39 years California experience), and Alex Single (B.A., 4 years California experience).

2 PROJECT LOCATION AND DESCRIPTION

The 12 bridge locations occur across Fresno County from the western slopes of the Coast Ranges near the city of Coalinga to the foothills of the Sierra Nevada east of Sanger within Caltrans District 6 (Map 2). The legal description of each bridge location is provided in Table 1, and survey coverage is depicted on Maps 3–11. Most of the bridges are in rural areas characterized by flat land or rolling hills covered with seasonal grasses and natural vegetation. A few of the bridges lie near a single-dwelling on farmland containing citrus groves and other agricultural crops.

Table 1
Legal Description of 12 Bridge Locations Designated for Maintenance in Fresno County

Bridge No.	USGS 7.5-minute Quadrangle	Township, Range, Section	Study Location	Survey Acres
42C0097	Guijarral Hills, CA 1956 (PR 1971)	T 20S, R 16E, Sec. 22, 23, 26, 27	Map 5	4.2
42C0104	Burrel, CA 1954 (PR 1981)	T 17S/18S, R 19E, Sec. 5, 32	Map 6	3.7*
42C0178	Malaga, CA 1964 (PR 1981)	T 14S, R21E, Sec. 36	Map 8	1.7
42C0179	Reedley, CA 1966 (PR 1988)	T 15S, R 24E, Sec. 17, 18	Map 11	1.1
42C0328	Round Mountain, CA 1964 (PR 1978)	T 13S, R22E, Sec. 25	Map 9	3.9
42C0367	Burrel, CA 1954 (PR 1981)	T 17S/18S, R 19E, Sec. 5, 32	Map 6	3.7*
42C0455	Alcalde Hills, CA 1969 (PR 1978)	T 20S, R14E, Sec. 5	Map 4	4.7
42C0458	Sherman Peak, CA 1969 (PR 1981)	T 19S, R13E, Sec. 35	Map 3	2.2
42C0459	Sherman Peak, CA 1969 (PR 1981)	T 19S, R13E, Sec. 35	Map 3	3.6
42C0520	Piedra, CA 1965	T 13S, R 23E, Sec. 33	Map 10	1.0
42C0531	Malaga, CA 1964 (PR 1981)	T 15S, R22E, Sec. 7	Map 8	1.0
42C0532	Conejo, CA 1963 (PR 1978)	T 15S, R21E, Sec. 35	Map 7	1.5

* Bridges 42C0104 and 42C0367 are within the same APE.

The County proposes to conduct maintenance activities on each bridge to extend the service life of the existing structure. Activities consist of installing new or repairing existing scour countermeasures and other maintenance activities. This includes removing vegetation and trash from the channel at each location. Portions of the channels within the APE at each bridge location could be excavated to a maximum depth of 3 feet to install or repair existing scour countermeasures. At Bridge 42C0455, a dead tree overhanging the channel will be removed. The County plans to use existing paths to access the channel and does not intend to remove other trees. Temporary construction permits will be required.

3 SOURCES CONSULTED

3.1 RECORDS SEARCH

On February 12, 2015, the staff of the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System at California State University, Bakersfield performed a records search of a 0.5-mile radius surrounding each bridge location. In its review of materials the SSJVIC staff examined site location maps and site record files as well as the National Register of Historic Places, the Historic Property Data File (dated March 18, 2013), California Historical Landmarks, California Register of Historical Resources, California Inventory of Historic Resources, and California Points of Historical Interest (Appendix B).

The records search revealed that no resources have been recorded within the APE at any of the bridges locations or in the 0.5-mile records search radius around each bridge. Four previous cultural resource studies have been conducted in the project APEs or within a 0.5-mile radius of

Bridges 42C0097 and 42C0455. No other studies have been documented in the remaining project APEs or within a 0.5-mile radius of the other 10 bridges.

At Bridge 42C0097, the records search revealed three previous cultural resource studies within a 0.5-mile radius of the bridge. One study conducted in 1986 for a transmission line project intersected the APE, while the other two occurred in the mid to late 1990s within 0.5 mile of the APE (Table 2). No cultural resources had been previously identified in the APE for Bridge 42C0097 as a result of these studies.

Table 2
Previous Cultural Resource Studies within 0.5-Mile Radius of Bridge 42C0097

SSJVIC Report No.	Report Author(s)	Report Date	Report Title
Within APE			
FR-00328	Chavez et al.	1986	Cultural and Paleontological Resources Evaluation for the Los Banos-Gates Transmission Project, Merced and Fresno Counties
Within 0.5 Mile of APE			
FR-00135	Hatoff et al.	1995	Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project
FR-00201	Norton and Dore	1998	Cultural Resources Inventory Survey along Arroyo Pasajero, Near Coalinga, Fresno County, California

The records search indicated that a survey in 1987 encompassed the Bridge 42C0455 APE (see Appendix B). This inventory (FR-00981) resulted in the discovery of 21 cultural resources (Wren 1987); however, none of them were in the project APE or within 0.5 mile of Bridge 42C0455.

In addition to the SSJVIC records search results, a review of the Caltrans Bridge Inventory confirmed that all 12 bridges are listed as Category 5 and are not eligible for the National Register of Historic Places (Appendix B). According to Caltrans District 6 Environmental Specialist John Whitehouse, the canals with the APEs are excluded from the Area of Potential Effects, as per the guidance provided in *Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures* (JRP Historical Consulting and California Department of Transportation 2000:1).

3.2 NATIVE AMERICAN CONSULTATION

On February 11, 2015, *Æ* sent an e-mail to the Native American Heritage Commission (NAHC) requesting a search of their Sacred Land File and contact information for local Native American representatives. The NAHC responded on February 27 stating that the search of the Sacred Lands File did not indicate the presence of resources within any of the 12 bridge APEs. They also included a list of five individuals to contact. On March 10, 2015, *Æ* sent a letter describing the project and its locations to each of the following contacts identified by the NAHC.

- Rueben Barrios Sr., Chairperson, Santa Rosa Rancheria Tachi Yokut Tribe;

- Lalo Franco, Cultural Coordinator, Santa Rosa Rancheria Tachi Yokut Tribe;
- Leanne Walker-Grant, Chairperson, Table Mountain Rancheria;
- Bob Pennell, Cultural Resources Director, Table Mountain Rancheria; and,
- Michael Russell, Tribal Administrator, Table Mountain Rancheria.

In a letter dated March 31, 2015, the Cultural Resources Director of the Table Mountain Rancheria, Bob Pennell, responded with a request for detailed maps at Bridges 42C0328, 42C0520, and 42C0179. *Æ* replied on April 8, 2015 with a letter containing location maps and detailed APE maps for each requested bridge location. *Æ* placed follow-up telephone calls or e-mails on May 18, 2015. None of the Native Americans who have responded expressed concerns. Copies of the NAHC response, an example of the letter sent to Native American contacts, and a log documenting outreach to the Native American representatives are included in Appendix C. Any further communication received by *Æ* will be forwarded to Fresno County.

4 BACKGROUND

4.1 ENVIRONMENT

The project's 12 bridges occur throughout Fresno County in the San Joaquin Valley, the southern half of an elongated trough called the Great Valley. The Great Valley is a 50-mile-wide lowland that extends approximately 500 miles south from the Cascade Range to the Tehachapi Mountains (Norris and Webb 1990:412). The Great Valley is divided by two prominent hydrologic features, the Sacramento and San Joaquin rivers, which drain into San Francisco Bay. Between the Mesozoic and Cenozoic eras, the Great Valley served as a shallow marine embayment containing numerous lakes, primarily within the San Joaquin Valley (Norris and Webb 1990:412). As a result, the upper levels of the Great Valley floor are composed of alluvium and flood materials. Below these strata are layers of marine and nonmarine rocks, including claystone, sandstone, shale, basalt, andesite, and serpentine. Waters began to diminish about 10 million years ago, eventually dwindling to the drainages, tributaries, and small lakes that exist today (Hill 1984:28).

The San Joaquin Valley makes up the Great Valley's lower half. It is bounded by the Sacramento–San Joaquin River Delta to the north, the Sierra Nevada to the east, the Coast Ranges to the west, and the Tehachapi Mountains to the south. The San Joaquin Valley comprises two distinct hydrologic subbasins: the San Joaquin and the Tulare. The San Joaquin subbasin is drained by the San Joaquin River. Before historic drainage projects and modern reclamation, seasonal flooding produced extensive wetlands. Lakes, marshes, and sloughs once covered more than 5,000 square kilometers in the San Joaquin Valley (Moratto 1984:168). The largest of these was ancient Tulare Lake, which occupied a structural basin formed by downwarping and spanned as much as 45 kilometers across from shore to shore (Davis et al. 1959). Along with Buena Vista Lake and Kern Lake farther to the south, Tulare Lake was also partially contained by geological features peculiar to the southern end of the valley. Alluvial fans extending from the Kings River on the east and Los Gatos Creek on the west coalesced long ago into a ridge, separating the extreme southern end of the San Joaquin Valley from the north end

(Rosenthal et al. 2007). The lands to the south were so arid that runoff often was not able to maintain a discharge through the alluvium. The resulting natural dam formed by these alluvial fans directed all drainages into the basins of Tulare, Buena Vista, and Kern lakes, contributing to the impoundment of these wetlands (Gifford and Schenck 1926:7; Rosenthal et al. 2007). At times of flood, Buena Vista and Tulare lakes formerly spilled into a single basin and, combined with waters from the Kern, Kaweah, and Kings rivers, flowed into the San Joaquin River system (Oakeshott 1978; Wedel 1941). Both Kern and Tulare lakes fluctuated greatly in size in response to paleoclimatic changes; however, as a result of historic drainage projects, both are now dry most of the time (Arguelles and Moratto 1983).

Fresno Slough has historically served as the northern flood outlet of Tulare Lake and the Kings River. Fresno Slough was also a flooded backwater swamp of the San Joaquin River. Prior to agricultural development and the control of the natural waterways, the area between Tulare Lake and the San Joaquin River was a vast swampland. A historical account written by George Derby, who circa 1850 aspired to travel up the slough that connected the San Joaquin with Tulare Lake reported:

> the ground between the lake and the San Joaquin entirely cut up by small sloughs which had overflown in every direction making the country a perfect swamp, which I found it a matter of great difficulty to cross [Yogi 1996:11].

The development of agriculture within the county resulted in the replacement of native plants and animals with domesticated species. Common native plants included white, blue, and live oaks as well as walnut, cottonwood, willow, and tule. Also predominant were bulrush and cattail, various grasses, flowers, and saltbrush. The previously swampy valley floor once provided a lush habitat for a variety of animals. Large mammals included mule deer, tule elk, pronghorn, grizzly and black bears, and mountain lion (Preston 1981:245–247). Other mammals noted are the gray wolf, valley coyote, bobcat, gray and kit foxes, and rabbits. Birds in the area included American osprey, redwing blackbird, marsh hawk, willow and Nuttall woodpeckers, western meadowlark, and quail. The lakes, rivers, and streams throughout the vicinity provided habitat for anadromous and freshwater fish, including Chinook salmon, white sturgeon, Sacramento perch, rainbow trout, thick-tailed chub, and Sacramento sucker (Preston 1981:249).

4.2 PREHISTORY AND ARCHAEOLOGY

A cultural sequence for the Central Valley was first proposed in the 1930s, after archaeologists from Sacramento Junior College and the University of California, Berkeley excavated numerous sites in the Delta and lower Sacramento Valley (Heizer 1936; Heizer and Fenenga 1938; Heizer and Krieger 1935–1936; Lillard and Purves 1936; Riddell and Riddell 1940; Wedel 1935); many of these were mound sites. Through an intersite comparison of stratigraphically distinct cultural assemblages, a tri-period chronological sequence—Early Horizon, Middle Horizon, and Late Horizon—was developed for the Delta region, defined primarily in terms of mortuary patterns and ornamental artifacts (Lillard et al. 1939; Moratto 1984:181–183).

Efforts to date this widely used Delta sequence were problematic due to the broad geographic and cultural range to which it was applied. Initial dates of 2500 B.C. for the Early Horizon, 1500 B.C. for the Middle Horizon, and A.D. 500 for the Late Horizon were developed mid-

century (Heizer 1949) and have remained relatively unchanged. However, growing criticism and frustration with the limitations of the sequence (Bickel 1974; Gerow 1954), spurred by the development of more sophisticated dating techniques, prompted Ragir (1972), Bennyhoff (1972, as cited in Elsasser 1978), Fredrickson (1974), and others to modify the sequence and develop variations for specific localities in central California (see Moratto 1984). As Moratto (1984:215) summarizes, the prehistory of the mid Central Valley is better understood now in terms of the broad cultural "patterns" proposed by Fredrickson (1974) "which represent fundamental economic, technologic, and often social continuities over large areas and long intervals of time."

Studies conducted in the 1960s along the eastern side of the Diablo Range, west of the project area, resulted in the identification of a cultural sequence similar to, but distinct from, that of the Delta region. Excavations conducted for the construction of several reservoirs, including San Luis (Olsen and Payen 1969; Riddell and Olsen 1965; Treganza 1960), Los Banos (Pritchard 1967, 1970), and Little Panoche (Olsen and Payen 1968), led to the development of four cultural complexes focused on the exploitation of the foothill-valley biotic zone (Table 3).

Table 3
Culture Phases in the Western San Joaquin Valley
(adapted from Moratto 1984)

Phase	Dates	Common Artifacts and Features
Positas Complex	ca. 3300–2600 B.C.	Shaped mortars, short cylindrical pestles, milling stones, perforated flat cobbles, spire-lopped *Olivella* beads
Pacheco B Complex	ca. 2600–1600 B.C.	Foliate bifaces, rectangular *Haliotis* ornaments, rectangular *Olivella* beads
Pacheco A Complex	ca. 1600 B.C.–A.D. 300	Multiple types of *Olivella* beads (often in interments), *Haliotis* disk beads and ornaments, perforated canine teeth, bone awls, whistles, grass saws, large stemmed and side-notched projectile points, milling stones, mortars, and pestles
Gonzaga Complex	A.D. 300–1000	Extended and flexed burials, bowl mortars and shaped pestles, squared and taper-stemmed projectile points, bone awls and grass saws, *Haliotis* ornaments, multiple types of *Olivella* wall beads
Unknown	A.D. 1000–1500	Unknown
Panoche Complex	A.D. 1500–1850	Large circular structures; flexed burials; cremations; few milling stones; multiple types of mortars and pestles; bone awls, saws, whistles, and tubes; side-notched arrowheads; clamshell disk beads; *Haliotis* epidermis disk beads; *Olivella* wall beads

It is difficult to determine the ancestry of these early inhabitants. Olsen and Payen (1983) speculate that Ohlone people may have crossed the Diablo Range and established habitation on its eastern side near the pass. Others suggest that the artifact assemblages associated with occupation circa 1000 B.C.–A.D. 500 are more similar to those of the Valley Yokuts (Moratto 1984:193). The latest occupation, the Panoche Complex, is associated with the time period in which the ethnographic Yokuts inhabited the region.

Archaeological evidence currently suggests that the initial occupants of the San Joaquin Valley settled mostly in lakeshore and streamside environments, including Tulare Lake and Lake Buena

Vista, to the south of the project areas, and used the foothills seasonally. Early ("Paleoindian") sites, typified by fluted points, stemmed dart points, scrapers, and flaked stone crescents, indicate that occupation occurred possibly as early as 11,000 years ago (Fredrickson and Grossman 1977; Sampson 1991). Unfortunately, there have been few archaeological research projects in western Fresno County; therefore archaeological evidence has been derived from sites to the south, typically near ancient Tulare, Buena Vista, and Kern lakes, and to the north in Merced County.

The ancient shores of Tulare Lake, south of the project primarily in Kings County, have yielded numerous early projectile point styles, including fluted Clovis-like specimens associated with human occupation dating to the Late Pleistocene-Early Holocene transitions 11,000 or more years ago (Riddell and Olsen 1969). Specifically, excavations at the Witt Site (CA-KIN-32) on the southwest shore, revealed fluted projectile points as well as a procession of later types, suggesting continual occupation of the basin until historic contact (Fenenga 1993; Moratto 1984:81–82).The Tulare lakeshore has also yielded various scrapers, flaked stone crescents, Lake Mojave projectile points, and other stone artifacts typical of the Lake Mojave Period, which is presumed to have begun somewhat earlier than 10,000 years ago at 9500 before present (B.P.) and lasted to perhaps 7000–6500 B.P. (Hall 1993; Moratto 1984). Thus, the evidence, albeit scant, indicates that the area was frequented at an early date by bands of hunters preying on the large herds of game animals. More recent analyses have revaluated these artifacts by examining the changing environmental conditions at the time and considering the mobility and adaptability of the inhabitants (Dillon 2002; Holliday and Miller 2014; Negrini et al. 2006).

In the foothills of the Sierra Nevada in eastern Fresno County, investigations at CA-FRE-1671 produced data indicating a Yokuts presence in the San Joaquin Valley by A.D. 1300. Although the site has an earlier component dating to between 700 B.C. and A.D. 300, it is not clear that it is associated with Yokuts (Price 1992). Earlier excavations at CA-FRE-64 indicate a Yokuts presence in the valley as early as A.D. 1100–1200 (Wallace et al. 1989).

This work has produced data that is generally consistent with prehistoric sequences developed from excavations in the foothill and mountain areas that provide a fairly clear understanding of cultural change during the last 2,000–3,000 years (summarized in Moratto 1984:316–324; Table 4). This chronology is relatively short compared to the southern San Joaquin Valley, where archaeological investigations in the Tulare Lake and Buena Vista Lake localities suggest that people occupied the region as early as 11,000–12,000 years ago (Fredrickson and Grossman 1977; Riddell and Olson 1969). Despite the consistent data generated within Fresno County, because there has been very little archaeological excavation in the immediate project vicinity, it is unclear whether the cultural phases identified in the adjacent foothills extend to the project areas in the eastern part of the county. Moreover, the late phase of this chronology is generally associated with ancestral Miwok peoples rather than Yokuts.

The impression gained from investigations in the Central Valley and neighboring foothills is one of highly mobile foragers who were slowly changing lifeways and becoming more sedentary due to ecological and social changes. The shift in resource procurement from small animals and hard seeds toward acorns and larger game suggests intensified and more specialized use of local resources.

Table 4
Culture Phases in the Sierra Nevada Foothills
(adapted from Moratto 1984)

Phase	Dates	Common Artifacts and Features
Chowchilla Phase	800 B.C.–A.D. 550	Large projectile points, cobble mortars and cylindrical pestles, milling stones, bone fish spear tips, abundant beads and ornaments of *Olivella* and *Haliotis* shell, bone tools common, extended and semi-extended burials, grave goods common and abundant, ochre in graves.
Raymond Phase	A.D. 550–1500	Milling stones, small-to-medium projectile points (likely introduction of bow and arrow), bedrock mortars and unshaped pestles, burials usually in flexed position, few-to-no grave goods, cairns over burials, *Olivella* and *Haliotis* beads nearly vanish from archaeological record.
Madera Phase	A.D. 1500–Historic Period	Lightweight arrowheads, steatite disk beads, bedrock mortars and cobble pestles, *Olivella* beads, steatite artifacts, small amounts of Brown Ware pottery, flexed burials (cremations for high status individuals), grave goods common, and small amounts of European artifacts.

4.3 ETHNOGRAPHY

The project area lie within the homeland of the Yokuts. The Yokuts are divided into three groups that include the northern valley, southern valley, and foothill divisions that collectively inhabited the San Joaquin Valley and eastern foothills of the Sierra Nevada from the Mokelumne River southward to the Kern River (Kroeber 1976). The Yokuts language belongs to the broader Penutian family, which subsumes a relatively diverse assemblage of languages including Miwok, Costanoan, Maiduan, and Wintuan (Silverstein 1978). Compared to other Penutian languages, however, Yokuts shows considerable internal linguistic homogeneity, especially given the extent of its geographic distribution. Dialects differ minimally and were mutually intelligible at least among speakers of contiguous groups. This relative lack of linguistic differentiation suggests that ancestors of the Yokuts entered California after the arrival and subsequent radiation of the more linguistically diverse Penutian groups such as the Miwok and Costanoan (Moratto 1984:554).

The 12 bridge locations occur within areas traditionally inhabited by three different tribes, the Tachi, Wet-chi-kit, and Wimilchi, each of which is discussed below.

4.3.1 Tachi

The Tachi occupied the northwestern shores of Tulare Lake and the area around Fish Slough. The Tachi relied on the plentiful supply of lacustrine resources, including lake trout, chubs, perch, and suckers as well as turtles and shellfish. Fires were burned near the lakeshore at night to attract fish, which were commonly caught in nets dragged behind tule rafts, although spears and basketry also were used (Wallace 1978b:450). Wild seeds and acorns were harvested in the early summer and fall, respectively, and stored for use throughout the year. The Tachi spent the winter months in the western villages of *Walna* and *Udjiu*, located approximately 5 miles east of Coalinga (Kroeber 1976:484). Burning was used to enhance the productivity of vegetable foods.

Waterfowl and other game attracted to the lake supplemented the Yokuts diet. Bridges 42C0455, 42C0458 and 42C0459 fall within territory traditionally occupied by the Tachi.

4.3.2 Wimilchi

The Wimilchi are a tribelet associated with the Southern Valley Yokuts and occupied the territory north of the Kings River. Fish Slough, which connects the Kings River with Tulare Lake, was consider the boundary with the Tachi to the west (Kroeber 1976). Typical of the Southern Valley Yokuts, subsistence focused on riverine resources and was based on fishing and waterfowl; only a minor part the diet came from land mammals and birds (Wallace 1978b). *Ugona* was a village associated with the tribe (Kroeber 1976; Wallace 1978b). Bridges 42C0367 and 42C0104 fall within territory traditionally occupied by the Wimilchi.

4.3.3 Wet-chi-kit

Bridge locations in eastern Fresno County, 42C0178, 42C0179, 42C0520, 42C0328, 42C0531, and 42C0532, fall within territory traditionally occupied by the Wet-chi-kit Yokuts, one of the many autonomous tribes that made up the Northern Valley Yokuts whose language is one of five members that compose the Penutian linguistic family (Silverstein 1978). The Northern Valley Yokuts inhabited the marshy regions of the upper half of the San Joaquin Valley (Wallace 1978a).

The material culture of the Wet-chi-kit was generally consistent with that of the Yokuts. Noren (1988) found a variety of artifacts at several sites along the Kings River, including stone gaming balls, beads, and pendants along with such functional items as net weights, arrow shaft straighteners, metates, manos, mortars, and pestles. The presence of *Olivella*, clam shell, and abalone from coastal regions as well as obsidian and steatite from the Sierra Nevada indicate the Wet-chi-kit were part of the regional trade network. Among the 20 habitation sites that Noren identified were *Wewayo*, located 5 miles northeast of Reedley, and *Mosahau*, which translates to "sweat house place" (Noren 1988).

4.4 HISTORY

The first Europeans known to have entered the San Joaquin Valley were Spanish soldiers led by Pedro Fages, who came to the valley through Tejon Pass in 1772 (Wallace 1978b:459). Other Europeans followed in 1806 when Lieutenant Gabriel Moraga led a group of Spanish explorers into the San Joaquin Valley to locate new lands for missions (Clough and Secrest 1984:25–27). The expansion of missions in California ceased by the early 1820s as a result of Mexico's independence from Spain (Clough and Secrest 1984:26). Fur trappers discovered the California interior soon after and began their forays into the San Joaquin Valley. Jedediah S. Smith may have been the first to enter the area during a fur trapping expedition in 1827. Smith's adventures included friendly encounters with the Yokuts while trapping and camping along the San Joaquin River (Clough and Secrest 1984:27). After Smith's visit, other trappers followed until about 1837 when fur-bearing animals were nearly gone from the valley. These trappers included Kit Carson, Peter Skene Ogden of the Hudson's Bay Company, and Joseph Reddeford Walker.

Compared to the California coastal regions, Euro-Americans settled in the Central Valley relatively late. The Mexican government issued land grants in the Fresno County area on three

occasions in the 1840s (Clough and Secrest 1984:32–36). In order to satisfy the conditions of the contract and receive full ownership of the property, the grantee had to fulfill certain residency and improvement requirements; however, this was easier said than done. Early Euro-American efforts to settle the Central Valley often met with resistance from the indigenous tribes, who were probably aware of the harsh treatment given to their coastal brethren by Spanish missionaries. In addition, most regions of the valley were not well suited either for agriculture or cattle ranching and required a certain level of development (e.g., transportation routes, irrigation) before their potential could be realized. As part of the terms of the Treaty of Guadalupe Hidalgo, which formally concluded the Mexican-American War and ceded California to the United States, the U.S. government was to respect claims on grants provided that they complied with Mexican colonization laws. After the war, a series of legal disputes ensued that extended into the 1860s. Testimony from these cases demonstrated that in only very few instances did the grantee actually reside on the land long enough to satisfy his contractual obligations (Clough and Secrest 1984:32–39). Aside from a small Hispanic presence located primarily in the western part of the Fresno County area (Clough and Secrest 1984:39–43), it was not until after 1849 and the early stages of the gold rush that Euro-American miners seriously considered establishing permanent residence in the valley.

The gold rush, which is perhaps best-known as a Northern California phenomenon, extended to the state's central highlands. Prospectors first established camps at Coarse Gold (presently the town of Coarsegold) and Fine Gold (Clough and Secrest 1984:46). For the speculators that came to the Sierra Nevada and its foothills from the West Coast, the Central Valley probably represented little more than a dry stretch of land to be traversed before reaching the gold fields to the east. The first settlements in the valley emerged along the valley's major waterways—the Chowchilla, Fresno, San Joaquin, and Kings rivers—largely to service the transportation and material needs of the miners. These were untamed and temperamental rivers that were prone to unexpected flooding, not the dry lifeless channels that mark the valley's present-day landscape. These waterways could be crossed only via ferry. Outposts such as Fort Miller, Fort Bishop, and Campbells Ferry offered river crossing points, supplies, lodging and, in the case of the first two, fortification from Indian attacks. It is perhaps telling that history of the area focuses not on the miners who arrived during the gold rush but rather the entrepreneurs who profited from them. The momentum of the gold rush could not be sustained, and by the early 1850s most of the miners and the merchants who relied on their patronage began to look to other pursuits.

Much of the history of Fresno County has been shaped by the introduction and subsequent development of extensive water conveyance systems. In addition, the arrival of the Southern Pacific Railroad to Fresno in 1872 coupled with the passage of the "no fence" laws in 1874 provided the underpinnings of an agricultural revolution in the Central Valley that has lasted into the twenty-first century. By bringing irrigation water from the Kings River, developers not only increased the productivity of land but enhanced the resale value of their agricultural subdivisions. The Enterprise Canal in the project vicinity is among the earliest canals constructed during this formative time in the history of the area. It brought (and continues to bring) irrigation water from the Kings River to the agricultural lands north of Fresno and around the nascent settlement of Clovis, which was established as a stop along the old San Joaquin Valley Railroad (Clough and Secrest 1984; Mead 1901; Thompson 1891).

Agriculture has greatly influenced the development of Fresno County's towns, such as Clovis, Sanger, and Reedley. Agricultural development began in the 1870s with grain farming on parcels of 640 acres or more. By the late nineteenth century, these larger tracts were being broken-up into smaller lots that (with irrigation) supported premium crops, such as vineyards and orchards (Guard 1909; Harvey 1907; Progressive Map Service 1913; Vandor 1919)

In western Fresno County, history was defined by the discovery of coal deposits in 1888 in the foothills just to the west of present day Coalinga. This prompted the Southern Pacific Railroad to extend its track from Huron westward (Roper Wickstrom 1990). The railroad owned vast real estate on the West Side, in what it hoped would become a major coal-producing area. The coal industry never materialized due to the poor quality of the ore, yet Coalinga owes its name and existence to this defunct endeavor.

Commercial oil exploration and extraction began in 1890. The South Pacific Railroad's Coalinga branch line, originally built to transport coal, greatly facilitated the emergence of oil-related enterprises on the West Side in the 1890s. With improvements in transportation came innovations in the equipment used to drill, extract, and refine the oil, including steam, and later gas, engines powering drilling rigs. Like the old gold mining town of the late 1840s and 1850s, the bawdy atmosphere of the 1890s oil rush gradually subsided as more families moved into the area. Without a well-developed agrarian base, the prosperity of Coalinga was largely dependent on the flow of oil. Coalinga continued to be an important oil center throughout the first half of the twentieth century, yet it never returned to the boom days of the early 1900s.

5 FIELD METHODS

On March 6, 9, 10 and April 15, 2015, Æ Associate Archaeologist Katie Asselin, assisted by Æ archaeologists Josh Tibbet, Chuck Pansarosa, Alex Single, and Kathleen Jernigan performed an intensive pedestrian survey at each bridge location (Maps 12–22) using parallel and meandering transects spaced no more that 15–20 meters apart. Æ photographed each location using a digital camera, and collected Global Positioning System (GPS) data with a Trimble GeoXH unit. All field conditions and survey observations were documented on survey field forms. Copies of photographs and field notes are on file at Æ's office in Fresno, California.

Cultural resources identified adjacent to the project work area were documented concurrently with the pedestrian survey. Æ photographed each resource using a digital camera, identified its location using the GPS unit, and recorded the discovery on the appropriate California Department of Parks and Recreation (DPR) forms (523 series). These forms are provided in Appendix D.

6 STUDY FINDINGS AND CONCLUSIONS

6.1 BRIDGE 42C0459

Bridge 42C0459 is west of Coalinga in the foothills of the Coast Ranges. It crosses Los Gatos Creek at Los Gatos Road 11.4 miles west of Derrick Avenue. The survey encompassed 3.6 acres

surrounding the bridge, which includes the entire project APE (Map 12). Ground visibility within the APE varied from low visibility in areas obscured by oaks, junipers, and seasonal grasses to close to 100 percent visibility in the Los Gatos Creek bottom (Figure 1). A historic Fairbanks Morse windmill associated with a more recent homestead was discovered on the west side of Los Gatos Creek. Æ assigned the historic windmill temporary number AE-3093-02 and documented it on a DPR Primary Record (Appendix D). The County established the project limits to ensure the windmill lies outside the APE and will not be adversely effected by the proposed project. No historical or prehistoric archaeological materials were discovered within the APE.

Figure 1 Bridge 42C0459 over Los Gatos Creek on Los Gatos Road, facing east.

6.1.1 AE-3093-02

This resource is a historic Fairbanks Morse windmill (Figure 2). The main structure is made of wood, and there is a metallic support frame inscribed “COALINGA IRON WKS. COALINGA, CALIF.” An electrical box on the structure was made by the Trumbull Electric Manufacturing Company and appears to have been added after it the windmill was erected. The windmill is no longer in use but is in good to excellent condition. The property upon which the windmill is located contains a modern residence that is currently occupied.

Figure 2 Fairbanks Morse windmill (AE-3093-02) near Bridge 42C0459, facing south.

6.2 BRIDGE 42C0458

Bridge 42C0458 crosses Los Gatos Creek at Los Gatos Road 11.23 miles west of Derrick Avenue. This bridge is just 0.2 mile from Bridge 42C0459 discussed above. Æ surveyed a 2.2-acre area surrounding the bridge (Map 13). Surveyors noted milled lumber fragments, a steel I-beam, metal pipe, and corrugated metal within the APE; however, none of these items appears to be historical or to possess temporally diagnostic attributes that indicate they were discarded more than 50 years ago. Seasonal grasses, wildflowers, oaks and junipers reduced ground visibility in most of the project area to less than 5 percent; however, visibility in the dry creek bottom was near 100 percent due to a lack of vegetation (Figure 3). AE observed an old farmhouse and associated outbuildings approximately 200 feet east of the project limits. No historical or prehistoric archaeological materials were discovered in the APE.

6.3 BRIDGE 42C0455

Bridge 42C0455 crosses Los Gatos Creek approximately 5.63 miles east of Bridge 42C0458 at Los Gatos Road and 5.6 mile west of Derrick Avenue. Æ surveyed a 4.7-acre area (Map 14). Survey visibility was poor (less than 5 percent) along both banks of Los Gatos Creek which were obscured by overgrown seasonal grasses, weeds, wildflowers, and thick salt cedar growth (Figure 4). The dry creek bed was clear of vegetation and provided close to 100 percent visibility. Æ discovered prehistoric rock art site containing two boulders with petroglyph motifs

Figure 3 **Bridge 42C0458 over Los Gatos Creek on Los Gatos Road, facing northeast.**

Figure 4 **Bridge 42C0455 over Los Gatos Creek on Los Gatos Road, facing east.**

on the east side of Los Gatos Creek. Æ assigned the site temporary number AE-3093-01, recorded its location using a GPS unit, and documented it on the appropriate DPR forms (Appendix D).

The County defined the APE at Bridge 42C0455 to ensure that the site is a sufficient distance from the proposed work area and will not be adversely affected by the proposed work. No historical or prehistoric archaeological materials were discovered within the APE.

6.3.1 AE-3093-01

This prehistoric rock art site is comprised of two sandstone boulders containing petroglyphs. No midden or artifacts (e.g., flaked or ground stone, ceramics, steatite objects, shell or bone) were observed in association with the rock art. The site measures 45 by 55 meters. One of the boulders lies on the broad lower stream terrace west of Los Gatos Creek, while the other is on an elevated sandstone escarpment overlooking the creek that contains a number of boulders (Figure 5). It appears that the boulder on the lower terrace is not in situ and likely was dislodged from the upper terrace. The lower terrace appears to have been used as a work area during bridge or road construction. There is evidence that the area has been graded in the past, and the boulder containing the petroglyph motif has been marked with white spray paint.

Figure 5 **Site with petroglyphs (AE-3093-01) near Bridge 42C055, facing northeast toward the upper stream terrace. Feature 1 is in the foreground and Feature 2 in the upper right corner of the frame.**

The panel on Feature 1 contains one petroglyph consisting of a pecked circle encompassing four parallel vertical grooves (Figure 6). This motif is approximately 9.8 centimeters wide and 8.9 centimeters high. The boulder also appears to contain another petroglyph, although it is faint and the design not as definitive. It appears to be a figure, possibly zoomorphic, with an outline forming two rounded ears at the top, extending down to form an arm, and rounding out near the bottom before becoming undistinguishable from the natural rock (Figure 7). This motif is approximately 16.6 centimeters high by 9.0 centimeters wide. There may be more motifs on the boulder on areas that were not exposed at the time of the survey.

Figure 6 Detail of petroglyph on Feature 1 at AE-3093-01 near Bridge 42C0555.

The panel on Feature 2 contains several motifs that are not clearly visible due to the poor condition of the rock. However, the markings are not ubiquitous on this boulder nor do they occur on adjacent boulders to suggest that these modifications are natural. Also, the fact that the markings occurs on the side of the boulder, and not on the top, supports the conclusion that these modifications are cultural. The panel contains several clusters of cupules, approximately 1–2 centimeters in diameter and 1 centimeter deep. There is also a cupule with pronounced grooves near the bottom of the boulder depicting an anthropomorphic figure with a head and outstretched arms (Figure 8). The panel is approximately 36 by 36 centimeters.

Figure 7 **Detail of possible zoomorphic figure on Feature 1 at AE-3093-01 near Bridge 42C0555.**

Figure 8 **Detail of petroglyph panel on Feature 2 at AE-3093-01 near Bridge 42C0555.**

Small cupules measuring 3 centimeters in diameter and 1 centimeter deep arranged in clusters are typical of the area and have been used to define the Western San Joaquin Cupule Style (Foster et al. 1990). Sites containing petroglyphs in this style tend to be along streams in the eastern foothills of the Coast Ranges. The Coalinga Upland Style is defined by the use of dots and drill holes and may contain anthropomorphic features; however, sites with rock art depicting this style tend to be located in a mountain or upland setting away from drainages (Foster et al. 1990). The motifs visible on Feature 1 do not appear to by typical of the area based on the limited research in the vicinity. The petroglyphs on Feature 2 could be indicative of either style, but without further research it is difficult to make definitive conclusions.

6.4 BRIDGE 42C0097

Bridge 42C0097 is west of Interstate 5 in the community of Turk. It crosses Arroyo Pasajero at El Dorado Avenue, 2 miles north of Jayne Avenue. The records search indicated that a portion of the APE had been surveyed in 1986 for a transmission line project, and two cultural resources surveys were conducted in the mid to late 1990s within 0.5 mile of the (see Section 3.1), although no cultural resources were identified in the APE for Bridge 42C0097.

As with the other bridges, ground visibility was highly variable in the 4.2-acre survey area (Map 15), ranging from near zero visibility in areas obscured by weeds, grasses, oaks, and salt cedars to close to 100 percent visibility in the bare, dry creek bottom. The APE and adjacent land has been heavily disturbed by roads, canals, and orchards (Figure 9). Æ observed a large amount of modern refuse scattered at the bottom of the canal. No historical or prehistoric archaeological materials were discovered within the APE.

Figure 9 Bridge 42C0097 over Arroyo Pasajero on El Dorado Avenue, facing northeast.

6.5 BRIDGES 42C0367 AND 42C0104

Bridges 42C0367 and 42C0104 are 400 feet apart and, thus, project work at the two bridges is encompassed by one APE. Both bridges are west of Highway 41 in the community of Schilling. Bridge 42C0104 crosses the Fresno Slough at Excelsior Avenue 0.1 miles west of Grantland Avenue. Bridge 42C0367 crosses the Fresno Slough Overflow at Excelsior Avenue 0.2 mile west of Grantland Avenue. The 3.7-acre APE (Map 16) is bounded by cultivated rye and feed crops to the north. Dirt access roads and other disturbed areas are prevalent within the APE (Figure 10). Surface visibility during the survey was between less than 5 and 20 percent in the creek bottom and area surrounding Bridge 42C0367 due to heavy weeds, oaks, and salt cedars (Figure 11). However, conditions improved and there was near 100 percent visibility in the dry sandy creek bed at Bridge 42C0104 (Figure 12). As shown in Figure 12, the creek bottom at this bridge appears to be a dumping ground for modern refuse. No historical or prehistoric archaeological materials were discovered within the APE.

Figure 10 **Bridges 42C0367 (left middle of photo) and Bridge 42C0104 (in background) on Excelsior Avenue, facing the east.**

6.6 BRIDGE 42C0532

Bridge 42C0532 is southwest of Highway 99. It crosses the Fowler Switch Canal at Huntsman Avenue, between the communities of Fowler and Selma and adjacent to the Selma Airport (Figure 13). Ground visibility within the 1.5-acre APE (Map 17) was excellent, ranging from 80 to 100 percent, limited only by sparse patches of weeds and grasses. Soils in the APE consist of silty sand in the agricultural fields and predominately sandy soils in the canal bottom. No historical or prehistoric archaeological materials were discovered within the APE.

Figure 11 Bridge 42C0367 over the Fresno Slough Overflow, facing southeast.

Figure 12 Bridge 42C0104 over the Fresno Slough, facing southeast.

Figure 13 Bridge 42C0532 over the Fowler Switch Canal on Huntsman Avenue, facing east.

6.7 BRIDGE 42C0178

The bridge is located on American Avenue in Del Rey and crosses the Fowler Switch Canal near the intersection of American and Highland avenues (Figure 14). The APE for the bridge is 1.7 acres and contains recently planted orchards at all four corners of the bridge (Map 18). Ground visibility was close to 100 percent due to the freshly tilled soils in the orchards. No cultural materials were observed during the survey of the APE.

6.8 BRIDGE 42C0531

Bridge 42C0531 is on Thompson Avenue in Del Rey (Figure 15). It crosses the Fowler Switch Canal 0.33 mile north of Adams Avenue. The project APE encompasses 1.0 acre (Map 19). It contains a homestead to the northwest, uncultivated fields to the east, and a recently planted orchard to the southwest. The canal was dry at the time of the survey and contained a large amount of modern refuse. Surface visibility ranged between 80 to 100 percent, limited only by sparse patches of weeds. Æ did not discover any historic or prehistoric archaeological material during survey of the APE.

Figure 14 **Bridge 42C0178 over the Fowler Switch Canal on American Avenue near its intersection with Highland Avenue, facing east.**

Figure 15 **Bridge 42C0531 across the Fowler Switch Canal on Thompson Avenue, facing south.**

6.9 BRIDGE 42C0328

Bridge 42C0328 crosses Mud Creek at Zediker Avenue 0.7 mile south of Shields Avenue in Riverbend. The 3.9-acre APE contains orange groves on both sides of the road, and includes portions of Mud Creek parallel to Zediker Avenue (Map 20). Ground visibility within the APE surrounding Mud Creek was poor, ranging from less than 5 to 20 percent due to small oaks, grasses, and heavy riparian vegetation. In contrast ground visibility was near 100 percent in the orange groves (Figure 16). No cultural material was observed in the APE during survey.

Figure 16 Bridge 42C0328 over Mud Creek on Zediker Avenue, facing north.

6.10 BRIDGE 42C0520

Bridge 42C0520 is on Viau Avenue in Riverbend west of the Kings River (Figure 17). The bridge crosses the Fresno Canal 0.3 mile north of Belmont Avenue. The 1.0-acre APE (Map 21) is flanked by orange groves south of the bridge and grassy agricultural fields and residences north of the bridge. Ground visibility ranged from less than 5 percent in grassy areas to nearly 100 percent in the orange groves. No cultural material was observed within the APE.

6.11 BRIDGE 42C0179

Bridge 42C0179 crosses Travers Creek at Alta Avenue 0.3 mile north of South Avenue. The APE covers 1.1 acres. At the time of the survey there was an uncultivated field to the southeast, a grazing allotment for horses to the northeast, an orange grove to the northwest, and a pecan orchard to the southwest (Map 22). Ground visibility during the survey was excellent (80–100 percent). The creek channel was dry at the time of the survey, although there were a variety of weeds on the banks and in the creek bed. No cultural materials were discovered within the APE.

Figure 17 Bridge 42C0520 over the Fresno Canal on Viau Avenue, facing south.

Figure 18 Bridge 42C0179 over Travers Creek on Alta Avenue, facing south.

7 STUDY FINDINGS AND CONCLUSIONS

No historical or prehistoric archaeological materials were discovered during survey within the APEs for any of the 12 project bridges. Æ did discover two cultural resources, a prehistoric rock art site (AE-3093-01) and a historic windmill (AE-3093-02) within the larger study areas at Bridge 42C0455 and 42C0459, respectively. However, County carefully established the APEs at each bridge location to ensure that these resources are well outside the project limits and can be sufficiently avoided so as not to be adversely affected by the proposed project.

Many of the bridges cross active streambeds, and areas surrounding the bridges have been periodically covered in alluvial sediments. As a result, it is possible that buried archaeological deposits may be encountered during ground-disturbing work on the adjacent stream terraces; however, the likelihood of uncovering intact archaeological sites in the steam beds or channels while installing or repairing scour countermeasures is low.

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 may be needed if the APEs are reconfigured and extend beyond the present survey limits or if project work is altered so that it can no longer be considered a Screened Undertaking under Caltrans' authority.

8 REFERENCES

Arguelles, Marcus R., with Michael J. Moratto

1983 *Overview of Cultural Resources, Kern and Pixley National Wildlife Refuges, California.* INFOTEC Development, Inc. Submitted to U.S. Fish and Wildlife Service, Portland, Oregon.

Bickel, P. McW

1974 Toward a Prehistory of the San Francisco Bay Area. Paper presented at the 8th Annual Meeting of the Society for California Archaeology, Riverside.

Clough, Charles W., and William B. Secrest Jr.

1984 *Fresno County—The Pioneer Years: From the Beginnings to 1900.* Panorama West Books, Fresno, California.

Davis, G. H., J. H. Green, F. H. Olmstead, and D. W. Brown

1959 *Groundwater Conditions and Storage Capacity in the San Joaquin Valley, California.* U.S. Geological Survey Water Supply Paper 1469. Prepared in cooperation with California Division of Water Resources, Sacramento.

Dillon, Brian D.

2002 California Paleoindians: Lack of Evidence, or Evidence of Lack? In *Essays in California Archaeology: A Memorial to Franklin Fenega,* edited by William J. Wallace and Frances A. Riddell, pp. 110–128. Contributions of the University of California Archaeological Research Facility No. 60. Berkeley.

Elsasser, Albert B.
1978 Development of Regional Prehistoric Cultures. In *California*, edited by Robert F. Heizer, pp. 37–58. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Fenenga, Gerrit L.
1993 Test Excavations at the Witt Site (CA-KIN-32). In *Contributions to Tulare Lake Archaeology II, Finding the Evidence: The Quest for Tulare Lake's Archaeological Past*, edited by William J. Wallace and Francis A. Riddell, pp. 25-38. Tulare Lake Archaeological Research Group, Redondo Beach, California.

Foster, Daniel G., Richard C. Jenkins, and John Betts
1990 Rock Art in the Coalinga Backcountry. In *Rock Art Papers*, Vol. 7, edited by Ken Hedges, pp. 53–68. San Diego Museum of Man.

Fredrickson, David A.
1974 Social Change in Prehistory: A Central California Example. In *'Antap: California Indian Political and Economic Organization*, edited by Lowell John Bean and Thomas F. King, pp. 57–73. Ballena Press Anthropological Papers 2.

Fredrickson, David A., and Joel W. Grossman
1977 A San Dieguito Component at Buena Vista Lake, California. *Journal of California Anthropology* 4:173–190.

Gerow, B. A.
1954 The Problem of Culture Sequences in Central California Archaeology. Paper presented at the Annual Meeting of the American Association for the Advancement of Science.

Gifford, Edward W., and W. Egbert Schenck
1926 Archaeology of the Southern San Joaquin Valley, California. *University of California Publications in American Archaeology and Ethnology* 23(1):1–122.

Guard, W. C.
1909 *Atlas of Fresno County.* W. C. Guard, Fresno, California.

Hall, Matthew C.
1993 *Archaeology of Seven Prehistoric Sites in Tiefort Basin, Fort Irwin, San Bernardino County, California*, with contributions by M. E. Basgall, D. A. Jones, M. G. Delacorte, M. R. Waters, C. A. Hunter, P. D. Bouey, T. M. Origer, and K. R. McGuire. Far Western Anthropological Research Group, Inc., Davis, California. Submitted to the U.S. Army National Training Center, Fort Irwin, California.

Harvey, William, Sr.
1907 *Atlas of Fresno County, California.* William Harvey, Sr., Fresno, California.

Heizer, Robert F.
1936 Notes and Manuscript of the Miller Mound, Site CA-Col-1. University of California Archaeological Survey Manuscripts 94. Archaeological Archives, Phoebe A. Hearst Museum of Anthropology, Berkeley.

1949 *The Archaeology of Central California, I: The Early Horizon.* University of California Anthropological Records 12. Berkeley.

Heizer, Robert F., and Franklin Fenenga
1938 Archaeological Notes on the Sandhill Site (CA-Col-3). University of California Archaeological Survey Manuscripts 57. Archaeological Archives, Phoebe A. Hearst Museum of Anthropology, Berkeley.

Heizer, Robert F., and A. D. Krieger
1935–1936 Colusa County Sites: Miller Mound (CA-Col-1), Sandhill Mound (CA-Col-2), Howells Point Mound (CA-Col-3). University of California Archaeological Survey Manuscripts 383. Archaeological Archives, Phoebe A. Hearst Museum of Anthropology, Berkeley.

Hill, Mary
1984 *California Landscape.* California Natural History Guide 48. University of California Press, Berkeley.

Holliday, Vance T., and D. Shane Miller
2014 The Clovis Landscape. In *Paleoamerican Odyssey*, edited by Kelly E. Graf, Caroline V. Ketron, and Michael R. Waters, pp. 221–245. Texas A&M University, College Station.

JRP Historical Consulting and California Department of Transportation (JRP and Caltrans)
2000 *Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures.* JRP Historical Consulting Services, Davis, California, and California Department of Transportation, Environmental Program/Cultural Studies Office, Sacramento.

Kroeber, Alfred L.
1976 *Handbook of the Indians of California.* Reprinted. Dover, New York. Originally published 1925, Bureau of American Ethnology Bulletin 78, Smithsonian Institution, Washington, D.C.

Lillard, Jeremiah B., Robert F. Heizer, and Franklin Fenenga
1939 *An Introduction to the Archaeology of Central California.* Sacramento Junior College Department of Anthropology Bulletin 2. Sacramento, California.

Lillard, Jeremiah B., and William K. Purves
1936 *The Archaeology of the Deer Creek–Cosumnes Area, Sacramento County, California.* Sacramento Junior College Department of Anthropology Bulletin 1.

Mead, Elwood
1901 *Irrigation Investigations in California.* U.S. Department of Agriculture Office of Experiment Stations Bulletin No. 100. Government Printing Office, Washington, D.C.

Negrini, Robert M., Peter E. Wigand, Sara Draucker, Kenneth Gobalet, Jill K. Gardner, Mark Q. Sutton, and Robert M. Yohe II
2006 The Rambla Highstand Shoreline and the Holocene Lake-Level History of Tulare Lake, California, USA. *Quaternary Science Reviews* 25:1599–1618.

Noren, Oscar
1988 Wet-chi-kit Tokuts Occupied the Area. *The Reedley Exponent*, 27 October.

Norris, Robert M., and Robert W. Webb
1990 *Geology of California.* 2nd ed. John Wiley & Sons, New York.

Moratto, Michael J.
1984 *California Archaeology*. Academic Press, Orlando and London.

Oakeshott, Gordon B.
1978 *California's Changing Landscapes: A Guide to the Geology of the State.* 2nd ed. McGraw-Hill, New York.

Olsen, William H., and Louis A. Payen
1968 *Archaeology of the Little Panoche Reservoir, Fresno County, California.* California Department of Parks and Recreation Archaeological Report 11. Sacramento.

1969 *Archaeology of the Grayson Site, Merced County, California.* California Department of Parks and Recreation Archaeological Report 12. Sacramento.

1983 Excavations at CA-MER-130: A Late Prehistoric Site in Pacheco Pass. In *Papers on Merced County Prehistory*, pp.1–85. California Department of Parks and Recreation Archaeological Reports No. 21. Sacramento.

Preston, William L.
1981 *Vanishing Landscapes: Land and Life in the Tulare Lake Basin.* University of California Press, Berkeley.

Price, Barry A.
1992 *Archaeological Survey Report of Route 168 Study Areas,* with contributions by Michael J. Moratto and Clayton G. Lebow. INFOTEC Research, Inc., Fresno, California. Prepared for CH2M Hill, Emeryville, California.

Pritchard, W. E.
1967 *The Archaeology of Lower Los Banos Creek.* Master's thesis, Department of Anthropology, California State University, Sacramento.

1970 *Archaeology of the Menjoulet Site, Merced County, California.* California Department of Parks and Recreation Archaeological Report No. 13. Sacramento.

Progressive Map Service
1913 *Progressive Atlas of Fresno County*. Progressive Map Service, Fresno, California.

Ragir, Sonia R.
1972 *The Early Horizon in Central California Prehistory.* Contributions of the University of California Archaeological Research Facility 15. Berkeley.

Riddell, Francis A., and William H. Olsen
1965 Archaeology of Mer-14, Merced County, California. Ms. on file, California Department of Parks and Recreation, Sacramento.

1969 An Early Man Site in the San Joaquin Valley, California. *American Antiquity* 34:121–130.

Riddell, F. A., and H. S. Riddell Jr.
1940 Archaeological Notes on Site CA-Sac-28. University of California Archaeological Survey Manuscripts 34. Archaeological Archives, Phoebe A. Hearst Museum of Anthropology, Berkeley.

Rosenthal, Jeffrey S., Gregory G. White, and Mark Q. Sutton.
2007 The Central Valley: A View from the Catbird's Seat. In *California Prehistory: Colonization, Culture, and Complexity,* edited by Terry L. Jones and Kathryn A. Klar, pp. 147–163. AltaMira Press, Lanham, Maryland.

Roper Wickstrom, Kristina C.
1990 *Cultural Resources Inventory and Evaluation for Lands Included in the Coalinga Cogeneration Project Near Coalinga, California.* Prepared for BioSystems Analysis, Inc., Santa Cruz, California.

Sampson, Michael
1991 A Distinctive Flaked-Stone Tool Type from Tulare Lake Basin. In *Contributions to Tulare Lake Archaeology I: Background to a Study of Tulare Lake's Archaeological Past,* edited by William J. Wallace and Francis A. Riddell, pp. 53–60. Tulare Lake Archaeological Research Group, Redondo Beach, California.

Silverstein, Michael
1978 Yokuts: Introduction. In *California,* edited by Robert F. Heizer, pp. 446-447. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Thompson, Thomas H.
1891 *Atlas of Fresno County, California.* Thos. H. Thompson, Tulare, California.

Treganza, Adan E.
1960 *Archaeological Investigations in the San Luis Reservoir Area, Merced County, California.* Submitted to California Department of Parks and Recreation, Sacramento.

Vandor, Paul E.
1919 *History of Fresno County, California, with Biographical Sketches of the Leading Men and Women of the County Who Have Been Identified with Its Growth and Development from the Early Days to the Present.* 2 vols. Historic Record Company, Los Angeles.

Wallace, William J.
1978a Northern Valley Yokuts. In *California*, edited by Robert F. Heizer, pp. 462–470. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

1978b Southern Valley Yokuts. In *California*, edited by Robert F. Heizer, pp. 448–461. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Wallace, William J., Adella B. Schroth, and Phillip De Barros
1989 *Archaeological Data Recovery at Prehistoric Archaeological Site CA-FRE-64.* Chambers Group, Inc., Santa Ana, California. Prepared for California Department of Transportation, District 6, Fresno.

Wedel, Waldo R.
1935 Archaeological Notes on the Howell's Point Site (CA-Col-2) and CA-Sha-47. University of California Archaeological Survey Manuscripts 18. Archaeological Archives, Phoebe A. Hearst Museum of Anthropology, Berkeley.

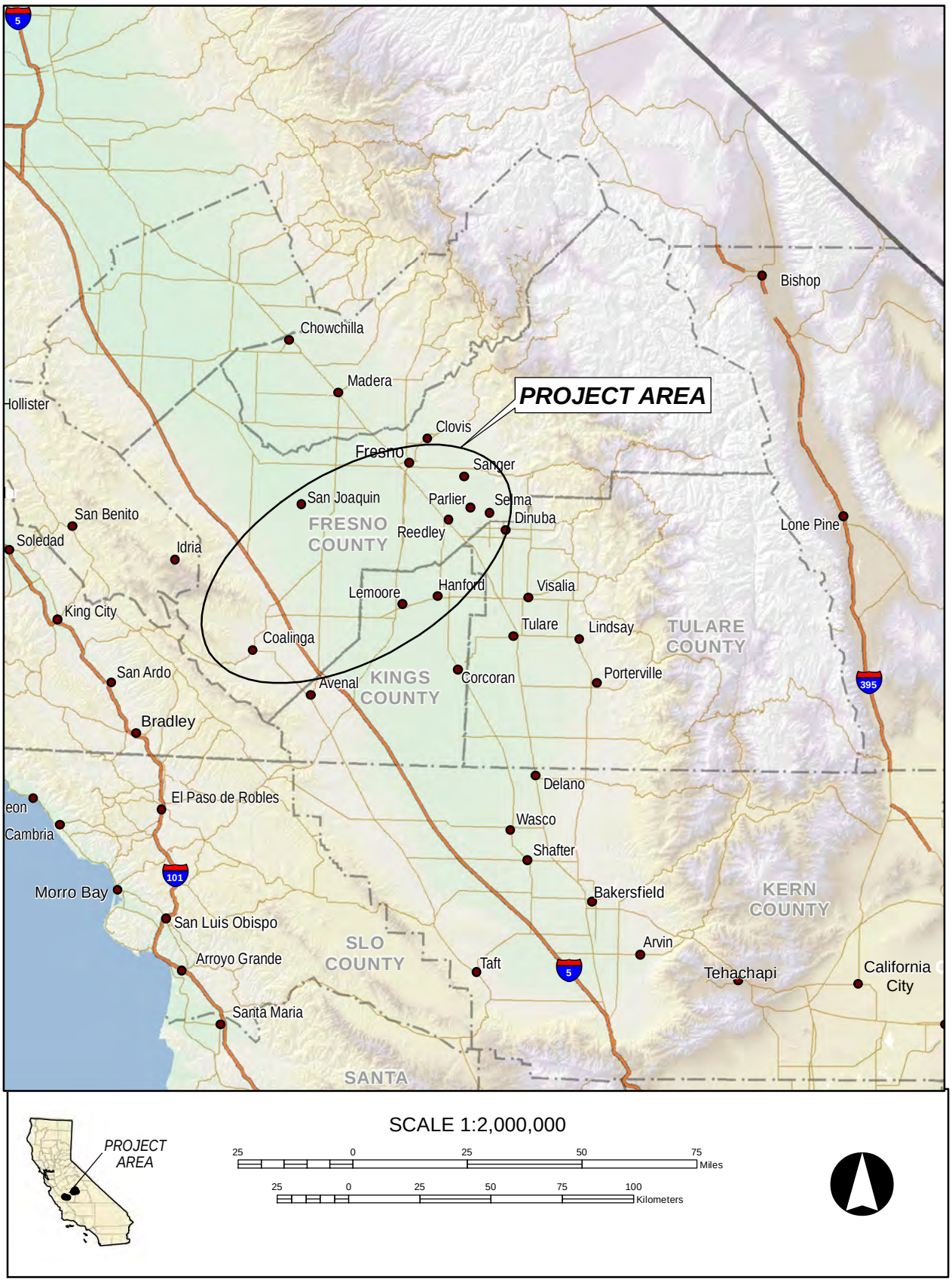
1941 *Archaeological Investigations at Buena Vista Lake, Kern County, California.* Bureau of American Ethnology Bulletin 130. Smithsonian Institution, Washington, D.C.

Wren, Donald G.
1987 *Arroyo Pasajero: An Archaeological Study*. California State University, Fresno Foundation. Prepared for California State Department of Water Resources, Contract No. 55992.

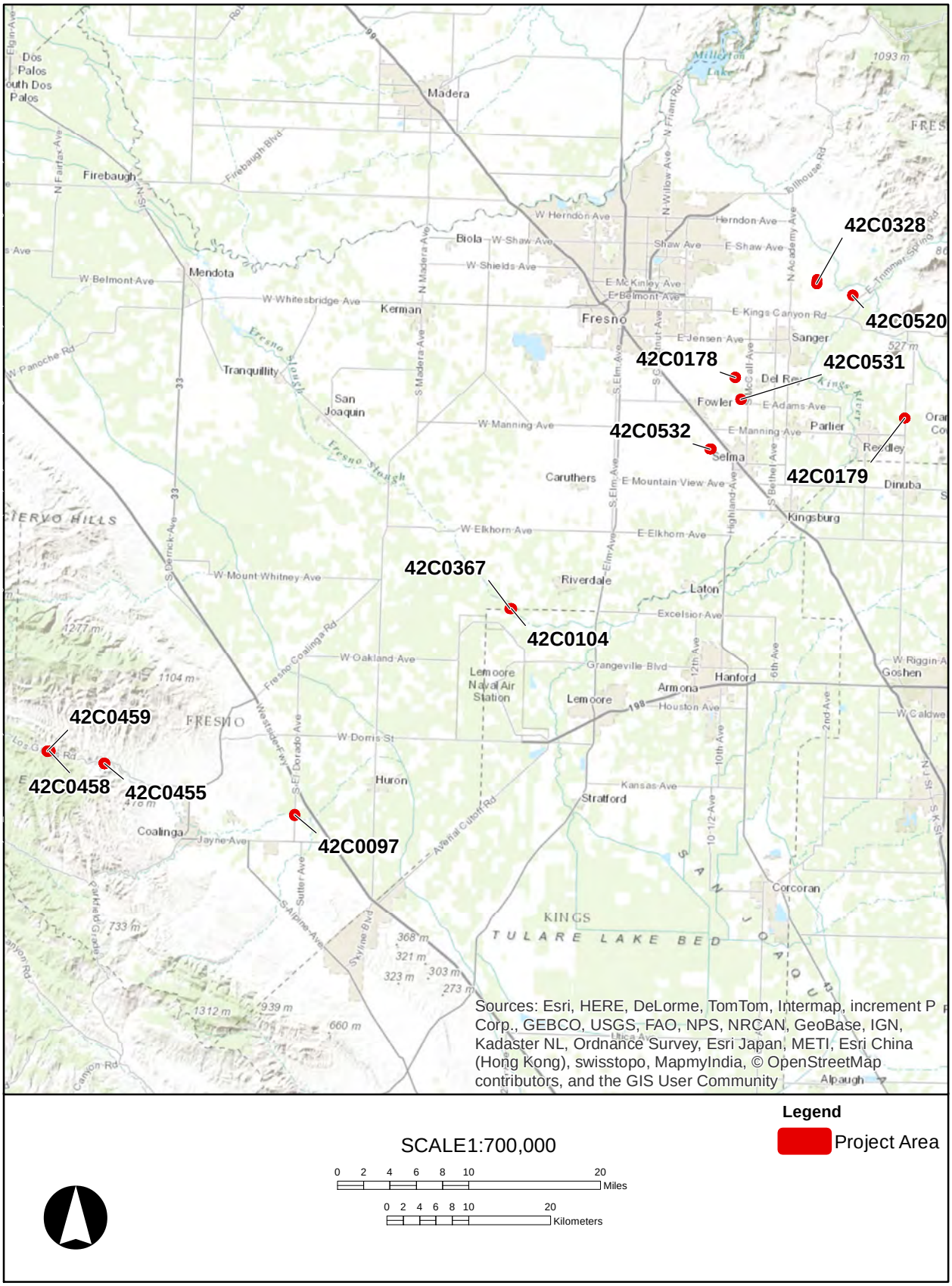
Yogi, Stan
1996 *Highway 99: A Literary Journey through California's Great Central Valley*. Heyday Books, Berkeley.

APPENDIX A

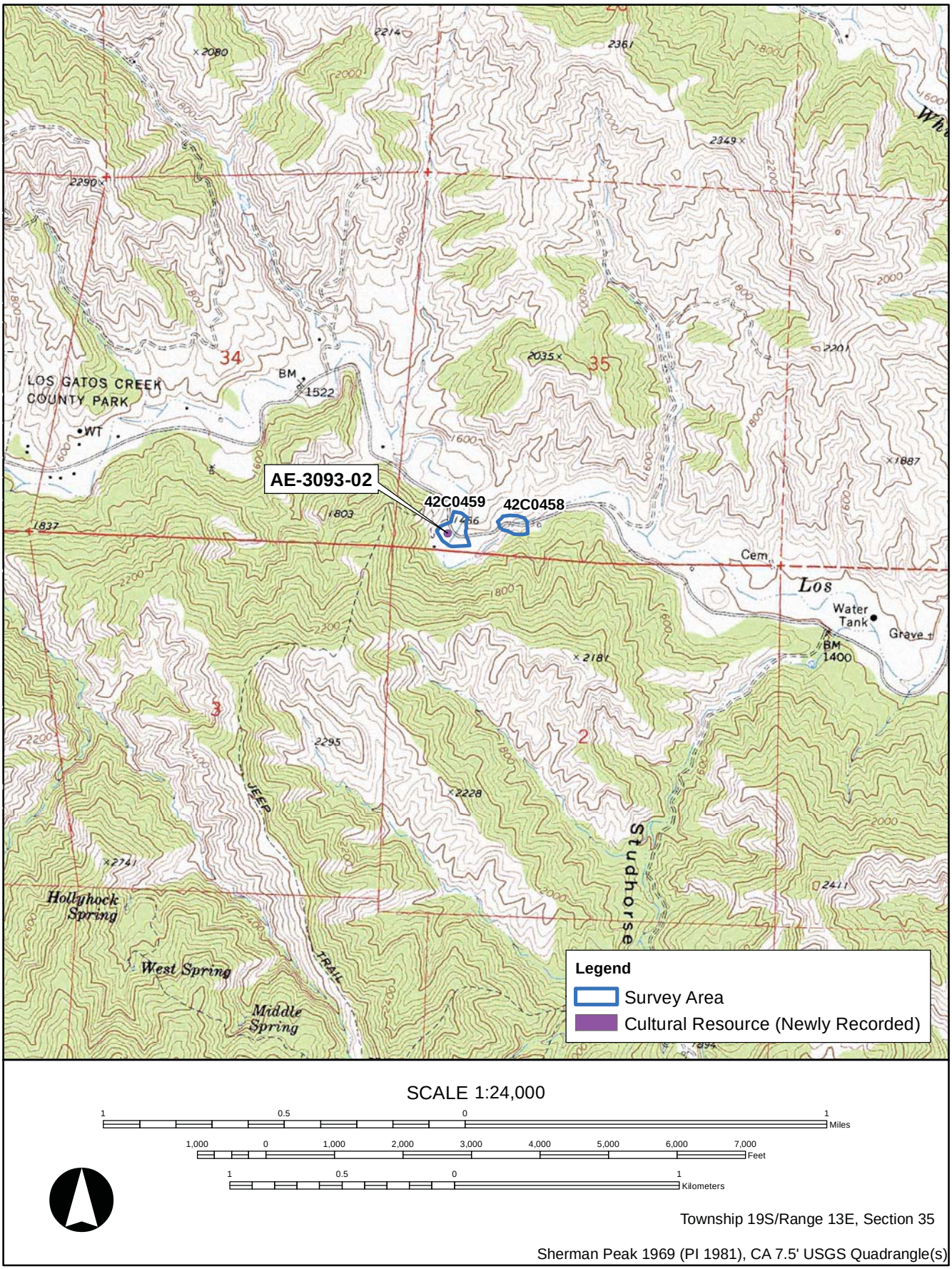
Project Vicinity, Study Location, and Survey Coverage Maps



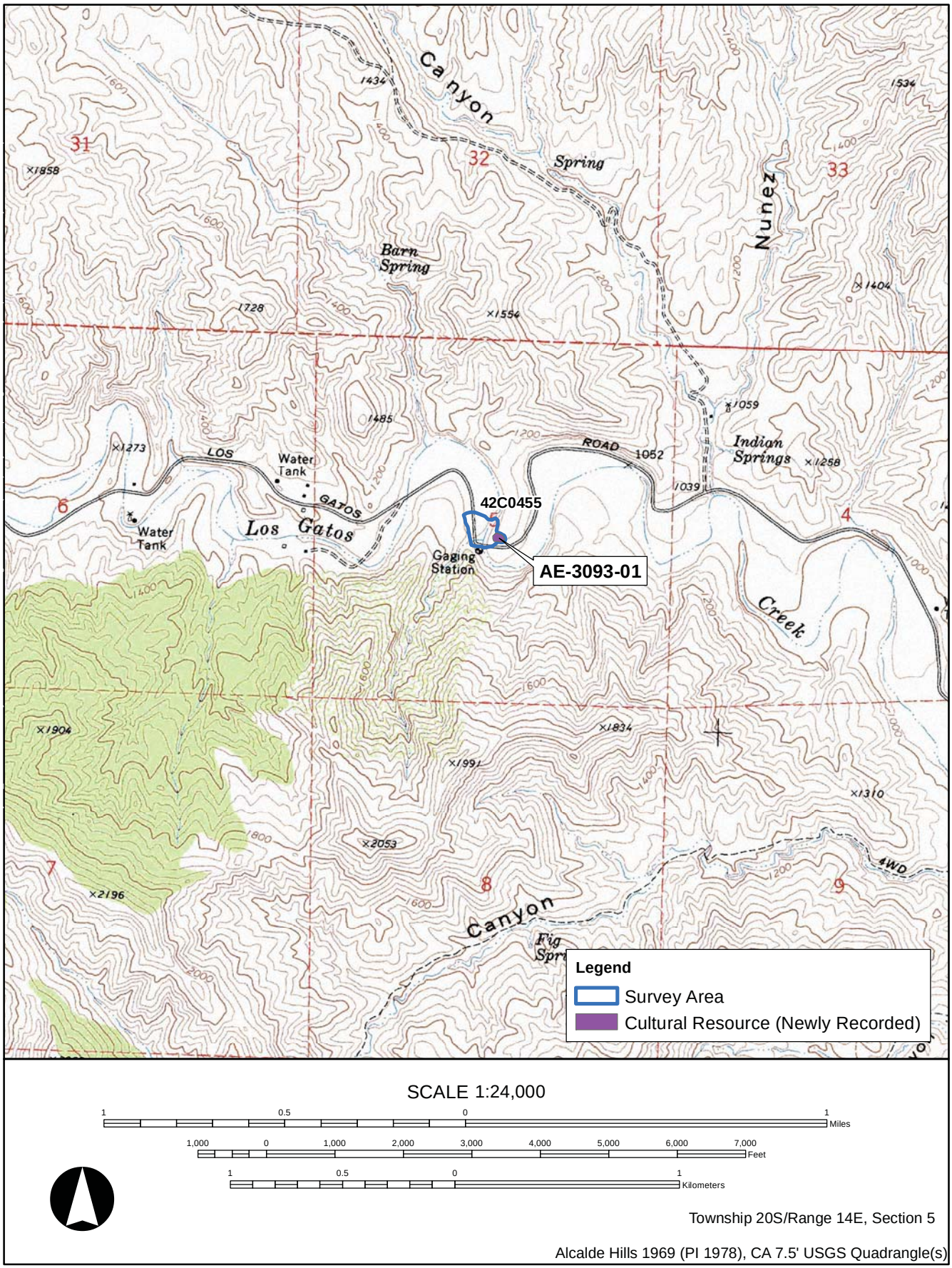
Map 1 Project Vicinity



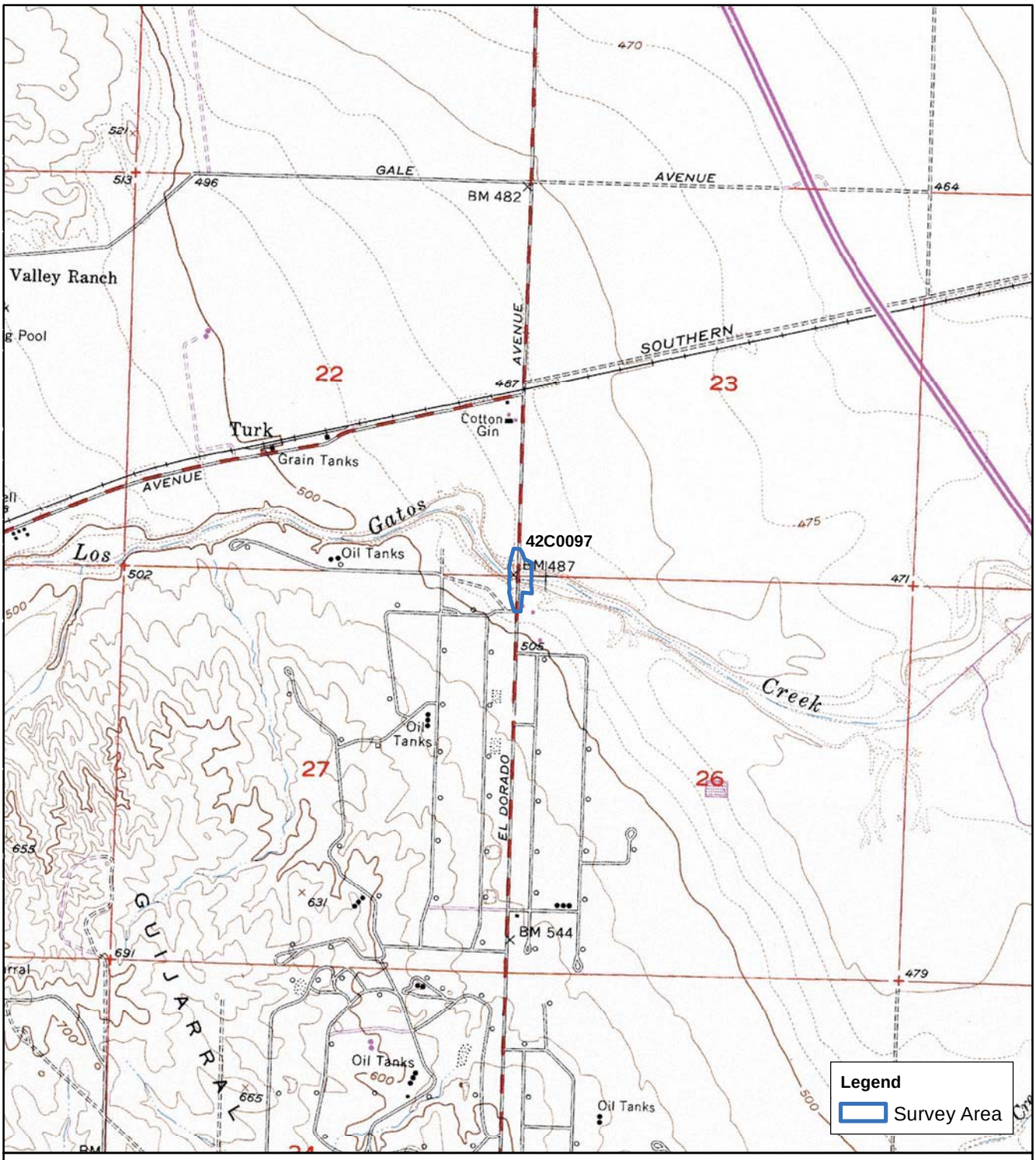
Map 2 Overview Showing the 12 Bridge Project Locations in Fresno County



Map 3 Study Location: Bridges 42C0458 and 42C0459



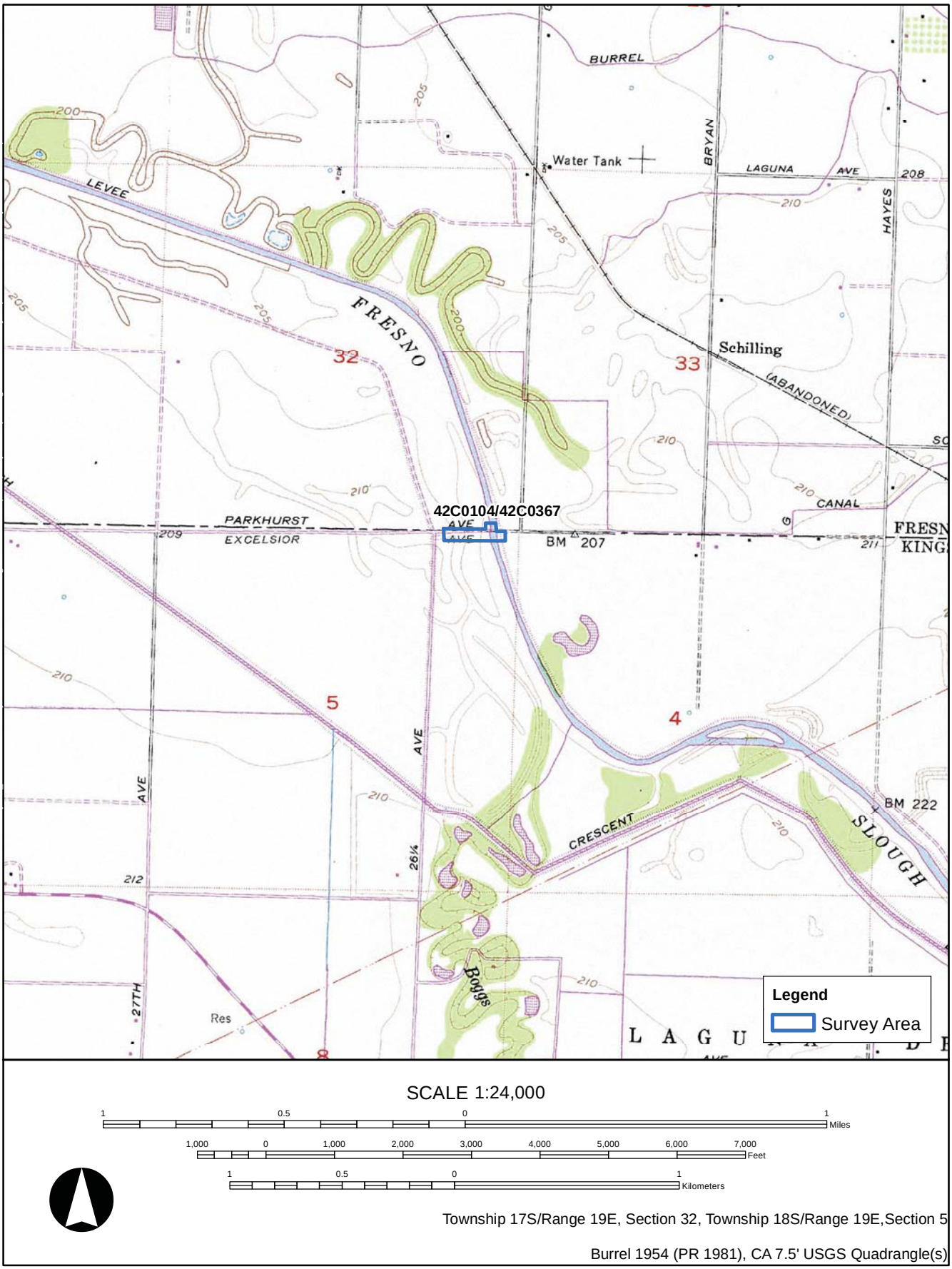
Map 4 Study Location: Bridge 42C0455



Township 20S/Range 16E, Section 22, 23, 26, 27

Guijarral Hills 1956 (PR 1971), CA 7.5' USGS Quadrangle(s)

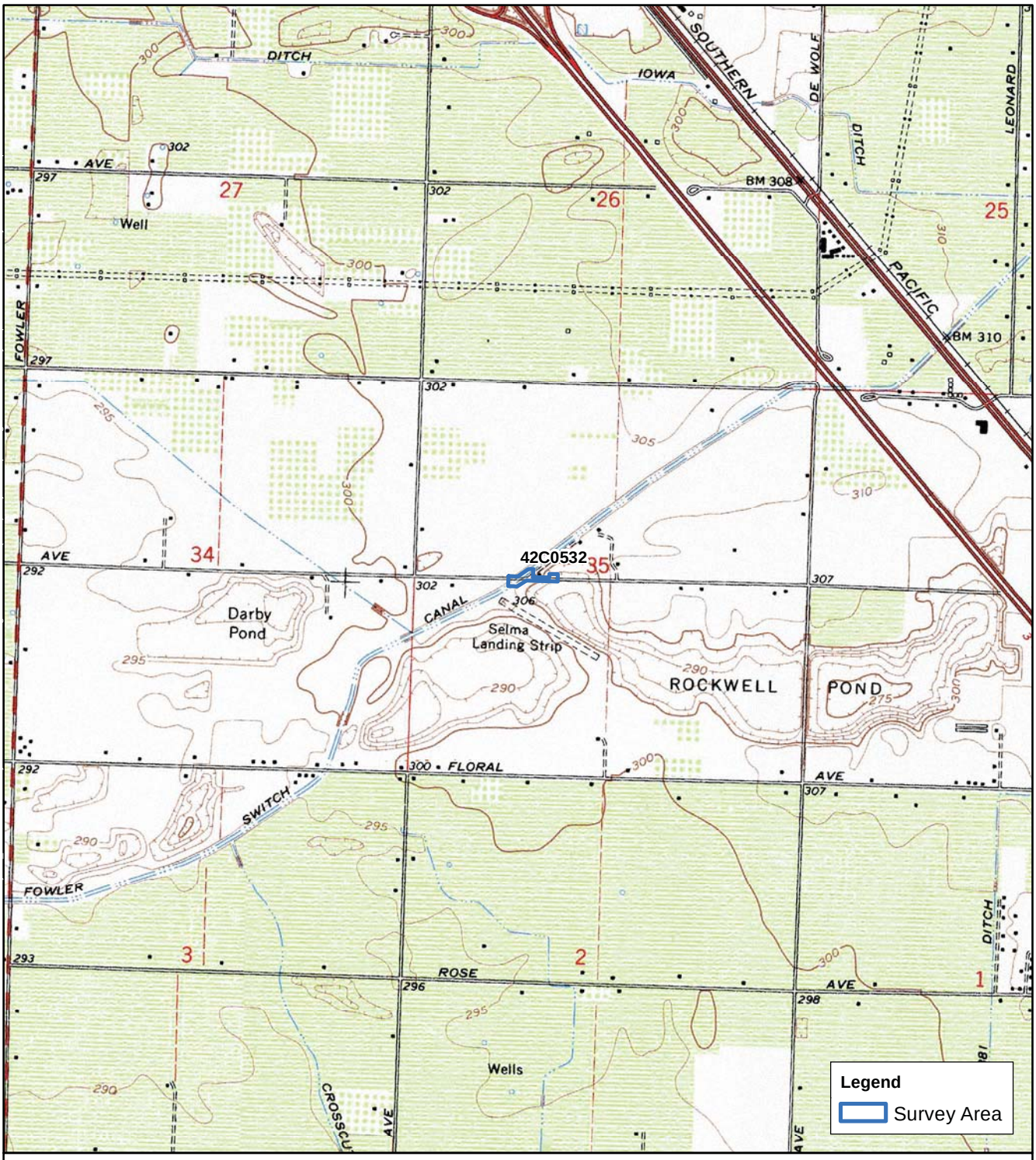
Map 5 Study Location: Bridge 42C0097



Township 17S/Range 19E, Section 32, Township 18S/Range 19E,Section 5

Burrel 1954 (PR 1981), CA 7.5' USGS Quadrangle(s)

Map 6 Study Location: Bridges 42C0104 and 42C0367



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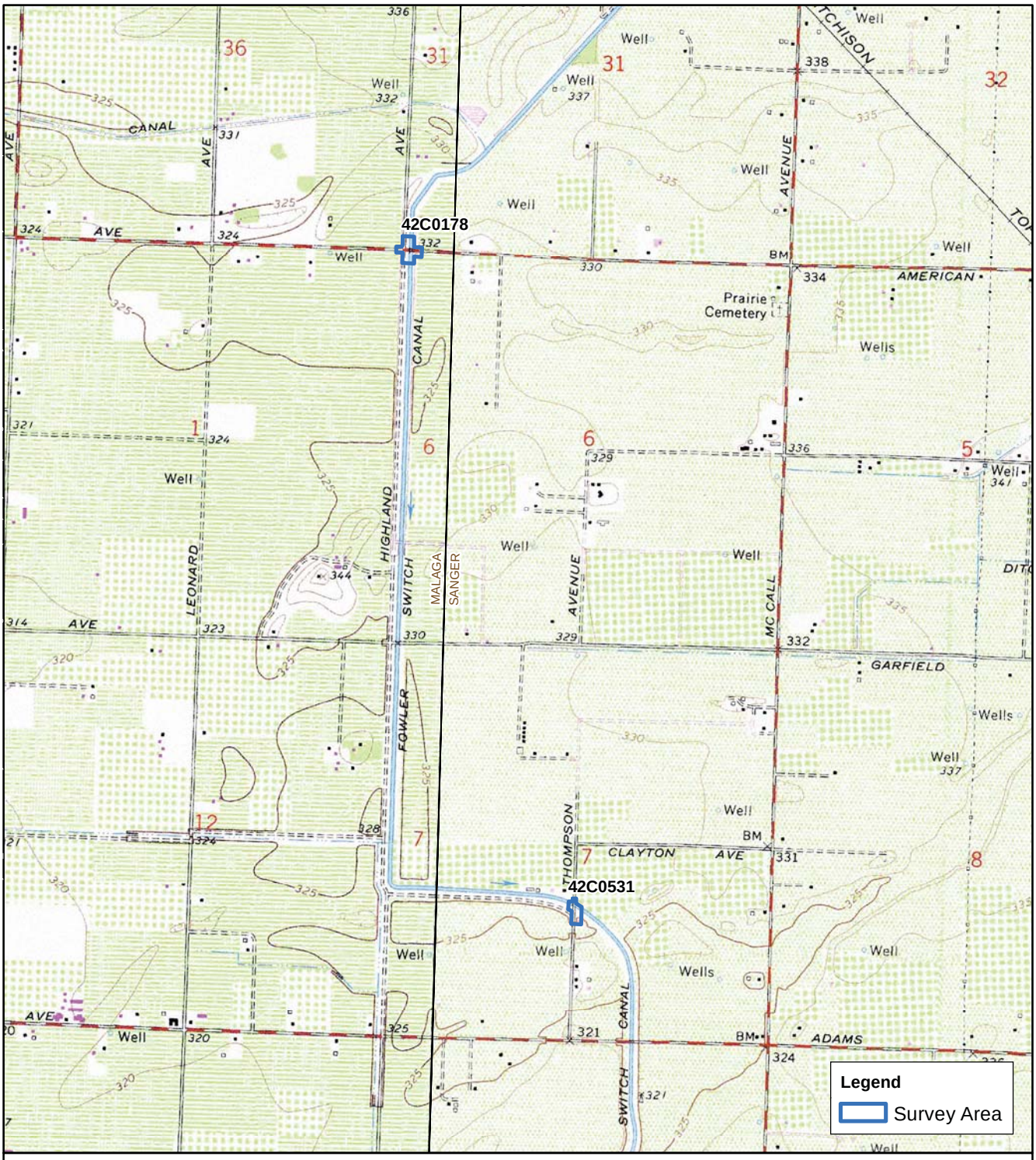
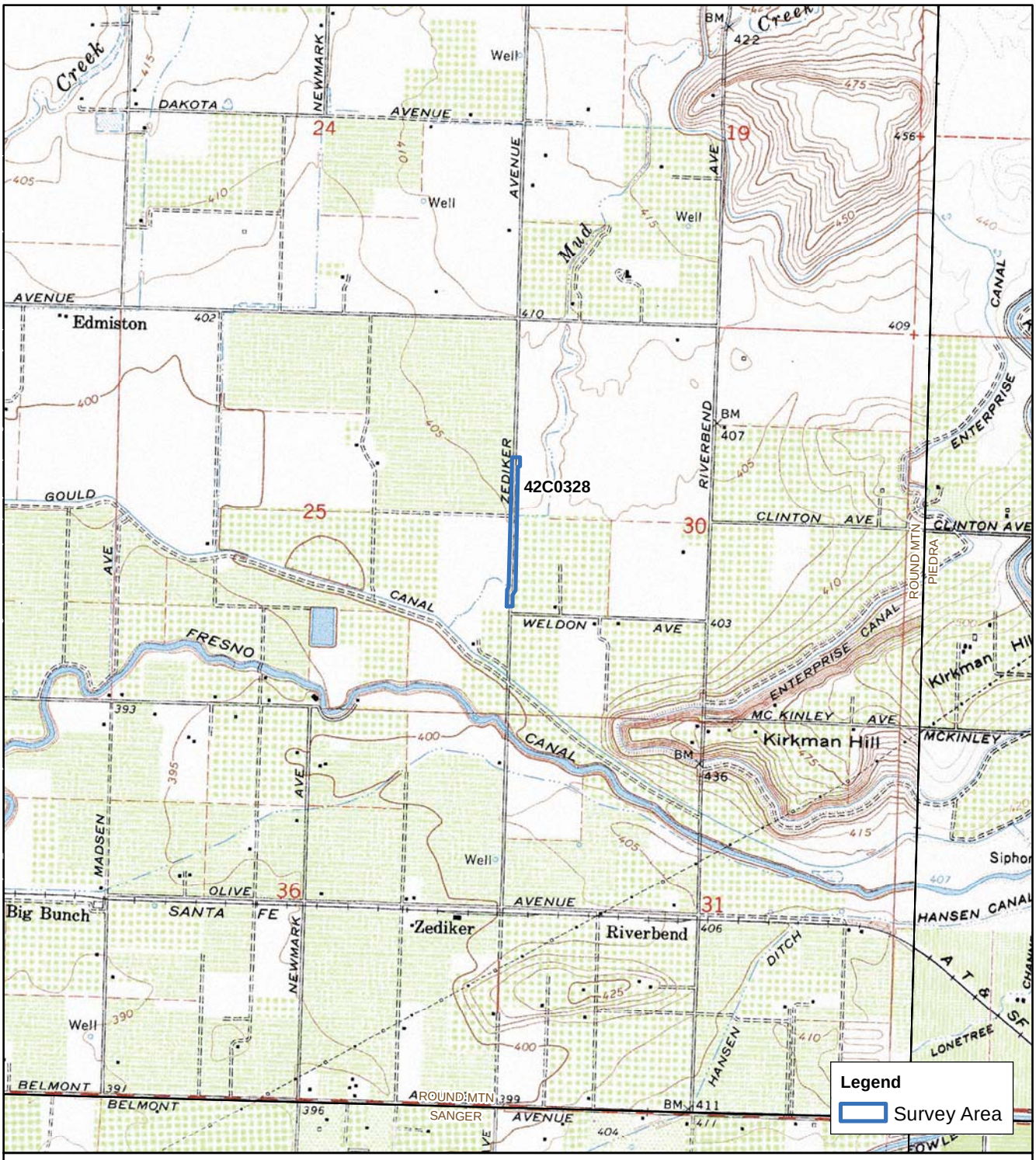
Township 15S/Range 21E, Section 35

Conejo 1963 (PI 1978), CA 7.5' USGS Quadrangle(s)

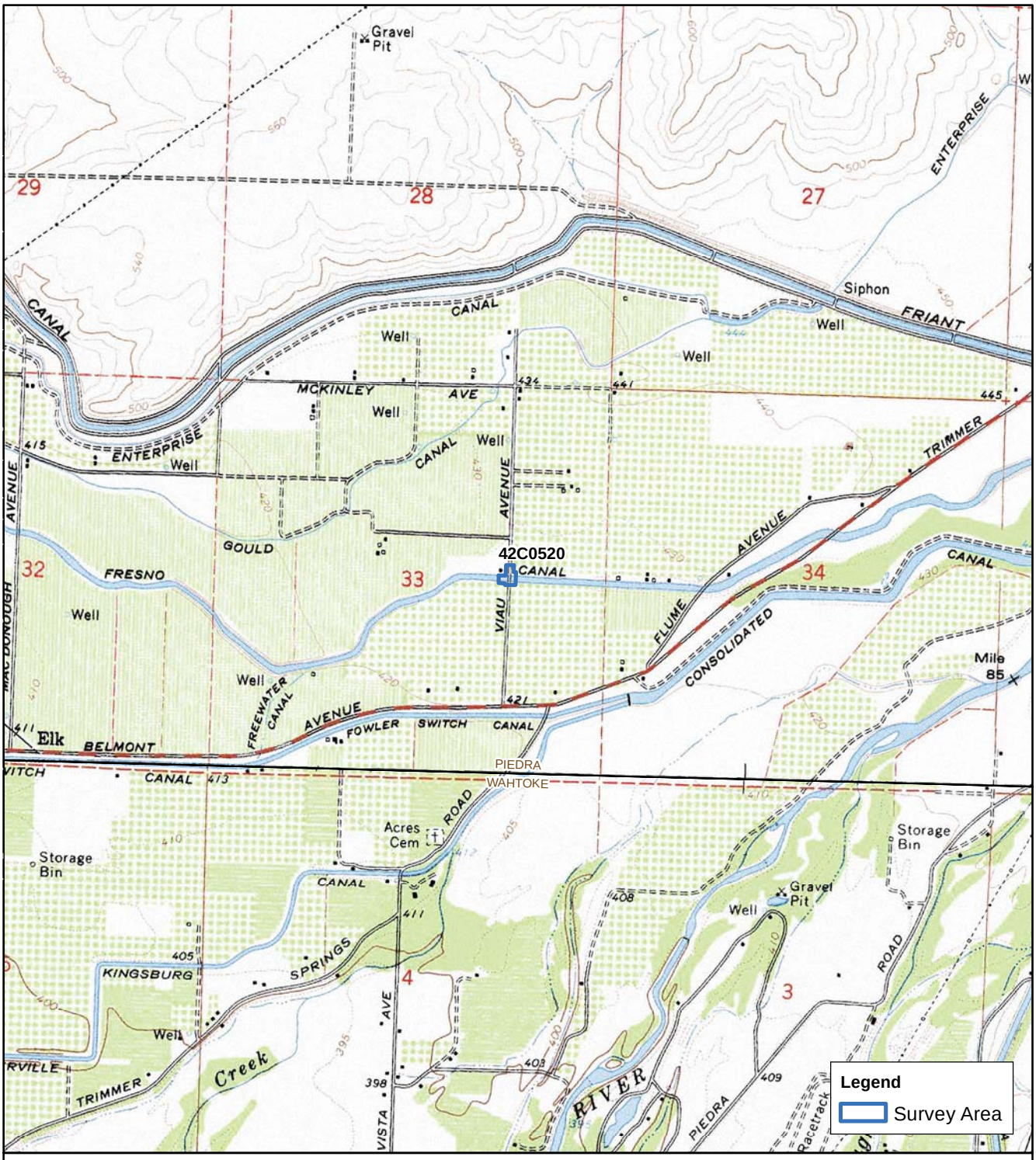
Map 7 Study Location: Bridge 42C0532



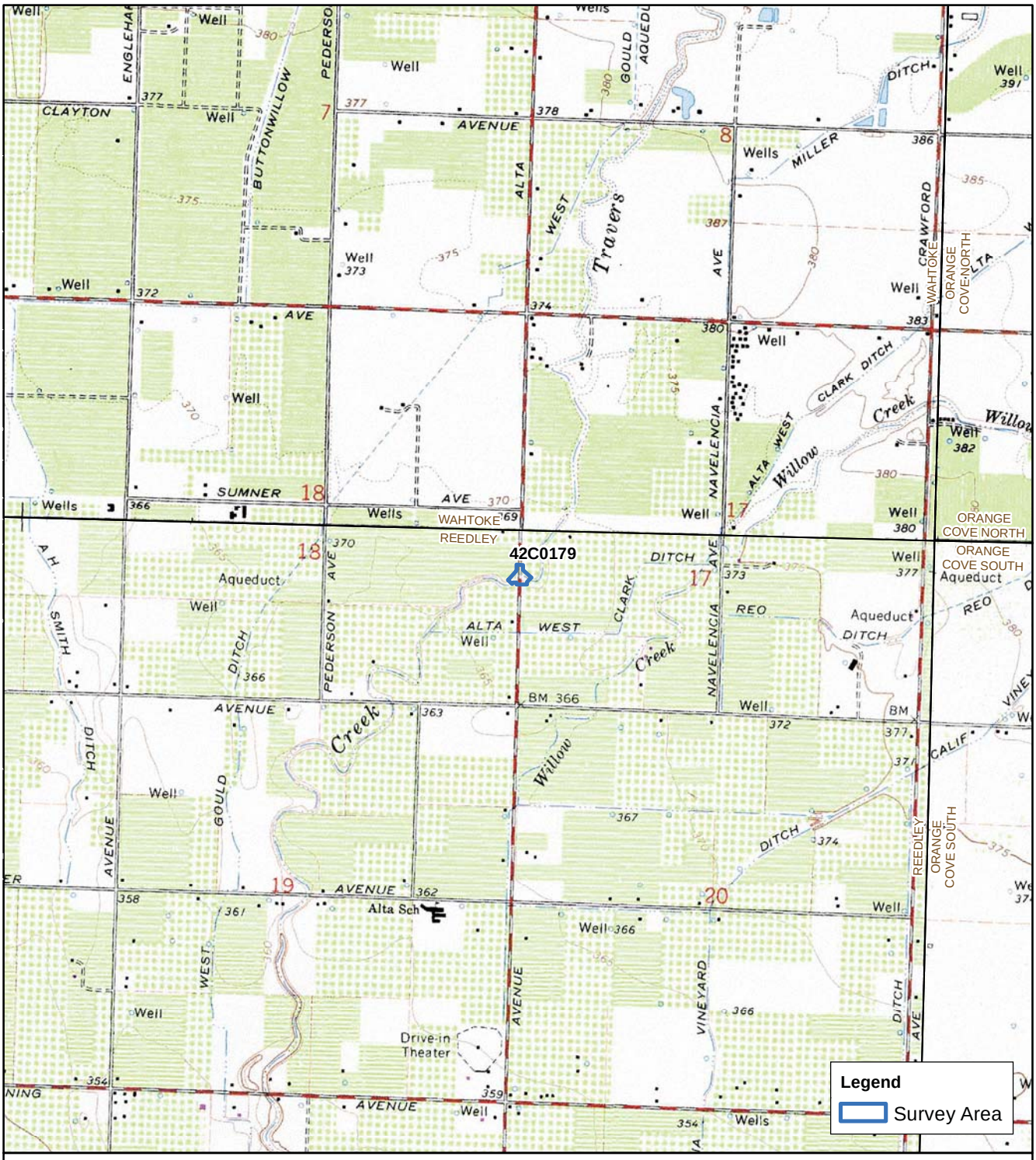
Map 8 Study Location: Bridges 42C0178 and 42C0531



Map 9 Study Location: Bridge 42C0328

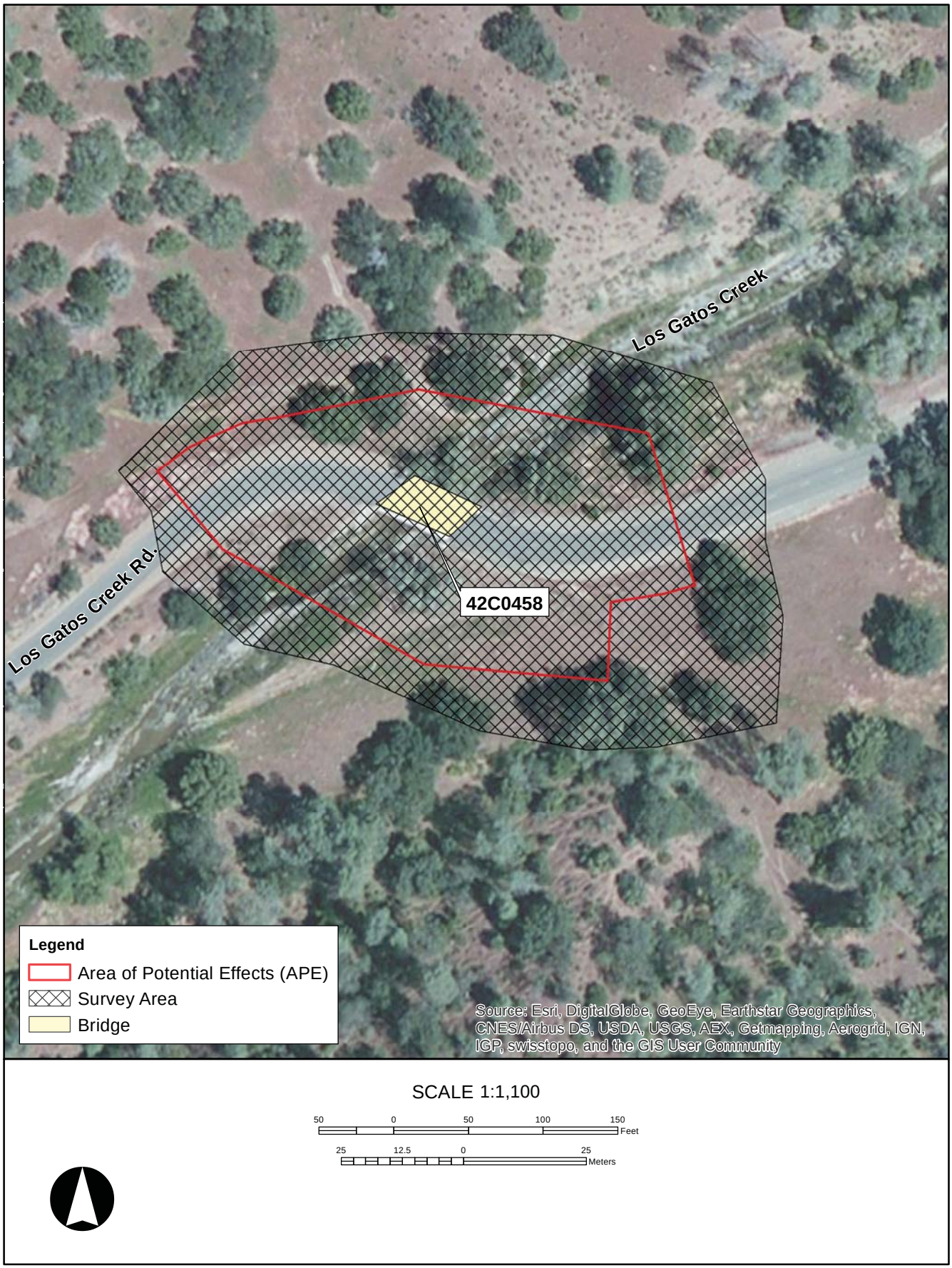


Map 10 Study Location: Bridge 42C0520



Map 11 Study Location: Bridge 42C0179

Map 12 Survey Coverage: Bridge 42C0459



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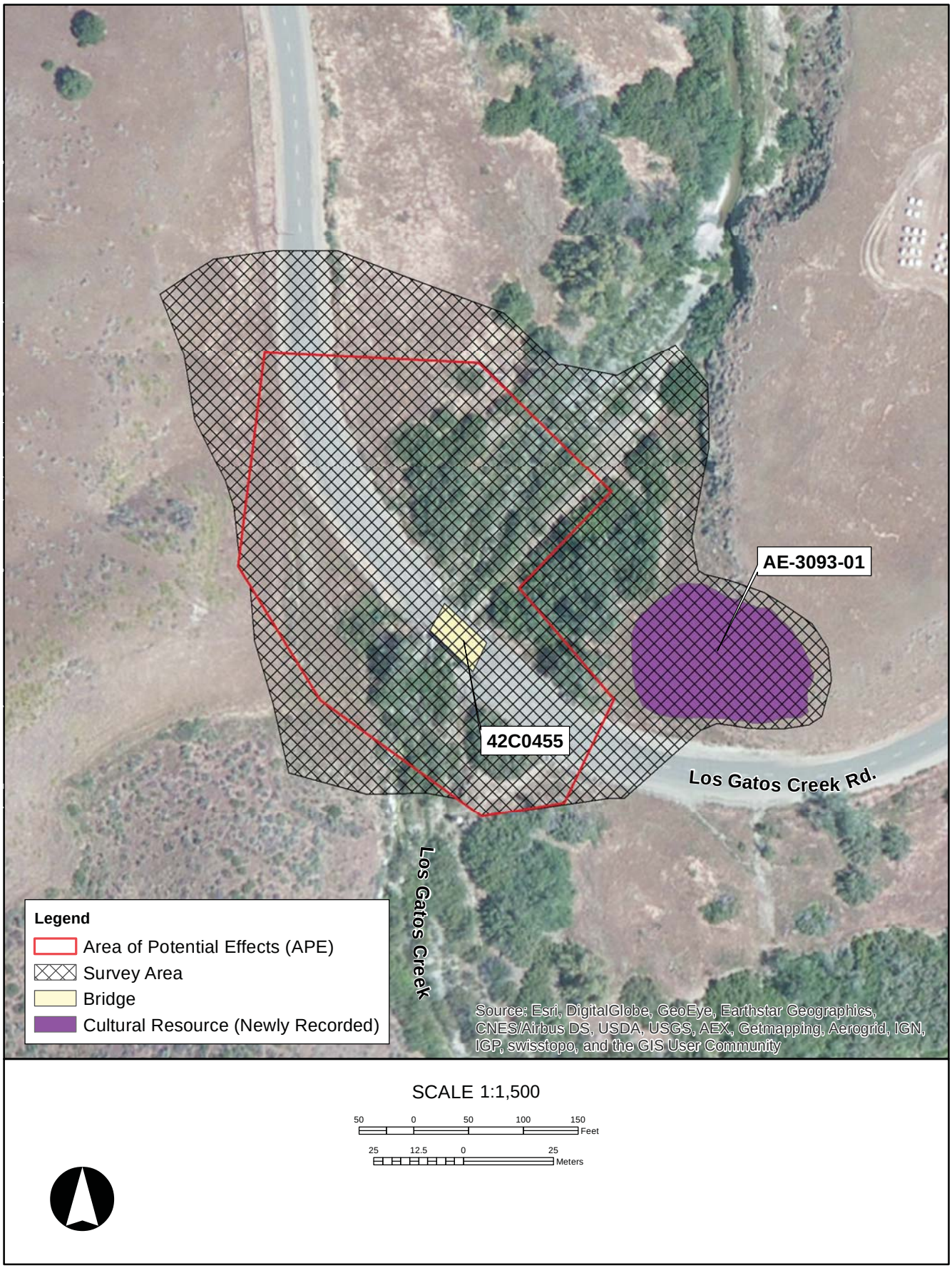

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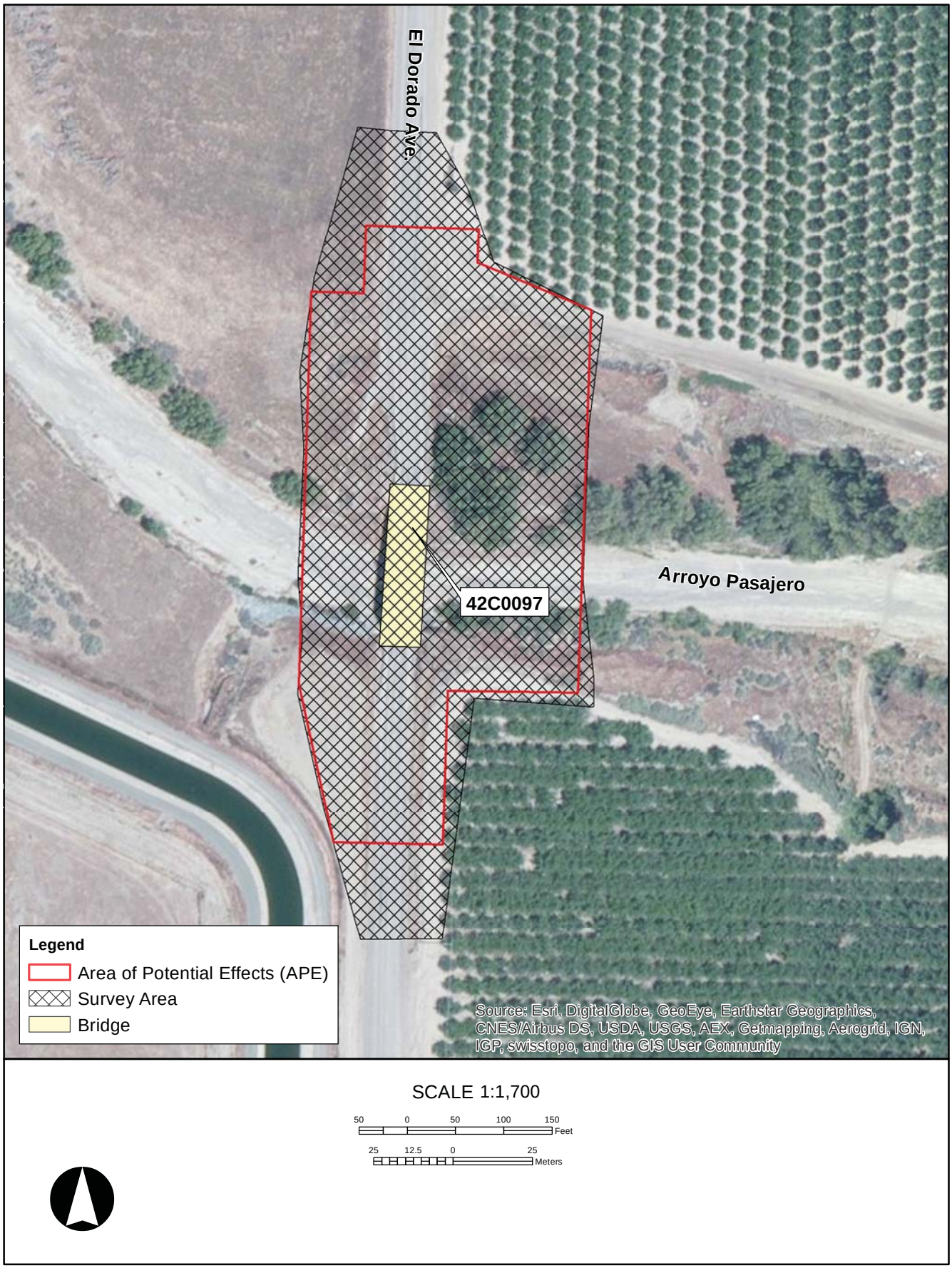
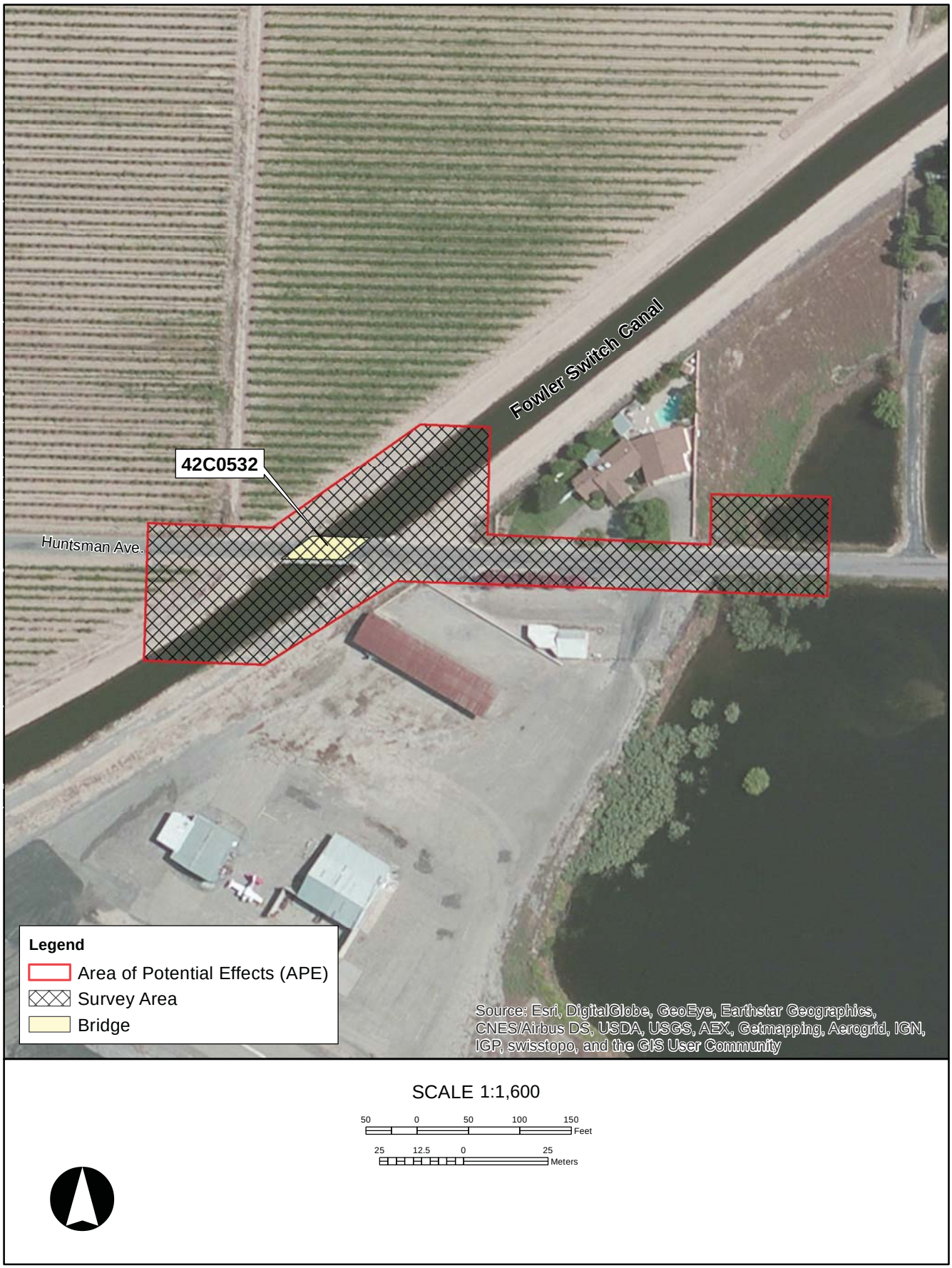


Map 15 Survey Coverage: Bridge 42C0097

Map 16 Survey Coverage: Bridges 42C0104 and 42C0367



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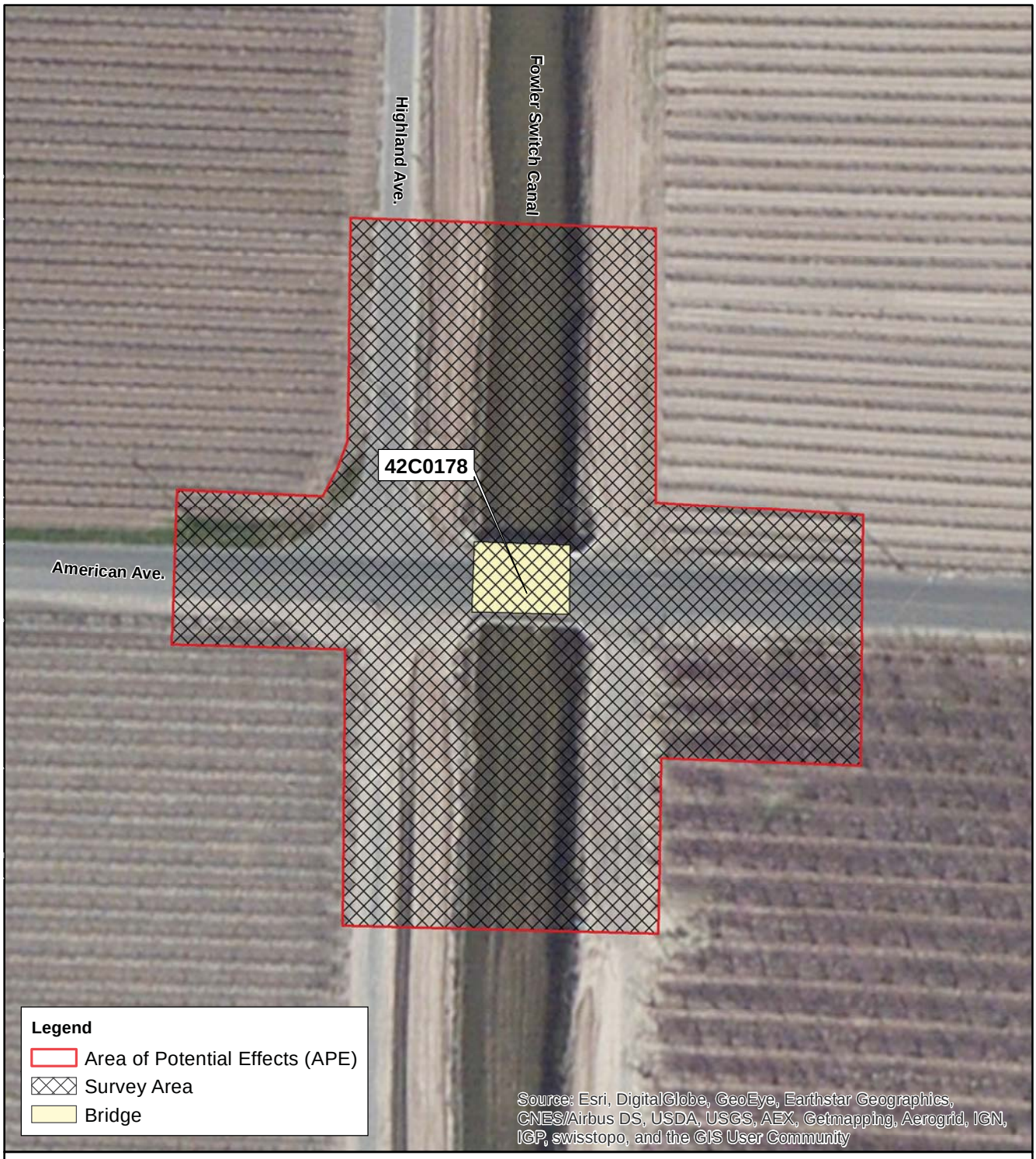

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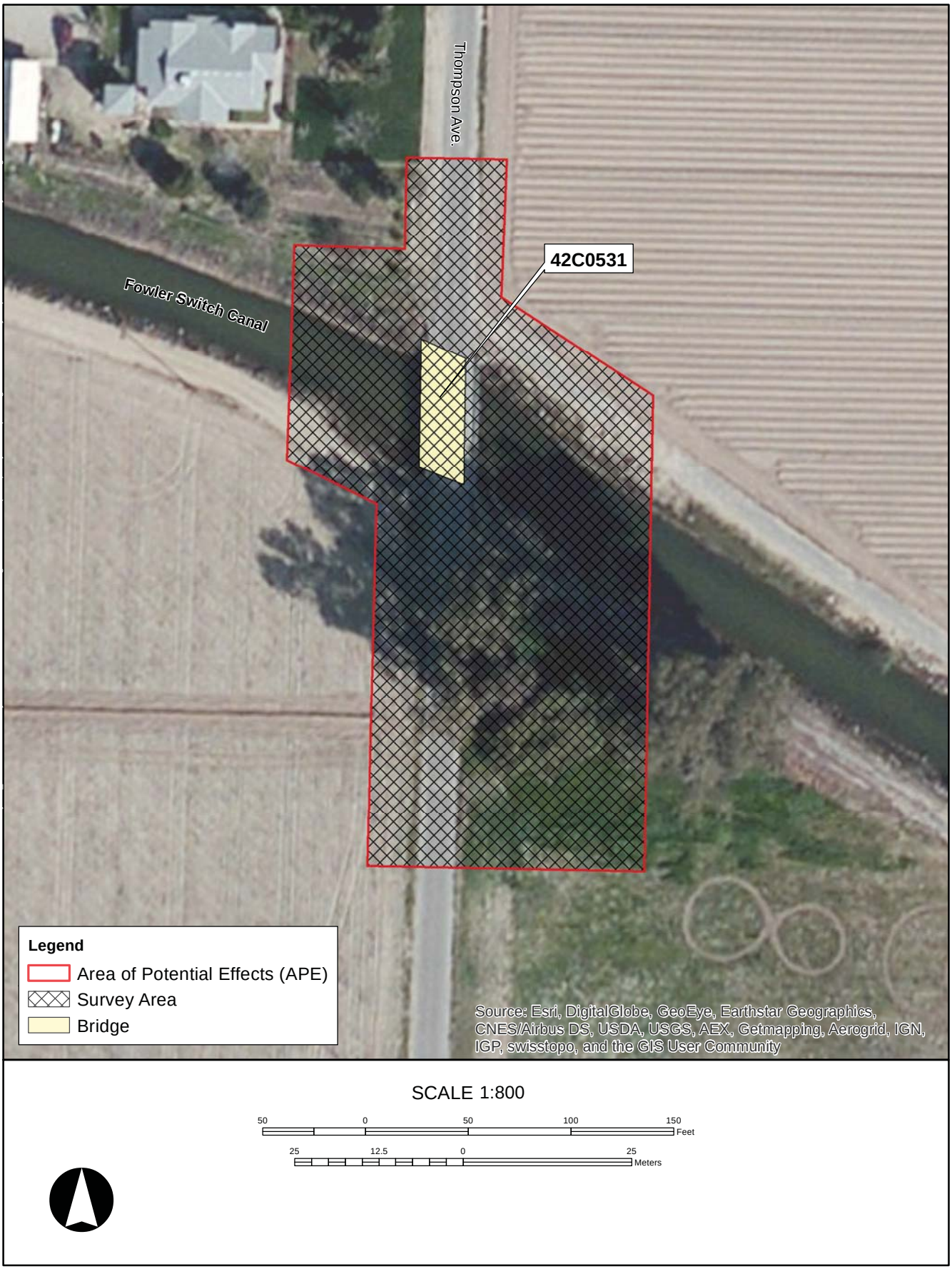

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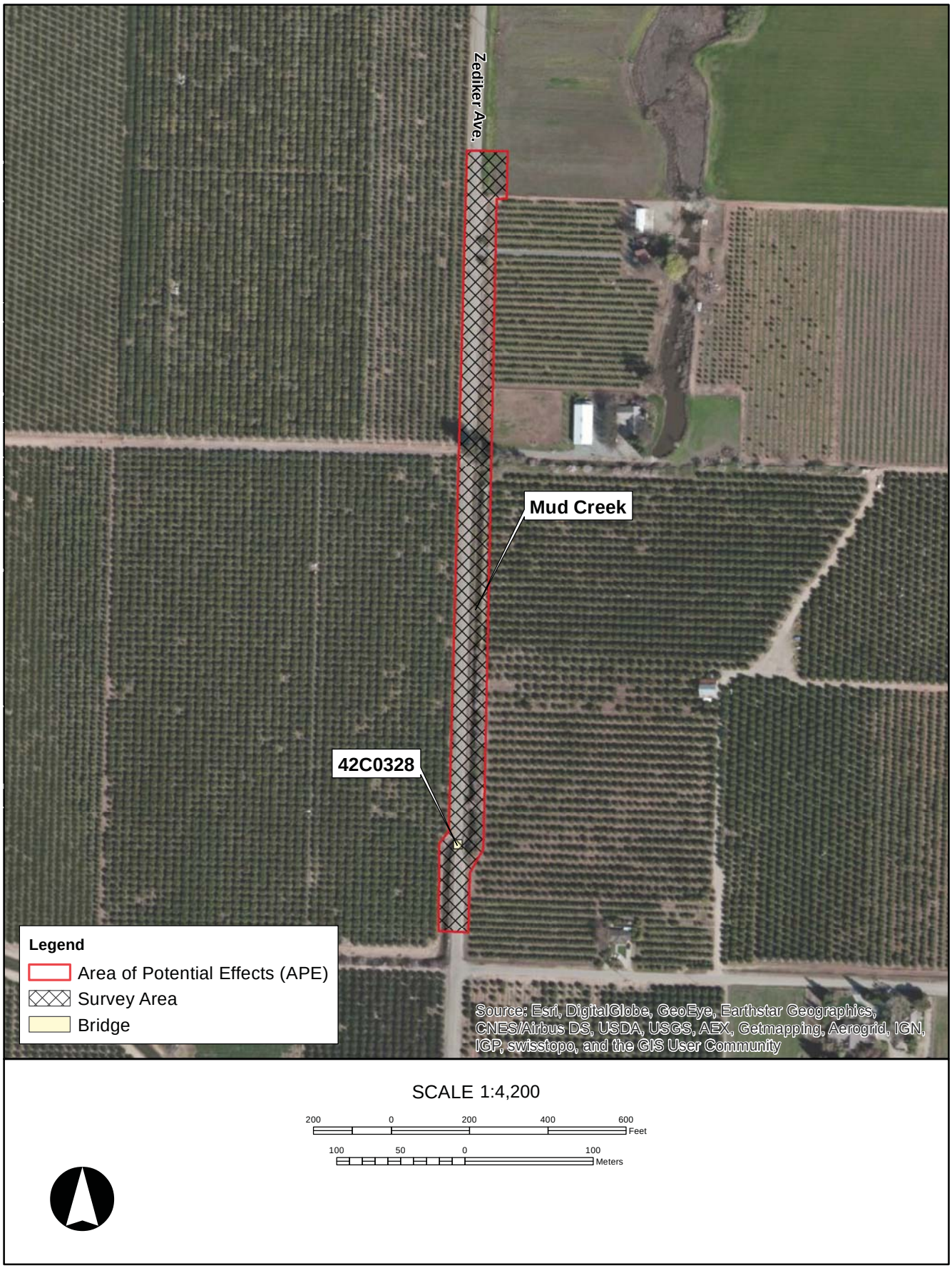


Map 20 Survey Coverage: Bridge 42C0328

Map 21 Survey Coverage: Bridge 42C0520

Map 22 Survey Coverage: Bridge 42C0179

APPENDIX B

Records Search Results

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

FRESNO KERN KINGS MADERA TULARE

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 46 MEC
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289 FAX (661) 654-2415
E-mail: ssjvic@csub.edu

2/12/2015

Mary Baloian
Applied EarthWorks, Inc.
1391 W. Shaw Ave., Suite C
Fresno, CA 93711

Re: 12 Locations for Bridge Preventative Maintenance Program
Records Search File No.: 15-088

The Southern San Joaquin Valley Information Center received your record search request for the project areas referenced above, located on the Alcalde Hills, Burrell, Conejo, Guijarral Hills, Malaga, Piedra, Reedley, Round Mountain, Sanger, Sherman Peak, and Wahtoke USGS 7.5' quads. The following reflects the results of the records search for the project areas and the 0.5 mile radii:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☐ custom GIS maps ☐ shapefiles ☒ hand-drawn maps

Resources within project areas:	None
Resources within 0.5 mile radii:	None
Reports within project areas:	FR-00328, 00981
Reports within 0.5 mile radii:	FR-00135, 00201

Resource Database Printout (list):	☐ enclosed	☐ not requested	☒ nothing listed	☐ not available
Resource Database Printout (details):	☐ enclosed	☐ not requested	☒ nothing listed	☐ not available
Resource Digital Database Records:	☐ enclosed	☐ not requested	☒ nothing listed	☐ not available
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed	☐ not available
Report Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed	☐ not available
Report Digital Database Records:	☒ enclosed	☐ not requested	☐ nothing listed	☐ not available
Resource Record Copies:	☐ enclosed	☐ not requested	☒ nothing listed	
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed	
OHP Historic Properties Directory:	☐ enclosed	☐ not requested	☒ nothing listed	
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed	
CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed	

Caltrans Bridge Survey: Not available at SSJVIC; please see http://www.dot.ca.gov/hq/structur/strmaint/historic.htm

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see http://historicalmaps.arcgis.com/usgs/

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC

Shipwreck Inventory: Not available at SSJVIC; please see http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp

Soil Survey Maps: Not available at SSJVIC; please see http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

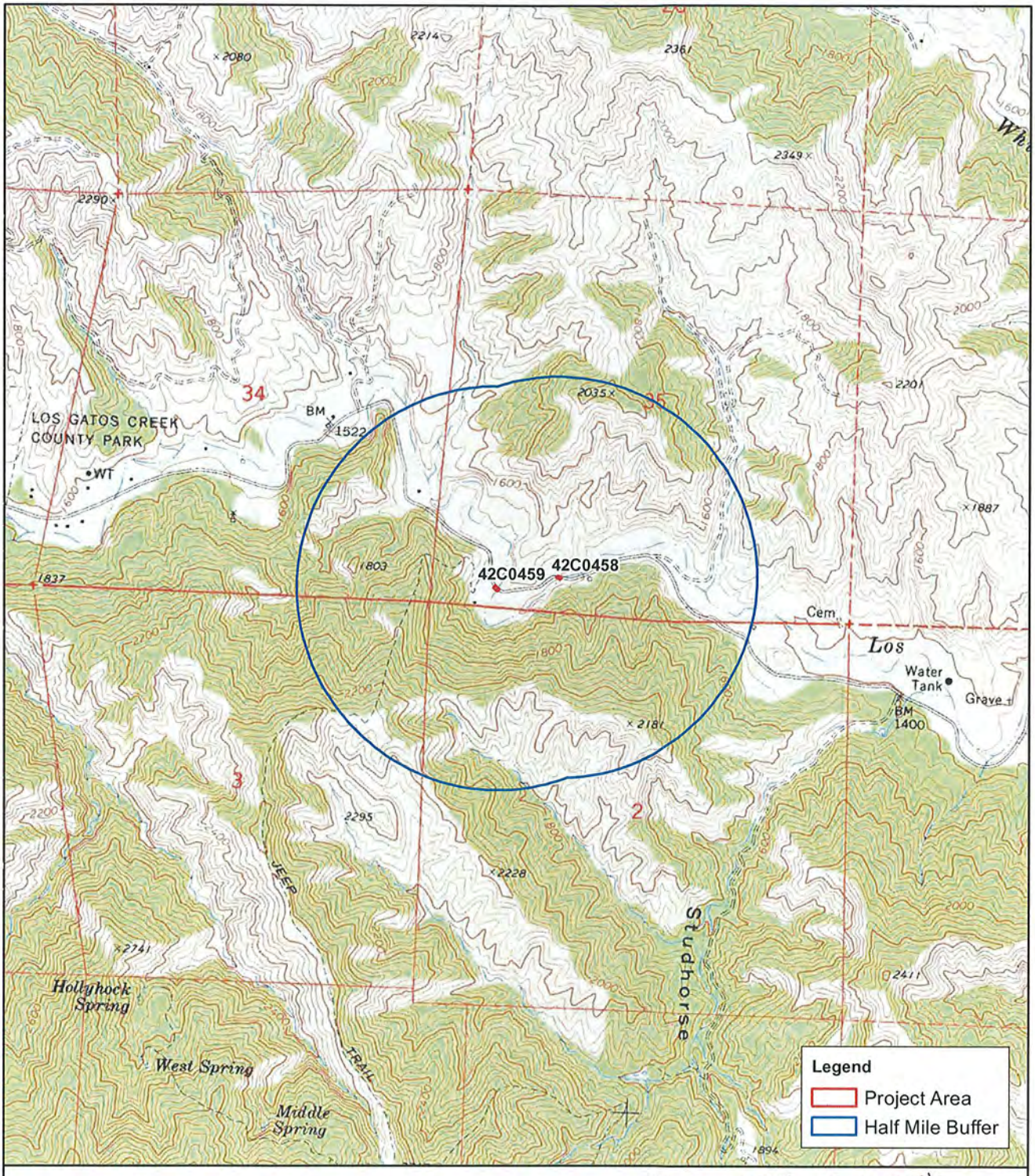
Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Celeste M. Thomson
Coordinator



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no resources or reports

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1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

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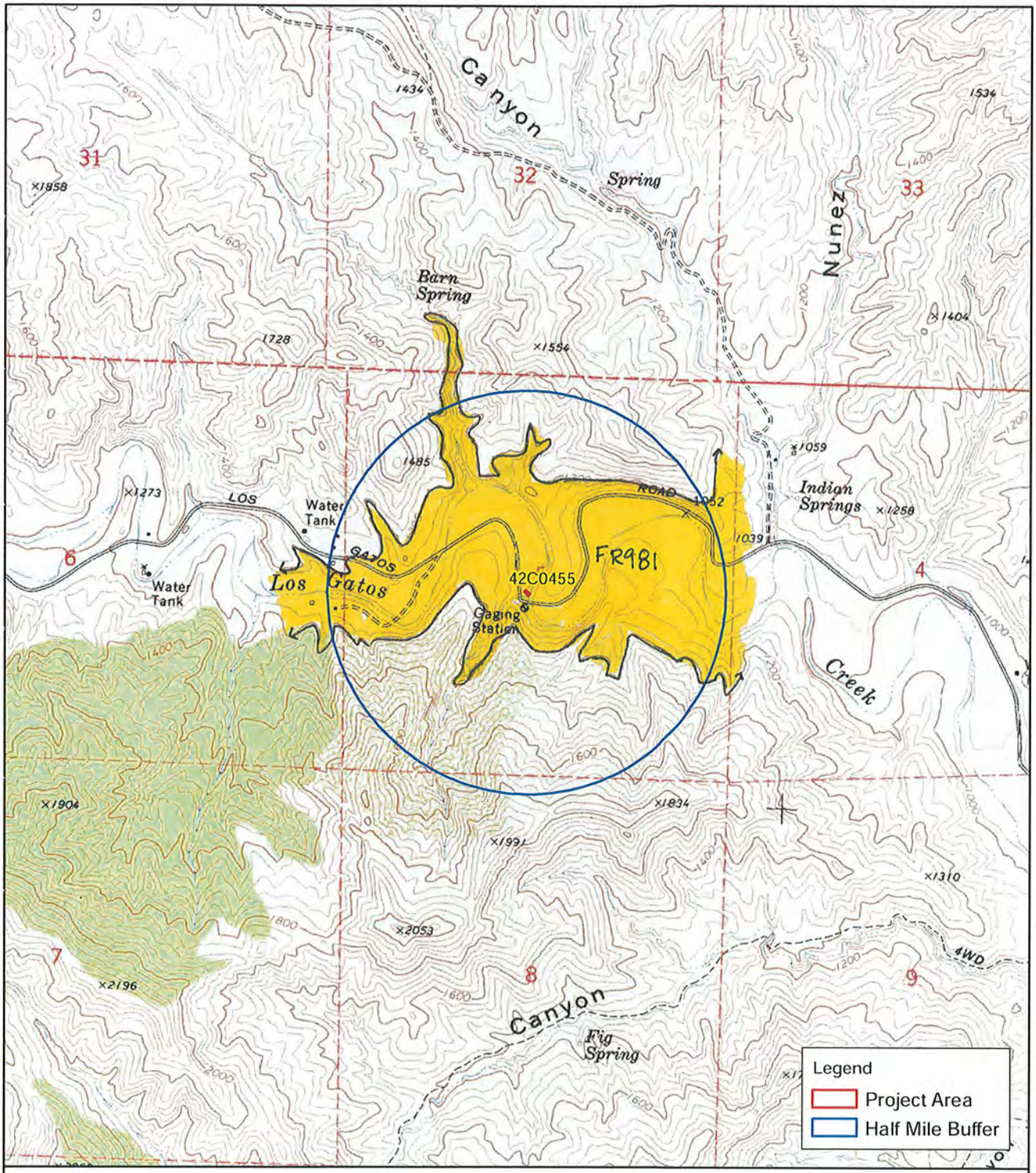
Township 19S/Range 13E, Section 34, 35, Township 20S/Range 13E, Section 2, 3

Sherman Peak 1969 (PI 1981), CA 7.5' USGS Quadrangle(s)

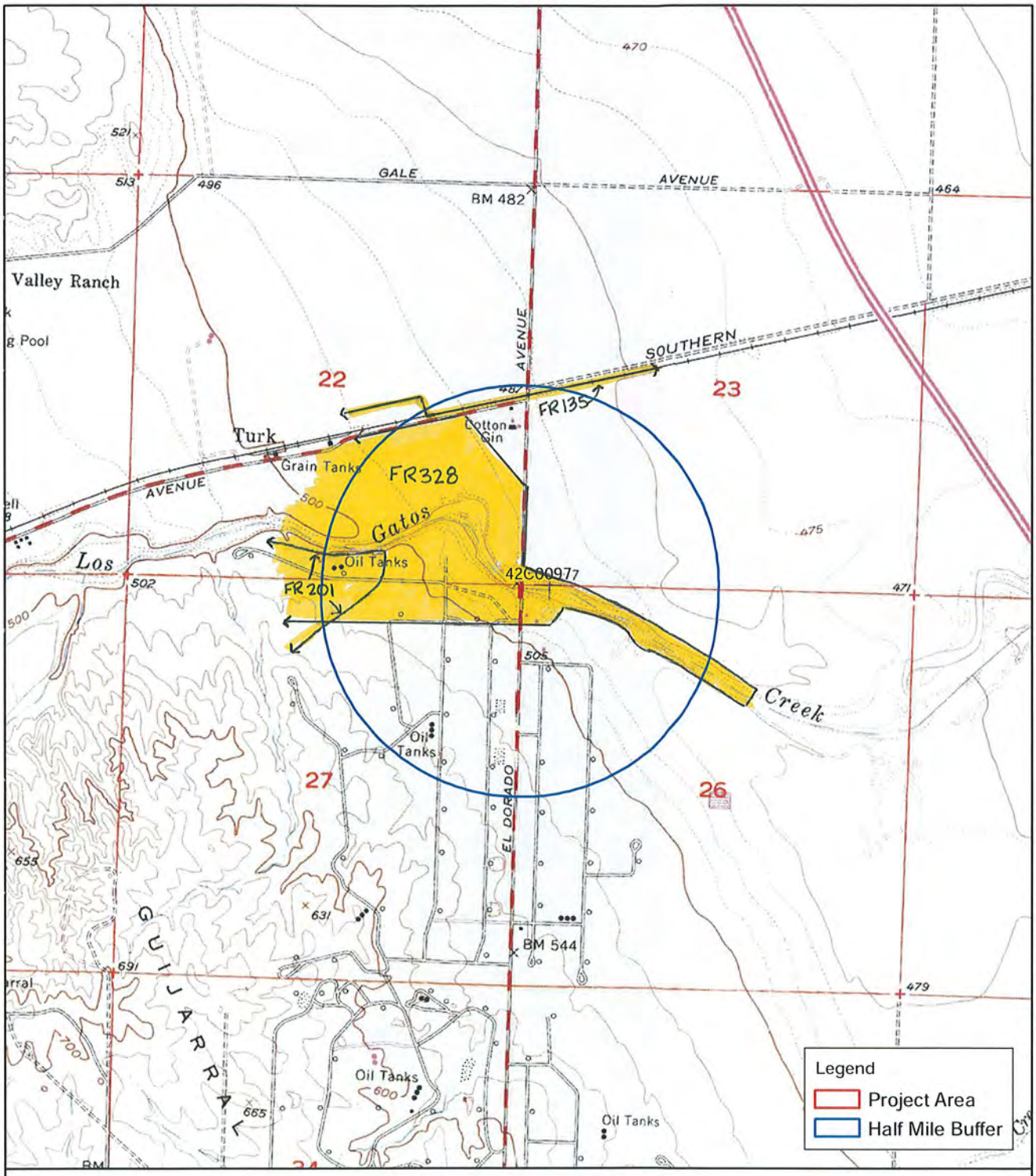
Location map for the *12 Locations for Bridge Maintenance Project - AE3093.*



Township 20S/Range 14E, Section 5, 6, 7, 8

Alcalde Hills 1969 (PI 1978), CA 7.5' USGS Quadrangle(s)

Location map for the *12 Locations for Bridge Maintenance Project - AE3093.*



SCALE 1:24,000

1 0.5 0 1 Miles

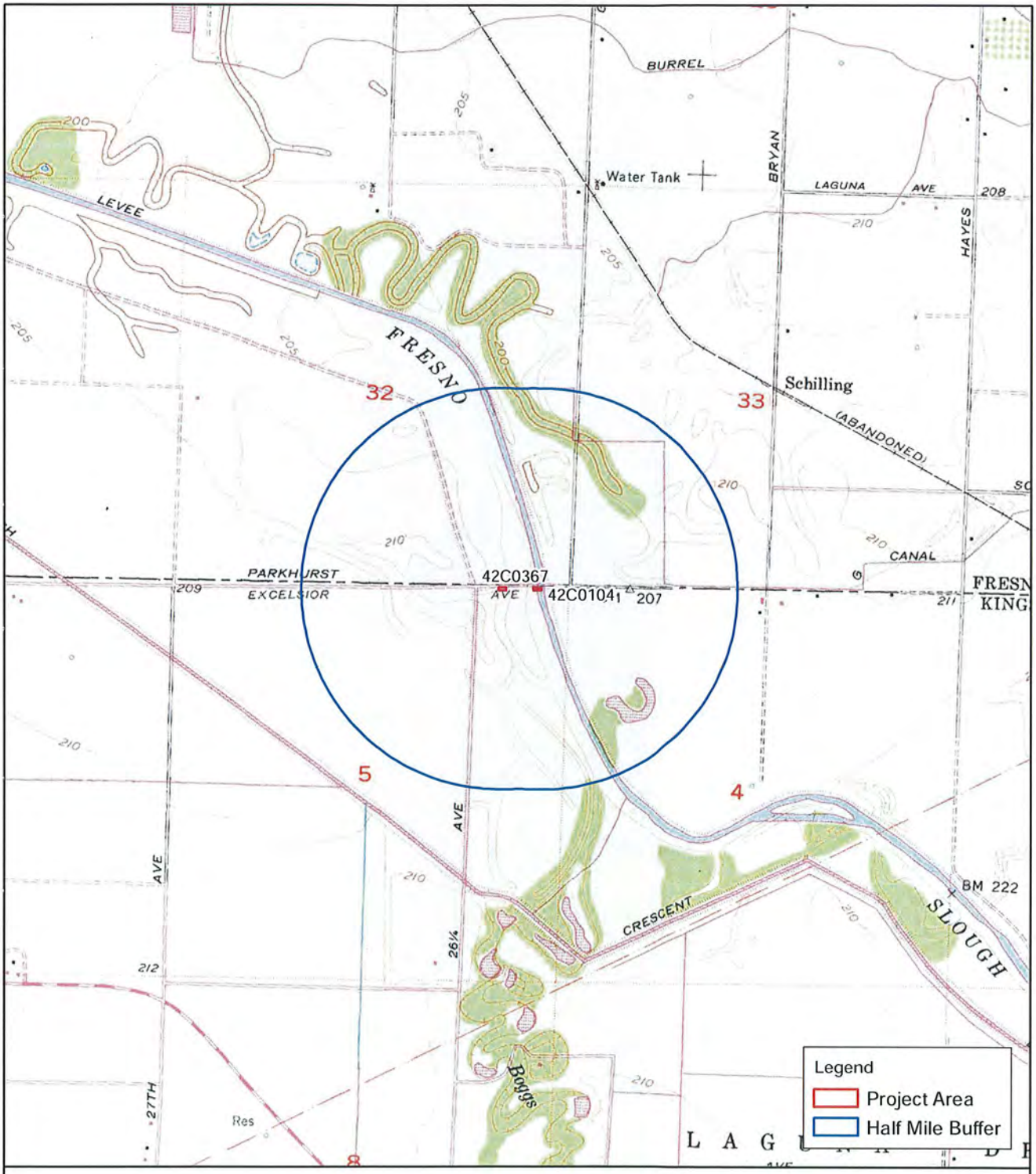
1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

1 0.5 0 1 Kilometers

Township 20S/Range 16E, Section 22, 23, 26, 27

Guijarral Hills 1956 (PR 1971), CA 7.5' USGS Quadrangle(s)

Location map for the *12 Locations for Bridge Maintenance Project - AE3093.*

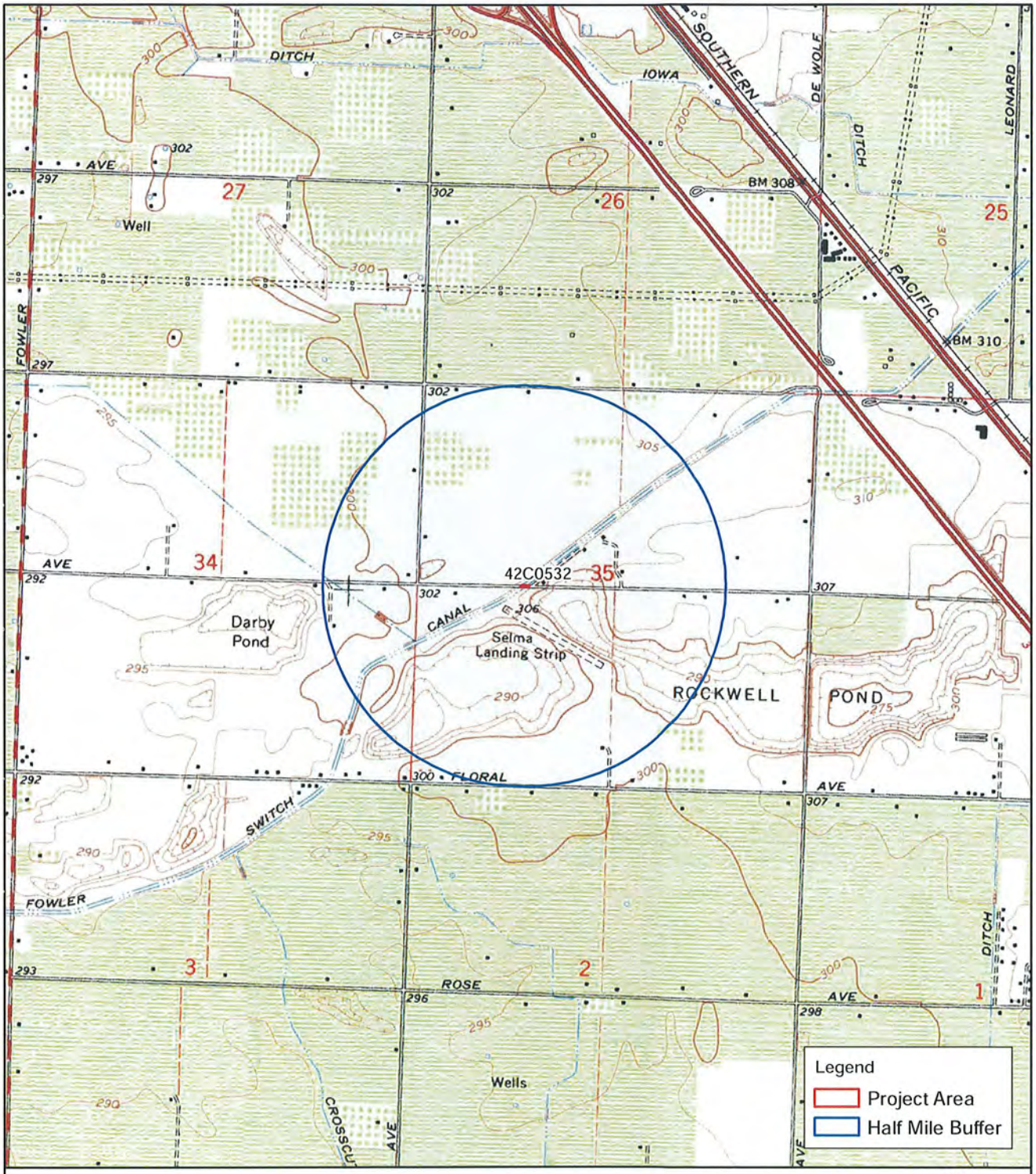


no resources or reports

Township 17S/Range 19E, Section 32, 33, Township 18S/Range 19E, 4, 5

Burrel 1954 (PR 1981), CA 7.5' USGS Quadrangle(s)

Location map for the *12 Locations for Bridge Maintenance Project - AE3093.*



SCALE 1:24,000

no resources or reports

1 0.5 0 1 Miles

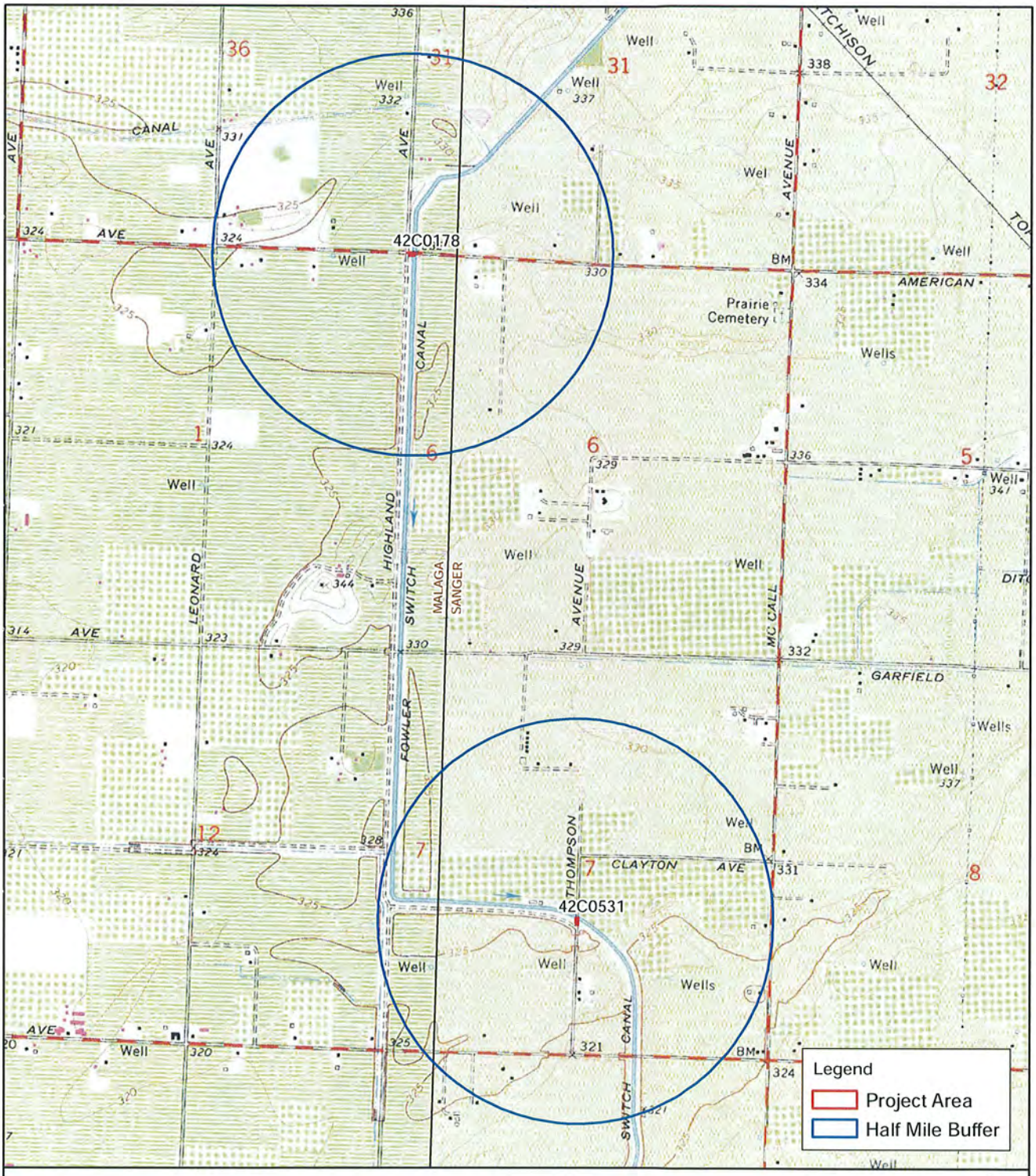
1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

1 0.5 0 1 Kilometers

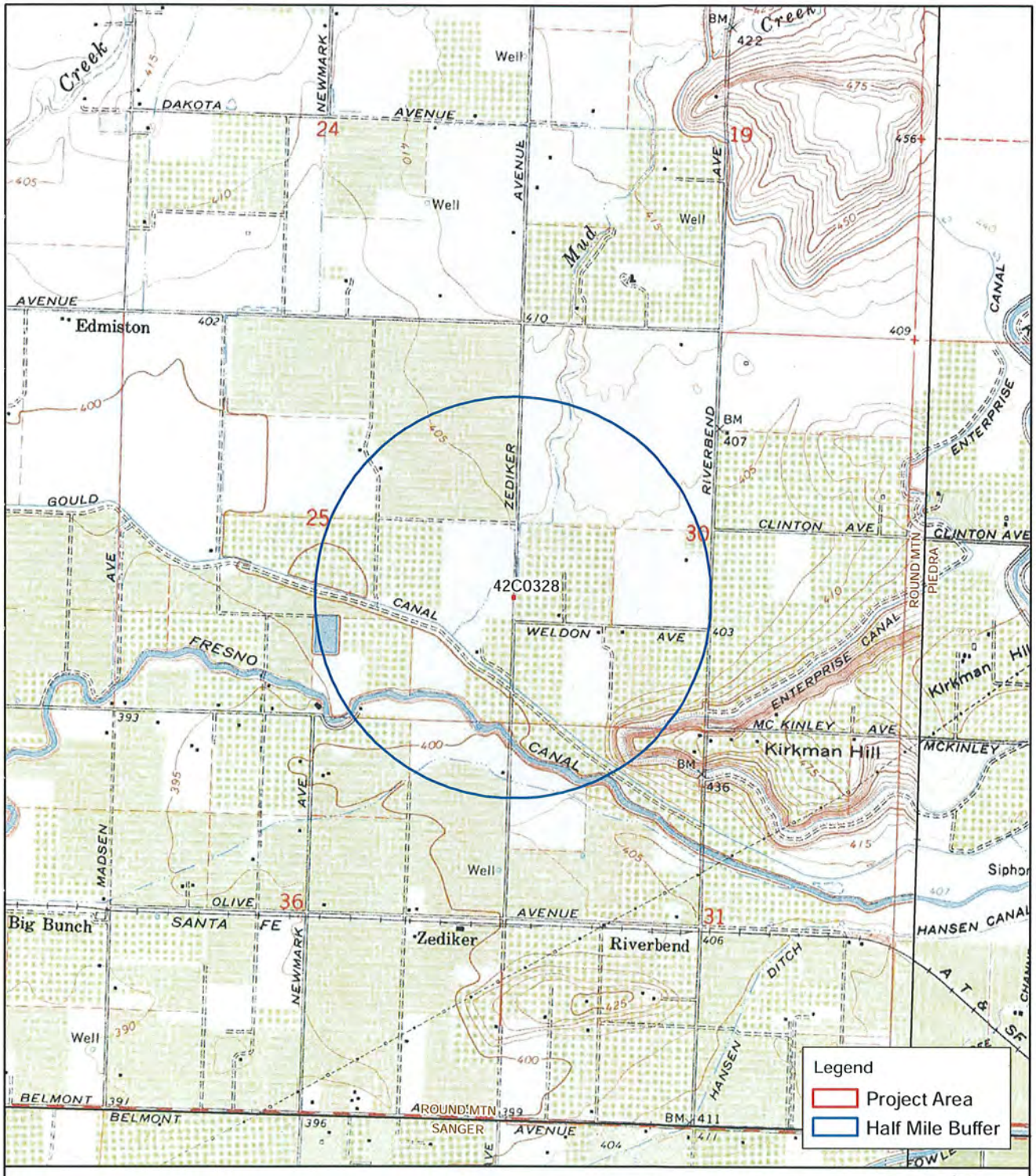
Township 15S/Range 21E, Section 34, 35

Conejo 1963 (PI 1978), CA 7.5' USGS Quadrangle(s)

Location map for the *12 Locations for Bridge Maintenance Project - AE3093.*



Location map for the *12 Locations for Bridge Maintenance Project - AE3093.*

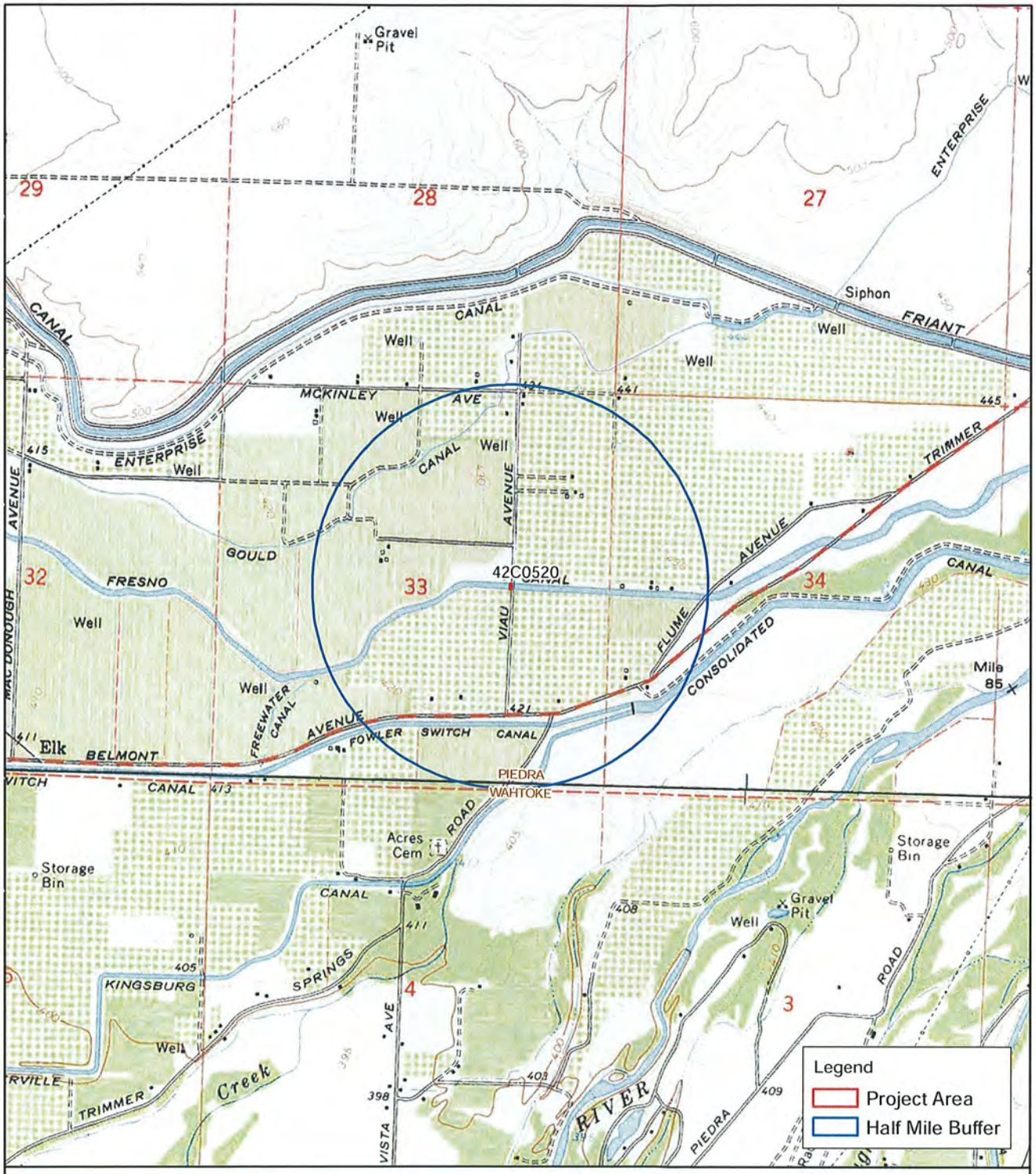


no resources or reports

Township 13S/Range 22E, Section 25, 36, Township 13S/Range 23E, 28, 31

Round Mountain 1964 (PI 1978), CA 7.5' USGS Quadrangle(s)

Location map for the *12 Locations for Bridge Maintenance Project - AE3093.*

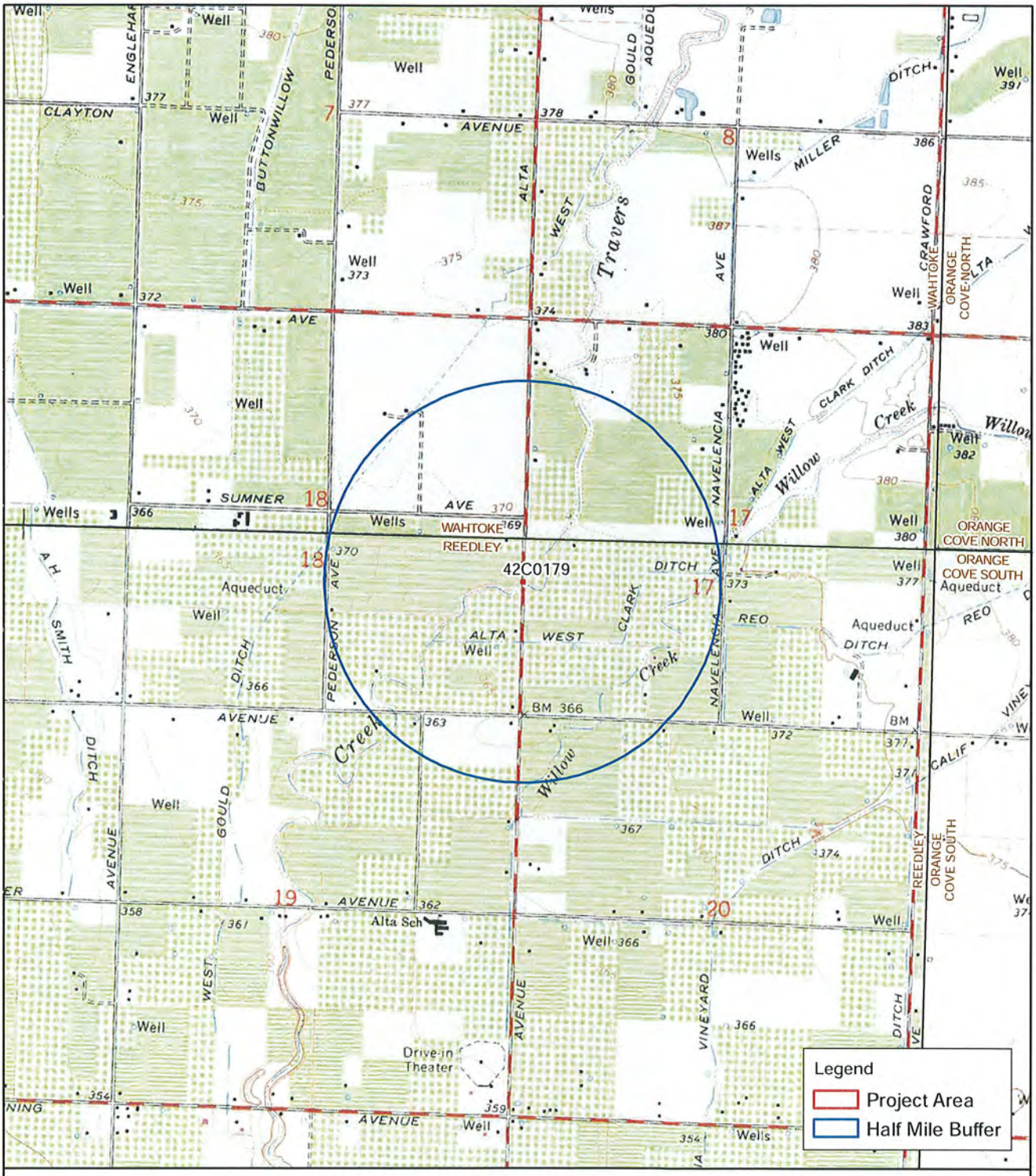


no resources or reports

Township 13S/Range 23E, Section 33, 34

Piedra 1965, CA 7.5' USGS Quadrangle(s)

Location map for the *12 Locations for Bridge Maintenance Project - AE3093.*



Location map for the *12 Locations for Bridge Maintenance Project - AE3093.*

Structure Maintenance & Investigations

Historical Significance - Local Agency Bridges

District 06

Fresno County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built	Year Wid/Ext
42C0091	FRIANT-KERN CANAL	WEST OF HILLS VALLEY RD	4. Historical Significance not determined	1948	
42C0092	LAGUNA CANAL	0.3 MI S OF MERRILL AVE	5. Bridge not eligible for NRHP	1931	
42C0097	ARROYO PASAJERO	2.0 MI NORTH OF JAYNE AVE	5. Bridge not eligible for NRHP	1970	
42C0098	LOS GATOS CREEK	0.7 MI NORTH OF JAYNE AVE	5. Bridge not eligible for NRHP	1970	
42C0099	SAND CREEK	0.3 MI S GEORGE SMITH RD	5. Bridge not eligible for NRHP	1975	
42C0102	WAHTOKE CREEK	0.2 MI N/O AMERICAN AVE	5. Bridge not eligible for NRHP	1969	
42C0103	ZAPATO CHINO CREEK	1.6 MI WEST OF I-5	5. Bridge not eligible for NRHP	1970	
42C0104	FRESNO SLOUGH (KINGS RIVER)	.1 MI W/O GRANTLAND AVE	5. Bridge not eligible for NRHP	1970	
42C0105	MILL DITCH	JUST SOUTH OF MCKINLEY AV	5. Bridge not eligible for NRHP	1921	1969
42C0111	FANCHER CREEK CANAL	0.3 MI SOUTH OF BELMONT	5. Bridge not eligible for NRHP	1925	1967
42C0112	MILL DITCH	0.3 MI SOUTH OF CLINTON	5. Bridge not eligible for NRHP	1948	
42C0114	HERNDON CANAL	SOUTH OF SHAW AVE	5. Bridge not eligible for NRHP	1925	1988
42C0115	DRY CREEK CANAL	0.15 MI E/O VILLA AVE	5. Bridge not eligible for NRHP	1978	
42C0116	ENTERPRISE CANAL	.05 MI WEST OF DEWOLF AVE	5. Bridge not eligible for NRHP	1947	1990
42C0117	HERNDON CANAL	0.05 MI WEST OF BRAWLEY	5. Bridge not eligible for NRHP	1951	1993
42C0118	CRESCENT DITCH	1.4 MI S MT WHITNEY AVE	5. Bridge not eligible for NRHP	1946	
42C0119	ENTERPRISE CANAL	0.75 MI EAST OF MCCALL AV	5. Bridge not eligible for NRHP	1925	1980
42C0121	ENTERPRISE CANAL	2.5 MI EAST OF MCCALL AVE	5. Bridge not eligible for NRHP	1980	
42C0122	DRY CREEK CANAL	0.1 MI WEST OF MILLBROOK	5. Bridge not eligible for NRHP	1962	
42C0123	SELMA BRANCH C & K CANAL	0.3 MI N OF SOUTH AVE	5. Bridge not eligible for NRHP	1948	1976
42C0124	FOWLER SWITCH CANAL	0.2 MI N OF JENSEN AVE	5. Bridge not eligible for NRHP	1985	2005
42C0126	FRESNO CANAL	0.4 MI SOUTH OF MCKINLEY	5. Bridge not eligible for NRHP	1942	2003
42C0129	FRIANT-KERN CANAL	1MI NORTH OF HERNDON AVE	4. Historical Significance not determined	1946	
42C0130	DRY CREEK CANAL	EAST OF BROADWAY	5. Bridge not eligible for NRHP	1989	
42C0131	HUGHES CREEK	1.3 MI N/O PINE FLAT RD	5. Bridge not eligible for NRHP	1969	
42C0132	WATTS CREEK	1.5 MI E WATTS VALLEY RD	5. Bridge not eligible for NRHP	1925	1960
42C0133	WATTS CREEK TRIBUTARY	0.3 MI E WATT VALLEY RD	5. Bridge not eligible for NRHP	1967	
42C0134	DRY CREEK	JUST E/O TOLLHOUSE RD	5. Bridge not eligible for NRHP	1925	1972
42C0135	BIG SANDY CREEK	0.5 MI S/O SH 168	5. Bridge not eligible for NRHP	1973	
42C0136	JENSEN AVENUE SEP & OH	900 FT E OF GOLDEN ST BLV	5. Bridge not eligible for NRHP	1963	
42C0137	SOUTH FORK LITTLE PANOCHE CREEK	12 MI WEST OF I-5	5. Bridge not eligible for NRHP	1985	
42C0138	LITTLE PANOCHE CREEK	12 MI WEST OF I-5	5. Bridge not eligible for NRHP	1935	
42C0142	DELTA-MENDOTA CANAL (@ CPM 097.68)	AT ALTHEA AVE	4. Historical Significance not determined	1950	1968
42C0144	3RD LIFT CANAL	AT FAIRFAX AVE	5. Bridge not eligible for NRHP	1960	
42C0145	PANOCHE CREEK	2.7 MI S/O BELMONT AVE	5. Bridge not eligible for NRHP	1975	
42C0147	DELTA-MENDOTA CANAL (@ CPM 102.93)	1.6 MI NORTH OF NEES AVE	4. Historical Significance not determined	1950	
42C0148	OUTSIDE CANAL	3 MI N/O NEES AVE	5. Bridge not eligible for NRHP	1981	
42C0150	CCID MAIN CANAL	0.7 MI S OF S.R. 33	5. Bridge not eligible for NRHP	1976	
42C0155	SAN JOAQUIN RIVER	0.2 MI E OF SR 33	5. Bridge not eligible for NRHP	2001	
42C0158	CANTUA CREEK	1.5 MI. SOUTH OF I-5	5. Bridge not eligible for NRHP	1969	
42C0160	BURREL DITCH	0.7 MI E OF S MARKS AVE	5. Bridge not eligible for NRHP	1925	1985
42C0161	BIG B DITCH (BIG B CANAL)	0.3 MI EAST OF PEACH AVE	5. Bridge not eligible for NRHP	1928	1947
42C0162	LATONIA AVENUE UP	AT LATONIA AVE	4. Historical Significance not determined	1935	1972

Structure Maintenance & Investigations

Historical Significance - Local Agency Bridges

District 06

Fresno County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built	Year Wid/Ext
42C0163	MURPHY SLOUGH	0.7 MI N MT WHITNEY AVE	5. Bridge not eligible for NRHP	1975	
42C0165	DRY CREEK CANAL	AT S MARKS AVE	5. Bridge not eligible for NRHP	1925	2006
42C0166	GRANT CANAL	0.2 MI S/O MT WHITNEY AVE	5. Bridge not eligible for NRHP	1980	
42C0168	MURPHY SLOUGH	0.06 MI N OF RIVERDALE AV	5. Bridge not eligible for NRHP	1922	1978
42C0169	LIBERTY DITCH	0.9 MI NORTH OF HARLAN AV	5. Bridge not eligible for NRHP	1925	1949
42C0170	FOWLER SWITCH CANAL	0.4 MI S OF FLORAL AVE	5. Bridge not eligible for NRHP	1925	1948
42C0172L	LITTLE DRY CREEK	1.0 MI NORTH OF WILLOW AV	5. Bridge not eligible for NRHP	1973	
42C0172R	LITTLE DRY CREEK	1.0 MI NORTH OF WILLOW AV	5. Bridge not eligible for NRHP	2007	
42C0174	KINGSBURG BRANCH CANAL	0.7 MI EAST OF BETHEL AVE	5. Bridge not eligible for NRHP	1981	
42C0175	TRAVERS CREEK	0.6 MI W ALTA AVE	5. Bridge not eligible for NRHP	1925	1942
42C0176	ALTA EAST BRANCH CANAL	0.2 MI E OF HILL AVE	5. Bridge not eligible for NRHP	1951	
42C0177	FRIANT-KERN CANAL	0.2 MI SOUTH OF PARK BLVD	4. Historical Significance not determined	1947	
42C0178	FOWLER SWITCH CANAL	AT (JEO) HIGHLAND AVE	5. Bridge not eligible for NRHP	1921	1951
42C0179	TRAVERS CREEK	0.3 MI N OF SOUTH AVE	5. Bridge not eligible for NRHP	1971	
42C0180	FRIANT-KERN CANAL	0.75 MI SOUTH OF SR 180	4. Historical Significance not determined	1956	
42C0181	LIBERTY DITCH	0.4 MI EAST OF S.R. 41	5. Bridge not eligible for NRHP	1949	
42C0182	FOWLER SWITCH CANAL	AT JCT WITH CENTRAL AVE	5. Bridge not eligible for NRHP	1961	
42C0183	FRESNO CANAL	0.2 MI SOUTH OF MCKINLEY	5. Bridge not eligible for NRHP	1953	
42C0184	GOULD CANAL	1.0 MI SOUTH OF DAKOTA AV	5. Bridge not eligible for NRHP	1925	1975
42C0185	REDBANK SLOUGH	0.5 MI SOUTH OF DAKOTA AV	5. Bridge not eligible for NRHP	1925	1975
42C0186	ENTERPRISE CANAL	0.75 MI NORTH OF SHAW AVE	5. Bridge not eligible for NRHP	1980	
42C0187	GOULD CANAL	AT ASHLAN AVE	5. Bridge not eligible for NRHP	1969	
42C0188	HERNDON CANAL	AT MILLBROOK AVE	5. Bridge not eligible for NRHP	1964	1984
42C0189	DRY CREEK CANAL	AT OLIVE AVE	5. Bridge not eligible for NRHP	1941	1964
42C0190	HERNDON CANAL	NORTH OF ASHLAN AVE	5. Bridge not eligible for NRHP	1963	1974
42C0191	HERNDON CANAL	EAST OF WEST AVE	5. Bridge not eligible for NRHP	1967	1974
42C0197	DRY CREEK CANAL	SOUTH OF MCKINLEY AVE	5. Bridge not eligible for NRHP	1958	1979
42C0198	DRY CREEK CANAL	JUST S/O MCKINLEY AVE	5. Bridge not eligible for NRHP	1954	1979
42C0199	HERNDON CANAL	0.5 MI NORTH OF ASHLAN	5. Bridge not eligible for NRHP	1979	
42C0200	MILL DITCH	SOUTH OF MCKINLEY AVE	5. Bridge not eligible for NRHP	1948	1973
42C0201	DRY CREEK CANAL	SOUTH OF DAKOTA AVE	5. Bridge not eligible for NRHP	1961	1974
42C0202	CENTRAL CANAL	JUST WEST OF CHESTNUT AVE	5. Bridge not eligible for NRHP	1963	
42C0203	H STREET OC	700 FT EAST OF G STREET	5. Bridge not eligible for NRHP	1965	
42C0205	DRY CREEK CANAL	0.2 MI S OLIVE AVE	5. Bridge not eligible for NRHP	1964	
42C0206	FRESNO STREET UP	300 FT EAST OF G STREET	5. Bridge not eligible for NRHP	1965	
42C0207	HERNDON CANAL	0.22 MI N DAKOTA AVE	5. Bridge not eligible for NRHP	1961	1981
42C0208	HERNDON CANAL	0.25 MI NORTH OF SHIELDS	5. Bridge not eligible for NRHP	1963	
42C0209	WISHON UP	SOUTH OF SHIELDS AVE	4. Historical Significance not determined	1914	
42C0210	DRY CREEK CANAL	AT DUDLEY AVE	5. Bridge not eligible for NRHP	1911	
42C0212	HERNDON CANAL	JUST SOUTH OF SHIELDS AVE	5. Bridge not eligible for NRHP	1959	
42C0213	HERNDON CANAL	SOUTH OF SHIELDS AVE	5. Bridge not eligible for NRHP	1954	1999
42C0214	MARIPOSA MALL UC	NORTH OF TULARE ST	5. Bridge not eligible for NRHP	1966	
42C0216	DRY CREEK CANAL	0.1 MI NORTH OF SHIELDS	5. Bridge not eligible for NRHP	1952	1961

Structure Maintenance & Investigations

Historical Significance - Local Agency Bridges

District 06

Fresno County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built	Year Wid/Ext
42C0326	ENTERPRISE CANAL	0.1 MI WEST OF RIVERBEND	5. Bridge not eligible for NRHP	1940	
42C0327	ENTERPRISE CANAL	0.5 MI NORTH OF SHIELDS	5. Bridge not eligible for NRHP	1940	
42C0328	MUD CREEK	0.7 MI SOUTH OF SHIELDS	5. Bridge not eligible for NRHP	1930	
42C0329	FANCHER CREEK	0.5 MI EAST OF ACADEMY AV	5. Bridge not eligible for NRHP	1960	
42C0330	GOULD CANAL	0.2 MI SOUTH OF SHIELDS	5. Bridge not eligible for NRHP	1950	
42C0331	GOULD CANAL	0.5 MI SOUTH OF SHIELDS	5. Bridge not eligible for NRHP	1950	
42C0332	HERNDON CANAL	SOUTH OF LANSING WAY	5. Bridge not eligible for NRHP	1990	
42C0333	HERNDON CANAL	SOUTH OF LANSING WAY	5. Bridge not eligible for NRHP	1988	
42C0334	HERNDON CANAL	WEST OF KENMORE DR W	5. Bridge not eligible for NRHP	1947	
42C0336	ALTA MAIN CANAL DIVERSION CHANNEL (WAHTOKE CREEK)	WEST OF PEDERSON AVE	5. Bridge not eligible for NRHP	1950	1972
42C0337	GOULD CANAL	0.6 MI NORTH OF SHIELDS	5. Bridge not eligible for NRHP	1925	1940
42C0338	GOULD CANAL	0.4 MI NORTH OF SHIELDS	5. Bridge not eligible for NRHP	1925	1970
42C0339	HOUGHTON CANAL	0.5 MI SOUTH OF BELMONT	5. Bridge not eligible for NRHP	1942	
42C0340	HOUGHTON CANAL	0.5 MI SOUTH OF BELMONT	5. Bridge not eligible for NRHP	1940	
42C0341	DRY CREEK CANAL	1.3 MI E/O CHATEAU FRESNO	5. Bridge not eligible for NRHP	1975	
42C0342	FANCHER CREEK CANAL	JUST SOUTH OF OLIVE AVE	5. Bridge not eligible for NRHP	1948	
42C0343	FRESNO CANAL	0.8 MI EAST OF ACADEMY AV	5. Bridge not eligible for NRHP	1939	1970
42C0344	FRESNO CANAL	0.5 MI NORTH OF OLIVE AVE	5. Bridge not eligible for NRHP	1940	1970
42C0345	GOULD CANAL	0.6 MI NORTH OF OLIVE AVE	5. Bridge not eligible for NRHP	1950	
42C0346	ENTERPRISE CANAL	1 MI NORTH OF BELMONT AVE	5. Bridge not eligible for NRHP	1952	
42C0347	ENTERPRISE CANAL	0.9 MI NORTH OF BELMONT	5. Bridge not eligible for NRHP	1970	
42C0348	FOWLER SWITCH CANAL	0.02 MI S OF SWITCH AVE	5. Bridge not eligible for NRHP	1940	
42C0349	KINGS RIVER	AT RIVERBEND AVENUE	5. Bridge not eligible for NRHP	1962	
42C0350	FOWLER SWITCH CANAL	AT (N/O) ANNADALE AVE	5. Bridge not eligible for NRHP	1975	
42C0351	FOWLER SWITCH CANAL	AT (W/O) DEL REY AVE	5. Bridge not eligible for NRHP	1975	
42C0352	FOWLER SWITCH CANAL	0.5 MI E OF MCCALL AVE	5. Bridge not eligible for NRHP	1975	
42C0353	ENTERPRISE CANAL	0.2 MI WEST OF MACDONOUGH	5. Bridge not eligible for NRHP	1970	
42C0354	FRESNO CANAL	0.5 MI NORTH OF BELMONT	5. Bridge not eligible for NRHP	1948	
42C0355	FRESNO CANAL	0.3 MI N OF TRIMMER SPR R	5. Bridge not eligible for NRHP	1940	
42C0356	BRANCH OF BYRD SLOUGH (OFF OF KINGS RIVER)	AT MACDONOUGH AVE	5. Bridge not eligible for NRHP	1973	
42C0357	BYRD SLOUGH (OFF OF KINGS RIVER)	0.35 MI E/O MACDONOUGH AV	5. Bridge not eligible for NRHP	1973	
42C0358	ALTA EAST BRANCH CANAL	0.01 MI E OF PEDERSON AVE	5. Bridge not eligible for NRHP	1960	
42C0359	MILL DITCH	0.7 MI SOUTH OF SHIELDS	5. Bridge not eligible for NRHP	1940	
42C0360	LIBERTY DITCH	0.5 MI EAST OF FOWLER AVE	5. Bridge not eligible for NRHP	1960	
42C0361	MURPHY SLOUGH	0.05 MI N/O RIVERDALE AVE	5. Bridge not eligible for NRHP	1948	
42C0362	MURPHY SLOUGH	0.3 MI N/O RIVERDALE AVE	5. Bridge not eligible for NRHP	1988	
42C0363	CROSSCUT CANAL	0.9 MI E OF FOWLER AV	5. Bridge not eligible for NRHP	1925	1951
42C0364	FOWLER SWITCH CANAL	0.1 MI W OF CLOVIS AVE	5. Bridge not eligible for NRHP	1965	
42C0365	MURPHY SLOUGH	0.3 MI S DAVIS AVE	5. Bridge not eligible for NRHP	1949	
42C0366	MURPHY SLOUGH	1.2 MI S/O DAVIS AVE	5. Bridge not eligible for NRHP	1950	
42C0367	FRESNO SLOUGH OVERFLOW	.2 MI W/O GRANTLAND AVE	5. Bridge not eligible for NRHP	1975	
42C0368	CRESCENT DITCH	0.7 MI E WEST LAWN AVE	5. Bridge not eligible for NRHP	1975	

Structure Maintenance & Investigations

Historical Significance - Local Agency Bridges

District 06

Fresno County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built	Year Wid/Ext
42C0422	WAHTOKE CREEK	1.8 MILES NORTH OF SR 180	5. Bridge not eligible for NRHP	1949	
42C0423	REEDLEY MAIN CANAL	0.1 MI W OF ENGLEHART AVE	5. Bridge not eligible for NRHP	1945	1970
42C0424	CALIFORNIA VINYARD DITCH	0.2 MI E OF CRAWFORD AVE	5. Bridge not eligible for NRHP	1925	1945
42C0426	COALINGA CANAL	1.8 MI NORTH OF JAYNE AVE	5. Bridge not eligible for NRHP	1972	
42C0427	ZAPATO CHINO CREEK	1.0 MI S JAYNE AVE	5. Bridge not eligible for NRHP	1974	
42C0429	GOULD CANAL	0.3 MI NORTH OF SHIELDS	5. Bridge not eligible for NRHP	1932	1949
42C0430	COLE SLOUGH CANAL	0.65 MI E OF ACADEMY AVE	5. Bridge not eligible for NRHP	1925	1948
42C0431	COLE SLOUGH CANAL	1.25 MI E OF ACADEMY AVE	5. Bridge not eligible for NRHP	1925	1950
42C0432	COLE SLOUGH CANAL	0.5 MI S OF ADAMS AVE	5. Bridge not eligible for NRHP	1925	1977
42C0433	COLE SLOUGH CANAL	AT (W/O) SMITH AVE	5. Bridge not eligible for NRHP	1977	
42C0434	SMITH-FERRY CANAL	AT ZEDIKER AVE	5. Bridge not eligible for NRHP	1960	1971
42C0435	SMITH-FERRY CANAL	0.5 MI S OF ADAMS AVE	5. Bridge not eligible for NRHP	1975	
42C0436	CENTERVILLE & KINGSBURG CANAL	JUST WEST OF NEWMARK AVE	5. Bridge not eligible for NRHP	1949	
42C0437	CENTERVILLE & KINGSBURG CANAL	0.3 MI E OF ACADEMY AVE	5. Bridge not eligible for NRHP	1925	1948
42C0439	CENTERVILLE & KINGSBURG CANAL	0.3 MI W OF ACADEMY AVE	5. Bridge not eligible for NRHP	1925	1949
42C0441	KINGSBURG BRANCH CANAL	0.1 MI E OF ACADEMY AVE	5. Bridge not eligible for NRHP	1925	1948
42C0443	KINGSBURG BRANCH CANAL	0.5 MI N OF E DINUBA AVE	5. Bridge not eligible for NRHP	1975	
42C0444	KINGSBURG BRANCH CANAL	0.7 MI E OF BETHEL AVE	5. Bridge not eligible for NRHP	1935	1945
42C0445	FOWLER SWITCH CANAL	0.5 MI E OF LEONARD AVE	5. Bridge not eligible for NRHP	1927	1948
42C0446	FOWLER SWITCH CANAL	JUST EAST OF HIGHLAND AVE	5. Bridge not eligible for NRHP	1948	
42C0447	FOWLER SWITCH CANAL	0.7 MI S OF MANNING AVE	5. Bridge not eligible for NRHP	1936	1972
42C0448	FOWLER SWITCH CANAL	AT DINUBA AVE	5. Bridge not eligible for NRHP	1938	
42C0449	FOWLER SWITCH CANAL	0.7 MI E OF FOWLER AVE	5. Bridge not eligible for NRHP	1964	
42C0450	CENTRAL CANAL	AT CHURCH AVE	5. Bridge not eligible for NRHP	1975	1991
42C0452	HOUGHTON CANAL	AT NIELSEN AVE	5. Bridge not eligible for NRHP	1954	
42C0455	LOS GATOS CREEK	5.53 MI W OF DERRICK BL	5. Bridge not eligible for NRHP	1974	
42C0456	LOS GATOS CREEK	5.96 MI W OF DERRICK BL	5. Bridge not eligible for NRHP	1948	
42C0457	LOS GATOS CREEK	6.86 MI W OF DERRICK BL	5. Bridge not eligible for NRHP	1950	1968
42C0458	LOS GATOS CREEK	11.14 MI W OF DERRICK BL	5. Bridge not eligible for NRHP	1974	
42C0459	LOS GATOS CREEK	11.31 MI W OF DERRICK BL	5. Bridge not eligible for NRHP	1974	
42C0460	LOS GATOS CREEK	11.95 MI W OF DERRICK BL	5. Bridge not eligible for NRHP	1974	
42C0462	LOS GATOS CREEK	12.83 MI W OF DERRICK BL	5. Bridge not eligible for NRHP	1949	
42C0463	LOS GATOS CREEK	13.16 MI NW OF DERRICK BL	5. Bridge not eligible for NRHP	1948	
42C0464	LOS GATOS CREEK	13.47 MI W DERRICK BLVD	5. Bridge not eligible for NRHP	1945	
42C0465	LOS GATOS CREEK	14.25 MI W DERRICK BLVD	5. Bridge not eligible for NRHP	1983	
42C0466	LOS GATOS CREEK	14.4 MI W OF DERRICK BLVD	5. Bridge not eligible for NRHP	1947	
42C0467	LOS GATOS CREEK	14.55 MI W DERRICK BLVD	5. Bridge not eligible for NRHP	1947	
42C0469	LOS GATOS CREEK	14.9 MI W OF DERRICK BL	5. Bridge not eligible for NRHP	1948	
42C0471	LOS GATOS CREEK	17.9 MI W DERRICK BLVD	5. Bridge not eligible for NRHP	1954	
42C0472	LOS GATOS CREEK	0.3 MI W OF MONTEREY AVE	5. Bridge not eligible for NRHP	1948	
42C0473	LOS GATOS CREEK	0.3 MI NORTH OF GALE AVE	5. Bridge not eligible for NRHP	1925	1968
42C0475	SUMMIT CREEK	6.7 MI E OF SR 168	5. Bridge not eligible for NRHP	1975	
42C0476	SAND CREEK	WEST OF MISTLETOE LANE	5. Bridge not eligible for NRHP	1945	1983

Structure Maintenance & Investigations

Historical Significance - Local Agency Bridges

District 06

Fresno County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built	Year Wid/Ext
42C0477	MILL CREEK	0.5 MI S/O MILLWOOD RD	5. Bridge not eligible for NRHP	1973	
42C0478	MILL CREEK	0.5 MI S/O ORCHARD DR	5. Bridge not eligible for NRHP	1956	
42C0479	HUGHES CREEK (@ PINE FLAT DAM)	0.1 MI E TRIMMER SPRG RD	5. Bridge not eligible for NRHP	1948	
42C0480	BIG CREEK (ON NORTH SIDE OF PINE FLAT LAKE)	30.92 MI NE OF SR 180	5. Bridge not eligible for NRHP	1952	
42C0481	SYCAMORE CREEK (ON NORTH SIDE OF PINE FLAT LAKE)	3 MI E/O MAXSON RD	5. Bridge not eligible for NRHP	1961	
42C0482	DRY CREEK CANAL	AT NIELSEN AVE	5. Bridge not eligible for NRHP	1925	1940
42C0483	JAMES BYPASS (FRESNO SLOUGH BYPASS)	0.32 MI N/O LINCOLN	5. Bridge not eligible for NRHP	1984	
42C0484	HERNDON CANAL	AT BARSTOW AVE	5. Bridge not eligible for NRHP	1925	1986
42C0485	HOUGHTON CANAL	0.5 MI S BELMONT AVE	5. Bridge not eligible for NRHP	1925	
42C0486	HOUGHTON CANAL	0.5 MI SOUTH OF BELMONT	5. Bridge not eligible for NRHP	1925	
42C0489	DRY CREEK CANAL	0.1 MI EAST OF HOWARD AVE	5. Bridge not eligible for NRHP	1950	
42C0490	ENTERPRISE CANAL	0.08 MI S/O SHEPHERD AVE	5. Bridge not eligible for NRHP	1985	
42C0494	ENTERPRISE CANAL	0.16 MI SOUTH OF BULLARD	5. Bridge not eligible for NRHP	1925	1968
42C0495	DOG CREEK	0.26 MI NORTH OF SH 168	5. Bridge not eligible for NRHP	1934	1978
42C0496	FRESNO CANAL	0.5 MI SOUTH OF MCKINLEY	5. Bridge not eligible for NRHP	1939	1967
42C0497	ENTERPRISE CANAL	0.62 MI EAST OF RIVERBEND	5. Bridge not eligible for NRHP	1936	
42C0498	GOULD CANAL	0.1 MI NORTH OF MCKINLEY	5. Bridge not eligible for NRHP	1925	
42C0499	GOULD CANAL	0.4 MI WEST OF VIAU AVE	5. Bridge not eligible for NRHP	1925	
42C0500	GOULD CANAL	SOUTH OF (AT) FLORADORA	5. Bridge not eligible for NRHP	1925	
42C0501	ALTA MAIN CANAL	AT CENTRAL AVE	5. Bridge not eligible for NRHP	1981	
42C0502	WAHTOKE CREEK	0.32 MI W BUTTONWILLOW AV	5. Bridge not eligible for NRHP	1938	1974
42C0503	ALTA EAST BRANCH CANAL	0.15 MI W OF S HILL AVE	5. Bridge not eligible for NRHP	1991	
42C0506	COLONY MAIN CANAL (DOS PALOS CANAL)	0.3 MI N/O SHAIN AVE	5. Bridge not eligible for NRHP	1925	1987
42C0507	2ND LIFT CANAL	0.9 MI NORTH OF NEES AVE	5. Bridge not eligible for NRHP	1937	1981
42C0508	3RD LIFT CANAL	0.7 MI SOUTH OF NEES AVE	5. Bridge not eligible for NRHP	1945	1981
42C0509	3RD LIFT CANAL	0.3 MI EAST OF JERROLD AV	5. Bridge not eligible for NRHP	1944	1968
42C0510	1ST LIFT CANAL	0.27 MI E OF SANTA FE	5. Bridge not eligible for NRHP	1988	
42C0511	JAMES BYPASS CANAL (JAMES MAIN CANAL)	0.28 MI N/O LINCOLN	5. Bridge not eligible for NRHP	1984	
42C0512	JAMES BYPASS CANAL (JAMES MAIN CANAL)	AT GRAHAM AVE	5. Bridge not eligible for NRHP	1940	1982
42C0514	MURPHY SLOUGH	0.16 MI S COLEMAN AVE	5. Bridge not eligible for NRHP	1988	
42C0515	GRANT CANAL	0.18 MI S/O MT WHITNEY AV	5. Bridge not eligible for NRHP	1937	
42C0517	REDBANK SLOUGH	0.1 MI SOUTH OF SHIELDS	5. Bridge not eligible for NRHP	1925	
42C0519	MILL DITCH	0.3 MI SOUTH OF MCKINLEY	5. Bridge not eligible for NRHP	1939	1960
42C0520	FRESNO CANAL	0.3 MI NORTH OF BELMONT	5. Bridge not eligible for NRHP	1925	1970
42C0521	CENTRAL CANAL	0.17 MI N JENSEN AVE	5. Bridge not eligible for NRHP	1995	
42C0522	TRAVERS CREEK	0.29 MI. EAST OF ALTA AVE	5. Bridge not eligible for NRHP	1941	
42C0524	HERNDON CANAL	0.5 MI NE OF SHAW AVE	5. Bridge not eligible for NRHP	1960	1982
42C0525	DRY CREEK CANAL	EAST OF CLOVIS AVE	5. Bridge not eligible for NRHP	1970	1991
42C0527	RIVERDALE DITCH	0.02 MI E OF WALNUT AVE	5. Bridge not eligible for NRHP	1935	1975
42C0528	LIBERTY DITCH	1.0 MI SOUTH OF DAVIS AVE	5. Bridge not eligible for NRHP	1942	
42C0529	STINSON CANAL	0.55 MI N OF CERINI AVE	5. Bridge not eligible for NRHP	1925	1983
42C0531	FOWLER SWITCH CANAL	0.33 MI N/O ADAMS AVE	5. Bridge not eligible for NRHP	1941	1978

Structure Maintenance & Investigations

Historical Significance - Local Agency Bridges

District 06

Fresno County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built	Year Wid/Ext
42C0532	FOWLER SWITCH CANAL	0.3 MI E OF TEMPERANCE AV	5. Bridge not eligible for NRHP	1941	
42C0533	STINSON CANAL	0.4 MI N OF CERINI AVE	5. Bridge not eligible for NRHP	1925	1981
42C0534	HERNDON CANAL	0.18 MI N OF ASHLAN AVE	5. Bridge not eligible for NRHP	1964	
42C0535	HERNDON CANAL	WEST OF MILLBROOK AVE	5. Bridge not eligible for NRHP	1954	
42C0536	DRY CREEK CANAL	JUST E/O MILLBROOK AVE	5. Bridge not eligible for NRHP	1965	
42C0537	DRY CREEK CANAL	EAST OF CEDAR AVE	5. Bridge not eligible for NRHP	1965	
42C0539	HOUGHTON CANAL	AT/JSO NIELSEN AVE	5. Bridge not eligible for NRHP	1925	1947
42C0543	DRY CREEK CANAL	0.07 MI EAST OF VALENTINE	5. Bridge not eligible for NRHP	1925	1947
42C0544	2ND LIFT CANAL	0.92 MI W OF WASHOE AVE	5. Bridge not eligible for NRHP	1950	
42C0545	3RD LIFT CANAL	0.92 MI S ASHLAN	5. Bridge not eligible for NRHP	1967	
42C0547	CRESCENT DITCH	0.64 MI S/O MT WHITNEY AV	5. Bridge not eligible for NRHP	1950	
42C0549	CRESCENT DITCH	1.0 MI WEST OF MADERA AVE	5. Bridge not eligible for NRHP	1945	
42C0550	STINSON CANAL	0.5 MI S OF ELKHORN AVE	5. Bridge not eligible for NRHP	1945	
42C0552	FRESNO SLOUGH OVERFLOW	0.2 MI E OF ELKHORN GRADE	5. Bridge not eligible for NRHP	1972	
42C0553	FRESNO SLOUGH (FISH SLOUGH) OVERFLOW	2.1 MI E LASSEN AVE	5. Bridge not eligible for NRHP	1978	
42C0554	FRESNO SLOUGH (W. H. 'BILL' JOHNSON, SR. BRIDGE)	1.9 MI EAST OF LASSEN AVE	5. Bridge not eligible for NRHP	1978	2007
42C0555	GRANT CANAL	0.7 MI EAST OF FOWLER AVE	5. Bridge not eligible for NRHP	1932	1985
42C0557	FOWLER SWITCH CANAL	0.33 MI W OF MCCALL AVE	5. Bridge not eligible for NRHP	1952	
42C0558	SELMA BRANCH C & K CANAL	0.31 MI W OF BETHEL AVE	5. Bridge not eligible for NRHP	1954	
42C0560	NO NAME DITCH	0.6 MI WEST OF SR 63	5. Bridge not eligible for NRHP	1925	1950
42C0561	BUTTONWILLOW DITCH	0.12 MI WEST OF ALTA AVE	5. Bridge not eligible for NRHP	1925	1950
42C0562	TRAVERS CREEK	0.75 MI E ALTA AVE	5. Bridge not eligible for NRHP	1935	1977
42C0563	CALIFORNIA VINYARD DITCH	0.9 MI N/O MANNING AVE	5. Bridge not eligible for NRHP	1937	
42C0564	CENTERVILLE & KINGSBURG CANAL	0.01 MI W OF NEWMARK AVE	5. Bridge not eligible for NRHP	1925	1978
42C0565	CENTERVILLE & KINGSBURG CANAL	0.28 MI S/O CALIFORNIA AV	5. Bridge not eligible for NRHP	1925	1956
42C0566	FANCHER CREEK CANAL	NORTH OF TULARE ST	5. Bridge not eligible for NRHP	1959	1991
42C0567	MILL DITCH	0.5 MI NORTH OF OLIVE AVE	5. Bridge not eligible for NRHP	1975	
42C0568	GOULD CANAL	0.5 MI NORTH OF SHIELDS	5. Bridge not eligible for NRHP	1925	1952
42C0570	WRISTEN CANAL	0.21 MI W/O TEMPERANCE AV	5. Bridge not eligible for NRHP	1939	1950
42C0572	HERNDON AVENUE OH	0.2 MI EAST OF POLK AVE	5. Bridge not eligible for NRHP	1983	
42C0573	MILL CREEK	0.2 MI NORTH OF ELWOOD RD	5. Bridge not eligible for NRHP	1966	1970
42C0574	WAHTOKE CREEK	JUST EAST OF REED AVE	5. Bridge not eligible for NRHP	1969	
42C0575	DRY CREEK CANAL	SOUTH OF ELIZABETH ST	5. Bridge not eligible for NRHP	1935	
42C0576	DRY CREEK CANAL	AT YOSEMITE AVE	5. Bridge not eligible for NRHP	1939	
42C0577	DRY CREEK CANAL	WEST OF YOSEMITE AVE	5. Bridge not eligible for NRHP	1930	
42C0578	DRY CREEK CANAL	SOUTH OF FRANKLIN AVE	5. Bridge not eligible for NRHP	1928	
42C0579	DRY CREEK CANAL	SOUTH OF FRANKLIN AVE	5. Bridge not eligible for NRHP	1935	
42C0580	DRY CREEK CANAL	SOUTH OF OLIVE AVE	5. Bridge not eligible for NRHP	1935	
42C0581	DRY CREEK CANAL	AT DELPHIA AVE	5. Bridge not eligible for NRHP	1940	
42C0583	SELMA BRANCH C & K CANAL	0.1 MI S OF THIRD ST	5. Bridge not eligible for NRHP	1930	
42C0585	DRY CREEK CANAL	NORTH OF FLORADORA AVE	5. Bridge not eligible for NRHP	1991	
42C0586	ENTERPRISE CANAL	0.11 MI W/O SUNNYSIDE	5. Bridge not eligible for NRHP	1970	2005
42C0587	MILL DITCH	JUST SOUTH OF MCKINLEY AV	5. Bridge not eligible for NRHP	1975	2003

APPENDIX C

Native American Consultation

Native American Consultation Log

Preventative Maintenance at 12 Bridge Locations, Fresno County

Organization	Name	Position	Letter	E-mail	Phone	Summary of Contact
Santa Rosa Rancheria Tachi Yokut Tribe	Rueben Barrios Sr.	Chairperson	03/10/15	n/a	n/a	See Lalo Franco contact.
Santa Rosa Rancheria Tachi Yokut Tribe	Lalo Franco	Cultural Coordinator	03/10/15	05/18/15	05/18/15	Æ spoke to Franco by phone on 5/18/15. He requested the project information be sent via e-mail to allow him to familiarize himself with the project locations. Project overview and detailed map informaiton sent via email 5/18/15. No comments have been recieved to date.
Table Mountain Rancheria	Leanne Walker-Grant	Chairperson	03/10/15	n/a	n/a	See Bob Pennell contact.
Table Mountain Rancheria	Bob Pennell	Cultural Resources Director	3/10/2015 and 4/8/2015	05/18/15	05/18/15	AE received a request from Pennell on 3/31/15 for detailed maps of three of the bridge locations (42C0328, 42C0520, and 42C0179). Æ sent the requested information to Pennell on April 8, 2015. Æ placed a follow-up call on 5/18/15 and left voice message. A follow-up email also was sent 5/18/15. No comments have been recieved to date.
Table Mountain Rancheria	Michael Russell	Tribal Administrator	03/10/15	n/a	n/a	See Bob Pennell contact.
Native American Heritage Commission	Katy Sanchez	Associate Government Program Analyst		02/11/15		Response to request for information dated 02/27/15.

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

February 27, 2015

Josh Tibbet
Applied Earthworks, Inc.
1391 West Shaw Avenue, Suite C
Fresno, CA 93711

Sent by Fax: (559) 229-2019
Number of Pages: 2

Re: 12 Locations for Bridge Preventative Maintenance Program, Fresno County.

Dear Mr. Tibbet,

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3712.

Sincerely,

Lyta Wineton for

Katy Sanchez
Associate Government Program Analyst

Native American Contacts
Fresno County
February 26, 2015

Santa Rosa Rancheria Tachi Yokut Tribe
Rueben Barrios Sr., Chairperson
P.O. Box 8 Tache
Lemoore , CA 93245 Tachi
(559) 924-1278 Yokut

(559) 924-3583 Fax

Santa Rosa Rancheria Tachi Yokut Tribe
Lalo Franco, Cultural Coordinator
P.O. Box 8 Tachi
Lemoore , CA 93245 Tache
(559) 924-1278 Ext. 5 Yokut

(559) 924-3583 Fax

Table Mountain Rancheria
Leanne Walker-Grant, Chairperson
P.O. Box 410 Yokuts
Friant , CA 93626
(559) 822-2587

(559) 822-2693 Fax

Table Mountain Rancheria
Michael Russell, Tribal Administrator
P.O. Box 410 Yokuts
Friant , CA 93626
(559) 822-2587

(559) 822-2693 Fax

Table Mountain Rancheria
Bob Pennell, Cultural Resources Director
P.O. Box 410 Yokuts
Friant , CA 93626
(559) 325-0351
(559) 217-9718 - cell
(559) 325-0394 FAX

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed 12 Locations for Bridge Preventative Maintenance Program, Fresno County.

Applied EARTHWORKS Inc.

EXAMPLE

1391 W. Shaw Ave., Suite C
Fresno, CA 93711-3600
O: (559) 229-1856 | F: (559) 229-2019

May 21, 2015

Rueben Barrios Sr.
Chairperson
Santa Rosa Rancheria Tachi Yokut Tribe
P.O. Box 8
Lemoore, CA 93245

RE: Bridge Preventative Maintenance Program at Twelve Bridge Locations, Fresno County, CA

Mr. Rueben Barrios Sr.,

Applied EarthWorks, Inc. (*Æ*) is currently providing cultural resources services to Fresno County in support of its Bridge Preventative Maintenance Program at 12 bridges within the county. On behalf of Fresno County, we are conducting Native American consultation and performing other tasks related to cultural resources management. The project is considered a federal undertaking (per 36 CFR 800.16[y]) subject to the National Historic Preservation Act of 1966, as amended (NHPA).

The bridges lie within various Townships, Ranges, and Sections as depicted on nine different U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps (see Table below). The attached map gives the general location of each bridge subject to the proposed maintenance. If you would like a more detailed map of each location, please contact *Æ* and we would be more than happy to provide these for you.

Bridge No.	**Township**	**Range**	**Section**	**Quadrangle**
42C0459	19S	13E	35	Sherman Peak 1969
42C0458	19S	13E	35	Sherman Peak 1969
42C0455	20S	14E	5	Alcalde Hills1969
42C0097	20S	16E	22, 23, 26, 27	Guijarral Hills 1956
42C0367	17S/18S	19E	5, 32	Burrel, 1954
42C0104	17S/18S	19E	5, 32	Burrel, 1954
42C0532	15S	21E	35	Conejo, 1963
42C0531	15S	22E	7	Malaga 1964
42C0178	14S	21E	36	Malaga 1964
42C0328	13S	22E	25	Round Mountain 1964
42C0520	13S	23E	33	Piedra 1965
42C0179	15S	24E	17, 18	Wahtoke 1966

Applied EarthWorks requested a records search from the South San Joaquin Valley Information Center (SSJVIC) of the California historical Resources Information System for each location. The SSJVIC reported that there are no previously recorded cultural resources within the project area for any of the bridge locations.

Your name and address were provided to us by the Native American Heritage Commission. As part of Fresno County's efforts to protect cultural resources that may be located in the proximity to the proposed work areas, we respectfully request any information you may have on the various bridge locations and character of Native American sacred or special sites in the area. If you have any questions or comments, you can contact me during normal business hours at 559-229-1856 or via email at mbaloian@appliedearthworks.com. Thank you.

Sincerely,

Mary Baloian,
Senior Archaeologist

encl.: Project Map

TABLE MOUNTAIN RANCHERIA
TRIBAL GOVERNMENT OFFICE

March 31, 2015

Mary Baloian, Senior Archaeologist
Applied Earth Works Inc.
1391 W. Shaw Ave., Suite C
Fresno, Ca. 93711

Leanne Walker-Grant
Tribal Chairperson

Beverly J. Hunter
Tribal Vice-Chairperson

Craig Martinez
Tribal Secretary/Treasurer

Ray Barnes
Tribal Council Member

Matthew W. Jones
Tribal Council Member

RE: Bridge No. 42C0328, Township 13S, Range 22E, Section 25, Quadrangle Round Mountain 1964, Bridge No. 24C0520, Township 13S, Range 23E, Section 33, Quadrangle Piedra 1965, Bridge No. 42C0179, Township 15S, Range 24E, Section 17 and 18, Quadrangle Wahtoke 1966.

Dear Mary Baloian:

Table Mountain Rancheria is responding to your letter dated March 10, 2015. Thank you for notifying Table Mountain Rancheria of the potential development and request for consultation. The Rancheria is very interested in this project as it lies within our cultural area of interest. At this time Table Mountain would like to request a detailed map of; Bridge No. 42C0328, Township 13S, Range 22E, Section 25, Quadrangle Round Mountain 1964, Bridge No. 24C0520, Township 13S, Range 23E, Section 33, Quadrangle Piedra 1965, Bridge No. 42C0179, Township 15S, Range 24E, Section 17 and 18, Quadrangle Wahtoke 1966.

Sincerely,

Bob Pennell
Tribal Cultural Resources Director

23736
Sky Harbour Road
Post Office
Box 410
Friant
California
93626
(559) 822-2587
Fax
(559) 822-2693

Applied EARTHWORKS Inc.

1391 W. Shaw Ave., Suite C
Fresno, CA 93711-3600
O: (559) 229-1856 | F: (559) 229-2019

April 8, 2015

Bob Pennell
Cultural Resources Director
Table Mountain Rancheria
P.O. Box 410
Friant, CA 93626

RE: Bridge 42C0328, Township 13S, Range 22E, Section 25, Round Mountain, CA 1964 USGS Quadrangle; Bridge 42C0520, Township 13S, Range 23E, Section 33, Piedra, CA 1965 USGS Quadrangle; and, Bridge 42C0179, Township 15S, Range 24E, Section 17 and 18, Wahtoke, CA 1966 USGS Quadrangle.

Mr. Bob Pennell,

This letter is in response to your letter dated March 31, 2015 requesting more information regarding three bridge locations for the Bridge Preventative Maintenance Program at Twelve Bridge Locations, Fresno County, California.

Please find attached location maps for each of the three locations as well as more detailed maps showing the Area of Potential Effects (APE) and the County of Fresno's planned work at Bridge 42C0328 (Township 13S, Range 22E, Section 25, Round Mountain, CA 1964 USGS Quadrangle), Bridge 42C0520 (Township 13S, Range 23E, Section 33, Piedra, CA 1965 USGS Quadrangle), and, Bridge 42C0179 (Township 15S, Range 24E, Section 17 and 18, Wahtoke, CA 1966 USGS Quadrangle).

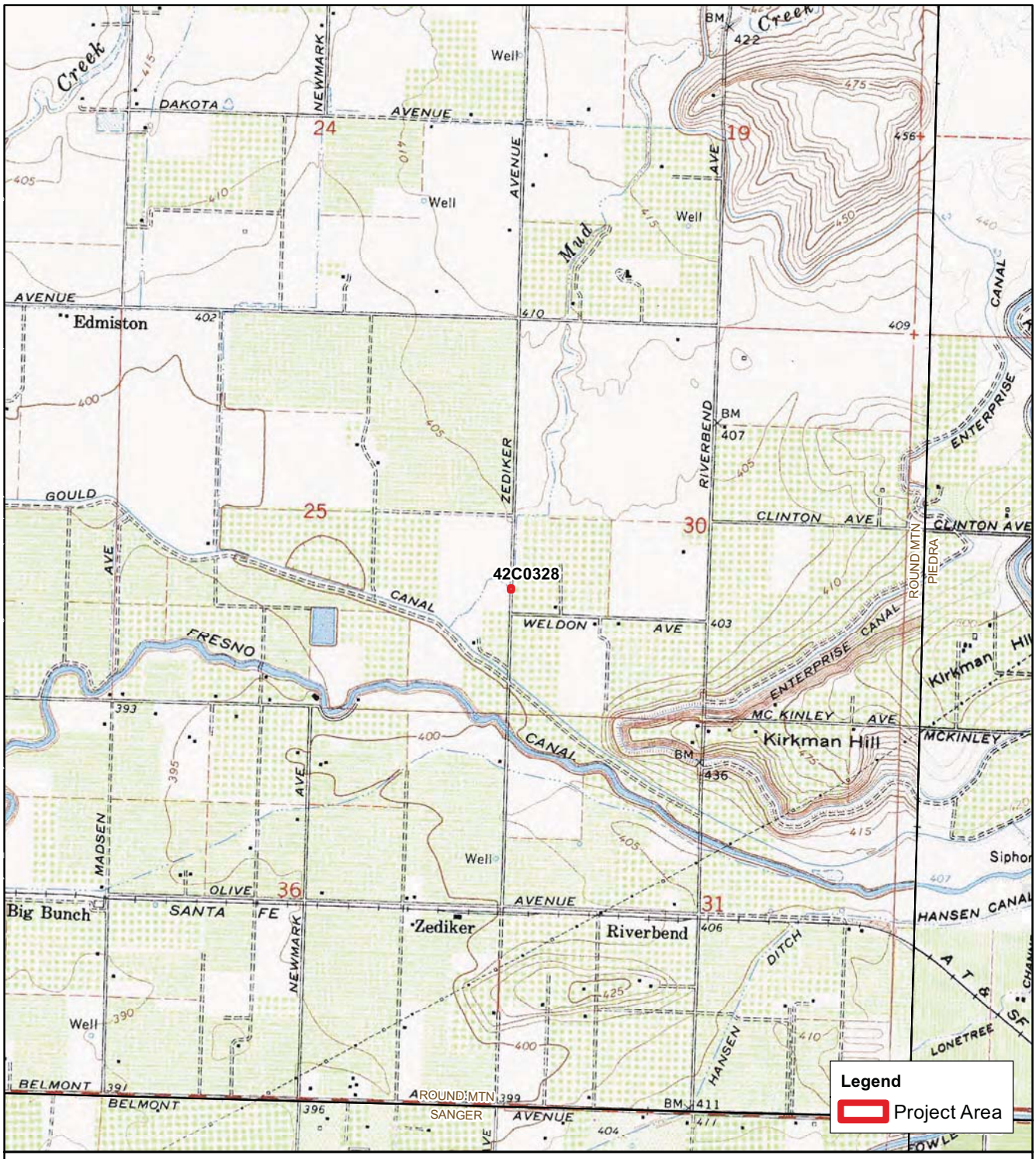
Additionally, these three locations were surveyed for cultural resources on March 9, 2015 using transects spaced no more than 20 meters apart. No cultural material was observed on the surface at any of these locations.

If you would like to discuss the project further, have additional questions, or have information pertaining to these locations that would help us in compiling our cultural resource inventory, please do not hesitate to contact me at (559) 229-1856 ext. 32 or via email at kasselin@appliedearthworks.com or Mary Baloian, Senior Archaeologist, at (559) 229-1856 ext. 11 or via email at mbaloian@appliedearthworks.com. Thank you.

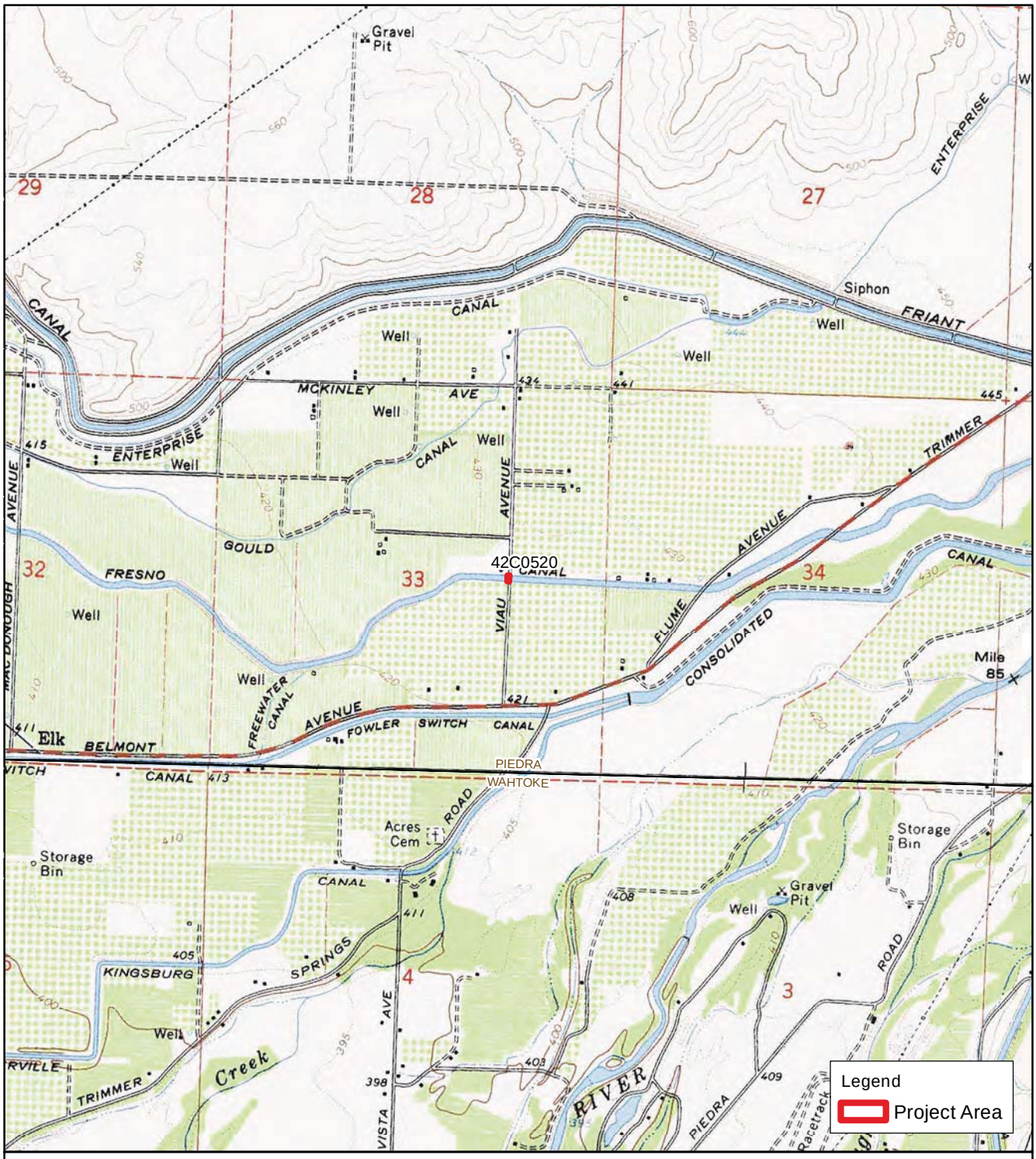
Sincerely,

Katie Asselin, M.A., RPA
Associate Archaeologist

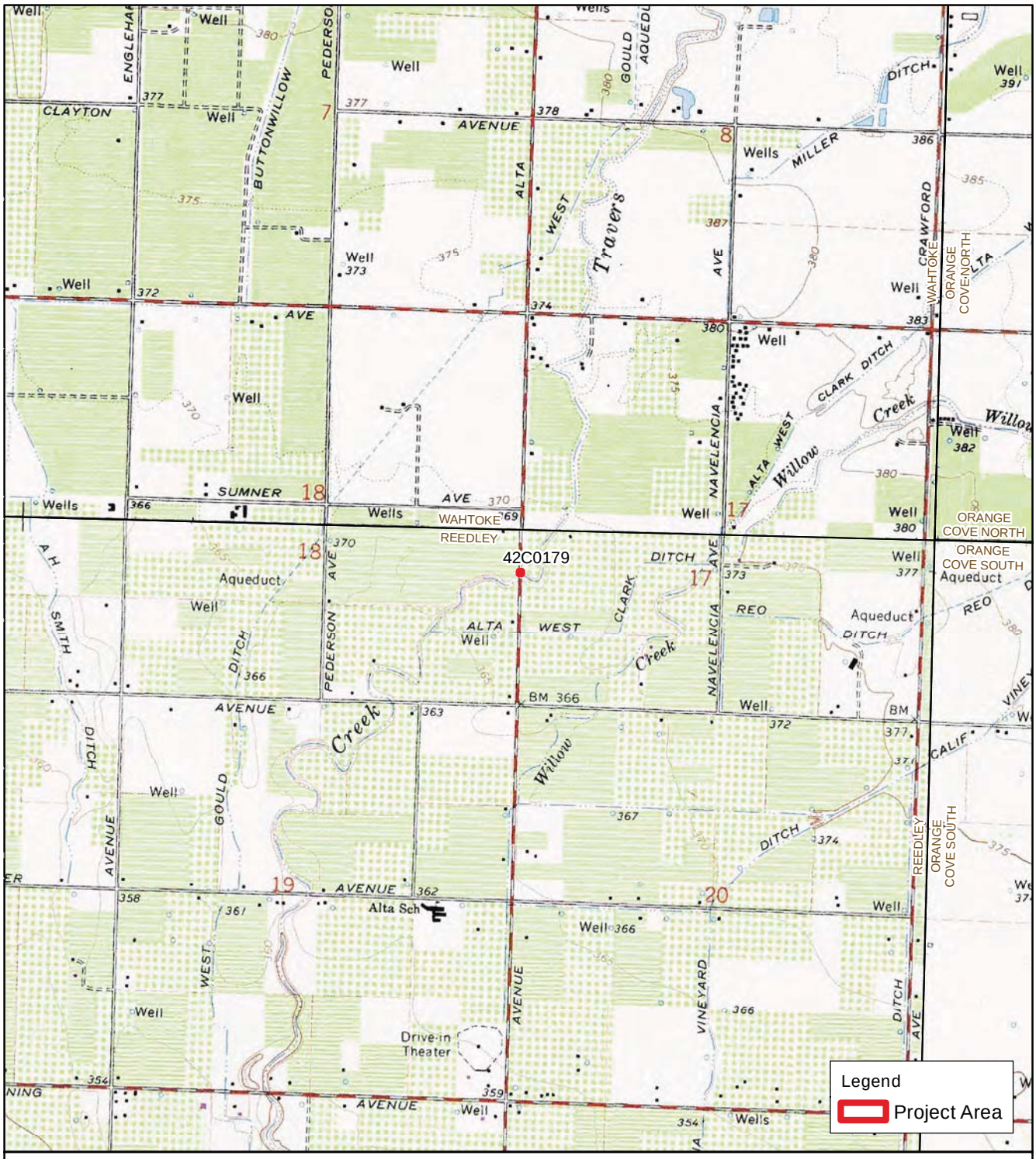
encl.: Project location maps (3); APE maps (3); County of Fresno planning maps (3)



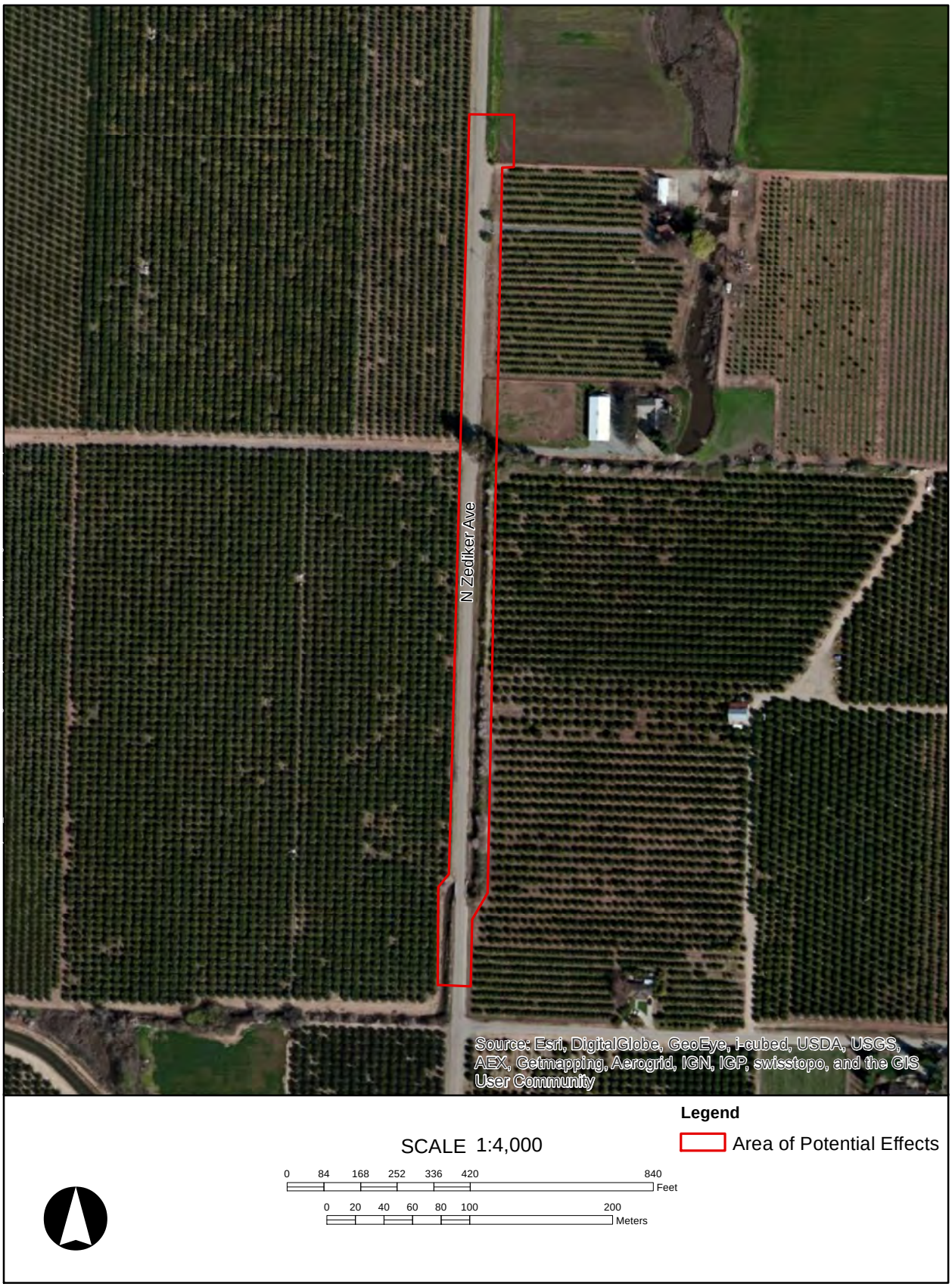
Location map for the *12 Locations for Bridge Maintenance Project - AE3093*.



Location map for the *12 Locations for Bridge Maintenance Project - AE3093*.



Location map for the *12 Locations for Bridge Maintenance Project - AE3093*.



Area of Potential Effects for Bridge No. 42C0328.

Area of Potential Effects for Bridge No. 42C0520.

Area of Potential Effects for Bridge No. 42C0179.

Attachment D

Caltrans District 6 Local Assistance Engineer — Date

Caltrans District 6 Professionally Qualified Staff — Date

	DATE
DESIGNED: R. DANSBY	12-03-14
DRAWN: A. CARDOZA	12-03-14
CHECKED: M. CHRISTENSEN	12-03-14

SCALE IN FEET: 0 30 60

REVISION — FOR R/W DATA AND ACCURATE ACCESS DETERMINATION SEE R/W RECORDS AT PUBLIC WORKS

TRC
6051 N. Fresno St., Suite 200
Fresno, California 93710

MARK IMBRIANI — SUPERVISING ENGINEER: — 12-03-14 — DATE:

PROJECT
BPMP SCOUR MITIGATION
Mud Creek
at Zediker Avenue
BRIDGE NO. 42C0328

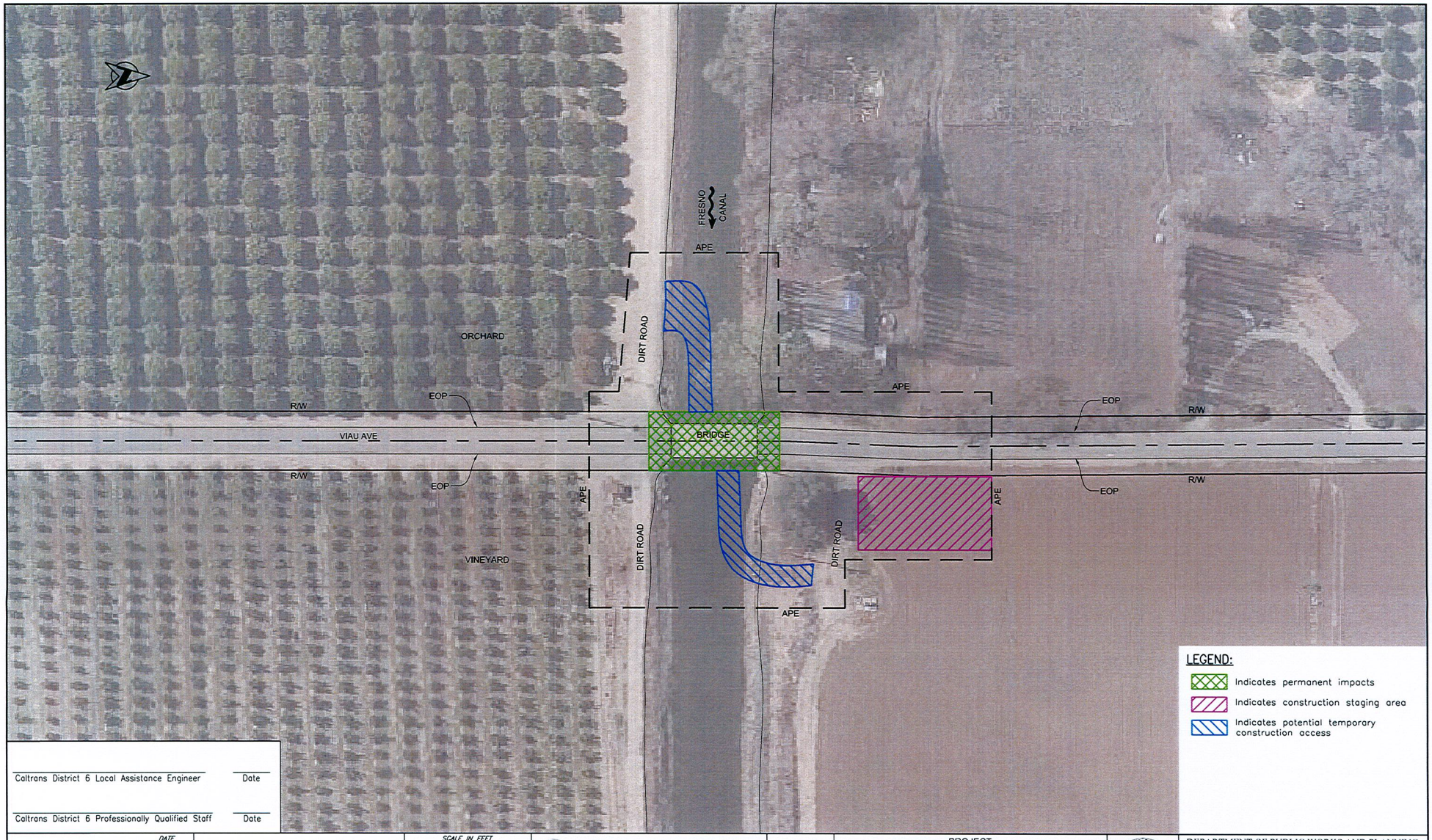
THE COUNTY OF FRESNO

DEPARTMENT OF PUBLIC WORKS AND PLANNING

AREA OF POTENTIAL EFFECT

DRAWING NO. — SHEET NO. — TOTAL: 1 OF 1

Attachment D



Caltrans District 6 Local Assistance Engineer — Date

Caltrans District 6 Professionally Qualified Staff — Date

	DATE
DESIGNED: R. DANSBY	12-03-14
DRAWN: A. CARDOZA	12-03-14
CHECKED: M. CHRISTENSEN	12-03-14

REVISION — FOR R/W DATA AND ACCURATE ACCESS DETERMINATION SEE R/W RECORDS AT PUBLIC WORKS

SCALE IN FEET: 0 30 60

TRC
6051 N. Fresno St., Suite 200
Fresno, California 93710

MARK IMBRIANI — SUPERVISING ENGINEER — 12-03-14 — DATE

PROJECT

BPMP SCOUR MITIGATION
Fresno Canal
at Viau Avenue

BRIDGE NO. 42C0520

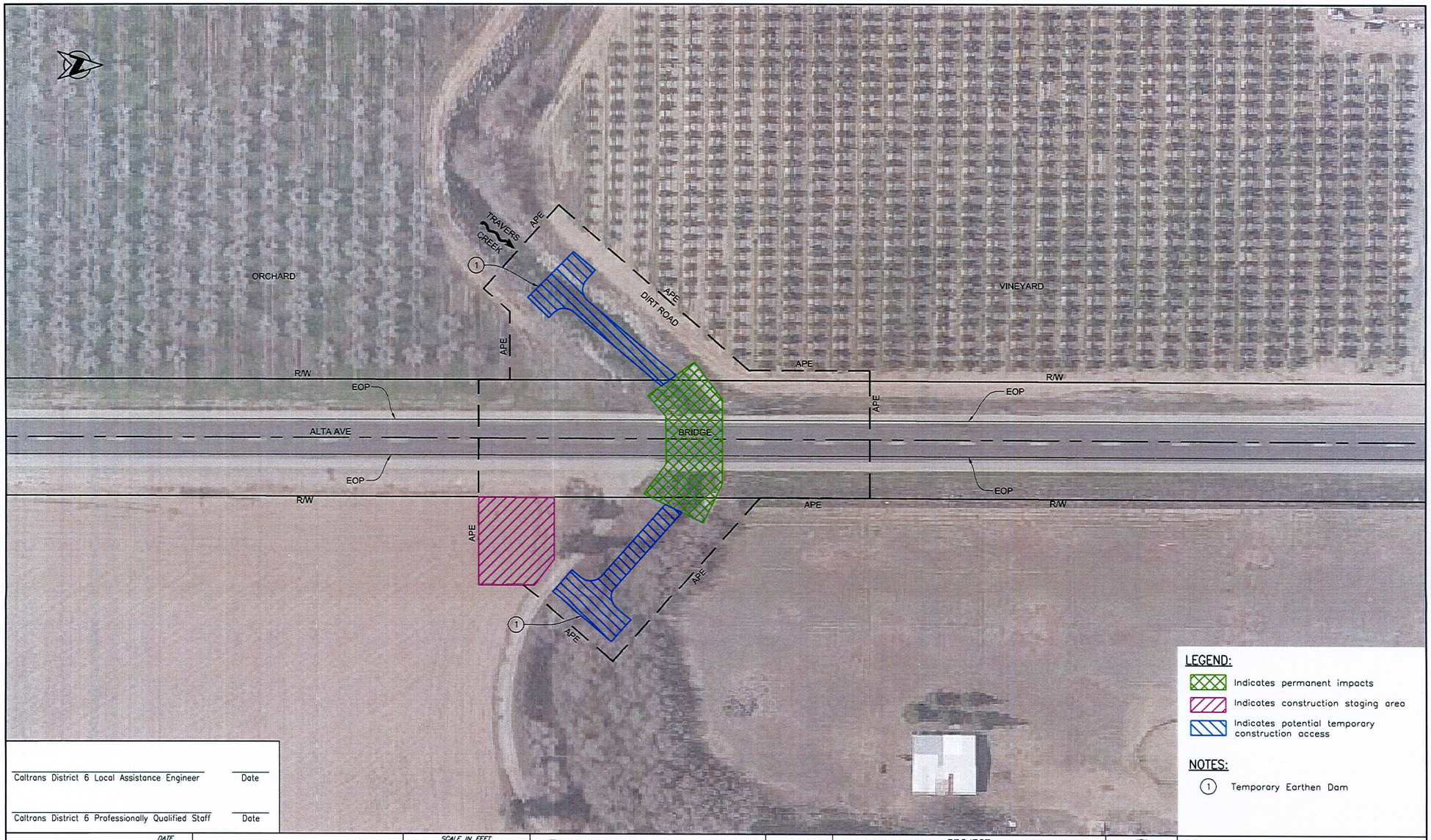
THE COUNTY OF FRESNO

DEPARTMENT OF PUBLIC WORKS AND PLANNING

AREA OF POTENTIAL EFFECT

DRAWING NO. XXXXX — SHEET NO. — TOTAL: 1 OF 1

Attachment D



Caltrans District 6 Local Assistance Engineer — Date

Caltrans District 6 Professionally Qualified Staff — Date

	DATE
DESIGNED: R. DANSBY	12-03-14
DRAWN: A. CARDOZA	12-03-14
CHECKED: M. CHRISTENSEN	12-03-14

REVISION — FOR R/W DATA AND ACCURATE ACCESS DETERMINATION SEE R/W RECORDS AT PUBLIC WORKS

SCALE IN FEET: 0 30 60

TRC
6051 N. Fresno St., Suite 200
Fresno, California 93710

MARK IMBRIANI — SUPERVISING ENGINEER: — 12-03-14 — DATE:

PROJECT

BPMP SCOUR MITIGATION
Travers Creek
at Alta Avenue

BRIDGE NO. 42C179

DEPARTMENT OF PUBLIC WORKS AND PLANNING

AREA OF POTENTIAL EFFECT

DRAWING NO. — SHEET NO. — TOTAL: 1 OF 1

APPENDIX D

Cultural Resource Records

State of California — The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **HRI #**
PRIMARY RECORD
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

Page 1 **of** 8 **Resource Name or #** AE-3093-01

P1. Other Identifier: --

*__P2. Location: a. County:__ Fresno ☒ **Not for Publication** ☐ **Unrestricted**

b. USGS 7.5′ Quad: Alcalde Hills, CA **Date:** 1969 (PR1978) T 20S, R 14E; NE ¼ **of** SW ¼ **of** Section 5 M.D.**B.M.**

c. Address: Los Gatos Creek Rd., Fresno County, California

d. UTM: NAD83 ,Zone 11N; 187967 **mE /** 4013463 **mN** (Site datum; Cottonwood tree)

e. Other Locational Data: From Interstate 5, take the CA-33 S exit toward Coalinga. Head towards Coalinga on CA-33 South for approximately 10 miles and then turn right (west) onto W. Gale Ave. Continue on W. Gale Ave. for 2 miles and turn right (north) onto S. Derrick Ave. Continue for 1 mile and then turn left (west) onto Los Gatos Creek Rd/W. Tornado Ave. Continue for 5.5 miles to the Los Gatos Creek Road Bridge (Caltrans Bridge No. 42C0455). The rock art is east of the bridge on the north side of Los Gatos Creek Rd. It is approximately 80 ft. east from the east/northeast corner of the bridge.

***P3a. Description:** Two sandstone boulders with rock art. Feature 1 is a boulder with a petroglyph of a circle encompassing 4 parallel vertical grooves and a less pronounced petroglyph of a possible zoomorphic figure. Feature 2 contains several cupule clusters with one possible anthropomorphic figure. See attached Rock Art Records for more information.

***P3b. Resource Attributes:** AP5 (Petroglyphs)

***P4. Resources Present:** ☐ Building ☐ Structure ☐ Object ☒ Site ☐ District ☐ Element of District ☐ Other:

***P5a. Photograph or Drawing:**

P5b. Description of Photo: Site overview from western site boundary showing Feature 1 in center and Los Gatos Creek Road, facing east.

***P6. Date Constructed/Age and Sources:** ☒ Prehistoric ☐ Historic ☐ Both

***P7. Owner and Address:** Private

***P8. Recorded By:**
K. Asselin and A. Single
Applied EarthWorks, Inc.
1391 W. Shaw Ave., Suite C
Fresno, CA 93711

***P9. Date Recorded:** March 9, 2015

***P10. Survey Type:** ☒ Intensive ☐ Reconnaissance ☐ Other
Describe: 15 to 20 meter parallel and meandering transects.

***P11. Report Citation:** Asselin, Katie, Josh Tibbet and Mary Baloian 2015 *Archaeological Survey Report for the Bridge Preventative Maintenance Program Scour Mitigation Project (12 Locations), Fresno County, California.* Applied EarthWorks, Inc. Fresno, California. Prepared for the County of Fresno, California.

***Attachments:**
☐ NONE ☒ Location Map ☒ Sketch Map ☒ Continuation Sheet
☐ Building, Structure, and Object Record ☒ Archaeological Record ☐ District Record ☐ Linear Feature Record
☐ Milling Station Record ☒ Rock Art Record ☐ Artifact Record
☐ Photograph Record ☐ Other (list):

***A1. Dimensions: a. Length** 45 m (N-S) **x** **b. Width** 55 m (E-W)

Method of Measurement: ☐ Paced ☐ Taped ☐ Visual estimate ☒ Other: GPS

Method of Determination (check any that apply): ☐ Artifacts ☒ Features ☐ Soil ☐ Vegetation ☐ Topography ☐ Cut bank ☐ Animal burrow ☐ Excavation ☐ Property boundary ☐ Other (explain):

Reliability of Determination: ☐ High ☒ Low Explain: No subsurface testing conducted.

Limitations (check any that apply): ☐ Restricted access ☐ Paved/built over ☐ Site limits incompletely defined ☒ Disturbances ☒ Vegetation ☐ Other (explain):

A2. Depth: ☐ None ☒ Unknown
Method of determination: No subsurface testing conducted.

***A3. Human Remains:** ☐ Present ☐ Absent ☐ Possible ☒ Unknown (explain): No subsurface testing conducted.

***A4. Features** (Number, describe, indicate size, list associated cultural constituents, and show location of each on sketch map)**:**

Feature 1 (F1): A boulder with two petroglyphs situated on a level terrace adjacent to Los Gatos Creek. One motif is a circle encompassing four parallel vertical grooves. It measures 9.8 centimeters long by 8.9 centimeters wide. The second is a less pronounced animal or anthropomorphic figure that is 16.6 centimeters long by approximately 9.0 centimeters wide.

Feature 2 (F2): A sandstone boulder with a panel of petroglyphs, situated on an eroded cliff just above Los Gatos Creek. The panel is approximately 36 cm by 36 cm and contains a number of cupule clusters averaging 1-2 cm wide by 1 cm deep and a possible anthropomorphic figure with a head and outstretched arms.

***A5. Cultural Constituents (not associated with features):** No artifacts were observed.

***A6. Were Specimens Collected?** ☒ No ☐ Yes (If yes, attached Artifact Record or catalog.)

***A7. Site Condition:** ☐ Good ☐ Fair ☒ Poor ☒ Disturbances: Los Gatos Creek Road lies adjacent to the site. It appears that this area also has been previously cleared, possibility for use as a staging area for road/bridge maintenance. Feature 1 appears to have been dislodged from the cluster of rocks containing Feature 2 and rolled down hill to its current location. It has been tagged (i.e., graffiti) with white spay paint.

***A8. Nearest Water (type, distance, and direction):** Los Gatos Creek, 50 meters to the west.

***A9. Elevation:** 1081 feet amsl

A10. Environmental Setting (vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.): The site is in a rolling foothill environment. Several rodent, lizard and bird species inhabit the area, as well as larger predatory mammals. The area is overgrown with grasses, weeds, and wildflowers, as well as thick, salt cedar along the banks of the Los Gatos Creek.

A11. Historical Information (full citations in A15 below): N/A

***A12. Age:** ☒ Prehistoric ☐ Protohistoric ☐ 1542–1769 ☐ 1769–1848 ☐ 1848–1880 ☐ 1880–1914 ☐ 1914–1945 ☐ Post 1945 ☐ Undetermined Describe position in regional prehistoric chronology or factual historic dates if known:

A13. Interpretations: Small cupules measuring 3 cm in diameter by 1 cm deep arranged in clusters are typical of the area and have been used to define the Western San Joaquin Cupule Style (Foster et al. 1990). Sites containing petroglyphs in this style tend to be along streams in the eastern foothills of the Coast Range. The Coalinga Upland Style is defined by the use of dots and drill holes and may contain anthropomorphic features; however, sites with rock art depicting this style tend to be located in a mountain or upland setting away from drainages (Foster et al. 1990). The motifs visible on Feature 1 do not appear to by typical of the area based on the limited research in the vicinity. The petroglyphs on Feature 2 could be indicative of either style, but without further research it is difficult to make definitive conclusions.

A14. Remarks: Ground visibility varied greatly from as little as 5% in some areas, to 100% in other areas due to vegetation, previous disturbance, and bioturbation.

A15. References:

Foster, Daniel G., Richard C. Jenkins, and John Betts
1990 Rock Art in the Coalinga Backcountry. In *Rock Art Papers*, Vol. 7, edited by Ken Hedges, pp. 53–68. San Diego Museum of Man.

A16. Photographs:

Original media/negatives kept at: Applied EarthWorks, Inc., Fresno, CA

***A17. Form Prepared By:** Josh Tibbet and Katie Asselin **Date:** May 14, 2015

Affiliation and Address: Applied EarthWorks, Inc., 1391 W. Shaw Ave., Suite C, Fresno, CA 93711

ROCK ART RECORD

R1. Feature No. (Panel No.): 1 **of** 2

R2. Feature/Panel Location (From site datum)**:**
Found on: ☐ Cliff face ☒ Boulder ☐ Bedrock ☐ Cave/shelter surface ☐ Other:

R3. Host Rock: Sandstone

R4. Host Background: ☒ Patinated ☐ Natural ☐ Painted ☐ Glaciated ☒ Smoke blackened ☐ Other:

R5. Detailed Description of Feature/Panel: (Check any that apply) ☒ Petroglyphs ☐ Pictographs ☐ Geoglyph
(Describe feature/panel size, size of host rock, number and types of elements/motifs, method of production, etc.)

The panel contains one definitive motif consisting of circle encompassing four parallel vertical grooves. It measures approximately 9.8 cm wide by 8.9 cm high. The panel also appears to contain another petroglyph, although it is faint and not as definitive. It appears to be a figure, possibly zoomorphic, with an outline forming two rounded ears at the top, extending down to form an arm, and rounding out near the bottom before becoming undistinguishable from the natural rock. This figure is approximately 16.6 cm high by 9.0 cm wide. There may be more motifs on the boulder that cannot be distinguished.

R6. a. Feature/Panel Integrity: ☐ Good ☐ Fair ☒ Poor ☐ Explain:
b. Natural Deterioration: (Check any that apply) ☐ Water erosion ☒ Surface spalling ☐ Block fractures ☒ Lichen growth ☐ Wind erosion ☐ Sun exposure ☐ Rock fall ☐ Plant defacement ☐ Animal nesting
c. Cultural Deterioration: (Check any that apply) ☐ Bullet holes ☒ Graffiti ☐ Chalk ☐ Scratched ☐ Altered ☐ Livestock ☐ Logging ☐ Visitor use ☐ NONE ☒ Other (Explain): The boulder does not appear to be in its original location.

R7. Style(s) and Suspected Cultural Affiliation: These two motifs do not appear to be typical of the area; however, research in the vicinity is lacking. Small cupules typically 3 cm in diameter by 1 cm deep arranged in clusters are typical of the area and have been used to define the Western San Joaquin Cupule Style (Foster et al. 1990). Sites with petroglyphs of this cupule style have been found along streams in the eastern foothills of the Coast Range.

R8. Elements Superimposed? ☒ No ☐ Yes (Describe):

R9. Feature/Panel Visibility: ☐ Visible ☒ Semi-visible ☐ Hidden

R10. Associated/Nearby Cultural Materials: No artifacts were observed in association. Another boulder containing rock art, Feature 2 lies to the west.

R11. Form Prepared By: K. Asselin **Date:** 4/28/15
Affiliation and Address: Applied EarthWorks, Inc., 1391 W. Shaw Ave., Suite C, Fresno, CA 93711

State of California — The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **Trinomial**

ROCK ART RECORD

 Resource Name or #: AE-3093-01

R1. Feature No. (Panel No.): 2 **of** 2

R2. Feature/Panel Location (From site datum)**:**
Found on: ☐ Cliff face ☒ Boulder ☐ Bedrock ☐ Cave/shelter surface ☐ Other:

R3. Host Rock: Sandstone

R4. Host Background: ☐ Patinated ☒ Natural ☐ Painted ☐ Glaciated ☐ Smoke blackened ☐ Other:

R5. Detailed Description of Feature/Panel: (Check any that apply) ☒ Petroglyphs ☐ Pictographs ☐ Geoglyph
(Describe feature/panel size, size of host rock, number and types of elements/motifs, method of production, etc.)

The panel contains several abstract designs that are not very distinct due to the poor condition of the rock. However, the markings are not ubiquitous on this boulder nor do they occur on adjacent boulders to suggest that these modifications are natural. Also, the fact that the markings occurs on the side of the boulder, and not on the top, supports the conclusion that these modifications are cultural. The panel contains several clusters of cupules, approximately 1-2 cm in diameter by 1 cm deep. There is also a cupule with pronounced grooves near the bottom of the boulder depicting an anthropomorphic figure with a head and outstretched arms. The panel is approximately 36 cm wide by 36 cm high and is on eroding cliff of sandstone just above Los Gatos Creek.

R6. a. Feature/Panel Integrity: ☐ Good ☐ Fair ☒ Poor ☐ Explain: The panel is heavily weathered and the cultural modifications are faint.

b. Natural Deterioration: (Check any that apply) ☐ Water erosion ☒ Surface spalling ☐ Block fractures ☒ Lichen growth ☒ Wind erosion ☒ Sun exposure ☐ Rock fall ☐ Plant defacement ☐ Animal nesting

c. Cultural Deterioration: (Check any that apply) ☐ Bullet holes ☐ Graffiti ☐ Chalk ☐ Scratched ☐ Altered ☐ Livestock ☐ Logging ☐ Visitor use ☐ NONE ☒ Other (Explain): Spall scars on the boulder suggest it may have been affected by heat, such as a grass fire.

R7. Style(s) and Suspected Cultural Affiliation: Small cupules typically 3 cm in diameter by 1 cm deep arranged in clusters are typical of the area and have been used to define the Western San Joaquin Cupule Style (Foster et al. 1990). Sites representing this style tend to be along streams and are located along the eastern foothills of the Coast Range. The Coalinga Upland Style is defined by the use of dots and drill holes and may contain anthropomorphic features; however, sites depicting this style tend to be located in a mountain or upland setting away from drainages (Foster et al. 1990). This panel could be indicative of either style, but without a better *in situ* representation and further research, there can be no definitive conclusions.

R8. Elements Superimposed? ☒ No ☐ Yes (Describe):

R9. Feature/Panel Visibility: ☐ Visible ☒ Semi-visible ☐ Hidden

R10. Associated/Nearby Cultural Materials: No associated artifacts were observed; however, feature 1 is located just to the east.

R11. Form Prepared By: K. Asselin **Date:** 4/28/15
Affiliation and Address: Applied EarthWorks, Inc., 1391 W. Shaw Ave., Suite C, Fresno, CA 93711

Overview from the site datum, facing west. Taken 4/15/15 at 9:00am.

Detail of petroglyph on Feature 1. Taken 3/9/15 at 1:00pm.

Detail of zoomorphic figure on Feature 1. Taken 3/9/15 at 1:00pm.

Detail petroglyph motifs on Feature 1. Taken 3/9/15 at 1:00pm.

Overview of Feature 2 with petroglyph in center, facing southwest. Taken 4/15/15 at 8:30am.

Detail of cupule and anthropomorphic motifs on Feature 2. Taken 4/15/15 at 8:30am.

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

LOCATION MAP

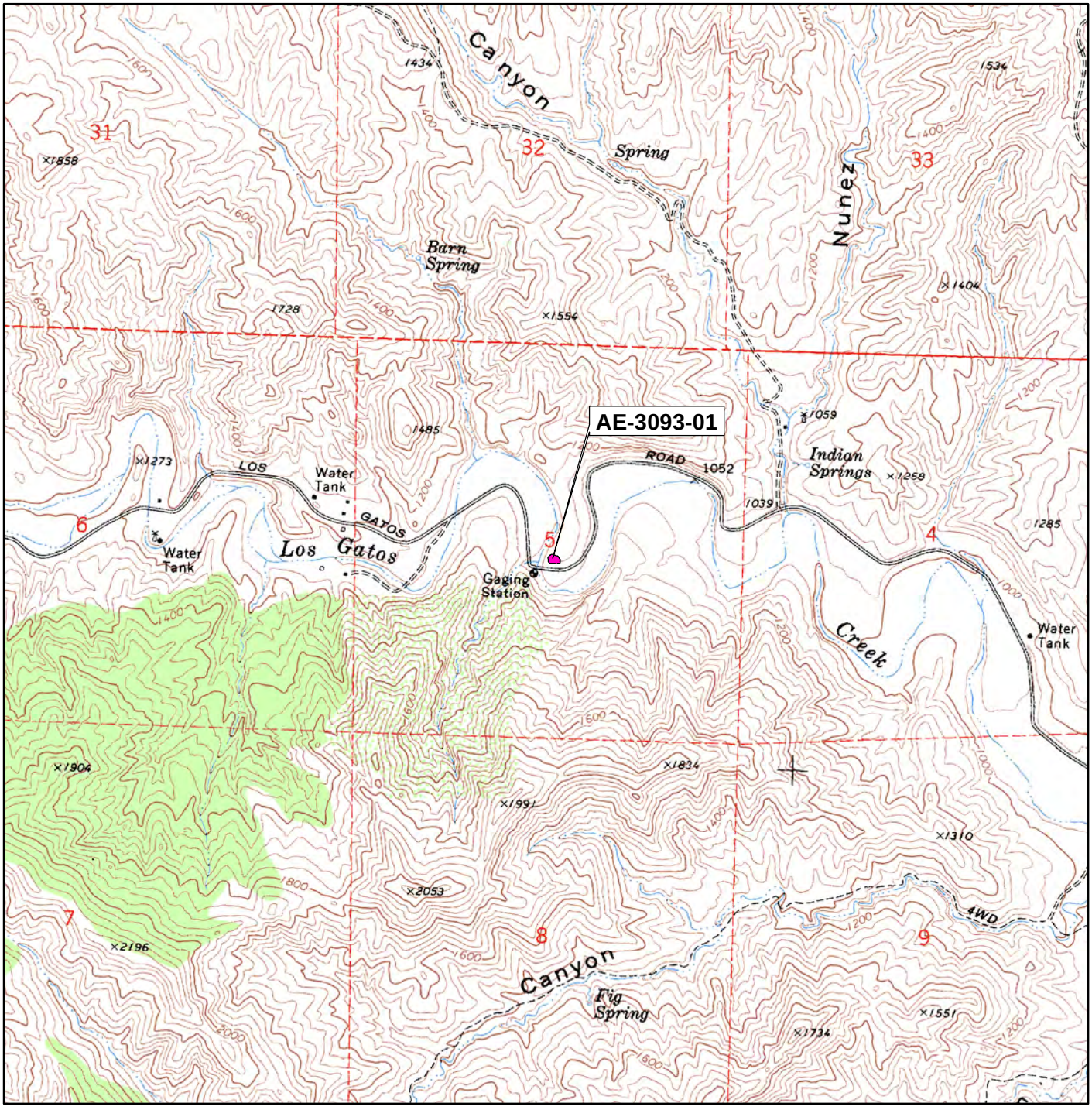
Primary #
HRI#
Trinomial

Resource Name or #: AE-3093-01

Scale: 1:24,000

Map Name: Alcalde Hills, CA, USGS 7.5' quadrangles

Date: 1969 (PR1978)



SCALE 1:24,000

1 0.5 0 1 Miles

1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

1 0.5 0 1 Kilometers

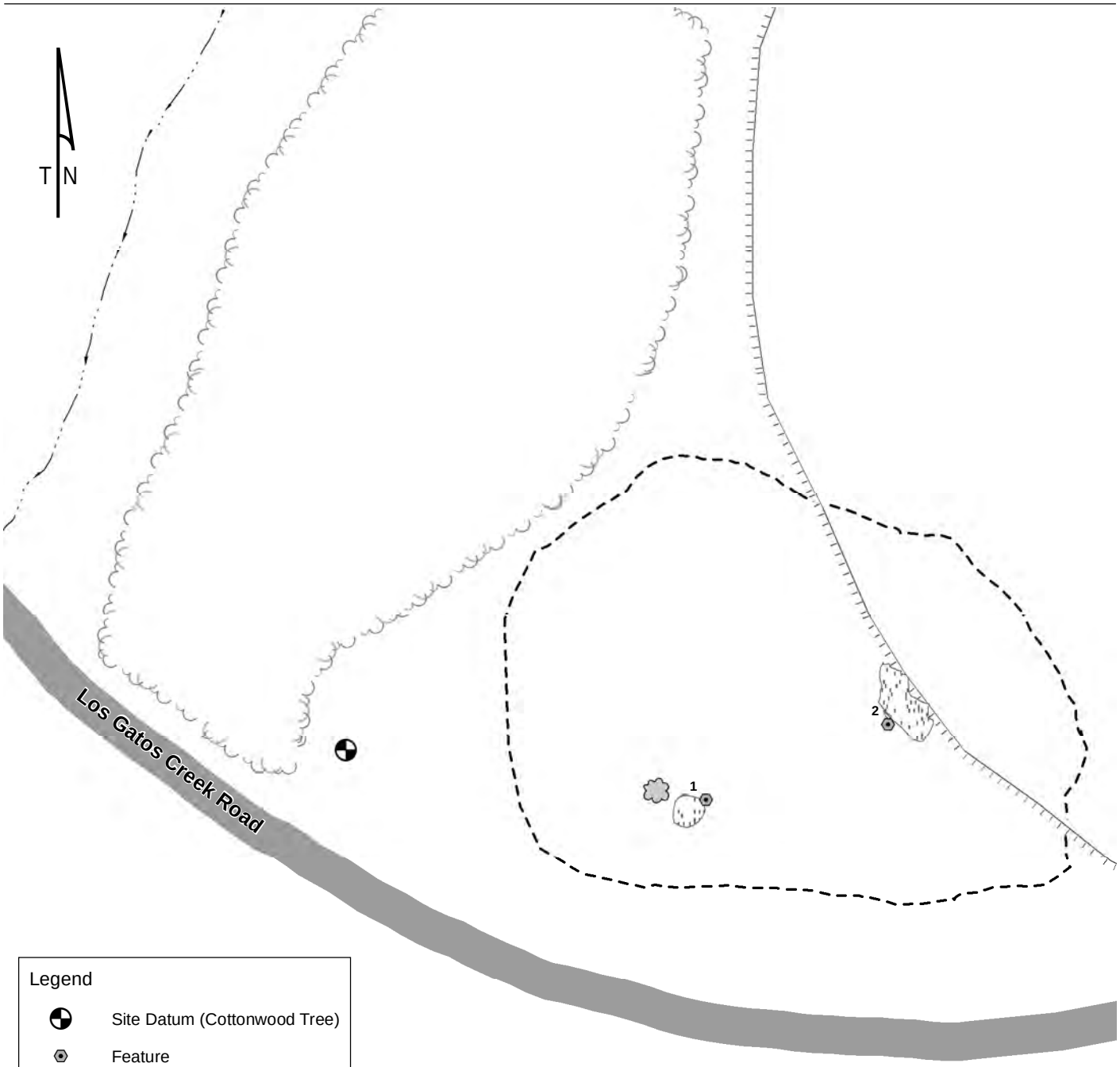
TRUE NORTH

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #
HRI#
Trinomial

Page 8 **of** 8 ***Resource Name or #:** AE-3093-01

***Drawn by:** K. Asselin ***Date of map:** 5/19/2015



Legend

- Site Datum (Cottonwood Tree)
- Feature
- Sandstone Boulder
- Thick Salt Cedar Growth
- Salt Cedar
- Road
- Los Gatos Creek
- Sandstone terrace edge
- Site Boundary

0 2 4 6 8 Meters

0 10 20 30 Feet

State of California — The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **HRI #**
PRIMARY RECORD
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 Resource Name or # AE-3093-02

P1. Other Identifier: --

*__P2. Location: a. County:__ Fresno ☒ **Not for Publication** ☐ **Unrestricted**

b. USGS 7.5′ Quad: Sherman Peak, CA **Date:** 1969 (PR 1981) T 19S, R 13E; SW ¼ **of** SW ¼ **of** Section 35 M.D.**B.M.**

c. Address: N/A

d. UTM: NAD83, Zone 11N; 180930 **mE /** 401998 **mN** (Structure; historic windmill)

e. Other Locational Data: From Interstate 5, take the CA-33 S exit toward Coalinga. Head towards Coalinga on CA-33 South for approximately 10 miles and then turn right (west) onto W. Gale Ave. Continue on W. Gale Ave. for 2 miles and turn right (north) onto S. Derrick Ave. Continue for 1 mile and then turn left (west) onto Los Gatos Creek Rd/W. Tornado Ave. Continue for 11.5 miles to Caltrans Bridge No. 42C0459 on Los Gatos Creek Road. The windmill is directly southwest of the bridge on private property approximately 70 ft. west of the western corner of the bridge on the south side of Los Gatos Creek Rd.

***P3a. Description:** A historic Fairbanks Morse windmill. The main structure is made of wood, and there is a metallic support frame with "COALINGA IRON WKS. COALINGA, CALIF." inscribed on it. An electrical box manufactured by The Trumbull Electric Manufacturing Company is on the structure and appears to have been an addition to the structure after it was first erected. The windmill is no longer in use, but is in good to excellent condition. The property upon which the windmill is located contains a modern residence which is currently occupied.

***P3b. Resource Attributes:** AH10 (Machinery)

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other:

***P5a. Photograph or Drawing:**

P5b. Description of Photo: Overview of the windmill, facing south. K. Asselin for reference, pointing north.

***P6. Date Constructed/Age and Sources:** ☐ Prehistoric ☒ Historic ☐ Both

***P7. Owner and Address:** Private

***P8. Recorded By:**
K. Asselin and J. Tibbet
Applied EarthWorks, Inc.
1391 W. Shaw Ave., Suite C
Fresno, CA 93711

***P9. Date Recorded:** March 6, 2015

***P10. Survey Type:** ☒ Intensive ☐ Reconnaissance ☐ Other
Describe: 15-20 meter parallel and meandering transects.

***P11. Report Citation:** Asselin, Katie, Josh Tibbet and Mary Clark Baloian 2015 *Archaeological Survey Report for the Bridge Preventative Maintenance Program Scour Mitigation Project (12 Locations), Fresno County, California*. Applied EarthWorks, Inc., Fresno, California. Prepared for the County of Fresno, California.

***Attachments:** ☐ NONE ☒ Location Map ☒ Sketch Map ☐ Continuation Sheet
☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record
☐ Photograph Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record
☐ Other (list):

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

LOCATION MAP

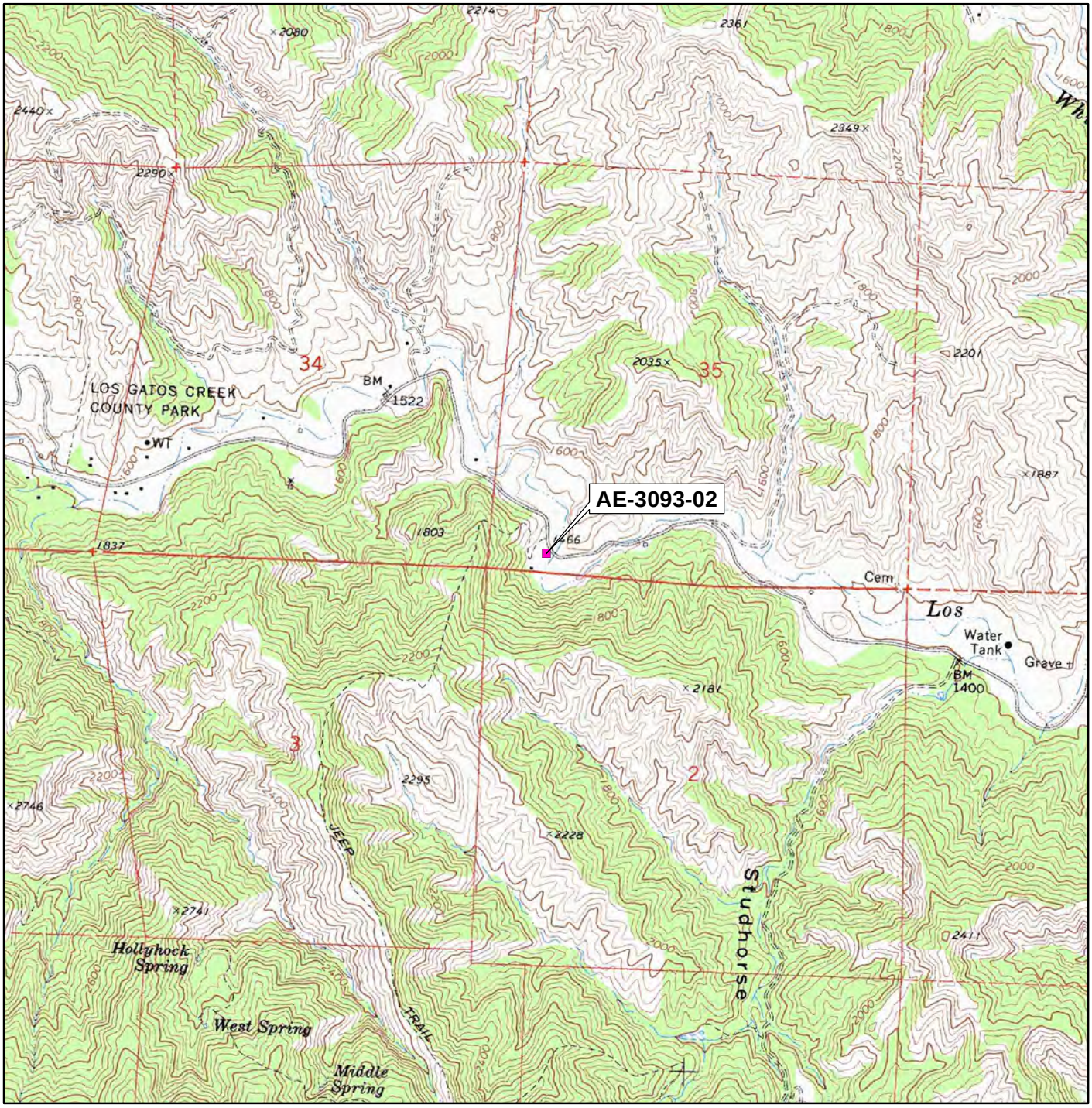
Primary #
HRI#
Trinomial

Resource Name or #: AE-3093-02

Scale: 1:24,000

Map Name: Sherman Peak, CA, USGS 7.5' quadrangles

Date: 1969 (PR1981)



SCALE 1:24,000

1 0.5 0 1 Miles

1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

1 0.5 0 1 Kilometers

TRUE NORTH

EXHIBIT 6-A PRELIMINARY ENVIRONMENTAL STUDY (PES)

Federal Project No.: BPMP-5942(240) *(Federal Program Prefix-Project No., Agreement No.)* **Final Design:** 2015 *(Expected Start Date)*

To: James Perrault *(District Local Assistance Engineer)*
Caltrans District 6 *(District)*
855 M Street, Suite 200
Fresno, CA 93721 *(Address)*
James.Perrault@dot.ca.gov *(Email Address)*

From: County of Fresno *(Local Agency)*
Erin Haagenson, Senior Staff Analyst
(559) 600-4528 *(Project Manager's Name and Telephone No.)*
2220 Tulare Street, 6th Floor
Fresno, CA 93721 *(Address)*
ehaagenson@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: See Attachment A *(Currently Adopted Plan Date)* See 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	
13/14 *(Fiscal Year)*	$ 395,000 *(Dollars)*	N/A *(Fiscal Year)*	$ N/A *(Dollars)*	14/15 *(Fiscal Year)*	$ 3,262,000 *(Dollars)*

Project Description as Shown in RTP and FSTIP: PM00009, Bridge Preventative Maintenance Program, various locations. See Caltrans Local Assistance HBP website for backup list bridges.

Detailed Project Description: *(Describe the following, as applicable: purpose and need, project location and limits, required right of way acquisition, proposed facilities, staging areas, disposal and borrow sites, construction activities, and construction access.)*
See attached Notes

(Continue description on "Notes" sheet, last page of this Exhibit, if necessary)

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 3' max	☐	☒	Temporary access road/detour
☐	☒	Capacity increasing—other (e.g., channelization)	☐	☒	Drainage/culverts	☐	☒	Utility relocation
☐	☒	Realignment	☐	☒	Flooding protection	☐	☒	Right of way acquisition (if yes, attach map with APN)
☐	☒	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:

DEC 10 2014
DIST. 06 ... NCE

☒ 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		
☐ 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)	12/19/14 *(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)	DEC 10, 2014 *(Date)*	600-4584 *(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 ☐ _____ ☐ _____

☐ 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. Chatham — *(Signature of Professionally Qualified Staff)*

1/13/2015 — *(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)*

1/13/2015 — *(Date)*

5594456447 — *(Telephone No.)*

G. William Norris III — *(Name)*

_____ — *(Signature of District Local Assistance Engineer or Designee)*

1/13/15 — *(Date)*

559 445-5417 — *(Telephone No.)*

Jim Perrault — *(Name)*

☐ HQ DEA Environmental Coordinator concurrence _____. Email concurrence attached.
(*date*)

Preliminary Environmental Investigation
Notes to Support the Conclusions of the PES Form
(May Also Include Continuation of Detailed Project Description)

Brief Explanation of How Project Complies, or Will Comply with Applicable Federal Mandate (Part A):

The County of Fresno proposes to conduct maintenance activities on twelve (12) bridges as part of the Bridge Preventive Maintenance Program (See Attachment B for location map and list). The proposed project would extend the service life of the existing structure at each location by installing new or repairing existing scour countermeasures and conducting other maintenance activities at each location (See Attachments C and D for work items, aerial photos and APE maps of each location). Vegetation and trash will be removed from the channel at each location. Portions of the channel could be excavated to a maximum depth of 3' to install new or repair existing scour countermeasures. A dead tree overhanging Location No. 3 will be removed. It is the intention of the County to use existing paths to access the channel and not remove any other trees. Temporary construction permits will be required.

1. The proposed project would not require future construction to fully utilize the design capabilities.

2. Public controversy is not anticipated due to the limited scope of the project. Traffic will be allowed to move through the locations during construction with minimal delay.

3. The proposed project is not a Type 1 project as defined in 23 CFR 772.5(h).

4. The Fresno County Noise Control Ordinance is intended to protect persons from excessive levels of noise within or near a residence, school, church, hospital or public library. The noise ordinance, as it applies to the project, includes noise measurement criteria, exterior noise standards, interior noise standards, noise source exemptions and a violation-enforcement provision.

   Per the Fresno County, Code of Ordinances, Title 8, Chapter 8.40 Noise Control, noise sources associated with construction are exempt from the requirements of the ordinance, provided such activities do not take place before six a.m. or after nine p.m. on any day except Saturday or Sunday, or before seven a.m. or after five p.m. on Saturday or Sunday.

   A residence is located adjacent to Location Nos. 7 and 10 (See Attachment D for aerial photos of the locations). Although construction activities are exempt according to the County's Noise Ordinance, a noise technical memorandum will be prepared to determine the level of noise impacts on these residences due to their proximity to the project. The proposed maintenance work is not expected to have adverse noise impacts due to the scope and duration of work at these locations.

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. The County's consultant will prepare a Phase 1 Initial Site Assessment for the project. If required, the County will include worker safety specifications in the construction contract for asbestos and lead.

10. Yes. Work will be conducted in the channel of all locations. The project could require a 1602 Streambed Alteration Agreement from DFW, Section 404 Nationwide Permit from the ACOE, a Section 401 Water Quality Certification and an NPDES Permit from the RWQCB.

11. Some of the proposed project locations are within the Fresno Sole Source Aquifer. However, the project does not involve a well or sewage disposal and would not result in a threat of aquifer contamination or a hazard to public health. The project will be processed as a CE and is therefore exempt from a project-by-project review by the EPA.
12. The proposed project is not within the State Coastal Zone.
13. Some of the locations are located within Flood Zone A according to FEMA FIRM Maps (See Attachment E).
14. The project is not within ¼ mile of a Wild and Scenic River System according the National Wild and Scenic Rivers website.
15. To be determined. The County's consultant will prepare a NESMI for the project.
16. Yes. Vegetation and trash will be cleared from the channel. A dead tree overhanging Location No. 3 will be removed. It is the intent of the County to not remove other trees. Swallow and Migratory Bird Contract Provisions would be included in the construction specifications.
17. Impacts to wetlands are not anticipated; however, an NESMI will be prepared for the project.
18. Impacts to agricultural wetlands are not anticipated.
19. Any required hydroseeding would be conducted per Caltrans requirements.
20. The surrounding land is privately owned (See Attachment F).
21. No.
22. Impacts to visual resources are not anticipated (See Attachment G).
23. The proposed project would not require relocation of a residence or business.
24. Further investigation is required; however temporary construction permits are anticipated.
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. It is anticipated that the roads will remain open during construction.
30. Access control to the State Highway System would not change.
31. Traffic will be routed through the project locations during construction activities.
32. The project would not affect available parking.
33. The project would not encroach on state or federal lands.
34. Conversion of farmland is not anticipated.
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

LSTMP032 — ADOPTION: 14-00

Project Title:FRE040501 - Bridge Preventative Maintenance Program
Project Description: PM00009, Bridge Preventative maintenance Program, various locations. See Caltrans Local Assistance HBP web site for backup list of bridges.

CALTRANS_FED_ID:5942 (200)

Sys: Local Rt: TCM: No Model #: CI:N Exempt Category: Safety - Non capacity widening or bridge reconstruction.

Cost Difference: $14,812,500 Est Total Cost: $14,812,500 Open to Traffic: JAN/01/2015

	Phase	PRIOR	14/15	15/16	16/17	17/18	18/19 BEYOND		TOTAL
Highway Bridge Program - State - Bridge - State (HBRR)	PE	$874,234	$263,819	$458,585	$97,383	$228,407	$324,905		$2,247,333
	RW								
	CON		$4,383,120	$2,890,505	$479,833	$1,527,143	$1,585,572		$10,866,173
	TOTAL	$874,234	$4,646,939	$3,349,090	$577,216	$1,755,550	$1,910,477		$13,113,506
Loc Funds - Agency	PE	$113,266	$34,181	$59,415	$12,617	$29,593	$42,095		$291,167
	RW								
	CON		$567,880	$374,495	$62,167	$197,857	$205,428		$1,407,827
	TOTAL	$113,266	$602,061	$433,910	$74,784	$227,450	$247,523		$1,698,994
	TOTAL PE	$987,500	$298,000	$518,000	$110,000	$258,000	$367,000	$0	$2,538,500
	TOTAL RW	$0	$0	$0	$0	$0	$0	$0	$0
	TOTAL CON	$0	$4,951,000	$3,265,000	$542,000	$1,725,000	$1,791,000	$0	$12,274,000
	TOTAL TOTAL	$987,500	$5,249,000	$3,783,000	$652,000	$1,983,000	$2,158,000		$14,812,500

ral Fiscal Year 2014/2015

RIED	FEATURE INTERSECTED	LOCATION	SR	SD/ FO	WORK CODE	WORK DESCRIPTION	INSPECTION DATE	DECK AREA (SF)	PE COST	CONST COST	CONTINGENCIES	CE	TOTAL CONSTRUCTION	TOTAL COST	UNIT COST ($/SF DECK)
					18	ANNUAL DEVELOPMENT & MAINTENANCE OF BPMP BRIDGE LIST			$25,000					$25,000	
OAD	LOS GATOS CREEK	11.40 MI. W/O DERRICK	90.1		2	METHACRYLATE	1/31/2014	1476	$277	$5,535	$1,384	$1,057.81	$7,957	$8,233	5.58
OAD	LOS GATOS CREEK	11.40 MI. W/O DERRICK	90.1		4	DECK AC REPLACEMENT	1/31/2014	1476	$1,094	$21,685	$5,471	$4,103.44	$31,460	$32,554	22.06
OAD	LOS GATOS CREEK	11.40 MI. W/O DERRICK	90.1		13	INSTALL SCOUR COUNTERMEASURES TO EXISTING	1/31/2014	1476	$2,775	$55,500	$13,875	$10,406.25	$79,781	$82,556	55.93
OAD	LOS GATOS CREEK	11.40 MI. W/O DERRICK	90.1		17	OTHER (CLEAR VEGETATION)	1/31/2014	1476	$50	$1,000	$250	$187.50	$1,438	$1,488	1.01
OAD	LOS GATOS CREEK	11.23 MI. W/O DERRICK	85.3		2	METHACRYLATE	1/30/2014	1542	$289	$5,783	$1,446	$1,084.31	$8,313	$8,602	5.58
OAD	LOS GATOS CREEK	11.23 MI. W/O DERRICK	85.3		3	POLYESTER CONCRETE DECK OVERLAY OR SIMILAR	1/30/2014	1542	$771	$15,420	$3,855	$2,891.25	$22,166	$22,523	14.61
OAD	LOS GATOS CREEK	11.23 MI. W/O DERRICK	85.3		4	GRIND AC APPROACHES	1/30/2014	1542	$356	$7,125	$1,781	$1,335.94	$10,242	$13,017	8.44
OAD	LOS GATOS CREEK	11.23 MI. W/O DERRICK	85.3		13	INSTALL SCOUR COUNTERMEASURES TO EXISTING	1/30/2014	1542	$2,775	$55,500	$13,875	$10,406	$79,781	$82,556	53.54
OAD	LOS GATOS CREEK	11.23 MI. W/O DERRICK	85.3		17	REMOVE OVERHANGING DEAD TREE	1/30/2014	1542	$125	$2,500	$625	$469	$3,594	$3,719	2.41
OAD	LOS GATOS CREEK	5.60 MI. W/O DERRICK	85.3		2	METHACRYLATE	2/4/2014	1516	$284	$5,685	$1,421	$1,066	$8,172	$8,456	5.58
OAD	LOS GATOS CREEK	5.60 MI. W/O DERRICK	85.3		3	POLYESTER CONCRETE DECK OVERLAY OR SIMILAR	1/30/2014	1516	$1,895	$37,900	$9,475	$7,106	$54,481	$56,376	37.19
OAD	LOS GATOS CREEK	5.60 MI. W/O DERRICK	85.3		4	DECK AC REPLACEMENT	12/2/2009	1516	$1,098	$21,955	$5,491	$4,116	$31,575	$32,673	21.55
OAD	LOS GATOS CREEK	5.60 MI. W/O DERRICK	85.3		13	INSTALL SCOUR COUNTERMEASURES TO EXISTING	12/2/2009	1516	$2,963	$59,250	$14,813	$11,106	$85,172	$88,134	58.14
OAD	LOS GATOS CREEK	5.60 MI. W/O DERRICK	85.3		17	OTHER (CLEAR VEGETATION)	12/2/2009	1516	$50	$1,000	$250	$188	$1,438	$1,488	0.98
ENUE	ARROYO PASAJERO	2.00 MI. N/O JAYNE	96.7		2	METHACRYLATE	11/20/2011	5134	$702	$14,037	$3,509	$2,632	$20,178	$20,880	4.07
ENUE	ARROYO PASAJERO	2.00 MI. N/O JAYNE	96.7		3	POLYESTER CONCRETE DECK OVERLAY OR SIMILAR	11/20/2011	5134	$4,679	$93,580	$23,395	$17,546	$134,521	$139,200	27.11
ENUE	ARROYO PASAJERO	2.00 MI. N/O JAYNE	96.7		4	DECK AC REPLACEMENT	11/20/2011	5134	$2,210	$44,197	$11,049	$8,287	$63,533	$65,743	12.81
ENUE	ARROYO PASAJERO	2.00 MI. N/O JAYNE	96.7		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	11/20/2011	5134	$225	$4,500	$1,125	$844	$6,469	$6,694	1.30
ENUE	ARROYO PASAJERO	2.00 MI. N/O JAYNE	96.7		13	INSTALL SCOUR COUNTERMEASURES TO EXISTING	11/20/2011	5134	$16,810	$336,200	$84,050	$63,038	$483,288	$500,098	97.41
ENUE	FRESNO SLOUGH	0.10 MI. W/O GRANTLAND	96.9		2	METHACRYLATE	1/29/2012	3478	$522	$10,434	$2,609	$1,956	$14,999	$15,521	4.46
ENUE	FRESNO SLOUGH	0.10 MI. W/O GRANTLAND	96.9		4	DECK AC REPLACEMENT	1/29/2012	3478	$1,391	$27,824	$6,956	$5,217	$39,997	$41,388	11.90
ENUE	FRESNO SLOUGH	0.10 MI. W/O GRANTLAND	96.9		13	INSTALL SCOUR COUNTERMEASURES TO EXISTING	1/29/2012	3478	$6,240	$124,800	$31,200	$23,400	$179,400	$185,640	53.38
ENUE	FRESNO SLOUGH	0.10 MI. W/O GRANTLAND	96.9		14	APPROACH SLAB	1/29/2012	3478	$6,240	$124,800	$31,200	$23,400	$179,400	$185,640	53.38
ENUE	FRESNO SLOUGH	0.10 MI. W/O GRANTLAND	96.9		17	OTHER (REPAVE APPROACHES, REDIRECT ROADWAY DRAINAGE)	1/29/2012	3478	$3,550	$71,000	$17,750	$13,313	$102,063	$105,613	30.37
ENUE	FRESNO SLOUGH OVERFLOW	0.20 MI. W/O GRANTLAND	96.9		2	METHACRYLATE	1/29/2012	2477	$372	$7,431	$1,858	$1,393	$10,682	$11,054	4.46
ENUE	FRESNO SLOUGH OVERFLOW	0.20 MI. W/O GRANTLAND	96.9		4	DECK AC REPLACEMENT	1/29/2012	2477	$1,276	$25,516	$6,379	$4,784	$36,679	$37,955	15.32
ENUE	FRESNO SLOUGH OVERFLOW	0.20 MI. W/O GRANTLAND	96.9		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	1/29/2012	2477	$75	$1,500	$375	$281	$2,156	$2,231	0.90
ENUE	FRESNO SLOUGH OVERFLOW	0.20 MI. W/O GRANTLAND	96.9		13	INSTALL SCOUR COUNTERMEASURES TO EXISTING	1/29/2012	2477	$4,780	$95,600	$23,900	$17,925	$137,425	$142,205	57.41
ENUE	FRESNO SLOUGH OVERFLOW	0.20 MI. W/O GRANTLAND	96.9		17	OTHER (REDIRECT ROADWAY DRAINAGE, CLEAR VEGETATION)	1/29/2012	2477	$450	$9,000	$2,250	$1,688	$12,938	$13,388	5.40
JE	FRESNO CANAL	0.3 MI N/O BELMONT	72		2	METHACRYLATE	2/8/2011	1418	$266	$5,318	$1,330	$997	$7,645	$7,911	5.58
JE	FRESNO CANAL	0.3 MI N/O BELMONT	72		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	2/8/2011	1418	$1,794	$35,880	$8,970	$6,726	$51,578	$53,372	37.64
JE	FRESNO CANAL	0.3 MI N/O BELMONT	72		13	RESTORE FAILING SCOUR PROTECTION	2/8/2011	1418	$2,890	$57,800	$14,450	$10,838	$83,088	$85,978	60.63
ENUE	FOWLER SWITCH CANAL	AT HIGHLAND AVE	72		2	METHACRYLATE	2/7/2012	1674.4	$257	$5,145	$1,286	$965	$7,396	$7,653	4.57
ENUE	FOWLER SWITCH CANAL	AT HIGHLAND AVE	72		3	POLYESTER CONCRETE DECK OVERLAY	2/7/2012	1674.4	$1,715	$34,300	$8,575	$6,431	$49,306	$51,021	30.47
ENUE	FOWLER SWITCH CANAL	AT HIGHLAND AVE	72		4	DECK AC REPLACEMENT	2/7/2012	1674.4	$1,931	$38,625	$9,656	$7,242	$55,523	$57,455	34.31
ENUE	FOWLER SWITCH CANAL	AT HIGHLAND AVE	72		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	2/7/2012	1674.4	$1,665	$33,300	$8,325	$6,244	$47,869	$49,534	29.58
ENUE	FOWLER SWITCH CANAL	AT HIGHLAND AVE	72		13	IMPROVE SCOUR PROTECTION	2/7/2012	1674.4	$3,975	$79,500	$19,875	$14,906	$114,281	$118,256	70.63
JE	TRAVERS CREEK	0.30 MI. N/O SOUTH	88.8		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	7/23/2011	895	$660	$13,200	$3,300	$2,475	$18,975	$19,635	21.94
JE	TRAVERS CREEK	0.30 MI. N/O SOUTH	88.8		13	INSTALL SCOUR COUNTERMEASURES TO EXISTING	7/23/2011	895	$2,450	$49,000	$12,250	$9,188	$70,438	$72,888	81.44
JE	TRAVERS CREEK	0.30 MI. N/O SOUTH	88.8		17	OTHER (CLEAR VEGETATION)	7/23/2011	895	$250	$5,000	$1,250	$938	$7,188	$7,438	8.31
ENUE	FOWLER SWITCH CANAL	0.33 MI N/O ADAMS	65.8		2	METHACRYLATE	2/7/2012	1560	$351	$7,020	$1,755	$1,316	$10,091	$10,442	6.69
ENUE	FOWLER SWITCH CANAL	0.33 MI N/O ADAMS	65.8		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	2/7/2012	1560	$903	$18,060	$4,515	$3,386	$25,961	$26,864	17.22
ENUE	FOWLER SWITCH CANAL	0.33 MI N/O ADAMS	65.8		13	PLACE ADDITIONAL SLOPE PROTECTION/SCOUR COUNTERMEASURES	2/7/2012	1560	$2,680	$53,600	$13,400	$10,050	$77,050	$79,730	51.11
ENUE	FOWLER SWITCH CANAL	0.33 MI N/O ADAMS	65.8		17	OTHER (CLEAR VEGETATION, CRACK SEAL APPROACHES)	2/7/2012	1560	$600	$12,000	$3,000	$2,250	$17,250	$17,850	11.44
VE	FOWLER SWITCH CANAL	0.3 MI E/O TEMPERANCE	58		2	METHACRYLATE	1/25/2012	1723	$323	$6,461	$1,615	$1,211	$9,288	$9,611	5.58
VE	FOWLER SWITCH CANAL	0.3 MI E/O TEMPERANCE	58		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	1/25/2012	1723	$1,095	$21,900	$5,475	$4,106	$31,481	$32,576	18.91
VE	FOWLER SWITCH CANAL	0.3 MI E/O TEMPERANCE	58		13	IMPROVE SCOUR PROTECTION	1/25/2012	1723	$3,500	$70,000	$17,500	$13,125	$100,625	$104,125	60.43
NUE	MUD CREEK	0.7 MI S/O SHIELDS	62		2	METHACRYLATE	2/9/2011	576	$161	$3,210	$803	$602	$4,614	$4,775	8.29
NUE	MUD CREEK	0.7 MI S/O SHIELDS	62		3	POLYESTER CONCRETE DECK OVERLAY	2/9/2011	576	$1,070	$21,400	$5,350	$4,013	$30,763	$31,833	55.26
NUE	MUD CREEK	0.7 MI S/O SHIELDS	62		4	DECK AC REPLACEMENT	2/9/2011	576	$214	$4,280	$1,070	$803	$6,153	$6,367	11.05
NUE	MUD CREEK	0.7 MI S/O SHIELDS	62		6	REPAIR OF MAJOR STRUCTURAL ELEMENTS	2/9/2011	576	$960	$19,200	$4,800	$3,600	$27,600	$28,560	49.58
NUE	MUD CREEK	0.7 MI S/O SHIELDS	62		13	PROVIDE SCOUR PROTECTION	2/9/2011	576	$1,750	$35,000	$8,750	$6,563	$50,313	$52,063	90.39
NUE	MUD CREEK	0.7 MI S/O SHIELDS	62		17	DREDGE OUT SPAN 1 AND CLEAR THE DOWNSTREAM CHANNEL TO PROVIDE ADEQUATE WATERWAY	2/9/2011	576	$1,000	$20,000	$5,000	$3,750	$28,750	$29,750	51.65
NUE	MUD CREEK	0.7 MI S/O SHIELDS	62		17	OTHER (REPAVE APPROACHES)	2/9/2011	576	$4,800	$96,000	$24,000	$18,000	$138,000	$142,800	247.92
E	COLONY MAIN CANAL	0.30 MI. N/O SHAIN	84.4		3	DECK RESURFACE	7/9/2014	933	$ 8,737				$ -	$8,737	9.36
NUE	MAIN OUTSIDE CANAL	3.00 MI. N/O NEES	95.7		14	APPROACH SLAB	12/19/2011	2403	$ 10,500				$ -	$10,500	4.37
NUE	MAIN OUTSIDE CANAL	3.00 MI. N/O NEES	95.7		2	METHACRYLATE	12/19/2011	2403	$ 918				$ -	$918	0.38
NUE	DELTA MENDOTA CANAL	1.30 MI. N/O NEES	79.9		1	JOINT SEAL	7/9/2014	3962	$ 1,913				$ -	$1,913	0.48
NUE	DELTA MENDOTA CANAL	1.30 MI. N/O NEES	79.9		3	DECK RESURFACE	7/9/2014	3962	$ 36,589				$ -	$36,589	9.23
NUE	THIRD LIFT CANAL	0.29 MI. N/O HERNDON	78.0		3	DECK RESURFACE	7/9/2014	546	$ 3,196				$ -	$3,196	5.85
NUE	DELTA MENDOTA CANAL	0.25 MI. N/O BULLARD	91.1		1	JOINT SEAL	7/9/2014	4508	$ 3,258				$ -	$3,258	0.72
JE	OUTSIDE CANAL	0.48 MI. N/E SSR 33	88.1	SD	2	METHACRYLATE	7/9/2014	2996	$ 2,394				$ -	$2,394	0.80
JE	MAIN CANAL	0.75 MI. N/E SSR 33	87.0	SD	2	METHACRYLATE	12/20/2011	2884	$ 1,103				$ -	$1,103	0.38
AD	LOS GATOS CREEK	6.86 MI. W/O DERRICK	73.2		6	CRACK SEALING	11/19/2011	1234	$ 1,543				$ -	$1,543	1.25
NUE	HERNDON CANAL	0.01 MI. N/O BARSTOW	65.6		3	DECK RESURFACE	2/5/2013	576	$ 6,196				$ -	$6,196	10.76
NUE	FRESNO SLOUGH OVERFLOW	0.20 MI. E/O ELKHORN GRADE	95.3		2	METHACRYLATE	7/7/2014	2376	$ 2,113				$ -	$2,113	0.89
	MURPHY SLOUGH	1.00 MI. N/O HARLAN	74.8		6	CRACK SEALING	1/29/2012	2733	$ 3,416				$ -	$3,416	1.25
UE	MURPHY SLOUGH	0.26 MI. W/O BRAWLEY	96.9		3	DECK RESURFACE	7/7/2014	1118	$ 4,363				$ -	$4,363	3.90

NUE	LIBERTY DITCH	0.50 MI. E/O FOWLER	83.5		3	DECK RESURFACE	7/7/2014	615	$ 3,296				$ -	$3,296	5.36
ENUE	RIVERDALE DITCH	0.02 MI. E/O WALNUT	57.0		3	DECK RESURFACE	7/7/2014	1044	$ 9,199				$ -	$9,199	8.81
ENUE	COLE SLOUGH	0.02 MI. NW/O RIVERDALE	98.4		2	METHACRYLATE	7/7/2014	4172	$ 2,851				$ -	$2,851	0.68
AD	LITTLE DRY CREEK	5.38 MI. N/O COPPER	85.2		2	METHACRYLATE	2/6/2013	3547	$ 7,235				$ -	$7,235	2.04
UE	CENTERVILLE-KINGSBURG CAN	0.07 MI. N/O SSR 180	87.1		6	MEMBER REPLACEMENT	2/6/2012	1131	$ 2,500				$ -	$2,500	2.21
S ROAD	KINGS RIVER (@EAST END OF PINE FLAT LAKE	14.00 MI. E/O MAXSON	78.0		2	METHACRYLATE	7/2/2014	6384	$ 4,144				$ -	$4,144	0.65
S ROAD	KINGS RIVER (@EAST END OF PINE FLAT LAKE	14.00 MI. E/O MAXSON	78.0		1	JOINT SEAL	7/2/2014	6384	$ 6,389				$ -	$6,389	1.00
S ROAD	KINGS RIVER (@EAST END OF PINE FLAT LAKE	14.00 MI. E/O MAXSON	78.0		14	APPROACH SLAB	7/2/2014	6384	$ 8,167				$ -	$8,167	1.28
S ROAD	FRIANT-KERN CANAL	1.50 MI. E/O BELMONT	75.2		3	DECK PATCHING	7/2/2014	2928	$ 3,604				$ -	$3,604	1.23
NUE	FOWLER SWITCH CANAL	AT CENTRAL	95.9		6	CRACK SEALING	2/7/2012	2201	$ 2,751				$ -	$2,751	1.25
ENUE	FOWLER SWITCH CANAL	W/O DEL REY	88.3		3	DECK PATCHING	7/3/2014	1409	$ 3,225				$ -	$3,225	2.29
ENUE	GOLDEN STATE BLVD	AT GOLDEN STATE BLVD	99.0		1	JOINT SEAL	7/7/2014	29204	$ 9,768				$ -	$9,768	0.33
ENUE	GOLDEN STATE BLVD	AT GOLDEN STATE BLVD	99.0		2	METHACRYLATE	7/7/2014	29204	$ 15,596				$ -	$15,596	0.53
NUE	ALTA MAIN CANAL	N/E PEDERSON	96.8		1	JOINT SEAL	7/7/2014	2946	$ 2,227				$ -	$2,227	0.76
NUE	ALTA MAIN CANAL	N/E PEDERSON	96.8		2	METHACRYLATE	7/7/2014	2946	$ 2,715				$ -	$2,715	0.92
NUE	ALTA MAIN CANAL	N/E PEDERSON	96.8		14	APPROACH SLAB	7/7/2014	2946	$ 13,667				$ -	$13,667	4.64
JE	FRIANT-KERN CANAL	.85 MI N/O AMERICAN AVE	75.2		6	SPALL REPAIR	7/3/2014	4874	$ 625				$ -	$625	0.13
JE	FRIANT-KERN CANAL	.85 MI N/O AMERICAN AVE	75.2		1	JOINT SEAL	7/3/2014	4874	$ 2,156				$ -	$2,156	0.44
ENUE	FRIANT-KERN CANAL	1.5 MI WEST OF SR 63	78.9		1	JOINT SEAL	7/3/2014	3559	$ 4,285				$ -	$4,285	1.20
NUE	FRIANT-KERN CANAL	1.5 MI WEST OF SR 63	78.9		14	APPROACH SLAB	7/3/2014	3559	$ 13,000				$ -	$13,000	3.65
ENUE	NO NAME DITCH	0.6 MI WEST OF SR 63	71.4		6	CRACK SEALING	2/7/2013	498	$ 623				$ -	$623	1.25
E ROAD	BIG CREEK	6.45 MI. N/O SSR 168	98.4		6	CRACK SEALING	6/13/2012	6713	$ 8,391				$ -	$8,391	1.25
ROAD	WATTS CREEK TRIBUTARY	0.01 MI. W/O MAXON	94.7	SD	2	METHACRYLATE	7/2/2014	856	$ 1,614				$ -	$1,614	1.89
						TOTAL			**$340,850**	**$2,031,666**	**$507,917**	**$380,937**	**$2,920,520**	**$3,263,374**	
							Round up		$150	$334	$84	$63	$480	-$1,374	
									$341,000	**$2,032,000**	**$508,000**	**$381,000**	**$2,921,000**	$3,262,000	

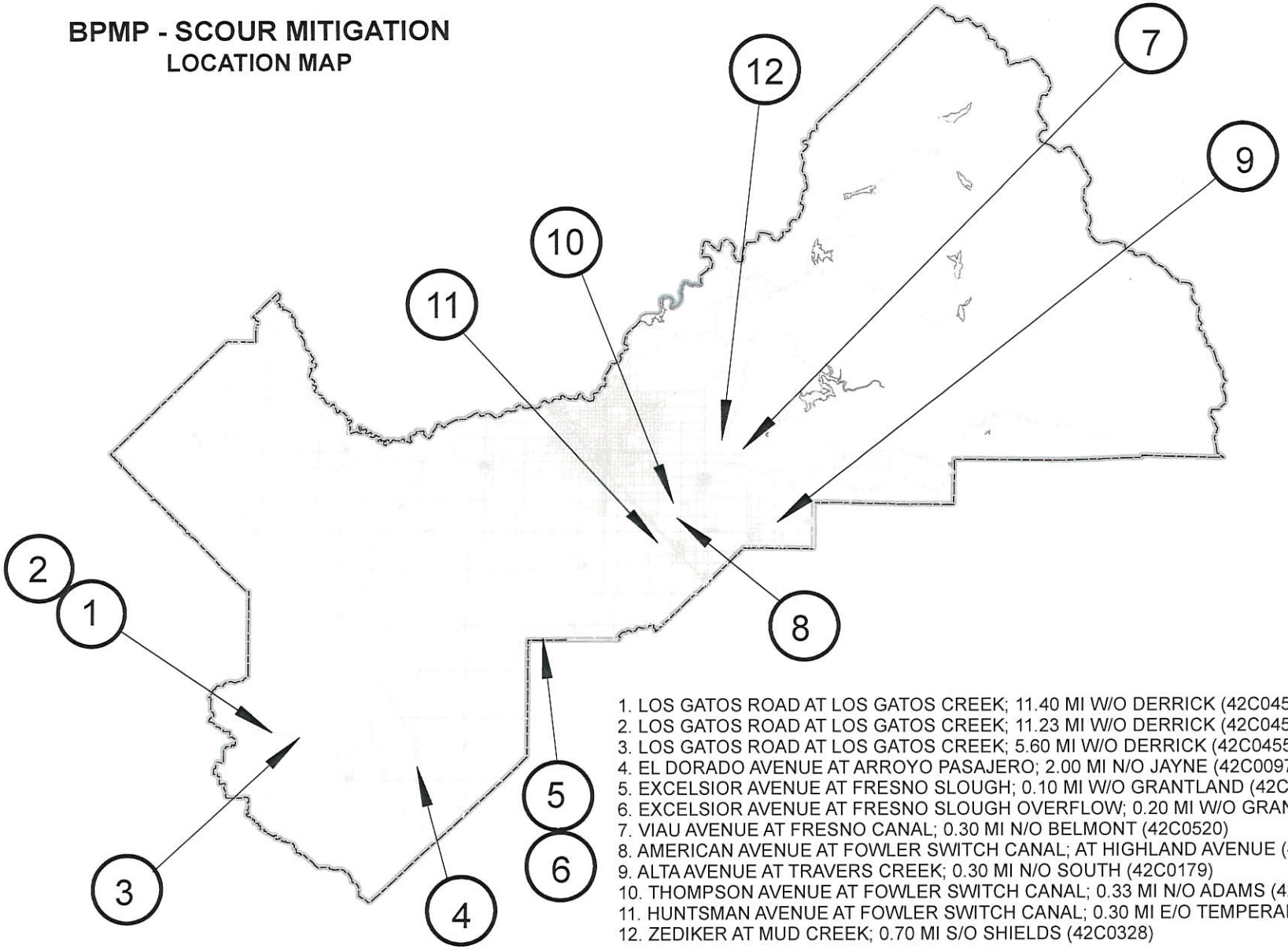
: FOR HBP REIMBURSEMENT UNDER PREVENTATIVE MAINTENANCE:

REPLACEMENT

MILAR PROTECTIVE DECK OVERLAYS
ION
OR BEARING SUPPORTS
NS, PIERS, AND END CAPS TO REDUCE THE NEED FOR BRIDGE WEIGHT LIMIT POSTING, MITIGATE FURTHER FATIGUE DAMAGE.
STRUCTURAL ELEMENTS SUCH AS TIMBER DECKING AND STRINGERS.
IECHANICAL/ELECTRICAL COMPONENTS
DETAILS OF STEEL GIRDERS
ELEMENTS WHERE THE PAINT CONDITION INDEX (PCI) IS GREATER THAN 65
DECK DRAINAGE ELEMENTS
IE RAILINGS DUE TO ENVIRONMENTAL CONDITIONS
EPAIR OF EXISTING SCOUR COUNTERMEASURES TO PROTECT THE STRUCTURAL INTEGRITY OF THE BRIDGE.
CEMENT AND NEW INSTALLATION BASED EXTENSIVE MAINTENANCE HISTORY
ACTIVE AGGREGATE MITIGATION, CORROSION MANAGEMENT SYSTEMS, FRACTURE CRITICAL ELEMENT REPLACEMENT/REHABILITATION
E MAINTENANCE PLANS (BPMP)
ORKS THAT MEET PREVENTATIVE MAINTENANCE OBJECTIVES; NEED TO CONTACT DLAE FOR ASSISTANCE.

Attachment B

BPMP - SCOUR MITIGATION
LOCATION MAP



1. LOS GATOS ROAD AT LOS GATOS CREEK; 11.40 MI W/O DERRICK (42C0459)
2. LOS GATOS ROAD AT LOS GATOS CREEK; 11.23 MI W/O DERRICK (42C0458)
3. LOS GATOS ROAD AT LOS GATOS CREEK; 5.60 MI W/O DERRICK (42C0455)
4. EL DORADO AVENUE AT ARROYO PASAJERO; 2.00 MI N/O JAYNE (42C0097)
5. EXCELSIOR AVENUE AT FRESNO SLOUGH; 0.10 MI W/O GRANTLAND (42C0104)
6. EXCELSIOR AVENUE AT FRESNO SLOUGH OVERFLOW; 0.20 MI W/O GRANTLAND (42C0367)
7. VIAU AVENUE AT FRESNO CANAL; 0.30 MI N/O BELMONT (42C0520)
8. AMERICAN AVENUE AT FOWLER SWITCH CANAL; AT HIGHLAND AVENUE (42C0178)
9. ALTA AVENUE AT TRAVERS CREEK; 0.30 MI N/O SOUTH (42C0179)
10. THOMPSON AVENUE AT FOWLER SWITCH CANAL; 0.33 MI N/O ADAMS (42C0531)
11. HUNTSMAN AVENUE AT FOWLER SWITCH CANAL; 0.30 MI E/O TEMPERANCE (42C0532)
12. ZEDIKER AT MUD CREEK; 0.70 MI S/O SHIELDS (42C0328)

THE COUNTY OF FRESNO 1856

DEPARTMENT OF PUBLIC WORKS AND PLANNING

Attachment B

Fresno County

Bridge Preventive Maintenance Program Scour Mitigation Project (12 Locations)

1. Bridge No. 42C0459 - Los Gatos Creek at Los Gatos Road; 11.40 mi w/o Derrick
2. Bridge No. 42C0458 - Los Gatos Creek at Los Gatos Road; 11.23 mi w/o Derrick
3. Bridge No. 42C0455 - Los Gatos Creek at Los Gatos Road; 5.60 mi w/o Derrick
4. Bridge No. 42C0097 - Arroyo Pasajero at El Dorado Avenue; 2.00 mi n/o Jayne
5. Bridge No. 42C0104 - Fresno Slough at Excelsior Avenue; .10 mi w/o Grantland
6. Bridge No. 42C0367 - Fresno Slough Overflow at Excelsior Avenue; .20 mi w/o Grantland
7. Bridge No. 42C0520 - Fresno Canal at Viau Avenue; .30 mi n/o Belmont
8. Bridge No. 42C0178 - Fowler Switch Canal at American Avenue; at Highland Avenue
9. Bridge No. 42C0179 - Travers Creek at Alta Avenue; .30 mi n/o South
10. Bridge No. 42C0531 - Fowler Switch Canal at Thompson Avenue; .33 mi n/o Adams
11. Bridge No. 42C0532 - Fowler Switch Canal at Huntsman Avenue; .30 mi e/o Temperance
12. Bridge No. 42C0328 - Mud Creek at Zediker Avenue; .7 mi s/o Shields

WORK CODES:

1) Joint Seal Replacement
2) Methacrylate Deck Treatment
3) Polyester Concrete Overlay
4) Deck AC Replacement/New Installation
5) Restore/Replace Existing Bearings
6) Repair/Restore/Strengthen Beams, Piers, and End Caps to Reduce Need for Load Posting or to Mitigate Further Fatigue Damage
7) Repair/Supplement/Replace Timber Structural Elements such as Timber Decking and Stringers
8) Repair/Replace Movable Bridge Components
9) Retrofit Repairs to Fatigue Prone Details of Steel Girders
10) Spot Painting of Structural Steel Elements
11) Rehab/New Installation of Deck Drainage Elements
12) Replace Deteriorated Bridge Railings due to Environmental Conditions
13) Embankment Erosion Control and Repair of Existing Scour Countermeasures to Protect the Structural Integrity of the Bridge
14) Approach Slab Rehab/Replace/New Installation Based on Extensive Maintenance History
15) ASR Mitigation, Corrosion Management Systems, Fracture Critical Element Replacement/Rehab
16) Development of BPMP
17) Other Case by Case Type of Works that Meet PM Objectives; Need to Contact DLAE for Assistance