

**Initial Study
and Mitigated Negative Declaration**

for the

**Glenn County Road 200A Bridge Replacement Project
Bridge No. 11C-0245, Federal Aid No. BHLO-5911(031)**

October 2019



Lead Agency:

Glenn County
Public Works Agency
777 N Colusa Street, Willows, CA 95988

Prepared By:



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1 Project Contacts and Information

This Project Information, Description, and Environmental Checklist contained herein constitute the contents of an Initial Study in accordance with Section 15063 of the California Environmental Quality Act (CEQA) Guidelines:

Project Title	Glenn County Road 200A Bridge Replacement Project
Lead Agency Contact and Address	County of Glenn Public Works Agency 777 N Colusa Street Willows, CA 95988
Project Sponsor's Name and Address	County of Glenn Public Works Agency Cole Grube, Assistant Director (530) 934-6530 (530) 934-6533 fax
Contact Person and Phone Number	Cole Grube, Assistant Director County of Glenn Public Works Agency (530) 934-6530 (530) 934-6533 fax

2 Project Description

The proposed Stony Creek Bridge (No. 11C-0245) Replacement Project (project) involves the replacement of the existing structurally deficient single-lane bridge on County Road 200A that crosses Stony Creek. The proposed project is included in the County Capital Improvement Program and the Federal Statewide Transportation Improvement Program, and is being funded by Local Highway Bridge Program funds administered by the California Department of Transportation (Caltrans) District 3-Marysville.

Glenn County proposes removing the existing bridge and associated footings and replacing it with a wider, three-span precast bridge structure to improve safety and traffic operations along County Road 200A. The project area or work limits for the bridge has been defined to include bridge replacement, staging areas, and all areas of ground-disturbing activities, as applicable (**Figure 1-Project Work Limits**).

2.1 Project Location

The proposed Glenn County Road 200A Bridge Replacement Project is located in Township 22N, Section 27, Range 05W of the Julian Rocks United States Geological Survey (USGS) 7.5-minute quadrangle. The proposed project is located approximately 11.5 miles west of the City of Orland and Interstate 5 (I-5) and 0.5 miles southwest of the southernmost boundary of Black Butte Lake Recreation Area in Glenn County, California. Black Butte Dam is located approximately 7.04 miles northeast of the project area (**Figure 2-Location Map**).

2.2 Existing Structure

The existing Stony Creek Bridge (Bridge No. 11C-0245) was constructed in 1960 by the U.S. Army Corps of Engineers as part of a county road relocation resulting from the Black Butte Dam Project. The existing bridge is approximately 500 feet long, with eight simple steel girder spans of 62 feet each. The bridge structure has seven piers with spread footings resting on substrates of either stream gravel or rock. The bridge has a single lane measuring approximately 15 feet wide with a 1.5-foot wide curb on either side with metal beam guard railing (**Appendix A – Photo Package**).

2.3 Proposed Structure

The proposed project would replace the existing eight span slab on steel girder bridge with a new three span, cast-in-place, box girder bridge founded on drilled shaft foundations. The new bridge would be located directly downstream (north) of the existing bridge and would be the same length as the existing bridge. The new bridge structure will be approximately 32-feet wide to accommodate two travel lanes and two 4-foot wide shoulders. The new bridge abutment locations would be constructed downstream and in line with the existing abutments. The existing bridge would continue to facilitate traffic during construction of the new bridge.

It is anticipated that bridge construction will be implemented over two construction seasons. Work during the first season would likely include the construction of the 8-foot diameter drilled shaft foundations and 7-foot diameter columns for the two bents in the creek bed as well as both abutments. The shaft foundations could be drilled up to 30 feet below the existing ground surface. This would represent the maximum depth of ground disturbance during construction. During the second season, the contractor will construct the temporary falsework, the box girder superstructure, and the roadway approaches, as well as, remove the falsework and the existing bridge.

During the first season, the contractor will most likely construct two 20-foot by 20-foot temporary timber work platforms that will support the drill rig during the drilling of the foundational shafts. Temporary timber pads, or other similar method may be needed to support heavy equipment while mobilizing through the construction access road within the channel of Stony Creek. It is anticipated that during the second season, a falsework support system will need to be constructed in the creek bed. Falsework may entail a number of small timber pads located throughout the creek bed to provide adequate support. As an alternative, the contractor may elect to drive temporary steel piles for the falsework support system. As with the pads, the exact number and location of the driven piles would be determined by contractor in his falsework shop drawing submittal. Once the new bridge has been constructed, the contractor will grade and pave the new approach roadway. Based on the current design, rock slope protection (RSP) would be placed around the wingwalls and abutments to prevent erosion and scour. Rock slope protection is expected to range in size from ¼ ton to ½ ton and would cover an area measuring approximately 75 feet long by 12 feet wide around the wingwalls on both sides of the creek. Once the new bridge is completed the existing bridge and road would be removed. Demolition activities would consist of the removal of the existing bridge foundations within Stony Creek to a depth of approximately three feet below the existing grade.

Some activities would need to occur within the creek, including the placement of timber pads along the construction road access to support the mobilization of heavy equipment to the construction area, the construction of temporary falsework, and drilling/excavating the foundational shafts. The proposed construction activities within the creek would be timed to occur under the driest conditions possible; and as such, in-water work (i.e. water diversions) would be minimized. However, given the placement of existing foundations and the proposed placement of the new pier foundations, both water diversions and dewatering may be required depending on the conditions present at the time of construction/demolition.

Two potential construction staging areas have been identified for the proposed project. Both are located on the north side of County Road 200A, approximately 400 to 600 feet east of the existing bridge. One of the potential staging areas would be selected as the designated areas for material or equipment storage and could encompass up to 1.34 acres (**Figure 3 – Project Plans**).

In order to access the work area within the channel of the creek, a temporary construction access road may need to be established. The construction access route will follow an existing dirt road north from County Road 200A to the channel of Stony Creek. The route then continues along the eastern bank of the creek to the work area for the new bridge.

Traffic will continue to utilize the existing bridge during construction of the new bridge. During the roadway paving tie-ins, temporary traffic control in the form of flagmen will be required to control traffic. The existing bridge would be demolished and removed from the project site after the new bridge is constructed and open to traffic. The project will require some relocation of public utilities.

The types and number of construction equipment as well as the number of construction workers would vary based on the specific activity being conducted. Construction equipment is expected to include but not be limited to an excavator, loader, dump truck, grader, vibratory roller compactor, crane, drill rig, fork lift, pile driving hammer, pile driving equipment, baker tanks, pumps, concrete trucks, several work trucks, and an assortment of other support vehicles. It is anticipated, approximately 8 to 10 construction workers may work on the project during any given day; however, up to 25 workers may be required during special operations.

Construction activities could take up to 24 months to complete over two construction seasons. Work within the channel of Stony Creek could begin in late spring and end in early fall, as necessary to satisfy

seasonal restrictions for in-channel work typically required by state and federal agencies to protect water resources. Construction may include a winter suspension between seasons.

2.4 Environmental Setting

The project occurs in the right-of-way of County Road 200A. Surrounding land rolling and gently sloping and is predominantly oak woodland dominated by blue oak (*Quercus douglasii*), scattered valley oak (*Q. lobata*), and grassland habitats. A rural residence can be found approximately 650 feet southeast of the existing bridge. A ranch and associated pasture land can be found north and west of the existing bridge.

In 2017, North State Resources, Inc. (NSR) prepared a Delineation of Waters of the United States. Approximately 2.19 acres of pre-jurisdictional Waters of the United States were delineated within the biological survey area and is comprised primarily of Stony Creek. Hydrology in the creek is driven by regulated flows from the Stony Gorge Reservoir. The creek carries water from the reservoir eventually to the Sacramento River approximately 31 river miles east of the study area. Generally, Stony Creek is a meandering stream with a wide, nearly level floodplain that flows from southwest to the northeast. Local precipitation events during the winter months could also contribute to hydrology seen on-site.

Four vegetation communities were observed within the project area including annual grassland, blue oak woodland, riverine, and valley foothill riparian based on descriptions provided in A Guide to Wildlife Habitat of California (Mayer and Laudenslayer 1988). Annual grassland is located in the northeast portion of the study area and characterized by a dense herbaceous layer. Dominant plant species include ripgut brome (*Bromus diandrus*), rattail fescue (*Festuca myuros*), harewell barley (*Hordeum murinum* sp. *leporinum*), bur-clover (*Medicago polymorpha*), winter vetch (*Vicia villosa*), and rose clover (*Trifolium hirtum*). Blue oak woodland occurs on the slopes above the Stony Creek floodplain and at the eastern portion of the study area. It is characterized by an open canopy of blue oaks (*Quercus douglasii*), with a dense herbaceous understory containing ripgut brome, rattail fescue, and winter vetch. Riverine habitat consists of Stony Creek, the dominant substrates within the creek include cobble, gravel and sand. Valley foothill riparian habitat occurs as bands of vegetation along the banks of Stony Creek. The habitat is characterized by a moderate to dense overstory of riparian trees and shrubs including Fremont cottonwood (*Populus fremontii*), mulefat (*Baccharis salicifolia*), arundo (*Arundo donax*), and sandbar willow (*Salix exigua*). Herbaceous species within the understory include ripgut brome, annual ragweed (*Ambrosia artemisiifolia*), yellow sweet clover (*Melilotus indicus*), and deergrass (*Muhlenbergia rigens*).

In addition, North State Resources, Inc. prepared a Natural Environmental Study (NES) (**Appendix B**) which included a list of special-status plants and wildlife species from information provided by the U.S. Fish and Wildlife Services (USFWS) species list, the California Department of Fish and Wildlife Natural Diversity Database (CNDDDB), and the California Native Plant Society (CNPS) species list. The database was evaluated to determine the likelihood of each species' occurrence in and near the project and the potential impacts from the proposed bridge replacement project (North State Resources, Inc., March 2017). Three special-status plant species and 11 special-status animal species have the potential to occur on-site including red-flowered bird's foot trefoil (*Acmispon rubriflorus*), Stony Creek spurge (*Euphorbia ocellate* ssp. *rattanii*), Ahart's paronychia (*Paronychia ahartii*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), foothill yellow-legged frog (*Rana boylei*), northwestern pond turtle (*Actinemys marmorata*), Swainson's hawk (*Buteo swainsoni*), grasshopper sparrow (*Ammodramus savannarum*), loggerhead shrike (*Lanius ludovicianus*), white-tailed kite (*Elanus leucurus*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), American badger (*Taxidea taxus*), ring-tailed cat (*Bassariscus astutus*), and migratory birds protected by the Migratory Bird Treaty Act (MBTA). Numerous cliff swallow (*Petrochelidon pyrrhonota*) nests were present beneath the bridge. Suitable nesting habitat for a variety of species protected under the MBTA occurs adjacent to the project area.

The mean annual precipitation is approximately 20 inches per year. The mean annual air temperature during the summer is approximately 77°F, and approximately 48°F during the winter months. (WRCC 2017). The site is approximately 500 feet above sea level.

2.5 Other Public Agencies Whose Approval is Required/Obtained

United States Army Corps of Engineers

- Section 404 Clean Water Act (CWA), Nationwide Permit #14 Linear Transportation Project

Regional Water Quality Control Board

- Section 401 CWA Water Quality Certification

California Department of Fish and Wildlife-Fish and Game Code

- Section 1600 Lake and Streambed Alteration Agreement

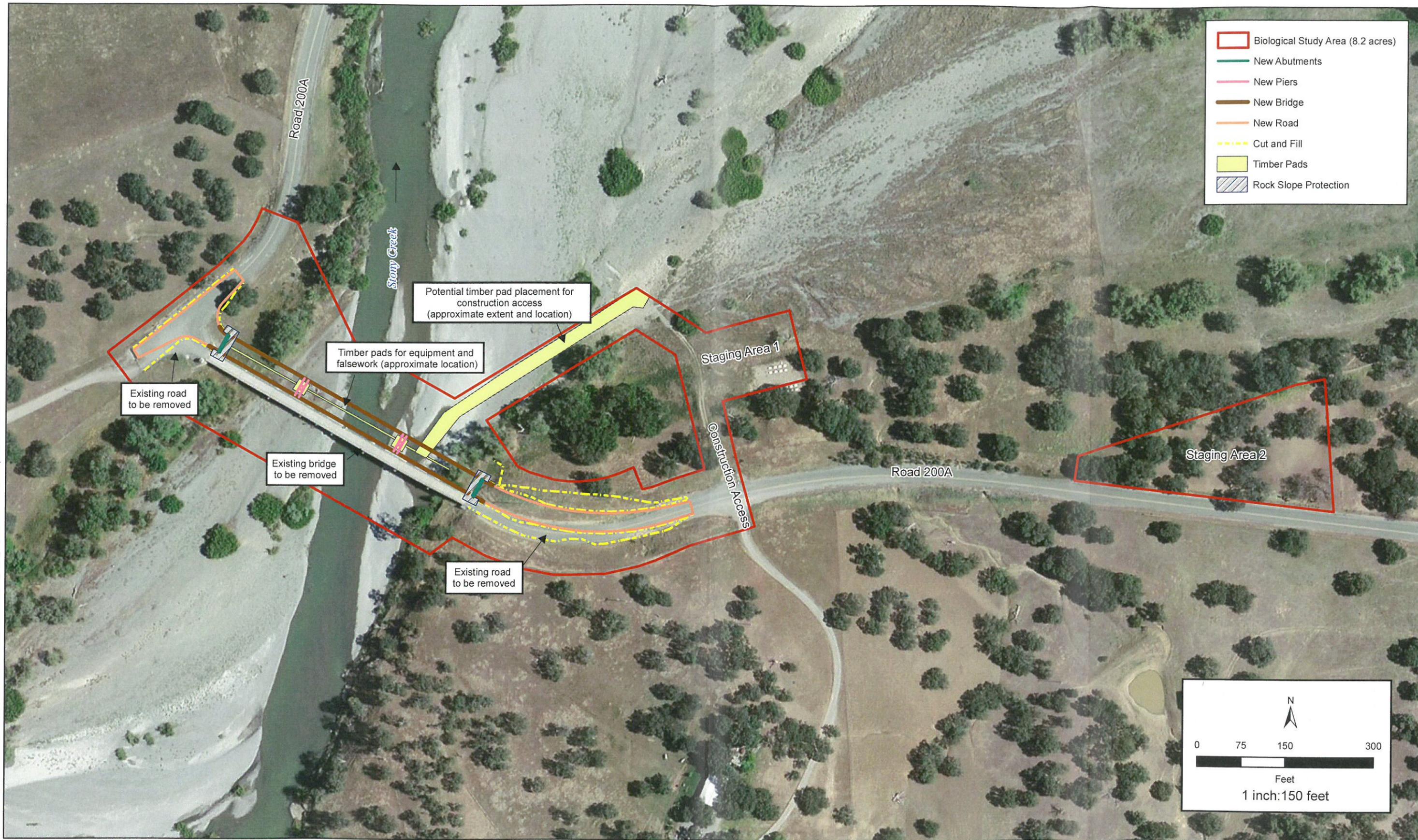
2.6 Regulatory Guidance

This document is an Initial Study, prepared pursuant to the California Environmental Quality Act (CEQA), for the proposed Glenn County Road 200A Bridge Replacement project. This Initial Study has been prepared in accordance with CEQA, Public Resources Code Sections 21000 et seq. and the CEQA Guidelines found in Chapter 14 of the California Code of Regulations (CCR).

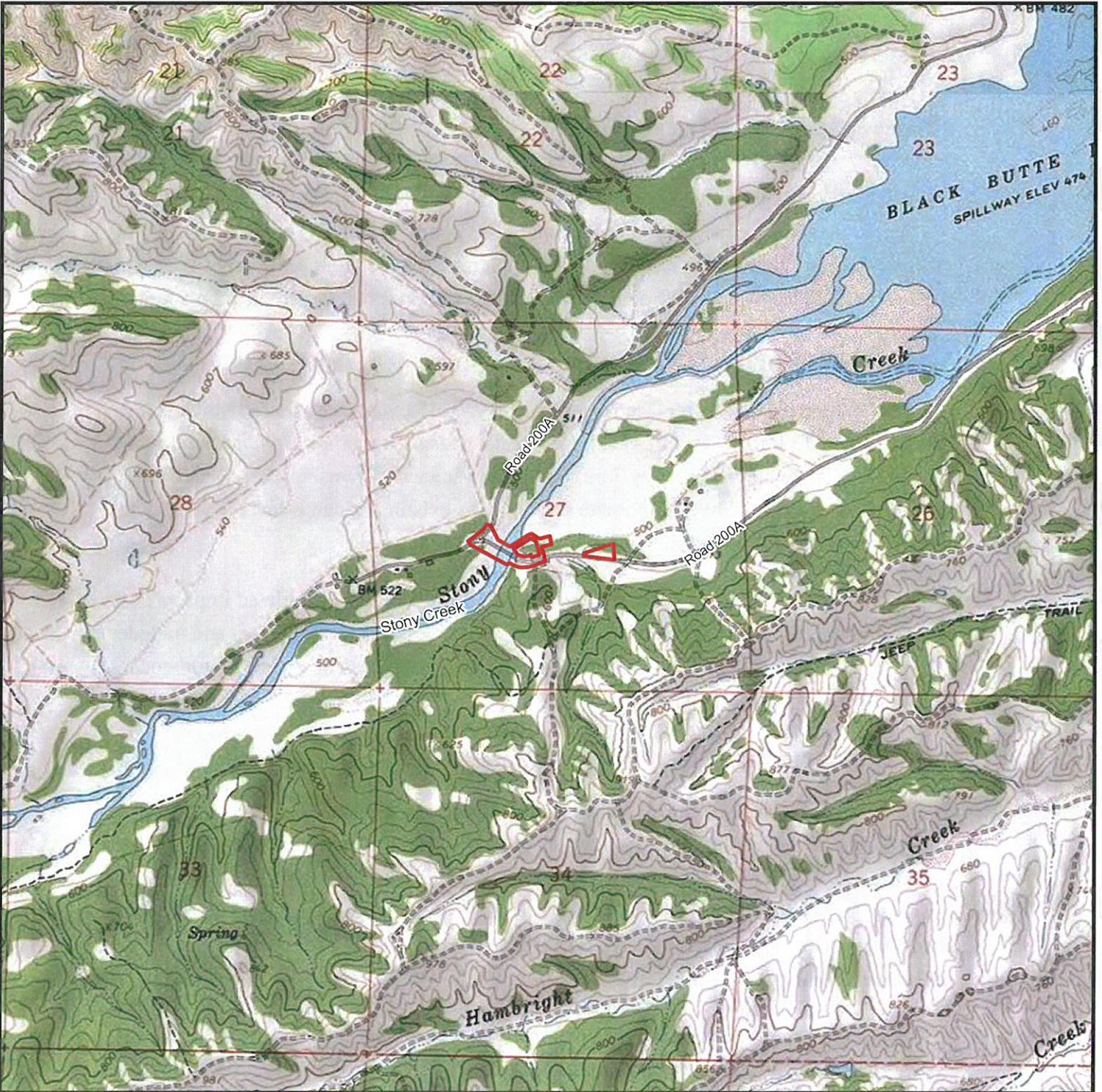
An Initial Study is conducted by a lead agency to determine if a project may have a significant effect on the environment. In accordance with CEQA Guidelines Section 15064(a)(1), an environmental impact report (EIR) must be prepared if there is substantial evidence in light of the whole record that the proposed project under review may have a significant effect on the environment. A negative declaration may be prepared if the lead agency finds that there is no substantial evidence, in light of the whole record, that the project may have a significant effect on the environment. A negative declaration is a written statement describing the reasons why a proposed project will not have a significant effect on the environment and, therefore, why the proposed project will not require the preparation of an EIR (CEQA Guidelines Section 15371). Furthermore, CEQA Section 15070 indicates that a public agency shall prepare a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when the initial study has identified significant effects, but:

- (1) Revisions in the project plans or proposals in accordance with the CEQA Guidelines Section 15070(b) made by or agreed to by the applicant before the proposed mitigated negative declaration and initial study is released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and
- (2) There is no substantial evidence, in light of the whole record before the agency, that the proposed project as revised may have a significant effect on the environment.

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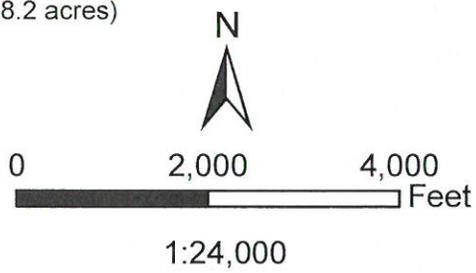
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 Biological Study Area (8.2 acres)

Public Land Survey:
Section 27
T22N, R5W (MDBM)

7.5' USGS Quad:
Julian Rocks



NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT COUNTY OF GLENN PUBLIC WORKS AND PLANNING DEPARTMENT.

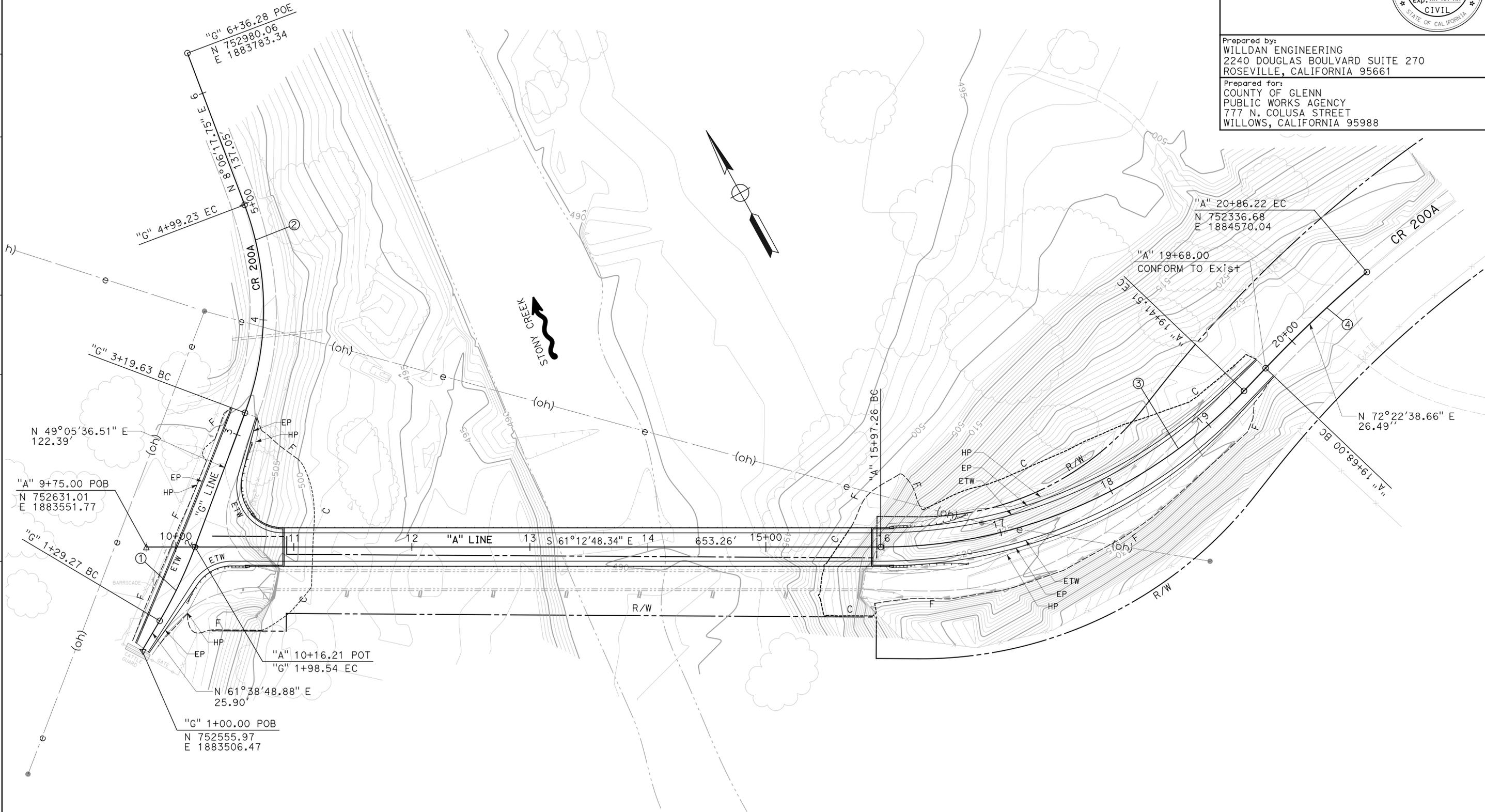
CURVE DATA

No. (+)	R	Δ	T	L
1	390.00'	10°10'34.69"	34.73'	69.27'
2	250.00'	41°09'39.17"	93.87'	179.60'
3	425.00'	46°24'33.01"	182.20'	344.25'
4	1136.00'	5°57'45.58"	59.16'	118.22'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Glenn	CR 200A			
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					

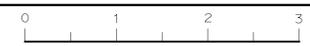
Prepared by:
 WILL DAN ENGINEERING
 2240 DOUGLAS BOULEVARD SUITE 270
 ROSEVILLE, CALIFORNIA 95661

Prepared for:
 COUNTY OF GLENN
 PUBLIC WORKS AGENCY
 777 N. COLUSA STREET
 WILLOWS, CALIFORNIA 95988



LAYOUT
 SCALE: 1" = 40'

L-1



3 Determination

3.1 Environmental Factors Potentially Affected

The environmental factors checked below could be potentially affected by this project; however, with the incorporation of mitigation measures, "potentially significant impacts are reduced to less than significant level by the project" (CEQA Guidelines Section 15382).

- | | | |
|--|--|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agricultural/Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards/Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population & Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

3.2 Determination:

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

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

I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Matt Rogers, Associate Planner

Printed Name

Signature:



Date

10/28/19

Glenn County Public Works Agency

For

4 Environmental Checklist

4.1 Aesthetics

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site/surroundings?				X
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

4.1.1 Discussion

- a) **Less than Significant.** The proposed project involves the construction of a new bridge and the demolition of the existing bridge across Stony Creek along County Road 200A. The proposed project will not change regulations or policies (or their implementation) relative to aesthetic/visual resources. Project construction will not change the established visual character and planned future use of the surrounding area as similar components (i.e. bridge) already exist at the location. Placement of the new bridge will not interfere with the views of scenic vistas from the adjacent residence and public right-of-way. Although the rural setting and unique geography of Glenn County and its surrounding area have created a number of scenic vistas and corridors, the proposed project only includes bridge replacement, roadway, and approach rehabilitation along the existing roadway alignments for improved safety and will not have a substantial adverse effect on a scenic vista.
- b) **No Impact.** There are no designated resources within a state scenic highway in the project area. Furthermore, there are no officially recognized scenic roadways in Glenn County. The proposed project would not result in a significant change to the appearance of the existing roadway, nor would it eliminate access to scenic views or alter the landscapes surrounding the project site.
- c) **No Impact.** The proposed project will not substantially degrade the existing visual character or quality of the site and its surroundings. The project would not create structures with a substantial vertical presence. Temporary visual impacts may occur during construction activities, when heavy equipment and construction materials will be present within the project area. Neither the function nor the general appearance of the surrounding area would be substantially modified by the proposed project.
- d) **No Impact.** The improvements associated with this project do not include the installation of lighting or reflective surfaces that could contribute to substantial sources of light or glare. Additionally, construction will not occur during the evening or nighttime hours.

Mitigation: None required

4.2 Agricultural and Forestry Resources

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Convert Farmland (Prime, Unique or of Statewide Importance) pursuant to the Farmland Mapping and Monitoring Program of the CA Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?			X	

4.2.1 Discussion

- a) **No Impact.** The proposed project does not occur on lands designated as Important Farmlands; although, the project will occur in adjacent lands designated as grazing land and Farmland of Local Potential. Because the project occurs within the existing county right-of-way and is the replacement of an existing structure it would not result in the conversion of Prime Farmland, Farmland of Statewide Importance, Unique Farmland or Farmland of Local Importance, as shown on the maps prepared pursuant to Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- b) **No Impact.** The project will not conflict with existing zoning for agricultural use, or a Williamson Act Contract. While there are Williamson Act Contracts on lands adjacent to the project, project activities in these areas will occur within the existing roadway right-of-way. Therefore, relative to land use designations and Williamson Act contracts, there would be no impact.
- c) **No Impact.** The proposed project would not conflict with existing zoning for, or cause the rezoning of forestland (as defined in Public Resources Code §1220(g)), timberland (as defined in Public Resources Code §4526), or Timberland Production (as defined in Government Code §51104(g)), because the project site and the surrounding area does not contain forest land. The proposed project is located in the northern portion of California’s Central Valley, a non-forested region.
- d) **No Impact.** The proposed project would not cause the rezoning or loss of forestland or timberland to non-forest use due to its location within Glenn County. The project is located within the foothills of the northern portion of California’s Central Valley, and, as such does not contain forest land.
- e) **Less Than Significant.** The proposed project does not involve changes to the existing environment that could result in the conversion of Farmland to non-agricultural use. The proposed project involves the

replacement of a bridge within the road right-of-way. Agricultural uses in the surrounding area will continue.

Mitigation: None required

4.3 Air Quality

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X		
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including emissions that exceed quantitative thresholds for ozone precursors)?		X		
d) Expose sensitive receptors to substantial pollutant concentrations?		X		
e) Create objectionable odors affecting a substantial number of people?			X	

4.3.1 Setting

The proposed project is in the Northern Sacramento Valley Planning Area (NSVPA), which includes the following counties: Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba. The NSVPA is bounded on the north and west by the Coastal mountain range and on the east by the southern portion of the Cascade mountain range and the northern portion of the Sierra Nevada mountains. High temperatures and low humidity, with prevailing winds from the south, characterize summer conditions. Occasional rainstorms, interspersed with stagnant and sometimes foggy weather, characterize winter conditions. Southern winds continue to predominate during the winter. Two types of inversions occur in the NSVPA: 1) during the summer, sinking air forms a lid over the region and distributes photochemical smog and 2) air cools next to the ground while air aloft remains warm causing poor dispersion of ground level pollutant emissions.

The California Air Resources Board (CARB) prepares and submits to the EPA a State Implementation Plan (SIP) explaining how the state will attain compliance with Federal clean air standards. The NSVPA is subject to federal, state, and local regulations. The NSVPA adopted an updated 2012 Triennial Air Quality Attainment Plan as its component of the SIP in compliance with the Federal and California Clean Air Acts.

The Glenn County Air Pollution Control District (GCAPCD) is responsible for attainment of the National and California Air Quality Standards in Glenn County. The GCAPCD's primary role when reviewing projects is to evaluate their consistency with ambient air quality standards and the provisions of SIP and Attainment Plan. The following table identifies criteria pollutants and the applicable state and federal attainment status:

Table 4.3.1: Glenn County Ambient Air Quality Attainment Status (GCAQMD, 2015)

Pollutant	State Designation	Federal Designation
ozone	Attainment	--
8-hour ozone		Unclassified/Attainment
Carbon monoxide	Unclassified	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
PM10	Nonattainment	Unclassified
PM2.5	Attainment	Unclassified/Attainment

4.3.2 Discussion

- a) **Less Than Significant.** The proposed project is the replacement of a structurally deficient bridge with a new cast in place structure. It does not involve the construction of new expanded facilities. The proposed project will be required to comply with all applicable rules, regulations, and control measures including permitting, prohibitions, and limits to emissions that work to reduce air pollution throughout California. Therefore, it will not conflict with or obstruct implementation of any air quality plans in Glenn County. The proposed project would not create a source of new vehicle traffic, such as a new housing development or commercial uses, and thus there would be no added vehicle trips to the existing roadway network, and no long-term air quality impacts. The proposed project is located within the Northern Sacramento Valley Air Basin (NSVAB) and the jurisdiction of CGAPCD. Construction activities may result in ground disturbance due to vegetation removal and placement of bridge components. To comply with Caltrans Standard Specifications, the County shall comply with all Best Available Mitigation Measures (BAMMs), as described in mitigation measure **Air Quality MMI1**, for the control of construction related particulate emissions
- b) **Less Than Significant With Mitigation Incorporated.** Implementation of the proposed project would result in the generation of short-term construction-related air pollutant emissions. Diesel fumes may be noticeable near the site; however, diesel fumes will be a short-term effect. All equipment must comply with California emissions standards and Caltrans Standard Specifications. Exhaust emissions from construction equipment would contain reactive organic gases (ROG), nitrogen oxides (NOx), carbon monoxide (CO) and particulate matter less than 10 microns in diameter (PM10). Particulate matter less than 10 microns emissions would also result from windblown dust (fugitive dust) generated during construction activities. As shown in **Table 4.3.1**, per the California Ambient Air Quality Standards (CAAQS) the project area is designated as a non-attainment area for PM10.

Because the project is receiving funding from the Highway Bridge Program, the project must comply with Caltrans Standard Specifications (Section 7-1.01F, Air Pollution Control and Section 10.1, Dust Control), therefore, the contractor is required to comply with other local jurisdiction rules,

regulations, ordinances, and statutes. The proposed project requires a relatively limited scale of roadway work for bridge replacement. The project would not result in construction related emissions exceeding GCAPCD emission thresholds, having a less than significant impact to regional air quality. The incorporation of **Air Quality MM-1**, would ensure construction related emissions impacts would be less than significant.

- c) **Less Than Significant With Mitigation Incorporated.** Bridges and roadways are conduits that enable vehicular traffic to move from one point to another. The project involves replacement of an existing bridge, and does not generate new traffic, thereby generating more emissions, as would new development (i.e., residential or commercial land uses).

The project will generate short-term construction related emissions associated with equipment used for construction activities. These emissions would contain ozone precursors, PM₁₀ and PM_{2.5}. Additional particulate matter emissions in the form of fugitive dust could be generated during ground disturbing activities for vegetation removal and placement of abutments and rock slope protection.

The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard. Each of the above impacts are temporary, local, and construction related. The incorporation of **Air Quality MM-1** would reduce impacts associated with PM₁₀ to a less than significant level. Air quality mitigation measures are consistent with the requirements of Glenn County General Plan and the GCAPCD and Caltrans Standard Specifications for pollution and dust control.

- d) **Less Than Significant With Mitigation Incorporated.** Two residences can be found in close proximity to the project area. A residential dwelling exists approximately 625 ft. to the southeast of the bridge. Project activities consist of removal of the current structure and replacement with a new bridge structure as well as roadway approach work. There are no schools, hospitals, or other sensitive receptors in the area and no substantial pollutant concentrations are anticipated to occur. Temporary construction activities would result in particulate emissions in an area designated as non-attainment. However, implementation of BMM's and the incorporation of **Air Quality MM-1** would minimize the exposure of sensitive receptors to fugitive dust to the maximum extent possible.
- e) **Less Than Significant.** Other than construction activities (diesel odors may be noticeable near the construction site), no long-term odor producing activities would result from the project. Therefore, the proposed project would not result in less than significant objectionable odor impacts.

4.3.3 Mitigation:

Air Quality MM-1: Best Available Mitigation Measures for the Control of Construction Related Particulate Emissions

To comply with the Glenn County Air Pollution Control District's (GAPCD) regulations (section 76 visible emissions), the County shall comply with all Best Available Mitigation Measures (BAMMs) for the control of construction related particulate emissions. The contractor shall submit an Air Quality Attainment Plan to the County for approval. The approved plan shall include all applicable BAMMs as specified by GCAPCD's Standard Construction Phase Mitigation Measures, including but not limited to the following:

1. Haul trucks must be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.

2. Construction equipment exhaust emissions shall not exceed GCAPCD Section 76 Visible Emissions (40 percent opacity or Ringelmann 2.0). Operators of vehicles and equipment found to exceed opacity limits shall act to repair the equipment within 72 hours or remove the equipment from service.
3. The area disturbed by demolition, clearing, grading, earth moving, or excavation operations shall be minimized at all times.
4. Suspend grading or earth moving activities when wind speeds exceed 20 mph
5. Minimize unnecessary idling time to 5 minutes.
6. Water shall be applied as needed to prevent fugitive dust impacts offsite.
7. All onsite vehicles should be limited to a speed of 15mph on unpaved roads.

4.4 Biological Resources

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?			X	
c) Have a substantial adverse effect on protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

4.4.1 Setting

Natural Environment Study (NES)

A NES report was prepared by North State Resources, Inc. in March of 2017 (**Appendix B**). The NES identified valley foothill riparian, riparian wetlands, perennial stream (Stony Creek), ephemeral stream, and intermittent stream. The NES also assessed the potential for significant impacts to special-status species. As part of the NES, a list of special-status plant and animal species was compiled from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation database, California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB), and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants to determine special-status species that may potentially be affected by the proposed project. All the special-status species listed by the USFWS, CDFW, and CNPS occurring within the Julian Rocks, Newville, Sehorn Creek, Black Butte Dam, Chrome, Fruto NE, Elk Creek, Fruto and Stone Valley USGS quadrangles are included in the NES, in Table 1. Based on the CNDDDB data, four special-status plant species occur within five miles of the project site, plamate-bracted bird's-beak (*Chloropyron palmatum*), red-flowered bird's-foot (*Acmispon rubriflorus*), Stony Creek spurge (*Euphorbia ocellate* ssp. *rattanii*), Ahart's paronychia (*Paronychia ahartii*). No special-status plant species were encountered during the botanical field survey of the project area during June of 2016.

Special-status wildlife species with at least moderate potential to occur within the project area include, valley elderberry longhorn beetle (*Desmicerus californicus dimorphus*), foothill yellow-legged frog (*Rana boylei*), northwestern pond turtle (*Emys marmorata*), grasshopper sparrow (*Ammodramus savannarum*), loggerhead shrike (*Lanius ludovicianus*), white-tailed kite (*Elanus leucurus*), Swainson's hawk (*Buteo swainsoni*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), American badger (*Taxidea taxus*), ring-tailed cat (*Bassariscus astutus*), and birds protected by the Migratory Bird Treaty Act (MBTA).

In addition, avoidance and minimization measures would ensure impacts to aquatic and upland habitat will be reduced. The County will implement avoidance and minimization measures as detailed in applicable regulatory permits to avoid impacts. Measures may include but are not limited to construction within the right-of-way (ROW), staging the equipment and the excavated material in designated areas, and using erosion control methods such as silt fencing and straw wattles.

Other measures may include, but are not limited to:

- Construction within the County ROW
- Staging equipment and excavated materials in the designated areas
- Using erosion control methods such as silt fencing and straw wattles

There are no federally listed special-status species with at least moderate potential to occur within the project area (including the potential for foraging habitat) and associated effect determination.

Table 2 includes federally listed special-status species with at least moderate potential to occur within the project (including the potential for foraging habitat) and an associated effect determination.

Table 4.4.1: Federally listed Species with Potential to Occur in the Action Area and Effect Determinations

Species	Effect Determination
Valley elderberry longhorn beetle (<i>Desmicerus californicus dimorphus</i>)	No effect

Table 3 includes State listed species and CDFW Species of Special Concern with at least moderate potential to occur within the project area.

**Table 4.4.2: State listed Species with Potential to Occur
in the Action Area and Associated Status**

Species	Status
Foothill yellow-legged frog (<i>Rana boylei</i>)	Species of Special Concern
Northwestern pond turtle (<i>Emys marmorata</i>)	Species of Special Concern
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	Species of Special Concern
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Species of Special Concern
White-tailed kite (<i>Elanus leucurus</i>)	Fully Protected
Swainson’s hawk (<i>Buteo swainsoni</i>)	State Threatened
Paillid bat (<i>Antrozous pallidus</i>)	Species of Special Concern
Western red bat (<i>Lasiurus blossevillii</i>)	Species of Special Concern
American badger (<i>Taxidea taxus</i>)	Species of Special Concern
Ring-tailed cat (<i>Bassariscus astutus</i>)	Fully Protected

Draft Delineation of Aquatic Resources

A Draft Delineation of Aquatic Resources (**Appendix C**) was prepared for this project by North State Resources, Inc. in January 2017. A total of 2.194 acres of pre-jurisdictional waters of the U.S. were delineated within the project area including 0.254 acres of riparian wetland, 0.001 acres of ephemeral stream, 0.016 acres of intermittent stream, and 1.923 acres of perennial stream. According to the Draft Delineation, the riparian wetlands are located adjacent to and within the ordinary high water mark of Stony Creek, the ephemeral stream is located in the southeastern portion of the study area near Stony Creek, the intermittent stream is located in the northwest portion of the study area and flows seasonally, and the perennial stream is Stony Creek which bisects the study area. The determinations concerning Waters of the United States are subject to verification by the U.S. Army Corps of Engineers.

Required Regulatory Permitting

The USACE and the EPA regulate the discharge of dredged or fill material into jurisdictional waters of the United States, under Section 404 of the CWA. The issuance of a Section 404 permit is contingent on a project’s demonstration of adherence to the maximum extent practicable to the following principals: 1) avoidance of impacts, 2) minimization of potential impacts, and 3) compensation for any remaining unavoidable impacts. Thus, acquisition of a Section 404 permit is indicative of adherence to the USACE “no net loss” policy for area and function of Waters of the US. Furthermore, the proposed project would be required to obtain water quality certification per Section 401 of the Clean Water Act as a condition of 404 permit acquisition. The Regional Water Quality Control Board (RWQCB) issues water quality certifications within the scope of the following mandates: Section 401 of the Clean Water Act, California Porter-Cologne Water Quality Control Act, and State and Federal No Net Loss Policies. Acquisition of water quality certification is indicative of compliance with the state’s water quality standards, including beneficial uses, water quality objectives, and an anti-degradation policy.

The CDFW grants approval per the Streambed Alteration Agreement Program under one of the following two scenarios, as described in Section 1602 of the Fish and Game Code:

- The activity will not substantially adversely affect an existing fish or wildlife resource, and that the entity may commence the activity without an agreement.
- The department determines that the activity may substantially adversely affect an existing fish or wildlife resource and issues a final agreement to the entity that includes reasonable measures necessary to protect the resource, and the entity conducts the activity in accordance with the agreement.

4.4.2 Discussion

a) **Less Than Significant With Mitigation.** Field surveys of the project area were conducted on November 9, 2016 by North State Resources, Inc. Based on the survey results and review of existing documentation, 11 special-status species have at least moderate potential to occur within the project area, including valley elderberry longhorn beetle, foothill yellow-legged frog, northwestern pond turtle, grasshopper sparrow, loggerhead shrike, white-tailed kite, Swainson’s hawk, pallid bat, western red bat, American badger, ring-tailed cat and migratory birds protected by the MBTA. Species with a low or no potential to occur within the project site are not discussed further because the potential for these species to occur is negligible (Refer to Table 3). The eleven special-status species with a moderate potential to occur are discussed in further detail below.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (VELB) is federally listed as threatened and critical habitat has been designated by the USFWS. The beetle is endemic to riparian systems along the margins of rivers and streams, and in adjacent grassy savannas in California’s Central Valley. The VELB occurs in the Central Valley of California below 3,000 feet. It is distributed primarily within riparian habitats from Shasta County to Kern County. Valley elderberry longhorn beetles feed and reproduce exclusively on two species of elderberry, including blue elderberry (*Sambucus nigra* ssp. *caerulea*) and red elderberry (*S. racemosa*). The adult female beetles deposit eggs in the bark crevices of living plants. Larvae bore into the pith (plant tissue in the center of the stem) of larger elderberry stems upon hatching, where the majority of the animal’s lifespan occurs. Following pupation in the spring, the adult beetle emerges, creating a hole in the bark of the stem or branch. Adults feed on foliage and are present from March through early June. Because the adult stage is short lived, survey techniques focus on the presence of emergence holes for evidence of VELB. Valley elderberry longhorn beetle emergence holes have been observed in shoots or branches with diameters as small as 0.5 inches (13 mm) but are more common in older, larger branches. Besides exhibiting a preference for “stressed” elderberry shrubs, VELB prefer shrubs with stems of a certain size class. Exit holes have been found more frequently in trunks or branches that are 5 to 20 cm (2-8 in) in diameter, or at least 1.0 inch or greater at ground height (USFWS 1999) and less than one meter off the ground (Collinge et al. 2001). Research also shows that exit holes more consistently occur in clusters or stands of elderberry shrubs surrounded by associate riparian vegetation, rather than in isolated shrubs (Collinge et al. 2001). Exit holes are circular to slightly oval and are usually 7-10 mm in diameter. Valley elderberry longhorn beetles are the only insect species known to inhabit live elderberry shrubs and/or make exit holes of a similar size and shape in the Central Valley (USFWS 1991). No VELB or evidence of their presence was detected within the project area. However, due to the presence of a blue elderberry shrub approximately 30 feet from ground disturbing activities the implementation of **Biological Resources MM – 1** would ensure project related impacts to VELB would be less than significant.

Foothill Yellow-legged Frog

The yellow-legged frog is a state species of concern which occurs along the Coast Range of California, to the Transverse Mountains in Los Angeles County, and throughout most of northern

California west of the Cascade crest. It can be found in or near rocky streams in a variety of habitats including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, costal scrub, mixed chaparral, and wet meadows. Adult yellow-legged frogs eat both aquatic and terrestrial invertebrates and yellow-legged frog tadpoles generally graze on algae and diatoms on rocky stream bottoms. The foothill yellow-legged frog is typically found in partly shaded, shallow streams and riffles with a rocky substrate in a variety of aquatic habitats. They generally prefer low- to moderate-gradient streams, especially for breeding and egg-laying, requiring at least some cobble-sized substrate for egg-laying, which they do following the end of spring flooding (mid-March to May). During the summer and fall, adult frogs prefer stream channels that provide exposed basking sites and cool shady areas. The tadpoles require water for at least 3 to 4 months while continuing to develop, hence the yellow-legged frog is rarely found far from permanent water sources. Garter snakes and bullfrogs have been documented as predators of the yellow-legged frog. Although suitable habitat is present within the project area, no foothill yellow-legged frogs were observed during biological surveys within the project area. Implementation of **Biological Resources MM-2** would ensure potential impacts to foothill yellow-legged frog would be less than significant.

Northwestern Pond Turtle

The northwestern pond turtle is a CDFW Species of Special Concern that occurs within a variety of habitats across the state. Northwestern pond turtles are associated with permanent or nearly permanent waters including ponds, lakes, sloughs, streams, irrigation ditches. Potentially suitable aquatic and nesting habitat occurs within the project area. Although no turtles of any species were observed during the biological survey of the project area in April 2017. Implementation of **Biological Resources MM-3** would ensure project related impacts to northwestern pond turtles would be less than significant.

Loggerhead Shrike

Loggerhead shrikes are common residents and winter visitors in lowlands and foothills throughout California. They can be found in open habitats with scattered shrubs, trees, posts, fences, utility lines or other perches. Typically, they occur in open canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. They rarely occur in heavily urbanized areas but are often found in open croplands. Loggerhead shrikes mainly eat large insects, but also take small birds, mammals, amphibians, reptiles, fish, carrion, and various other invertebrates. They nest in shrubs or trees at heights ranging from 0.4 to 15 meters above the ground. Adults lay eggs from March to May with male and females tending their young into July or August. Although suitable habitat is present within the project area, no loggerhead shrikes were observed during biological surveys of the project area.

The implementation of **Biological Resources MM-4** will ensure potential impacts to loggerhead shrike would be less than significant.

White-Tailed Kite

The white-tailed kite is a CDFW fully protected bird species that can be found as a yearlong resident in coastal and valley lowlands near agricultural areas. Its habitat includes herbaceous and open stages of most habitats and cismontane habitats in California. The kite forages in undisturbed open grasslands, meadows, farmlands, and emergent wetlands where there are dense populations of voles (their main food source). White tailed kites require dense broad-leaved deciduous tree woodlands for nesting. Although suitable habitat is present within the project area, no white-tailed kites were observed during biological surveys within the project area.

The implementation of **Biological Resources MM-4** will ensure potential impacts to white-tailed kite would be less than significant.

Swainson's Hawk

Swainson hawk is a State-threatened species with no federal status listing. The species can be found throughout much of California, but the greatest concentration of breeding pairs is found in the Central Valley from Butte to San Joaquin counties. The species often nests in riparian areas adjacent to agricultural fields. Swainson's hawks are migratory, arriving in California in late February/early March and departing the breeding grounds in September.

The nearest known occurrence of Swainson's hawk is approximately six miles to the southeast of the project area. However, the riparian trees located near the existing bridge could provide suitable nesting habitat for the species. No Swainson's hawks or any large nests were observed during the biological survey.

The implementation of **Biological Resources MM-4** will ensure potential impacts to Swainson's hawk would be less than significant.

Pallid Bat

The pallid bat (*Antrozous pallidus*) is a rather large, pale, yellowish-brown bat with long prominent ears, a blunt snout, and pinkish-brown or gray wing and tail membranes. Pallid bats tend to roost alone or in small groups and are known to use day and night roosts in crevices of rocky outcrops and cliffs, caves, mines, trees (bole cavities of oaks, exfoliating Ponderosa pine and valley oak bark, deciduous trees in riparian areas, and fruit trees in orchards), and various man-made structures such as bridges and buildings (Baker et al. 2008). The pallid bat primarily preys on a variety of arthropods, grasshoppers, crickets, beetles, moths, occasionally small reptiles and rodents (Hermanson and O'Shea 1983). This species of bat is very vulnerable to disturbance that many times results in mass displacement of the species. If the species is detected in the project area, actions to coax the bat out of the area should be taken prior to the end of October when the bat seeks its winter hibernacula, isolation measures should be installed to prevent re-entry to the roost (Sherwin, 1998). Potential roosting habitat for pallid bat is present. Implementation of **Biological Resources MM-5** will ensure potential impacts to pallid bat would be less than significant.

Western Red Bat

The western red bat (*Lasiurus blossevillii*) is found in California from Shasta County to the Mexican border, west of the Sierra Nevada/Cascade crest and deserts. Winter range includes western lowlands and coastal habitats south of San Francisco. The western red bat roosts primarily in trees within forests and woodlands in edge habitats from sea level to mixed conifer forests (Williams and Findley 1979). However, the western red bat may have an association with riparian habitats with dense stands of cottonwood and sycamore, and orchards (Bolster, 1998). Family groups are known to roost together, forming nursing colonies. They forage in open areas and feed on a variety of insects including moths, crickets, beetles, and cicadas (Shump and Shump 1982). Migrations typically occur in the spring from March to May and in the autumn from September to October. The western red bat has been seen at temperatures as low as 44°F, however, in these cold climates the bat spends winter in hibernation (LaVal and LaVal 1979). Although suitable roosting habitat is present, no western red bats were observed within the project area. Implementation of **Biological Resources MM-5** will ensure potential impacts to western red bat would be less than significant.

American Badger

The American badger (*Taxidea taxus*) is a carnivorous mammal found throughout the state of California, with the exception of the northernmost portion of the North Coast. American badgers are most often found in drier, open stages of most shrub, forest, and herbaceous habitats, with friable soils. Their diet consists primarily of fossorial rodents: rats, mice, chipmunks, and especially ground squirrels and pocket gophers. American badgers also eat some reptiles, insects, earthworms, eggs, birds, and carrion. Diet shifts seasonally and yearly in response to availability of prey. This species is considered a Species of Special Concern by the CDFW. Although suitable burrowing and foraging habitat is present within the project area, no American badgers were observed within the project area. Implementation of **Biological Resources MM-6** will ensure potential impacts to American badger that would be less than significant.

Ring-tailed Cat

The ring-tailed cat (*Bassariscus astutus*) is widely distributed throughout California, though its range extends from the western and southwestern United States, through Mexico and into Central America. It is a common to uncommon, permanent, non-migratory resident throughout its range. The ring-tailed cat is active year-round but is rarely seen as it is nocturnal and secretive in nature. It can be found at low to middle elevations and inhabit various riparian habitats, usually being found no more than 1 kilometer from water. The ring-tailed cat is primarily carnivorous, foraging for mice, woodrats, bird eggs, reptiles, invertebrates, fruits, nuts and some carrion on the ground, among rocks and in the trees (CDFG 2005). For nesting it utilizes rock recesses, hollow trees, logs, snags abandoned burrows and wood rat nests. Young are typically born in late spring or early summer. (David and Russell 1984). Although suitable habitat is present in the riparian areas, no ring-tailed cats were observed within the project area. Implementation of **Biological Resources MM-7** will ensure potential impacts to ring-tailed cats would be less than significant.

Migratory Birds and Raptors

The federal Migratory Bird Treaty Act (MBTA) and California F.G.C. Sections 3503 and 3800 protect the occupied nests and eggs of migratory and non-game bird species. Birds nest in a variety of places including trees, shrubs, man-made structures, and the ground. Work buffers around migratory birds and their nests are typically needed to minimize impacts to these species. Any proposed project must take measures to avoid the take of any migratory and non-game birds, nests, or eggs.

Numerous migratory bird species were observed during the wildlife survey. Active cliff swallow nesting was in progress beneath the bridge. With the implementation of **Biological Resources MM-4** impacts to migratory birds and raptors would be less than significant.

- b) **Less Than Significant.** The project area contains valley foothill riparian habitat, which is considered a sensitive natural community by the USACE and CDFW. The proposed project will temporarily and permanently impact valley foothill riparian habitat. Temporary impacts to valley foothill riparian habitat will be returned to pre-construction conditions. Mitigation purchase will likely be required by CDFW for tree loss within the valley foothill riparian habitat.
- c) **Less Than Significant with Mitigation.** A Draft Delineation of Waters of the U.S. (**Appendix C**) was prepared for the project site by North State Resources in January 2017. A total of 2.194 acres of pre-jurisdictional waters of the U.S. were delineated within the project area. The proposed project could affect Stony Creek, a perennial stream and a Waters of the U.S. In addition, the project would also be required to comply with FGC Section 1602, The following regulatory permits will be acquired prior to the start of any grading or construction activities within the project area:

- CWA Section 404 permit #14 Linear Transportation from the USACE
- CWA Section 401 Water Quality Certification from the RWQCB
- F.G.C. Section 1602 Streambed Alteration Agreement from CDFW

Obtaining the appropriate regulatory permits ensures: 1) compliance with applicable state and federal laws, 2) that potential impacts to wetlands and waters of the U.S., waters of the state, and streambed and banks (including irrigation ditches), and listed species are mitigated appropriately (including the payment of mitigation fees), and 3) minimizes, reduces, or avoids potentially significant impacts. Incorporation of **Biological Resources MM-1** would ensure that the county would obtain all required subsequent regulatory permits.

- d) **Less than Significant.** The proposed project would involve the removal of the current structurally deficient bridge and replacing it with a three span, cast-in-place, box girder bridge founded on drilled shaft foundations structure. Temporary disturbances resulting from vegetation removal will be restored to pre-project conditions. The project would not result in the introduction of permanent barriers to movement of any resident or migratory fish or wildlife species, nor would it result in the introduction of any new long-term factors (light, fencing, noise, human/presence and/or domestic animals) which could hinder the normal activities of wildlife.
- e) **No Impact.** The proposed project would not conflict with any local plans or policies that protect biological resources. The project would be required to adhere to the mitigation measures and standard/permitting requirements of regulatory agencies, as set forth in this study.
- f) **No Impact.** The project site is not subject to the provisions of any adopted habitat conservation plans or natural community conservation plans, as Glenn County has yet to prepare any. Regarding local plans, policies and ordinances, the proposed project would result in no impact.

4.4.3 Mitigation:

Biological Resources MM-1: Valley Elderberry Longhorn Beetle and Obtain Regulatory Permits and Implement Avoidance and Minimization Measures

The following avoidance and minimization measures, which are consistent with the *Formal Programmatic Consultation Permitting Projects with Relatively Small Effects on the Valley Elderberry Longhorn Beetle within the Jurisdiction of the Sacramento Field Office, California* (USFWS 1996) and the *Conservation Guidelines for Valley Elderberry Longhorn Beetle* (USFWS 1999), will be implemented to minimize the potential impacts to VELB

- Worker awareness training will be provided to all construction personnel. The training will be administered by a qualified biologist and will provide the workers with information on their responsibilities in regards to the sensitive biological resources in the BSA. The program will specifically address the status of VELB, the species life history, how to identify the species and its habitat, the need to protect the beetle and its host plant, and the project conservation and avoidance and minimization measures.
- Project activities within 100 feet of elderberry shrubs will be timed to occur outside of the VELB active season (mid-March through mid-May) to the greatest extent practicable.
- Prior to construction activities, an environmentally sensitive area will be designated around the elderberry shrub not slated for removal using exclusionary fencing, signs, and flagging under the supervision of a qualified biologist. A 100-foot buffer zone around the elderberry shrub will be marked within stakes or flags as a minimal disturbance area. Because project activities would

encroach within 100 feet of the shrub, exclusionary fencing will be placed at a distance of 20 feet or more from the dripline of the shrub. Signs stating “*This area is a habitat for the VELB, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.*” will be erected and attached to the fencing. The signs will be placed in clearly visible locations and will be readable from a distance of 20 feet. Fencing and signs will be maintained throughout the entire project duration.

- No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant will be used within 100 feet of any elderberry shrub with one or more stems measuring 1.0 inch or greater in diameter at ground level.
- Any damage to the buffer area (i.e. area within 100 feet of elderberry shrub with stems of suitable size) during construction will be restored following construction. Restoration will include erosion control and revegetation with appropriate native plants, as appropriate.
- A qualified biologist will conduct a pre and post-construction survey of the elderberry shrub as a result of the proposed action. The pre-construction survey will document the conditions of the shrub prior to construction activities and document compliance with mitigation measures. The post-construction survey will verify that no additional impacts to the elderberry shrub took place. If the shrub becomes damaged during construction activities, the County may be required to compensate for the loss of the shrub through compensatory mitigation.

Additionally, the project will obtain the following permits, as necessary and applicable:

- CWA Section 404 permit #14 Linear Transportation from the USACE
 - CWA Section 401 Water Quality Certification from the RWQCB
 - F.G.C. Section 1602 Streambed Alteration Agreement from CDFW
- The project will incorporate the avoidance and minimization measures (AMMs), standard BMPs and other notification requirements identified in applicable permits, such as pre and post-construction surveys and documentation, worker awareness training, exclusionary measures, AMM compliance and reporting, incident reports and monitoring requirements.

Biological Resources MM-2: Foothill Yellow-legged Frog Avoidance and Minimization Measures

- Environmental awareness training will be conducted by a qualified biologist prior to onset of the work for construction personnel to brief them on how to recognize foothill yellow-legged frog and other special-status animals that may occur in the project area.
- To avoid potential injury or mortality to foothill yellow-legged frogs using vegetated areas for cover along Stony Creek, initial vegetation clearing (i.e. removal of small trees, shrubs, brush, and tall dense grasses) along Stony Creek will be done manually using hand tools (e.g. chainsaw, lopper, weed whacker). The vegetation will be cut to ground level and be removed from the work area by hand. Heavy equipment may be used once the initial vegetation clearing along the creek is complete.
- Stony Creek outside the work area will be staked, flagged, or signed to avoid encroachment by equipment and construction crews. The number of access routes, size of the staging area, and the total area of impact will be limited to the minimum necessary to achieve the proposed project goal. This goal includes locating access routes and construction areas outside of the creek to the maximum extent practicable. The flagged areas will confine access routes and construction areas to the minimum area necessary to complete construction and minimize the impact on natural habitats in the BSA.

- Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed will be minimized to the maximum extent possible.
- If foothill yellow-legged frogs are encountered in the BSA during construction and will be harmed by construction activities, work will stop in the area and the County will notify CDFW. Upon authorization from CDFW, a qualified biologist may relocate the individual(s) the shortest distance possible to a location containing habitat outside of the project area.

Biological Resources MM-3: Northwestern Pond Turtle Avoidance and Minimization Measures

- No later than 48 hours prior to any ground disturbance, pre-construction surveys will be conducted by a qualified biologist within the project limits.
- If a pond turtle is observed in the project limits during construction, all work will be stopped, and the turtle will: 1) be allowed to leave on its own volition, or 2) be moved by the project biologist in the direction it was heading (upstream or downstream), at a safe distance from the construction activities, and at a safe location. The biologist will report observations and relocations to the County.

Biological Resources MM-4: Swainson's Hawk, White-tailed Kite, Loggerhead Shrike and Migratory Birds Avoidance and Minimization Measures

- If species covered under the Migratory Bird Treaty Act and Fish and Game Code sections 3503, 3503.5, and 3513 are determined to be present within the project vicinity, construction activity including clearing of vegetation, generation of mechanical noise, or ground disturbance should be conducted outside of the breeding season (February 1 to August 31), if feasible.
- If Project activities must be conducted during the nesting bird season, then the following shall be conducted:
 - The County will retain a qualified biologist to conduct a pre-construction survey of the BSA, and within an appropriate distance from the BSA boundary, as access is available (e.g., 0.25 miles for Swainson's hawk and 500 feet for other raptors). The pre-construction survey will be performed between February 15 and September 15, but no more than 14 days prior to the implementation of construction activities (including staging and equipment access).
 - If active nests are found during the pre-construction survey, the County will coordinate with CDFW and USFWS on additional protection measures, such as establishment of a buffer zone around the nest tree. No construction activity will be conducted within this zone during the nesting season (generally February through September) or until such a time that the qualified biologist determines the nest is no longer active. The buffer zone will be marked with flagging, stakes, or other means to mark the boundary. All construction personnel will be notified of the existence of the buffer zone and shall avoid entering the buffer zone during the nesting season.
 - Existing cliff swallow nests on the existing bridge will be removed prior to the nesting season (i.e., removal between September 16 and February 14) to discourage continued nesting on this structure prior to construction. An effective deterrent to cliff swallow nesting should be installed on the bridge prior to the nesting season. If a nesting deterrent is used, the deterrent shall be monitored for integrity and effectiveness until the project is completed. If nesting activities cannot be effectively deterred, continuous removal of cliff swallow nest starting prior to egg-laying may be necessary before construction activities

are initiated. Disturbance or removal of active nests (i.e., nests containing eggs) shall not be conducted without the appropriate authorization(s) from the USFWS and/or CDFW.

- Information on nesting special-status and migratory birds will be provided during the worker environmental awareness training.

Biological MM-5: Pallid Bat and Western Red Bat Avoidance and Minimization Measures

- In conjunction with the pre-construction nesting bird survey, a qualified biologist will conduct a reconnaissance level pre-construction survey of the suitable roosting locations. The pre-construction survey will be performed to determine if the existing vegetation or bridge is being used by bats as a roosting location.
- If the biologist finds evidence of bat roosts, the biologist will attempt to determine which species are present, which features are being used, and for which roosting purpose. If it is determined that roosting bats are not present or only using the area as a night roost (i.e., no young are present in the roost), no further avoidance and minimization measures are necessary.
- If during the survey, pallid bat or western red bat day roost or maternity roosts are identified in the vegetation or structure (e.g., the bridge) slated for removal, the County will coordinate with CDFW to determine the next steps and appropriate methods for removal. The installation or the exclusionary netting would help ensure roosting bats are no present under the existing bridge prior to demolition.
- Removal of the vegetation would need to be scheduled before the birthing season for bats (i.e., prior to May 1) or after young bats are able to fly (i.e., after August 31). Removal of active bat roosts should be conducted in a manner that allows the bats the best opportunity to leave during darker hours to increase their chance of finding new roosts within minimum exposure to predation during daylight.

Biological MM-6: American Badger Avoidance and Minimization Measures

- The project has been designed to minimize impacts on the American badger's native habitat, to the maximum extent possible. The majority of construction activities would occur in previously disturbed areas, including the existing road, shoulders, and bridge.
- A pre-construction survey will be performed to detect if American badger is present. If the species is detected the Glenn County will coordinate with CDFW and identify appropriate measures to avoid impacts during construction activities, such as using non-invasive techniques to encourage badgers to leave the area prior to ground disturbance.

Biological MM-7: Ring-tailed Cat Avoidance and Minimization Measures

- The project has been designed to minimize impacts on the ring-tailed cats's native habitat, to the maximum extent possible. The majority of construction activities would occur in previously disturbed areas, including the existing road, shoulders, and bridge.
- Worker awareness training will be provided to all construction personnel. The training will be administered by a qualified biologist and will provide the workers with information on their responsibilities in regards to the sensitive biological resources in the BSA. The program will specifically address the status of ring-tailed cat, the species life history, how to identify the species and its habitat, the need to protect the species, and the project conservation and avoidance and minimization measures.

- As work will occur during the natal denning season period for ring-tailed cat (March 1 to June 30), the Glenn County will retain a qualified biologist to conduct a pre-construction survey no more than 3 days prior to the commencement of construction activities. If an active denning site is located during the survey, Glenn County will coordinate with a qualified biologist and CDFW, as necessary, on additional protection measures.
- If a ring-tailed cat is encountered in the BSA during construction, work will stop and the individual will be allowed to freely leave the work area.

4.5 Cultural Resources and Tribal Cultural Resources

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CA Code of Regulations, §15064.5?		X		
b) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		
d) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:		X		
i.) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or		X		
ii.) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe				

4.5.1 Setting

North State Resources Inc. prepared a Draft Archaeological Survey Report (ASR) for the project to identify potentially significant cultural resources located in or within 0.5 miles of the proposed project's Area of Potential Effect (APE). The Draft ASR included background research, a record search conducted at the Northeast Information Center (NEIC), a search of the Native American Heritage Commission's

(NAHC) sacred lands file, outreach to Native American Tribes, individuals, or organizations identified by the NAHC that may have knowledge about the area, and a pedestrian survey of the APE.

The results of the Draft ASR identified three prehistoric sites – CA-GLE-32, CA-GLE-328, and CA-GLE-329 within the APE. However, upon review of maps provided, it appears CA-GLE-32 is located outside of the APE. Additionally, nine previously recorded cultural resources are within 0.5 miles of the APE, one of which CA-GLE-331 is located adjacent to the APE. The Stony Creek Bridge (No. 11C-0245) is listed on the Caltrans Historical Significance Local Agency Bridge List as not eligible for listing on the National Register of Historic Places (NRHP). Additionally, no properties or resources located in the NRHP, the California Register of Historic Resources, the California Historical Lands Listings, the California Points of Historical Interest, the Archaeological Determinations of Eligibility for Glenn County and the Historic Property Data File for Glenn County are located in or within 0.5 miles of the APE. A pedestrian survey was completed on April 7, 2017, CA-GLE-32 was not relocated during the pedestrian survey. Both CA-GLE-328 and CA-GLE-329 were relocated during the survey. The Draft ASR determined the area to have high sensitivity for cultural resources.

In August 2017, North State Resources, Inc. conducted an Extended Phase I (XPI) archaeological investigation for the project. The XPI was conducted to identify the presence or absence, and nature of, archaeological deposits or features related to archaeological sites CA-GLE-32, CA-GLE-328, and CA-GLE-329 within the project area of direct impact. For the investigation, eight shovel test pits measuring 50 centimeters (cm) in diameter were hand excavated to depths ranging from 24 cm to 100 cm below ground surface in areas that could be subject to project-related ground disturbances. No temporally or culturally diagnostic artifacts or features (i.e. projectile points, shell beads), or prehistoric features such as hearths, house pits, rock alignments, etc. or human remains were identified during this investigation. However, buried deposits related to middens were found.

Based on the results of the XPI, Phase II testing was recommended to determine if either CA-GLE-328 or -329 is eligible for listing on either the National or California Register. Far Western prepared an Archaeological Evaluation Proposal (AEP) for Phase II testing of sites in March of 2019 for the proposed project. In support of the AEP, Far Western staff conducted archival record search, consultations and an archaeological field survey to identify the cultural resources occurring, or potentially occurring, in the project area. Additionally, a tribal consultation involved potentially interested Native American groups, as identified by the Native American Heritage Commission (NAHC).

Due to the finding of the initial archaeological field survey, Far Western conducted a more extensive field survey which included not only historic resources GLE-328 and GLE-329 but also the surrounding area. The majority of GLE-329 is located on private property and therefore the majority of this site was not explored, only the boundary of the site that extends into the county (ROW). The more intensive survey, which took place between June 24 and 28, 2019, involved digging backhoe trenches, several surface transects by shovel, as well as several control units at both CA-GLE-328 and CA-GLE-329.

Test excavation at CA-GLE-328 produced a small house floor, a hearth, ash features, charcoal, baked clay, fire cracked rock, flaked stone, one core, three flake tools, a handstone, and millstone fragment. The test excavation at CA-GLE-329 produced flaked stone, baked clay, faunal bone, charcoal, a midden containing substantial quantities of ash and fire cracked rock, debitage, one flaked stone tool, and one core. Both sites are consistent with habitation sites found within the general area.

4.5.2 Discussion

a) Less than Significant With Mitigation Incorporated. The field surveys conducted by Far Western resulted in the identification of several prehistoric resources in addition to the two known

prehistorical resources within the project site. However, due to the locations of the prehistorical resources, the absence of ground disturbing activities near the known resources and the suggested establishment of an Environmentally Sensitive Area around them, it is not anticipated that the proposed project would result in significant impacts to the prehistoric resources. In the event that additional unknown resources are uncovered during the proposed construction activities the incorporation of **Cultural Resources MM-1** would ensure impacts to archaeological resources would be less than significant.

- b) **No Impact.** There is no record of paleontological or unique geological resources present within the projects site and further more no evidence of paleontological or unique geological resources was uncovered during field surveys.
- c) **Less than Significant with Mitigation Incorporated.** Although there are habitation sites present, no human remains were uncovered during the archaeological field survey, as stated in Archaeological Evaluation Proposal for Phase II. In the event human remains are uncovered during work activities, pursuant to Health and Safety Code (§7050.5), the Coroner must be contacted if human remains are uncovered during construction activities (See item d below). Previously unidentified human remains are subject to regulations set forth at the state and federal levels, including the CA Public Resources Code and the Native American Graves Protection and Repatriation Act (NAGPRA). Incorporation of **Cultural Resources MM-1** will ensure impacts to archaeological resources would be less than significant.
- d) **Less than Significant with Mitigation Incorporated.** As discussed above there are two known prehistorical sites present within the project area and several additional resources were uncovered during the field surveys. In the event that additional resources are uncovered during the proposed construction activities the incorporation of **Cultural Resources MM-1** would ensure impacts to archaeological resources would be less than significant.
 - i) **Less than Significant with Mitigation Incorporated.** According to the discussion in the Summary of Phase II Evaluation Testing of Sites of CA-GLE-328 (P-11-000328) and CA-GLE-329 (P-11-000329) Stony Creek Bridge Replacement Project provided by Far Westerrn, both of these prehistoric resources are likely eligible to the National Register and the California Register of Historic Resources under Criterion D, has the potential to yield information important in regional prehistory. It is suggested that an Environmentally Sensitive Area be established around both sites to prevent any further disturbances during construction.
 - ii) **Less than Significant with Mitigation Incorporated.** After review and an examination of criteria set forth in subdivision (c) of Public Resources Code Section 5024.1 both CA-GLE-238 and CA-GLE-329 are considered significant resources to the California Native American tribe.

4.5.3 Mitigation:

Cultural Resources MM-1: Disturbance of Prehistoric Resources

Though no ground disturbing activities will occur within the known prehistoric resources within the project area it is still possible that additional prehistoric discoveries may be uncovered during construction. If unknown resources are discovered during construction and excavation activities, the following Cultural Resources Mitigation Measures will be included in all contract documents and construction plans.

- Worker awareness to educate construction personnel in best management practices for cultural site preservation.

- Should archaeological resources be encountered at any point during project excavation and construction activities, all activity around the discovery will cease. The County will retain the services of a qualified archaeologist to examine the findings, assess their significance, and offer proposals for any exploratory procedures deemed appropriate to further investigate and/or mitigate any adverse impacts.
- Should human remains be encountered during excavation activities in the project area, the following procedures shall be followed:
 - Per Health and Safety Code §7050.5(b), the Glenn County Coroner’s Office will be contacted immediately; all work must cease, no further disturbances may occur until the Coroner has made findings as to the origins and disposition per Public Resources Code §5097.98.
 - If the Coroner determines the remains are Native American, the Office will notify the Native American Heritage Commission (NAHC) within 24 hours.
 - Following receipt of the Coroners notice, the NAHC will contact a Most Likely Descendent (MLD). The MLD will then have 48 hours in which to make recommendations to the County and the consulting archaeologist regarding the treatment and/or re-interment of the human remains and any associated grave items.

4.6 Energy

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?				X
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

4.6.1 Discussion

- a) **No Impact.** The proposed project will not result in any potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Construction energy consumption would largely occur from fuel consumption by heavy equipment during bridge construction and subsequent demolition of the existing bridge, transportation of materials to and from the site, and construction worker trips to and from the project site. Energy consumption during construction related activities would vary substantially depending on the level of activities, length of construction period, construction operations, type of equipment used, and number of personnel present. Despite this variability, the overall scope of construction is moderate and would be completed within two construction seasons. Increasingly stringent state and federal regulations regarding engine efficiency combined with state, local, and federal regulations limiting engine idling times and recycling of construction debris, would further reduce the amount of transportation fuel demand during construction.

The proposed project is the installation of a new safer bridge with improved roadway approaches, as such, it will not use any energy resources during operation.

b) **No Impact.** Many of the state and federal regulations regarding energy efficiency focus on increasing building efficiency and renewable energy generation, as well as reducing water consumption and vehicle miles traveled. The proposed project includes conservation measures to meet or exceed the regulatory requirements including limiting idling time of heavy equipment during construction activities. The project will comply with Glenn County and Caltrans standards regarding engine efficiency and limiting idling time during project construction.

4.6.2 Mitigation: *None Required*

4.7 Geology and Soils

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i.) Rupture of a known earthquake fault, as delineated on the Alquist-Priolo Earthquake Fault Zoning Map for the area or based on other substantial evidence of a known fault?				X
ii.) Strong seismic ground shaking?				X
iii.) Seismic-related ground failure/liquefaction?				X
iv.) Landslides?				X
b) Substantial soil erosion or the loss of topsoil?			X	
c) Located on a geologic unit or soil that is unstable, or would become unstable as a result of the project, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X

4.7.1 Discussion

a) **No Impact.**

i & ii) The site is not within an Alquist-Priolo Earthquake fault zone and is not within an aftershock epicenter region. There are no known active faults in Glenn County. The closest active fault is the Cleveland Hill fault zone, located approximately 60 miles southeast of the project site near Lake Oroville. Like most of Central California, the site can be expected to be subjected to seismic ground shaking at some future time. However, active faults are quite distant from the project site and ground shaking due to a seismic event is expected to have a lower intensity at the project site. As the project appears to be located such that the probability of significant ground shaking is low, and beca

use the project does not propose the addition of significant structures that would be at risk to seismic activity, potential geologic impacts would be less than significant.

iii) Liquefaction is a phenomenon where loose saturated, granular soils lose their inherent shear strength due to excess water pressure that builds up during repeated movement from seismic activity. Factors that contribute to the potential for liquefaction include a low relative density of granular materials, a shallow groundwater table, and a long duration and high acceleration of seismic shaking. Liquefaction usually results in horizontal and vertical movements from lateral spreading of liquefied materials and post-earthquake settlement of liquefied materials. Liquefaction potential is greatest where the groundwater level is shallow, and submerged loose, fine sands occur within a depth of approximately 50 feet or less. According to Section 3.3.1 of Environmental Setting Technical Paper, Glenn County General Plan, Volume III, Glenn County is in a relatively inactive seismic area. During the past 100 years, the County has experienced only minor earthquakes within its boundaries and secondary impacts from earthquakes centered out of the area. The United States Geologic Survey (USGS) and California Geologic Survey (CGS) produced a Seismic Shaking Hazards in California map (revised April 2003), which depicts the peak ground acceleration (pga) percentage that has a ten percent potential of occurring in the next fifty years. The project site is rated as 10%–20% on a scale of 0%–100%, quite low. Additionally, no earthquake greater than a magnitude 5.5 have occurred in Glenn County in over 200 years (CGS Map 49, California Earthquakes, 1800-2000). These two facts, and the relatively flat slope of the project site, create a less than significant impact regarding risk of damage from earthquakes. However, all construction will comply with the California Building Code (CBC) including the requirements for seismic design.

iv) The potential for landslides on the project site is considered remote due to the lack of significant topography on the project site and on the surrounding parcels.

b) **Less than Significant.** The project is the replacement of a structurally deficient bridge within Glenn County. Project activities at Bridge 11C0245 include vegetation removal, removal of existing bridge structure, the installation/construction of the new cast-in-place bridge structure, and construction of roadway approaches on both side of the new structure. During construction the project would be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) in compliance with the Construction General Permit. Specific erosion control and surface water protection methods would be implemented within the project site. such as straw wattles and silt fencing, covering materials and dumpsters, storing fuel and other potentially hazardous materials away from channel, and the use of erosion control seeding. These control measures are standard in the construction industry and are commonly utilized to minimize soil erosion and water quality degradation. The project will have a less than significant impact on loss of top soil.

c) **No Impact.** No major earthquakes have been recorded within Glenn County. The project will not expose people or structures to potential substantial adverse effects due to rupture or a known earthquake fault, seismic ground shaking, seismic-related ground failure including liquefaction. The project will not result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. The project site would not be subject to landslide free zone due to its relative flat topography and gently sloping hills

d) **Less than Significant.** The soil present within the project site consists primarily of Riverwash which consists of cobble and gravel. The site is not located on expansive soil and would not create substantial risks to life or property. Bridge design and all construction will comply with CBC requirements.

- e) **No Impact.** The project will not utilize septic tanks or an alternative wastewater disposal system on the site. Therefore, the proposed project will not result in an impact due to soils incapable of adequately supporting septic systems.

4.7.2 **Mitigation:** *None required.*

4.8 Greenhouse Gas Emissions

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Generate greenhouse gas emissions, directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?			X	

4.8.1 Discussion

- a)-b) **Less than Significant.** It is anticipated that bridge replacement activities would generate short-term temporary GHG emissions associated with construction equipment. Examples of sources for construction related GHGs are equipment fossil fuel combustion, material transportation, and purchased electricity. See the BMP's discussed in Section 3, Air Quality, minimize temporary emissions associated with the construction activities.

4.8.2 **Mitigation:** *None required.*

4.9 Hazards and Hazardous Materials

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

4.9.1 Discussion

An Initial Site Assessment Transaction Screen Assessment was completed for the project by Willdan Engineering for the bridge in 2012. The purpose of the assessment is to evaluate whether there is evidence of a recognized environmental condition (REC) that may have impacted or could potentially impact the environment resulting from project activities. The assessment for the bridge included research of site history, review of information provided by regulatory databases, observed site conditions, and discussions with owners, local officials, or regulatory personnel regarding past site activities and history. According to the ISA prepared for the project there are no recognized environmental conditions within the project area.

- a) **Less than Significant.** The proposed project would not involve the routine transport, use, or disposal of hazardous materials, and would not result in such impact. Construction activities associated with the project would include refueling and minor onsite maintenance of construction equipment, which could lead to minor fuel or oil spills. The use and handling of hazardous materials during construction activities would occur in accordance with applicable federal, state, and local laws including CalOSHA requirements.
- b) **Less than Significant.** The proposed project would not result in new land uses when compared to existing conditions. The project would not construct dwellings, occupy structures, or result in land uses that could generate or emit hazardous materials. Project activities are not anticipated to result in a release of hazardous materials into the environment, or to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions as stated previously the use and handling of hazardous materials during construction activities would occur in accordance with applicable federal, state, and local laws including California Occupational Health and Safety Administration (CalOSHA) requirements.
- c) **No Impact.** The proposed project does not involve any emission or handling of any hazardous materials, substances, or waste within one-quarter mile of an existing school. No existing or proposed school facilities are located within one-quarter mile radius of the project site. As stated previously, the

use and handling of hazardous materials during construction activities would occur in accordance with applicable federal, state, and local laws including CalOSHA requirements.

- d) **No Impact.** The project is not included on a list of sites containing hazardous materials, and would not result in a significant hazard to the public or to the environment. The project site is not included on the Cortese list compiled pursuant to Government Code Section 65962.5. The nearest sites containing hazardous materials are located approximately 11.7 miles east of the project area in Orland California. As per the ISA, there are no recognized environmental conditions within the project area.
- e) **Less than Significant.** The proposed project site is not located within two miles of a public airport. The nearest public airport is the Haigh Field Airport located approximately 14.3 miles east of the project area.
- f) **No Impact.** The proposed project site is not located within the vicinity of a private airstrip and the project would not result in permanent structures that expose people to an airport or airstrip related safety hazard.
- g) **Less than Significant.** The proposed project does not include any actions within the roadways that would physically interfere with any emergency response or emergency evacuation plans. The existing bridge would remain in place during construction of the new bridge to facilitate access. The project would not result in an increase in traffic, and thus would not significantly reduce the current level of service of the area road network.
- h) **Less than Significant.** The Fire Severity Zone Maps adopted by Cal Fire in 2007 identifies the project site in a Federal Responsibility Area. The project does not involve the construction of significant structures that would be considered residential in nature, and thus would not expose people or associated structures to risk of loss, injury or death involving wildland fires. The project is the replacement of a structurally deficient 15-foot wide single-lane bridge with a 32-foot wide two-lane bridge. The new bridge would improve emergency access to the area.

Mitigation: None required.

4.10 Hydrology and Water Quality

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Violate any water quality standards or waste discharge requirements?			X	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				X
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			X	
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
f) Otherwise degrade water quality?				X
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j) Inundation by seiche, tsunami, or mudflow?				X

4.10.1 Discussion

- a) **Less Than Significant.** As identified in Section 4.4 of this document (**Biological Resources MM-1**), the project will obtain all appropriate regulatory permits including certification from a RWQCB per Section 401 Water Quality Certification of the Clean Water Act prior to construction activities. A Section 401 permit is contingent on sufficient evidence that a project would not pose a threat to water quality or quantity leaving the proposed project's site. No additional mitigation measures are necessary. Additionally, the project would be required to prepare a Storm Water Pollution Prevention Plan and implement all applicable erosion control BMPs, which include: the installation of straw wattles, and silt fencing to prevent silt/sediment from entering the waterways, and re-seeding of disturbed upland areas post construction. As described in the Air Quality Section 4.3 of this document, the project will be required to adhere BMMs standard mitigation measures for fugitive dust control outlined in Section 4.3, (**Air Quality MM-1**).
- b) **No Impact.** The proposed project involves the replacement of an existing bridge and does not propose activities requiring increases in groundwater use. No new extraction wells or buildings with the potential to increase water usage are proposed.

- c) **Less Than Significant.** Project activities include the replacement of an existing bridge and bridge approach work. The overall direction of drainage on the site will not change. The implementation of Stormwater Pollution Prevention Plan and BMPs during construction activities will minimize soil erosion and siltation. Additionally, the proposed project will not alter the existing drainage pattern of the site, including through the alteration of the course of Stony Creek in a manner that will result in substantial erosion or siltation on- or off-site

Less than Significant. Avila & Associates prepared a Hydraulic Study Report (HSR) for the project which analyzed potential changes in hydrological conditions based on project activities at the bridge. The HSR utilized the Hydraulic Engineering Center River Analysis System (HEC-RAS) to estimate the hydraulic conveyance capacity under project conditions. The HSR concluded the addition of the new proposed bridge will improve hydraulics by replacing seven existing narrow piers that are susceptible to debris accumulation with two wider piers which will reduce the potential for debris capture. The HSR for the bridge is available from the Glenn County Public Works Agency Engineering Division located at 777 N. Colusa Street, Willows, CA 95988.

- e)-j) **No Impact.** The proposed project is located within a non-printed flood map boundary (FIRM Map Number 06021C0350D) and would not result in significant increases in the surface area of impervious materials or redirect flood flows. The project does not involve the construction of dwelling units and will not place housing within the flood hazard area. Furthermore, the project would not expose people or structures to significant loss, injury, or death involving flooding, including levee or dam failure. There are no anticipated impacts to the proposed project from seiche, tsunami, or mudflow, as no topographical features of water bodies capable of producing such events exist within the project site vicinity.

4.10.2 Mitigation: None Required

4.11 Land Use and Planning

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

4.11.1 Discussion

- a), b) **No impact.** The project is the replacement of an existing bridge structure and will not physically divide an established community. The proposed project would not conflict with an applicable land use plan, policy, or regulation of any agencies with jurisdiction adopted for the purpose of avoiding or mitigating an environmental effect.

- c) **No Impact.** The project will not have a substantial conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan as there are none in Glenn County.

4.11.2 Mitigation: *None required.*

4.12 Mineral Resources

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site on a local general plan, specific plan or other land use plan?				X

4.12.1 Discussion

- a), b) **No Impact.** The California Geological Survey’s (Department of Conservation) map “Fifty-Year Aggregate Demand Compared to Permitted Aggregate Resources” (2018) does not identify extraction facilities near the project site. The General Plan and State of California Division of Mines and Geology Special Publication 132 do not list the site as having any substantial mineral deposits of a significant or substantial nature.

4.12.2 Mitigation: *None required*

4.13 Noise

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

Setting

The Health and Safety Element of the Glenn County General Plan identifies land use compatibility standards for exterior community noise for a variety of sensitive land uses. For residential designations, a maximum allowable noise exposure level of 60 L_{dn}/CNEL outdoors and 45 L_{dn}/CNEL decibel level is generally identified as being an acceptable noise environment requiring no special noise insulation or noise abatement features. This standard is applicable to properties containing noise sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the use of the land.

The Glenn County Noise Control Ordinance provides the County with a means of assessing complaints of alleged noise violations and to address noise level violations. The ordinance sets forth exterior and interior noise level standards that are applicable to sensitive areas within Glenn County, including residential uses. Among the noise generating activities subject to the noise ordinance are noise sources associated with construction. If project operations occur between 7:00a.m. to 10:00p.m. the maximum decibel level is 70 dB. From 10:00p.m. to 7:00a.m. decibels must remain below 65dB.

4.13.1 Discussion

a)-d) Less Than Significant. The proposed project will be required to comply with all applicable rules, regulations and control measures including permitting, prohibitions and limits to emissions that work to reduce air pollution throughout California. The nearest residents to the project site are 400 feet away. While construction activities would generate noise, it is anticipated at this distance noise levels would not exceed established acceptable levels. The project would be expected to comply with the noise ordinance with regard to allowable construction times and noise limits.

e) No Impact: The proposed project is not located within an airport land use plan area and is located over 14 miles from the Haigh Field Airport. The proposed project will not expose people residing or working in the project area to excessive noise levels associated with airport landuses.

f) No Impact: The proposed project is not located within two miles of a private airstrip and people residing or working in the project area will not be exposed to excessive noise levels generated by private airstrips.

4.13.2 Mitigation: None Required

4.14 Population and Housing

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

4.14.1 Discussion

a)-c) **No Impact:** The proposed project is a bridge replacement project located in a rural portion of Glenn County. The proposed project will not induce substantial population growth in the area, directly or indirectly, or displace a substantial number of people or existing housing. The project will not displace people or housing nor necessitate the construction of replacement housing elsewhere. Therefore, the project will not impact population or housing.

4.14.2 Mitigation: *None required*

4.15 Public Services

Would the project: result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Fire protection?				X
b) Police protection?				X
c) Schools?				X
d) Parks?				X
e) Other public facilities?				X

4.15.1 Discussion

a)-e) **No Impact.** The proposed project would not construct buildings, businesses or other facilities that would result in an increased population in the area. Temporary delays to traffic may occur during construction activities. However, as required by state and local regulations, emergency vehicles will be given the right-of-way in the event of their presence at the project site. There would be no long-term demands on public services such as fire protection, police protection, schools, or parks generated

by this project. No changes in fire protection or police protection are proposed as part of this project. Therefore, the proposed project is not anticipated to impact public services.

4.15.2 Mitigation: *None required*

4.16 Recreation

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

4.16.1 Discussion

a), b) No Impact. This proposed project will not result in residential development that would result in the increase the use of existing neighborhood and regional parks or other recreational facilities including recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

4.16.2 Mitigation: *None required*

4.17 Traffic and Transportation

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				X
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				X

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?			X	
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				X

4.17.1 Discussion

- a) **No Impact.** The proposed project is a bridge replacement that would result in the replacement of a single-lane bridge with a two-lane 32-foot wide bridge. The project will not conflict with an applicable plan, ordinance or policy regarding the effectiveness of the performance of the circulation system. The proposed project would not generate additional traffic, as it would not construct facilities or land uses that would generate additional vehicular traffic such as a retail center or residential subdivision.
- b) **No Impact.** The project is not expected to result in additional vehicular trips, or to impact levels of service and trip distributions within the project area. The proposed project will not conflict with an applicable congestion management program and will not affect travel demand measures. Roadway safety conditions are expected to improve upon project completion, as the project will include a new wider bridge and provide safer, wider transitions to the bridge structure.
- c) **No Impact.** The proposed project will not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that will result in substantial safety risks. The project site is not located in the vicinity of a public airport which is approximately 14 miles southeast of the project area. This project will not obstruct air traffic patterns.
- d) **No Impact.** The proposed project would replace a structurally deficient, narrow bridge, and make roadway-widening improvements in order to increase conveyance and safety for residents, farm equipment, and the public on County Road 200A within the existing public right-of-way. The proposed project would improve sight distances and safety and will not increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment).
- e) **Less than Significant.** During the construction phase, emergency vehicle access to, and passage through, the project site would be ensured through adherence to applicable roadway and/or lane closures and detour standards. The project will be required to adhere to pertinent local and state construction site regulations. Thus, temporary traffic control activities during the construction phase of the proposed project would not prevent emergency vehicle movement throughout the area. In addition, the existing bridge would remain in operation during construction activities. The proposed improvements, which would bring the existing facilities in the project site up to current design

standards, would provide safer passage for emergency vehicles. Therefore, relative to emergency access, impacts would be less than significant

- f) **No Impact.** The proposed project will not conflict with an applicable plan, ordinance or policy regarding public transit, bicycle or pedestrian facilities because the project site is located in a rural area that does not have any provisions for alternative transportation. No impact is anticipated.

4.17.2 Mitigation: *None required*

4.18 Utilities and Service Systems

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Exceed wastewater treatment requirements of the applicable Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider which serves/may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

4.18.1 Discussion

a)-e) **No Impact.** This project proposes replacing an existing bridge over Stony Creek, with a new wider bridge of similar size. The new bridge will not significantly increase the amount of impervious surfaces in the area, and will not increase the surface runoff of the area. All work will be conducted within the existing right-of-way, and will not require additional water supplies or entitlements. The project will not result in exceeding wastewater treatment requirements for the applicable RWQCB or result in the need for new wastewater treatment facilities because the project is not a use that generates wastewater.

f), g) **No Impact.** The proposed project would not generate impacts relative to landfill capacity, wastewater treatment or solid waste generation. Therefore, there would be no impact.

4.18.2 Mitigation: *None required*

4.19 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

4.19.1 Setting

The project site is designated as a moderate fire hazard by the State Department of Forestry and Fire Protection. The project site is also within a designated Federal Responsibility Area (FRA), which means the federal jurisdiction has fiscal responsibility for preventing and suppressing wildfires.

4.19.2 Discussion

- a) **No Impact.** The project will not impair an adopted emergency response plan or evacuation plan. The existing bridge will be open to traffic during the project and would not constrict access for emergency vehicles.
- b) **No Impact.** The project site is located approximately 11 southwest of Orland, CA and the topography of the site is relatively flat to gently sloping and will not expose project occupants to pollution concentrations from a wildfire. The habitat within the project area is riparian with grass along the banks of Stony Creek with few residential land uses. Wildfires in the area are extinguished quickly and contained to a relatively small area due to the conditions of the area. No conditions or factors have been identified in the project area that would exacerbate wildfire risks.
- c) **Less Than Significant.** The proposed project involves replacement of a structurally deficient bridge on Road 200A in Glenn County, California which spans Stony Creek. Construction activities will comply with all applicable public resources code, therefore, roadway construction would not exacerbate a fire risk.
- d) **No Impact.** The proposed project is located on the edge of the Central Valley and the majority of the project site contains slopes between 0 and 10 percent, although small steeper slopes exist

along the channel of Stony Creek. The project area does not exhibit landslide potential, nor does it exhibit flood potential due to the high banks and wide channel as well as bridge design being able to pass any potential high flow events within the channel. Therefore, no impacts from post fire instability or drainage changes have been identified.

4.19.3 Mitigation: *None Required*

5 Mandatory Findings of Significance

Mandatory Findings of Significance	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Does the project have impacts that are individually limited, but cumulatively considerable (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?				X
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				X

5.1.1 Discussion

- a) **Less Than Significant with Mitigation Incorporated.** With the implementation of the mitigation measures included in this Initial Study, **Air Quality MM-1, Biological Resources MM-1 through MM-7 and Cultural Resources MM-1**, the proposed project would not degrade the environment; result in an adverse impact on fish, wildlife, or plant species including special status species, or prehistoric or historic resources.
- b) **No Impact.** The project is the replacement of a structurally deficient bridge which spans Stony Creek on Glenn County Road 200A with a wider bridge for safety purposes. The project does not involve the addition of new expanded structures, facilities, or growth inducing effects, which would be considered cumulatively considerable with regards to past or future projects.
- c) **No Impact.** Based on the preceding environmental analysis and adherence to applicable local, state and federal regulations, as noted in this document, the proposed project would not result in potentially significant cumulative, direct or indirect adverse effects on human beings.

6 Preparers and References

6.1 Report Preparation and Review

Kamie Loeser, Principle Planner, NorthStar, Reviewer

Matt Rogers, Associate Environmental Planner/ Biologist, NorthStar, Preparer

Billy Abbott, Assistant Environmental Planner, NorthStar, Preparer

Cole Grube, Assistant Director of Public Works, Glenn County, Reviewer

6.2 References

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7 Acronyms and Abbreviations

Agencies, Boards, Commissions, Districts:

CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CDWR	California Department of Water Resources
DTSC	(California) Department of Toxic Substances Control
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
NAHC	Native American Heritage Commission
NSVAB	Northern Sacramento Valley Air Board
RWQCB	Regional Water Quality Control Board
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

Guidelines, Policies, Programs, Regulations:

CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CWA	Clean Water Act
ESA	Endangered Species Act
FGC	Fish and Game Code
MBTA	Migratory Bird Treaty Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NPDES	National Pollution Discharge Elimination System
NRHP	National Registry of Historic Places
SIP	State Implementation Plan

Miscellaneous:

APE	Area of Potential Effect
ASR	Archaeological Survey Report
BMPs	Best Management Practices
BSAs	Biological Study Areas
Cm	Centimeter
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
ESAs	Environmentally Sensitive Areas
FIRM	Flood Insurance Rate Map
GHG	Green House Gases
ISA	Initial Site Assessment
MLD	Most Likely Descendant
NES	Natural Environmental Study
NOx	Nitrogen oxides
PM _{10 / 2.5}	Particulate Matter less than 10 / 2.5 Microns

ROG Reactive Organic Gases
RSP Rock Slope Protection

8 Mitigation Monitoring and Reporting Program

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
AIR QUALITY						
Air Quality MM-1	<p>To comply with the Glenn County Air Pollution Control District's (GAPCD) Regulations of the Air Pollution Control District of Glenn County (section 76 visible emissions), the County shall comply with all Best Available Mitigation Measures (BAMMs) for the control of construction related particulate emissions. The contractor shall submit a Air Quality Attainment Plan to the County for approval. The approved plan shall include all applicable BAMMs as specified by GCAPCD's Standard Construction Phase Mitigation Measures, including but not limited to the following:</p> <ul style="list-style-type: none"> • Haul trucks must be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained. • Construction equipment exhaust emissions shall not exceed GCAPCD Section 76 Visible Emissions (40 percent opacity or Ringelmann 2.0). Operators of vehicles and equipment found to exceed opacity limits shall act to repair the equipment within 72 hours or remove the equipment from service. • The area disturbed by demolition, clearing, grading, earth moving, or excavation operations shall be minimized at all times. • Suspend grading or earth moving activities when wind speeds exceed 20 mph • Minimize unnecessary idling time to 5 minutes. • Water shall be applied as needed to prevent fugitive dust impacts offsite. • All onsite vehicles should be limited to a speed of 15mph on unpaved 	Fugitive Dust Control Plan - Prior to initiation of construction.	Glenn County – Public Works			

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
roads.						
BIOLOGICAL RESOURCES						
	<p>Biological Resources MM-1 Valley Elderberry Longhorn Beetle and Obtain Regulatory Permits and Implement Avoidance and Minimization Measures</p> <p>The following avoidance and minimization measures, which are consistent with the <i>Formal Programmatic Consultation Permitting Projects with Relatively Small Effects on the Valley Elderberry Longhorn Beetle within the Jurisdiction of the Sacramento Field Office, California</i> (USFWS 1996) and the <i>Conservation Guidelines for Valley Elderberry Longhorn Beetle</i> (USFWS 1999), will be implemented to minimize the potential impacts to VELB</p> <ul style="list-style-type: none"> • Worker awareness training will be provided to all construction personnel. The training will be administered by a qualified biologist and will provide the workers with information on their responsibilities in regards to the sensitive biological resources in the BSA. The program will specifically address the status of VELB, the species life history, how to identify the species and its habitat, the need to protect the beetle and its host plant, and the project conservation and avoidance and minimization measures. • Project activities within 100 feet of elderberry shrubs will be timed to occur outside of the VELB active season (mid-March through mid-May) to the greatest extent practicable. • Prior to construction activities, an environmentally sensitive area will be designated around the elderberry shrub not slated for removal using exclusionary fencing, signs, and flagging under the supervision of a qualified biologist. A 100-foot buffer zone around the elderberry shrub will be marked within stakes or flags as a minimal disturbance area. Because project activities would encroach within 100 feet of the shrub, exclusionary fencing will be placed at a distance of 20 feet or more from the dripline of the shrub. Signs stating “<i>This area is a habitat for the VELB, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of</i> 	<p>Obtain Permits - Prior to initiation of construction.</p> <p>Purchase Compensatory Mitigation (if applicable) – Prior to initiation of construction.</p> <p>AMMs – Include in specifications and contract documents.</p>	<p>Glenn County – Public Works</p>			

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
	<p>1973, as amended. Violators are subject to prosecution, fines, and imprisonment.” will be erected and attached to the fencing. The signs will be placed in clearly visible locations and will be readable from a distance of 20 feet. Fencing and signs will be maintained throughout the entire project duration.</p> <ul style="list-style-type: none"> • No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant will be used within 100 feet of any elderberry shrub with one or more stems measuring 1.0 inch or greater in diameter at ground level. • Any damage to the buffer area (i.e. area within 100 feet of elderberry shrub with stems of suitable size) during construction will be restored following construction. Restoration will include erosion control and revegetation with appropriate native plants, as appropriate. • A qualified biologist will conduct a pre and post-construction survey of the elderberry shrub as a result of the proposed action. The pre-construction survey will document the conditions of the shrub prior to construction activities and document compliance with mitigation measures. The post-construction survey will verify that no additional impacts to the elderberry shrub took place. If the shrub becomes damaged during construction activities, the County may be required to compensate for the loss of the shrub through compensatory mitigation. <p>Additionally, the project will obtain the following permits, as necessary and applicable:</p> <ul style="list-style-type: none"> • CWA Section 404 permit #14 Linear Transportation from the USACE • CWA Section 401 Water Quality Certification from the RWQCB • F.G.C. Section 1602 Streambed Alteration Agreement from CDFW <ul style="list-style-type: none"> ○ The project will incorporate the avoidance and minimization measures (AMMs), standard BMPs and other notification requirements identified in applicable permits, such as pre and post-construction surveys and documentation, worker awareness training, exclusionary measures, AMM 					

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
	compliance and reporting, incident reports and monitoring requirements.					
	<p>Biological Resources MM-2: Foothill Yellow-legged Frog Avoidance and Minimization Measures</p> <ul style="list-style-type: none"> • Environmental awareness training will be conducted by a qualified biologist prior to onset of the work for construction personnel to brief them on how to recognize foothill yellow-legged frog and other special-status animals that may occur in the project area. • To avoid potential injury or mortality to foothill yellow-legged frogs using vegetated areas for cover along Stony Creek, initial vegetation clearing (i.e. removal of small trees, shrubs, brush, and tall dense grasses) along Stony Creek will be done manually using hand tools (e.g. chainsaw, lopper, weed whacker). The vegetation will be cut to ground level and be removed from the work area by hand. Heavy equipment may be used once the initial vegetation clearing along the creek is complete. • Stony Creek outside the work area will be staked, flagged, or signed to avoid encroachment by equipment and construction crews. The number of access routes, size of the staging area, and the total area of impact will be limited to the minimum necessary to achieve the proposed project goal. This goal includes locating access routes and construction areas outside of the creek to the maximum extent practicable. The flagged areas will confine access routes and construction areas to the minimum area necessary to complete construction and minimize the impact on natural habitats in the BSA. • Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed will be minimized to the maximum extent possible. • If foothill yellow-legged frogs are encountered in the BSA during construction and will be harmed by construction activities, work 	Prior to initiation of construction	Glenn County – Public Works			

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
	will stop in the area and the County will notify CDFW. Upon authorization from CDFW, a qualified biologist may relocate the individual(s) the shortest distance possible to a location containing habitat outside of the project area.					
	<p>Biological Resources MM-3 Northwestern Pond Turtle Avoidance and Minimization Measures</p> <ul style="list-style-type: none"> No later than 48 hours prior to any ground disturbance, pre-construction surveys will be conducted by a qualified biologist within the project limits. If a pond turtle is observed in the project limits during construction, all work will be stopped, and the turtle will: 1) be allowed to leave on its own volition, or 2) be moved by the project biologist in the direction it was heading (upstream or downstream), at a safe distance from the construction activities, and at a safe location. The biologist will report observations and relocations to the County. 	Prior to initiation of construction.	Glenn County – Public Works			
	<p>Biological Resources MM-4 Swainson’s Hawk and Migratory Birds Avoidance and Minimization Measures</p> <ul style="list-style-type: none"> If species covered under the Migratory Bird Treaty Act and Fish and Game Code sections 3503, 3503.5, and 3513 are determined to be present within the project vicinity, construction activity including clearing of vegetation, generation of mechanical noise, or ground disturbance should be conducted outside of the breeding season (February 1 to August 31), if feasible. If Project activities must be conducted during the nesting bird season, then the following shall be conducted: <ul style="list-style-type: none"> The County will retain a qualified biologist to conduct a pre-construction survey of the BSA, and within an appropriate distance from the BSA boundary, as access is available (e.g., 0.25 miles for Swainson’s hawk and 500 feet for other raptors). The pre-construction survey will be performed between February 15 and September 15, but no more than 14 days prior to the implementation of construction activities (including 	Prior to initiation of construction.	Glenn County – Public Works			

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
	<p>staging and equipment access).</p> <ul style="list-style-type: none"> ○ If active nests are found during the pre-construction survey, the County will coordinate with CDFW and USFWS on additional protection measures, such as establishment of a buffer zone around the nest tree. No construction activity will be conducted within this zone during the nesting season (generally February through September) or until such a time that the qualified biologist determines the nest is no longer active. The buffer zone will be marked with flagging, stakes, or other means to mark the boundary. All construction personnel will be notified of the existence of the buffer zone and shall avoid entering the buffer zone during the nesting season. ○ Existing cliff swallow nests on the existing bridge will be removed prior to the nesting season (i.e., removal between September 16 and February 14) to discourage continued nesting on this structure prior to construction. An effective deterrent to cliff swallow nesting should be installed on the bridge prior to the nesting season. If a nesting deterrent is used, the deterrent shall be monitored for integrity and effectiveness until the project is completed. If nesting activities cannot be effectively deterred, continuous removal of cliff swallow nest starting prior to egg-laying may be necessary before construction activities are initiated. Disturbance or removal of active nests (i.e., nests containing eggs) shall not be conducted without the appropriate authorization(s) from the USFWS and/or CDFW. ○ Information on nesting special-status and migratory birds will be provided during the worker environmental awareness training. 					
Biological MM-5: Pallid Bat and Western Red Bat Avoidance and		Prior to initiation of construction	Glenn County – Public Works			

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
Minimization Measures						
	<ul style="list-style-type: none"> In conjunction with the pre-construction nesting bird survey, a qualified biologist will conduct a reconnaissance level pre-construction survey of the suitable roosting locations. The pre-construction survey will be performed to determine if the existing vegetation or bridge is being used by bats as a roosting location. If the biologist finds evidence of bat roosts, the biologist will attempt to determine which species are present, which features are being used, and for which roosting purpose. If it is determined that roosting bats are not present or only using the area as a night roost (i.e., no young are present in the roost), no further avoidance and minimization measures are necessary. If during the survey, pallid bat or western red bat day roost or maternity roosts are identified in the vegetation or structure (e.g., the bridge) slated for removal, the County will coordinate with CDFW to determine the next steps and appropriate methods for removal. The installation or the exclusionary netting would help ensure roosting bats are not present under the existing bridge prior to demolition. Removal of the vegetation would need to be scheduled before the birthing season for bats (i.e., prior to May 1) or after young bats are able to fly (i.e., after August 31). Removal of active bat roosts should be conducted in a manner that allows the bats the best opportunity to leave during darker hours to increase their chance of finding new roosts within minimum exposure to predation during daylight. 					
Biological MM-6: American Badger Avoidance and Minimization Measures						
	<ul style="list-style-type: none"> The project has been designed to minimize impacts on the American badger's native habitat, to the maximum extent 	Prior to initiation of construction	Glenn County – Public Works			

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
	<p>possible. The majority of construction activities would occur in previously disturbed areas, including the existing road, shoulders, and bridge.</p> <ul style="list-style-type: none"> A pre-construction survey will be performed to detect if American badger is present. If the species is detected the Glenn County will coordinate with CDFW and identify appropriate measures to avoid impacts during construction activities, such as using non-invasive techniques to encourage badgers to leave the area prior to ground disturbance. 					
	<p>Biological MM-7: Ring-tailed Cat Avoidance and Minimization Measures</p> <ul style="list-style-type: none"> The project has been designed to minimize impacts on the ring-tailed cats's native habitat, to the maximum extent possible. The majority of construction activities would occur in previously disturbed areas, including the existing road, shoulders, and bridge. Worker awareness training will be provided to all construction personnel. The training will be administered by a qualified biologist and will provide the workers with information on their responsibilities in regards to the sensitive biological resources in the BSA. The program will specifically address the status of ring-tailed cat, the species life history, how to identify the species and its habitat, the need to protect the species, and the project conservation and avoidance and minimization measures. As work will occur during the natal denning season period for ring-tailed cat (March 1 to June 30), the Glenn County will retain a qualified biologist to conduct a pre-construction survey no more than 3 days prior to the commencement of construction activities. If an active denning site is located during the survey, Glenn County will coordinate with a qualified biologist and CDFW, as necessary, on additional protection measures. If a ring-tailed cat is encountered in the BSA during construction, work will stop and the individual will be allowed to freely leave 	Prior to initiation of construction	Glenn County – Public Works			

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
	the work area.					
CULTURAL RESOURCES						
Cultural Resources MM-1		During construction, if resources are discovered.	Glenn County – Public Works			
<p>Although no prehistoric sites have been formally recorded or otherwise identified within the project site, the presence of buried cultural resources is always a possibility. Therefore, although unlikely, if unknown resources are discovered during construction and excavation activities, the following Cultural Resources Minimization Measures will be included in all contract documents and construction plans.</p> <ul style="list-style-type: none"> • Should archaeological resources be encountered at any point during project excavation and construction activities, all activity around the discovery will cease. The County will retain the services of a qualified archaeologist to examine the findings, assess their significance, and offer proposals for any exploratory procedures deemed appropriate to further investigate and/or mitigate any adverse impacts. • Should human remains be encountered during excavation activities in the project area, the following procedures shall be followed: <ul style="list-style-type: none"> ○ Per Health and Safety Code §7050.5(b), the Glenn County Coroner’s Office will be contacted immediately; all work must cease, no further disturbances may occur until the Coroner has made findings as to the origins and disposition per Public Resources Code §5097.98. ○ If the Coroner determines the remains are Native American, the Office will notify the Native American Heritage Commission (NAHC) within 24 hours. ○ Following receipt of the Coroners notice, the NAHC will contact a Most Likely Descendent (MLD). The MLD will then have 48 hours in which to make recommendations to the County and the consulting archaeologist regarding the treatment and/or re-interment of the human remains and any associated grave items. 						

Appendix A
Site Photos

Site Photos – County Road 200A Bridge Replacement Project



Photo 1 –
Overview of the upstream side of the bridge.

- Standing near the southwest corner of the bridge looking north.



Photo 2 –
Overview of the northern end on the downstream side of the bridge.

- Standing near the northeast corner of the bridge looking south.

Site Photos – County Road 200A Bridge Replacement Project



Photo 3 –
Approach on to the northern end of the bridge.

- Standing in County Road 200A looking south.



Photo 4 –
Bridge Deck approximately half way across the bridge.

- Standing on the bridge looking north.

Site Photos – County Road 200A Bridge Replacement Project



Photo 5 –
Approach coming into the bridge on the southern end.

- Standing near the southern end of the bridge looking south.



Photo 6 –
Downstream portion of the bridge with piers within Stony Creek. Debris visible on left of second pier.

- Standing near the southeastern corner of the bridge looking north.

Site Photos – County Road 200A Bridge Replacement Project

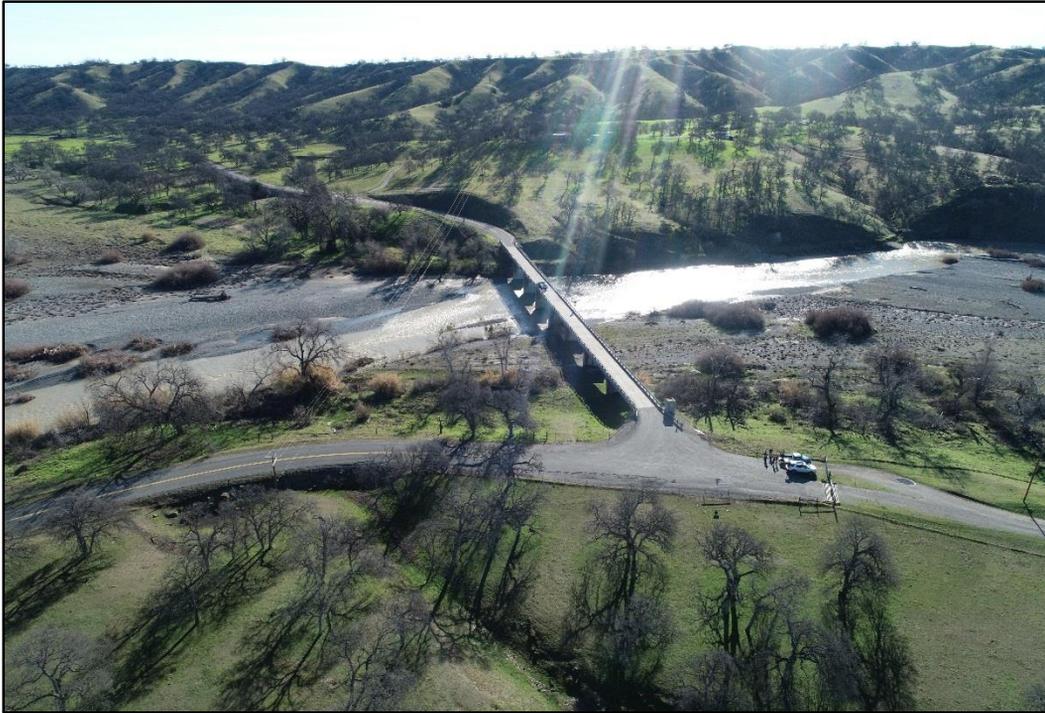


Photo 7 –
Overview of
bridge and
surrounding
habitat.

- Photo is
taken from the
northern end
of the bridge
looking south.



Photo 8 –
Overview of the
bridge and
surrounding
habitat.

- Photo is taken
from the
southern end of
the bridge
looking north.

Site Photos – County Road 200A Bridge Replacement Project



Photo 9 –
Overview of the downstream side of the bridge and surrounding habitat.

- Photo taken from the east looking towards the west.



Photo 10 –
Overview of the upstream side of the bridge and surrounding habitat.

- Photo taken from the west looking east towards Black Butte Lake.

Appendix B
Natural Environment Study

Stony Creek Bridge (No. 11C-0245) Replacement Project
Natural Environment Study

Glenn County, California
Township 22N, Range 5W, Section 27
USGS *Julian Rocks, California* 7.5-Minute Quadrangle
Federal Aid Number: BHLO-5911(031)



March 2017



Stony Creek Bridge (No. 11C-0245) Replacement Project

Natural Environment Study

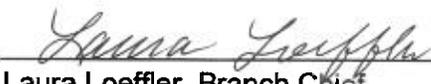
Glenn County, California
Township 22N, Range 5W, Section 27
USGS *Julian Rocks, California* 7.5-Minute Quadrangle
03-GLE-CR200A-N/A
03-928540L
Federal Aid Number: BHLO-5911(031)

STATE OF CALIFORNIA
Department of Transportation

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Summary

Glenn County Public Works Department proposes to replace the existing bridge (No. 11C-0245) on County Road 200A spanning Stony Creek with a wider concrete bridge to improve roadway safety (proposed project). The existing bridge, built in 1960, would be replaced by a new bridge measuring approximately 500 feet long and 32 feet 8 inches wide. The existing bridge is located approximately 13 miles west of Orland in Glenn County, California. The proposed project is being funded by Local Highway Bridge Program funds administered by the California Department of Transportation (Caltrans).

This Natural Environment Study (NES) has been prepared to evaluate the potential effects of implementing the proposed project on sensitive biological resources. The biological study area (BSA) encompasses approximately 8.2 acres, and includes all project components including potential staging areas and areas of ground disturbance. Construction activities could take up to 24 months to complete over two construction seasons. Standard conservation measures have been incorporated into the proposed project to minimize water quality impact in Stony Creek and other water bodies, avoid hazardous material spills, minimize fugitive dust generation, prevent the spread of invasive plant species, protect special-status species, and restore temporarily disturbed areas to pre-project conditions to the greatest extent feasible.

Surveys conducted by North State Resources, Inc. (NSR) identified annual grassland, blue oak woodland, valley-foothill riparian, wetlands, and riverine habitats present in the BSA. These habitats provide potential habitat for three special-status plant species, 11 special-status animal species, and nesting migratory birds and raptors. Stony Creek (a perennial stream), adjacent riparian wetlands, an ephemeral stream, and an intermittent stream occur in the BSA and may be subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps), Central Valley Regional Water Quality Control Board (RWQCB), and/or the California Department of Fish and Wildlife (CDFW). The BSA encompasses approximately 2.19 acres (1,061 linear feet) of wetlands and other waters.

The proposed project has been designed to minimize its project footprint thereby reducing the impact it may have on the natural environment. In total, the proposed project would permanently remove approximately 0.24 acres of habitat, which includes 0.01 acre of riverine, 0.21 acre of annual grassland, and 0.02 acre of valley foothill riparian habitats. Temporary impacts associated with the proposed project would occur to a total of 2.67 acres of annual grassland, blue oak woodland, riverine (Stony Creek), and valley foothill riparian habitats.

The County will obtain coverage under a Nationwide Permit (No. 14) from the Corps, request a water quality certification from the Central Valley RWQCB, and notify the CDFW of the proposed alteration to Stony Creek. Based on the current design drawings permanent impacts on the wetlands could occur; as such, the County will provide compensatory mitigation in the form of in-lieu fees or another appropriate mechanism in coordination with the Corps.

The only federally listed animal species with potential habitat in the BSA is valley elderberry longhorn beetle (VELB). A single blue elderberry shrub (*Sambucus nigra* ssp. *caerulea*) is present within the valley foothill riparian habitat on the west side of Stony Creek, approximately 30 feet south of the existing bridge. The shrub is multi-stemmed and approximately 6 feet tall with several stems appearing greater than 1-inch diameter. As such, the shrub is considered potential habitat for VELB given stems are greater than 1-inch diameter. Construction activities could affect this species if they are present in the work area at the time of construction. Potential habitat for nesting migratory birds, which are federally protected under the Migratory Bird Treaty Act, is also present in the BSA. Avoidance and minimization measures would be implemented to locate active bird nests prior to construction, monitor construction activities, take precautionary measures if any individuals are found during construction, and protect individuals and active nest sites.

Construction specific conservation measures have been incorporated into the proposed project to minimize impacts on sensitive biological resources to the greatest extent practicable. Specific avoidance and minimization measures, as detailed in Chapter 4, will also be implemented to further reduce the potential for impacts on waters of the United States and special-status animal species.

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Chapter 1. Introduction

On behalf of Willdan Engineering and Glenn County Public Works Department (County), North State Resources, Inc. (NSR) has prepared this Natural Environment Study (NES) to evaluate the potential effects associated with implementing the proposed Stony Creek Bridge (No. 11C-0245) Replacement Project (proposed project) on sensitive biological resources.

1.1. Project Location

The County is proposing to replace Bridge No. 11C-0245 over Stony Creek, which is located approximately 13 miles west of Orland, California. It is shown on the *Julian Rocks, California* U.S. Geological Survey 7.5-minute quadrangle in Township 22N, Range 5W, Section 27 (Figure 1). The approximate center of the existing bridge is located at latitude 39.73185°, longitude -122.41405°.

This NES characterizes the biological resources and evaluates project related impacts in the biological study area (BSA). The BSA encompasses approximately 8.2 acres and includes all project components including potential staging areas and areas of ground disturbance (Figure 2).

1.2. Project History

The existing Stony Creek Bridge (No. 11C-0245) was constructed in 1960 by the U.S. Army Corps of Engineers as part of a county road relocation resulting from the Black Butte Dam Project. It is 500 feet long, with eight simple steel girder spans of 62 feet each. There are seven piers with spread footings resting on either stream gravel or rock. The bridge has a single lane measuring approximately 15 feet wide with a 1.5-foot wide curb on either side with a metal beam guard railing.

In April 2003, County staff discovered that the bridge curbs were miss-aligned near the center of the bridge. Further investigation suggested that the footing of Pier 6 had subsided on the upstream side due to scour of the supporting stream gravels, and the entire pier had rotated in an upstream direction. In June 2003, the bridge was seismically retrofitted in accordance with a previously approved plan. An underwater investigation later showed that there was a large void beneath the upstream end of Pier 6, and a 15-ton weight limit was placed on the bridge. Rip rap was placed at the upstream face of Pier 6 and a monitoring plan was established.

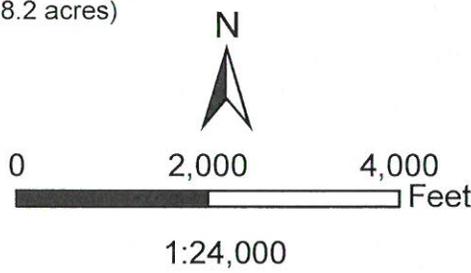
G:\Projects\51243_ Stony Creek Bridge\GIS\Working MXDs\51243_Fig1_Loc_NES.mxd 11/22/2016 stona



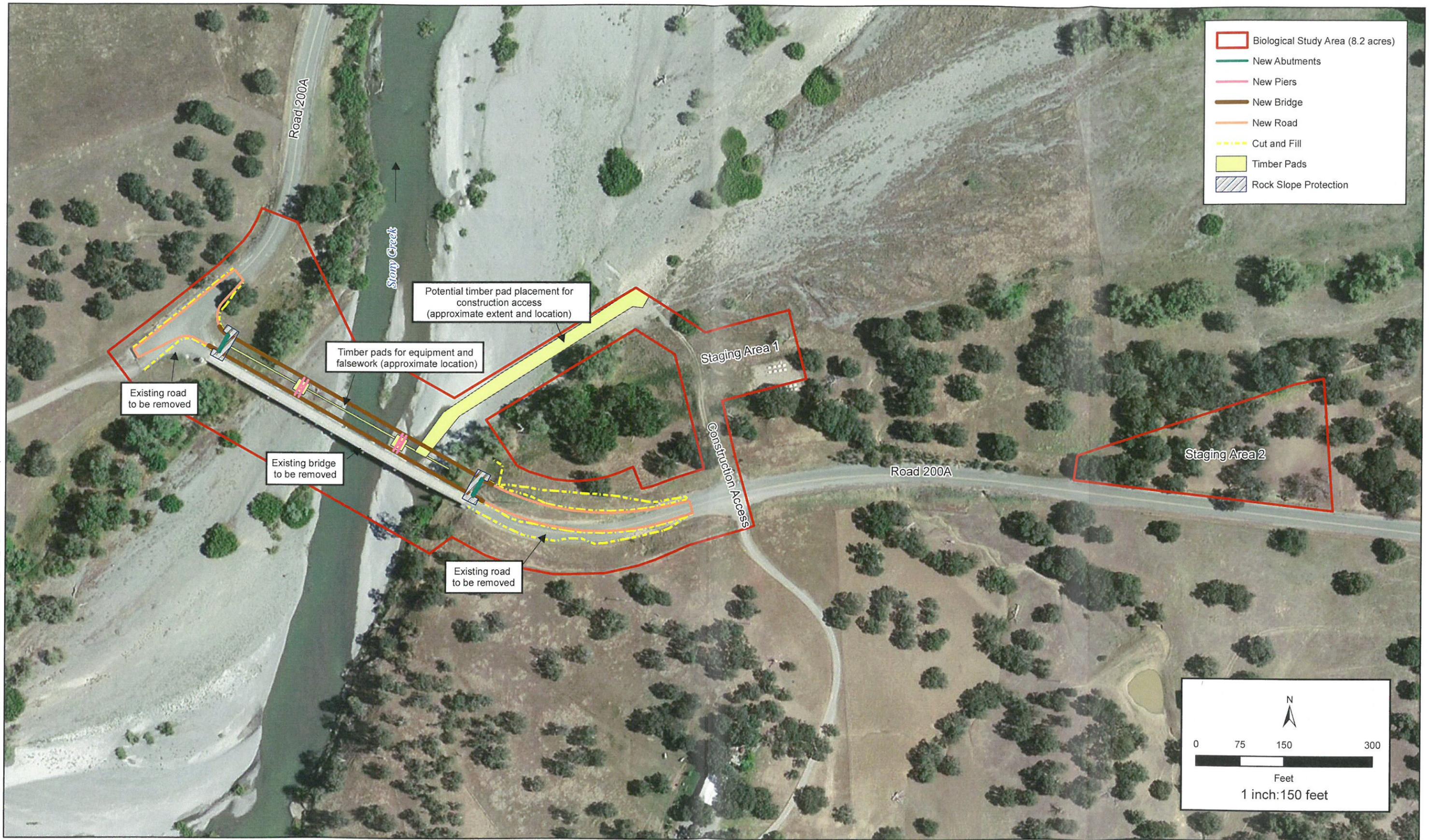
 Biological Study Area (8.2 acres)

Public Land Survey:
Section 27
T22N, R5W (MDBM)

7.5' USGS Quad:
Julian Rocks



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A geotechnical study determined that Piers 3, 4, and 5 were all founded on gravels and had the same potential for scour as Pier 6 had experienced. The study indicated the need to mitigate the scour at these bridge pier footings in order to prevent future scour and to protect the bridge from deteriorating to the point where complete replacement would be the only option. During a field review meeting with Caltrans on February 23, 2010, the Caltrans District Local Assistance Structures Representative indicated that none of the repair options could completely address the erosive nature of the foundation material, and recommended replacing the entire structure.

The proposed project is included in the County Capital Improvement Program and the Federal Statewide Transportation Improvement Program and is being funded by Local Highway Bridge Program funds administered by Caltrans. The purpose of the project is to improve traffic safety conditions on a public roadway and comply with current County, Caltrans, and American Association of State Highway and Transportation Officials guidelines by: (1) replacing a structurally deficient bridge with a new structure that meets current standards and (2) slightly realigning the road geometry approaching the bridge from both east-bound and west-bound directions to accommodate the new bridge being shifted slightly downstream. The existing bridge was determined to be structurally deficient with a sufficiency rating of 27.3. County Road 200A is a local rural road with a two-way travel lane that has an average daily traffic count of about 63 trips in the project area. The overall project objective is to improve safety and traffic operations along County Road 200A.

1.3. Project Description

1.3.1. Bridge Design and Construction Methods

The proposed project is to replace the existing eight span slab on steel girder bridge with a new three span, cast-in-place, box girder bridge founded on drilled shaft foundations. The new bridge would be located immediately downstream (north) of the existing bridge, and would be the same length as the existing bridge, but will be approximately 32 feet wide to accommodate two 12-foot wide travel lanes and two 4-foot wide shoulders. The new bridge abutment locations would be constructed downstream (north) and in line with the existing abutments. The existing bridge would continue to facilitate traffic during construction of the new bridge.

It is anticipated that bridge construction will be implemented over two construction seasons. Work during the first season would likely include the construction of the 8-foot diameter drilled shaft foundations and 7-foot diameter columns for the two bents in the creek bed as well as both of the two abutments. The shaft foundations could be drilled up to 30 feet below the existing grade. This would represent the maximum depth of ground disturbance during

construction. During the second season, the contractor will construct the temporary falsework, the box girder superstructure, and the roadway approaches as well as remove the falsework and the existing bridge.

During the first season, the contractor will most likely construct two 20-foot by 20-foot temporary timber work platforms that will support the drill rig during the drilling of the foundational shafts. Temporary timber pads, or another similar method may be needed to support heavy equipment while mobilizing through the construction access road within the channel of Stony Creek. It is anticipated that during the second season, a falsework support system will need to be constructed in the creek bed. Falsework may entail a number of small timber pads located throughout the creek bed to provide adequate support. As an alternate, the contractor may elect to drive temporary steel piles for the falsework support system. As with the pads, the exact number and location of the driven piles would be determined by contractor in his falsework shop drawing submittal. Once the new bridge has been constructed, the contractor will grade and pave the new approach roadway. Based on the current design rock slope protection (RSP) would be placed around the wing walls and abutments to prevent erosion and scour. RSP is expected to range in size from ¼ ton to ½ ton and would measure approximately 75 feet long (wrapped length) by 12 feet wide around the wing walls on both sides of the creek. Once the new bridge has been constructed the existing bridge and road would be removed. Demolition activities would entail the removal of the existing bridge foundations within Stony Creek to a depth of 3 feet below the existing grade.

Some activities would need to occur within the creek, including the placement of timber pads along the construction access road to support the mobilization of heavy equipment to the work area, the construction of the temporary falsework, and drilling/excavating the foundational shafts. The proposed construction activities within the creek would be timed to occur under the driest conditions possible; and as such, in-water work (i.e., water diversions) would be minimized. However, given the placement of the existing foundations and the proposed placement of the new pier foundations, both water diversions and dewatering may be required depending on the conditions present at the time of construction/demolition.

Two potential construction staging areas have been identified for the proposed project. Both are located on the north side of County Road 200A, approximately 400 to 600 feet east of the existing bridge. One of the potential staging areas would be selected as the designated area for material or equipment storage and could encompass up to 1.34 acres.

In order to access the work area within the channel of the creek, a temporary construction access route may be established. The construction access route will follow an existing dirt road north from County Road 200A to the channel of Stony Creek. The route then continues along the eastern bank of the creek to the work area for the new bridge.

Traffic will continue to utilize the existing bridge during construction of the new bridge. During the roadway paving tie-ins, temporary traffic control in the form of flagmen will be required to control traffic. The existing bridge would be demolished and removed from the project after the new bridge is constructed and open to traffic. The project would require some relocation of public utilities.

The type of equipment and number of construction workers would vary based on the specific activity being conducted. Construction equipment is expected to include an excavator, loader, dump truck, grader, vibratory roller compactor, crane, drill rig, fork lift, pile driving hammer, pile drilling equipment, baker tanks, pumps, concrete trucks, several work trucks, and an assortment of other support vehicles. Approximately 8 to 10 construction workers may work on the project in any given day; however, up to 25 workers may be required during special operations.

Construction activities could take up to 24 months to complete over two construction seasons. Work within the channel of Stony Creek could begin in late spring and end in early fall, as necessary to satisfy seasonal restrictions for in-channel work typically required by State and Federal agencies to protect water resources. Construction could include a winter suspension period between seasons.

1.3.2. Conservation Measures

Conservation measures will be incorporated into the proposed project to minimize the potential for adverse effects on sensitive biological resources. These conservation measures are identified below.

1.3.2.1. CONSERVATION MEASURE #1 - EROSION AND SEDIMENTATION CONTROL

Erosion control measures shall be implemented during construction of the proposed project. These measures shall conform to the provisions in Chapter 21 (Erosion Control) of the Caltrans Standard Specifications and special provisions included in the contract for the project. Such provisions shall include the preparation of a Storm Water Pollution Prevention Plan, which will describe and illustrate best management practices (BMPs). Erosion control measures to be included in the Storm Water Pollution Prevention Plan or otherwise implemented by the Contractor include, but are not limited to, the following:

- To the extent practicable, activities that increase the erosion potential shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall to transport sediment to surface water features. If these activities must take place during the late fall, winter, or spring, temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and shall be maintained until permanent erosion control structures are in place.
- Vegetation clearing and ground-disturbing activities shall be limited to the smallest area necessary for project implementation.
- Areas where woody vegetation needs to be removed shall be identified in advance of ground disturbance and shall be limited to only those areas that have been approved by the County. Within 10 days of completion of construction in those areas, weed-free mulch shall be applied to disturbed areas to reduce the potential for short-term erosion. Prior to a rain event or when there is a greater than 50 percent probability of rain within the next 24 hours as forecasted by the National Weather Service, weed-free mulch shall be applied to all exposed areas at the completion of the day's activities. Soils shall not be left exposed during the rainy season.
- Suitable BMPs shall be implemented, such as placing silt fences, and straw wattles below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These structures shall be installed prior to any clearing or grading activities.
- If spoil sites are used, they shall be placed where they do not drain directly into a surface water feature, if possible. If a spoil site would drain into a surface water feature, suitable BMPs shall be constructed to ensure sediment is intercepted before it reaches the feature. Spoil sites shall be graded and vegetated to reduce the potential for erosion. Erosion control measures that employ monofilament netting shall be prohibited within the work area.
- Sediment control measures shall be in place prior to the onset of the rainy season and shall be monitored and maintained in good working condition until disturbed areas have been revegetated.

1.3.2.2. CONSERVATION MEASURE #2 - PREVENTION OF ACCIDENTAL SPILLS

Construction specifications shall include the following measures to minimize the potential for adverse effects resulting from accidental spills of pollutants (e.g., fuel, oil, grease):

- A site-specific spill prevention plan shall be implemented if potentially hazardous materials are used or stored at the construction site. The plan shall include the proper handling and storage of all potentially hazardous materials, as well as the proper

procedures for cleaning up and reporting any spills. If necessary, containment berms shall be constructed to prevent spilled materials from reaching surface water features.

- Equipment and hazardous materials shall be stored a minimum of 50 feet away from surface water features.
- Vehicles and equipment used during construction shall receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of potentially hazardous materials. Maintenance and fueling shall be conducted in an area at least 50 feet away from surface water features or within an adequate fueling containment area.

1.3.2.3. CONSERVATION MEASURE #3 - AIR QUALITY/DUST CONTROL

In the construction bid documents, the County shall include provisions that the contractor shall implement a dust control program to limit fugitive dust emissions. The dust control program may include, but is not limited to, the following elements:

- Water inactive construction work areas (i.e., areas where exposed/disturbed soil is present) and exposed stockpiles at least twice daily or until soils are stable.
- Pursuant to California Vehicle Code, all trucks hauling soil and other loose material to and from the construction site shall be covered or should maintain at least 6 inches of freeboard (i.e., minimum vertical distance between the top of the load and the trailer).
- Any topsoil removed during construction shall be stored on-site in piles no higher than 4 feet to preserve the seed bank and to allow development of microorganisms prior to replacing the soil in the construction area. The topsoil piles shall be clearly marked and flagged. Topsoil piles that will not immediately be used in the construction area shall be revegetated with a non-persistent erosion control mixture.
- Soil piles for backfill shall be marked and flagged separately from native topsoil stockpiles. These soil piles shall also be surrounded by silt fencing, straw wattles, or other sediment barriers or covered unless they are to be used immediately.
- All stockpiles, dirt/gravel roads, and exposed or disturbed soil surfaces shall be watered, as necessary, to reduce airborne dust.

1.3.2.4. CONSERVATION MEASURE #4 - PREVENTION OF SPREAD OF INVASIVE SPECIES

In the construction bid documents, the County shall include provisions that the contractor shall implement the following measures to prevent the spread of invasive plants:

- All equipment used for off-road construction activities shall be weed-free prior to entering the project area.

- Any mulches or fill used shall be weed free.
- Any seed mixes or other vegetative material used for revegetation of disturbed sites shall consist of regionally occurring native plant species that are found in the BSA and surrounding vicinity to the extent practicable.

1.3.2.5. CONSERVATION MEASURE #5 –PROTECTION OF SPECIAL-STATUS SPECIES

In the construction bid documents, the County shall include provisions that the contractor shall implement the following general conservation measures to avoid or minimize the potential for adverse effects on special-status species and their habitat:

- Construction access and equipment will be located on existing roads or previously disturbed parking areas.
- Disturbance of soil, vegetation, naturally occurring debris piles (including fallen trees, woodrat nests, or dead tree snags), and wildlife burrows will be avoided or minimized to the extent possible.
- To the extent practicable, excavations will be covered at the end of each workday to prevent wildlife from becoming trapped. Excavations will be inspected before each work day to facilitate the release of any trapped wildlife. A qualified biologist will be consulted if work crews are unable to safely assist in the release of trapped wildlife.
- To ensure impacts to riparian vegetation outside of the construction area are minimized, exclusionary fencing shall be installed along the construction access route where riparian vegetation/wetlands are present. Riparian areas temporarily disturbed shall be replanted using native riparian species that are present along Stony Creek and vicinity.

1.3.2.6. CONSERVATION MEASURE #6 – RETURN TEMPORARILY DISTURBED AREAS TO PRE-PROJECT CONDITIONS

All temporarily disturbed areas will be returned to pre-project conditions upon completion of construction to the greatest extent practicable. These areas will be properly protected from washout and erosion using appropriate erosion control devices including coir netting, hydroseeding, and revegetation. In sloped areas additional erosion control measures should be applied including erosion control blankets and biodegradable fiber rolls. If woody species (i.e., trees, and large shrubs) are removed, these areas should be replanted with comparable native vegetation.

Chapter 2. Study Methods

2.1. Regulatory Requirements

2.1.1. Federal Regulatory Requirements

2.1.1.1. FEDERAL ENDANGERED SPECIES ACT

The federal Endangered Species Act of 1973 (ESA) was established to protect and recover imperiled species and the ecosystems upon which they depend. The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service administer the act and are responsible for consulting with other federal agencies under Section 7 to ensure that their actions do not jeopardize the continued existence of endangered or threatened species (plant or animal) or result in the destruction or adverse modification of designated critical habitat for these species.

2.1.1.2. CLEAN WATER ACT

The objective of the Clean Water Act of 1977, as amended, is to maintain and restore the chemical, physical, and biological integrity of the nation's waters. Discharge of dredged or fill material into waters of the United States, including jurisdictional wetlands, is regulated under Section 404 of the Clean Water Act by the U.S. Army Corps of Engineers (Corps) via a permitting process. Applicants for Section 404 permits are also required to obtain water quality certification through the State (State Water Resources Control Board or Regional Water Quality Control Board in California) under Section 401 of the Clean Water Act.

2.1.1.3. MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act (MBTA) of 1918 enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. This treaty makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under the act, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations.

2.1.2. Executive Orders

Federal agencies are required to demonstrate that their actions comply with Presidential Executive Orders established to protect the environment. Relevant Executive Orders include the following:

- Executive Order 11990 (Wetlands): For projects that could affect wetlands, federal agencies are required to demonstrate that no practicable alternative exists to avoid the wetland(s) and that all practicable avoidance, mitigation, and/or preservation

measures have been incorporated into the project to minimize impacts to wetlands. Federal agencies are also required to provide opportunity for early public review of any plans or proposals for new construction in wetlands.

- Executive Order 11988 (Floodplain Management): For projects that may be located in a floodplain, federal agencies are required to evaluate the effects of the action on the floodplain and identify practicable alternatives or measures to avoid long- and short-term adverse impacts associated with the occupancy and modification of the floodplain and to avoid incompatible development in the floodplain.
- Executive Order 13112 (Invasive Species): Federal agencies are required to prevent the introduction of invasive species and not authorize actions that could cause or promote the introduction or spread of invasive species. Federal agencies need to identify feasible and prudent measures to minimize the risk of harm caused by invasive species.
- Executive Order 13186 (Migratory Birds): Federal agencies are required to evaluate the effects of their actions on migratory birds, with emphasis on species of concern, and to minimize the take of migratory birds through development of procedures for evaluating such take and conservation efforts in coordination with the USFWS. This Executive Order further implements the MBTA and requires coordination between the USFWS and federal agencies.

2.1.3. California Regulatory Requirements

2.1.3.1. CALIFORNIA ENDANGERED SPECIES ACT

The California Endangered Species Act (CESA, Section 2800 of the Fish and Game Code) prohibits “take” of state-listed species and protects native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, that are threatened with extinction or experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation. Take is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”. CESA authorizes the California Department of Fish and Wildlife (CDFW) to issue incidental take permits for state-listed species, when specific criteria are met.

2.1.3.2. PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Porter-Cologne Water Quality Control Act authorizes the State Water Resources Control Board to oversee water rights and water quality policy and establishes nine Regional Water Quality Control Boards to protect and enhance water quality at the regional and local levels. In addition to preparing water quality control plans to designate beneficial uses of water bodies in each region, the Boards issue waste discharge requirements for activities that result

in pollutant or nuisance discharges that may affect surface or groundwater, including isolated wetlands not subject to the Corps' jurisdiction.

2.1.4. Fish and Game Code

The Fish and Game Code provides several provisions for the protection of waters of the State and the State's plant, fish, and wildlife resources, including the following relevant sections:

- Sections 1600-1616 (Streambed Alteration): The CDFW is responsible for the protection and conservation of fish and wildlife resources in California. Under Section 1602, CDFW has the authority to issue lake or streambed alteration agreements for construction activities that substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the CDFW as providing resources for fish or wildlife.
- Sections 1900-1913 (Native Plant Protection Act): The Native Plant Protection Act prohibits the taking, possessing, or sale within the state of any plants that the CDFW has determined are rare, threatened, or endangered. The CDFW has the authority to enforce the provisions of this act and authorize measures to salvage native plants that may otherwise be affected by project activities, if deemed appropriate.
- Sections 3500-3516 (Game Birds and Birds of Prey): The CDFW protects game birds, birds of prey, migratory birds, and fully protected birds from take or possession, except as otherwise provided by the code (e.g., incidental take under CESA).
- Sections 3511, 4700, 5050, and 5515 (Fully Protected Species): California statutes accord a "fully protected" status to a number of specifically identified birds, mammals, reptiles, amphibians, and fish. These species cannot be "taken," even with an incidental take permit.

2.2. Studies Required

2.2.1. Background Research

Special-status plant and animal species and sensitive habitats potentially occurring in the BSA were determined, in part, by reviewing natural resource agency databases, literature, and other relevant sources. The following sources were reviewed:

- United States Geological Survey *Julian Rocks, California* 7.5-minute quadrangle;
- Aerial photography of the BSA and vicinity;
- USFWS list of endangered and threatened species that may occur in the vicinity of the proposed project (Appendix A);

- California Natural Diversity Database (CNDDDB) (California Department of Fish and Wildlife 2016a) and California Native Plant Society (CNPS) online *Inventory of Rare and Endangered Vascular Plants of California* (California Native Plant Society 2016) records for the *Julian Rocks, California* 7.5-minute quadrangle and the eight surrounding quadrangles (Appendix B);
- California Wildlife Habitat Relationships (CWHR) System (California Department of Fish and Wildlife 2016b);
- Other pertinent databases and literature, including the *The Jepson manual: vascular plants of California* (Baldwin et al. 2012).

A preliminary list of special-status species potentially occurring in the BSA and vicinity was developed based on the background research. The preliminary list was further refined based on field assessments conducted during 2010 and 2016.

2.2.2. Studies Conducted

NSR biologists conducted biological surveys for the proposed project on June 1 and November 9, 2016. These surveys consisted of a reconnaissance-level survey to assess habitats and potentially occurring special-status plants and animals in the BSA, a botanical survey, and a delineation of waters of the United States.

The reconnaissance-level biological surveys were performed to characterize the habitats in the BSA, and to assess the potential for special-status species to occur. To better focus the field survey efforts a target list of potentially occurring species was developed during the background research.

The botanical surveys were conducted in accordance with *The Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (California Department of Fish and Game 2009). Per CDFW guidelines, a target list of special-status plant species with the potential to occur in the BSA was developed prior to the survey based on interpretation of the CNDDDB and CNPS query results. Plant taxonomy for the botanical surveys follows Baldwin et al. (2012).

The delineation of waters of the United States was conducted according to the methods described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Manual: Arid West Region* (U.S. Army Corps of Engineers 2008a). Delineation of “other waters” was based on the presence of an ordinary high water mark as defined in Corps regulations (33 CFR 328.3 and 33 CFR 328.4). A copy of the delineation report is provided in Appendix C.

2.3. Personnel and Survey Dates

The biological surveys were performed by NSR biologists Tim Hanson and Sarah Tona. Tim Hanson is a biologist/botanist with over 6 years of experience performing botanical survey surveys, habitat assessments, and wetland delineations. Tim performed the habitat assessment and botanical survey, and compiled a list of special-status plant and animal species that may occur in the BSA. Sarah Tona is a biologist/botanist with over 8 years of experience performing biological surveys, habitat assessments, and wetland delineations. Sarah performed the delineation of the waters of the United States in the BSA.

2.4. Agency Coordination and Professional Contacts

A list of species that are listed, proposed for listing and candidates for listing under the ESA with the potential to be affected by the proposed project was obtained from the USFWS Sacramento Fish and Wildlife Office. On November 16, 2016, an updated list was obtained from the USFWS Sacramento Fish and Wildlife Office using the Information for Planning and Conservation tool (Consultation Code: 08ESMF00-2017-SLI-0286) (Appendix A).

2.5. Limitations That May Influence Results

All field studies were conducted in accordance with applicable protocols. Therefore, no limitations that may influence the results of field studies associated with this project are known to have occurred.

Chapter 3. Results: Environmental Setting

3.1. Description of Existing Physical and Biological Conditions

3.1.1. Study Area

The BSA encompasses private land and County right-of-way along County Road 200A. Black Butte Lake, located approximately 4 miles north of the existing bridge, is used for boating, fishing, and camping. Dominant land uses in the vicinity of the BSA are rural residential and grazing. The nearest residence is located approximately 1,000 feet south of the BSA, east of Stony Creek.

3.1.2. Physical Conditions

The BSA is located in the Stony Creek floodplain and adjacent upland terraces at an elevation of about 500 feet above sea level. The topography of the BSA is nearly level with the adjacent terraces sloping towards the creek. The landscape surrounding the BSA consists of rolling hills dominated by woodlands and grasslands.

Precipitation in the BSA primarily occurs as rain, with occasional snowfall. The average annual rainfall is approximately 20 inches and the average annual snowfall is 1 inch. Air temperatures range between an average January high of 54 degrees Fahrenheit (°F) and an average July high of 97°F. The annual average high is approximately 75°F (Western Regional Climate Center 2016).

Five soil map units occur in the BSA. They are described in the Soil Survey of the *Glenn County Area, California* (Natural Resources Conservation Service 2016). Soil map units occurring within the BSA are summarized in Table 1 below.

Hydrology of the BSA is driven by precipitation, runoff, and groundwater. Stony Creek, a perennial stream, is the primary drainage feature in the BSA and flows northerly through the BSA into Black Butte Reservoir. Stony Creek receives regulated flows from the Stony Gorge Reservoir, located approximately 15 miles south of the BSA. Below Black Butte Reservoir, Stony Creek flows to the Sacramento River, approximately 31.5 river miles east of the BSA.

Table 1. Soil Map Units in the Stony Creek Bridge Replacement Project Biological Study Area, Glenn County, California.

Map Unit Name Taxonomy	Map Unit Reference Code	Drainage Class	Depth to Restrictive Layer	Hydric Soils
Arbuckle gravelly loam, 0 to 2 percent slopes Typic haploxeralfs	AoA	Well-drained	More than 80 inches	No, hydric inclusions (depressions)
Pleasanton gravelly loam, 2 to 10 percent slopes Mollic haploxeralfs	PmB	Well-drained	More than 80 inches	Not hydric
Riverwash	Rh	Excessively drained	N/A	Yes, drainageways
Sehorn-Millsholm association, 30 to 65 percent slopes Entic Chromoxerents	SdE	Well-drained	20-40 inches to lithic bedrock	Not hydric
Water	W	N/A	N/A	Hydric

3.1.3. Biological Conditions

3.1.3.1. HABITAT COMMUNITIES

Habitat communities in the BSA were classified based on habitat descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988) and the results of the field survey. The habitat communities in the BSA include annual grassland, blue oak woodland, riverine, and valley foothill riparian (Figure 3). The existing County Road 200A in the BSA is considered a subcomponent of the habitat communities given the relatively small area the road covers. A list of plants observed in the BSA during field surveys is included as Appendix D, and habitat descriptions are provided below.

Annual Grassland

Annual grassland is located in the northeast portion of the BSA and characterized as a dense herbaceous layer. Dominant plant species include harewall barley (*Hordeum murinum* ssp. *leporinum*), ripgut brome (*Bromus diandrus*), rattail fescue (*Festuca myuros*), hedge-parsley (*Torilis arvensis*), bur-clover (*Medicago polymorpha*), winter vetch (*Vicia villosa*), and rose clover (*Trifolium hirtum*). Common animal species that use the annual grassland habitat include mourning dove (*Zenaida macroura*), California ground squirrel (*Otospermophilus beecheyi*), coyote (*Canis latrans*), and northwestern fence lizard (*Sceloporus occidentalis occidentalis*).

Blue Oak Woodland

Blue oak woodland habitat occurs on the slopes above the Stony Creek floodplain and at the eastern portion of the BSA. It is characterized by an open canopy of blue oaks (*Quercus douglasii*), with a dense herbaceous understory. Dominant plants in the understory include ripgut brome, rattail fescue, hedge-parsley, winter vetch, and California melic (*Melica californica*). Typical animal species that use blue oak woodlands include acorn woodpecker (*Melanerpes formicivorus*), American kestrel (*Falco sparverius*), gray fox (*Urocyon cinereoargenteus*), and western gray squirrel (*Sciurus griseus*).

Riverine

Riverine habitat in the BSA consists of Stony Creek. Stony Creek is characterized as a perennial, low-gradient stream with an extensive floodplain because of the stream's low gradient and the presence of alluvial deposits. Dominant substrates include cobble, gravel, and sand. Isolated patches of riparian vegetation are located within the creek channel. Animal species associated with riverine habitat include white catfish (*Ameiurus catus*) and a variety of other fish species, American bullfrog (*Lithobates catesbeianus*), great blue heron (*Ardea herodias*), and American beaver (*Castor canadensis*).

Valley Foothill Riparian

Valley foothill riparian habitat occurs as bands of vegetation along the banks of Stony Creek ranging between 10-70 feet in width. This habitat is characterized by a moderate to dense overstory of riparian species with a dense herbaceous layer dominated by upland species. Dominant trees and shrubs include Fremont cottonwood (*Populus fremontii*), mulefat (*Baccharis salicifolia*), arundo (*Arundo donax*), and narrowleaf willow (*Salix exigua*). Herbs and forbs occurring in the understory include ripgut brome, rattail fescue, annual ragweed (*Ambrosia artemisiifolia*), yellow sweetclover (*Melilotus indicus*), and deergrass (*Muhlenbergia rigens*). Valley foothill riparian habitat supports a variety of bird and other animal species, including black phoebe (*Sayornis nigricans*), northern raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*).

3.1.3.2. HABITAT CONNECTIVITY

Habitat corridors are segments of land that provide linkages between different habitats while also providing cover. On a broader level, corridors also function as avenues along which wide-ranging animals can travel, plants can propagate, genetic exchange can occur, populations can move in response to environmental changes and natural disasters, and threatened species can be replenished from other areas. Habitat corridors often consist of riparian areas along streams, rivers, or other natural features. Additionally, the rivers and streams themselves may serve as migration corridors for fish and other aquatic species.

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In the BSA, Stony Creek and the adjacent riparian habitat provide dispersal and migration corridors for numerous plant and animal species. The BSA is located upstream of the Black Butte Dam which is classified as a total fish barrier (California Department of Fish and Wildlife 2016a) and in an area classified as “Historical Watershed: Anthropogenically Blocked” for regionally occurring anadromous fish species by the National Marine Fisheries Service (National Oceanic Atmospheric Administration 2016a,b). Therefore, anadromous fish species are absent in Stony Creek within the BSA.

3.1.3.3. INVASIVE SPECIES

Invasive plants (i.e., noxious weeds) are undesirable, non-native plants that commonly invade disturbed sites. Most species have been introduced from Europe and Asia and are known to degrade native wildlife habitat and plant communities. When disturbance results in the creation of habitat openings or in the loss of intact native vegetation, invasive plants may colonize the site and spread, often out-competing native species. Once established, they are very difficult to eradicate and could pose a threat to native species.

All non-native plant species found in the BSA were reviewed to determine their status as invasive plants according to the ratings in the California Invasive Plant Inventory produced by California Invasive Plant Council (Cal-IPC 2006). Cal-IPC categorizes non-native invasive plants into three categories of overall negative ecological impact in California: High, Moderate, and Limited. Occurrences of invasive species found in the BSA with a Cal-IPC rating of “High” include barbed goat grass (*Aegilops triuncialis*), giant reed, red brome (*Bromus madritensis* ssp. *rubens*), yellow star-thistle (*Centaurea solstitialis*), medusa head (*Elymus caput-medusae*), and smallflower tamarisk (*Tamarix parviflora*). Barbed goat grass, red brome, yellow star-thistle, and medusa head are scattered through the annual grassland throughout the project area. Giant reed occurs in the riparian habitat west of Stony Creek and smallflower tamarisk grows in patches throughout the Stony Creek floodplain.

3.2. Habitats and Natural Communities of Concern and Regional Species

3.2.1. Habitats and Natural Communities of Concern

3.2.1.1. RARE NATURAL COMMUNITIES

In addition to inventorying reported occurrences of special-status species, the CNDDDB serves to inventory locations of rare natural communities. Rare natural communities are those communities that are of highly limited distribution, and may or may not contain rare, threatened, or endangered species. The CNDDDB ranks natural communities according to their rarity and endangerment in California. The CNDDDB contains no records of rare natural communities within the BSA (California Department of Fish and Wildlife 2016a).

Riparian habitat (valley foothill riparian) is located in the BSA and is considered a sensitive natural community by the Corps and CDFW. In addition to providing habitat for many terrestrial animal species, riparian areas provide shade, sediment, nutrient or chemical regulation, stream bank stability, and input for large woody debris or organic matter to the channel; which are necessary habitat elements for fish and other aquatic species.

Other natural communities of concern by the Corps and CDFW include wetlands and aquatic habitats. Waters of the United States in the BSA include Stony Creek and the adjacent riparian wetlands, and intermittent and ephemeral streams. Both Stony Creek and the intermittent and ephemeral streams may also be subject to CDFW jurisdiction under Section 1600 of the California Fish and Game Code.

3.2.1.2. WATERS OF THE UNITED STATES

Waters of the United States occurs in the BSA as riparian wetlands, perennial stream (Stony Creek), ephemeral stream, and intermittent stream.

3.2.2. Special-Status Plants

For the purpose of this evaluation, special-status plant species include plants that are (1) listed as threatened or endangered under the CESA or the ESA; (2) designated as rare by the CDFW; (3) identified as state or federal candidate or proposed species for listing as threatened or endangered; and/or (4) have a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, or 2B.

Regionally occurring special-status plant species were identified based on a review of pertinent literature, the USFWS species list, CNDDDB and CNPS database records, and the field survey results. The status of each special-status plant species was verified using the *Special Vascular Plants, Bryophytes, and Lichens List* (California Department of Fish and Wildlife 2016c) and the *State and Federally Listed Endangered, Threatened and Rare Plants of California* (California Department of Fish and Wildlife 2016d). For each species, habitat requirements were assessed and compared to the habitats in the BSA and immediate vicinity to determine if potential habitat occurs in the BSA. Based on the habitat assessment, the BSA provides potential habitat for three special-status plant species (Table 2). These plant species are further discussed in Chapter 4. For the purposes of this review, all plant species provided on the USFWS species list are included in Table 2, regardless of whether the BSA provides potential habitat.

Table 2. Special-Status Plants Potentially Occurring in the Stony Creek Bridge Replacement Project Biological Study Area, Glenn County, California.

Common Name Scientific Name	Status ¹ (Fed/State/ CRPR)	General Habitat Description	Habitat Assessment ²	Rationale
Federal or State Listed Species				
palmate-bracted bird's-beak <i>Chloropyron palmatum</i>	FE/SE/1B.1	Chenopod scrub, Valley and foothill grassland/alkaline. Elevation 0 to 500 feet. Blooms from May- October.	A	The BSA does not contain alkaline grassland habitat.
Other Special-Status Species				
red-flowered bird's- foot trefoil <i>Acmispon rubriflorus</i>	—/—/1B.1	Cismontane woodland, valley and foothill grassland. Elevation 650 to 1,400 feet. Blooms from April-June.	HP	The BSA contains cismontane woodland and valley and foothill grassland.
Stony Creek spurge <i>Euphorbia ocellata ssp. rattanii</i>	—/—/1B.2	Chaparral, Valley and foothill grassland (sandy or rocky). Elevation 250 to 2,650 feet. Blooms from May- October.	HP	The BSA contains sandy valley and foothill grassland.
Ahart's paronychia <i>Paronychia ahartii</i>	—/—/1B.2	Cismontane woodland, Valley and foothill grassland, Vernal pools. Elevation 100 to 1,650 feet. Blooms from February- June.	HP	The BSA contains cismontane woodland and valley and foothill grassland.

¹ Status Codes: Federal Endangered (FE); State Endangered (SE); State Fully Protected (FP); State Species of Special Concern (SSC).

¹ CRPR Codes and Extensions:

1B Plants rare, threatened, or endangered in California and elsewhere.

xx.2 Fairly endangered in California

xx.1 Seriously endangered in California

² Assessment Codes. Absent (A): No habitat present and no further work needed. Habitat Present (HP): Habitat is, or may be present. The species may be present.

3.2.3. Special-Status Wildlife

Special-status wildlife include species that are (1) listed as threatened or endangered under the CESA or the ESA; (2) proposed for federal listing as threatened or endangered; (3)

identified as state or federal candidates for listing as threatened or endangered; and/or (4) identified by the CDFW as Species of Special Concern or California Fully Protected Species.

Regionally occurring special-status wildlife species were identified based on a review of pertinent literature, the USFWS species list, CNDDDB database records, a query of the CWHR, and the field survey results. The status for each special-status wildlife species was verified using the *Special Animals List* (California Department of Fish and Wildlife 2016e) and the *State and Federally Listed Endangered and Threatened Animals of California* (California Department of Fish and Wildlife 2016f). For each species, habitat requirements were assessed and compared to the habitats in the BSA and immediate vicinity to determine the species' potential to occur in or near the BSA. Based on the habitat assessment, 11 special-status wildlife species potentially occur in the BSA (Table 3). These special-status wildlife species are further discussed in Chapter 4. For the purposes of this review, all wildlife species provided on the USFWS species list are included in Table 3, regardless of whether the BSA provides potential habitat.

Table 3. Special-Status Wildlife Potentially Occurring in the Stony Creek Bridge Replacement Project Biological Study Area, Glenn County, California.

Common Name <i>Scientific Name</i>	Status ¹ (Fed/State)	General Habitat Description	Habitat Assessment ²	Rationale
Federal or State Listed Species				
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT/—	Elderberry shrubs having stems with a basal diameter equal to or greater than 1 inch. Typically associated with riparian habitat.	HP	A single elderberry shrub with stems greater than 1 inch in diameter is present in the BSA.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT/—	Grass or mud-bottomed swales, earth slump or basalt-flow depression pools in grasslands.	A	The BSA does not contain vernal or intermittent pools. Critical habitat is not present.
Vernal pool tadpole shrimp <i>Lepidurus packardi</i>	FE/—	Vernal pools, swales, and ephemeral freshwater habitats	A	The BSA does not contain vernal or intermittent pools. Critical habitat is not present.
Delta smelt <i>Hypomesus transpacificus</i>	FT/SE	Endemic to Sacramento-San Joaquin River Delta in open, shallow, low salinity (<1%) waters. Spawns in middle and upper reaches of Delta from late winter to spring	A	The BSA is outside the species' range.

Table 3. Special-Status Wildlife Potentially Occurring in the Stony Creek Bridge Replacement Project Biological Study Area, Glenn County, California.

Common Name Scientific Name	Status¹ (Fed/State)	General Habitat Description	Habitat Assessment²	Rationale
Northern California DPS steelhead <i>Oncorhynchus mykiss irideus</i>	FT/—	Requires cool, swift shallow water; clean, loose gravel for spawning and runs, and suitable large pools in which to rear and over-summer.	A	The BSA is located outside of the range for the species (National Oceanic Atmospheric Administration 2016b).
California red-legged frog <i>Rana draytonii</i>	FT/SSC	Requires aquatic habitat for breeding, also uses a variety of other habitat types including riparian and upland areas. Adults utilize dense, shrubby or emergent vegetation associated with deep-water pools with fringes of cattails and dense stands of overhanging vegetation. This species may also breed in ephemeral ponds that support little or no vegetation.	A	Slow moving water features with deep pools and/or backwaters with emergent/ riparian vegetation is absent from the BSA.
Giant garter snake <i>Thamnophis gigas</i>	FT/ST	Freshwater marshes and low gradient streams with emergent vegetation. Adapted to drainage canals and irrigation ditches with mud substrate.	A	The BSA lacks freshwater marshes and low gradient streams with emergent vegetation for the species.
Swainson's hawk <i>Buteo swainsoni</i>	—/ST	Breeds in stands with few trees in riparian areas, and oak savannah; forages in adjacent livestock pasture, grassland, or grain fields.	HP	Riparian trees overhanging Stony Creek in the BSA provide potential nesting habitat for the species.
Other Special-Status Species				

Table 3. Special-Status Wildlife Potentially Occurring in the Stony Creek Bridge Replacement Project Biological Study Area, Glenn County, California.

Common Name Scientific Name	Status¹ (Fed/State)	General Habitat Description	Habitat Assessment²	Rationale
Foothill yellow-legged frog <i>Rana boylei</i>	—/SSC	Requires partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg laying.	HP	Stony Creek in the BSA provides suitable aquatic habitat for the species.
Western pond turtle <i>Emys marmorata</i>	—/SSC	Slow water aquatic habitat with available basking sites. Hatchlings require shallow water with dense submergent or short emergent vegetation. Requires an upland oviposition site in the vicinity of the aquatic site.	HP	Stony Creek and the adjacent upland habitat in the BSA provides suitable aquatic, basking, and upland habitat for the species.
Grasshopper sparrow <i>Ammodramus savannarum</i>	—/SSC	Valley and foothill grassland	HP	The annual grassland habitat in the BSA provides potential nesting/foraging habitat for the species.
Loggerhead shrike <i>Lanius ludovicianus</i>	—/SSC	Forages in open grassland habitats throughout the Central Valley of California. Nests in shrubs and trees.	HP	Suitable trees and shrubs for nesting are located in the BSA and vicinity.
White-tailed kite <i>Elanus leucurus</i>	—/FP	Nests in tall shrubs and trees, forages in grasslands, agricultural fields and marshes	HP	Suitable trees for nesting are located in the BSA and vicinity.
Western burrowing owl <i>Athene cunicularia hypugea</i>	—/SSC	Grasslands and ruderal habitats. Uses mammal burrows or other suitable underground cavities and/or crevices.	A	The BSA and vicinity lacks suitably sized burrows and other underground cavities/crevices that would support the species.

Table 3. Special-Status Wildlife Potentially Occurring in the Stony Creek Bridge Replacement Project Biological Study Area, Glenn County, California.

Common Name Scientific Name	Status¹ (Fed/State)	General Habitat Description	Habitat Assessment²	Rationale
Pallid bat <i>Antrozous pallidus</i>	--/SSC	Forages over many habitats; roosts in buildings, large oaks or redwoods, rocky outcrops and rocky crevices in mines and caves.	HP	The existing bridge may serve as roosting habitat for pallid bat in the BSA.
Western red bat <i>Lasiurus blossevillii</i>	--/SSC	Forages over many habitats, requires tall cliffs or buildings for roosting.	HP	Large trees and the existing bridge in the BSA could provide roosting habitat
American badger <i>Taxidea taxus</i>	--/SSC	Herbaceous, shrub, and open stages of most habitats with dry, friable soils.	HP	Friable soils are present in the BSA and grasslands could provide potential habitat for the species.
Ring-tailed cat <i>Bassariscus astutus</i>	--/FP	Riparian habitats and in brush stands of most forest and shrub habitats. Nests in rock recesses, hollow trees, logs, snags, abandoned burrows or woodrat nests.	HP	Potential denning habitat is present in the tree cavities in the BSA and vicinity.

¹ Status Codes: Federal Endangered (FE); Federal Threatened (FT); State Endangered (SE); State Threatened (ST); State Fully Protected (FP); State Species of Special Concern (SSC).

² Assessment Codes. Absent (A): No habitat present and no further work needed. Habitat Present (HP): Habitat is, or may be present. The species may be present.

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation

4.1. Habitats and Natural Communities of Concern

The BSA contains valley foothill riparian/ riparian wetlands, perennial stream (Stony Creek), and intermittent and ephemeral streams that are subject to the Corps and/or CDFW jurisdiction; these features are discussed below. A copy of the delineation of waters of the United States is included as Appendix C. Annual grassland, and blue oak woodland are not considered habitats or communities of concern and are further discussed under the special-status plant and animal species sections below. Riverine habitat is addressed in this section under waters of the United States. No other habitats or natural communities of concern are present in the BSA.

4.1.1. Waters of the United States and Riparian Habitat

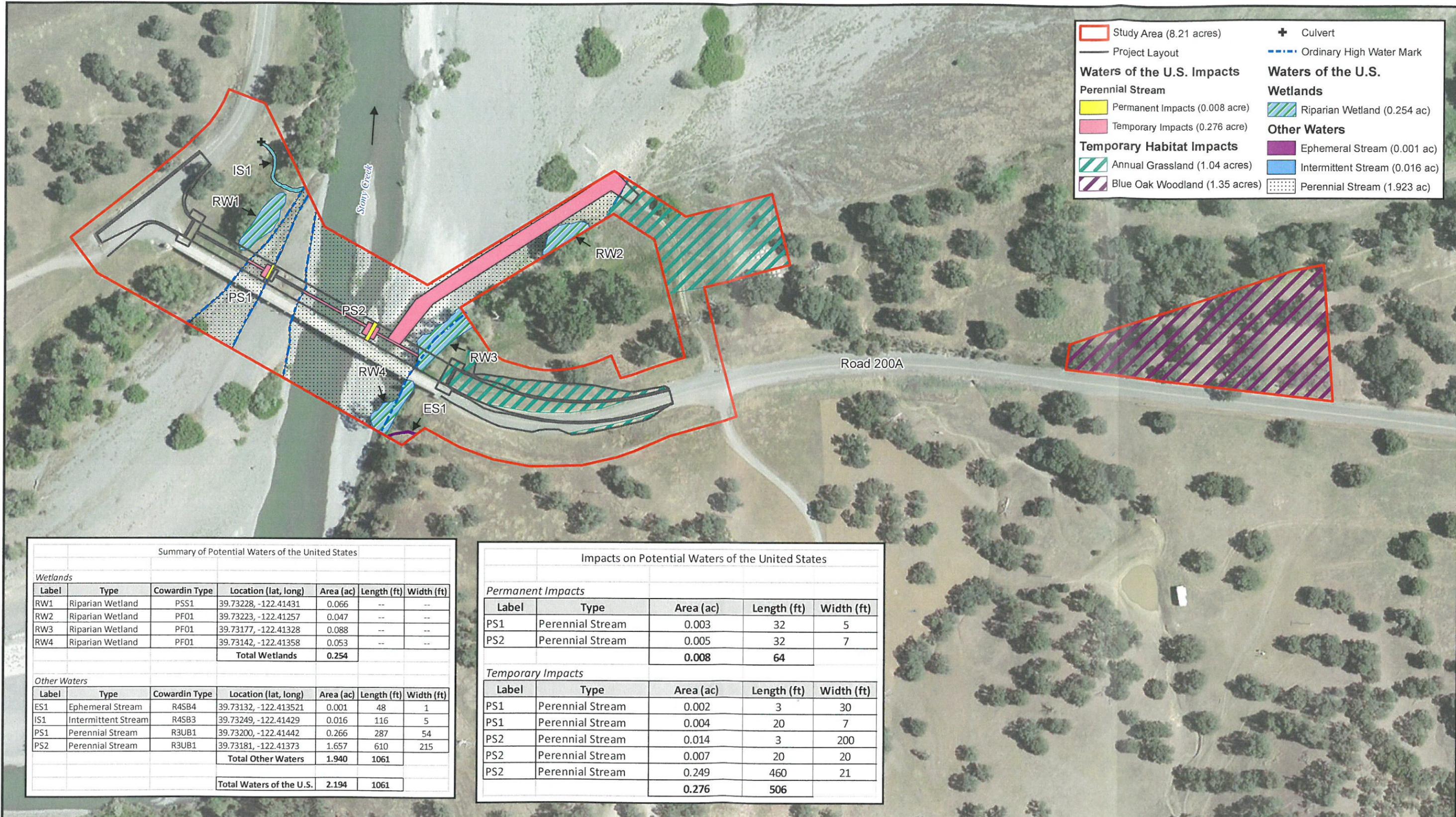
4.1.1.1. SURVEY RESULTS

A total of 2.19 acres (1,061 linear feet) of waters of the United States is present in the BSA and includes perennial stream (1.92 acre, linear 897 feet), intermittent stream (0.02 acre, linear 116 feet), ephemeral stream (0.001 acre, 48 linear feet), and riparian wetland (0.25 acre)(Figure 4).

Stony Creek is a perennial stream and flows northerly through the central portion of the BSA. The width of the creek is varies from approximately 50 to 200 feet wide in the BSA. The creek channel is scoured with little vegetation present in the active channel. The creek during the November 9, 2016, wetland delineation had flowing water with depths ranging from 1-3 feet.

An unnamed intermittent stream is located approximately 150 feet north of the existing bridge on the west side of Stony Creek. The stream measures approximately 4 feet wide, and collects run-off from the road shoulder of County Road 200A via culvert and subsequently drains to Stony Creek. The stream is a scoured feature with bed and bank characteristics, and was dry at the time of the wetland delineation.

An ephemeral stream is located on the east side of Stony Creek approximately 75 feet south of the existing bridge. The ephemeral stream exhibits poorly defined, but visible, indicators of scour and deposition, minor drift lines, and sediment deposits. The stream measures approximately 1-foot wide, and appears to channel sheet flow and water from a swale located outside of the BSA to Stony Creek.



Study Area (8.21 acres)	Culvert
Project Layout	Ordinary High Water Mark
Waters of the U.S. Impacts	
Perennial Stream	
Permanent Impacts (0.008 acre)	
Temporary Impacts (0.276 acre)	
Temporary Habitat Impacts	
Annual Grassland (1.04 acres)	
Blue Oak Woodland (1.35 acres)	
Waters of the U.S. Wetlands	
Riparian Wetland (0.254 ac)	
Other Waters	
Ephemeral Stream (0.001 ac)	
Intermittent Stream (0.016 ac)	
Perennial Stream (1.923 ac)	

Summary of Potential Waters of the United States						
<i>Wetlands</i>						
Label	Type	Cowardin Type	Location (lat, long)	Area (ac)	Length (ft)	Width (ft)
RW1	Riparian Wetland	PSS1	39.73228, -122.41431	0.066	--	--
RW2	Riparian Wetland	PF01	39.73223, -122.41257	0.047	--	--
RW3	Riparian Wetland	PF01	39.73177, -122.41328	0.088	--	--
RW4	Riparian Wetland	PF01	39.73142, -122.41358	0.053	--	--
Total Wetlands				0.254		
<i>Other Waters</i>						
Label	Type	Cowardin Type	Location (lat, long)	Area (ac)	Length (ft)	Width (ft)
ES1	Ephemeral Stream	R4SB4	39.73132, -122.413521	0.001	48	1
IS1	Intermittent Stream	R4SB3	39.73249, -122.41429	0.016	116	5
PS1	Perennial Stream	R3UB1	39.73200, -122.41442	0.266	287	54
PS2	Perennial Stream	R3UB1	39.73181, -122.41373	1.657	610	215
Total Other Waters				1.940	1061	
Total Waters of the U.S.				2.194	1061	

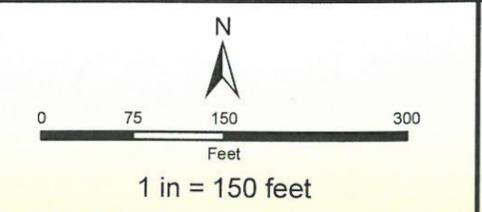
Impacts on Potential Waters of the United States				
<i>Permanent Impacts</i>				
Label	Type	Area (ac)	Length (ft)	Width (ft)
PS1	Perennial Stream	0.003	32	5
PS2	Perennial Stream	0.005	32	7
Total Permanent Impacts		0.008	64	
<i>Temporary Impacts</i>				
Label	Type	Area (ac)	Length (ft)	Width (ft)
PS1	Perennial Stream	0.002	3	30
PS1	Perennial Stream	0.004	20	7
PS2	Perennial Stream	0.014	3	200
PS2	Perennial Stream	0.007	20	20
PS2	Perennial Stream	0.249	460	21
Total Temporary Impacts		0.276	506	

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 This delineation of waters of the United States is subject to verification by the U.S. Army Corps of Engineers (Corps). NSR advises all parties that the delineation is preliminary until the Corps provides a written verification.

Delineator: Sarah Tona
 Delineation Date: 11/9/2016
 Aerial Photography Source: NAIP 2014
 Coordinate System: NAD 1983 UTM Zone 10N
 Projection: Transverse Mercator
 Datum: North American 1983



Stony Creek Bridge (11C-0245) Replacement Project
Figure 4
Impacts on Potential Waters of the United States
 January 13, 2017

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Patches of riparian wetlands occur along the banks and within the channel of Stony Creek. These riparian wetlands support hydrophytic species including mulefat, arundo, narrowleaf willow, and white alder (*Alnus rhombifolia*).

4.1.1.2. PROJECT IMPACTS

Temporary and permanent impacts to waters of the United States, including wetlands and riparian habitat are anticipated from the implementation of the proposed project. Temporary impacts would result from the placement of the timber pads or equivalent alternative in the creek, which could result in approximately 0.04 acre (23 linear feet) of temporary fill. The temporary load supports would be used to support the bridge falsework and heavy equipment during the installation of the pier foundations. The temporary construction access road may also require the placement of timber pads or equivalent alternative within Stony Creek to support the mobilization of heavy equipment. The temporary timber pads or equivalent alternative for the access road could result in the temporary fill of up to 0.17 acre (453 linear feet) in the creek. The construction of a diversion dam may be required for the removal of existing bridge foundations and could result in the temporarily dewatering and fill of approximately 0.07 acre (30 linear feet) of Stony Creek. The timber pads or equivalent alternative and the diversion dam would be removed upon project/task completion and the temporarily disturbed areas would be restored to pre-construction conditions to the greatest extent feasible. Work within Stony Creek would also be performed under the driest conditions possible; and therefore, impacts to water quality would be minimized.

The new bridge is approximately 500 feet long and would span Stony Creek, but requires the placement of two pier foundations within the channel (i.e., within the ordinary high water mark) of the creek. The placement of the foundations would result in the permanent discharge of fill into less than 0.01 acre (64 linear feet) of Stony Creek. The new bridge abutments will be placed above Stony Creek and the adjacent riparian wetlands; therefore, permanent impacts to these features as a result of the abutment construction is not anticipated. The placement of the new bridge will require the removal of approximately 0.02 acre of valley foothill riparian vegetation and would include the removal of trees rooted in the banks of Stony Creek.

Other impacts on habitats in the BSA could result from the spread of invasive plants because they may colonize areas disturbed by construction activities and outcompete native species. Equipment removing existing invasive plant species during construction could expose and/or distribute the seeds of the species or introduce other invasive plant species, which would result in the spread of invasive plants. Specifically, removal of the existing bridge and road could introduce new and/or existing invasive species and allow the invasive species to

establish to the areas. Restoration of the former roadbed after installation of the new bridge and realignment of the roadway provides an opportunity to restore native vegetation in the BSA and reduce the potential for invasive plants to spread.

4.1.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

The proposed project has been designed to minimize effects on Stony Creek, the adjacent riparian habitat/wetlands, and the intermittent and ephemeral streams to the maximum extent practicable. Instream construction in Stony Creek would occur in the summer months once the creek channel in the work area is dry. BMPs would be implemented to reduce water quality impacts. The majority of the impacts would occur in the annual grassland habitat and in previously disturbed areas (e.g., existing road, shoulders, and bridge). While the placement of the existing bridge would not overlap the existing bridge location, the permanent discharge of fill material into Stony Creek and removal of riparian habitat would be minimized to the greatest extent practicable. In addition to the conservation measures incorporated into the proposed project, the following avoidance and minimization efforts are recommended to further reduce impacts on waters of the United States and habitats in the BSA.

Waters of the United States

- The County will comply with the terms of a Clean Water Act Section 404 permit issued by the Corps and Section 401 water quality certification issued by the Regional Water Quality Control Board for activities involving the discharge of fill material in the Stony Creek or wetlands. For activity in and along Stony Creek the County will also comply with the terms of a Streambed Alteration Agreement with CDFW (if determined necessary by CDFW). The actual project impacts will be calculated once final designs are available and during the permit application process. Prior to any discharge of dredged or fill material into wetlands and other waters located in the BSA or the removal of riparian vegetation, the required permits and authorizations will be obtained from the respective agencies. All terms and conditions of the required permits and authorizations will be implemented.
- Based on the final designs, if unavoidable permanent impacts on wetlands in the BSA are anticipated, the County will compensate for the loss of wetland functions through payment into an in-lieu fee program or mitigation bank identified in coordination with the Corps. The specific mitigation ratio will be identified in coordination with the Corps and will provide at least a 1:1 replacement ratio for impacts to mitigation.
- All waters of the United States that are temporarily affected by project construction will be restored as close as practicable to their original contour and conditions.
- The waters of the United States in the BSA will be identified on construction drawings, and those features that would not be affected will be demarcated in the

field with flagging to identify the areas as off-limits to equipment, vegetation removal, and ground-disturbing activities.

Invasive Species

- All equipment used for off-road construction activities will be weed-free prior to entering the BSA.
- If project implementation calls for mulches or fill, they will be weed free.
- Any seed mixes or other vegetative material used for re-vegetation of disturbed areas will consist of locally adapted native plant materials.
- All temporary disturbance areas (e.g., staging areas) will be identified on construction drawings/plans and the boundaries will be delineated in the field with flagging prior to the initiation of construction activities.

4.1.1.4. COMPENSATORY MITIGATION

The CDFW would likely require compensatory mitigation for the loss of trees removed from the banks of Stony Creek as a condition of the Streambed Alteration Agreement. Should this be required, the County will coordinate with CDFW to replace trees through plantings or a mitigation bank.

4.1.1.5. CUMULATIVE IMPACTS

Other bridge replacement projects in the Stony Creek watershed and road improvement projects along County Road 200A may be undertaken by the County or Caltrans in the future. These projects may result in cumulative impacts on streams and wetlands. The County and Caltrans would be expected to implement similar measures as those described in this NES to ensure no net loss of wetlands. With implementation of the avoidance and minimization efforts and compensatory mitigation paid through in-lieu fees, the proposed project would not result in cumulatively considerable impacts to waters of the United States.

4.2. Special-Status Plant Species

The blue oak woodland and annual grassland habitat in the BSA provide potential habitat for three special-status plants: red-flowered bird's-foot trefoil (*Acmispon rubriflorus*), Stony Creek spurge (*Euphorbia ocellata* ssp. *rattanii*), and Ahart's paronychia (*Paronychia ahartii*). The botanical survey performed on June 1, 2016, occurred during the blooming period of all of these species and when they would be readily identifiable. These three species were not observed during the survey, nor were any other special-status plant species. Therefore, special-status plant species do not occur in the BSA and would not be affected by the proposed project. A list of plant species identified in the BSA is provided in Appendix D.

4.3. Special-Status Animal Species

The BSA and vicinity provides potential habitat for 11 special-status animal species: valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*; VELB), foothill yellow-legged frog (*Rana boylei*), western pond turtle (*Emys marmorata*), grasshopper sparrow (*Ammodramus savannarum*), loggerhead shrike (*Lanius ludovicianus*), white-tailed kite (*Elanus leucurus*), Swainson's hawk (*Buteo swainsonii*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), American badger (*Taxidea taxus*), and ring-tailed cat (*Bassariscus astutus*).

4.3.1. Valley Elderberry Longhorn Beetle

4.3.1.1. SURVEY RESULTS

The BSA is located in the current known range of VELB. The CNDDDB reports the nearest species occurrence is approximately 7.5 miles northeast of the BSA, downstream (east) of the Black Butte Lake spillway (California Department of Fish and Wildlife 2016a). The CNDDDB occurrence was recorded on June 13, 1991, and states that a large shrub with recent VELB exit holes is located adjacent to the landside levee toe of Stony Creek.

The field survey performed on June 1, 2016, found a blue elderberry shrub (*Sambucus nigra* ssp. *caerulea*) present within the valley foothill riparian habitat on the west side of Stony Creek, approximately 30 feet south of the existing bridge. The shrub is multi-stemmed and approximately 6 feet tall with several stems appearing greater than 1-inch diameter. As such, the shrub is considered potential habitat for VELB given stems are greater than 1-inch diameter.

4.3.1.2. PROJECT IMPACTS

The VELB is found exclusively on elderberry shrubs. Thus, protection of the species is based on protection of the elderberry shrub. The USFWS has adopted conservation guidelines (U.S. Fish and Wildlife Service 1999) for impacts on VELB and its habitat. Complete avoidance may be assumed when a buffer of 100 feet or more is established and maintained around elderberry plants considered to be habitat (i.e., has stems measuring 1.0 inch or greater in diameter at ground level). Avoidance of direct impacts is assumed when a 20-foot or greater buffer is established and maintained around the dripline of elderberry shrubs having stems of suitable size. Finally, direct impacts are assumed when ground disturbance takes place within 20 feet of elderberry shrubs containing stems of suitable size.

Ground-disturbing activities during the removal of the existing bridge and its western abutment will occur within approximately 30 feet of the elderberry shrub. Construction activities for the installation of the new bridge and western abutment will occur within

approximately 50 feet. As such, indirect impacts to VELB as a result of the proposed project may occur. Indirect impacts to VELB would include items that could affect the long-term viability of its habitat (i.e., elderberry shrub) such as changes in topography and drainage patterns, soil compaction in the root zone, the introduction of invasive plant species, the accidental release of pollutants (e.g., fuel, oil, grease), and the generation of fugitive dust from construction vehicles and equipment. Direct impacts to VELB will not occur given construction activities for the proposed project will occur over 20 feet away from the elderberry shrub.

Conservation measures #1 through #6 have been incorporated into the proposed project and would minimize indirect construction related impacts on VELB and its habitat in the BSA.

4.3.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

The following avoidance and minimization measures, which are consistent with the *Formal Programmatic Consultation Permitting Projects with Relatively Small Effects on the Valley Elderberry Longhorn Beetle within the Jurisdiction of the Sacramento Field Office, California* (U.S. Fish and Wildlife Service 1996) and the *Conservation Guidelines for Valley Elderberry Longhorn Beetle* (U.S. Fish and Wildlife Service 1999), will be implemented to minimize the potential for adverse impacts on VELB to the maximum extent possible:

- Worker Environmental Awareness Training will be provided to all construction personnel. The training will be administered by a qualified biologist and will provide the workers with information on their responsibilities in regards to the sensitive biological resources in the BSA. The program will also specifically address the status of the federally threatened VELB, the species life history, how to identify the species and its habitat, the need to protect the beetle and its host plant, and the project conservation and avoidance and minimization measures.
- Project activities within 100 feet of elderberry shrubs will be timed to occur outside of the VELB active season (mid-March through mid-May; U.S. Fish and Wildlife Service 1984) to the greatest extent practicable.
- Prior to construction activities, an environmentally sensitive area will be designated around elderberry shrub(s) not slated for removal using exclusionary fencing, signs, and flagging under the supervision of a qualified biologist. A 100-foot buffer zone around elderberry shrub(s) will be marked with stakes or flags as a minimal disturbance area. Because project activities would encroach within 100 feet of the shrub(s), exclusionary fencing will be placed at a distance of 20 feet or more from the dripline of the shrub(s). Signs stating “*This area is habitat for the VELB, a threatened species, and must not be disturbed. This species is protected by the*

Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.” will be erected and attached to the fencing. The signs will be placed in clearly visible locations and will be readable from a distance of 20 feet. Fencing and signs will be maintained throughout the entire project duration.

- No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant will be used within 100 feet of any elderberry plant with one or more stems measuring 1.0 inch or greater in diameter at ground level.
- Any damage to the buffer area (i.e., area within 100 feet of elderberry plants with stems of suitable size) during construction will be restored following construction. Restoration will include erosion control and re-vegetation with appropriate native plants including elderberry, as appropriate.
- A qualified biologist will conduct a pre and post-construction survey of the elderberry shrub(s) not removed as a result of the proposed action. The pre-construction survey will document the conditions of the shrub prior to construction activities and document compliance with mitigation measures. The post-construction survey will verify that no additional impacts to the elderberry shrub(s) took place. If the shrub(s) becomes damaged during construction activities, the County may be required to compensate for the loss of the shrub through compensatory mitigation. Specific compensation will be identified in coordination with the USFWS and will be in accordance with *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (U.S. Fish and Wildlife Service 1999).

4.3.1.4. COMPENSATORY MITIGATION

Direct impacts to VELB and its habitat are not anticipated as a result of the proposed project. Implementation of the conservation measures incorporated into the proposed project and the additional avoidance and minimization measures described above would minimize the potential for indirect impacts to VELB. Therefore, no compensatory mitigation is proposed.

4.3.1.5. CUMULATIVE IMPACTS

Other bridge replacement projects in the Stony Creek watershed and road improvement projects along County Road 200A may be undertaken by the County or Caltrans, and are anticipated to be conducted in the future. These projects have the potential to result in cumulative impacts on VELB and its habitat. The County would be expected to implement similar measures as those described in this NES to avoid or minimize impacts on VELB and its habitat. With implementation of the avoidance and minimization measures, the proposed project would not result in cumulatively considerable impacts on VELB.

4.3.2. Foothill Yellow-legged Frog

4.3.2.1. SURVEY RESULTS

The BSA is in the known geographic range of the foothill yellow-legged frog. The nearest recorded CNDDDB species occurrence is within an unnamed tributary to Salt Creek, approximately 8 miles southwest of the BSA (California Department of Fish and Wildlife 2016a).

In the BSA, Stony Creek consists of rocky substrates of exposed cobbles and bedrock within the channel, and vegetation along the banks consisting of annual grassland and valley foothill riparian habitats. These characteristics provide potential aquatic/breeding and upland habitat for foothill yellow-legged frog.

4.3.2.2. PROJECT IMPACTS

Direct impacts on individual foothill yellow-legged frogs, if present in the work area during construction, could include injury or mortality, increased risk of predation, and increased stress. Indirect impacts could include alteration of potential aquatic/breeding habitat in the BSA and the release of sediment or other pollutants into Stony Creek downstream of the BSA.

Work performed in Stony Creek would only occur during the dry months and the low flow period, and in-water work would be limited to the greatest extent feasible; thereby, reducing the likelihood of foothill yellow-legged frogs from being present. The implementation of the proposed project could result in the permanent loss of approximately 0.06 acre of habitat, which includes less than 0.01 acre of riverine, 0.03 acre of annual grassland along the banks of the creek, and 0.02 acre of valley foothill riparian. Abundant potential habitat for the species would remain in the vicinity of the BSA; therefore, the net loss of habitat as a result of the proposed project implementation for foothill yellow-legged frog would be negligible.

4.3.2.3. AVOIDANCE AND MINIMIZATION EFFORTS

The proposed project has been designed to minimize effects on potential foothill yellow-legged frog aquatic and upland habitat to the greatest extent feasible. In addition to the measures incorporated into the proposed project, the following measures will be implemented prior to and during construction to avoid or minimize project-related impacts on foothill yellow-legged frog and its habitat in the BSA:

- Environmental awareness training will be conducted by a qualified biologist prior to onset of the work for construction personnel to brief them on how to recognize foothill yellow-legged frog and other special-status animals that may occur in the project area.

- To avoid potential injury or mortality to foothill yellow-legged frogs using vegetated areas for cover along Stony Creek, initial vegetation clearing (i.e., removal of small trees, shrubs, brush, and tall dense grasses) along Stony Creek will be done manually using hand tools (e.g., chainsaw, lopper, weed whacker). The vegetation will be cut to ground level and be removed from the work area by hand. Heavy equipment may be used once the initial vegetation clearing along the creek is complete.
- Stony Creek outside the work area will be staked, flagged, or signed to avoid encroachment by equipment and construction crews. The number of access routes, size of the staging area, and the total area of impact will be limited to the minimum necessary to achieve the proposed project goal. This goal includes locating access routes and construction areas outside of the creek to the maximum extent practicable. The flagged areas will confine access routes and construction areas to the minimum area necessary to complete construction and minimize the impact on natural habitats in the BSA.
- Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed will be minimized to the maximum extent possible.
- If foothill yellow-legged frogs are encountered in the BSA during construction and will be harmed by construction activities, work will stop in the area and the County will notify CDFW. Upon authorization from CDFW, a qualified biologist may relocate the individual(s) the shortest distance possible to a location containing habitat outside of the work area.

4.3.2.4. COMPENSATORY MITIGATION

Implementation of avoidance and minimization efforts described above would minimize potential adverse effects on foothill yellow-legged frog. Therefore, no compensatory mitigation is required.

4.3.2.5. CUMULATIVE IMPACTS

Other bridge replacement projects in the Stony Creek watershed, and road improvement projects along Road 200A may be undertaken by the County or Caltrans in the future. These projects have the potential to result in cumulative impacts on the foothill yellow-legged frog and its habitat. The County would be expected to implement similar measures as those described in this NES to avoid direct impacts on individuals and protect foothill yellow-legged frog breeding and non-breeding habitat, to the extent feasible. With implementation of the avoidance and minimization measures identified above, the proposed project would not result in cumulatively considerable impacts on foothill yellow-legged frog.

4.3.3. Western Pond Turtle

4.3.3.1. SURVEY RESULTS

The BSA is in the current known range of western pond turtle. The nearest CNDDDB occurrence is approximately 25 miles southeast of the BSA near Chico, California, in Comanche Creek (California Department of Fish and Wildlife 2016a). Shallow slow moving water in Stony Creek, and rocks and logs within and adjacent to the creek channel provide aquatic and basking habitat for western pond turtle in the BSA. The annual grassland and valley foothill riparian habitat present along the creek banks provide potential upland habitat for nesting.

4.3.3.2. PROJECT IMPACTS

Project impacts on western pond turtle, would be similar to those described for foothill yellow-legged frog. Direct impacts could include injury or mortality of individual turtles; temporary impediments to dispersal along the creek channel; and the removal of vegetation in upland habitats away from Stony Creek where the turtle may also be found. Indirect impacts could include potential sedimentation of downstream habitats where the turtle may occur or the reduction of suitable upland habitat for basking and nesting within the BSA.

4.3.3.3. AVOIDANCE AND MINIMIZATION EFFORTS

Avoidance and minimization measures described for the foothill yellow-legged frog in Section 4.3.2 would also reduce the potential for impacts on western pond turtle. Furthermore, if a pond turtle nest is found, the biologist shall flag the site and determine if construction activities can avoid affecting the nest. If the nest cannot be avoided, it will be excavated and re-buried at a suitable location outside of the construction impact zone by a qualified biologist. The County will inform Caltrans and CDFW prior to the relocation of the nest.

4.3.3.4. COMPENSATORY MITIGATION

Implementation of avoidance and minimization efforts described above would minimize potential adverse effects on western pond turtle. Therefore, no compensatory mitigation is required.

4.3.3.5. CUMULATIVE IMPACTS

Other bridge replacement projects in the Stony Creek watershed, and road improvement projects along Road 200A may be undertaken by the County or Caltrans in the future. These projects have the potential to result in cumulative impacts on the western pond turtle and its habitat. The County would be expected to implement similar measures as those described above to avoid direct impacts on individuals and protect western pond turtle breeding and non-breeding habitat, to the extent feasible. With implementation of the avoidance and

minimization measures identified above, the proposed project would not result in cumulatively considerable impacts on western pond turtle.

4.3.4. Special-status Bird Species, Migratory Birds, and Raptors

4.3.4.1. SURVEY RESULTS

The annual grasslands, trees, shrubs, and other features (e.g., existing bridge) in and near the BSA provide potential nesting and foraging habitat for various bird species, such as Swainson's hawk, white-tailed kite, grasshopper sparrow, loggerhead shrike, and cliff swallow (*Petrochelidon pyrrhonota*). Active cliff swallow nests were observed on the existing bridge during the June 1, 2016, survey. The CNNDDB does not report any recorded occurrences of special-status birds within 5 miles of the BSA (California Department of Fish and Wildlife 2016a).

4.3.4.2. PROJECT IMPACTS

Construction activities (e.g., vegetation removal and equipment noise) would be scheduled during the avian breeding season (generally February through September, depending on the species) and could disturb nesting birds in or adjacent to the BSA. Construction-related disturbance could result in the incidental loss of fertile eggs or nestlings, and/or nest abandonment. The demolition of the bridge may result in the direct removal of nests or affect nesting birds if nests are present in the surrounding vicinity. The removal of the trees and vegetation from the annual grassland, blue oak, and valley foothill riparian habitats may be necessary to accommodate the new road alignment and bridge and would directly affect nesting birds if nests are present in the vegetation. Other construction activities such as grading, excavation, and paving near trees could also disturb nesting birds.

In total, the proposed project would result in the permanent removal of less than 0.25 acre of vegetation, which includes 0.21 of annual grassland, and 0.02 acre of valley foothill riparian (Figure 4). As such, the net loss of habitat would be negligible, and abundant avian nesting and foraging habitat would remain in the vicinity of the BSA. Furthermore, with the implementation of the avoidance and minimization measure described below incidental take of the state-listed Swainson's hawk would not occur.

4.3.4.3. AVOIDANCE AND MINIMIZATION EFFORTS

The proposed project has been designed to minimize impacts on native habitats, to the maximum extent practicable, and majority of the construction activities would occur in previously disturbed areas, including the existing road, shoulders, and bridge. In addition to the conservation measures that have been incorporated into the proposed project (see Section 1.3), the following measures are recommended to further reduce the potential for impacts on special-status and migratory birds that may nest in or near the BSA:

- Because construction activities cannot avoid the breeding season for native birds, the County will retain a qualified biologist to conduct a pre-construction survey of the BSA, and within an appropriate distance from the BSA boundary, as access is available (e.g., 0.25 mile for Swainson's hawk and 500 feet for other raptors). The pre-construction survey will be performed between February 15 and September 15, but no more than 14 days prior to the implementation of construction activities (including staging and equipment access).
- If active nests are found during the pre-construction survey, the County will coordinate with CDFW and USFWS on additional protection measures, such as establishment of a buffer around the nest tree. No construction activity will be conducted within this zone during the nesting season (generally February through September) or until such time that the biologist determines that the nest or burrow is no longer active. The buffer zone will be marked with flagging, stakes, or other means to mark the boundary. All construction personnel will be notified of the existence of the buffer zone and shall avoid entering the buffer zone during the nesting season.
- Since construction activities during the nesting season cannot be avoided, existing cliff swallow nests on the existing bridge shall be removed prior to the nesting season (i.e., removal between September 16 and February 14) to discourage continued nesting on this structure prior to construction. An effective deterrent to cliff swallow nesting should be installed on the bridge prior to the nesting season. If a nesting deterrent is used, the deterrent shall be monitored for integrity and effectiveness until the project is completed. If nesting activities cannot be effectively deterred, continuous removal of cliff swallow nest starts prior to egg-laying may be necessary before construction activities are initiated. Disturbance or removal of active nests (i.e., nests containing eggs) shall not be conducted without the appropriate authorization(s) from the USFWS and/or the CDFW.
- Information on nesting special-status and migratory birds will be provided during the worker environmental awareness training.

4.3.4.4. COMPENSATORY MITIGATION

Implementation of avoidance and minimization efforts described above would minimize potential adverse effects on special-status and migratory birds. Therefore, no compensatory mitigation is required.

4.3.4.5. CUMULATIVE IMPACTS

Other bridge replacement projects in the Stony Creek watershed and road improvement projects along Road 200A, which may be undertaken by the County or Caltrans are

anticipated to be conducted in the future. These projects have the potential to result in cumulative impacts on nesting birds and their habitat. The County would be expected to implement similar measures as those described in this NES to avoid or minimize impacts on nesting birds and their habitat. With implementation of the avoidance and minimization measures, the proposed project would not result in cumulatively considerable impacts on nesting birds.

4.3.5. Pallid Bat and Western Red Bat

4.3.5.1. SURVEY RESULTS

The BSA is located within the range of pallid bat and western red bat. Tree snags/cavities within the blue oak and valley foothill riparian habitats were observed in the BSA and provide potential roosting habitat for pallid bat. Potential roosting habitat for western red bat also is present in the blue oak woodland and valley foothill riparian tree foliage adjacent to Stony Creek. Crevices and cavities are also present in the existing Stony Creek bridge and provide potential roosting habitat for both bat species.

4.3.5.2. PROJECT IMPACTS

Impacts on the pallid bat and western red bat would be similar to those described above for birds. Construction activities could disturb roosting bats in the riparian vegetation or snags present in the BSA and in other nearby trees. Bridge removal could disturb bats roosting on the bridge. Foraging activity would not be affected because construction activities would take place during the day. The permanent loss of 0.02 acre of valley foothill riparian vegetation (i.e., roosting habitat) is anticipated with the placement of the new bridge (Figure 4). The permanent loss of roosting habitat would be negligible given the abundance of riparian habitats in the vicinity of the BSA.

4.3.5.3. AVOIDANCE AND MINIMIZATION EFFORTS

The proposed project has been designed to minimize impacts on native habitats, to the maximum extent practicable, and majority of the construction activities would occur in previously disturbed areas, including the existing road, shoulders, and bridge. In addition to the standard construction practices that have been incorporated into the proposed project, the following measures are recommended to further reduce the potential for impacts on special-status bats that may roost in or near the BSA:

- In conjunction with the pre-construction nesting bird survey, a qualified biologist will conduct a reconnaissance-level pre-construction survey of the suitable roosting locations. The pre-construction survey will be performed to determine if the existing vegetation or bridge is being used by bats as roosting location.

- If the biologist finds evidence of bat roosts, the biologist will attempt to determine which species are present, which features are being used, and for which roosting purpose. If it is determined that roosting bats are not present or are only using the area as a night roost (i.e., no young are present in the roost), no further avoidance and minimizations measures are necessary.
- If during the survey, pallid bat or western red bat day roost or maternity roosts are identified in the vegetation or structure (e.g., the bridge) slated for removal, the County will coordinate with CDFW to determine the next steps and appropriate methods for removal. The installation of the exclusionary netting would help ensure roosting bats are not present under the existing bridge prior to demolition.
- Removal of the vegetation would need to be scheduled before the birthing season for bats (i.e., prior to May 1) or after young bats are able to fly (i.e., after August 31). Removal of active roosts should be conducted in a manner that allows the bats the best opportunity to leave during darker hours to increasing their chance of finding new roosts with minimum exposure to predation during daylight

4.3.5.4. COMPENSATORY MITIGATION

Habitat loss for western red bats or pallid bats would be negligible; therefore, no compensatory mitigation is anticipated

4.3.5.5. CUMULATIVE IMPACTS

Other bridge replacement projects in the Stony Creek watershed and road improvement projects along Road 200A may be undertaken by the County or Caltrans in the future. These projects have the potential to result in cumulative impacts on special-status bat species. The County and/or Caltrans would be expected to implement similar measures as those described in this NES to avoid or minimize impacts on special-status bat species and their habitat. With implementation of the avoidance and minimization measures, the proposed project would not result in cumulatively considerable impacts on special-status bat species.

4.3.6. American Badger

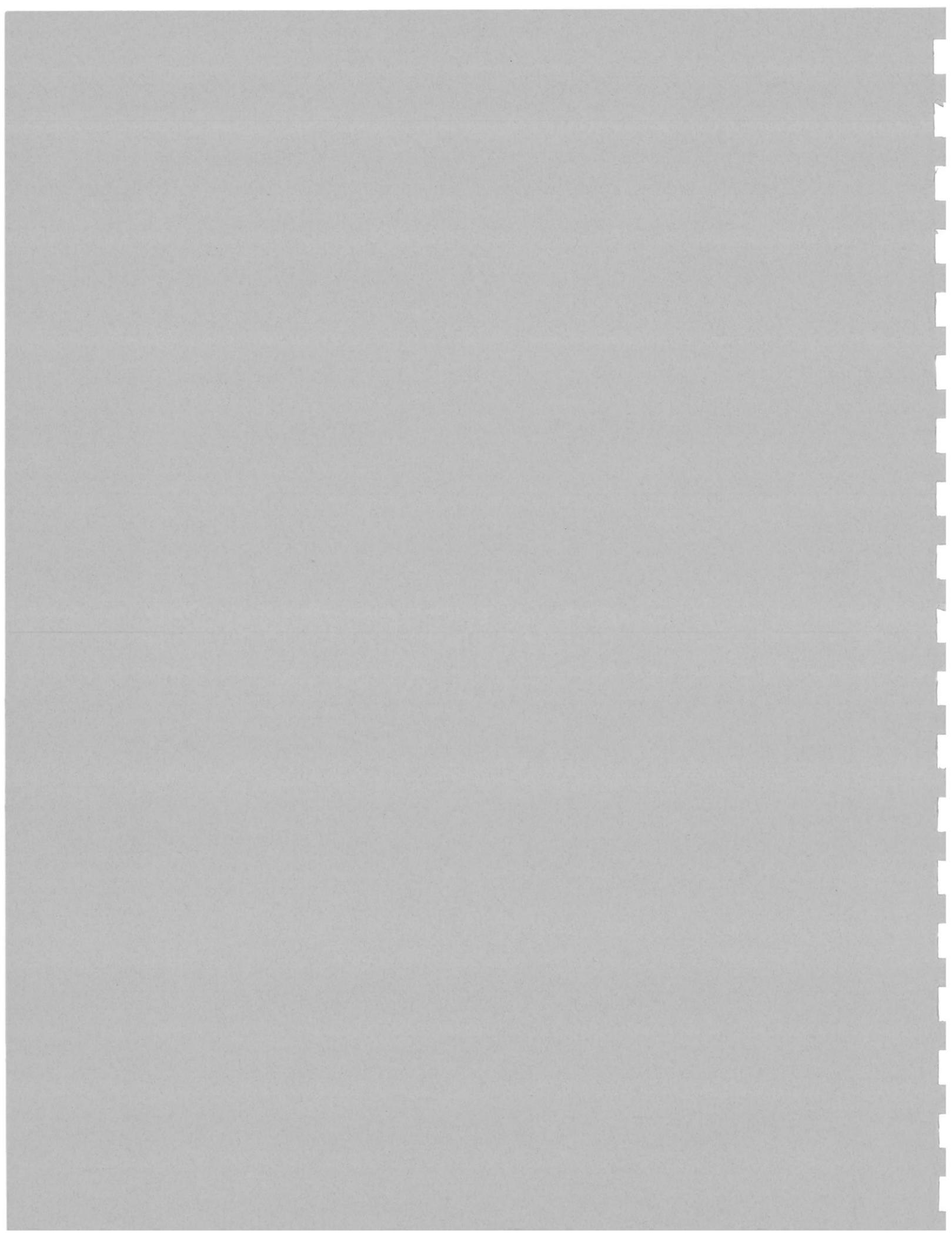
4.3.6.1. SURVEY RESULTS

Annual grasslands with friable soils in and near the BSA could provide habitat for American badger. The nearest CNDDDB occurrence is approximately 9 miles northeast of the BSA near Hambright Creek and County Road C (California Department of Fish and Wildlife 2016a).

4.3.6.2. PROJECT IMPACTS

Construction activities would be scheduled during the late-spring and summer months when American badgers are most active and frequently dig new burrows, and badgers would likely leave the area at the start of construction. Approximately 0.21 acre of annual grasslands

Appendix A U.S. Fish and Wildlife Service
Species Query List





United States Department of the Interior



FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office

FEDERAL BUILDING, 2800 COTTAGE WAY, ROOM W-2605

SACRAMENTO, CA 95825

PHONE: (916)414-6600 FAX: (916)414-6713

Consultation Code: 08ESMF00-2017-SLI-0286

November 16, 2016

Event Code: 08ESMF00-2017-E-00518

Project Name: Stoney Creek Bridge

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2)

of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: Stoney Creek Bridge

Official Species List

Provided by:

Sacramento Fish and Wildlife Office
FEDERAL BUILDING
2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
(916) 414-6600

Consultation Code: 08ESMF00-2017-SLI-0286

Event Code: 08ESMF00-2017-E-00518

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: Stoney Creek Bridge

Project Description: The proposed project is to replace the existing eight span slab on steel girder bridge with a new three span, cast-in-place, box girder bridge of the same length immediately downstream of the existing bridge founded on drilled shaft foundations. The existing bridge would continue to facilitate traffic during construction of the new bridge.

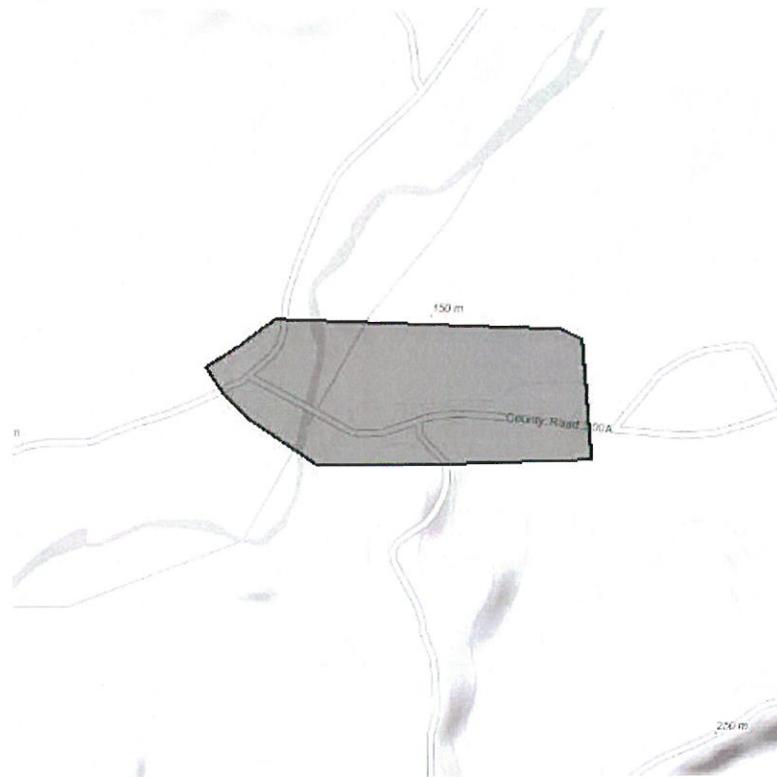
Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: Stoney Creek Bridge

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-122.41456031799316 39.733181549115976, -122.40870237350462 39.733016533090264, -122.40827322006226 39.73283501500569, -122.40809082984923 39.73094554837945, -122.41150259971619 39.73087128880808, -122.41371273994446 39.730887790941956, -122.41507530212402 39.73159737896212, -122.415611743927 39.73200992677891, -122.41597652435303 39.73243897388932, -122.41526842117308 39.732769008310974, -122.41456031799316 39.733181549115976)))

Project Counties: Glenn, CA



United States Department of Interior
Fish and Wildlife Service

Project name: Stoney Creek Bridge

Endangered Species Act Species List

There are a total of 7 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	Status	Has Critical Habitat	Condition(s)
California red-legged frog (<i>Rana draytonii</i>) Population: Wherever found	Threatened	Final designated	
Crustaceans			
Vernal Pool fairy shrimp (<i>Branchinecta lynchi</i>) Population: Wherever found	Threatened	Final designated	
Vernal Pool tadpole shrimp (<i>Lepidurus packardii</i>) Population: Wherever found	Endangered	Final designated	
Fishes			
Delta smelt (<i>Hypomesus transpacificus</i>) Population: Wherever found	Threatened	Final designated	
steelhead (<i>Oncorhynchus (=salmo) mykiss</i>) Population: Northern California DPS	Threatened		
Insects			



United States Department of Interior
Fish and Wildlife Service

Project name: Stoney Creek Bridge

Valley Elderberry Longhorn beetle <i>(Desmocerus californicus dimorphus)</i> Population: Wherever found	Threatened	Final designated	
Reptiles			
Giant Garter snake <i>(Thamnophis gigas)</i> Population: Wherever found	Threatened		



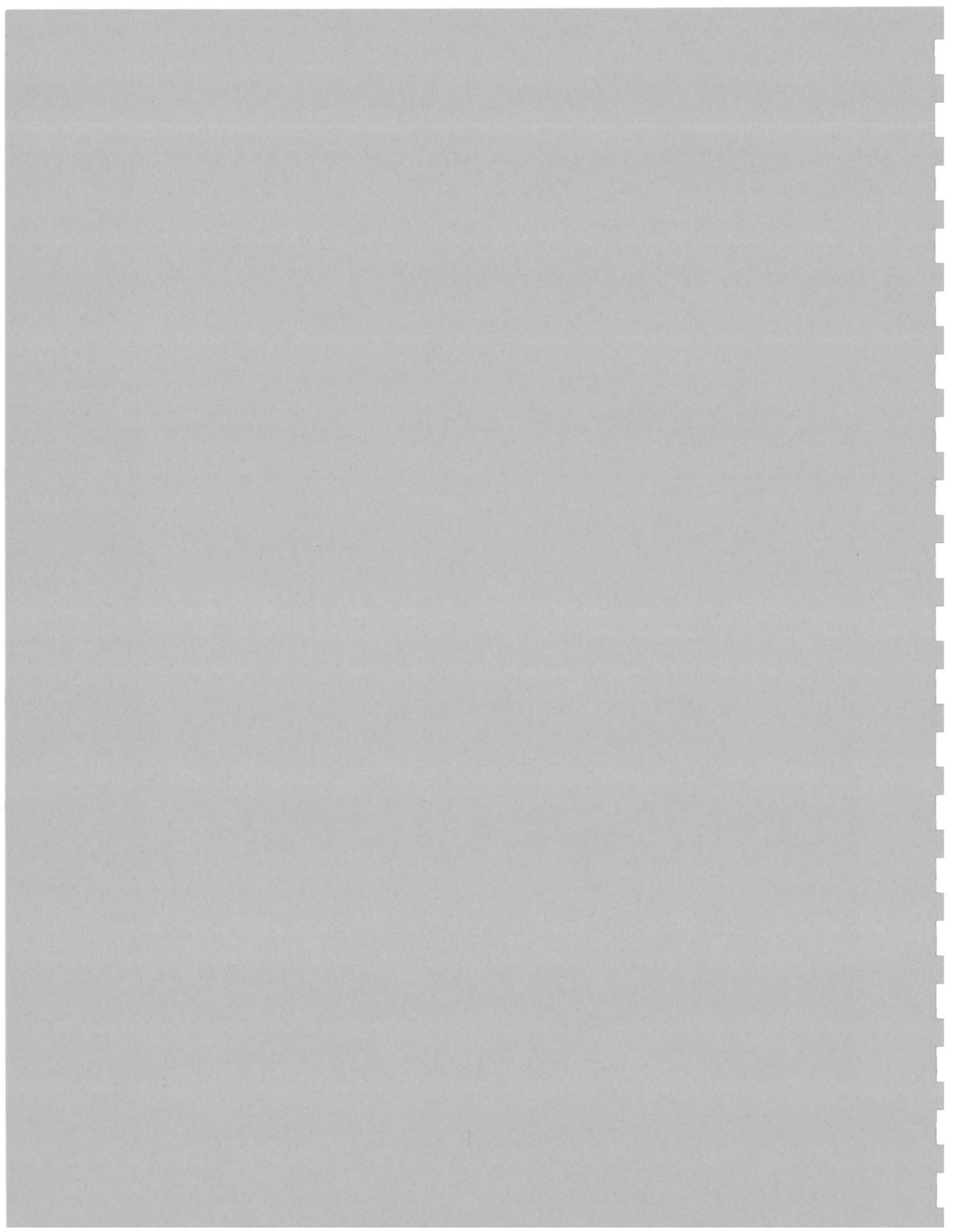
United States Department of Interior
Fish and Wildlife Service

Project name: Stoney Creek Bridge

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Appendix B CNDDDB and CNPS Query Lists





Selected Elements by Common Name
 California Department of Fish and Wildlife
 California Natural Diversity Database



Query Criteria: BIOS selection

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
adobe-lily <i>Fritillaria pluriflora</i>	PMLILOV0F0	None	None	G2G3	S2S3	1B.2
Ahart's paronychia <i>Paronychia ahartii</i>	PDCAR0L0V0	None	None	G3	S3	1B.1
American badger <i>Taxidea taxus</i>	AMAJF04010	None	None	G5	S3	SSC
bald eagle <i>Haliaeetus leucocephalus</i>	ABNKC10010	Delisted	Endangered	G5	S3	FP
burrowing owl <i>Athene cunicularia</i>	ABNSB10010	None	None	G4	S3	SSC
caper-fruited tropidocarpum <i>Tropidocarpum capparideum</i>	PDBRA2R010	None	None	G1	S1	1B.1
Colusa layia <i>Layia septentrionalis</i>	PDAST5N0F0	None	None	G2	S2	1B.2
dimorphic snapdragon <i>Antirrhinum subcordatum</i>	PDSCR2S070	None	None	G3	S3	4.3
dwarf downingia <i>Downingia pusilla</i>	PDCAM060C0	None	None	GU	S2	2B.2
dwarf soaproot <i>Chlorogalum pomeridianum var. minus</i>	PMLILOG042	None	None	G5T2T3	S2S3	1B.2
foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050	None	None	G3	S3	SSC
Great Valley Cottonwood Riparian Forest <i>Great Valley Cottonwood Riparian Forest</i>	CTT61410CA	None	None	G2	S2.1	
green jewelflower <i>Streptanthus hesperidis</i>	PDBRA2G510	None	None	G2	S2	1B.2
Jepson's milk-vetch <i>Astragalus rattanii var. jepsonianus</i>	PDFAB0F7E1	None	None	G4T3	S3	1B.2
Konocti manzanita <i>Arctostaphylos manzanita ssp. elegans</i>	PDERI04271	None	None	G5T3	S3	1B.3
osprey <i>Pandion haliaetus</i>	ABNKC01010	None	None	G5	S4	WL
oval-leaved viburnum <i>Viburnum ellipticum</i>	PDCPR07080	None	None	G4G5	S3?	2B.3
prairie falcon <i>Falco mexicanus</i>	ABNKD06090	None	None	G5	S4	WL
Red Bluff dwarf rush <i>Juncus leiospermus var. leiospermus</i>	PMJUN011L2	None	None	G2T2	S2	1B.1
red-flowered bird's-foot-trefoil <i>Acmispon rubriflorus</i>	PDFAB2A150	None	None	G2	S2	1B.1



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Stony Creek spurge <i>Euphorbia ocellata ssp. rattanii</i>	PDEUP0D1P1	None	None	G4T3	S3	1B.2
Swainson's hawk <i>Buteo swainsoni</i>	ABNKC19070	None	Threatened	G5	S3	
Tehama County western flax <i>Hesperolinon tehamense</i>	PDLIN010C0	None	None	G2	S2	1B.3
Tracy's eriastrum <i>Eriastrum tracyi</i>	PDPLM030C0	None	Rare	G3Q	S3	3.2
tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020	None	Candidate Threatened	G2G3	S1S2	SSC
valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	IICOL48011	Threatened	None	G3T2	S2	
Valley Needlegrass Grassland <i>Valley Needlegrass Grassland</i>	CTT42110CA	None	None	G3	S3.1	
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	ICBRA03030	Threatened	None	G3	S3	
western spadefoot <i>Spea hammondi</i>	AAABF02020	None	None	G3	S3	SSC

Record Count: 29

CNPS Inventory of Rare and Endangered Plants

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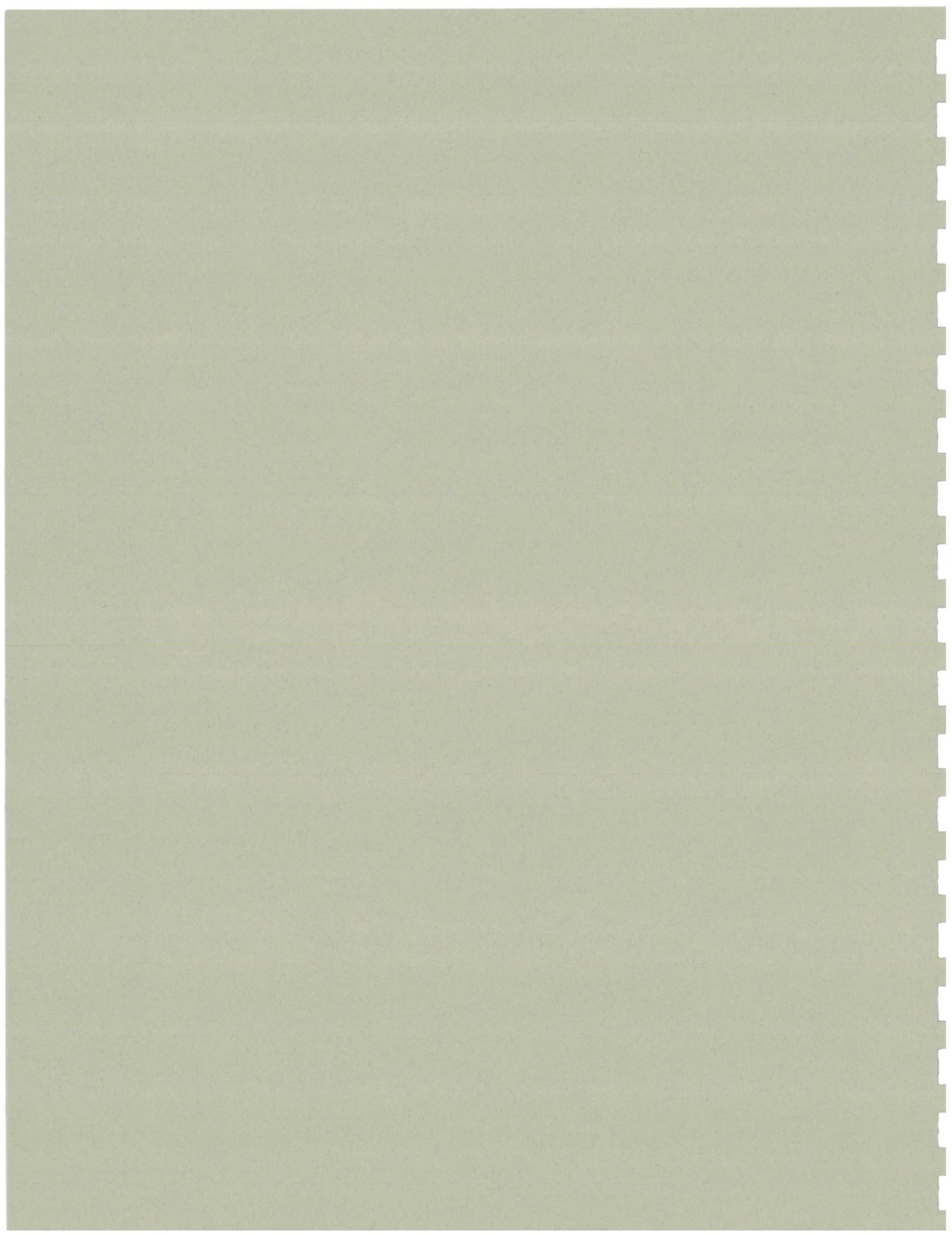
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ECOLOGICAL REPORT

scientific	family	life form	blooming	communities	elevation	CNPS
<u>Arctostaphylos manzanita ssp. elegans</u>	Ericaceae	perennial evergreen shrub	Jan-May (Jul), Months in parentheses are uncommon.	•Chaparral (Chprl) •Cismontane woodland (CmWld) •Lower montane coniferous forest (LCFRs)/volcanic	395 - 1615 meters	List 1B.3
<u>Astragalus rattanii var. jepsonianus</u>	Fabaceae	annual herb	Mar-Jun	•Chaparral (Chprl) •Cismontane woodland (CmWld) •Valley and foothill grassland (VFGrs)/often serpentinite	295 - 700 meters	List 1B.2
<u>Chlorogalum pomeridianum var. minus</u>	Agavaceae	perennial bulbiferous herb	May-Aug	•Chaparral (Chprl) (serpentinite)	305 - 1000 meters	List 1B.2
<u>Downingia pusilla</u>	Campanulaceae	annual herb	Mar-May	•Valley and foothill grassland (VFGrs) (mesic) •Vernal pools (VnPIs)	1 - 445 meters	List 2B.2
<u>Eriastrum tracyi</u>	Polemoniaceae	annual herb	May-Jul	•Chaparral (Chprl) •Cismontane woodland (CmWld) •Valley and foothill grassland (VFGrs)	315 - 1780 meters	List 3.2
<u>Euphorbia ocellata ssp. rattanii</u>	Euphorbiaceae	annual herb	May-Oct	•Chaparral (Chprl) •Riparian scrub (RpScr)(streambank) •Valley and foothill grassland (VFGrs) (sandy or rocky)	65 - 800 meters	List 1B.2
<u>Fritillaria pluriflora</u>	Liliaceae	perennial bulbiferous herb	Feb-Apr	•Chaparral (Chprl) •Cismontane woodland (CmWld) •Valley and foothill grassland (VFGrs)/often adobe	60 - 705 meters	List 1B.2
<u>Hesperolinon tehamense</u>	Linaceae	annual herb	May-Jul	•Chaparral (Chprl) •Cismontane woodland (CmWld)/serpentinite	100 - 1250 meters	List 1B.3
<u>Juncus leiospermus var. leiospermus</u>	Juncaceae	annual herb	Mar-Jun	•Chaparral (Chprl) •Cismontane woodland (CmWld) •Meadows and seeps (Medws) •Valley and foothill grassland (VFGrs) •Vernal pools (VnPIs)/vernally mesic	35 - 1250 meters	List 1B.1
<u>Layia</u>		annual		•Chaparral (Chprl) •Cismontane woodland (CmWld)	100 -	List

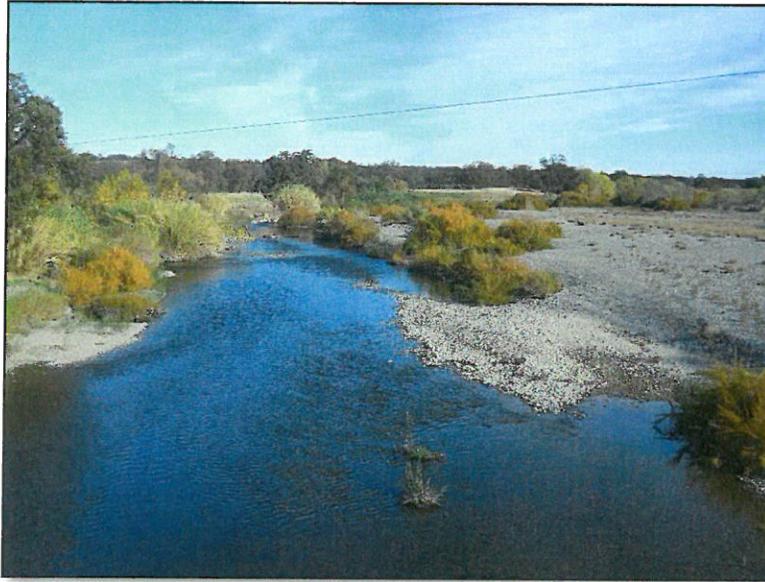
<u>septentrionalis</u>	Asteraceae	herb	Apr-May	•Valley and foothill grassland (VFGrs)/sandy, serpentinite	1095 meters	1B.2
<u>Paronychia ahartii</u>	Caryophyllaceae	annual herb	Feb-Jun	•Cismontane woodland (CmWld) •Valley and foothill grassland (VFGrs) •Vernal pools (VnPIs)	30 - 510 meters	List 1B.1
<u>Streptanthus hesperidis</u>	Brassicaceae	annual herb	May-Jul	•Chaparral (Chprl) (openings) •Cismontane woodland (CmWld)/serpentinite, rocky	130 - 760 meters	List 1B.2
<u>Viburnum ellipticum</u>	Adoxaceae	perennial deciduous shrub	May-Jun	•Chaparral (Chprl) •Cismontane woodland (CmWld) •Lower montane coniferous forest (LCFr)	215 - 1400 meters	List 2B.3

Appendix C Wetland Delineation



Stony Creek Bridge (11C-0245) Replacement Project

Delineation of Waters of the United States



Prepared for:
Willdan Engineering
2400 Washington Ave, Suite 101
Redding, CA 96001
530-244-8500

Prepared by:
 North State Resources, Inc.
5000 Bechelli Lane, Suite 203
Redding, California 96002
Attn: Wirt Lanning
(530) 222-5347 ext. 128
FAX: (530) 222-4958
Email: lanning@nsrnet.com
NSR Project No. 51243

January 2017

**Stony Creek Bridge (11C-0245) Replacement Project
Delineation of Waters of the United States**

Glenn County

STATE OF CALIFORNIA
Department of Transportation

January 2017

Prepared By: Sarah Tona Date: 1/10/2017

Sarah Tona, Biologist
530-222-5347 ext. 127
North State Resources, Inc.

Reviewed By: Matthew J. Gomes Date: 3/13/17

Matthew J. Gomes,
Deputy Director of Planning and Public Works
(530) 934-6530
Glenn County Public Works Department

Recommended for
Approval By: _____ Date: _____

Jennifer Osmondson, District Biologist
(530) 740-4807
North Region Environmental Planning M1
Caltrans, District 3

Approved By: _____ Date: _____

Susan D. Bauer, Branch Chief
(530) 741-7113
North Region Environmental Planning M1
Caltrans, District 3

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Chapter 3. Environmental Setting	3
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Appendix A	Routine Wetland Determination Data Forms
Appendix B	Ordinary High Water Mark Data Forms
Appendix C	Representative Photographs

Chapter 1. Executive Summary

On behalf of Willdan Engineering and Glenn County, North State Resources, Inc. (NSR) conducted a delineation of waters of the United States occurring in the Stony Creek Bridge (11C-0245) Replacement Project (study area) in Glenn County, California. The delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008). The field delineation was conducted on November 9, 2016. A total of 2.194 acres of potential waters of the United States were mapped within the study area and include riparian wetland (0.254 acre), ephemeral stream (0.001 acre, 48 linear feet), intermittent stream (0.016 acre, linear 116 feet), and perennial stream (1.923 acre, linear 897 feet).

The purpose of this delineation of waters of the United States is to document and describe waters of the United States to support a Preliminary Jurisdictional Determination from the United States Army Corps of Engineers (Corps). This delineation is subject to initial review and approval by Caltrans District 3 Office of Local Assistance and subsequent verification by the Corps, Sacramento District. NSR advises all parties to treat the information contained herein as preliminary until the Corps provides written verification of the boundaries of its jurisdiction.

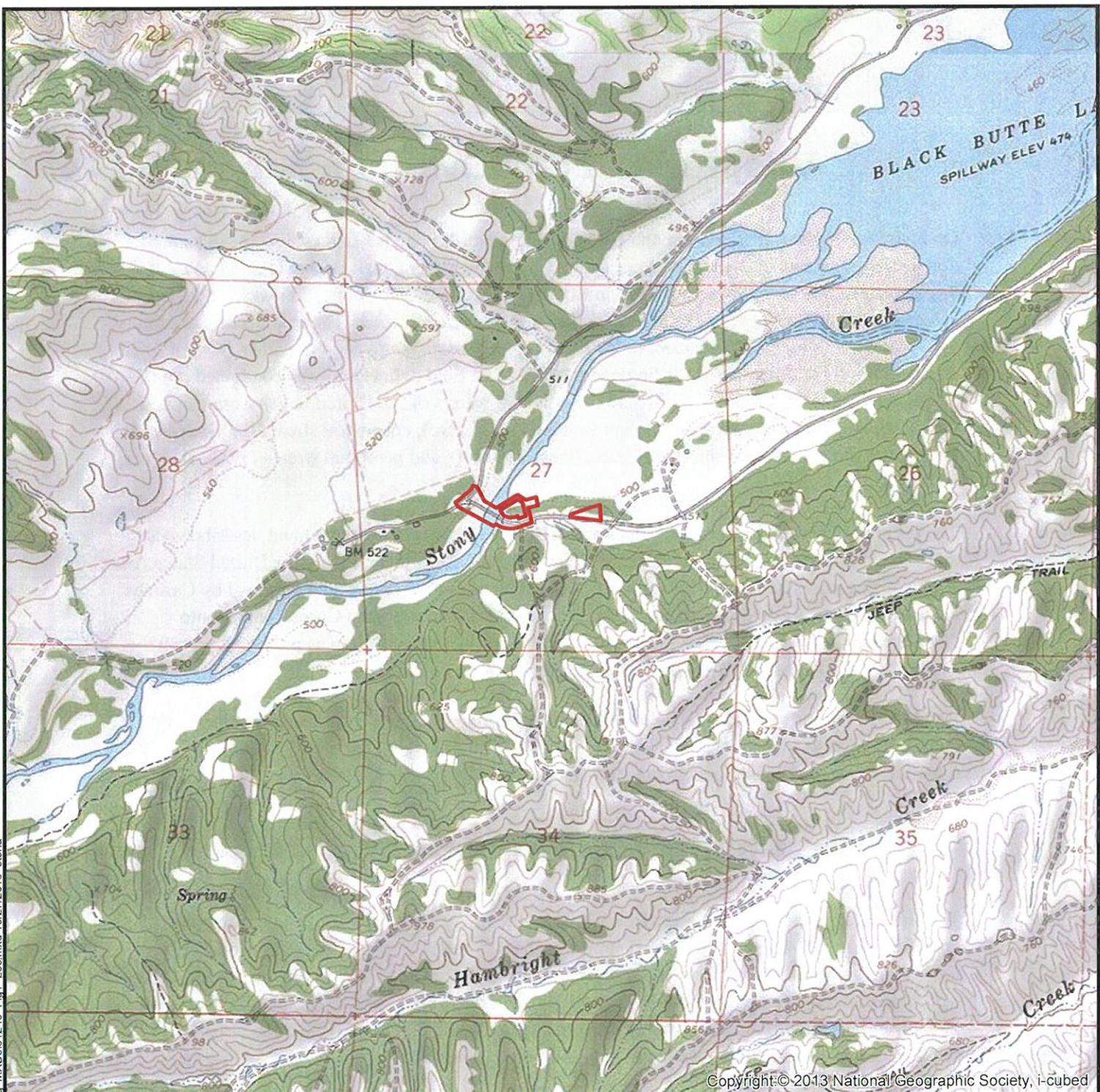
If the Corps wishes to conduct a field verification, Willdan Engineering requests that the Corps contact Mr. Gary Gordon by telephone at (530) 244-8500 or by email at ggordon@willdan.com to schedule a date and time to access the study area.

Chapter 2. Project Location

The study area is located on County Road 200A at the Stony Creek crossing and encompasses approximately 8.21 acres. It is located approximately 13 miles west of Orland, Glenn County, California; approximately 1.5 miles southwest of Black Butte Lake. It is shown on the *Julian Rocks, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle in Township 22N, Range 5W, Section 27. The approximate center of the study area is located at UTM 10 S 550254 E, 4398138 N (NAD83 datum). The study area location is shown on Figure 1.

To access the study area from Interstate 5, exit at the Highway 32 exit in Orland. Travel 5 miles west on Newville Road (County Road 200). Turn left on County Road 206. Travel southwest approximately 3 miles on County Road 206 to County Road 200A and turn left. Travel southwest approximately 4.5 miles to the Stony Creek bridge.

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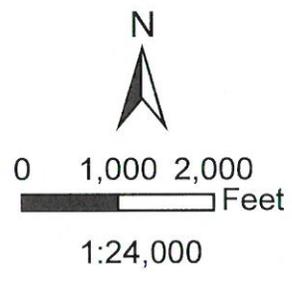


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 Study Area (8.21 acres)

Public Land Survey:
Section 27
T22N, R5W (MDBM)

7.5' USGS Quad:
Julian Rocks



Chapter 3. Environmental Setting

3.1 Current/Recent Land Use

The study area is located in the Stony Creek floodplain and adjacent upland terraces. Black Butte Lake, located northeast of the bridge, is used for boating, fishing, and camping. The land surrounding the study area is used for cattle and horse grazing.

3.2 Site Topography and Elevation

The study area is generally level and the elevation is approximately 500 feet.

3.3 Climate

Historical data used to describe the climate is collected at Orland, California approximately 13 miles east of the study area (Western Regional Climate Center 2016).

Type: The climate of the area is characterized as a Mediterranean climate with moderate winters and hot, dry summers.

Precipitation: Precipitation in the study area primarily occurs as rain, with occasional snowfall. The average annual rainfall is approximately 20 inches and the average annual snowfall is 1 inch.

Air Temperature: Air temperatures in the study area range between an average January high of 54 degrees Fahrenheit (°F) and an average July high of 97°F. The annual average high is approximately 75°F.

Growing Season: The growing season (i.e., 50% probability of air temperature 28 °F or higher) in the study area is approximately 340 days and occurs between February and December.

3.4 Hydrology/Hydrologic Features

The hydrologic features in the study area include Stony Creek and small intermittent and ephemeral tributary streams that flow into Stony Creek. The study area is situated on Stony Creek between Stony Gorge Reservoir and Black Butte Lake. Stony Creek receives regulated flows from the Stony Gorge Reservoir. Stony Creek is a meandering stream with a wide, nearly level floodplain that flows from southwest to the northeast. Tributaries flow into the stream from the northwest and southeast slopes. Stony Creek flows to the Sacramento River, a traditional navigable water, approximately 31.5 river miles (23.6 aerial miles) east of the study area.

3.5 Soil Map Units

Five soil map units occur in the study area. They are described in the *Soil Survey of the Glenn County Area, California* (Natural Resources Conservation Service 2016). Soil map units occurring within the study area are summarized in Table 1 and shown in Figure 2.

Table 1. Soil Map Units the Study Area

Map Unit Name Taxonomy	Map Unit Reference Code	Drainage Class	Depth to Restrictive Layer	Hydric Soils
Arbuckle gravelly loam, 0 to 2 percent slopes Typic haploxeralfs	AoA	Well-drained	More than 80 inches	No, hydric inclusions (depressions)
Pleasanton gravelly loam, 2 to 10 percent slopes Mollic haploxeralfs	PmB	Well-drained	More than 80 inches	Not hydric
Riverwash	Rh	Excessively drained	N/A	Yes, drainageways
Sehorn-Millsholm association, 30 to 65 percent slopes Entic Chromoxerents	SdE	Well-drained	20-40 inches to lithic bedrock	Not hydric
Water	W	N/A	N/A	Hydric

3.6 Vegetation Communities

Four vegetation communities occur in the study area: annual grassland, blue oak woodland, riverine, and valley foothill riparian, based on descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988).

Annual Grassland

Annual grassland is located in the northeast portion of the study area and characterized as a dense herbaceous layer. Dominant plant species include harewall barley (*Hordeum murinum* ssp. *leporinum*), ripgut brome (*Bromus diandrus*), rattail fescue (*Festuca myuros*), hedge-parsley (*Torilis arvensis*), bur-clover (*Medicago polymorpha*), winter vetch (*Vicia villosa*), and rose clover (*Trifolium hirtum*).

Blue Oak Woodland

Blue oak woodland occurs on the slopes above the Stony Creek floodplain and at the eastern portion of the study area. It is characterized by an open canopy of blue oaks (*Quercus douglasii*), with a dense herbaceous understory. Dominant plants in the understory include ripgut brome, rattail fescue, hedge-parsley, winter vetch, and California melic (*Melica californica*).

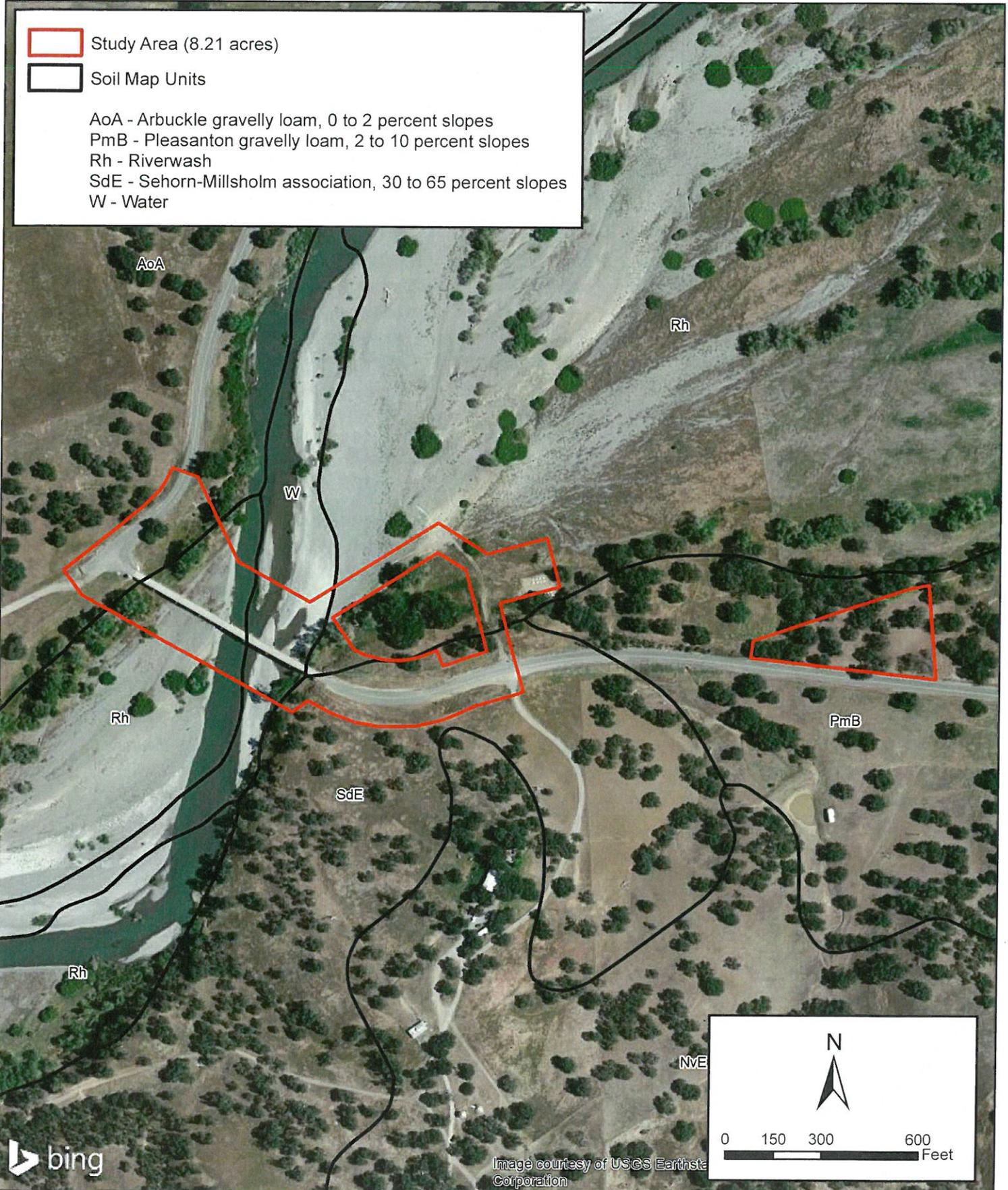


Study Area (8.21 acres)



Soil Map Units

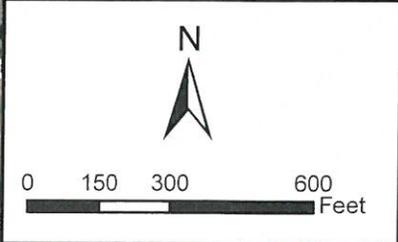
- AoA - Arbuckle gravelly loam, 0 to 2 percent slopes
- PmB - Pleasanton gravelly loam, 2 to 10 percent slopes
- Rh - Riverwash
- SdE - Sehorn-Millsholm association, 30 to 65 percent slopes
- W - Water



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Image courtesy of USGS Earthstar Corporation



Riverine

The riverine feature within the study area consists of Stony Creek. In the study area and vicinity Stony Creek is characterized as a perennial, low-gradient stream with an extensive floodplain due to the stream's low gradient and the presence of alluvial deposits. Dominant substrates include cobble, gravel, and sand.

Valley Foothill Riparian

Valley foothill riparian occurs as moderately wide bands of vegetation along the banks of Stony Creek. This habitat is characterized by a moderate to dense overstory of riparian species with a dense herbaceous layer dominated by upland species. Dominant trees and shrubs include Fremont cottonwood (*Populus fremontii*), mulefat (*Baccharis salicifolia*), arundo (*Arundo donax*), and narrowleaf willow (*Salix exigua*). Herbs and forbs occurring in the understory include ripgut brome, rattail fescue, annual ragweed (*Ambrosia artemisiifolia*), yellow sweetclover (*Melilotus indicus*), and deergrass (*Muhlenbergia rigens*).

Chapter 4. Methods

NSR conducted an on-site routine delineation of wetlands and “other waters” of the United States based on field observations of positive indicators for wetland vegetation, hydrology, and soils; and indicators of an ordinary high water mark (OHWM). This methodology is consistent with the approach outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008). Plant taxonomy follows *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). Wetland indicator status for plant species was confirmed using *The National Wetland Plant List* (Lichvar et al. 2016), and the “50/20 Rule” or “Prevalence Index” was applied to determine plant dominance (U.S. Army Corps of Engineers 2008). Presence of primary and secondary wetland hydrology indicators were documented for each wetland feature. The OHWM was determined using the approach outlined in *A Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States* (U.S. Army Corps of Engineers 2008).

Soil pits were dug in each representative wetland feature to a depth sufficient to document the presence or confirm the absence of hydric soil or hydrology indicators. Soils were examined to assess field indicators of hydric soils. Positive indicators of hydric soils were observed in the field in accordance with the criteria outlined in *Field Indicators of Hydric Soils in the United States* (Vasilas et al. 2010). Soil colors were determined using a Munsell® soil color chart. The hydric status of each soil map unit occurring in the study area was reviewed using the *Web Soil Survey* (Natural Resources Conservation Service 2016). At least one set of data points was selected to best represent the wetland feature type and the adjacent uplands. Data points were also placed in suspect areas to confirm wetland or upland status.

Other waters are defined as traditional navigable waters and their tributaries (33 CFR 329). Delineation of other waters was based on presence of an OHWM as defined in Corps regulations (33 CFR 328.3 and 33 CFR 328.4) and whether the feature qualified as tributary to waters of the United

States. Physical characteristics of an OHWM include, but are not limited to, a natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, presence of litter and debris, leaf litter disturbed or washed away, scour, deposition, presence of bed and bank, and water staining. At least one data point was selected to best represent the OHWM of other waters for each other waters type.

Prior to conducting the on-site routine delineation, the U.S. Fish and Wildlife Service's, National Wetlands Inventory (NWI) Wetlands Mapper (U.S. Fish and Wildlife Service 2016) was reviewed to determine if any wetlands or deepwater habitats as described by Cowardin et al. (1979) have been previously mapped in the study area and general vicinity. Features delineated during the on-site routine delineation were classified using Cowardin (1979) based on existing NWI mapping, or assigned a Cowardin type if not previously mapped. The Corps Aquatic Resources Excel spreadsheet, which includes specific information about the wetland and other waters features delineated, including their Cowardin type, was completed and submitted as a separate deliverable with this report.

Eleven data points were used to characterize and document each wetland or other water feature type, and the adjacent upland. Field observations were conducted on November 9, 2016.

The boundaries of delineated features and the associated data points were mapped using a Trimble Mapping Grade Global Positioning System (GPS) capable of sub-foot accuracy. Where the use of the GPS was not practicable or satellites were not available, the features were delineated by hand onto ortho-rectified color aerial photographs. The GPS and hand-drawn location data were overlaid onto an aerial photograph of the study area to develop the delineation map.

Chapter 5. Results and Discussion

Potential waters of the United States occur in the study area as wetlands and other waters. Wetlands include riparian wetland, and other waters include ephemeral stream, intermittent stream, and perennial stream.

The boundaries and area of potential waters of the United States occurring in the study area are illustrated in Figure 3. A total of 2.194 acres of waters of the United States was delineated. A summary of the delineated features is presented in Table 3. Routine wetland determination data forms are presented in Appendix A. Ordinary high water mark data forms are presented in Appendix B. Representative photographs of the delineated features and data point locations are presented in Appendix C.

Table 2. Waters of the United States Summary

Waters of the United States	Total Acreage	Total Linear Feet	Cowardin Type ¹
Wetlands			
Riparian Wetland	0.254	N/A	PF01
Other Waters			
Ephemeral Stream	0.001	48	R4SB4
Intermittent Stream	0.016	116	R4SB3
Perennial Stream	1.923	897	R3UB1
Total Waters of the United States	2.194	1061	

5.1 Characterization of Delineated Features

Riparian Wetland

Riparian wetlands (RW) occur immediately adjacent to and within the OHWM of Stony Creek. These features are dominated by mulefat, arundo, and narrowleaf willow. White alder (*Alnus rhombifolia*) also occurs in the riparian wetlands located on the east side of the stream. Facultative-upland and upland herbaceous species are common in the understory. Wetland hydrology is provided by frequent flooding and long-duration inundation indicated by water marks, sediment deposits, and drift deposits. The soils are problematic because these features occur on sand/cobble bars within and adjacent to Stony Creek. The coarse substrates allow oxygenated water to permeate, which inhibits development of hydric soil indicators.

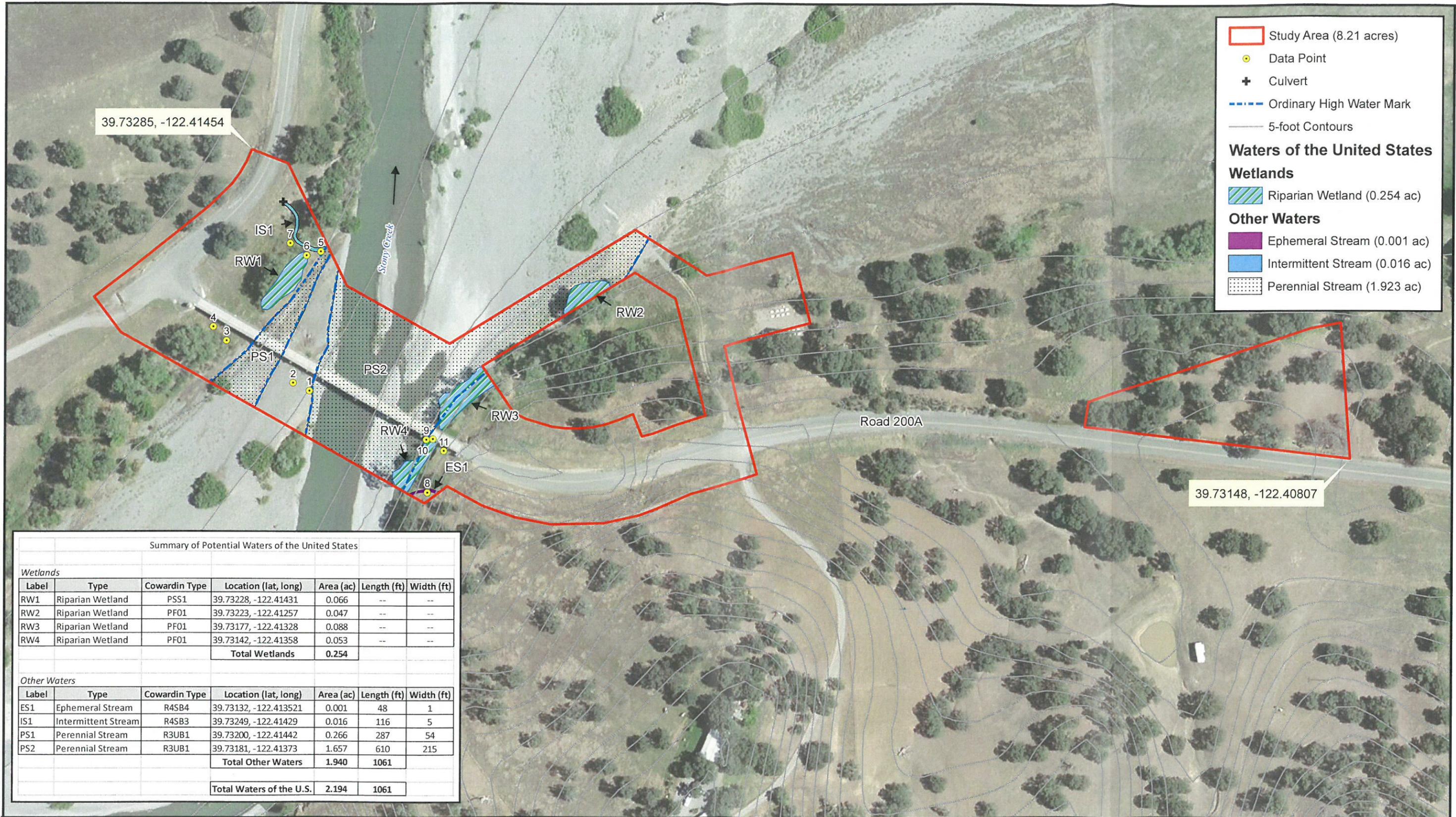
Ephemeral Stream

An ephemeral stream (ES1) occurs in the southeastern portion of the study area. The ephemeral stream exhibits poorly defined, but visible, indicators of scour and deposition, minor drift lines, and sediment deposits. The poorly defined hydrology indicators, close proximity to the headwaters, and the small size of the ephemeral stream indicate short duration flow lacking a groundwater component. The stream's hydrology is provided by sheet flow and a swale feature located outside of the study area that scours as the gradient increases near Stony Creek.

Intermittent Stream

One intermittent stream occurs in the northwest portion of the study area. The stream flows seasonally, but also exhibits a groundwater component in addition to the collection of precipitation and sheet flow from adjacent slopes, which extends the seasonal duration of flow. The intermittent stream is characterized as bed and bank features that exhibit evidence of scour and deposition. Hydrology for the intermittent stream is provided by the swale west of the study area and sheet flow from the road.

¹ Cowardin et al. 1979



Study Area (8.21 acres)

- Data Point
- Culvert
- Ordinary High Water Mark
- 5-foot Contours

Waters of the United States Wetlands

- Riparian Wetland (0.254 ac)

Other Waters

- Ephemeral Stream (0.001 ac)
- Intermittent Stream (0.016 ac)
- Perennial Stream (1.923 ac)

39.73285, -122.41454

39.73148, -122.40807

Summary of Potential Waters of the United States						
Wetlands						
Label	Type	Cowardin Type	Location (lat, long)	Area (ac)	Length (ft)	Width (ft)
RW1	Riparian Wetland	PSS1	39.73228, -122.41431	0.066	--	--
RW2	Riparian Wetland	PF01	39.73223, -122.41257	0.047	--	--
RW3	Riparian Wetland	PF01	39.73177, -122.41328	0.088	--	--
RW4	Riparian Wetland	PF01	39.73142, -122.41358	0.053	--	--
Total Wetlands				0.254		
Other Waters						
Label	Type	Cowardin Type	Location (lat, long)	Area (ac)	Length (ft)	Width (ft)
ES1	Ephemeral Stream	R4SB4	39.73132, -122.413521	0.001	48	1
IS1	Intermittent Stream	R4SB3	39.73249, -122.41429	0.016	116	5
PS1	Perennial Stream	R3UB1	39.73200, -122.41442	0.266	287	54
PS2	Perennial Stream	R3UB1	39.73181, -122.41373	1.657	610	215
Total Other Waters				1.940	1061	
Total Waters of the U.S.				2.194	1061	

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Prepared by:

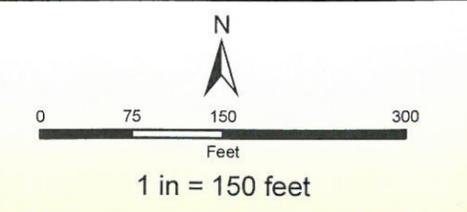
 5000 Bechelli Lane Suite 203
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Prepared for:
 Willdan Engineering
 2400 Washington Ave, Suite 101
 Redding, CA 96001 (530) 244-8500

This delineation of waters of the United States is subject to verification by the U.S. Army Corps of Engineers (Corps). NSR advises all parties that the delineation is preliminary until the Corps provides a written verification.

Delineator: Sarah Tona
 Delineation Date: 11/9/2016
 Aerial Photography Source: NAIP 2014

Coordinate System: NAD 1983 UTM Zone 10N
 Projection: Transverse Mercator
 Datum: North American 1983



Stony Creek Bridge (11C-0245) Replacement Project

Figure 3
Potential Waters of the United States
 November 9, 2016

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Perennial Stream

Stony Creek is a perennial stream that bisects the study area (PS1 and PS2). This stream is characterized as a perennial bed and bank feature. Within the study area, the stream has a low flow channel and a high flow channel separated by an upland bank. Cobble, gravel, and sand dominate the stream substrate. Riparian wetlands occur within the OHWM and adjacent to Stony Creek. Indicators of wetland hydrology observed include inundation, watermarks, drift lines, sediment deposits, and drainage patterns.

Chapter 6. Conclusion

Waters of the United States delineated within the study area occupy a total of 2.194 acres and include riparian wetland, ephemeral stream, intermittent stream, and perennial stream.

The determinations concerning waters of the United States, including wetlands, were based on current conditions, (i.e., normal circumstances) and made in accordance with relevant U.S. Environmental Protection Agency and Corps guidance. The determinations are subject to verification by the Corps. NSR advises all interested parties to treat the information contained herein as preliminary pending written verification of jurisdictional boundaries by the Corps.

Chapter 7. References

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APPENDIX A

Routine Wetland Determination Data Forms

Wetland Determination Data Form-Arid West Region

Data Point 1
Feature Type PS

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn County / Willdan Engineering State: CA
 Investigator(s): Sarah Tona Section, Township, Range: S27, T22N R5W
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope %: < 1
 Subregion (LRR): C Lat: 4398151.89 Long: 550199.26 Datum: NAD83
 Soil Map Unit Name: Riverwash NWI Classification: R3USA

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

Are vegetation Y, soil N, or hydrology N significantly disturbed? Are normal circumstances present? Y / N

Are vegetation Y, soil N, or hydrology N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? Y / N Hydric soil? Y / N Wetland hydrology? Y / N Is sampled area a wetland? Y / N Other waters? Y / N

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width 320'
 Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate Sand, Gravel, Cobble,
 Natural Drainage Artificial Drainage Navigable Water

Remarks DP documents the OTHWM of Stony Creek, a perennial stream.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Sapling/Shrub Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Herb Stratum (Plot Size: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____		

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: _____ (A)
 Total number of dominant species across all strata: _____ (B)
 Percent of dominant species that are OBL, FACW, or FAC: _____ (AB)

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 ≤ 3.0¹
 _____ Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 _____ Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y / N

Remarks No vegetation, the feature has a scoured channel.

Soils

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

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

Indicators for Problematic Hydric Soils³

- | | | |
|--|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Materials (TF21) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Vegetated Sand/Gravel Bars |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? ~~Y/N~~

Remarks No pit dug, feature has a scoured channel.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

Secondary Indicators (2 or more required)

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input checked="" type="checkbox"/> Water Marks (B1) (Riverine) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations

Surface Water Present? Yes No _____ Depth (Inches) 1-3' Wetland Hydrology? (Y) / N
 Water Table Present? Yes No _____ Depth (inches) Surface
 Saturation Present? Yes No _____ Depth (inches) Surface (includes capillary fringe)

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

Remarks Water marks, sediment deposits, and drift deposits document the O#WM.

Wetland Determination Data Form-Arid West Region

Data Point 2
Feature Type upland

Project/Site: Stony creek Bridge City/County: Glenn County Date: 11/9/16
Applicant/Owner: Glenn County/Wildlan Engineering State: CA
Investigator(s): Sarah Tora Section, Township, Range S27, T22N, R5W
Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none) Concave Slope % <1
Subregion (LRR): C Lat: 4398155 Long: 550190 Datum: NAD83
Soil Map Unit Name: Riverwash NWI Classification: _____

Are climatic/hydrologic conditions on the site typical for this time of year? **Y** N (If no, explain in Remarks.)
Are vegetation **Y** N, soil **Y** N, or hydrology **Y** N significantly disturbed? Are normal circumstances present? **Y** N
Are vegetation **Y** N, soil **Y** N, or hydrology **Y** N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
Hydrophytic vegetation? **Y** N Hydric soil? **Y** N Wetland hydrology? **Y** N Is sampled area a wetland? **Y** N Other waters? **Y** N

Evaluation of features designated "Other Waters of the United States"
Indicators: Defined bed and bank _____ Scour _____ Ordinary High Water Mark Mapped _____ Stream Width _____
Feature Designation: Perennial _____ Intermittent _____ Ephemeral _____ Blue-line on USGS Quad _____ Substrate _____
Natural Drainage _____ Artificial Drainage _____ Navigable Water _____

Remarks DP

Vegetation (Use Scientific Names)			
Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Sapling/Shrub Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Herb Stratum (Plot Size: <u>10x10'</u>)	% Cover	Species?	Status
1. <u>Heterotheca oregona</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
2. <u>Bromus tectorum</u>	<u>2</u>	<u>Y</u>	<u>UPL</u>
3. <u>Hypochaeris radicata</u>	<u>1</u>	<u>N</u>	<u>FACU</u>
4. <u>Festuca myuros</u>	<u>1</u>	<u>N</u>	<u>FACU</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
50%= <u>4.5</u> 20%= <u>1.8</u> Total Cover: <u>9</u>			
Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50%= _____ 20%= _____ 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 (AB)

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
 N Dominance Test is >50%
 Prevalence Index is ≤ 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? **Y** N

Remarks

Soils

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

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

Indicators for Problematic Hydric Soils³

- | | | |
|--|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vetric (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Materials (TF21) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Vegetated Sand/Gravel Bars |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Y (N)

Remarks No soil pit dug, the area is a gravel/cobble bar.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations

Surface Water Present? Yes ___ No X Depth (inches) _____ Wetland Hydrology? Y (N)

Water Table Present? Yes ___ No X Depth (inches) _____

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

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

Remarks Small drift deposits are indicative of flooding, but are likely from rare high flood events and not frequent.

Wetland Determination Data Form-Arid West Region

Data Point 3
 Feature Type upland

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn County / Willdan Engineering State: CA
 Investigator(s): Sarah Tona Section, Township, Range S22, T22N, R5W
 Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none) Concave Slope % 41
 Subregion (LRR): C Lat: 4398176.57 Long: 550157.22 Datum: NAD83
 Soil Map Unit Name: Riverwash NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Y/N (If no, explain in Remarks.)
 Are vegetation Y/N, soil Y/N, or hydrology Y/N significantly disturbed? Are normal circumstances present? Y/N
 Are vegetation Y/N, soil Y/N, or hydrology Y/N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
 Hydrophytic vegetation? Y/N Hydric soil? Y/N Wetland hydrology? Y/N Is sampled area a wetland? Y/N Other waters? Y/N

Evaluation of features designated "Other Waters of the United States"
 Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width
 Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate
 Natural Drainage Artificial Drainage Navigable Water

Remarks Suspect area adjacent to Stony Creek. Indicators are not sufficient to support the wetland status.

Vegetation (Use Scientific Names)		Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot Size: <u> </u>)				
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
50%= <u> </u>	20%= <u> </u>	Total Cover: <u> </u>		
Sampling/Shrub Stratum (Plot: <u>20x19'</u>)				
1.	<u>Baccharis salicifolia</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
50%= <u> </u>	20%= <u> </u>	Total Cover: <u>20</u>		
Herb Stratum (Plot Size: <u>10'x10'</u>)				
1.	<u>Bromus diandrus</u>	<u>70</u>	<u>Y</u>	<u>UPL</u>
2.	<u>Trifolium dubium</u>	<u>20</u>	<u>N</u>	<u>UPL</u>
3.	<u>Anthraciscus caucalis</u>	<u>10</u>	<u>N</u>	<u>UPL</u>
4.	<u>Muhlenbergia rigens</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
5.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
6.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
7.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
8.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
50%= <u>55</u>	20%= <u>22</u>	Total Cover: <u>110</u>		
Woody/Vine Stratum (Plot: <u> </u>)				
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
50%= <u> </u>	20%= <u> </u>	Total Cover: <u> </u>		
% Bare Ground in Herb Stratum <u> </u> % Cover of Biotic Crust <u> </u>				

Dominance Test Worksheet
 Number of dominant species that are OBL, FACW, or FAC: 1 (A)
 Total number of dominant species across all strata: 2 (B)
 Percent of dominant species that are OBL, FACW, or FAC: 50 (AB)

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 ≤ 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y/N

Remarks

Soils

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-20	2.5YR 4/1	100	-	-	-	-	Sandy loam	

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

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

Indicators for Problematic Hydric Soils³

- | | | |
|--|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Materials (TF21) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Vegetated Sand/Gravel Bars |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

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

Restrictive Layer (if present): Type: none Depth (Inches) _____ Hydric Soil? Y/N

Remarks No redox features are present.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations

Surface Water Present? Yes ___ No Depth (inches) _____ Wetland Hydrology? Y / (N)

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

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

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

Remarks Drift deposits are likely from major precipitation events. Recent drift deposits do not occur, and no other hydrology indicators are present.

Wetland Determination Data Form-Arid West Region

Data Point 4
Feature Type Upland

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
Applicant/Owner: Glenn County/Willdan Engineering State: CA
Investigator(s): Sarah Toga Section, Township, Range S27, T22N, R5W
Landform (hillslope, terrace, etc.) drainage Local relief (concave, convex, none) Convex Slope % 3
Subregion (LRR): C Lat: 43.9818340 Long: 55.015048 Datum: NAD83
Soil Map Unit Name: Riverwash NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Y / N (If no, explain in Remarks.)
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? Y / N
Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
Hydrophytic vegetation? Y / N Hydric soil? N Wetland hydrology? N Is sampled area a wetland? N Other waters? N

Evaluation of features designated "Other Waters of the United States"
Indicators: Defined bed and bank Scour Ordinary-High Water Mark Mapped Stream Width
Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate
Natural Drainage Artificial Drainage Navigable Water

Remarks Suspect area with riparian shrubs but upland grasses. The area may flood periodically, but not frequently.

Vegetation (Use Scientific Names)			
Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
50%= _____ 20%= _____ Total Cover: _____			
Sampling/Shrub Stratum (Plot: _____)	% Cover	Species?	Status
1. <u>Arundo donax</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>
2. <u>Baccharis salicifolia</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3. _____			
4. _____			
50%= <u>25</u> 20%= <u>10</u> Total Cover: <u>50</u>			
Herb Stratum (Plot Size: _____)	% Cover	Species?	Status
1. <u>Bromus diandrus</u>	<u>70</u>	<u>Y</u>	<u>UPL</u>
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
50%= <u>35</u> 20%= <u>14</u> Total Cover: <u>70</u>			
Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____			
2. _____			
50%= _____ 20%= _____ Total Cover: _____			
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____			

Dominance Test Worksheet	
Number of dominant species that are OBL, FACW, or FAC:	<u>2</u> (A)
Total number of dominant species across all strata:	<u>3</u> (B)
Percent of dominant species that are OBL, FACW, or FAC:	<u>66.6</u> (AB)
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 ≤ 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y / N

Remarks

Soils

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-20	2.5 YR 4/1	100	—	—	—	—	Sandy loam	

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

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

Indicators for Problematic Hydric Soils³

- | | | |
|--|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Materials (TF21) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Vegetated Sand/Gravel Bars |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

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

Restrictive Layer (if present): Type: NONE Depth (Inches) _____ Hydric Soil? Y (N)

Remarks No redox features

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (Db) |

Field Observations

Surface Water Present? Yes _____ No X Depth (inches) _____ Wetland Hydrology? Y (N)
 Water Table Present? Yes _____ No X Depth (inches) _____
 Saturation Present? Yes _____ No X Depth (inches) _____ (includes capillary fringe)

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

Remarks Drift deposits are above the OTHM and likely historic from a major rain event.

Data Point 5
 Feature Type I.S.

Wetland Determination Data Form-Arid West Region

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn County / Willdan Engineering State: CA
 Investigator(s): Sarah Tona Section, Township, Range S27, T22N, R9W
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none) Concave Slope % 2
 Subregion (LRR): C Lat: 4398221.91 Long: 550203.97 Datum: NAD83
 Soil Map Unit Name: Riverwash NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Y N (If no, explain in Remarks.)
 Are vegetation Y N soil Y N or hydrology Y N significantly disturbed? Are normal circumstances present? Y N
 Are vegetation Y N soil Y N or hydrology Y N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
 Hydrophytic vegetation? Y N Hydric soil? Y N Wetland hydrology? Y N Is sampled area a wetland? Y N Other waters? Y N

Evaluation of features designated "Other Waters of the United States"
 Indicators: Defined bed and bank X Scour X Ordinary High Water Mark Mapped X Stream Width 3-4'
 Feature Designation: Perennial Intermittent X Ephemeral Blue-line on USGS Quad Substrate
 Natural Drainage X Artificial Drainage Navigable Water

Remarks The stream is sourced by a culvert and is influenced by road run-off.

Vegetation (Use Scientific Names)			
Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Sapling/Shrub Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Herb Stratum (Plot Size: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____			

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: _____ (A)

Total number of dominant species across all strata: _____ (B)

Percent of dominant species that are OBL, FACW, or FAC: _____ (AB)

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 ≤ 3.0¹
 _____ Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 _____ Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y N

Remarks Primarily scoured channel. Scattered herb sprouts are present in the channel, including Bromus diandrus, Brassica sp., and Ambrosia sp.

Soils

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)		Indicators for Problematic Hydric Soils³
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Materials (TF21)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Vegetated Sand/Gravel Bars
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if present): Type: none Depth (Inches) _____ Hydric Soil? Y/N

Remarks
No pit scoured channel.

Hydrology

Wetland Indicators

<u>Primary Indicators (Any one indicator is sufficient.)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input checked="" type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations

Surface Water Present? Yes _____ No Depth (inches) _____ Wetland Hydrology? / N

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

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

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

Remarks

Data Point 6
 Feature Type RW

Wetland Determination Data Form-Arid West Region

Project/Site: Stony Creek Bridge City/County: Glen County Date: 11/9/16
 Applicant/Owner: Glen County / Willdan Engineering State: CA
 Investigator(s): Sarah Tona Section, Township, Range S27, T22N, R5W
 Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none) Concave Slope % <1
 Subregion (LRR): C Lat: 4398219.94 Long: 550176.17 Datum: NAD83
 Soil Map Unit Name: Riverwash NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Y N (If no, explain in Remarks.)
 Are vegetation Y N, soil Y N, or hydrology Y N significantly disturbed? Are normal circumstances present? Y N
 Are vegetation Y N, soil Y N, or hydrology Y N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? Y N Hydric soil? Y N Wetland hydrology? Y N Is sampled area a wetland? Y N Other waters? Y N

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width
 Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate
 Natural Drainage Artificial Drainage Navigable Water

Remarks DP documents a riparian wetland adjacent to stony creek.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: <u>20x20</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Populus fremontii</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: <u>30</u>			
Sapling/Shrub Stratum (Plot: <u>20x20</u>)	% Cover	Species?	Status
1. <u>Baccharis salicifolia</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>
2. <u>Salix exigua</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= <u>30</u> 20%= <u>12</u> Total Cover: <u>60</u>			
Herb Stratum (Plot Size: <u>10x10</u>)	% Cover	Species?	Status
1. <u>Trifolium dubium</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
2. <u>Bromus diandrus</u>	<u>70</u>	<u>Y</u>	<u>UPL</u>
3. <u>Ambrosia artemisiifolia</u>	<u>5</u>	<u>N</u>	<u>UPL</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
50%= <u>37.5</u> 20%= <u>15</u> Total Cover: <u>75</u>			
Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
% Bare Ground in Herb Stratum _____ % 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: 3 (B)
 Percent of dominant species that are OBL, FACW, or FAC: 60% (AB)

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

Y Dominance Test is >50%
 Prevalence Index is ≤ 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y N

Remarks

Soils

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

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-22	2.5YR 4/1	100	—	—	—	—	Sandy loam	

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

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

Indicators for Problematic Hydric Soils³

- | | | |
|--|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Materials (TF21) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input checked="" type="checkbox"/> Vegetated Sand/Gravel Bars |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

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

Restrictive Layer (if present): Type: NONE Depth (Inches) _____ Hydric Soil? Y / N

Remarks: Soils are problematic because the feature is a vegetated sand and gravel bar. No hydric soil indicators are present because of annual deposition of new material.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

Secondary Indicators (2 or more required)

- | | | |
|--|---|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input checked="" type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations

Surface Water Present? Yes No Depth (inches) _____ Wetland Hydrology? Y / N

Water Table Present? Yes No Depth (inches) _____

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

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

Remarks: water-stained leaves, water marks, sediment deposits and drift deposits indicate frequent flooding.

Wetland Determination Data Form-Arid West Region

Data Point 7
Feature Type Upland

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
Applicant/Owner: Glenn County/Willdan Engineering State: CA
Investigator(s): Sarah Toga Section, Township, Range: S27, T22N, R5W
Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope %: 2
Subregion (LRR): C Lat: 4398225.97 Long: 550188.91 Datum: NAD83
Soil Map Unit Name: Arbuckle gravelly loam, 0 to 2% slopes NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Y N (If no, explain in Remarks.)
Are vegetation Y N, soil Y N, or hydrology Y N significantly disturbed? Are normal circumstances present? Y N
Are vegetation Y N, soil Y N, or hydrology Y N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
Hydrophytic vegetation? Y N Hydric soil? Y N Wetland hydrology? Y N Is sampled area a wetland? Y N Other waters? Y N

Evaluation of features designated "Other Waters of the United States"
Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width
Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate
Natural Drainage Artificial Drainage Navigable Water

Remarks DP documents the upland pair point to DP 5(RW).

Vegetation (Use Scientific Names)				Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
Tree Stratum (Plot Size: _____)							Number of dominant species that are OBL, FACW, or FAC:	<u>1</u> (A)
1.							Total number of dominant species across all strata:	<u>2</u> (B)
2.							Percent of dominant species that are OBL, FACW, or FAC:	<u>50</u> (AB)
3.							Prevalence Index Worksheet	
4.							Total % Cover of:	Multiply by
50%= _____	20%= _____	Total Cover: _____					OBL Species	_____ x 1 = _____
Sapling/Shrub Stratum (Plot: <u>10' x 10'</u>)				% Cover	Species?	Status	FACW Species	_____ x 2 = _____
1.	<u>Baccharis salicifolia</u>			<u>5</u>	<u>Y</u>	<u>FACW</u>	FAC Species	_____ x 3 = _____
2.							FACU Species	_____ x 4 = _____
3.							UPL Species	_____ x 5 = _____
4.							Column Totals	_____ (A) _____ (B)
50%= _____	20%= _____	Total Cover: <u>5</u>					Prevalence Index = B/A = _____	
Herb Stratum (Plot Size: <u>10' x 10'</u>)				% Cover	Species?	Status	Hydrophytic Vegetation Indicators	
1.	<u>Bromus diandrus</u>			<u>80</u>	<u>Y</u>	<u>UPL</u>	<input checked="" type="checkbox"/> Dominance Test is >50%	
2.	<u>Ambrosia artemisiifolia</u>			<u>7</u>	<u>N</u>	<u>UPL</u>	<input type="checkbox"/> Prevalence Index is ≤ 3.0 ¹	
3.	<u>Torilis arvensis</u>			<u>5</u>	<u>N</u>	<u>UPL</u>	<input type="checkbox"/> Morphological Adaptations ¹ (provide supporting data in Remarks or on a separate sheet)	
4.							<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
5.							¹ Indicators of hydric soil and wetland hydrology must be present.	
6.							Hydrophytic Vegetation? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	
7.								
8.								
50%= <u>46</u>	20%= <u>18.4</u>	Total Cover: <u>92</u>						
Woody/Vine Stratum (Plot: _____)				% Cover	Species?	Status		
1.								
2.								
50%= _____	20%= _____	Total Cover: _____						
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____								

Remarks

Soils

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-20	2.5YR 4/1	100	—	—	—	—	Sandy loam	

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

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

Indicators for Problematic Hydric Soils³

- | | | |
|--|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Materials (TF21) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Vegetated Sand/Gravel Bars |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

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

Restrictive Layer (if present): Type: NONE Depth (Inches) _____ Hydric Soil? Y/N

Remarks: No redox indicators.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (R3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (Db) |

Field Observations

Surface Water Present? Yes _____ No X Depth (inches) _____ Wetland Hydrology? Y N
 Water Table Present? Yes _____ No X Depth (inches) _____
 Saturation Present? Yes _____ No X Depth (inches) _____ (includes capillary fringe)

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

Remarks: Drift lines on the terrace from major rain events, Not an indicator of frequent flooding.

Wetland Determination Data Form-Arid West Region

Data Point 8
Feature Type E-S

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
Applicant/Owner: Glenn County/Wildan Engineering State: CA
Investigator(s): Sarah Tona Section, Township, Range: S27, T22N, R5W
Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope %: 45
Subregion (LRR): C Lat: 43.98120, 84 Long: 550268.45 Datum: NAD83
Soil Map Unit Name: Sehorn-Millsholm Association, 30 to 65% Slopes NWI Classification: None

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

Are vegetation Y N, soil Y N, or hydrology Y N significantly disturbed? Are normal circumstances present? Y N

Are vegetation Y N, soil Y N, or hydrology Y N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? Y N Hydric soil? Y N Wetland hydrology? Y N Is sampled area a wetland? Y N Other waters? Y N

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width 1 foot
Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate Sand
Natural Drainage Artificial Drainage Navigable Water

Remarks Ephemeral stream that begins to show signs of Scour at the top of the hill.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Sapling/Shrub Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Herb Stratum (Plot Size: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____			

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: _____ (A)
Total number of dominant species across all strata: _____ (B)
Percent of dominant species that are OBL, FACW, or FAC: _____ (AB)

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 < 3.0¹
_____ Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
_____ Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y/N

Remarks Scoured channel with limited vegetation.

Soils

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

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

Indicators for Problematic Hydric Soils³

- | | | |
|--|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Materials (TF21) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Vegetated Sand/Gravel Bars |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Y/N

Remarks

No pit- Scoured channel.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

Secondary Indicators (2 or more required)

- | | | |
|--|---|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input checked="" type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (Db) |

Field Observations

- Surface Water Present? Yes _____ No Depth (inches) _____ Wetland Hydrology? / N
- Water Table Present? Yes _____ No Depth (inches) _____
- Saturation Present? Yes _____ No Depth (inches) _____ (includes capillary fringe)

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

Remarks

Data Point 9
Feature Type PS

Wetland Determination Data Form-Arid West Region

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn County/Willdan Engineering State: CA
 Investigator(s): Sarah Tona Section, Township, Range: S27, T22N, R5W
 Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): Concave Slope %: 1
 Subregion (LRR): C Lat: 43°18'38.64 Long: 55°02'63.43 Datum: NAD83
 Soil Map Unit Name: Water NWI Classification: R3USA

Are climatic/hydrologic conditions on the site typical for this time of year? **Y** *(If no, explain in Remarks.)*
 Are vegetation **Y**, soil **Y**, or hydrology **Y** significantly disturbed? Are normal circumstances present? **Y** *(If no, explain in Remarks.)*
 Are vegetation **Y**, soil **Y**, or hydrology **Y** naturally problematic? *(If needed, explain in Remarks.)*

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? **Y** **Y** Hydric soil? **Y** Wetland hydrology? **Y** Is sampled area a wetland? **Y** Other waters? **Y**

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank **X** Scour **X** Ordinary High Water Mark Mapped **X** Stream Width 320 ft
 Feature Designation: Perennial **X** Intermittent Ephemeral Blue-line on USGS Quad **X** Substrate Sand, gravel, cobbles
 Natural Drainage **X** Artificial Drainage Navigable Water

Remarks DP documents the OHWM of Stony Creek, a perennial stream.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Sapling/Shrub Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Herb Stratum (Plot Size: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____			

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: _____ (A)
 Total number of dominant species across all strata: _____ (B)
 Percent of dominant species that are OBL, FACW, or FAC: _____ (AB)

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 ≤ 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? **Y** **Y**

Remarks no vegetation, the feature has a scoured channel.

Soils

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)		Indicators for Problematic Hydric Soils ³
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Materials (TF21)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Vegetated Sand/Gravel Bars
<input type="checkbox"/> 1 cm Muck (A8) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Y/N

Remarks No pit dug, the feature has a scoured channel.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)		Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input checked="" type="checkbox"/> Water Marks (B1) (Riverine)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations

Surface Water Present? Yes No _____ Depth (inches) 1-3' Wetland Hydrology? Y/N

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

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

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

Remarks Water marks, sediment deposits, and drift deposits document the OTWM.

Wetland Determination Data Form-Arid West Region

Data Point 10
Feature Type 12W

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
Applicant/Owner: Glenn County / Willdan Engineering State: CA
Investigator(s): Sarah Tong Section, Township, Range: S27, T22N, R5W
Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): Convex Slope %: 2
Subregion (LRR): C Lat: 4392129.64 Long: 550261.21 Datum: NAD83
Soil Map Unit Name: Schorn-Mills-holm association, 30105i NWI Classification: NONE

Are climatic/hydrologic conditions on the site typical for this time of year? Y N (If no, explain in Remarks.)
Are vegetation Y N, soil Y N, or hydrology Y N significantly disturbed? Are normal circumstances present Y N
Are vegetation Y N, soil Y N, or hydrology Y N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation Y N Hydric soil? Y N Wetland hydrology? Y N Is sampled area a wetland? Y N Other waters? Y N

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width
Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate
Natural Drainage Artificial Drainage Navigable Water

Remarks DP documents the Riparian wetland adjacent to Stony Creek.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: <u>100' x 10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Populus fremontii</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2. <u>Salix gooddingii</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50% = <u>10</u> 20% = <u>4</u> Total Cover: <u>20</u>			
Sapling/Shrub Stratum (Plot: <u>10' x 10'</u>)	% Cover	Species?	Status
1. <u>Baccharis salicifolia</u>	<u>45</u>	<u>Y</u>	<u>FAC</u>
2. <u>Vitis californica</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50% = <u>32.5</u> 20% = <u>13</u> Total Cover: <u>65</u>			
Herb Stratum (Plot Size: <u>50' x 10'</u>)	% Cover	Species?	Status
1. <u>Cynodon dactylon</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
50% = <u>5</u> 20% = <u>2</u> Total Cover: <u>10</u>			
Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50% = _____ 20% = _____ 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: 5 (B)
Percent of dominant species that are OBL, FACW, or FAC: 60 (AB)

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

Y Dominance Test is >50%
 Prevalence Index is ≤ 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Y N

Remarks

Soils

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
1-20	2.5YR 3/1	98	7.5YR 4/6	2	C	PL	Sandy loam	

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)		Indicators for Problematic Hydric Soils³
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Materials (TF21)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input checked="" type="checkbox"/> Vegetated Sand/Gravel Bars
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if present): Type: None Depth (Inches) _____ Hydric Soil? Y/N

Remarks Soils are problematic because the wetland is a vegetated Sand/Gravel bar within the OTW of a perennial stream. Annual deposition of new material likely prevents soil indicators from forming.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input checked="" type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (Db)

Field Observations

Surface Water Present? Yes _____ No X Depth (inches) _____ Wetland Hydrology? Y/N

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

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

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

Remarks

Wetland Determination Data Form-Arid West Region

Data Point 11
Feature Type Upland

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
Applicant/Owner: Glenn County/Willdan Engineering State: CA
Investigator(s): Sarah Tooa Section, Township, Range: S27, T22N, R5W
Landform (hillslope, terrace, etc.): hill slope Local relief (concave, convex, none): Upland Slope %: 3
Subregion (LRR): C Lot: 4398121.44 Long: 550272.04 Datum: NAD83
Soil Map Unit Name: Seburn-Millshdm association 30t0654 NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Y N (If no, explain in Remarks.)
Are vegetation Y N, soil Y N, or hydrology Y N significantly disturbed? Are normal circumstances present? Y N
Are vegetation Y N, soil Y N, or hydrology Y N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? Y N Hydric soil? Y N Wetland hydrology? Y N Is sampled area a wetland? Y N Other waters? Y N

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width
Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate
Natural Drainage Artificial Drainage Navigable Water

Remarks DP documents the upland pair point to DP 9.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Sapling/Shrub Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Herb Stratum (Plot Size: <u>10x10</u>)	% Cover	Species?	Status
1. <u>Centaurea solstitialis</u>	<u>10</u>	<u>N</u>	<u>UPL</u>
2. <u>Bromus diandrus</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>
3. <u>Bromus madritensis</u>	<u>40</u>	<u>Y</u>	<u>UPL</u>
4. <u>Avena sp.</u>	<u>10</u>	<u>N</u>	<u>UPL</u>
5. <u>Festuca myuros</u>	<u>10</u>	<u>N</u>	<u>UPL</u>
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
50%= <u>45</u> 20%= <u>18</u> Total Cover: <u>40</u>			
Woody/Vine Stratum (Plot: <u>20x29</u>)	% Cover	Species?	Status
1. <u>Vitis californica</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
2. _____	_____	_____	_____
50%= _____ 20%= _____ 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 (AB)

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 < 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y N

Remarks

Soils

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-2.0	7.5 YR 4/3	60	—					

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

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

- | | | |
|--|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Materials (TF21) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Vegetated Sand/Gravel Bars |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

Indicators for Problematic Hydric Soils³

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Y/N

Remarks No redox features.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations

Surface Water Present? Yes _____ No X Depth (inches) _____ Wetland Hydrology? Y/N

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

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

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

Remarks No wetland hydrology indicators

APPENDIX B

Ordinary High Water Mark Data Forms

Project: *Stony Creek Bridge* Date: *11/9/16* Time: *0930*
 Project Number: *51243* Town: *West of Orland* State: *CA*
 Stream: *Stony Creek* Photo begin file# Photo end file#
 Investigator(s): *Sarah Tong*

Y / N Do normal circumstances exist on the site?
 Y / N Is the site significantly disturbed?
 Location Details: *on County Road 200A where it crosses Stony Creek*
 Projection: *Transverse Mercator Datum: NAD83*
 Coordinates: *UTM 10S 550254 E, 4398138 N*

Notes: *Cattle use the stream for drinking water. Some hoof prints are on the bank, but not enough to influence the delineation of OTHWM.*

Brief site description:
Flashy perennial stream with a wide gravel bar and more than one channel.

- Checklist of resources (if available):
- Aerial photography
Dates: *2014*
 - Topographic maps
Scale: *5' contours*
 - Geologic maps
 - Vegetation maps
 - Soils maps
 - Rainfall/precipitation maps
 - Existing delineation(s) for site
 - Global positioning system (GPS)
 - Other studies
 - Stream gage data
Gage number:
 - Period of record:
 - Clinometer / level
 - History of recent effective discharges
 - Results of flood frequency analysis
 - Most recent shift-adjusted rating
 - Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10 08	256	Boulder	Gravel
2.56	64	Cobble	
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00081	0.0156	Medium silt	
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	Mud
		Clay	

Hydrogeomorphic Floodplain Units - Intermittent and Ephemeral Channel Forms (representative cross-section)

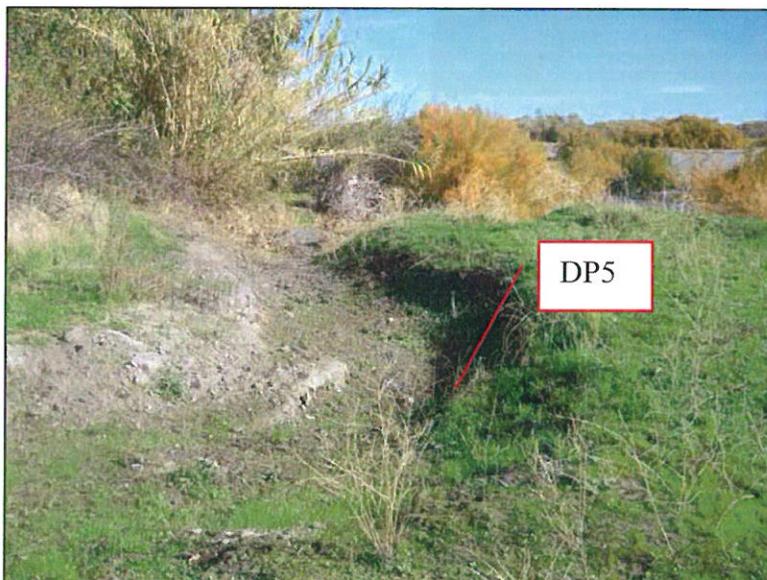
<input checked="" type="checkbox"/>	Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.
<input checked="" type="checkbox"/>	<p>Locate the low-flow channel (lowest part of the channel). Record observations.</p> <p>Characteristics of the low-flow channel:</p> <p>Average sediment texture: <u>Pebble</u></p> <p>Total veg cover: <u>0</u> % Tree: <u>0</u> % Shrub: <u>0</u> % Herb: <u>0</u> %</p> <p>Community successional stage:</p> <p><input type="checkbox"/> NA <input type="checkbox"/> Mid (herbaceous, shrubs, saplings)</p> <p><input type="checkbox"/> Early (herbaceous & seedlings) <input type="checkbox"/> Late (herbaceous, shrubs, mature trees)</p> <p>Dominant species present: <u>None, has 1-3' of water flowing at time of visit.</u></p> <p>Other: <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____</p>
<input checked="" type="checkbox"/>	<p>Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.</p> <p>Characteristics used to delineate the low-flow/active floodplain boundary:</p> <p><input checked="" type="checkbox"/> Change in total veg cover <input type="checkbox"/> Tree <input checked="" type="checkbox"/> Shrub <input type="checkbox"/> Herb</p> <p><input type="checkbox"/> Change in overall vegetation maturity</p> <p><input type="checkbox"/> Change in dominant species present</p> <p><input type="checkbox"/> Other <input checked="" type="checkbox"/> Presence of bed and bank</p> <p><input checked="" type="checkbox"/> Drift and/or debris</p> <p><input checked="" type="checkbox"/> Other: <u>Sediment deposits</u></p> <p><input type="checkbox"/> Other: _____</p> <p><i>Scattered young <i>Baccharis salicifolia</i>, and mature <i>Tamarix</i>.</i></p>
<input checked="" type="checkbox"/>	<p>Continue walking the channel cross-section. Record observations below.</p> <p>Characteristics of the ^{high} low-flow channel:</p> <p>Average sediment texture: <u>Granule</u></p> <p>Total veg cover: _____ % Tree: _____ % Shrub: <u>6</u> % Herb: <u>5</u> %</p> <p>Community successional stage:</p> <p><input type="checkbox"/> NA <input type="checkbox"/> Mid (herbaceous, shrubs, saplings)</p> <p><input checked="" type="checkbox"/> Early (herbaceous & seedlings) <input type="checkbox"/> Late (herbaceous, shrubs, mature trees)</p> <p>Dominant species present: <u>Aster shrub</u></p> <p><u><i>Bromus tectorum</i></u></p> <p><u><i>Hypochaeris glabrata</i></u></p> <p><u><i>Festuca myuros</i></u></p> <p>Other: <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____</p>

APPENDIX C

Representative Photographs



Photograph 3. Upland. DP3 (shovel) documents a suspect area that was determined to be upland.



Photograph 4. Intermittent Stream. DP 5 documents the OHWM of this stream. Orientation: northeast.



Photograph 5. Riparian Wetland. DP6 (shovel) documents the feature. Orientation: southwest.

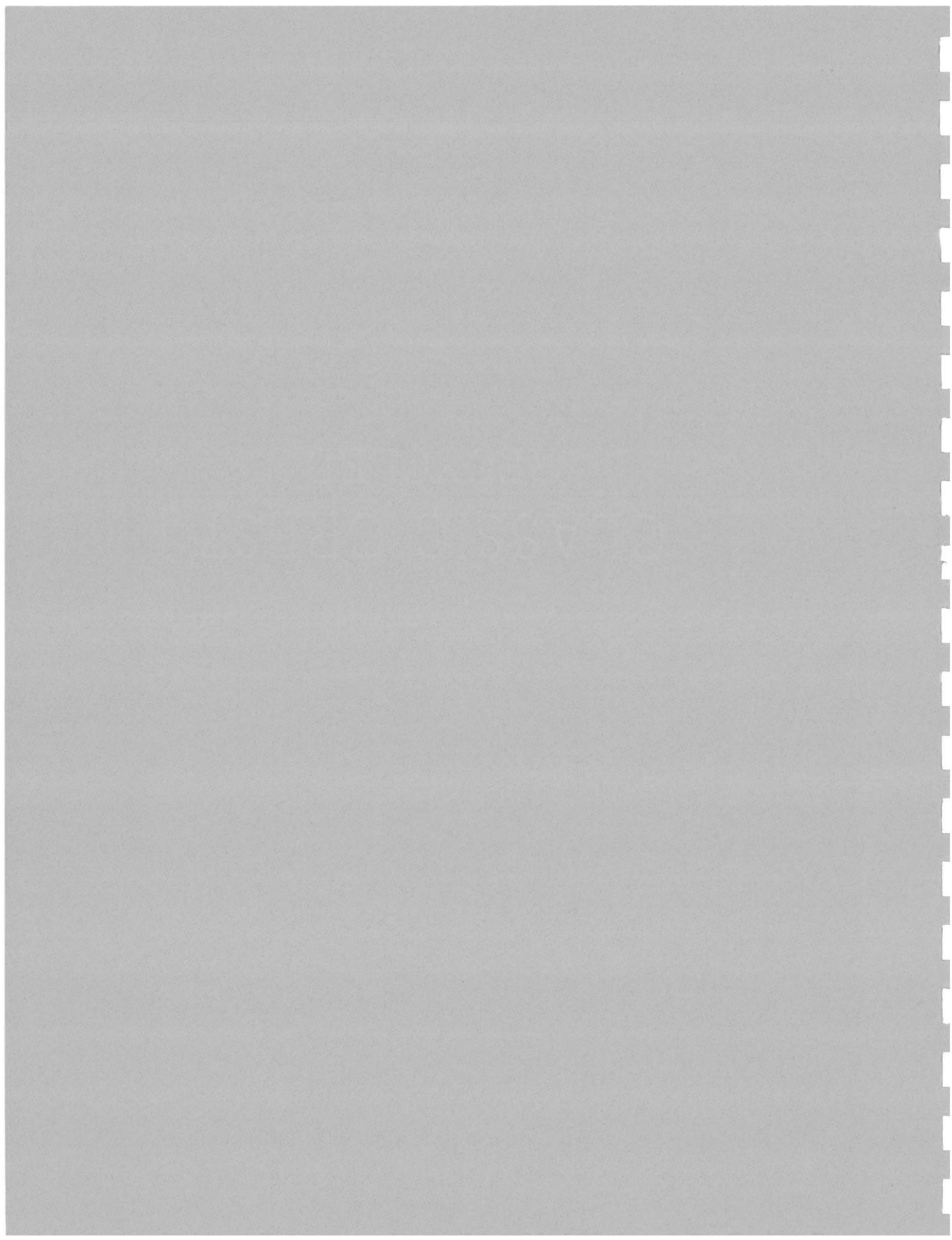


Photograph 6. Upland. DP7 (shovel) documents the upland pair point to DP5. Orientation: southwest.



Photograph 7. Riparian wetland. DP10 (shovel) documents the feature.

Appendix D Plant Species Observed



Plant species observed during the June 1, 2016 botanical survey for the Stony Creek Bridge (No. 11C-0245) Replacement Project, Glenn County, California.

Scientific Name	Common Name	Family
<i>Acmispon brachycarpus</i>	short podded lotus	Fabaceae
<i>Aegilops triuncialis</i>	barbed goat grass	Poaceae
<i>Aesculus californica</i>	California buckeye	Sapindaceae
<i>Alnus rhombifolia</i>	white alder	Betulaceae
<i>Amaranthus</i> sp.	pigweed	Amaranthaceae
<i>Amsinckia lycopsoides</i>	bugloss-flowered fiddleneck	Boraginaceae
<i>Anagallis arvensis</i>	scarlet pimpernel	Myrsinaceae
<i>Anthriscus caucalis</i>	bur-chervil	Apiaceae
<i>Artemisia douglasiana</i>	mugwort	Asteraceae
<i>Arundo donax</i>	giant reed	Poaceae
<i>Avena fatua</i>	wild oat	Poaceae
<i>Baccharis salicifolia</i> ssp. <i>salicifolia</i>	mule fat	Asteraceae
<i>Brickellia</i> sp.	brickellbush	Asteraceae
<i>Brodiaea elegans</i>	harvest brodiaea	Liliaceae
<i>Bromus diandrus</i>	riggut grass	Poaceae
<i>Bromus hordeaceus</i>	soft chess	Poaceae
<i>Bromus madritensis</i> ssp. <i>rubens</i>	red brome	Poaceae
<i>Capsella bursa-pastoris</i>	shepherd's purse	Brassicaceae
<i>Carduus pycnocephalus</i>	Italian plumeless thistle	Asteraceae
<i>Carex barbarae</i>	Santa Barbara sedge	Cyperaceae
<i>Centaurea melitensis</i>	toocalote	Asteraceae
<i>Centaurea solstitialis</i>	yellow star-thistle	Asteraceae
<i>Centromadia</i> sp.	tarweed	Asteraceae
<i>Cephalanthus occidentalis</i>	California button willow	Rubiaceae
<i>Cerastium glomeratum</i>	sticky mouse-ear chickweed	Caryophyllaceae
<i>Chamaesyce glyptosperma</i>	ridge-seeded spurge	Euphorbiaceae
<i>Chamaesyce maculata</i>	spotted spurge	Euphorbiaceae
<i>Cirsium occidentale</i> var. <i>venustum</i>	venus thistle	Asteraceae
<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	four-spot	Onagraceae
<i>Clarkia unguiculata</i>	elegant clarkia	Onagraceae
<i>Convolvulus arvensis</i>	bindweed, orchard morning-glory	Convolvulaceae
<i>Croton setigerus</i>	turkey-mullein	Euphorbiaceae
<i>Cynodon dactylon</i>	Bermuda grass	Poaceae
<i>Cynosurus echinatus</i>	bristly dogtail grass	Poaceae
<i>Daucus pusillus</i>	rattlesnake weed	Apiaceae
<i>Dichelostemma capitatum</i>	blue dicks	Liliaceae
<i>Dysphania ambrosioides</i>	Mexican tea	Chenopodiaceae
<i>Elymus</i> sp.	wildrye	Poaceae
<i>Elymus caput-medusae</i>	medusa head	Poaceae

<i>Equisetum arvense</i>	common horsetail	Equisetaceae
<i>Ericameria fasciculata</i>	Eastwood's goldenbush	Asteraceae
<i>Erigeron bonariensis</i>	flax-leaved horseweed	Asteraceae
<i>Eriogonum dasyanthemum</i>	chaparral wild buckwheat	Polygonaceae
<i>Eriogonum nudum</i>	naked buckwheat	Polygonaceae
<i>Erodium botrys</i>	big heron bill	Geraniaceae
<i>Erodium cicutarium</i>	redstem filaree	Geraniaceae
<i>Festuca myuros</i>	rat tail fescue	Poaceae
<i>Festuca perennis</i>	rye grass	Poaceae
<i>Galium aparine</i>	goose grass	Rubiaceae
<i>Geranium dissectum</i>	cut leaved geranium	Geraniaceae
<i>Geranium molle</i>	crane's bill geranium	Geraniaceae
<i>Glycyrrhiza lepidota</i>	wild licorice	Fabaceae
<i>Heliotropium europaeum</i>	European heliotrope	Boraginaceae
<i>Hemizonia</i> sp.	tarweed	Asteraceae
<i>Heterotheca oregona</i> var. <i>compacta</i>	compact Oregon goldenaster	Asteraceae
<i>Hirschfeldia incana</i>	short podded mustard	Brassicaceae
<i>Holocarpha virgata</i> ssp. <i>virgata</i>	narrow tarplant	Asteraceae
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	Poaceae
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	hare barley	Poaceae
<i>Hypochaeris glabra</i>	smooth cat's-ear	Asteraceae
<i>Juglans hindsii</i>	northern California black walnut	Juglandaceae
<i>Juncus bufonius</i> var. <i>bufonius</i>	toad rush	Juncaceae
<i>Koeleria gerardii</i>	annual june grass, bristly koeleria	Poaceae
<i>Lactuca serriola</i>	prickly lettuce	Asteraceae
<i>Lagophylla glandulosa</i>	glandular hareleaf	Asteraceae
<i>Leontodon taraxacoides</i>	lesser hawkbit	Asteraceae
<i>Lessingia</i> sp.	Lessingia	Asteraceae
<i>Logfia gallica</i>	daggerleaf cottonrose	Asteraceae
<i>Lupinus bicolor</i>	miniature lupine	Fabaceae
<i>Lupinus microcarpus</i> var. <i>densiflorus</i>	chick lupine	Fabaceae
<i>Lythrum hyssopifolia</i>	hyssop loosestrife	Lythraceae
<i>Marrubium vulgare</i>	white horehound	Lamiaceae
<i>Matricaria discoidea</i>	pineapple weed	Asteraceae
<i>Medicago minima</i>	burclover	Fabaceae
<i>Medicago polymorpha</i>	California burclover	Fabaceae
<i>Melilotus indicus</i>	sourclover	Fabaceae
<i>Mentzelia laevicaulis</i>	blazing star	Loasaceae
<i>Mimulus guttatus</i>	seep monkey flower	Phrymaceae
<i>Muhlenbergia rigens</i>	deer grass	Poaceae
<i>Persicaria amphibia</i>	water smartweed	Polygonaceae
<i>Petrorhagia dubia</i>	pink grass	Caryophyllaceae
<i>Plantago lanceolata</i>	English plantain	Plantaginaceae

<i>Poa annua</i>	annual blue grass	Poaceae
<i>Poa bulbosa</i>	bulbous blue grass	Poaceae
<i>Polygonum aviculare</i>	knotweed, knotgrass	Polygonaceae
<i>Polypogon maritimus</i>	Mediterranean beard grass	Poaceae
<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood	Salicaceae
<i>Quercus douglasii</i>	blue oak	Fagaceae
<i>Quercus lobata</i>	valley oak, roble	Fagaceae
<i>Rumex crispus</i>	curly dock	Polygonaceae
<i>Salix exigua</i>	sandbar willow	Salicaceae
<i>Salix gooddingii</i>	Gooding's black willow	Salicaceae
<i>Sambucus nigra</i> ssp. <i>caerulea</i>	blue elderberry	Adoxaceae
<i>Sanicula bipinnata</i>	poison sanicle	Apiaceae
<i>Silene gallica</i>	small-flower catchfly, windmill pink	Caryophyllaceae
<i>Silybum marianum</i>	milk thistle	Asteraceae
<i>Sisymbrium officinale</i>	hedge mustard	Brassicaceae
<i>Sonchus asper</i> ssp. <i>asper</i>	prickly sow thistle	Asteraceae
<i>Stipa pulchra</i>	purple needle grass	Poaceae
<i>Tamarix parviflora</i>	smallflower tamarisk	Tamaricaceae
<i>Torilis arvensis</i>	tall sock-destroyer	Apiaceae
<i>Toxicodendron diversilobum</i>	western poison oak	Anacardiaceae
<i>Tribulus terrestris</i>	puncture vine	Zygophyllaceae
<i>Trichostema</i>	bluecurls	Lamiaceae
<i>Trifolium glomeratum</i>	clustered clover	Fabaceae
<i>Trifolium hirtum</i>	rose clover	Fabaceae
<i>Urtica urens</i>	dwarf nettle	Urticaceae
<i>Velezia rigida</i>	velezia	Caryophyllaceae
<i>Verbascum blattaria</i>	moth mullein	Scrophulariaceae
<i>Verbascum thapsus</i>	woolly mullein	Scrophulariaceae
<i>Veronica</i> sp.	speedwell	Scrophulariaceae
<i>Vicia villosa</i> ssp. <i>varia</i>	hairy vetch	Fabaceae
<i>Vitis californica</i>	California wild grape	Vitaceae
<i>Xanthium strumarium</i>	cocklebur	Asteraceae

Appendix C
Draft Aquatic Resources Delineation

Stony Creek Bridge (11C-0245) Replacement Project

Delineation of Waters of the United States



Prepared for:
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Prepared by:
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NSR Project No. 51243

January 2017

Stony Creek Bridge (11C-0245) Replacement Project Delineation of Waters of the United States

Glenn County

STATE OF CALIFORNIA
Department of Transportation

January 2017

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Sarah Tona, Biologist
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Chapter 1. Executive Summary

On behalf of Willdan Engineering and Glenn County, North State Resources, Inc. (NSR) conducted a delineation of waters of the United States occurring in the Stony Creek Bridge (11C-0245) Replacement Project (study area) in Glenn County, California. The delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008). The field delineation was conducted on November 9, 2016. A total of 2.194 acres of potential waters of the United States were mapped within the study area and include riparian wetland (0.254 acre), ephemeral stream (0.001 acre, 48 linear feet), intermittent stream (0.016 acre, linear 116 feet), and perennial stream (1.923 acre, linear 897 feet).

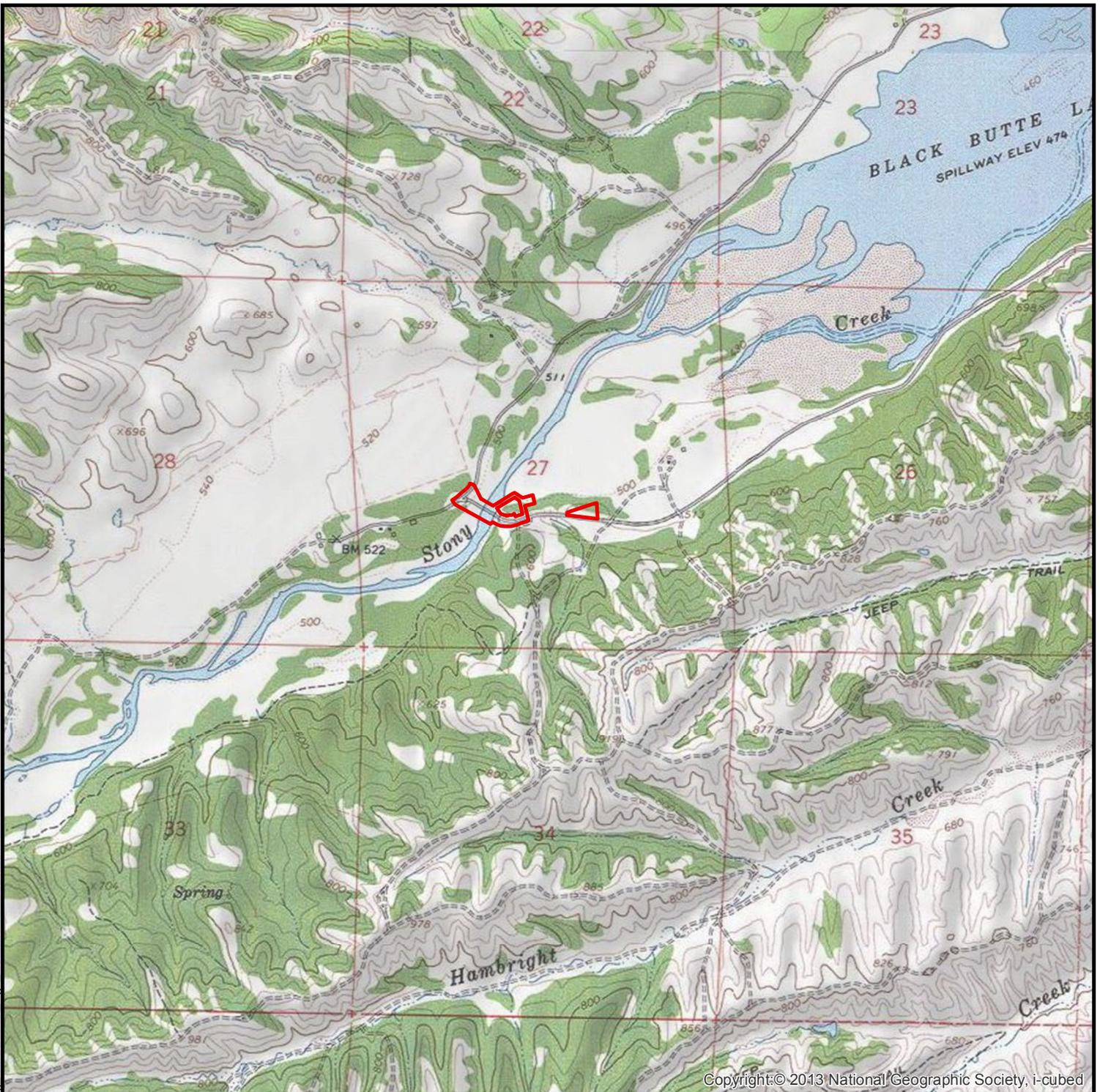
The purpose of this delineation of waters of the United States is to document and describe waters of the United States to support a Preliminary Jurisdictional Determination from the United States Army Corps of Engineers (Corps). This delineation is subject to initial review and approval by Caltrans District 3 Office of Local Assistance and subsequent verification by the Corps, Sacramento District. NSR advises all parties to treat the information contained herein as preliminary until the Corps provides written verification of the boundaries of its jurisdiction.

If the Corps wishes to conduct a field verification, Willdan Engineering requests that the Corps contact Mr. Gary Gordon by telephone at (530) 244-8500 or by email at ggordon@willdan.com to schedule a date and time to access the study area.

Chapter 2. Project Location

The study area is located on County Road 200A at the Stony Creek crossing and encompasses approximately 8.21 acres. It is located approximately 13 miles west of Orland, Glenn County, California; approximately 1.5 miles southwest of Black Butte Lake. It is shown on the *Julian Rocks, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle in Township 22N, Range 5W, Section 27. The approximate center of the study area is located at UTM 10 S 550254 E, 4398138 N (NAD83 datum). The study area location is shown on Figure 1.

To access the study area from Interstate 5, exit at the Highway 32 exit in Orland. Travel 5 miles west on Newville Road (County Road 200). Turn left on County Road 206. Travel southwest approximately 3 miles on County Road 206 to County Road 200A and turn left. Travel southwest approximately 4.5 miles to the Stony Creek bridge.

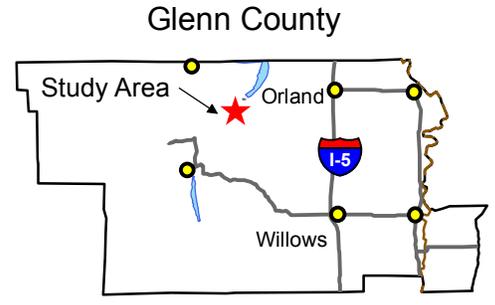
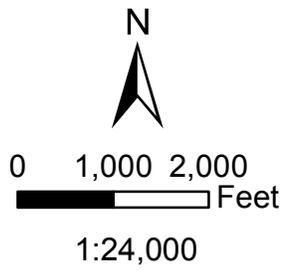


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 Study Area (8.21 acres)

Public Land Survey:
Section 27
T22N, R5W (MDBM)

7.5' USGS Quad:
Julian Rocks



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Chapter 3. Environmental Setting

3.1 Current/Recent Land Use

The study area is located in the Stony Creek floodplain and adjacent upland terraces. Black Butte Lake, located northeast of the bridge, is used for boating, fishing, and camping. The land surrounding the study area is used for cattle and horse grazing.

3.2 Site Topography and Elevation

The study area is generally level and the elevation is approximately 500 feet.

3.3 Climate

Historical data used to describe the climate is collected at Orland, California approximately 13 miles east of the study area (Western Regional Climate Center 2016).

Type: The climate of the area is characterized as a Mediterranean climate with moderate winters and hot, dry summers.

Precipitation: Precipitation in the study area primarily occurs as rain, with occasional snowfall. The average annual rainfall is approximately 20 inches and the average annual snowfall is 1 inch.

Air Temperature: Air temperatures in the study area range between an average January high of 54 degrees Fahrenheit (°F) and an average July high of 97°F. The annual average high is approximately 75°F.

Growing Season: The growing season (i.e., 50% probability of air temperature 28 °F or higher) in the study area is approximately 340 days and occurs between February and December.

3.4 Hydrology/Hydrologic Features

The hydrologic features in the study area include Stony Creek and small intermittent and ephemeral tributary streams that flow into Stony Creek. The study area is situated on Stony Creek between Stony Gorge Reservoir and Black Butte Lake. Stony Creek receives regulated flows from the Stony Gorge Reservoir. Stony Creek is a meandering stream with a wide, nearly level floodplain that flows from southwest to the northeast. Tributaries flow into the stream from the northwest and southeast slopes. Stony Creek flows to the Sacramento River, a traditional navigable water, approximately 31.5 river miles (23.6 aerial miles) east of the study area.

3.5 Soil Map Units

Five soil map units occur in the study area. They are described in the *Soil Survey of the Glenn County Area, California* (Natural Resources Conservation Service 2016). Soil map units occurring within the study area are summarized in Table 1 and shown in Figure 2.

Table 1. Soil Map Units the Study Area

Map Unit Name Taxonomy	Map Unit Reference Code	Drainage Class	Depth to Restrictive Layer	Hydric Soils
Arbuckle gravelly loam, 0 to 2 percent slopes Typic haploxeralfs	AoA	Well-drained	More than 80 inches	No, hydric inclusions (depressions)
Pleasanton gravelly loam, 2 to 10 percent slopes Mollic haploxeralfs	PmB	Well-drained	More than 80 inches	Not hydric
Riverwash	Rh	Excessively drained	N/A	Yes, drainageways
Sehorn-Millsholm association, 30 to 65 percent slopes Entic Chromoxerents	SdE	Well-drained	20-40 inches to lithic bedrock	Not hydric
Water	W	N/A	N/A	Hydric

3.6 Vegetation Communities

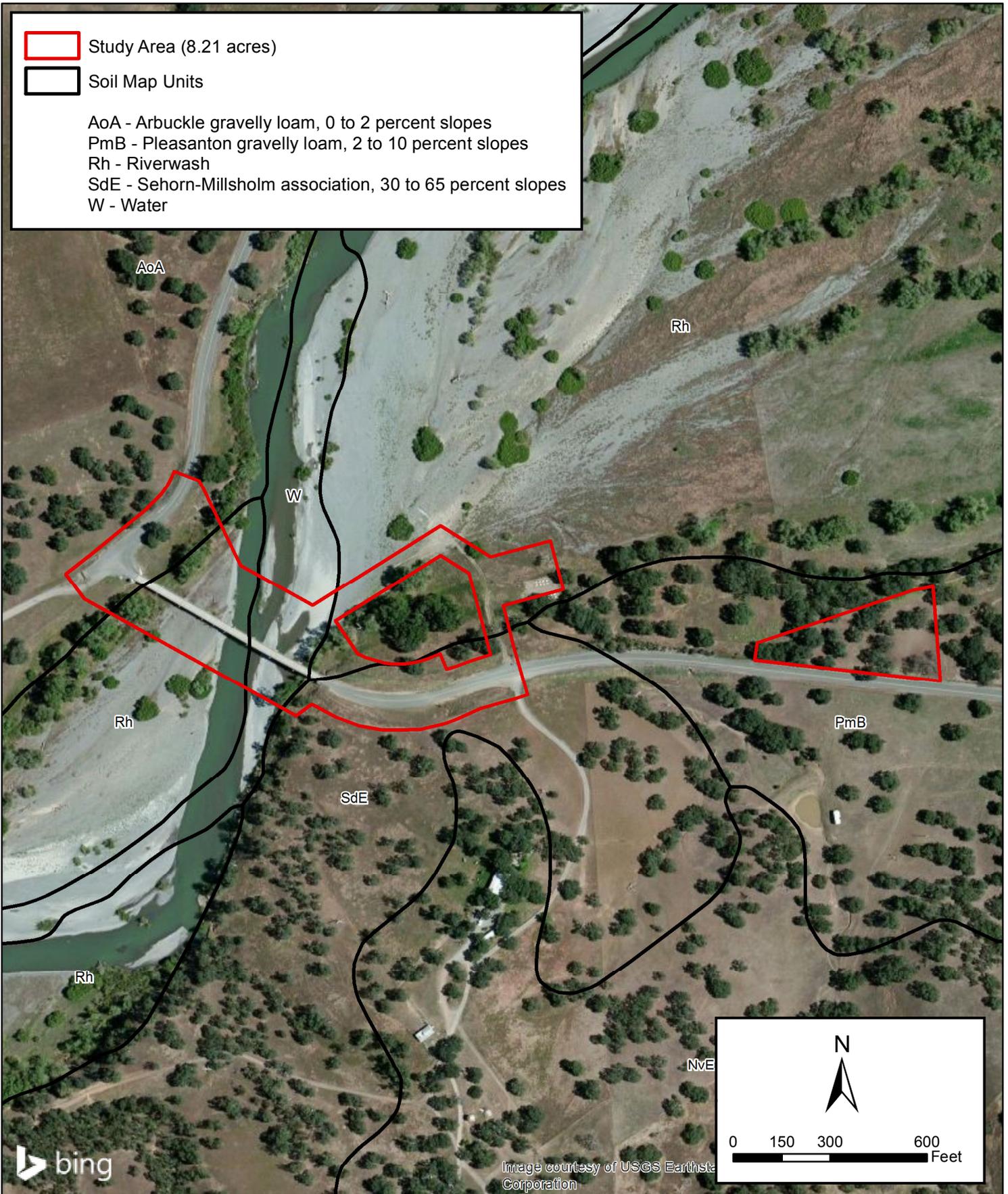
Four vegetation communities occur in the study area: annual grassland, blue oak woodland, riverine, and valley foothill riparian, based on descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988).

Annual Grassland

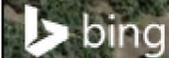
Annual grassland is located in the northeast portion of the study area and characterized as a dense herbaceous layer. Dominant plant species include harewall barley (*Hordeum murinum* ssp. *leporinum*), ripgut brome (*Bromus diandrus*), rattail fescue (*Festuca myuros*), hedge-parsley (*Torilis arvensis*), bur-clover (*Medicago polymorpha*), winter vetch (*Vicia villosa*), and rose clover (*Trifolium hirtum*).

Blue Oak Woodland

Blue oak woodland occurs on the slopes above the Stony Creek floodplain and at the eastern portion of the study area. It is characterized by an open canopy of blue oaks (*Quercus douglasii*), with a dense herbaceous understory. Dominant plants in the understory include ripgut brome, rattail fescue, hedge-parsley, winter vetch, and California melic (*Melica californica*).



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Riverine

The riverine feature within the study area consists of Stony Creek. In the study area and vicinity Stony Creek is characterized as a perennial, low-gradient stream with an extensive floodplain due to the stream's low gradient and the presence of alluvial deposits. Dominant substrates include cobble, gravel, and sand.

Valley Foothill Riparian

Valley foothill riparian occurs as moderately wide bands of vegetation along the banks of Stony Creek. This habitat is characterized by a moderate to dense overstory of riparian species with a dense herbaceous layer dominated by upland species. Dominant trees and shrubs include Fremont cottonwood (*Populus fremontii*), mulefat (*Baccharis salicifolia*), arundo (*Arundo donax*), and narrowleaf willow (*Salix exigua*). Herbs and forbs occurring in the understory include ripgut brome, rattail fescue, annual ragweed (*Ambrosia artemisiifolia*), yellow sweetclover (*Melilotus indicus*), and deergrass (*Muhlenbergia rigens*).

Chapter 4. Methods

NSR conducted an on-site routine delineation of wetlands and “other waters” of the United States based on field observations of positive indicators for wetland vegetation, hydrology, and soils; and indicators of an ordinary high water mark (OHWM). This methodology is consistent with the approach outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008). Plant taxonomy follows *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). Wetland indicator status for plant species was confirmed using *The National Wetland Plant List* (Lichvar et al. 2016), and the “50/20 Rule” or “Prevalence Index” was applied to determine plant dominance (U.S. Army Corps of Engineers 2008). Presence of primary and secondary wetland hydrology indicators were documented for each wetland feature. The OHWM was determined using the approach outlined in *A Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States* (U.S. Army Corps of Engineers 2008).

Soil pits were dug in each representative wetland feature to a depth sufficient to document the presence or confirm the absence of hydric soil or hydrology indicators. Soils were examined to assess field indicators of hydric soils. Positive indicators of hydric soils were observed in the field in accordance with the criteria outlined in *Field Indicators of Hydric Soils in the United States* (Vasilas et al. 2010). Soil colors were determined using a Munsell® soil color chart. The hydric status of each soil map unit occurring in the study area was reviewed using the *Web Soil Survey* (Natural Resources Conservation Service 2016). At least one set of data points was selected to best represent the wetland feature type and the adjacent uplands. Data points were also placed in suspect areas to confirm wetland or upland status.

Other waters are defined as traditional navigable waters and their tributaries (33 CFR 329). Delineation of other waters was based on presence of an OHWM as defined in Corps regulations (33 CFR 328.3 and 33 CFR 328.4) and whether the feature qualified as tributary to waters of the United

States. Physical characteristics of an OHWM include, but are not limited to, a natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, presence of litter and debris, leaf litter disturbed or washed away, scour, deposition, presence of bed and bank, and water staining. At least one data point was selected to best represent the OHWM of other waters for each other waters type.

Prior to conducting the on-site routine delineation, the U.S. Fish and Wildlife Service's, National Wetlands Inventory (NWI) Wetlands Mapper (U.S. Fish and Wildlife Service 2016) was reviewed to determine if any wetlands or deepwater habitats as described by Cowardin et al. (1979) have been previously mapped in the study area and general vicinity. Features delineated during the on-site routine delineation were classified using Cowardin (1979) based on existing NWI mapping, or assigned a Cowardin type if not previously mapped. The Corps Aquatic Resources Excel spreadsheet, which includes specific information about the wetland and other waters features delineated, including their Cowardin type, was completed and submitted as a separate deliverable with this report.

Eleven data points were used to characterize and document each wetland or other water feature type, and the adjacent upland. Field observations were conducted on November 9, 2016.

The boundaries of delineated features and the associated data points were mapped using a Trimble Mapping Grade Global Positioning System (GPS) capable of sub-foot accuracy. Where the use of the GPS was not practicable or satellites were not available, the features were delineated by hand onto ortho-rectified color aerial photographs. The GPS and hand-drawn location data were overlaid onto an aerial photograph of the study area to develop the delineation map.

Chapter 5. Results and Discussion

Potential waters of the United States occur in the study area as wetlands and other waters. Wetlands include riparian wetland, and other waters include ephemeral stream, intermittent stream, and perennial stream.

The boundaries and area of potential waters of the United States occurring in the study area are illustrated in Figure 3. A total of 2.194 acres of waters of the United States was delineated. A summary of the delineated features is presented in Table 3. Routine wetland determination data forms are presented in Appendix A. Ordinary high water mark data forms are presented in Appendix B. Representative photographs of the delineated features and data point locations are presented in Appendix C.

Table 2. Waters of the United States Summary

Waters of the United States	Total Acreage	Total Linear Feet	Cowardin Type ¹
Wetlands			
Riparian Wetland	0.254	N/A	PF01
Other Waters			
Ephemeral Stream	0.001	48	R4SB4
Intermittent Stream	0.016	116	R4SB3
Perennial Stream	1.923	897	R3UB1
Total Waters of the United States	2.194	1061	

5.1 Characterization of Delineated Features

Riparian Wetland

Riparian wetlands (RW) occur immediately adjacent to and within the OHWM of Stony Creek. These features are dominated by mulefat, arundo, and narrowleaf willow. White alder (*Alnus rhombifolia*) also occurs in the riparian wetlands located on the east side of the stream. Facultative-upland and upland herbaceous species are common in the understory. Wetland hydrology is provided by frequent flooding and long-duration inundation indicated by water marks, sediment deposits, and drift deposits. The soils are problematic because these features occur on sand/cobble bars within and adjacent to Stony Creek. The coarse substrates allow oxygenated water to permeate, which inhibits development of hydric soil indicators.

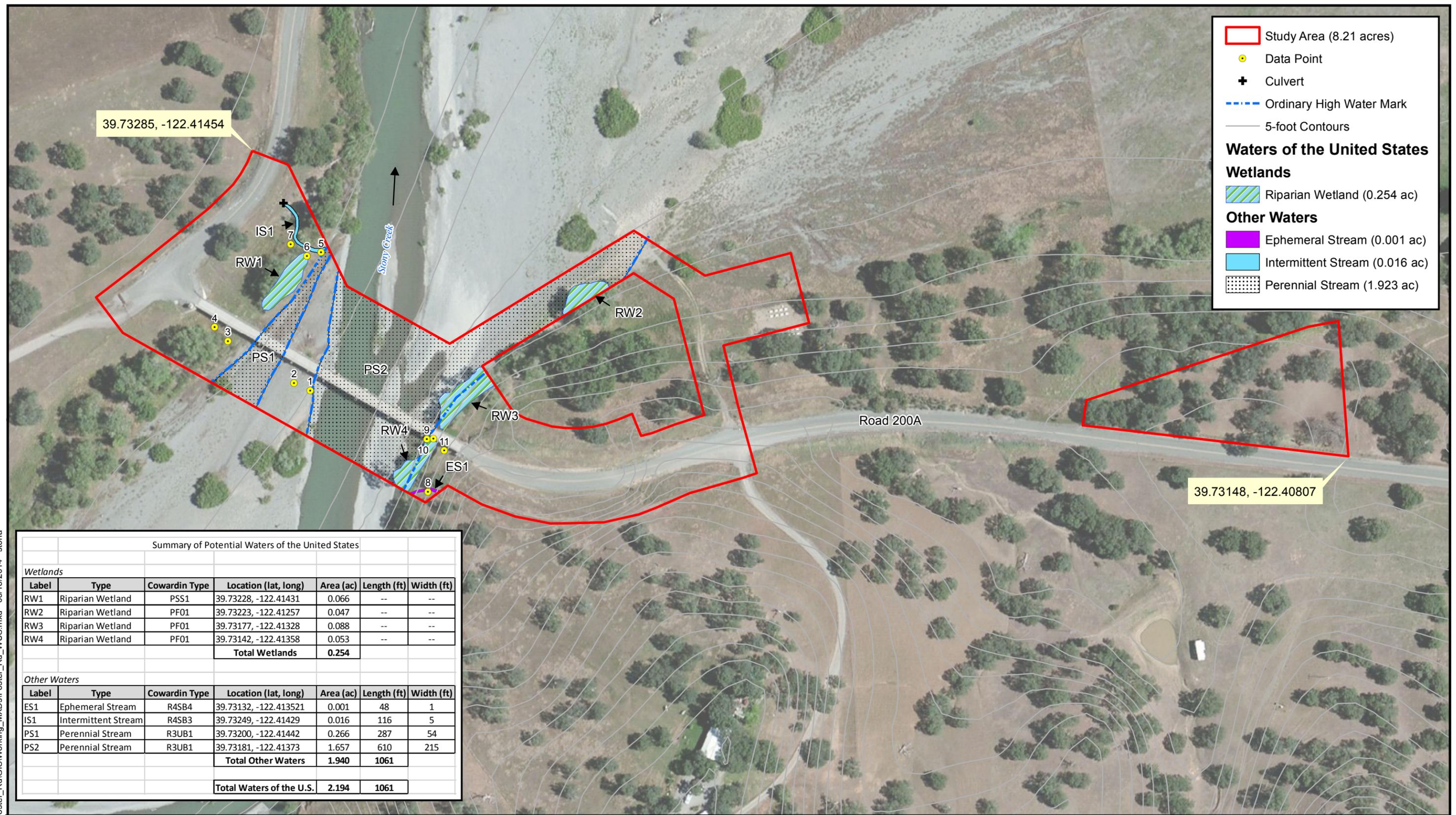
Ephemeral Stream

An ephemeral stream (ES1) occurs in the southeastern portion of the study area. The ephemeral stream exhibits poorly defined, but visible, indicators of scour and deposition, minor drift lines, and sediment deposits. The poorly defined hydrology indicators, close proximity to the headwaters, and the small size of the ephemeral stream indicate short duration flow lacking a groundwater component. The stream's hydrology is provided by sheet flow and a swale feature located outside of the study area that scours as the gradient increases near Stony Creek.

Intermittent Stream

One intermittent stream occurs in the northwest portion of the study area. The stream flows seasonally, but also exhibits a groundwater component in addition to the collection of precipitation and sheet flow from adjacent slopes, which extends the seasonal duration of flow. The intermittent stream is characterized as bed and bank features that exhibit evidence of scour and deposition. Hydrology for the intermittent stream is provided by the swale west of the study area and sheet flow from the road.

¹ Cowardin et al. 1979



Study Area (8.21 acres)

- Data Point
- Culvert
- Ordinary High Water Mark
- 5-foot Contours

Waters of the United States Wetlands

- Riparian Wetland (0.254 ac)

Other Waters

- Ephemeral Stream (0.001 ac)
- Intermittent Stream (0.016 ac)
- Perennial Stream (1.923 ac)

Summary of Potential Waters of the United States						
<i>Wetlands</i>						
Label	Type	Cowardin Type	Location (lat, long)	Area (ac)	Length (ft)	Width (ft)
RW1	Riparian Wetland	PSS1	39.73228, -122.41431	0.066	--	--
RW2	Riparian Wetland	PF01	39.73223, -122.41257	0.047	--	--
RW3	Riparian Wetland	PF01	39.73177, -122.41328	0.088	--	--
RW4	Riparian Wetland	PF01	39.73142, -122.41358	0.053	--	--
Total Wetlands				0.254		
<i>Other Waters</i>						
Label	Type	Cowardin Type	Location (lat, long)	Area (ac)	Length (ft)	Width (ft)
ES1	Ephemeral Stream	R4SB4	39.73132, -122.413521	0.001	48	1
IS1	Intermittent Stream	R4SB3	39.73249, -122.41429	0.016	116	5
PS1	Perennial Stream	R3UB1	39.73200, -122.41442	0.266	287	54
PS2	Perennial Stream	R3UB1	39.73181, -122.41373	1.657	610	215
Total Other Waters				1.940	1061	
Total Waters of the U.S.				2.194	1061	

Prepared by:

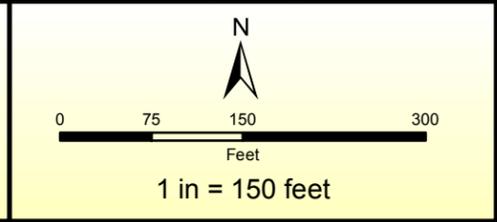
 5000 Bechelli Lane Suite 203
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Prepared for:
 Willdan Engineering
 2400 Washington Ave, Suite 101
 Redding, CA 96001 (530) 244-8500

This delineation of waters of the United States is subject to verification by the U.S. Army Corps of Engineers (Corps). NSR advises all parties that the delineation is preliminary until the Corps provides a written verification.

Delineator: Sarah Tona
 Delineation Date: 11/9/2016
 Aerial Photography Source: NAIP 2014

Coordinate System: NAD 1983 UTM Zone 10N
 Projection: Transverse Mercator
 Datum: North American 1983



Stony Creek Bridge (11C-0245) Replacement Project

Figure 3
Potential Waters of the United States
 November 9, 2016

G:\Projects\13.17575.003_Foster_Rd\GIS\Working_MXD\Foster_Rd_WUS.mxd 06/18/2014 stona

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Perennial Stream

Stony Creek is a perennial stream that bisects the study area (PS1 and PS2). This stream is characterized as a perennial bed and bank feature. Within the study area, the stream has a low flow channel and a high flow channel separated by an upland bank. Cobble, gravel, and sand dominate the stream substrate. Riparian wetlands occur within the OHWM and adjacent to Stony Creek. Indicators of wetland hydrology observed include inundation, watermarks, drift lines, sediment deposits, and drainage patterns.

Chapter 6. Conclusion

Waters of the United States delineated within the study area occupy a total of 2.194 acres and include riparian wetland, ephemeral stream, intermittent stream, and perennial stream.

The determinations concerning waters of the United States, including wetlands, were based on current conditions, (i.e., normal circumstances) and made in accordance with relevant U.S. Environmental Protection Agency and Corps guidance. The determinations are subject to verification by the Corps. NSR advises all interested parties to treat the information contained herein as preliminary pending written verification of jurisdictional boundaries by the Corps.

Chapter 7. References

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APPENDIX A

Routine Wetland Determination Data Forms

Wetland Determination Data Form—Arid West Region

Data Point 1
Feature Type PS

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn County / Willdan Engineering State: CA
 Investigator(s): Sarah Tona Section, Township, Range: S27, T22N, R5W
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope %: <1
 Subregion (LRR): C Lat: 4398151.89 Long: 550179.26 Datum: NAD83
 Soil Map Unit Name: Riverwash NWI Classification: R3uSA

Are climatic/hydrologic conditions on the site typical for this time of year? Y / N (If no, explain in Remarks.)
 Are vegetation Y / N, soil Y / N, or hydrology Y / N significantly disturbed? Are normal circumstances present? Y / N
 Are vegetation Y / N, soil Y / N, or hydrology Y / N naturally problematic? (If needed, explain in Remarks.)
Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
 Hydrophytic vegetation? Y / N Hydric soil? Y / N Wetland hydrology? Y / N Is sampled area a wetland? Y / N Other waters? Y / N

Evaluation of features designated "Other Waters of the United States"
 Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width 320'
 Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate Sand, Gravel, Cobble,
 Natural Drainage Artificial Drainage Navigable Water

Remarks DP documents the OTHWM of Stony Creek, a perennial stream.

Vegetation (Use Scientific Names)				Dominance Test Worksheet			
Tree Stratum (Plot Size: _____)				Absolute % Cover	Dominant Species?	Indicator Status	Number of dominant species that are OBL, FACW, or FAC: _____ (A)
1.	_____	_____	_____	_____	_____	_____	Total number of dominant species across all strata: _____ (B)
2.	_____	_____	_____	_____	_____	Percent of dominant species that are OBL, FACW, or FAC: _____ (AB)	
3.	_____	_____	_____	_____	_____		
4.	_____	_____	_____	_____	_____		
50%=_____ 20%=_____ Total Cover: _____							
Sapling/Shrub Stratum (Plot: _____)				% Cover	Species?	Status	Prevalence Index Worksheet Total % Cover of: _____ Multiply by _____
1.	_____	_____	_____	_____	_____	OBL Species _____ x 1 = _____	
2.	_____	_____	_____	_____	_____	FACW Species _____ x 2 = _____	
3.	_____	_____	_____	_____	_____	FAC Species _____ x 3 = _____	
4.	_____	_____	_____	_____	_____	FACU Species _____ x 4 = _____	
50%=_____ 20%=_____ Total Cover: _____				UPL Species _____ x 5 = _____			
Herb Stratum (Plot Size: _____)				% Cover	Species?	Status	Column Totals _____ (A) _____ (B)
1.	_____	_____	_____	_____	_____	_____	Prevalence Index = B/A = _____
2.	_____	_____	_____	_____	_____	_____	
3.	_____	_____	_____	_____	_____	_____	
4.	_____	_____	_____	_____	_____	_____	
5.	_____	_____	_____	_____	_____	_____	Hydrophytic Vegetation Indicators _____ Dominance Test is >50% _____ Prevalence Index is ≤ 3.0' _____ 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.
6.	_____	_____	_____	_____	_____	_____	
7.	_____	_____	_____	_____	_____	_____	
8.	_____	_____	_____	_____	_____	_____	
50%=_____ 20%=_____ Total Cover: _____							
Woody/Vine Stratum (Plot: _____)				% Cover	Species?	Status	Hydrophytic Vegetation? Y/N
1.	_____	_____	_____	_____	_____	_____	
2.	_____	_____	_____	_____	_____	_____	
50%=_____ 20%=_____ Total Cover: _____							
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____							

Remarks No vegetation, the feature has a scoured channel.

Soils

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

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)		Indicators for Problematic Hydric Soils³
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Materials (TF21)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Vegetated Sand/Gravel Bars
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? ~~Y/N~~

Remarks No pit dug, feature has a scoured channel.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water Marks (B1) (Riverine)
<input checked="" type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Biotic Crust (B12)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations

Surface Water Present? Yes No Depth (Inches) 1-3' Wetland Hydrology? (Y) / N
 Water Table Present? Yes No Depth (inches) Surface
 Saturation Present? Yes No Depth (inches) Surface (includes capillary fringe)

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

Remarks Water marks, sediment deposits, and drift deposits document the OTHWM.

Data Point 2
Feature Type Upland

Wetland Determination Data Form-Arid West Region

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn County/Willdan Engineering State: CA
 Investigator(s): Sarah Tona Section, Township, Range: S27, T22N, R3W
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope %: <1
 Subregion (LRR): C Lat: 4398155 Long: 550190 Datum: NAD83
 Soil Map Unit Name: Riverwash NWI Classification: _____

Are climatic/hydrologic conditions on the site typical for this time of year? Y N (If no, explain in Remarks.)
 Are vegetation Y N soil Y N or hydrology Y N significantly disturbed? Are normal circumstances present? Y N
 Are vegetation Y N soil Y N or hydrology Y N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? Y N Hydric soil? Y N Wetland hydrology? Y N Is sampled area a wetland? Y N Other waters? Y N

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank _____ Scour _____ Ordinary High Water Mark Mapped _____ Stream Width _____
 Feature Designation: Perennial _____ Intermittent _____ Ephemeral _____ Blue-line on USGS Quad _____ Substrate _____
 Natural Drainage _____ Artificial Drainage _____ Navigable Water _____

Remarks DP

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Sapling/Shrub Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Herb Stratum (Plot Size: <u>10x10'</u>)	% Cover	Species?	Status
1. <u>Heterotheca oregona</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
2. <u>Bromus tectorum</u>	<u>2</u>	<u>Y</u>	<u>UPL</u>
3. <u>Hypochaeris radicata</u>	<u>1</u>	<u>N</u>	<u>FACU</u>
4. <u>Festuca myuros</u>	<u>1</u>	<u>N</u>	<u>FACU</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
50%= <u>4.5</u> 20%= <u>1.8</u> Total Cover: <u>9</u>			
Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50%= _____ 20%= _____ 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 (AB)

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 ≤ 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y N

Remarks

Soils

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

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

Indicators for Problematic Hydric Soils³

- | | | |
|--|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Materials (TF21) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Vegetated Sand/Gravel Bars |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Y (N)

Remarks *No soil pit dug, the area is a gravel/cobble bar.*

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biologic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (Db) |

Field Observations

Surface Water Present? Yes _____ No Depth (inches) _____ Wetland Hydrology? Y (N)

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

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

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

Remarks *Small drift deposits are indicative of flooding, but are likely from rare high flood events and not frequent.*

Data Point 3
 Feature Type upland

Wetland Determination Data Form-Arid West Region

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn County / Willdan Engineering State: CA
 Investigator(s): Sarah Tona Section, Township, Range S27, T22N, R5W
 Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none) Concave Slope % 51
 Subregion (LRR): C Lat: 4398176.57 Long: 550157.22 Datum: NAD 83
 Soil Map Unit Name: Riverwash NWI Classification: None

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

Are vegetation Y N, soil Y / N, or hydrology Y N significantly disturbed? Are normal circumstances present? Y / N

Are vegetation Y N, soil Y N, or hydrology Y / N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? Y N Hydric soil? Y N Wetland hydrology? Y N Is sampled area a wetland? Y N Other waters? Y N

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width
 Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate
 Natural Drainage Artificial Drainage Navigable Water

Remarks Suspect area adjacent to Stony Creek. Indicators are not sufficient to support the wetland status.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
50%= _____ 20%= _____ Total Cover: _____			
Sapling/Shrub Stratum (Plot: <u>20x14'</u>)	% Cover	Species?	Status
1. <u>Baccharis salicifolia</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2. _____			
3. _____			
4. _____			
50%= <u>—</u> 20%= <u>—</u> Total Cover: <u>20</u>			
Herb Stratum (Plot Size: <u>10'x10'</u>)	% Cover	Species?	Status
1. <u>Bromus diandrus</u>	<u>70</u>	<u>Y</u>	<u>UPL</u>
2. <u>Triofolium dubium</u>	<u>20</u>	<u>N</u>	<u>UPL</u>
3. <u>Anthiscus caucalis</u>	<u>10</u>	<u>N</u>	<u>UPL</u>
4. <u>Muhlenbergia rigens</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
5. _____			
6. _____			
7. _____			
8. _____			
50%= <u>55</u> 20%= <u>22</u> Total Cover: <u>110</u>			
Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____			
2. _____			
50%= _____ 20%= _____ 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: 2 (B)

Percent of dominant species that are OBL, FACW, or FAC: 50 (AB)

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 ≤ 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y N

Remarks

Soils

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
0-20	2.5YR 4/1	100					Sandy loam	

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

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

Indicators for Problematic Hydric Soils³

- | | | |
|--|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Materials (TF21) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Vegetated Sand/Gravel Bars |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

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

Restrictive Layer (if present): Type: none Depth (Inches) _____ Hydric Soil? Y / N

Remarks

No redox features are present.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations

Surface Water Present? Yes _____ No Depth (inches) _____ Wetland Hydrology? Y / N

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

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

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

Remarks

Drift deposits are likely from major precipitation events. Recent drift deposits do not occur, and no other hydrology indicators are present.

Data Point 4
Feature Type Upland

Wetland Determination Data Form-Arid West Region

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn County/Wildan Engineering State: CA
 Investigator(s): Sarah Tonga Section, Township, Range S27, T22N, R5W
 Landform (hillslope, terrace, etc.) drainage Local relief (concave, convex, none) CONVEX Slope % 3
 Subregion (LRR): C Lat: 4398183.40 Long: 550150.48 Datum: NAD83
 Soil Map Unit Name: Riverwash NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? N (If no, explain in Remarks.)
 Are vegetation Y/N, soil Y/N, or hydrology Y/N significantly disturbed? Are normal circumstances present? N
 Are vegetation Y/N, soil Y/N, or hydrology Y/N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? N Hydric soil? Wetland hydrology? Is sampled area a wetland? N Other waters? N

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width
 Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate
 Natural Drainage Artificial Drainage Navigable Water

Remarks Suspect area with riparian shrubs but upland grasses.
The area may flood periodically, but not frequently.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
50%= _____ 20%= _____ Total Cover: _____			

Sapling/Shrub Stratum (Plot: _____)	% Cover	Species?	Status
1. <u>Arundo donax</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>
2. <u>Baccharis salicifolia</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3. _____			
4. _____			
50%= <u>25</u> 20%= <u>10</u> Total Cover: <u>50</u>			

Herb Stratum (Plot Size: _____)	% Cover	Species?	Status
1. <u>Bromus diandrus</u>	<u>70</u>	<u>Y</u>	<u>UPL</u>
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
50%= <u>35</u> 20%= <u>14</u> Total Cover: <u>70</u>			

Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____			
2. _____			
50%= _____ 20%= _____ Total Cover: _____			

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

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 2 (A)
 Total number of dominant species across all strata: 3 (B)
 Percent of dominant species that are OBL, FACW, or FAC: 66.6 (AB)

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 < 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? N

Remarks

Soils

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

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-26	2.5 YR 4/1	100	—	—	—	—	Sandy loam	

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

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

Indicators for Problematic Hydric Soils³

- | | | |
|--|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Materials (TF21) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Vegetated Sand/Gravel Bars |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

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

Restrictive Layer (if present): Type: NONE Depth (Inches) _____ Hydric Soil? Y (N)

Remarks

No redox features.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (Db) |

Field Observations

Surface Water Present? Yes _____ No X Depth (inches) _____ Wetland Hydrology? Y (N)

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

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

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

Remarks

Drift deposits are above the OTHWM and likely historic from a major rain event.

Data Point 5
Feature Type I.S.

Wetland Determination Data Form-Arid West Region

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn County / Willdan Engineering State: CA
 Investigator(s): Sarah Tona Section, Township, Range S27, T22N, R5W
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none) Concave Slope % 2
 Subregion (LRR): C Lat: 4398221.91 Long: 550203.97 Datum: NAD83
 Soil Map Unit Name: Riverwash NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? **Y** **N** (If no, explain in Remarks.)

Are vegetation **Y** **N** soil **Y** **N** or hydrology **Y** **N** significantly disturbed? Are normal circumstances present? **Y** **N**

Are vegetation **Y** **N** soil **Y** **N** or hydrology **Y** **N** naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? **Y** **N** Hydric soil? **Y** **N** Wetland hydrology **Y** **N** Is sampled area a wetland? **Y** **N** Other waters? **Y** **N**

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width 3-4'
 Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate _____
 Natural Drainage Artificial Drainage Navigable Water

Remarks The stream is sourced by a culvert and is influenced by road run-off.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Sapling/Shrub Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Herb Stratum (Plot Size: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____			

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: _____ (A)
 Total number of dominant species across all strata: _____ (B)
 Percent of dominant species that are OBL, FACW, or FAC: _____ (AB)

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 ≤ 3.0¹
 _____ Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 _____ Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? **Y** **N**

Remarks Primarily scoured channel. Scattered herb sprouts are present in the channel, including *Bomus diandrus*, *Brassica* sp., and *Ambrosia* sp.

Soils

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

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

Indicators for Problematic Hydric Soils³

- | | | |
|--|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Materials (TF21) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Vegetated Sand/Gravel Bars |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

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

Restrictive Layer (if present): Type: none Depth (Inches) _____ Hydric Soil? Y/N

Remarks

No pit-scoured channel.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

Secondary Indicators (2 or more required)

- | | | |
|--|---|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input checked="" type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (Db) |

Field Observations

Surface Water Present? Yes _____ No X Depth (inches) _____ Wetland Hydrology? Y / N
 Water Table Present? Yes _____ No X Depth (inches) _____
 Saturation Present? Yes _____ No X Depth (inches) _____ (includes capillary fringe)

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

Remarks

Data Point 6
 Feature Type RW

Wetland Determination Data Form-Arid West Region

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn County / Willdan Engineering State: CA
 Investigator(s): Sarah Tona Section, Township, Range S27, T22N, R5W
 Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none) Concave Slope % < 1
 Subregion (LRR): C Lat: 4398219.94 Long: 550196.77 Datum: NAD83
 Soil Map Unit Name: River wash NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Y N (If no, explain in Remarks.)
 Are vegetation Y N, soil Y N, or hydrology Y N significantly disturbed? Are normal circumstances present? Y N
 Are vegetation Y N, soil Y N, or hydrology Y N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
 Hydrophytic vegetation? Y N Hydric soil? Y N Wetland hydrology? Y N Is sampled area a wetland? Y N Other waters? Y N

Evaluation of features designated "Other Waters of the United States"
 Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width
 Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate
 Natural Drainage Artificial Drainage Navigable Water

Remarks DP documents a riparian wetland adjacent to stony creek.

Vegetation (Use Scientific Names)		Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot Size: <u>20x20'</u>)				
1.	<u>Populus fremontii</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2.				
3.				
4.				
50%= <u> </u>	20%= <u> </u>	Total Cover: <u>30</u>		
Sapling/Shrub Stratum (Plot: <u>20x20'</u>)				
1.	<u>Baccharis salicifolia</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>
2.	<u>Salix exigua</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>
3.				
4.				
50%= <u>30</u>	20%= <u>12</u>	Total Cover: <u>60</u>		
Herb Stratum (Plot Size: <u>10x10'</u>)				
1.	<u>Taraxacum officinale</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
2.	<u>Bromus diandrus</u>	<u>70</u>	<u>Y</u>	<u>UPL</u>
3.	<u>Ambrosia artemisiifolia</u>	<u>5</u>	<u>N</u>	<u>UPL</u>
4.				
5.				
6.				
7.				
8.				
50%= <u>37.5</u>	20%= <u>15</u>	Total Cover: <u>75</u>		
Woody/Vine Stratum (Plot: <u> </u>)				
1.				
2.				
50%= <u> </u>	20%= <u> </u>	Total Cover: <u> </u>		
% Bare Ground in Herb Stratum <u> </u> % Cover of Biotic Crust <u> </u>				

Dominance Test Worksheet
 Number of dominant species that are OBL, FACW, or FAC: 5 (A)
 Total number of dominant species across all strata: 3 (B)
 Percent of dominant species that are OBL, FACW, or FAC: 60% (AB)

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 ≤ 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y N

Remarks

Soils

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
0-22	2.5YR 4/1	100	—	—	—	—	Sandy loam	

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

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

Indicators for Problematic Hydric Soils³

- | | | |
|--|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Materials (TF21) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input checked="" type="checkbox"/> Vegetated Sand/Gravel Bars |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

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

Restrictive Layer (if present): Type: None Depth (Inches) _____ Hydric Soil? Y/N

Remarks: Soils are problematic because the feature is a vegetated sand and gravel bar. No hydric soil indicators are present because of annual deposition of new material.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)

Secondary Indicators (2 or more required)

- | | | |
|--|---|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input checked="" type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (Db) |

Field Observations

Surface Water Present? Yes _____ No Depth (inches) _____ Wetland Hydrology? Y/N
 Water Table Present? Yes _____ No Depth (inches) _____
 Saturation Present? Yes _____ No Depth (inches) _____ (includes capillary fringe)

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

Remarks: water-stained leaves, water marks, sediment deposits and drift deposits indicate frequent flooding.

Data Point 7
 Feature Type Upland

Wetland Determination Data Form—Arid West Region

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn County/Willdan Engineering State: CA
 Investigator(s): Sarah Tona Section, Township, Range: S27, T22N, R5W
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope %: 2
 Subregion (LRR): C Lat: 4398225.97 Long: 550188.91 Datum: NAD83
 Soil Map Unit Name: Arbuckle gravelly loam, 0 to 2% slopes NWI Classification: None

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

Are vegetation Y / N, soil Y / N, or hydrology Y / N significantly disturbed? Are normal circumstances present? Y / N

Are vegetation Y / N, soil Y / N, or hydrology Y / N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)

Hydrophytic vegetation? Y / N Hydric soil? Y / N Wetland hydrology? Y / N Is sampled area a wetland? Y / N Other waters? Y / N

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width
 Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate
 Natural Drainage Artificial Drainage Navigable Water

Remarks DP documents the upland pair point to DP 5 (RW).

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			

Sapling/Shrub Stratum (Plot: 10' x 10')	% Cover	Species?	Status
1. <u>Baccharis salicifolia</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: <u>5</u>			

Herb Stratum (Plot Size: 10' x 10')	% Cover	Species?	Status
1. <u>Bromus diandrus</u>	<u>80</u>	<u>Y</u>	<u>UPL</u>
2. <u>Ambrosia artemisiifolia</u>	<u>7</u>	<u>N</u>	<u>UPL</u>
3. <u>Torilis arvensis</u>	<u>5</u>	<u>N</u>	<u>UPL</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
50%= <u>46</u> 20%= <u>18.4</u> Total Cover: <u>92</u>			

Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50%= _____ 20%= _____ 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: 2 (B)
 Percent of dominant species that are OBL, FACW, or FAC: 50 (AB)

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 < 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y / N

Remarks

Soils

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
0-20	2.5YR 4/1	100	—	—	—	—	Sandy loam	

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)		Indicators for Problematic Hydric Soils ³
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vetric (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Materials (TF21)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Vegetated Sand/Gravel Bars
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if present): Type: none Depth (Inches) _____ Hydric Soil? Y(N)

Remarks No redox indicators.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Biotic Crust (B12)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations

Surface Water Present? Yes _____ No X Depth (inches) _____ Wetland Hydrology? Y(N)
 Water Table Present? Yes _____ No X Depth (inches) _____
 Saturation Present? Yes _____ No X Depth (inches) _____ (includes capillary fringe)

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

Remarks Drift lines on the terrace from major rain events, not an indicator of frequent flooding.

Data Point 8
Feature Type E.S.

Wetland Determination Data Form-Arid West Region

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn County/Willdan Engineering State: CA
 Investigator(s): Sarah Tona Section, Township, Range S27, T22N, R5W
 Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none) Concave Slope % 45
 Subregion (LRR): C Lat: 4398120.84 Long: 550268.45 Datum: NAD83
 Soil Map Unit Name: Schura-Millsholm association, 30w 65% Slopes NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Y N (If no, explain in Remarks.)
 Are vegetation Y N, soil Y N, or hydrology Y N significantly disturbed? Are normal circumstances present? Y N
 Are vegetation Y N, soil Y N, or hydrology Y N naturally problematic? (If needed, explain in Remarks.)
Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
 Hydrophytic vegetation? Y N Hydric soil? Y N Wetland hydrology? Y N Is sampled area a wetland? Y N Other waters? Y N

Evaluation of features designated "Other Waters of the United States"

Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width 1 foot
 Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate Sand
 Natural Drainage Artificial Drainage Navigable Water

Remarks Ephemeral stream that begins to show signs of Scour at the top of the hill.

Vegetation (Use Scientific Names)			
Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Sapling/Shrub Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Herb Stratum (Plot Size: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
Woody/Vine Stratum (Plot: _____)	% Cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
50%= _____ 20%= _____ Total Cover: _____			
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____			

Dominance Test Worksheet
 Number of dominant species that are OBL, FACW, or FAC: _____ (A)
 Total number of dominant species across all strata: _____ (B)
 Percent of dominant species that are OBL, FACW, or FAC: _____ (AB)

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 ≤ 3.0¹
 _____ Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 _____ Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y N

Remarks Scoured channel with limited vegetation.

Soils

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

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)		Indicators for Problematic Hydric Soils³
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Materials (TF21)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Vegetated Sand/Gravel Bars
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Y/N

Remarks No pit-scoured channel.

Hydrology

Wetland Indicators

<u>Primary Indicators (Any one indicator is sufficient.)</u>	<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Biologic Crust (B12)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations

Surface Water Present? Yes _____ No Depth (inches) _____ Wetland Hydrology? / N

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

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

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

Remarks

Data Point 9
Feature Type PS

Wetland Determination Data Form-Arid West Region

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn County (Willdan Engineering) State: CA
 Investigator(s): Sarah Tona Section, Township, Range: S27, T22N, R5W
 Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope %: 1
 Subregion (LRR): C Lat: 43°18'38.64 Long: 55°02'63.43 Datum: NAD83
 Soil Map Unit Name: Water NWI Classification: R3USA

Are climatic/hydrologic conditions on the site typical for this time of year? **Y** **N** (If no, explain in Remarks.)
 Are vegetation **Y** **N** soil **Y** **N** or hydrology **Y** **N** significantly disturbed? Are normal circumstances present? **Y** **N**
 Are vegetation **Y** **N** soil **Y** **N** or hydrology **Y** **N** naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
 Hydrophytic vegetation? **Y** **N** Hydric soil? **Y** **N** Wetland hydrology? **Y** **N** Is sampled area a wetland? **Y** **N** Other waters? **Y** **N**

Evaluation of features designated "Other Waters of the United States"
 Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width 320 ft
 Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate Sand, gravel, cobbles
 Natural Drainage Artificial Drainage Navigable Water

Remarks DP documents the OHWM of Stony Creek, a perennial stream.

Vegetation (Use Scientific Names)				Dominance Test Worksheet		
Tree Stratum (Plot Size: _____)		Absolute % Cover	Dominant Species?	Indicator Status	Number of dominant species that are OBL, FACW, or FAC:	(A)
1.	_____	_____	_____	_____	_____	_____
2.	_____	_____	_____	_____	_____	_____
3.	_____	_____	_____	_____	_____	_____
4.	_____	_____	_____	_____	_____	_____
50%= _____	20%= _____	Total Cover: _____		Total number of dominant species across all strata: _____ (B)		
Sapling/Shrub Stratum (Plot: _____)		% Cover	Species?	Status	Percent of dominant species that are OBL, FACW, or FAC:	(AB)
1.	_____	_____	_____	_____	_____	_____
2.	_____	_____	_____	_____	_____	_____
3.	_____	_____	_____	_____	_____	_____
4.	_____	_____	_____	_____	_____	_____
50%= _____	20%= _____	Total Cover: _____		Prevalence Index Worksheet		
Herb Stratum (Plot Size: _____)		% Cover	Species?	Status	Total % Cover of:	Multiply by
1.	_____	_____	_____	_____	OBL Species _____	x 1 = _____
2.	_____	_____	_____	_____	FACW Species _____	x 2 = _____
3.	_____	_____	_____	_____	FAC Species _____	x 3 = _____
4.	_____	_____	_____	_____	FACU Species _____	x 4 = _____
5.	_____	_____	_____	_____	UPL Species _____	x 5 = _____
50%= _____	20%= _____	Total Cover: _____		Column Totals _____ (A) _____ (B)		
Woody/Vine Stratum (Plot: _____)		% Cover	Species?	Status	Prevalence Index = B/A = _____	
1.	_____	_____	_____	_____		
2.	_____	_____	_____	_____		
50%= _____	20%= _____	Total Cover: _____		Hydrophytic Vegetation Indicators		
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		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? <input checked="" type="radio"/> Y <input type="radio"/> N		

Remarks No vegetation, the feature has a scoured channel.

Soils

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)		Indicators for Problematic Hydric Soils³
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Materials (TF21)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Vegetated Sand/Gravel Bars
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Y/N

Remarks No pit dug, the feature has a scoured channel.

Hydrology

Wetland Indicators

<u>Primary Indicators (Any one indicator is sufficient.)</u>	<u>Secondary Indicators (2 or more required)</u>
<input checked="" type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water Marks (B1) (Riverine)
<input checked="" type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Biotic Crust (B12)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations

Surface Water Present? Yes No _____ Depth (inches) 1-3' Wetland Hydrology? 0 / N
 Water Table Present? Yes No _____ Depth (inches) Surface
 Saturation Present? Yes No _____ Depth (inches) Surface (includes capillary fringe)

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

Remarks Water marks, sediment deposits, and drift deposits document the OTWM.

Data Point 10
Feature Type RW

Wetland Determination Data Form-Arid West Region

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn county / Willdan Engineering State: CA
 Investigator(s): Sarah Tona Section, Township, Range: S27, T22N, R5W
 Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): Convex Slope %: 2
 Subregion (LRR): C Lat: 4398129.64 Long: 550261.21 Datum: NAD83
 Soil Map Unit Name: Schorn-Mills-holm association, 30 to 65i NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Y N (If no, explain in Remarks.)
 Are vegetation Y N, soil Y N, or hydrology Y N significantly disturbed? Are normal circumstances present? Y N
 Are vegetation Y N, soil Y N, or hydrology Y N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
 Hydrophytic vegetation? Y N Hydric soil? Y N Wetland hydrology? Y N Is sampled area a wetland? Y N Other waters? Y N

Evaluation of features designated "Other Waters of the United States"
 Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width
 Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate
 Natural Drainage Artificial Drainage Navigable Water

Remarks DP documents the Riparian wetland adjacent to Stony Creek.

Vegetation (Use Scientific Names)		Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot Size: <u>100' x 10'</u>)				
1.	<u>Populus fremontii</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2.	<u>Salix gooddingii</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>
3.				
4.				
50% = <u>10</u> 20% = <u>4</u> Total Cover: <u>20</u>				
Sapling/Shrub Stratum (Plot: <u>10' x 10'</u>)				
1.	<u>Baccharis salicifolia</u>	<u>45</u>	<u>Y</u>	<u>FAC</u>
2.	<u>Vitis californica</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
3.				
4.				
50% = <u>32.5</u> 20% = <u>13</u> Total Cover: <u>65</u>				
Herb Stratum (Plot Size: <u>50' x 10'</u>)				
1.	<u>Cynodon dactylon</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
2.				
3.				
4.				
5.				
6.				
7.				
8.				
50% = <u>5</u> 20% = <u>2</u> Total Cover: <u>10</u>				
Woody/Vine Stratum (Plot: <u> </u>)				
1.				
2.				
50% = <u> </u> 20% = <u> </u> Total Cover: <u> </u>				
% Bare Ground in Herb Stratum <u> </u> % Cover of Biotic Crust <u> </u>				

Dominance Test Worksheet
 Number of dominant species that are OBL, FACW, or FAC: 3 (A)
 Total number of dominant species across all strata: 5 (B)
 Percent of dominant species that are OBL, FACW, or FAC: 60 (AB)

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
 Y Dominance Test is >50%
 Prevalence Index is ≤ 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y N

Remarks

Soils

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-20	2.5YR 3/1	98	7.5YR 4/6	2	C	PL	Sandy loam	

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)			Indicators for Problematic Hydric Soils ³		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Materials (TF21)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input checked="" type="checkbox"/> Vegetated Sand/Gravel Bars			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

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

Restrictive Layer (if present): Type: None Depth (Inches) Hydric Soil? Y/N

Remarks: Soils are problematic because the wetland is a vegetated sand/gravel bar within the OAWM of a perennial stream. Annual deposition of new material likely prevents soil indicators from forming.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input checked="" type="checkbox"/> Water Marks (B1) (Riverine)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biologic Crust (B12)	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations

Surface Water Present? Yes No Depth (inches) Wetland Hydrology? Y/N

Water Table Present? Yes No Depth (inches)

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

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

Remarks

Data Point 11
Feature Type upland

Wetland Determination Data Form-Arid West Region

Project/Site: Stony Creek Bridge City/County: Glenn County Date: 11/9/16
 Applicant/Owner: Glenn County/Willdan Engineering State: CA
 Investigator(s): Sarah Topa Section, Township, Range: S27, T22N, R5W
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): upland Slope %: 3
 Subregion (LRR): C Lot: 4398121.44 Long: 550272.04 Datum: NAD83
 Soil Map Unit Name: Sehorn-Millshdm association, 30 to 65% NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Y N (If no, explain in Remarks.)
 Are vegetation Y N soil Y N or hydrology Y N significantly disturbed? Are normal circumstances present? Y N
 Are vegetation Y N soil Y N or hydrology Y N naturally problematic? (If needed, explain in Remarks.)

Summary of Findings (Attach site map showing sampling point locations, transects, important features, etc.)
 Hydrophytic vegetation? Y N Hydric soil? Y N Wetland hydrology? Y N Is sampled area a wetland? Y N Other waters? Y N

Evaluation of features designated "Other Waters of the United States"
 Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Stream Width
 Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Substrate
 Natural Drainage Artificial Drainage Navigable Water

Remarks DP documents the upland pair point to DP 9.

Vegetation (Use Scientific Names)		Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot Size: _____)				
1.				
2.				
3.				
4.				
50%= _____	20%= _____	Total Cover: _____		
Sapling/Shrub Stratum (Plot: _____)				
1.				
2.				
3.				
4.				
50%= _____	20%= _____	Total Cover: _____		
Herb Stratum (Plot Size: <u>10x10</u>)				
1.	<u>Centaurea solstitialis</u>	<u>10</u>	<u>N</u>	<u>UPL</u>
2.	<u>Bromus diandrus</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>
3.	<u>Bromus mollis</u>	<u>40</u>	<u>Y</u>	<u>UPL</u>
4.	<u>Avena sp.</u>	<u>10</u>	<u>N</u>	<u>UPL</u>
5.	<u>Festuca myuros</u>	<u>10</u>	<u>N</u>	<u>UPL</u>
6.				
7.				
8.				
50%= <u>45</u>	20%= <u>18</u>	Total Cover: <u>40</u>		
Woody/Vine Stratum (Plot: <u>2x2g</u>)				
1.	<u>Vitis californica</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
2.				
50%= _____	20%= _____	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 (AB)

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 ≤ 3.0¹
 Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? Y N

Remarks

Soils

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-2.0	7.5 YR	4/3	100					

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining M = Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)		Indicators for Problematic Hydric Soils ³
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vetric (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Materials (TF21)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Vegetated Sand/Gravel Bars
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil? Y / N

Remarks no redox features.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient.)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biologic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowd Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations

Surface Water Present? Yes _____ No X Depth (inches) _____ Wetland Hydrology? Y / N
 Water Table Present? Yes _____ No X Depth (inches) _____
 Saturation Present? Yes _____ No X Depth (inches) _____ (includes capillary fringe)

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

Remarks no wetland hydrology indicators.

APPENDIX B

Ordinary High Water Mark Data Forms

Project: *Stony Creek Bridge*
 Project Number: *51243*
 Stream: *Stony Creek*
 Investigator(s): *Sarah Tong*

Date: *11/9/16* Time: *0930*
 Town: *West of Orland* State: *CA*
 Photo begin file# Photo end file#

Y / N Do normal circumstances exist on the site?

Location Details: *on County Road 200A where it crosses Stony Creek*

Y / N Is the site significantly disturbed?

Projection: *Transverse Mercator* Datum: *NAD83*
 Coordinates: *UTM 10S 550254E, 4398138N*

Notes: *Cattle use the stream for drinking water. Some hoof prints are on the bank, but not enough to influence the delineation or OTHWM.*

Brief site description:

Flashy perennial stream with a wide gravel bar and more than one channel.

Checklist of resources (if available):

- Aerial photography
Dates: *2014*
- Topographic maps
Scale: *5' contours*
- Geologic maps
- Vegetation maps
- Soils maps
- Rainfall/precipitation maps
- Existing delineation(s) for site
- Global positioning system (GPS)
- Other studies
- Stream gage data
Gage number:
- Period of record:
- Clinometer / level
- History of recent effective discharges
- Results of flood frequency analysis
- Most recent shift-adjusted rating
- Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	
0.157	4	Pebble	
0.079	2.00	Granule	
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	
1/2 0.0098	0.25	Medium sand	
1/4 0.005	0.125	Fine sand	
1/8 0.0025	0.0625	Very fine sand	
1/16 0.0012	0.031	Coarse silt	
1/32 0.00081	0.0156	Medium silt	
1/64 0.00031	0.0078	Fine silt	
1/128 0.00015	0.0039	Very fine silt	
		Clay	Mud

Hydrogeomorphic Floodplain Units - Intermittent and Ephemeral Channel Forms (representative cross-section)

0 cm 1 2 3 4 5 6 7 8
 0 in 1 2 3

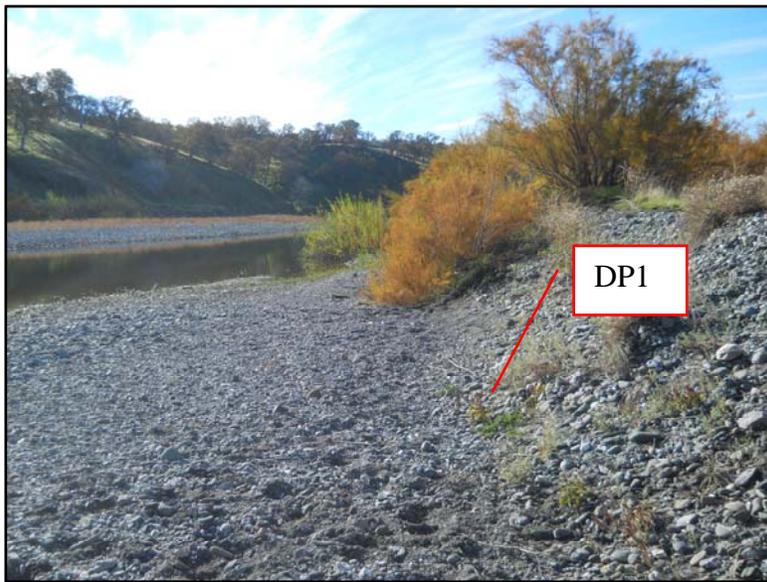
<input checked="" type="checkbox"/>	Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.
<input checked="" type="checkbox"/>	<p>Locate the low-flow channel (lowest part of the channel). Record observations.</p> <p>Characteristics of the low-flow channel:</p> <p>Average sediment texture: <u>Pebble</u></p> <p>Total veg cover: <u>0</u> % Tree: <u>0</u> % Shrub: <u>0</u> % Herb: <u>0</u> %</p> <p>Community successional stage:</p> <p><input type="checkbox"/> NA <input type="checkbox"/> Mid (herbaceous, shrubs, saplings)</p> <p><input type="checkbox"/> Early (herbaceous & seedlings) <input type="checkbox"/> Late (herbaceous, shrubs, mature trees)</p> <p>Dominant species present: <u>None, has 1-3' of water flowing at time of visit.</u></p> <p>Other: <input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>
<input checked="" type="checkbox"/>	<p>Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.</p> <p>Characteristics used to delineate the low-flow/active floodplain boundary:</p> <p><input checked="" type="checkbox"/> Change in total veg cover <input type="checkbox"/> Tree <input checked="" type="checkbox"/> Shrub <input type="checkbox"/> Herb</p> <p><input type="checkbox"/> Change in overall vegetation maturity</p> <p><input type="checkbox"/> Change in dominant species present</p> <p><input type="checkbox"/> Other <input checked="" type="checkbox"/> Presence of bed and bank</p> <p><input checked="" type="checkbox"/> Drift and/or debris</p> <p><input checked="" type="checkbox"/> Other: <u>Sediment deposits</u></p> <p><input type="checkbox"/> Other: _____</p> <p><u>Scattered young Baccharis salicifolia, and mature Tamarix.</u></p>
<input checked="" type="checkbox"/>	<p>Continue walking the channel cross-section. Record observations below.</p> <p>Characteristics of the low-flow channel:</p> <p>Average sediment texture: <u>Granule</u></p> <p>Total veg cover: _____ % Tree: _____ % Shrub: <u>6</u> % Herb: <u>5</u> %</p> <p>Community successional stage:</p> <p><input type="checkbox"/> NA <input type="checkbox"/> Mid (herbaceous, shrubs, saplings)</p> <p><input checked="" type="checkbox"/> Early (herbaceous & seedlings) <input type="checkbox"/> Late (herbaceous, shrubs, mature trees)</p> <p>Dominant species present: <u>Aster shrub</u></p> <p><u>Bromus tectorum</u></p> <p><u>Hypochaeris glabrata</u></p> <p><u>Festuca myuros</u></p> <p>Other: <input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>

APPENDIX C

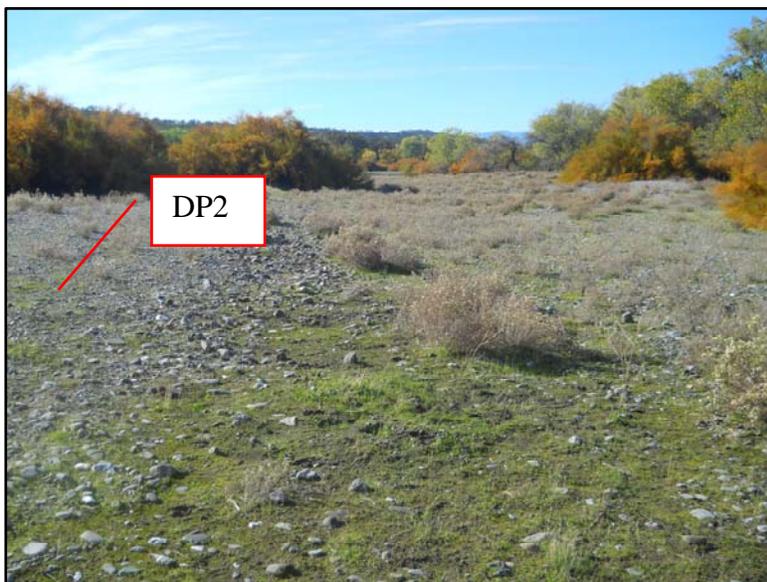
Representative Photographs

**Stony Creek Bridge (11C-0245)
Replacement Project
Delineation of Waters of the United States**

Photographs Taken November 9, 2016



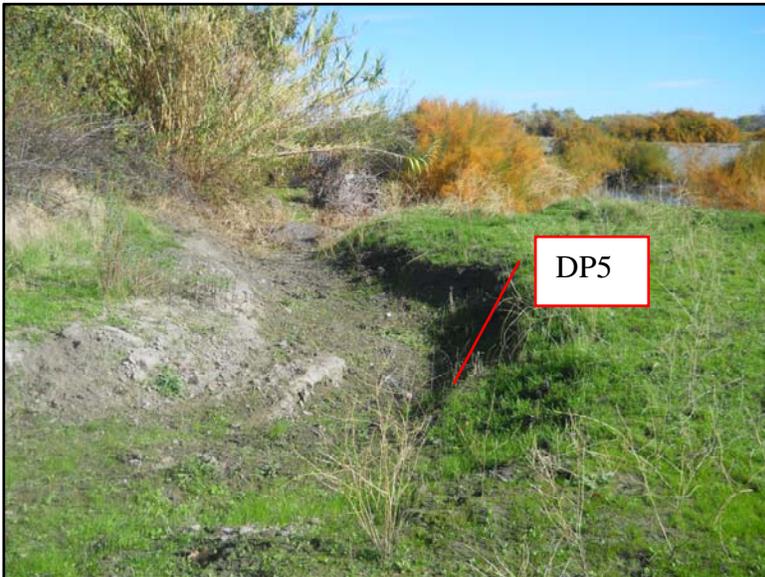
Photograph 1. Perennial Stream. Data point (DP) 1 documents the OHWM of the feature. Orientation: southwest.



Photograph 2. Upland. DP2 documents the upland bank between the low flow channel and high flow channel of Stony Creek. Orientation: southwest.



Photograph 3. Upland. DP3 (shovel) documents a suspect area that was determined to be upland.



Photograph 4. Intermittent Stream. DP 5 documents the OHWM of this stream. Orientation: northeast.



Photograph 5. Riparian Wetland. DP6 (shovel) documents the feature. Orientation: southwest.



Photograph 6. Upland. DP7 (shovel) documents the upland pair point to DP5. Orientation: southwest.



Photograph 7. Riparian wetland. DP10 (shovel) documents the feature.