written request for formal consultation. During this review process, the Federal agency may engage in planning efforts but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Federal agencies are required to confer with the Service, pursuant to section 7(a)(4) of the Act, when an agency action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10(a)). A request for formal conference must be in writing and should include the same information that would be provided for a request for formal consultation. Conferences can also include discussions between the Service and the Federal agency to identify and resolve potential conflicts between an action and proposed species or proposed critical habitat early in the decision-making process. The Service recommends ways to minimize or avoid adverse effects of the action. These recommendations are advisory because the jeopardy prohibition of section 7(a)(2) of the Act does not apply until the species is listed or the proposed critical habitat is designated. The conference process fulfills the need to inform Federal agencies of possible steps that an agency might take at an early stage to adjust its actions to avoid jeopardizing a proposed species.

When a proposed species or proposed critical habitat may be affected by an action, the lead Federal agency may elect to enter into formal conference with the Service even if the action is not likely to jeopardize or result in the destruction or adverse modification of proposed critical habitat. If the proposed species is listed or the proposed critical habitat is designated after completion of the conference, the Federal agency may ask the Service, in writing, to confirm the conference as a formal consultation. If the Service reviews the proposed action and finds that no significant changes in the action as planned or in the information used during the conference have occurred, the Service will confirm the conference as a formal consultation on the project and no further section 7 consultation will be necessary. Use of the formal conference process in this manner can prevent delays in the event the proposed species is listed or the proposed critical habitat is designated during project development or implementation.

Candidate species are those species presently under review by the Service for consideration for Federal listing. Candidate species should be considered in the planning process because they may become listed or proposed for listing prior to project completion. Preparation of a biological assessment, as described in section 7(c) of the Act, is not required for candidate species. If early evaluation of your project indicates that it is likely to affect a candidate species, you may wish to request technical assistance from this office.

Only listed species receive protection under the Act. However, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Wildlife's Natural Diversity Data Base. You can contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

[*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.]

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
(805) 644-1766

Project Summary

Consultation Code: 08EVEN00-2020-SLI-0457

Event Code: 08EVEN00-2020-E-00940

Project Name: Panoche Road Bridge Replacement

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: LSA Project No. QCE2001

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/36.654581489880925N121.06696697876367W

Counties: San Benito, CA

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this 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.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
California Condor *Gymnogyps californianus* Population: U.S.A. only, except where listed as an experimental population There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
Marsh Sandwort *Arenaria paludicola* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2229	Endangered

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
California Red-legged Frog *Rana draytonii* https://ecos.fws.gov/ecp/species/2891#crithab	Final

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Quien Sabe Valley (3612172) OR Ruby Canyon (3612171) OR Ortigalita Peak (3612078) OR Cherry Peak (3612162) OR Panoche Pass (3612161) OR Cerro Colorado (3612068) OR Bickmore Canyon (3612152) OR San Benito (3612151) OR Llanada (3612058))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Ammospermophilus nelsoni Nelson's antelope squirrel	AMAFB04040	None	Threatened	G2	S2S3	
Anniella pulchra northern California legless lizard	ARACC01020	None	None	G3	S3	SSC
Asio otus long-eared owl	ABNSB13010	None	None	G5	S3?	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Calicina arida San Benito harvestman	ILARAU8010	None	None	G1	S1	
Campanula exigua chaparral harebell	PDCAM020A0	None	None	G2	S2	1B.2
Charadrius montanus mountain plover	ABNNB03100	None	None	G3	S2S3	SSC
Chorizanthe biloba var. immemora Hernandez spineflower	PDPGN04025	None	None	G3T1T2	S1S2	1B.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Delphinium californicum ssp. interius Hospital Canyon larkspur	PDRAN0B0A2	None	None	G3T3	S3	1B.2
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
Dipodomys venustus elephantinus big-eared kangaroo rat	AMAFD03041	None	None	G4T2	S2	SSC
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Eriogonum heermannii var. occidentale western Heermann's buckwheat	PDPGN082P6	None	None	G5T2	S2	1B.2
Eriogonum nortonii Pinnacles buckwheat	PDPGN08470	None	None	G2	S2	1B.3
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Gambelia sila blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S1	FP
Lagophylla diabolensis Diablo Range hare-leaf	PDAST5J060	None	None	G2	S2	1B.2
Layia munzii Munz's tidy-tips	PDAST5N0B0	None	None	G2	S2	1B.2
Lepidium jaredii ssp. album Panoche pepper-grass	PDBRA1M0G2	None	None	G2G3T2T3	S2S3	1B.2
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
Madia radiata showy golden madia	PDAST650E0	None	None	G3	S3	1B.1
Malacothamnus aboriginum Indian Valley bush-mallow	PDMAL0Q020	None	None	G3	S3	1B.2
Masticophis flagellum ruddocki San Joaquin coachwhip	ARADB21021	None	None	G5T2T3	S2?	SSC
Navarretia nigelliformis ssp. radians shining navarretia	PDPLM0C0J2	None	None	G4T2	S2	1B.2
Navarretia panochensis Panoche navarretia	PDPLM0C220	None	None	G3	S3	1B.3
Nemacladus secundiflorus var. robbinsii Robbins' nemacladus	PDCAM0F0B2	None	None	G3T2	S2	1B.2
North Central Coast Drainage Sacramento Sucker/Roach River North Central Coast Drainage Sacramento Sucker/Roach River	CARA2623CA	None	None	GNR	SNR	
Onychomys torridus tularensis Tulare grasshopper mouse	AMAFF06021	None	None	G5T1T2	S1S2	SSC
Optioservus canus Pinnacles optioservus riffle beetle	IICOL5E020	None	None	G1	S1	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Rana boylii foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Streptanthus insignis ssp. lyonii Arburua Ranch jewelflower	PDBRA2G0Q1	None	None	G3G4T2	S2	1B.2
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	

Record Count: 43

CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

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

Search Criteria

Found in Quads 3612172, 3612171, 3612078, 3612162, 3612161, 3612068, 3612152 3612151 and 3612058;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Acanthomintha lanceolata	Santa Clara thorn-mint	Lamiaceae	annual herb	Mar-Jun	4.2	S4	G4
Acanthomintha obovata ssp. obovata	San Benito thorn-mint	Lamiaceae	annual herb	Apr-Jul	4.2	S3S4	G4T3T4
Allium howellii var. howellii	Howell's onion	Alliaceae	perennial bulbiferous herb	Mar-Apr	4.3	S3	G3G4T3
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	Mar-Jun	4.2	S3S4	G5? T3T4
Astragalus macrodon	Salinas milk-vetch	Fabaceae	perennial herb	Apr-Jul	4.3	S4	G4
Benitoa occidentalis	western lessingia	Asteraceae	annual herb	May-Nov	4.3	S3S4	G3G4
Calystegia collina ssp. venusta	South Coast Range morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jun	4.3	S4	G4T4
Camissonia benitensis	San Benito evening-primrose	Onagraceae	annual herb	Apr-Jun	1B.1	S2	G2
Campanula exigua	chaparral harebell	Campanulaceae	annual herb	May-Jun	1B.2	S2	G2
Chorizanthe biloba var. immemora	Hernandez spineflower	Polygonaceae	annual herb	May-Aug(Sep)	1B.2	S1S2	G3T1T2
Chorizanthe douglasii	Douglas' spineflower	Polygonaceae	annual herb	Apr-Jul	4.3	S4	G4
Clarkia breweri	Brewer's clarkia	Onagraceae	annual herb	Apr-Jun	4.2	S4	G4
Clarkia lewisii	Lewis' clarkia	Onagraceae	annual herb	May-Jul	4.3	S4	G4
Cryptantha rattanii	Rattan's cryptantha	Boraginaceae	annual herb	Apr-Jul	4.3	S4	G4
Delphinium californicum ssp. interius	Hospital Canyon larkspur	Ranunculaceae	perennial herb	Apr-Jun	1B.2	S3	G3T3
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Eriogonum elegans	elegant wild buckwheat	Polygonaceae	annual herb	May-Nov	4.3	S4S5	G4G5
Eriogonum heermannii var. occidentale	western Heermann's buckwheat	Polygonaceae	perennial deciduous shrub	Jul-Oct	1B.2	S2	G5T2
Eriogonum nortonii	Pinnacles buckwheat	Polygonaceae	annual herb	(Apr)May-Aug(Sep)	1B.3	S2	G2
Lagophylla diabolensis	Diablo Range hare-leaf	Asteraceae	annual herb	Apr-Sep	1B.2	S2	G2
Madia radiata	showy golden madia	Asteraceae	annual herb	Mar-May	1B.1	S3	G3
Malacothamnus aboriginum	Indian Valley bush-mallow	Malvaceae	perennial deciduous shrub	Apr-Oct	1B.2	S3	G3
Microseris paludosa	marsh microseris	Asteraceae	perennial herb	Apr-Jun(Jul)	1B.2	S2	G2
Navarretia nigelliformis ssp. nigelliformis	adobe navarretia	Polemoniaceae	annual herb	Apr-Jun	4.2	S3	G4T3
	shining navarretia	Polemoniaceae	annual herb	(Mar)Apr-Jul	1B.2	S2	G4T2

Navarretia nigelliformis ssp. radians							
Nemacladus secundiflorus var. robbinsii	Robbins' nemacladus	Campanulaceae	annual herb	Apr-Jun	1B.2	S2	G3T2
Plagiobothrys uncinatus	hooked popcornflower	Boraginaceae	annual herb	Apr-May	1B.2	S2	G2
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
Streptanthus insignis ssp. lyonii	Arburua Ranch jewelflower	Brassicaceae	annual herb	Mar-May	1B.2	S2	G3G4T2

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 01 June 2020].

From: NMFSWCRCA Specieslist - NOAA Service Account
To: Anna Van Zuuk
Subject: Re: Caltrans District 5; Panoche Road Bridge Replacement at Tres Pinos Creek
Date: Monday, June 1, 2020 6:20:05 PM

Receipt of this message confirms that NMFS has received your email to nmfswcrca.specieslist@noaa.gov. If you are a federal agency (or representative) and have followed the steps outlined on the California Species List Tools web page (http://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.html), you have generated an official Endangered Species Act species list.

Messages sent to this email address are not responded to directly. For project specific questions, please contact your local NMFS office.

Northern California/Klamath (Arcata) 707-822-7201

North-Central Coast (Santa Rosa) 707-387-0737

Southern California (Long Beach) 562-980-4000

California Central Valley (Sacramento) 916-930-3600

From: Anna Van Zuuk
To: "nmfswcrca.specieslist@noaa.gov"
Subject: Caltrans District 5; Panoche Road Bridge Replacement at Tres Pinos Creek
Date: Monday, June 1, 2020 6:19:00 PM
Attachments: image001.png

Federal agency name and address:
California Department of Transportation – District 5
50 Higuera Street
San Luis Obispo, CA 93401-5415
Info-d5@dt.ca.gov
(805) 549-3111

Non-federal agency (Project Proponent):
Deems Katada
San Benito County Department of Public Works
2301 Technology Parkway
Hollister, CA 95023
DKatada@cosb.us
(831) 636-4170

Point-of-contact:
Anna Van Zuuk, Biologist/Botanist
Anna.VanZuuk@lsa.net
(916) 844-2983

Quad Name **Quien Sabe Valley**
Quad Number **36121-G2**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) - **X**
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office
562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Ruby Canyon**
Quad Number **36121-G1**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) - **X**
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -

Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -

Olive Ridley Sea Turtle (T/E) -

Leatherback Sea Turtle (E) -

North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -

Fin Whale (E) -

Humpback Whale (E) -

Southern Resident Killer Whale (E) -

North Pacific Right Whale (E) -

Sei Whale (E) -

Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -

Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -

Chinook Salmon EFH -

Groundfish EFH -

Coastal Pelagics EFH -

Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -

MMPA Pinnipeds -

Quad Name **Ortigalita Peak**

Quad Number **36120-G8**

ESA Anadromous Fish

SONCC Coho ESU (T) -

CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) - X
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - X
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -

North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Cherry Peak**
Quad Number **36121-F2**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) - **X**
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat - X
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office
562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Panoche Pass**
Quad Number **36121-F1**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) - **X**
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -

Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -

Olive Ridley Sea Turtle (T/E) -

Leatherback Sea Turtle (E) -

North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -

Fin Whale (E) -

Humpback Whale (E) -

Southern Resident Killer Whale (E) -

North Pacific Right Whale (E) -

Sei Whale (E) -

Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -

Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -

Chinook Salmon EFH -

Groundfish EFH -

Coastal Pelagics EFH -

Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -

MMPA Pinnipeds -

Quad Name **Cerro Colorado**

Quad Number **36120-F8**

ESA Anadromous Fish

SONCC Coho ESU (T) -

CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) - X
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - X
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -

North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Bickmore Canyon**
Quad Number **36121-E2**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) - **X**
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat - X
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office
562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **San Benito**
Quad Number **36121-E1**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) - **X**
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat - **X**
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -

Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -

Olive Ridley Sea Turtle (T/E) -

Leatherback Sea Turtle (E) -

North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -

Fin Whale (E) -

Humpback Whale (E) -

Southern Resident Killer Whale (E) -

North Pacific Right Whale (E) -

Sei Whale (E) -

Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -

Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -

Chinook Salmon EFH -

Groundfish EFH -

Coastal Pelagics EFH -

Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -

MMPA Pinnipeds -

Quad Name **Llanada**

Quad Number **36120-E8**

ESA Anadromous Fish

SONCC Coho ESU (T) -

CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) - X
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - X
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -

North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

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Appendix C Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Panoche Road Bridge City/County: San Benito Sampling Date: 7/6/2011
Applicant/Owner: San Benito County State: CA Sampling Point: 1
Investigator(s): Mike Trueblood Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ 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:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	50%	Yes	FACW
2. Salix exigua	20%	Yes	OBL
3.			
4.			
Total Cover:	100%		
Sapling/Shrub Stratum			
1. Baccharis salicifolia	10%	Yes	FACW
2.			
3.			
4.			
5.			
Total Cover:	10%		
Herb Stratum			
1. Polypogon monspeliensis	10%	No	FACW
2. Cyperus eragrostis	5%	No	FACW
3. Juncus effusus	60%	Yes	OBL
4. Ludwigia peploides	10%	No	OBL
5.			
6.			
7.			
8.			
Total Cover:	85%		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9"	—	—	—					cobble rock / coarse gravel

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

cobble/gravel / coarse sand riverbottom no soil color available.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 6"

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Panoche Road Bridge City/County: San Benito Sampling Date: 7/6/2011
Applicant/Owner: San Benito County State: CA Sampling Point: 1a
Investigator(s): Mike Trueblood Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ 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:
upland data point

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Bucharis pilularis	20%	Yes	UPL
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Plantago lanceolata	5%	No	FACU
2. Hulocarpa virgata	10%	No	UPL
3. Bromus hordeaceus	30%	Yes	FACU
4. Brassica nigra	10%	No	UPL
5. Avena fatua	20%	Yes	UPL
6.			
7.			
8.			
Total Cover: 75%			
Woody Vine Stratum			
1.			
2.			
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: 0 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: 1a

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12"	10YR 3/3	100%	—	—	—			cobbly sandy loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks: Roadside fill dirt.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ____ No ✓ Depth (inches): >12"

Saturation Present? (Includes capillary fringe) Yes ____ No ✓ Depth (inches): >12"

Wetland Hydrology Present? Yes ____ No ✓

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Panoche Road Bridge City/County: San Benito Sampling Date: 7/6/2011
Applicant/Owner: San Benito County State: CA Sampling Point: 3
Investigator(s): Mike Trueblood Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ 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 _____
Hydric Soil Present? Yes ✓ No _____
Wetland Hydrology Present? Yes ✓ No _____
Is the Sampled Area within a Wetland? Yes ✓ No _____

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Baccharis salicifolia	30%	Yes	FACW
2.			
3.			
4.			
5.			
Total Cover: 30%			
Herb Stratum			
1. Artemisia douglasii	15%	Yes	FACW
2. Salsola vermiculata	5%	No	FAC
3. Polypogon monspeliensis	10%	Yes	FACW
4.			
5.			
6.			
7.			
8.			
Total Cover: 30%			
Woody Vine Stratum			
1.			
2.			
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: 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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 3

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

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

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks: reduction of soil Chroma compared to adjacent upland data point.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ____ No ✓ Depth (inches): 7 12"

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): 7 12"

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Panoche Road Bridge City/County: San Benito Sampling Date: 7/6/2011
Applicant/Owner: San Benito County State: CA Sampling Point: 3a
Investigator(s): Mike Trueblood Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ 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: upland datapoint

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Avena fatua	60%	Yes	UPL
2. Bromus diandrus	30%	Yes	UPL
3. Carduus pycnocephalus	10%	No	Facu
4. Hordeum murinum	10%	No	UPL
5.			
6.			
7.			
8.			
Total Cover: 110%			
Woody Vine Stratum			
1.			
2.			
Total Cover:			

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: 3a

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
0-13"	10YR3/3	100%						Sandy loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ____ No ✓ Depth (inches): 7 13"

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): 7 13"

Wetland Hydrology Present? Yes ____ No ✓

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Panoche Road Bridge City/County: San Benito Sampling Date: 7/6/2011
Applicant/Owner: San Benito County State: CA Sampling Point: 4
Investigator(s): Mike Trueblood Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ 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 _____
Hydric Soil Present? Yes ✓ No _____
Wetland Hydrology Present? Yes ✓ No _____
Is the Sampled Area within a Wetland? Yes ✓ No _____

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	60%	Yes	FACW
2.			
3.			
4.			
Total Cover: 60%			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Ludwigia peploides	20%	Yes	OBL
2. Artemesia douglasii	10%	No	FACW
3. Juncus effusus	30%	Yes	OBL
4.			
5.			
6.			
7.			
8.			
Total Cover: 60%			
Woody Vine Stratum			
1.			
2.			
Total Cover:			

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 4

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

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ___

Depth (Inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

Soil pit not dug - water too deep.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (Inchas): 18"

Water Table Present? Yas ✓ No ___ Depth (inches): Surface

Saturation Present? (Includes capillary fringe) Yes ✓ No ___ Depth (inches): Surface

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Panoche Road Bridge City/County: San Benito Sampling Date: 7/6/2011
Applicant/Owner: San Benito County State: CA Sampling Point: 4a
Investigator(s): Mike Trueblood Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: 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: Upland datapoint

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Cynodon dactylon	50%	Yes	FAC
2. Plantago lanceolata	5%	No	FACU
3. Helocarpa virgata	20%	Yes	UPL
4. Bromus hordeaceus	20%	Yes	FACU
5. Brassica nigra	5%	No	UPL
6. Avena Sativa	5%	No	UPL
7.			
8.			
Total Cover:	105%		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 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.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: 4a

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"	7.5 YR 3/3	100%						sandy loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ____ No ✓ Depth (inches): 76"

Saturation Present? (Includes capillary fringe) Yes ____ No ✓ Depth (inches): 76"

Wetland Hydrology Present? Yes ____ No ✓

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Panoche Road Bridge City/County: San Benito Sampling Date: 7/6/2011
Applicant/Owner: San Benito County State: CA Sampling Point: 5
Investigator(s): Mike Trueblood Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ 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 _____
Hydric Soil Present? Yes ✓ No _____
Wetland Hydrology Present? Yes ✓ No _____
Is the Sampled Area within a Wetland? Yes ✓ No _____

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Juncus xiphioides	30%	Yes	OBL
2. Lythrum hyssopifolium	30%	Yes	FACW
3. Polypogon monspeliensis	5%	No	FACW
4. Rumex crispus	2%	No	FACW
5. Cenium maculatum	10%	No	FACW
6. Juncus bufonius	10%	No	FACW
7. mimulus guttatus	5%	No	OBL
8. Polygonum sp.	10%	No	OBL
Total Cover:	102%		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 2/1	95%	7.5YR 3/4	5%	C	M		Sandy loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Panoche Road Bridge City/County: San Benito Sampling Date: 7/6/2011
Applicant/Owner: San Benito County State: CA Sampling Point: 5a
Investigator(s): Mike Trueblood Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: 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: Upland Riparian

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus wislizeni	30%	Yes	UPL
2. Salix lasiolepis	30%	Yes	FACW
3.			
4.			
Total Cover:	60%		
Sapling/Shrub Stratum			
1. Berberis nevinii	30%	Yes	FACW
2.			
3.			
4.			
5.			
Total Cover:	30%		
Herb Stratum			
1. Urtica dioica	10%	Yes	FACW
2. Conium maculatum	10%	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	20%		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

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

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No

Remarks:

SOIL

Sampling Point: 5a

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"	10YR 2/2	100%						dark sandy loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ___ No ✓ Depth (inches): 7-14"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): 7-14"

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: PANOCHE ROAD BRIDGE City/County: SAN BENITO Sampling Date: 04/16/2020

Applicant/Owner: SAN BENITO COUNTY State: CA Sampling Point: 6

Investigator(s): A. VAN ZUUK Section, Township, Range: _____

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

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ 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:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. SALIX LASIOLEPIS	70	Y	FACW
2.			
3.			
4.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. ROSA CALIFORNICA	20	Y	FAC
2. BACCHARIS SALICIFOLIA	5	N	FAC
3. RIBES CALIFORNICUM	3	N	UPL
4.			
5.			
	28	= Total Cover	
Herb Stratum (Plot size: _____)			
1. PLANTAGO MAJOR	2	N	FAC
2. JUNCUS BALTICUS	35	Y	FACW
3. EPILOBIUM CILIATUM	20	Y	FACW
4. CYNODON DACTYLON	7	N	FACU
5. JUNCUS XIPHIOIDES	15	Y	OBL
6. RUMEX CRISPUS	5	N	FAC
7. NASTURTIUM OFFICINALE	10	N	OBL
8.			
	94	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= 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: 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:

SOIL

Sampling Point: 6

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"	10YR 3/2	80	7.5YR 4/6	20	C	M	SANDY LOAM	MEDIUM COBBLES
6-10"	WATER	100						

[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: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

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): SURFACE

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: PANOCHE ROAD BRIDGE City/County: SAN BENITO Sampling Date: 04/16/2020

Applicant/Owner: SAN BENITO COUNTY State: CA Sampling Point: 6A

Investigator(s): A. VAN ZUUK Section, Township, Range: _____

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

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ 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:
PAIRED UPLAND DATAPOINT.

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: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. BROMUS DIANDRUS	30	Y	UPL
2. BROMUS HORDEACEUS	40	Y	FACU
3. GERANIUM DISSECTUM	20	Y	UPL
4. ERODIUM BOTRYS	9	N	FACU
5. POA BULBOSA	3	N	FACU
6. LUPINUS MICROCARPUS VAR. MICROCARPUS	4	N	UPL
7. AMSINCKIA INTERMEDIA	2	N	UPL
8. HORDEUM MURINUM	7	N	FACU
	115 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (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:

SOIL

Sampling Point: 6A

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-13"	10YR 3/2	100	—	—	—	—	SANDY LOAM	SMALL COBBLES

[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: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

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): >13"

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): >13"

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

Appendix D Site Assessment for CTS and CRLF

SITE ASSESSMENT FOR CALIFORNIA RED-LEGGED FROG AND CALIFORNIA TIGER SALAMANDER

PANOCHE ROAD BRIDGE (NO. 43C-0070)

REPLACEMENT AT TRES PINOS CREEK

SAN BENITO COUNTY, CALIFORNIA

05-SBT-0-CR

FEDERAL PROJECT NO. BRLS-5943 (056)

August 2011

SITE ASSESSMENT FOR CALIFORNIA RED-LEGGED FROG AND CALIFORNIA TIGER SALAMANDER

PANOCHE ROAD BRIDGE (NO. 43C-0070)

REPLACEMENT AT TRES PINOS CREEK

SAN BENITO COUNTY, CALIFORNIA

05-SBT-0-CR

FEDERAL PROJECT NO. BRLS-5943 (056)

Prepared for:
San Benito County Department of Public Works
3220 Southside Road
Hollister, California 95023

For Submittal to:
U.S. Fish and Wildlife Service
2493 Portola Road, Suite B
Ventura, California 93003

California Department of Fish and Game
Central Region
3196 Higuera Street, Suite A
San Luis Obispo, California 93401

Caltrans

August 2011

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APPENDICES

1.0 INTRODUCTION

1.1 PURPOSE OF ASSESSMENT

This report presents an assessment of the status of the California red-legged frog (*Rana aurora draytonii*), the California tiger salamander (*Ambystoma californiense*), and potential habitat for each species on the Panoche Road Bridge Replacement Project (hereafter, project site) and vicinity. This assessment was prepared by Laura Belt and Mike Trueblood, Biologists with LSA Associates, Inc. (LSA) on behalf of San Benito County Department of Public Works.

This assessment follows the protocols outlined in the United States Fish and Wildlife Service (USFWS) Revised Guidance on Site Assessment and Field Surveys for California Red-legged Frogs (August 2005) and the USFWS Interim Guidance on Conducting Site Assessments and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander (October 2003). Accordingly, for California red-legged frog, this assessment documents the records and describes the habitats occurring on the project site and within 1 mile; for California tiger salamander, this assessment describes the habitats within 1.24 miles of the site and documents the records within 3.1 miles of the project site. The assessment also evaluates the potential for each species to occur on the project site.

1.2 ASSESSMENT AREA

The project site is located in central San Benito County within the Panoche Pass 7.5-minute quadrangle, at the eastern base of the Diablo mountain range, and approximately 25 miles southeast of the City of Hollister. Panoche Road crosses over Tres Pinos Creek (No. 43C-0027) approximately 15 miles southeast of the State Highway 25 (Figures 1 and 2) and will be replaced with a new bridge (No. 43C-0070). Panoche Road generally runs east to west and consists of a graded two-lane asphalt roadway. The existing bridge crossing is a narrow single-lane concrete bridge over Tres Pinos Creek.

The project site lies in a largely undeveloped area among rolling hills within the Tres Pinos Creek watershed. Aquatic features in the general vicinity are composed of small ephemeral drainages as well as several stock ponds. Many of the ephemeral drainages are tributary to Tres Pinos Creek. The dominant plant communities on the project site are willow riparian forest, pasture, and ruderal grassland. Primary land uses in the vicinity are rural residences and pasture.

The project site comprises approximately 3.73 acres and is at an elevation of approximately 1,800 feet. The majority of the land in the area is privately owned and appears to be similar to the project site in use and vegetative characteristics.

FIGURE 1

LEGEND

☆ Project Location

N

0 2.5 5

MILES

SOURCE: ESRI Imagery (4/2008)

I:\QCE1005A\GIS\ba_fig1-reg_loc.mxd (4/25/12)

Panoche Road Bridge (43C-0070) Replacement
at Tres Pinos Creek
05-SBt-0-CR
Federal Project No. BRLS-5943 (056)

Regional Location

FIGURE 2

Caltrans

LEGEND

☆ Project Location

N

0 1000 2000

FEET

SOURCE: USGS Topo (Panoche Pass 7.5-Minute Quadrangle)

I:\QCE1005A\GIS\ba_fig2-prj_vic_topo.mxd (4/25/12)

Panoche Road Bridge (43C-0070) Replacement
at Tres Pinos Creek
05-SBt-0-CR
Federal Project No. BRLS-5943 (056)
Project Vicinity on Topographic Base

1.3 PROJECT DESCRIPTION

The Panoche Road Bridge Replacement Project (project) will include replacement of the existing single-lane bridge with a bridge consisting of two 12 foot travel lanes with 4 foot shoulders on both sides. The roadway on both sides of the bridge is two lanes. The project would also include up to 400 feet of approach work on either side of the bridge. The current bridge is 86.94 feet long and 15.75 feet wide. The proposed structure would be approximately 132 feet long with a total bridge deck width of approximately 34 feet on a shifted alignment approximately 50 feet downstream of the existing bridge.

2.0 ASSESSMENT

2.1 REGIONAL STATUS

2.1.1 California Red-Legged Frog

The California red-legged frog historically ranged throughout much of the northern Central Valley and the coast range from San Francisco to northern Baja California, Mexico. The California red-legged frog is now absent from 90 percent of its historical range, but is still locally abundant in portions of the San Francisco Bay and the central coast. San Benito County is located within the current range of the California red-legged frog.

The project site is located within California red-legged frog designated critical habitat Unit SNB-2.

2.1.2 California Tiger Salamander

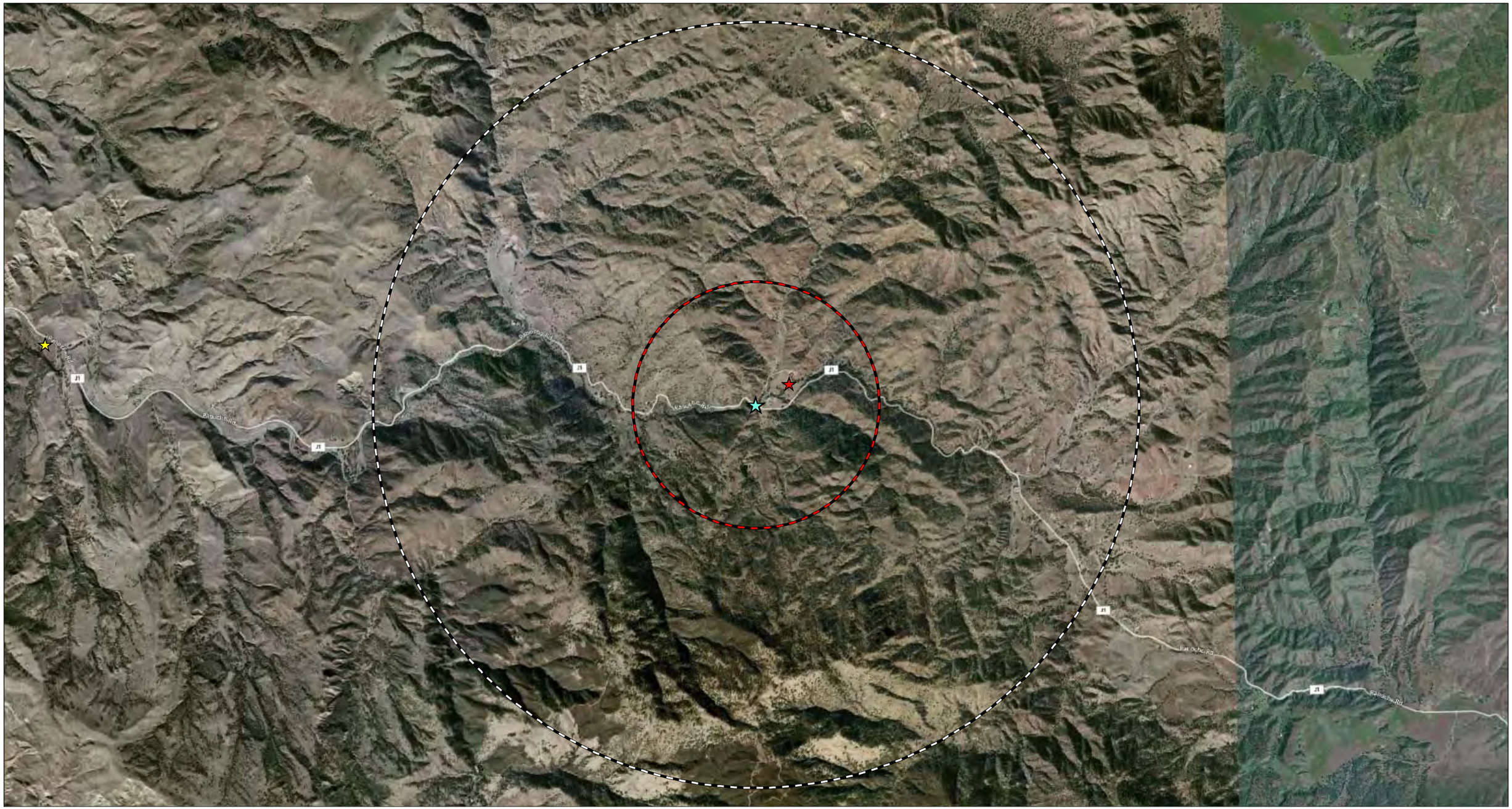
The California tiger salamander ranges through low grasslands and low foothill regions of Central and Northern California. The species occurs from Sonoma, Colusa, and Yolo Counties south through the Central Valley to Tulare County, and through the Coast Range into Santa Barbara County. An isolated population also occurs in Butte County. San Benito County is located within the current range of the California tiger salamander.

The project site is not located within designated critical habitat for California tiger salamander. The nearest critical habitat is Unit eb-16, which is located approximately 10 miles south of the project site along State Highway 25.

2.2 DOCUMENTED OCCURRENCES

2.2.1 California Red-Legged Frog

LSA searched for records of California red-legged frog in the project vicinity by querying the California Natural Diversity Data Base (CNDDB 2011) referencing the Panoche Pass and surrounding 8 quadrangles. The nearest record of California red-legged frog is 0.15 mile upstream of the project site on Tres Pinos Creek (Figure 3). The habitat consists of the creek limits and an adjacent roadside pond with open riparian shoreline. Although there are no other CNDDB records in this area, this species is well-documented in the Tres Pinos Creek watershed. Figure 3 shows records for California red-legged frog in the vicinity of the project site.



Caltrans

LEGEND

Project Location

CRLF 1-Mile Radius

CTS 3.1-Mile Radius

CNDDB Records (May 2011)

Ambystoma californiense

Rana draytonii

N

0 2000 4000

FEET

SOURCE: ESRI Imagery (2009)

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FIGURE 3

Panoche Road Bridge (43C-0070) Replacement
at Tres Pinos Creek
05-SBt-0-CR
Federal Project No. BRLS-5943 (056)

CRLF and CTS CNDDB Records
in the Vicinity of the Project Site

2.2.2 California Tiger Salamander

LSA searched for records of California tiger salamander in the project vicinity by querying the California Natural Diversity Data Base (CNDDB 2011) referencing the Panoche Pass and surrounding 8 quadrangles. There are no records of California tiger salamander within 3.1 miles of the project site. The nearest record, dated 2000, is approximately 7.6 miles west of the project site. This record is of an individual California tiger salamander observed along Panoche Road in the vicinity of Tres Pinos Creek. Figure 3 shows records for California tiger salamander in the vicinity of the project site.

2.3 HABITATS ON THE PROJECT SITE AND IN THE VICINITY

LSA biologist Mike Trueblood surveyed the project site and surrounding site vicinity on May 11, 2011. Prior to the survey, aerial photographs of the project site and surrounding lands were reviewed to identify ponds, drainages, and other features that could potentially provide aquatic habitat for California red-legged frog or California tiger salamander. During the survey, LSA biologists surveyed the entire project site, and mapped all suitable aquatic habitats for California red-legged frog or California tiger salamander. Most private lands in the vicinity of the project were inaccessible, but potential habitats for California red-legged frog and California tiger salamander were mapped using an aerial photo.

2.3.1 California Red-Legged Frog - Potential Aquatic Habitat on the Project Site and Within a 1 Mile Radius

California red-legged frogs are considered to be “pond frogs,” adapted to slow moving or still waterbodies such as ponds, pools, and marshes. However, California red-legged frogs also occur in perennial streams. Habitat features typically associated with this species include emergent and overhanging vegetation, and banks containing numerous refugia locations that could conceal adult frogs.

Tres Pinos Creek within the project site supports adequate hydrology and vegetative structure to provide suitable aquatic habitat for California red-legged frogs. It is a perennial creek with pooled areas directly adjacent to the Panoche Road Bridge structure where the water moves at a slower velocity than the rest of the channel. The bed of the live channel is composed of bedrock, rock, cobble, and sand. The edges of the creek have sediment deposited at varying levels; emergent vegetation is fairly dense and grows along the edges and within the live channel. The majority of the canopy cover consists of willow (*Salix* sp.) and a few oaks (*Quercus* sp.); the channel edge and bank are dominated by creeping spike rush (*Eleocharis* sp.), poison oak (*Toxicodendren diversilobum*), California rose (*Rosa californica*), mugwort (*Artemesia* sp.), and other herbaceous vegetation. See the data sheet in Appendix B.

Potential aquatic habitat for California red-legged frog within 1 mile of the project site includes additional reaches of Tres Pinos Creek upstream and downstream of the project site, a few intermittent and ephemeral tributaries, and several stock ponds. The stock ponds appear to be minimally vegetated, though some appear to support overhanging or emergent vegetation. Figure 4 illustrates the distribution of potential aquatic habitat for California red-legged frog on the project site and within a 1 mile radius.

LSA

LEGEND

- Project Site
- 1-Mile Radius
- Intermittent and Perennial Streams
- Lakes and Ponds

N

0 1000 2000
FEET

SOURCE: ESRI Imagery (2009)

I:\QCE1005A\GIS\fig4_crlf_hab.mxd (4/25/12)

FIGURE 4

Panoche Road Bridge (43C-0070) Replacement
at Tres Pinos Creek
05-SBt-0-CR
Federal Porject No. BRLS-5943 (056)

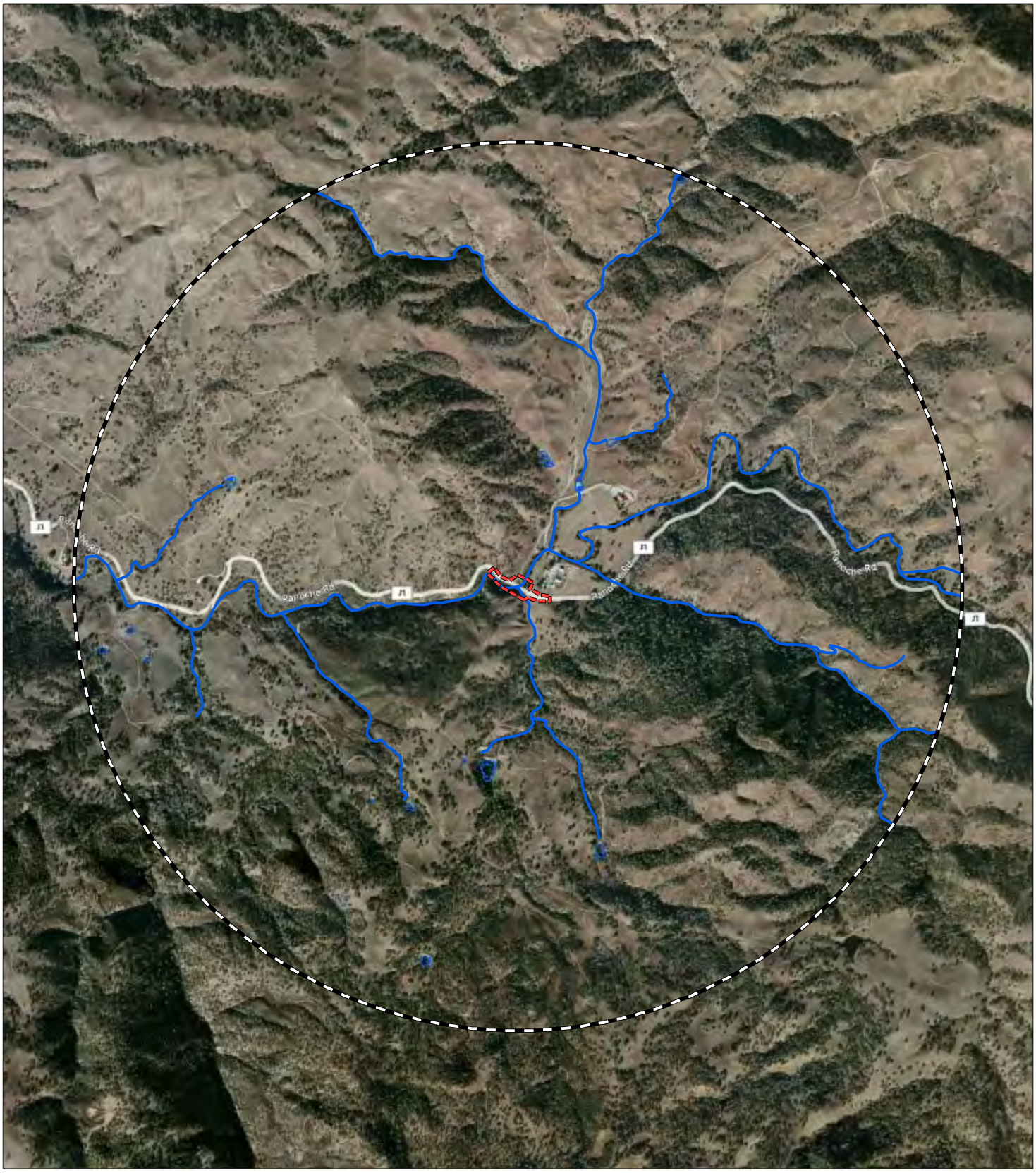
Potential California Red-Legged Frog
Aquatic Habitat Within 1 Mile of the Project Site

2.3.2 California Tiger Salamander - Potential Aquatic Habitat on the Project Site and Within a 1.24 Mile Radius

The California tiger salamander requires burrows in upland habitat for the majority of the year, in addition to aquatic breeding habitat. Upland habitat favored by this species is generally open grassland or savannahs. California tiger salamanders cannot dig their own burrows and, consequently, are largely dependent on the presence of fossorial mammals such as ground squirrels, though California tiger salamanders can also utilize cracks or crevices in the ground. Breeding habitat consists of natural ephemeral pools, stock ponds, and other small, artificial water bodies, particularly those that dry up in summer.

Tres Pinos Creek is a perennial creek with flows too swift to provide suitable aquatic breeding habitat for the California tiger salamander, even in the slower moving sections of the creek. No other potential aquatic habitat occurs on the project site. Suitable upland habitat is also absent from the project site; though grassland and pasture are present, no suitable burrows or other suitable openings in the ground were observed in the project site.

Several ponds occur within 1.24 miles of the project site that provide potential aquatic habitat for California tiger salamander. Although the ponds are located on private property and were not accessible during the field surveys, review of aerial photos showing these features reveal that several of the ponds within 1.24 miles of the project site are seasonal and could provide suitable aquatic habitat for California tiger salamander. Figure 5 illustrates the distribution of potential aquatic habitat for California tiger salamander within 1.24 miles of the project site.



LSA

LEGEND

- Project Site
- 1.24-Mile Radius
- Intermittent and Perennial Streams
- Lakes and Ponds

0 1000 2000
FEET

SOURCE: ESRI Imagery (2009)

I:\QCE1005A\GIS\fig5_cts_hab.mxd (4/25/12)

FIGURE 5

Panoche Road Bridge (43C-0070) Replacement
at Tres Pinos Creek
05-SBt-0-CR
Federal Porject No. BRLS-5943 (056)

Potential California Tiger Salammander
Aquatic Habitat Within 1.24 Mile of the Project Site

3.0 RESULTS

3.1 CALIFORNIA RED-LEGGED FROG

The findings of this report are that the California red-legged frogs are potentially present on the project site and in the vicinity based on the following observations:

- The project site is located within the current range of the species;
- There is suitable habitat within the project site for California red-legged frog;
- There are several drainages and ponds in the vicinity of the project site that could provide habitat and a source of migrating individuals;
- There are numerous records of California red-legged frog in the vicinity.

3.2 CALIFORNIA TIGER SALAMANDER

The findings of this report are that California tiger salamanders are not likely to be present on the project site, but may be present in the vicinity based on the following observations:

- Although the project site is located within the current range of the species, there is no suitable aquatic or upland habitat for California tiger salamander on the project site;
- There are no records of California tiger salamander within 3.1 miles of the project site;
- There is potentially suitable aquatic and upland habitat in the vicinity of the project site.

4.0 REFERENCES

California Department of Fish and Game. 2011. Rarefind 3 personal computer program. Sacramento, CA. Records search executed May 3, 2011 and July 19, 2011. Sacramento, California.

Jennings, M. R., and M. P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. Final report to the California Dept. of Fish and Game, Inland Fisheries Division, Rancho Cordova. Contract No. 8023.

U.S. Fish and Wildlife Service (USFWS). 2001. Endangered and Threatened Wildlife and Plants; Final Determinations of Critical Habitat for the California Red-legged Frog; Final Rule. March 13, 2001. Federal Register 66:14625-14674.

———. 2002. Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*). Portland, Oregon. May 2002. 173pp.

———. 2003. *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander.* USFWS, California/Nevada Operations Office, Sacramento, CA and California Department of Fish and Game, Office of the Director, Sacramento, CA.

———. 2004. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Tiger Salamander, Central Population; Proposed Rule. *Federal Register* 69: 78570-48649.

———. 2005. *Interim Guidance on Site Assessment and Field Surveys for California Red-legged Frogs.* Sacramento Field Office, Sacramento, CA.

APPENDIX A

RESUMES FOR LAURA BELT AND MIKE TRUEBLOOD

LAURA BELT
WILDLIFE BIOLOGIST

EXPERTISE

Wildlife Surveys

Sensitive Species Surveys

Biological Construction Monitoring

Environmental Assessment

EDUCATION

California State University, Bakersfield. Bachelor of Science Degree in General Biology, 1989.

PROFESSIONAL AFFILIATIONS

The Wildlife Society

The Audubon Society

PROFESSIONAL RESPONSIBILITIES

Ms. Belt has a diverse background as a wildlife field biologist, which includes 19 years of experience in conducting habitat and wildlife surveys throughout the state. Ms. Belt is responsible for a variety of tasks at LSA, which include biological surveys and construction monitoring of a variety of projects including road work and bridge replacement projects, preparation of biological assessments involving plant and wildlife issues, preparation of 401, 404 and 1600 application material, mitigation plans, and other environmental documentation.

Ms. Belt is also on the Fish and Wildlife Service List of Authorized Individuals to conduct activities with vernal pool tadpole and fairy shrimp and California tiger salamander, as per LSA's Recovery Permit.

Construction monitoring experience includes kit fox, Mojave ground squirrel, western burrowing owl, Swainson's hawk, California red-legged frog, foothill yellow-legged frog, San Francisco garter snake, giant garter snake and valley elderberry longhorn beetle. The following highlights her survey and monitoring experience.

PROJECT EXPERIENCE

Vulcan Sanger Aggregate Mine
Fresno County, California
Conducted preconstruction survey for nesting birds in the limits of the proposed expansion site. Conducted focused surveys for potential VELB habitat, elderberry shrubs (*Sambucus* spp.), in riparian habitat located along the Kings River. Approximately 150 elderberry shrub locations were mapped and stem and exit-hole data was recorded.

River Rock Expansion
Fresno County, California
Conducted preconstruction survey for nesting birds in the limits of the proposed expansion site. Monitored the status of inactive nests in trees via a man –lift (cherry picker).

Academy North On-Call Services
Fresno County, California
Conducted focused survey for western burrowing owl and mapped suitable habitat for California tiger salamander along roadway and right-of-way limits.

LAURA BELT
WILDLIFE BIOLOGIST

PROFESSIONAL EXPERIENCE

Wildlife Biologist, LSA Associates, Inc., Rocklin CA, 2000-Present.

Wildlife Assistant, California Department of Fish and Game, Sacramento CA, 1992-1994, 1999-2000.

Public Relations, San Diego Zoo and Wild Animal Park, 1997-98.

Wildlife Research Assistant, San Diego State Research Foundation, San Diego CA, 1995-1996.

Wildlife Research Assistant, United States Geological Survey, Western Ecological Research Center,

Dixon, CA, and California Department of Fish and Game, Sacramento CA, 1990-94.

PROJECT EXPERIENCE (CONTINUED)

Triangle Rock Products, Inc.
Sacramento County, California
Conducted focused pre-construction surveys for tricolored blackbird and burrowing owl.

- General wildlife surveys, biological reconnaissance survey of proposed project site, and special status species surveys for giant garter snake, Swainson's Hawk, Cooper's Hawk, burrowing owl, white-tailed kite, loggerhead shrike, and northwestern pond turtle.
- Triangle Rock Preserve - Hydrology monitoring and protocol fairy and tadpole shrimp surveying at existing and created vernal pools.

Highway 41 Quarry (Austin Quarry)
Madera County, California
Conducted San Joaquin kit fox and western burrowing owl site assessments for a 300-acre potential quarry site. Mapped and monitored burrowing owls habitat use and movement, before and after the nesting season. Project site also included vernal pools and California tiger salamander habitat.

San Luis Obispo Creek Enhancement Project
San Luis Obispo County, California
Conducted preconstruction and construction monitoring on the San Luis Obispo Creek Enhancement project site, located north of the City of San Luis Obispo and west of Highway 101. Assisted the Department of Fish and Game in capturing steelhead during dewatering activities.

Coast Rock Company
Bradley, San Luis Obispo County, California
Conducted protocol surveys for San Joaquin kit fox and western burrowing owl, as well as pre-construction and construction monitoring for both species. Focused burrow surveys were also conducted for both species using video-scope camera technology.

Potrero Hills Landfill Study Site
Suisun, Solano County, California
Conduct protocol level surveys for vernal pool crustaceans and focused surveys for California tiger salamander, annually.

Wendt Ranch, Dougherty Valley and Discovery Bay Development
Contra Costa County, California
Monitored the location of western burrowing owls and passive relocation activities, prior to clearing and grading.

PROJECT EXPERIENCE (CONTINUED)

Ventura State Highway 118 Corridor Study
Simi Valley, Ventura County, California
Wildlife surveys using camera, video, and scent station tracking to document the use of highway corridors by wildlife, with a focus on bear, mountain lion, deer, coyote, and bobcat.

SR-92/Retaining Wall and Culvert Construction
Half Moon Bay, California
Pre-construction and construction monitoring for California red-legged frog and San Francisco garter snake, within the Pilarcitos Creek Corridor adjacent to SR-92.

SR-101/West of Bayshore and BART Haul Route Restoration San Francisco Airport
San Francisco, California
Preconstruction and construction monitoring for California red-legged frog and San Francisco garter snake, adjacent to the off-ramp lane to the San Francisco Airport.

Cranmore/Garmire Road Bridge Replacement Project
Sutter County California
Pre-construction and construction monitoring for nesting birds, giant garter snake, burrowing owl and Swainson's hawk near the Sacramento River over a construction season.

SR-65/Bypass
Lincoln, Placer County, California
Inventory and map the location of all native trees within the 14 –mile bypass alignment limits. Conduct preconstruction and construction monitoring of work project creating new roadway and 17 bridges. Monitoring tasks include surveying for Swainson's hawks and other nesting birds, before and during the nesting season.

MIKE TRUEBLOOD
BIOLOGIST

EXPERTISE

Construction Monitoring

Environmental Assessment/ Biological Assessment

Wetland Delineation

Regulatory Permitting

GIS Graphics Design

EDUCATION

University of California at Davis; Davis, CA. B.S. Wildlife, Fish, and Conservation Biology, 2000.

PROFESSIONAL EXPERIENCE

Biologist, LSA Associates, Inc., Rocklin, CA. June 2002-present.

Environmental Analyst, North State Resources, Sacramento, CA. 2001.

Environmental Monitor/Field Coordinator, Jones & Stokes, Sacramento, CA. 2000.

PROFESSIONAL RESPONSIBILITIES

Mr. Trueblood has been a general biologist at LSA since 2002, with an additional 2 years of professional experience prior to LSA, focusing on biological resources, wetland projects, and construction projects throughout the middle sections of California. Mr. Trueblood's background has involved work in a variety of habitats including oak woodland and savannah, riparian woodland, saltwater marsh, freshwater marsh, vernal marsh, coastal sage and desert scrub, chaparral, and grassland.

Mr. Trueblood is responsible for a variety of biological tasks at LSA, which include biological surveys, sensitive species surveys, habitat assessment, wetland delineation, construction monitoring, regulatory permitting, and GIS graphic design. Environmental analyst tasks include preparation of various environmental documents, water resource, and other application material or mitigation plans.

PROJECT EXPERIENCE

Mr. Trueblood has provided biological and/or permitting services for the following selected projects.

Highway 41 Quarry (Austin Quarry)
Madera County, California
Wetland delineation, habitat mapping, and San Joaquin kit fox and western burrowing owl site assessments for a 300-acre potential quarry site.

Academy North On-Call Services
Fresno County, California
Western burrowing owl focused surveys, habitat mapping and California tiger salamander habitat assessment along roadway and right-of-way limits for a road widening project.

State Route 65 Bypass
Lincoln, California
Wetland delineation and verification for project site and mitigation site, vernal pool hydrology monitoring, GIS graphic design, and construction monitoring.

Triangle Rock Vernal Pool and Laguna Creek Enhancement and Maintenance
Sacramento, California
Biological resource monitoring and long-term maintenance for vernal pool and wetland improvement and restoration mitigation for an aggregate mining project.

PROJECT EXPERIENCE (CONTINUED)

Lone Tree Road Bridge/Cienega Road Bridge
Hollister, California
Biological surveys, wetland delineation, California red-legged frog protocol surveys, and regulatory permitting for two bridge replacement projects.

Amargosa Creek Corridor Development
Palmdale, California
Field surveys including tortoise, burrowing owl, and Mojave ground squirrel. Construction monitoring. 2081 take permit applications.

Mid County Parkway
Perris, California
Field surveys including habitat assessment, protocol sensitive plant surveys, and wetland delineation for the Ramona/Cajalco Expressway widening and realignment.

Wise Road Bridge Replacement
Placer County, California
Biological surveys, Red legged Frog protocol surveys. Wetland delineation, regulatory permitting/coordination and construction monitoring for a bridge replacement project.

North Stockton Railroad Grade Separations and Bridge Replacements
Stockton, California
Habitat assessment, Biological surveys, wetland delineation, and regulatory permitting/coordination for three roadway widening and railroad grade separation projects.

404, 1602, and 401 permitting, Various projects.

GIS Graphic Design, Various projects.

APPENDIX B

CRLF HABITAT SITE ASSESSMENT DATA SHEETS

California Red-legged Frog Habitat Site Assessment Data Sheet #1

Site Assessment reviewed by_____ _____
_____
(FWS Field Office) (date) (biologist)

Date of Site Assessment: 05/11/2011
(mm/dd/yyyy)

Site Assessment Biologists: Trueblood, Mike _____
(Last name) (first name) (Last name) (first name)

_____ _____
(Last name) (first name) (Last name) (first name)

Site Location: Panoche Road Bridge at Tres Pinos Creek, San Benito County
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: **Panoche Road Bridge Replacement Project**
Brief description of proposed action: **Replace the existing single-lane Panoche Road Bridge with a bridge consisting of two 12 foot travel lanes with four foot shoulders on both sides. The project would also include up to 400 feet of approach work on either side of he bridge.**

1) Is this site within the current or historic range of the CRF (circle one)? YES **X** NO

2) Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES **X** NO
If yes, attach a list of all known CRF records with a map showing all locations. *(See Figure 3)*

GENERAL AQUATIC HABITAT CHARACTERIZATION

(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)

POND:

Size: _____ Maximum depth: _____

Vegetation: emergent, overhanging, dominant species: _____
_____

Substrate: _____
_____

Perennial or Ephemeral *(circle one).* If ephemeral, date it goes dry: _____

California Red-legged Frog Habitat Site Assessment Data Sheet#1

STREAM:

Bank full width: **40 feet (20 to 30 feet average, and 6 to 12 feet in low flow areas)**

Depth at bank full: **1 to 2 feet on average (1 foot in low flow areas)**

Stream gradient: **Shallow**

Are there pools (circle one)?YES **X** NO

If yes,

Size of stream pools: **6 to 12 feet in width by 10 to 12 feet in length**

Maximum depth of stream pools: **2 feet**

Characterize non-pool habitat: run, riffle, glide, other: **Glide and riffle**

Vegetation: emergent, overhanging, dominant species: **Willow, creeping spike rush, poison oak, and mugwort.**

Substrate: **Bedrock, cobble, rocks, and sand**

Bank description: **Edge of creek and top of bank is vegetated.**

Perennial X or Ephemeral *(circle one).* If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:

Perennial creek with pooled areas directly adjacent to the Rocks Road Bridge structure where the water moves at a slower velocity than the rest of the channel. The bed of the live channel is composed of bedrock, rock, cobble, and sand. The edges of the creek have sediment deposited at varying levels; emergent vegetation is fairly dense and grows along the edges and within the live water channel. The majority of the canopy cover consists of willow; the channel edge is dominated by creeping spikerush and the banks are dominated by emergent willow, poison oak, California rose, mugwort, and other herbaceous vegetation.

Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs

Maps with important habitat features and species location

APPENDIX C

REPRESENTATIVE PHOTOS OF TRES PINOS CREEK

Tres Pinos Creek downstream of the existing bridge.

From the low water crossing north of the bridge looking upstream.

Ephemeral tributary to Tres Pinos Creek southeast of the bridge.

Tres Pinos Creek directly under bridge. Frogs observed at this location.

Caltrans

Panoche Road Bridge (43C-0027) Replacement at Tres Pinos Creek
Federal Project No. BRLO-5943(056)

Representative Photos of Tres Pinos Creek

SOURCE: LSA Associates, Inc. 2011

P:\QCE1005A\Graphics\Rep_photos.pdf (7-25-11)

Appendix E Agency Coordination Documentation

Jeff Bray

From: Crystahl Taylor
Sent: Monday, August 22, 2011 3:17 PM
To: Jeff Bray
Cc: Mike Trueblood
Subject: San Benito Projects - Conference Call with USFWS and CDFG

Hi Jeff,

Mike and I just finished talking with Chris Diel and Brandon Sanderson. They were very complimentary of our reports, but do have concerns for Rocks Road and Panoche. Below is a summary of each project and their concerns. Mike, please add to this if needed.

Santa Ana/Fairview

- As long as construction does not go "off alignment" neither Chris nor Brandon have any real concerns regarding CTS.
- Implementation of typical avoidance measures, construction timing, and presence of a biological monitor would be sufficient.
- Consultation not expected.
- Insignificant project impacts.

Panoche Road

- Not as concerned regarding CTS habitat. Implementation of typical avoidance measures, construction timing, and presence of a biological monitor would be sufficient.
- More concerned regarding CRLF and recommend surveys/consultation.
- Mike mentioned that he observed a pond turtle and CRLF tadpoles during jurisdictional delineation.

Rocks Road

- Most concerned with this project of the three discussed.
- Chris questioned if burrows were present within the project site and staging area.
- Project could be dispersal habitat. Not classically defined habitat, but upland habitat may be present within vicinity.
- Brandon plans to conduct a site visit within the next few weeks.
- Implementation of typical avoidance measures, construction timing, and presence of a biological monitor may be sufficient. Brandon will confirm after site visit.

Feel free to let me know if you have any questions. Thank you!

Crystahl Taylor
Senior Environmental Planner
LSA Associates, Inc.
1998 Santa Barbara Street, Suite 120
San Luis Obispo, CA 93401
805.782.0745 phone
805.782.0796 fax
crystahl.taylor@lsa-assoc.com

Jeff Bray

From: Brandon Sanderson [BSANDERSON@dfg.ca.gov]
Sent: Tuesday, January 03, 2012 3:23 PM
To: Ali Summers
Subject: Panoche Rd Bridge Replacement

Attachments: DFG SJAS Survey Methodologies.pdf

DFG SJAS Survey Methodologies....

Hi Ali,

Hope you had a good holiday. Got your message. After reviewing the project I don't think you'll need to worry about antelope squirrels in the area. They predominantly occur in the Panoche Valley and eastern foothills within k-rat habitat. However, I have attached survey protocol for your future reference. As far as Least Bell's vireo, I don't have information on this area. I would however, make sure that there isn't the potential for Ca tiger salamanders to be in the area. From the CTS site assessment provided in August there doesn't seem to be a concern but the potential may exist.

Thanks,

_____
Brandon Sanderson
Environmental Scientist
Department of Fish & Game
3196 Higuera St., Suite A
San Luis Obispo, CA 93401
805-594-6141
bsanderson@dfg.ca.gov
www.dfg.ca.gov

Jeff Bray

From: Devin Best [devin.best@noaa.gov]
Sent: Monday, January 09, 2012 8:46 AM
To: Ali Summers
Subject: Re: Tres Pinos Creek steelhead

Hi Ali,

To answer your first question, the work window for dewatering follows DFG guidelines and for that area it would be July 15 - October 15. As for the second question, if the county pursued doing an informal consultation, which would not provide take authorization, and fish were present during dewatering events, they could be liable. It would be int the best interest for the county to request a formal consultation to give them the insurance of causing "take" to the species so the project can be implemented. What would help in making the determination is knowing what the site conditions and anticipated flows during the summer period. If the section of creek is typically dry, even in normal or wet years, there may not be any reason to go informal since fish would not likely be present. If you could provide me with the lat/long, I will take a look to give you some guidance.

Thanks,
Devin

Devin Best
Natural Resource Management Specialist
NOAA Fisheries
777 Sonoma Ave.
Santa Rosa, CA 95404
Office: 707.578.8553
Fax: 707.575.3435

On Fri, Jan 6, 2012 at 1:26 PM, Ali Summers <Ali.Summers@lsa-assoc.com> wrote:

> Hi Devin,
>
> Thanks for the information yesterday. I have a couple more questions. Since the project will involve dewatering, what would be the recommended work window for construction, for that area? Second, if the fish are not physically present during construction, would there still be take? My supervisor thinks the county would rather not get take authorization unless they need to, so he wanted to get your opinion on this.
>
> Thanks so much,
>
> *Ali Summers*
> Biologist
>
> LSA Associates, Inc.
> 4200 Rocklin Road, Suite 11B
> Rocklin, CA 95677
> 916-630-4600
> ali.summers@lsa-assoc.com

Mike Trueblood

Subject: FW: Panoche Weir removal of anchor pipes

From: Devin Best - NOAA Federal [mailto:devin.best@noaa.gov]
Sent: Thursday, April 04, 2013 8:01 AM
To: Mike Trueblood
Subject: Re: Panoche Weir removal of anchor pipes

Mike,

From reviewing the attached design, the project looks acceptable. Please let me know if I can be of further assistance.

Thanks,
Devin

On Mon, Apr 1, 2013 at 12:50 PM, Mike Trueblood <Mike.Trueblood@lsa-assoc.com> wrote:

Devin – Per your request, the engineers have removed the anchor pipes from the weir design (see attached). Since they were only included as a redundancy and are not necessary, no further modifications to the weir design were made. Let me know if the design is now acceptable.

Thanks,

Mike Trueblood
Senior Biologist
LSA Associates, Inc.
4200 Rocklin Road, Suite 11B
Rocklin, CA 95677
(916) 630-4600
mike.trueblood@lsa-assoc.com

From: Devin Best - NOAA Federal [mailto:devin.best@noaa.gov]
Sent: Thursday, March 14, 2013 11:21 AM
To: Mike Trueblood
Subject: Re: FW: Panoche RSP Limits and Weir Details

Mike,

I met with our hydraulic engineer to review the design for this project. Using pipe to keep rocks from "walking" is no longer an accepted practice. NMFS encourages applicants and engineers to mimic natural systems as much as possible. There are many design alternatives available and our engineering staff would be willing to offer any assistance needed. Please revise the plans and get back to me with any questions or comments you have.

Thanks,
Devin

On Mon, Mar 11, 2013 at 3:29 PM, Mike Trueblood <Mike.Trueblood@lsa-assoc.com> wrote:

Devin – I spoke to the engineers and asked them to write up something to justify the anchor pipes as part of the weir design. Bottom line is that they were added as a redundancy to meet the property owner's request that the weir would be zero maintenance. See below for the "engineer speak". They can be removed as part of the design if you think it would be prudent. Let me know what you think.
Thanks,

From: Grant Wilcox [mailto:grant_wilcox@wreco.com]
Sent: Monday, March 11, 2013 2:06 PM
To: Mario Quest; Mike Trueblood
Cc: HanBin Liang; Wana Chiu; Carolyn Davis; Edward Heming
Subject: RE: Panoche RSP Limits and Weir Details

Hi Mike,
In summary of our phone conversation concerning the anchor pipes and the weir design, we have the following:

The anchor pipes are redundant and were included because of the landowner's comments concerning creating a maintenance free system. ½ ton should be sufficient to handle the velocities in the stream, but the pipes provide an extra barrier to rocks from "walking" away and creating a more maintenance free system. We would prefer to keep them but if it is a deal breaker with NMFS they can be removed.

I hope this answers your questions and feel free to contact me if you need additional help.

Regards,

Grant

Grant Wilcox, P.E., C.E.G.
Senior Engineer/Project Manager
WRECO
1243 Alpine Road, Suite 108
Walnut Creek, CA 94596
Phone: (925) 941-0017x226
Fax: (925) 941-0018
email: grant_wilcox@wreco.com
Connect with WRECO:

From: Mario Quest [mailto:marioq@quincyeng.com]
Sent: Monday, March 11, 2013 8:19 AM
To: Mike Trueblood; Grant Wilcox
Cc: HanBin Liang; Wana Chiu; Carolyn Davis; Edward Heming (Edward.Heming@lsa-assoc.com)
Subject: RE: Panoche RSP Limits and Weir Details

Hi Mike,

I got your phone message about concerns NMFS has with the weir design. To answer your questions, it might be best for you to call Grant directly at WRECO (925/941-0017 x226) to discuss why the pipe detail was used instead of larger RSP. Apparently this detail has been used before, and the pipes should not become exposed and hazardous to fish. Keep me in the loop. I would like to know how this turns out.

Thank you,

Mario Quest, P.E. | Senior Project Manager | marioq@quincyeng.com
3247 Ramos Circle, Sacramento California 95827
P: 916.368.9181 | F: 916.368.1308 | www.quincyeng.com

Appendix F Representative Photos

Existing Panoche Road Bridge looking northwest. 'S' curve in roadway would be eliminated.

Panoche Road Bridge looking southeast.

Proposed staging area in California annual grassland series north of bridge, looking south.

Low water crossing north of existing bridge, looking northwest.

Caltrans

APPENDIX F

Panoche Road Bridge (No. 43C0027) over
Tres Pinos Creek Replacement Project
San Benito County, California; Caltrans District 5
Federal Project No. BRLO-5943(056)

Representative Photos

Source: LSA (11/2020)

Low water crossing north of existing bridge, looking southeast.

Tres Pinos Creek north of bridge, looking southwest.

Tres Pinos Creek south of bridge, looking northeast.

Unnamed ephemeral tributary with mulefat series, looking east.

Confluence of Tres Pinos Creek and unnamed ephemeral tributary south of bridge.

Spring box and pump house north of Panoche Road, east of Tres Pinos Creek, looking northeast.

Mixed oak series south of Panoche Road, looking southeast.

California annual grassland series south of Panoche Road, looking southeast. Mulefat series in background on right.

Appendix G Hydraulic Analysis

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Memorandum

Date: March 20, 2019

To: Carolyn Davis, Quincy Engineering, Inc.

From: Han-Bin Liang, WRECO

Project: Panoche Road Bridge

Subject: Upstream Channel Bank Protection Analysis

Introduction

Panoche Road at Tres Pinos Creek Bridge Replacement Project (Project) proposes to remove and replace existing Panoche Road bridge over Tres Pinos Creek (Bridge No. 43C0027) with a new longer and wider bridge on an improved roadway alignment.

WRECO's hydraulic analysis of Tres Pinos Creek in the Project vicinity indicated that the proposed Project would result in increased average channel velocities upstream (north) of the bridge (relative to the existing condition). Concerns arose that the increased velocities could negatively affect the soils on the east bank by increasing their erosive potential. The erosion of these soils could in turn have the potential to negatively affect the adjacent spring water box, which is used by the Wattis' Ranch as a water source to capture groundwater from the aquifer.

The purpose of this memorandum is to summarize the velocity differences associated with Tres Pinos Creek for the existing and proposed Project conditions during the 100-year storm, and to size rock slope protection to protect the eastern bank upstream of the proposed bridge. Additional details of the hydraulic analysis are documented in the Project's Bridge Design Hydraulic Study report.

Hydraulic Analysis Velocities

The comparison of the average channel velocities at the cross sections upstream of the Project site are summarized in Table 1.

Table 1. 100-Year Velocity Comparison

River Station	Distance to Proposed Bridge (feet)	Average Channel Velocity (feet per second)	
		Existing	Proposed
1525	225	4.1	6.2
1316	15	3.9	7.1

Based on the hydraulic analysis, the proposed condition would result in an approximately 2 to 3 feet per second increase in average channel velocity at the specified locations. The empirical velocity distributions at the cross sections are included in the appendices. Graphical depictions of the velocity distributions are also included for both the existing and proposed conditions.

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Recommendations

In order to address the increases in average channel velocity, rock slope protection (RSP) is proposed to be placed at the eastern bank upstream of the existing bridge. RSP generally consists of rocks on channel and structure boundaries to limit the effects of erosion. It is the most common type of scour countermeasure due to its general availability, ease of installation, and relatively low cost. It is assumed that the creek bed and bank would not be excavated for the installation of the RSP countermeasures. The avoidance of excavation would help to minimize potential impacts to the aquifer.

Rock Slope Protection Calculations

Calculations were performed using the results of the hydraulic analysis for the proposed condition to evaluate the size of RSP needed to protect the channel bank from potential erosion. The primary design concern for RSP is to determine the median particle size such that the material will not be displaced during the peak design flows. Calculations were based upon the 100-year storm. The equations from the California Department of Transportation's (Caltrans') Highway Design Manual (HDM) were used to estimate the weight of the RSP required to protect the channel bank (2018). The calculated minimum RSP classes are presented in Table 2. The RSP sizing calculations are included in the appendices.

Table 2. Results of RSP Sizing Analysis

River Station	Distance to Proposed Bridge (feet)	Minimum RSP Sizing
1525	225	Class IV 300 pounds median weight 15 inches median particle diameter
1316	15	Class V 1/4 ton median weight 18 inches median particle diameter

Based on the calculations, the minimum RSP class can transition from Class IV at River Station 1525 to Class V at River Station 1316. Alternatively, Class V RSP can be placed throughout the affected reach, which would provide additional protection and simplicity of installation. According to the HDM, the minimum thickness of the RSP layer needs to be 1.5 times the median particle diameter or the maximum diameter, whichever is greater. A typical cross section recommended by the Federal Highway Administration (FHWA) for mounded toe RSP is shown in Figure 1.

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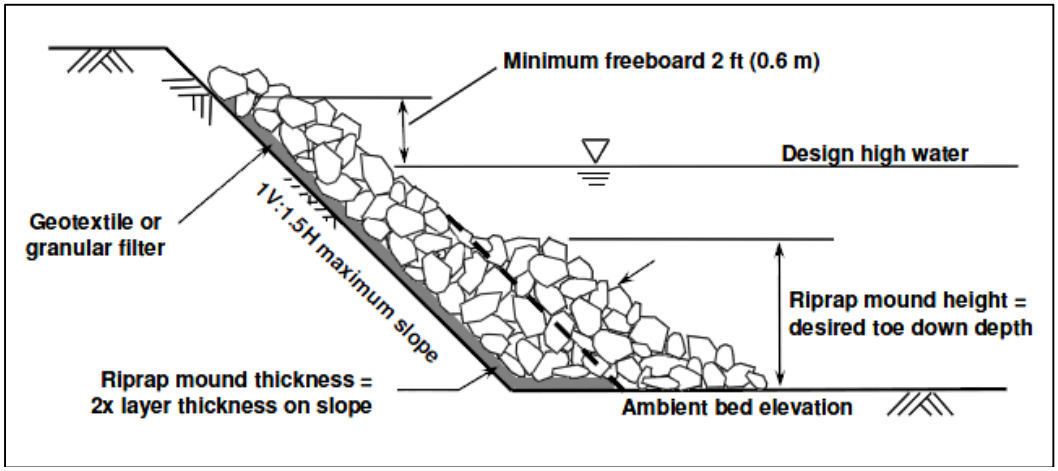

Figure 1. Mounded Toe Typical Cross Section

Source: Federal Highway Administration

The minimum layer thicknesses for the RSP are presented in Table 3.

Table 3. Minimum RSP Layer Thicknesses

Outside Layer		Inside Layer		Total Layer Thickness (ft)
RSP Class	Minimum Layer Thickness (ft)	RSP Class	Minimum Layer Thickness (ft)	
IV	2.5	N/A	N/A	2.5
V	3.0	II	1.5	4.5

The mounded thickness needs to be twice as thick as the layer thickness, which would be 5 ft for the Class IV RSP, and 9 ft for the Class V and Class II RSP system. The mounded height is recommended to be a minimum of 6 ft. The placement method for these classes of RSP is Method B, which involves dumping the rock near its planned location, and working the rock to its final position with machinery. Class 8 RSP geotextile filter fabric should be placed on the bank as a separator material between the RSP and the channel bank.

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References

California Department of Transportation. (2018). Highway Design Manual. 6th Edition HDM Change 12/14/18. <http://www.dot.ca.gov/design/manuals/hdm.html> (Last accessed: March 20, 2019).

Federal Highway Administration. (2009). *Bridge Scour and Stream Instability Countermeasures: Experience, Selection, and Design Guidance.* Hydraulic Engineering Circular No. 23. Third Edition.

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Appendices

- Hydraulic Analysis Empirical Velocity Distributions
- Rock Slope Protection Calculations

At Upstream Cross Section (River Station 1525)

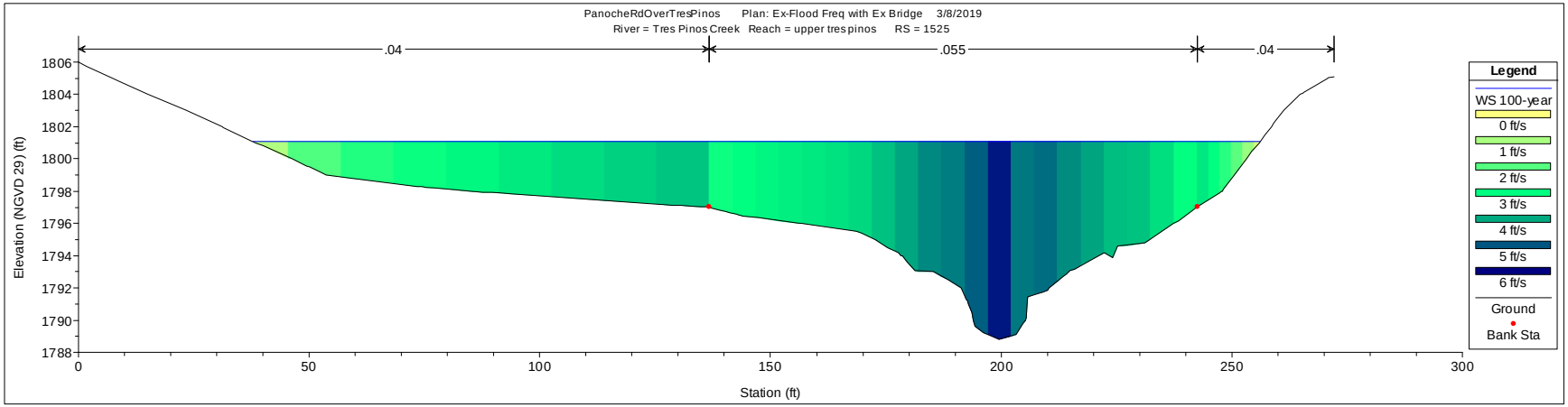

Figure 1. Existing Condition Cross Section

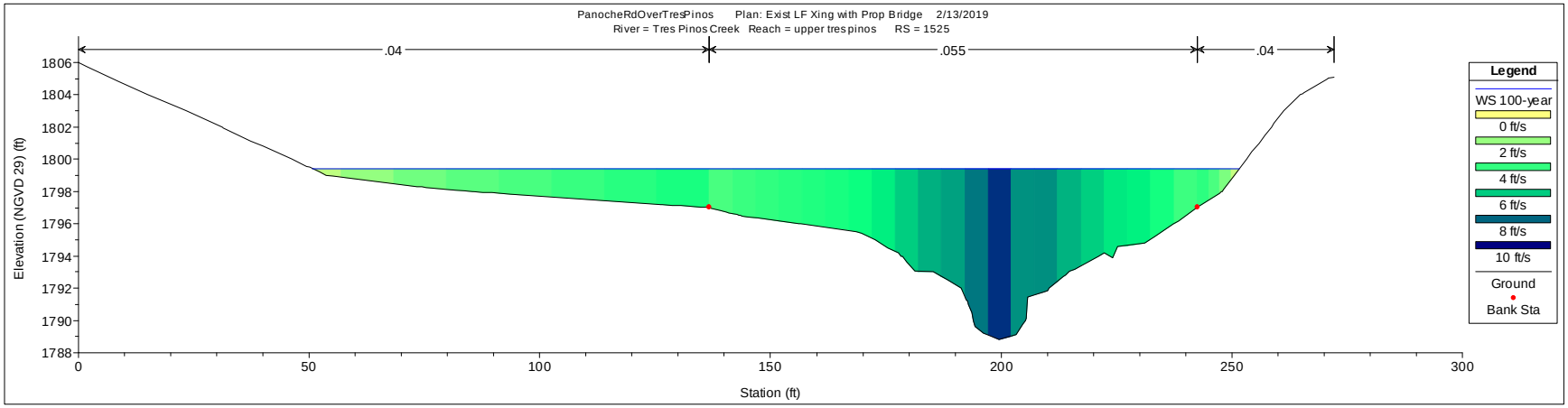

Figure 2. Proposed Condition Cross Section

Table 1. Velocity Comparison at River Station 1525

Segment No.	Left Station (ft)	Right Station (ft)	Velocity (ft/s)		Δ Velocity (ft/s)
			Existing	Proposed	
1	34	46	0.9	N/A	
2	46	57	2.1	1.3	-0.8
3	57	68	2.6	2.1	-0.5
4	68	80	2.9	2.8	-0.1
5	80	91	3.1	3.3	0.2
6	91	103	3.3	3.6	0.4
7	103	114	3.4	3.9	0.5
8	114	125	3.5	4.2	0.7
9	125	137	3.7	4.5	0.9
10	137	142	2.9	3.6	0.7
11	142	147	3.0	3.9	0.9
12	147	152	3.1	4.1	1.0
13	152	157	3.2	4.2	1.1
14	157	162	3.3	4.4	1.1
15	162	167	3.4	4.6	1.2
16	167	172	3.5	4.8	1.3
17	172	177	3.7	5.3	1.6
18	177	182	4.1	6.0	1.9
19	182	187	4.4	6.6	2.2
20	187	192	4.5	6.8	2.3
21	192	197	4.9	7.7	2.8
22	197	202	5.7	9.1	3.3
23	202	207	4.6	7.2	2.6
24	207	212	4.7	7.2	2.5
25	212	217	4.3	6.5	2.1
26	217	222	4.1	6.0	1.9
27	222	227	3.8	5.4	1.7
28	227	232	3.7	5.3	1.6
29	232	237	3.4	4.6	1.3
30	237	242	3.0	3.8	0.9
31	242	245	3.3	4.1	0.9
32	245	247	3.0	3.5	0.6
33	247	250	2.5	2.5	0.0
34	250	252	1.9	1.1	-0.8
35	252	255	1.2	N/A	
36	255	257	0.5	N/A	

At Downstream Cross Section (River Station 1316)

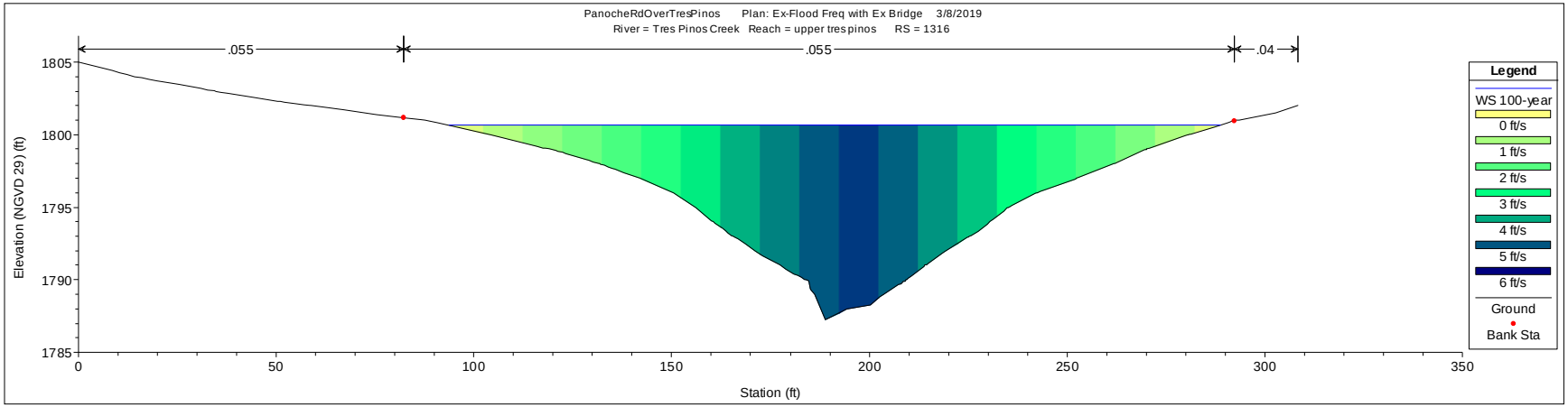

Figure 3. Existing Condition Cross Section

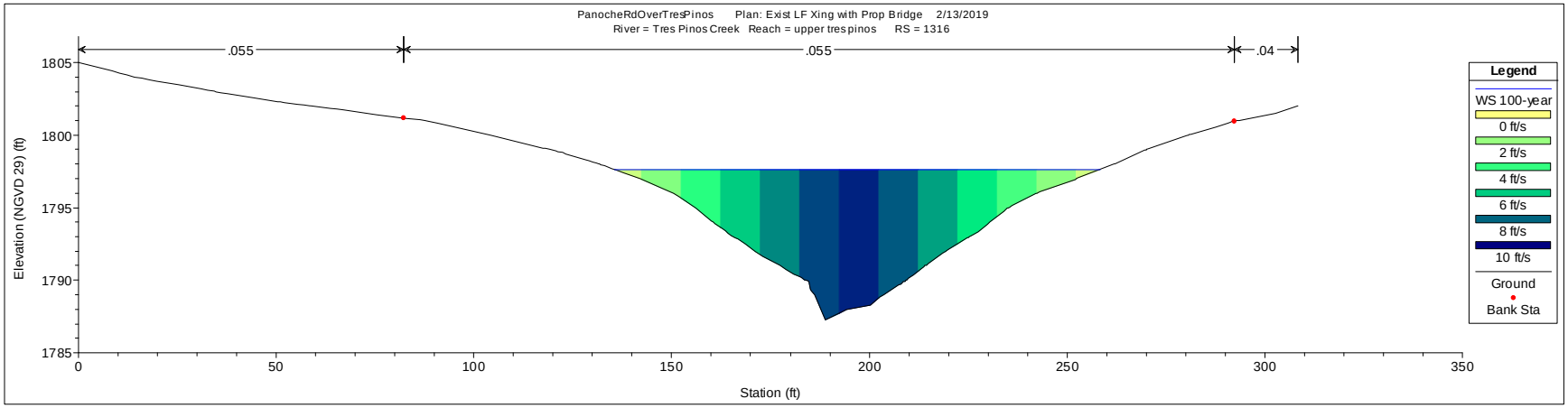

Figure 4. Proposed Condition Cross Section

Table 2. Velocity Comparison at River Station 1316

Segment No.	Left Station (ft)	Right Station (ft)	Velocity (ft/s)		Δ Velocity (ft/s)
			Existing	Proposed	
1	92	102	0.4	N/A	
2	102	112	0.9	N/A	
3	112	122	1.3	N/A	
4	122	132	1.7	N/A	
5	132	142	2.2	1.0	-1.2
6	142	152	2.6	2.4	-0.2
7	152	162	3.2	4.2	1.0
8	162	172	3.9	6.0	2.1
9	172	182	4.5	7.3	2.9
10	182	192	5.0	8.6	3.7
11	192	202	5.3	9.3	4.0
12	202	212	4.9	8.3	3.4
13	212	222	4.3	6.8	2.6
14	222	232	3.7	5.4	1.7
15	232	242	3.0	3.7	0.6
16	242	252	2.6	2.3	-0.3
17	252	262	2.1	1.0	-1.2
18	262	272	1.6	N/A	
19	272	282	1.0	N/A	
20	282	292	0.4	N/A	

Panoche Road Bridge over Tres Pinos Creek

San Benito County, California

Streambank Rock Slope Protection

Calculation guideline from Caltrans Highway Design Manual

Input from HEC-RAS for Proposed Bridge

100-year Flow

Input:

Location along stream:	Upstream	Downstream	
River Station	1525	1316	
V_{avg}	6.2	7.1	ft/s
g	32.2	32.2	ft/s^2
Depth based on	Average	Average	
y	5.4	4.6	ft
S_f	1.1	1.1	
C_s	0.3	0.3	
Cross section location:	Outside of bend	Outside of bend	
C_v	1.25	1.21	

For outside of bends, need R_c and W:

R_c	300	300	ft
W	201	123	ft
C_t	1.0	1.0	
S_g	2.65	2.65	
Type of channel:	Natural	Natural	
V_{des}	10.2	11.0	ft/s
K_1	0.72	0.72	
θ	33.7	33.7	degrees
SS	1.5	1.5	
D_{30}	0.9	1.1	ft
D_{50}	1.1	1.4	ft
D_{50}	13.5	16.4	inches
	IV	V	RSP Class
	300 lb	**1/4 ton**	Median particle weight
	15	**18**	Median particle diameter (inches)

Panoche Road Bridge (No. 43C0027) Replacement at Tres Pinos Creek

Biological Assessment

San Benito County, California

05-SBT-0-CR

Federal Project No. BRLO-5943 (056)

August 2021

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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