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

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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03-GLE-CR200A-N/A
03-928540L
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STATE OF CALIFORNIA
Department of Transportation

Prepared by: _____ Date: March 9, 2017

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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 Stoney 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.

Biological Study Area (8.2 acres)

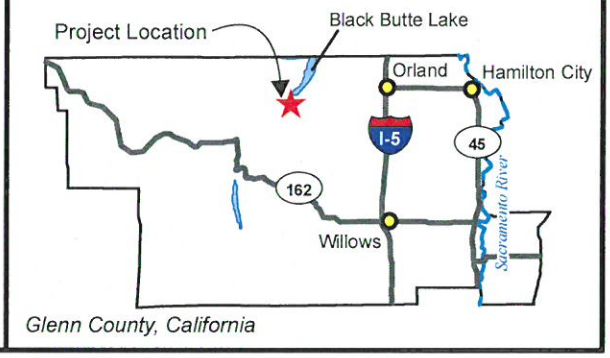
Public Land Survey:
Section 27
T22N, R5W (MDBM)

7.5' USGS Quad:
Julian Rocks

N

0 2,000 4,000 Feet

1:24,000



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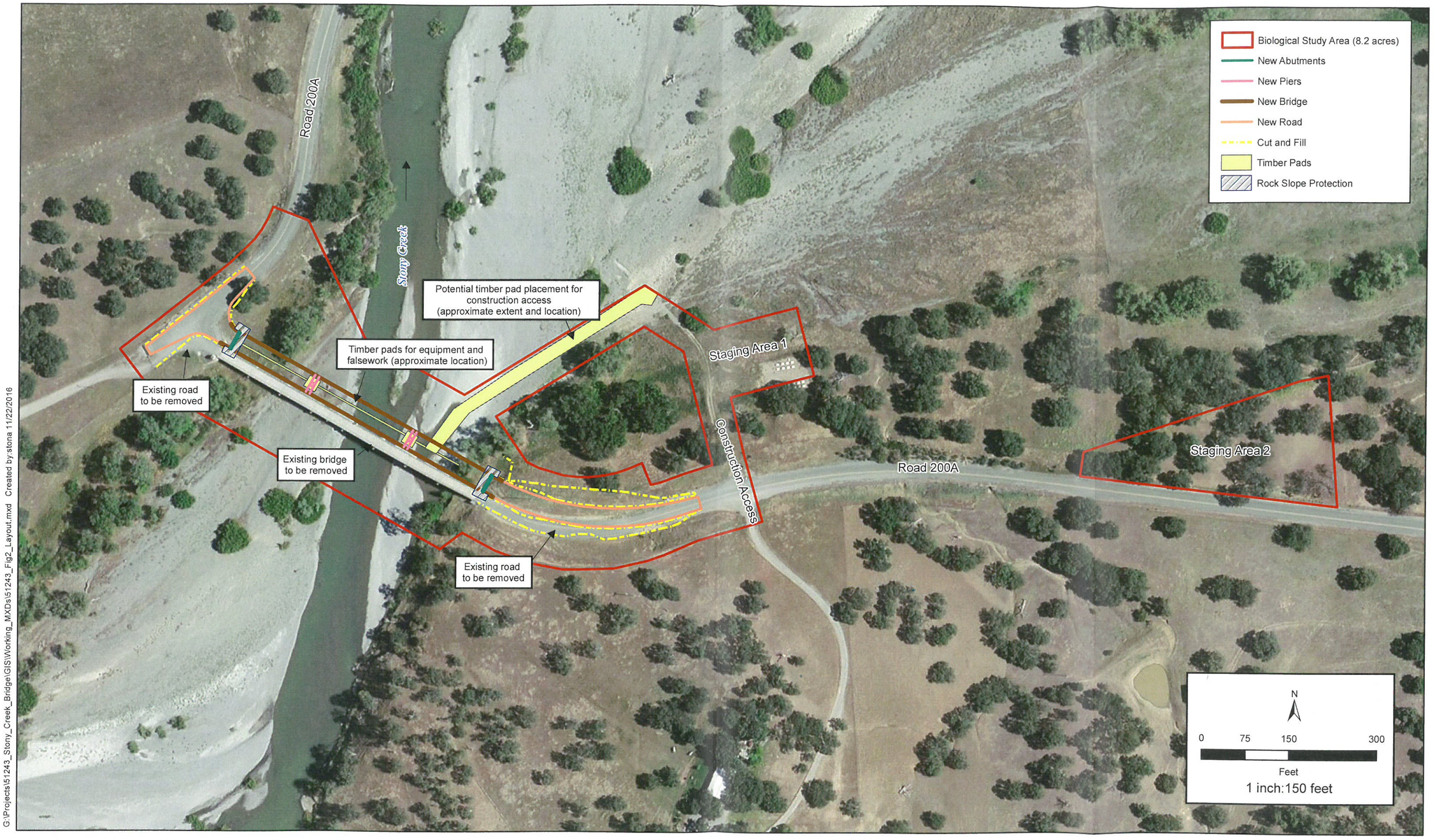
Stony Creek Bridge (11C-0245) Replacement Project

North State Resources, Inc.

Figure 1
Project Location



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North State Resources, Inc.

Stony Creek Bridge (11C-0245) Replacement Project

Figure 2
Project Design

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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 Requirments

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 (CNDDB) (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 CNDDB 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 arvense*), bur-clover (*Medicago polymorpha*), winter vetch (*Vicea 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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North State Resources, Inc.

Stony Creek Bridge (11C-0245) Replacement Project

Figure 3
Habitat Communities

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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 CNDDB 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 CNDDB ranks natural communities according to their rarity and endangerment in California. The CNDDB 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, CNDDB 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 *Chloropyron palmatum*	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 *Acmispon rubriflorus*	—/—/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 *Euphorbia ocellata* ssp. *rattanii*	—/—/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 *Paronychia ahartii*	—/—/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, CNDDB 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 *Scientific Name*	Status[1] (Fed/State)	General Habitat Description	Habitat Assessment [2]	Rationale
Federal or State Listed Species				
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	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 *Branchinecta lynchi*	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 *Lepidurus packardi*	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 *Hypomesus transpacificus*	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*	Status[1] (Fed/State)	General Habitat Description	Habitat Assessment [2]	Rationale
Northern California DPS steelhead *Oncorhynchus mykiss irideus*	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 *Rana draytonii*	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 *Thamnophis gigas*	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 *Buteo swainsoni*	—/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*	Status[1] (Fed/State)	General Habitat Description	Habitat Assessment [2]	Rationale
Foothill yellow-legged frog *Rana boylii*	—/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 *Emys marmorata*	—/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 *Ammodramus savannarum*	—/SSC	Valley and foothill grassland	**HP**	The annual grassland habitat in the BSA provides potential nesting/foraging habitat for the species.
Loggerhead shrike *Lanius ludovicianus*	—/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 *Elanus leucurus*	—/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 *Athene cunicularia hypugea*	—/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*	Status[1] (Fed/State)	General Habitat Description	Habitat Assessment [2]	Rationale
Pallid bat *Antrozous pallidus*	—/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 *Lasiurus blossevillii*	—/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 *Taxidea taxus*	—/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 *Bassariscus astutus*	—/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

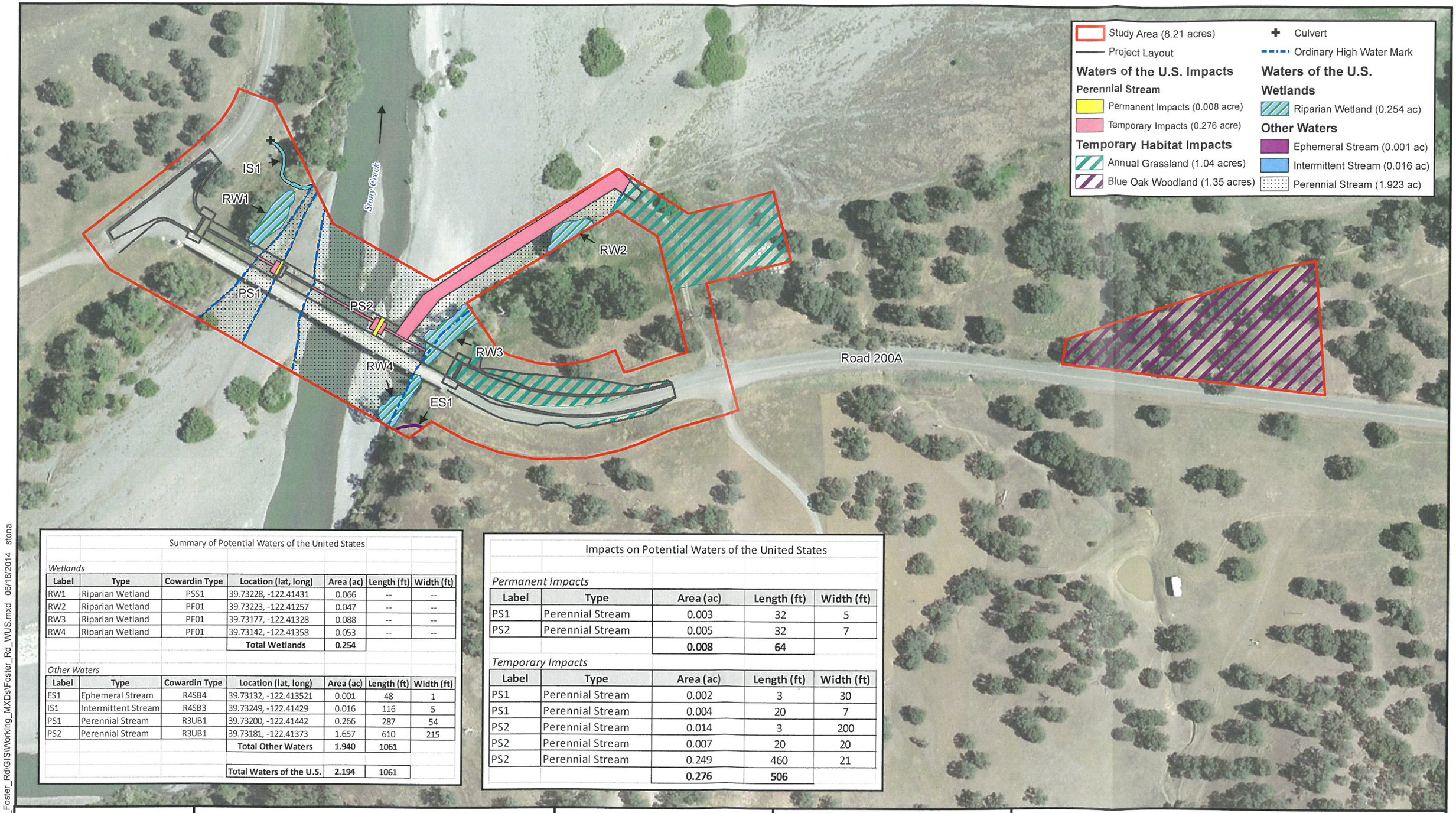
4.1.1.1. Survey Results

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.



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**	

Impacts on Potential Waters of the United States

Permanent Impacts

Label	Type	Area (ac)	Length (ft)	Width (ft)
PS1	Perennial Stream	0.003	32	5
PS2	Perennial Stream	0.005	32	7
		0.008	**64**	

Temporary Impacts

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
		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: Tansverse Mercator
Datum: North American 1983

N

0 75 150 300
Feet

1 in = 150 feet

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 recommend 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 boylii)*, 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 CNDDB 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 CNDDB 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 CNDDB 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 CNDDB 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 CNNDB 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 CNDDB 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
Event Code: 08ESMF00-2017-E-00518
Project Name: Stoney Creek Bridge

November 16, 2016

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

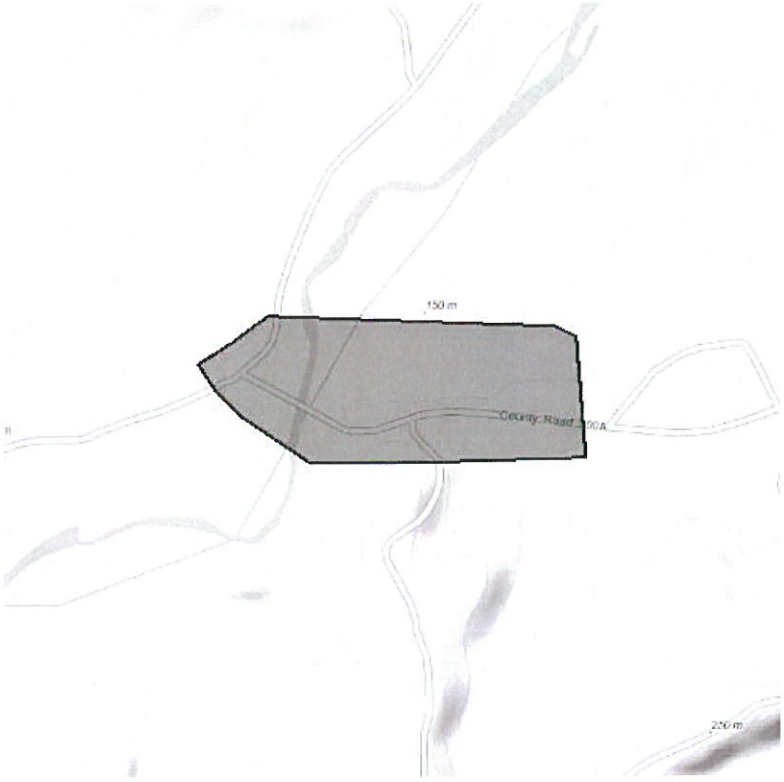
Consultation Code: 08ESMF00-2017-SLI-0286
Event Code: 08ESMF00-2017-E-00518

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.

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 *(Rana draytonii)* Population: Wherever found	Threatened	Final designated	
Crustaceans			
Vernal Pool fairy shrimp *(Branchinecta lynchi)* Population: Wherever found	Threatened	Final designated	
Vernal Pool tadpole shrimp *(Lepidurus packardi)* Population: Wherever found	Endangered	Final designated	
Fishes			
Delta smelt *(Hypomesus transpacificus)* Population: Wherever found	Threatened	Final designated	
steelhead *(Oncorhynchus (=salmo) mykiss)* Population: Northern California DPS	Threatened		
Insects			

Valley Elderberry Longhorn beetle *(Desmocerus californicus dimorphus)* Population: Wherever found	Threatened	Final designated	
Reptiles			
Giant Garter snake *(Thamnophis gigas)* 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 CNDDB 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 *Fritillaria pluriflora*	PMLIL0V0F0	None	None	G2G3	S2S3	1B.2
Ahart's paronychia *Paronychia ahartii*	PDCAR0L0V0	None	None	G3	S3	1B.1
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
bald eagle *Haliaeetus leucocephalus*	ABNKC10010	Delisted	Endangered	G5	S3	FP
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
caper-fruited tropidocarpum *Tropidocarpum capparideum*	PDBRA2R010	None	None	G1	S1	1B.1
Colusa layia *Layia septentrionalis*	PDAST5N0F0	None	None	G2	S2	1B.2
dimorphic snapdragon *Antirrhinum subcordatum*	PDSCR2S070	None	None	G3	S3	4.3
dwarf downingia *Downingia pusilla*	PDCAM060C0	None	None	GU	S2	2B.2
dwarf soaproot *Chlorogalum pomeridianum var. minus*	PMLIL0G042	None	None	G5T2T3	S2S3	1B.2
foothill yellow-legged frog *Rana boylii*	AAABH01050	None	None	G3	S3	SSC
Great Valley Cottonwood Riparian Forest *Great Valley Cottonwood Riparian Forest*	CTT61410CA	None	None	G2	S2.1	
green jewelflower *Streptanthus hesperidis*	PDBRA2G510	None	None	G2	S2	1B.2
Jepson's milk-vetch *Astragalus rattanii var. jepsonianus*	PDFAB0F7E1	None	None	G4T3	S3	1B.2
Konocti manzanita *Arctostaphylos manzanita ssp. elegans*	PDERI04271	None	None	G5T3	S3	1B.3
osprey *Pandion haliaetus*	ABNKC01010	None	None	G5	S4	WL
oval-leaved viburnum *Viburnum ellipticum*	PDCPR07080	None	None	G4G5	S3?	2B.3
prairie falcon *Falco mexicanus*	ABNKD06090	None	None	G5	S4	WL
Red Bluff dwarf rush *Juncus leiospermus var. leiospermus*	PMJUN011L2	None	None	G2T2	S2	1B.1
red-flowered bird's-foot-trefoil *Acmispon rubriflorus*	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 *Euphorbia ocellata ssp. rattanii*	PDEUP0D1P1	None	None	G4T3	S3	1B.2
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S3	
Tehama County western flax *Hesperolinon tehamense*	PDLIN010C0	None	None	G2	S2	1B.3
Tracy's eriastrum *Eriastrum tracyi*	PDPLM030C0	None	Rare	G3Q	S3	3.2
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Candidate Threatened	G2G3	S1S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T2	S2	
Valley Needlegrass Grassland *Valley Needlegrass Grassland*	CTT42110CA	None	None	G3	S3.1	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
western spadefoot *Spea hammondii*	AAABF02020	None	None	G3	S3	SSC

Record Count: 29

CNPS Inventory of Rare and Endangered Plants

Status: Plant Press Manager window with 13 items - Wed, Nov. 16, 2016 12:06 ET c

Reformat list as: Standard List - with Plant Press controls ▾

ECOLOGICAL REPORT

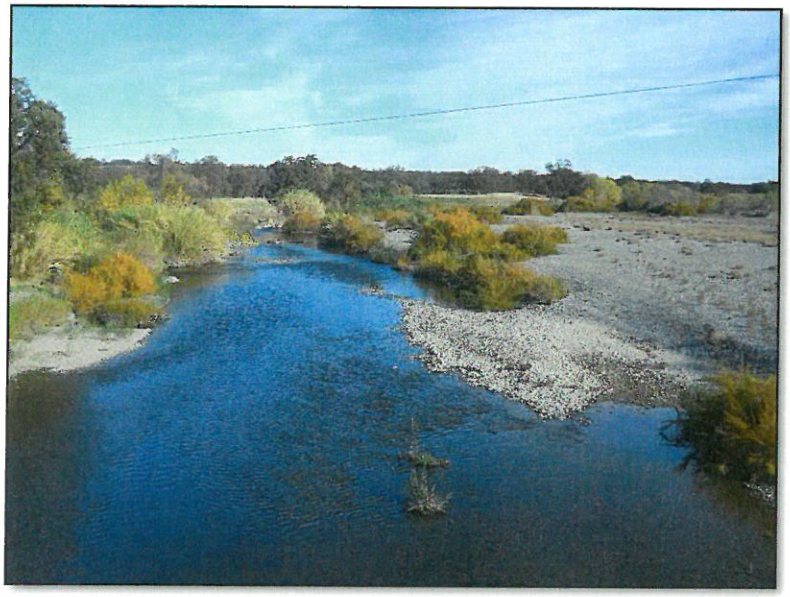
scientific	family	life form	blooming	communities	elevation	CNPS
Arctostaphylos manzanita ssp. elegans	Ericaceae	perennial evergreen shrub	Jan-May(Jul), Months in parentheses are uncommon.	•Chaparral (Chprl) •Cismontane woodland (CmWld) •Lower montane coniferous forest (LCFrs)/volcanic	395 - 1615 meters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

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

Appendix C Wetland Delineation

Stony Creek Bridge (11C-0245) Replacement Project

Delineation of Waters of the United States



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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

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

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

Reviewed By: Date: 3/13/17

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(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

Contents

Tables

Figures

Appendices

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).

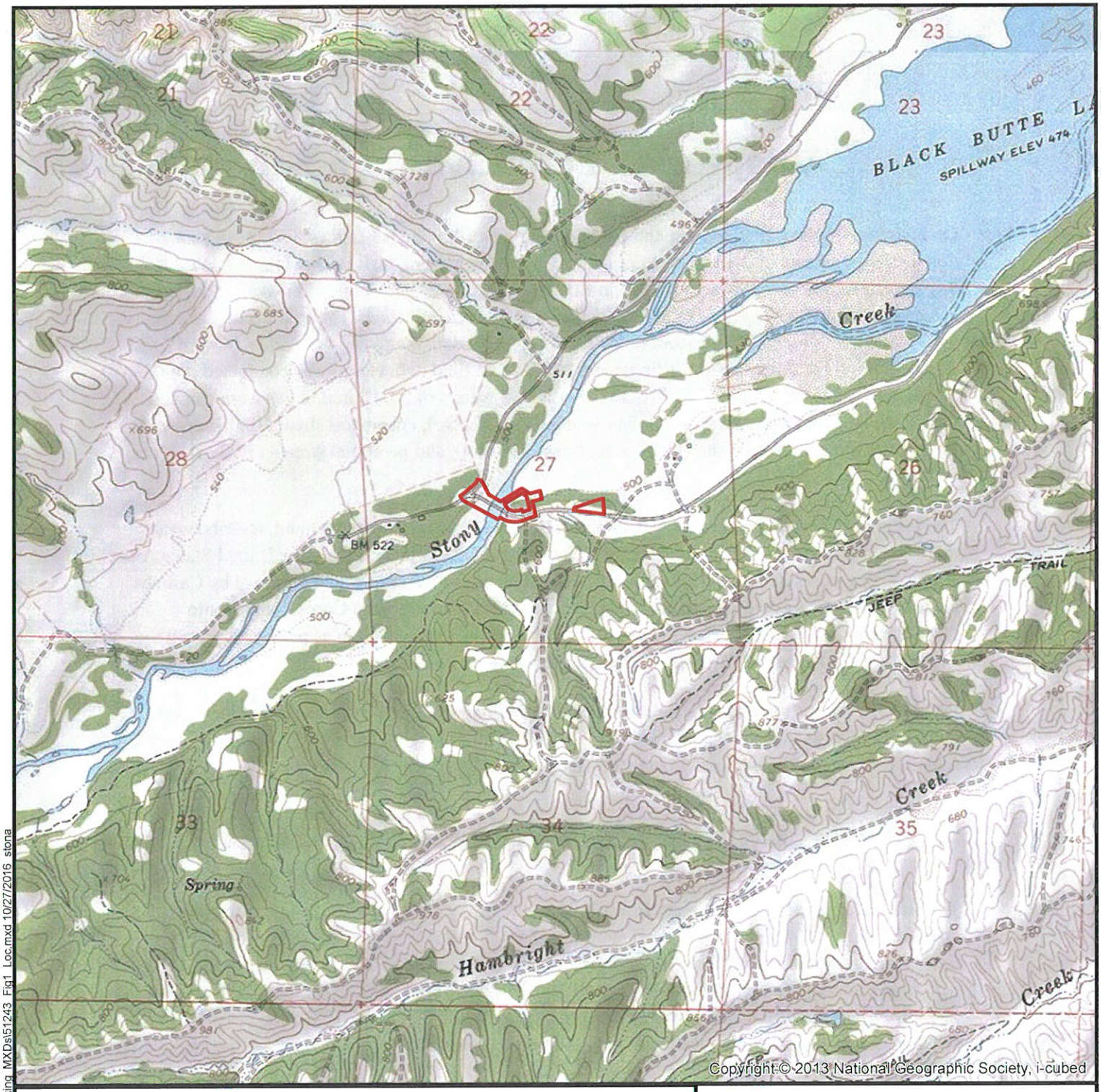
The purpose of this delineation of waters of the United States is to document and describe waters of the United States to support a Preliminary Jurisdictional Determination from the United States Army Corps of Engineers (Corps). This delineation is subject to initial review and approval by Caltrans District 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.



Study Area (8.21 acres)

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

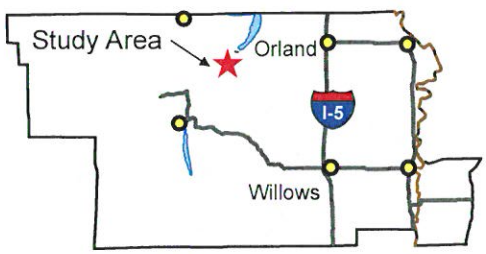
7.5' USGS Quad:
Julian Rocks

N

0 1,000 2,000
Feet

1:24,000

Glenn County



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Stony Creek Bridge (11C-0245) Replacement Project

North State Resources, Inc.

Figure 1
Project Location and Vicinity

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

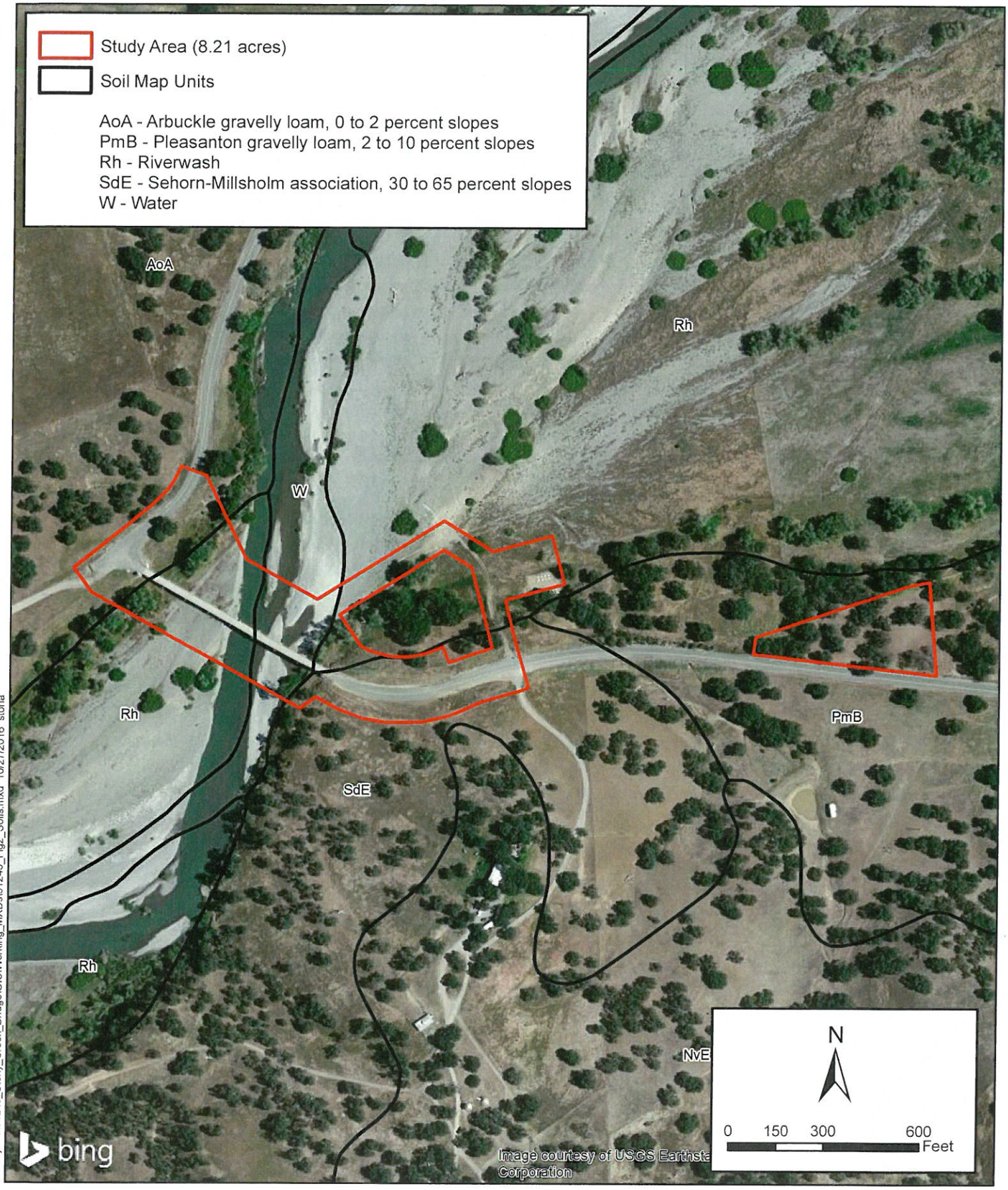
Four vegetation communities occur in the study area: annual grassland, blue oak woodland, riverine, and valley foothill riparian, based on descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988).

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 arvense*), 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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North State Resources, Inc.

Stony Creek Bridge (11C-0245) Replacement Project

Figure 2
Soils

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.

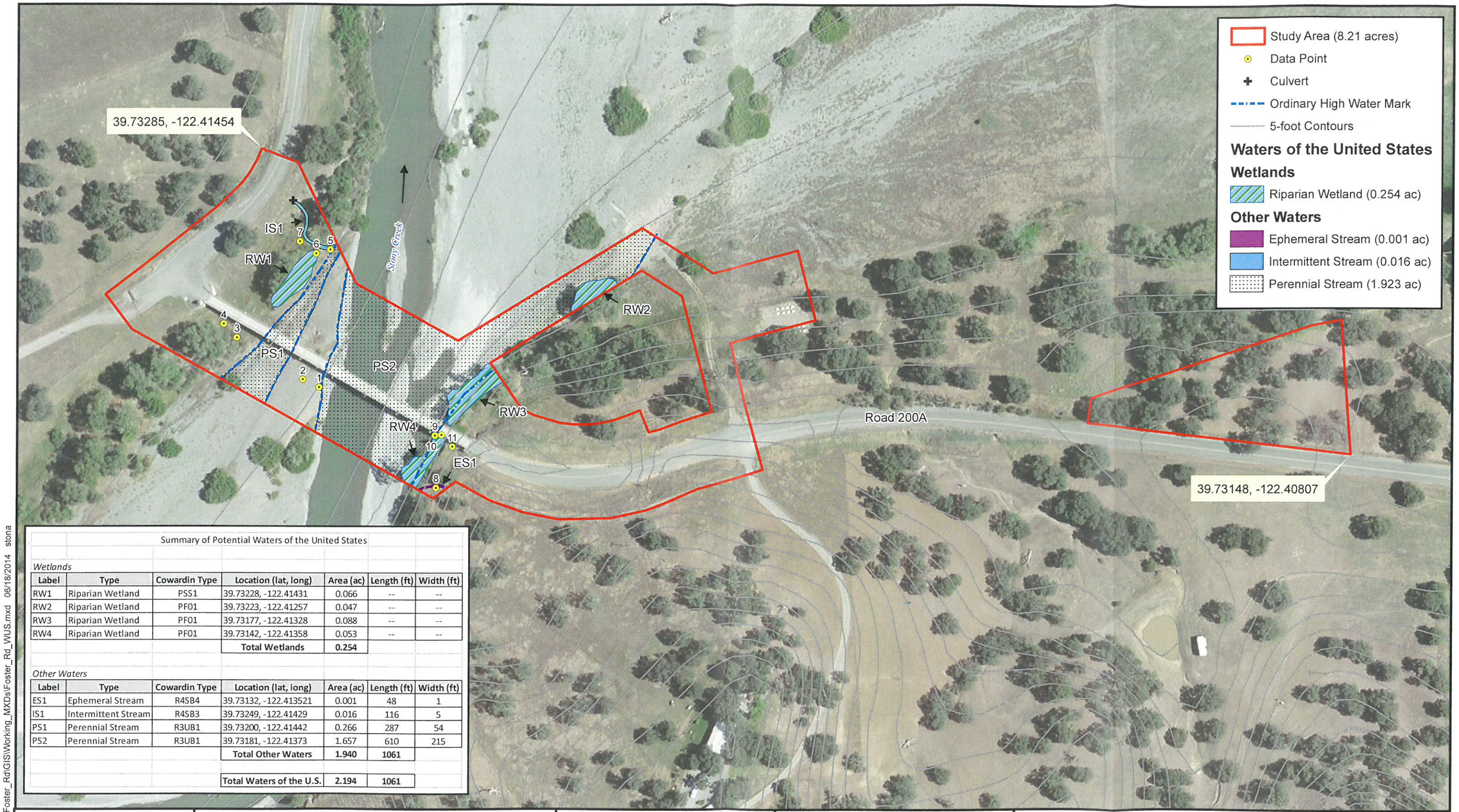
Ephemeral Stream

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



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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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: Tansverse Mercator
Datum: North American 1983

N
0 75 150 300
Feet
1 in = 150 feet

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

North State Resources, Inc.

Data Point 1
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: 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 (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 320'
Feature Designation: Perennial X Intermittent ____ Ephemeral ____ Blue-line on USGS Quad X Substrate Sand, Gravel, Cobble,
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 ≤ 3.0[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? ~~Y/N~~

Remarks No vegetation, the feature has a scoured channel.

Data Point 1

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF21)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

[3]Indicators 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.)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ Drift Deposits (B3) (Nonriverine)
- ____ Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Salt Crust (B11)
- ____ Biotic Crust (B12)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

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

Water Table Present? Yes X No ____ Depth (inches) Surface

Saturation Present? Yes X 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 OHWM.

North State Resources, Inc.

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, 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: 10x10')	% Cover	Species?	Status
1. Heterotheca Oregona	5	Y	FACU
2. Bromus tectorum	2	Y	UPL
3. Hypochaeris radicata	1	N	FACU
4. Festuca myuros	1	N	FACU
5.			
6.			
7.			
8.			
50%= 4.5 20%= 1.8 Total Cover:	9		

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 ≤ 3.0[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? Y (N)

Remarks

Data Point 2

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF21)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

[3]Indicators 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.)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ Drift Deposits (B3) (Nonriverine)
- ____ Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Salt Crust (B11)
- ____ Biotic Crust (B12)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No 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.

North State Resources, Inc.

Data Point 3

Wetland Determination Data Form–Arid West Region

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 S27, T22N, R5W

Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none) Concave Slope % <1

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)

Tree Stratum (Plot Size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%=____ 20%=____	Total Cover:		
Sapling/Shrub Stratum (Plot: 20x10')	**% Cover**	**Species?**	**Status**
1. Baccharis Salicifolia	20	Y	FAC
2.			
3.			
4.			
50%=— 20%=—	Total Cover: 20		
Herb Stratum (Plot Size: 10' x 10')	**% Cover**	**Species?**	**Status**
1. Bromus diandrus	70	Y	UPL
2. Trifolium dubium	20	N	UPL
3. Anthriscus caucalis	10	N	UPL
4. Muhlenbergia rigens	10	N	FAC
5.			
6.			
7.			
8.			
50%=55 20%=22	Total Cover: 110		
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

- N 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? Y (N)

Remarks

Data Point 3

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	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF21)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

[3]Indicators 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.)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ Drift Deposits (B3) (Nonriverine)
- ____ Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Salt Crust (B11)
- ____ Biotic Crust (B12)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No 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 likely from major precipitation events. Recent drift deposits do not occur, and no other hydrology indicators are present.

North State Resources, Inc.

Data Point 4

Wetland Determination Data Form–Arid West Region

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 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? (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 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. Arundo donax	20	Y	FACW
2. Baccharis salicifolia	30	Y	FAC
3.			
4.			
50%= 25 20%= 10	Total Cover: 50		

Herb Stratum (Plot Size:____)	% Cover	Species?	Status
1. Bromus diandrus	70	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
50%= 35 20%= 14	Total Cover: 70		

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

Y 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? (Y) / N

Remarks

Data Point 4

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	2.5 YR 4/1	100	--	--	--	--	Sandy loam	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF21)
- ____ Vegetated Sand/Gravel Bars
- Other (Explain in Remarks)

[3]Indicators 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.)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ Drift Deposits (B3) (Nonriverine)
- ____ Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Salt Crust (B11)
- ____ Biotic Crust (B12)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No 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 OHWM and likely historic from a major rain event.

North State Resources, Inc.

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 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 ≤ 3.0[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? ~~Y~~ / ~~N~~

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

Data Point 5

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF21)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

[3]Indicators 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.)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ Drift Deposits (B3) (Nonriverine)
- ____ Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Salt Crust (B11)
- ____ Biotic Crust (B12)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No 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

North State Resources, Inc.

Data Point 6

Wetland Determination Data Form–Arid West Region

Feature Type RW

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)

Tree Stratum (Plot Size: 20'x20')	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus fremontii	30	Y	FAC
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:	30		

Sapling/Shrub Stratum (Plot: 20'x20')	% Cover	Species?	Status
1. Baccharis salicifolia	50	Y	FAC
2. Salix exigua	10	Y	FACW
3.			
4.			
50%= 30 20%= 12 Total Cover:	60		

Herb Stratum (Plot Size: 10'x10')	% Cover	Species?	Status
1. Trifolium dubium	20	Y	FACU
2. Bromus diandrus	70	Y	UPL
3. Ambrosia artemisifolia	5	N	UPL
4.			
5.			
6.			
7.			
8.			
50%= 37.5 20%= 15 Total Cover:	75		

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 ≤ 3.0[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? (Y) / N

Remarks

Data Point 6

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	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF21)
- X Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

[3]Indicators 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.)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ Drift Deposits (B3) (Nonriverine)
- ____ Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ____ Salt Crust (B11)
- ____ Biotic Crust (B12)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No 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 Water-Stained leaves, water marks, sediment deposits and drift deposits indicate frequent flooding.

North State Resources, Inc.

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: 550188.41 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'x10')	% Cover	Species?	Status
1. Baccharis salicifolia	5	Y	FACW
2.			
3.			
4.			
50%=____ 20%=____ Total Cover:	5		

Herb Stratum (Plot Size: 10'x10')	% Cover	Species?	Status
1. Bromus diandrus	80	Y	UPL
2. Ambrosia artemisiifolia	7	N	UPL
3. Torilis arvensis	5	N	UPL
4.			
5.			
6.			
7.			
8.			
50%= 46 20%= 18.4 Total Cover:	92		

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
N 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? Y (N)

Remarks

Data Point 7

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	

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- Reduced Vetric (F18)
- ____ Red Parent Materials (TF21)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

[3]Indicators 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.)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ Drift Deposits (B3) (Nonriverine)
- ____ Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Salt Crust (B11)
- ____ Biotic Crust (B12)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No 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.

North State Resources, Inc.

Data Point 8
Feature Type I.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: 439820.84 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 X Scour X Ordinary High Water Mark Mapped X Stream Width 1 foot
Feature Designation: Perennial ____ Intermittent ____ Ephemeral X Blue-line on USGS Quad ____ Substrate Sand
Natural Drainage X 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 ≤ 3.0[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? ~~Y/N~~

Remarks Scoured channel with limited vegetation.

Data Point 8

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF21)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

[3]Indicators 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.)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ Drift Deposits (B3) (Nonriverine)
- ____ Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Salt Crust (B11)
- ____ Biotic Crust (B12)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No 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

North State Resources, Inc.

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: 4398138.64 Long: 550263.43 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 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 ≤ 3.0[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? ~~Y/N~~

Remarks No vegetation, the feature has a scoured channel.

Data Point 9

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF21)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

[3]Indicators 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.)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ Drift Deposits (B3) (Nonriverine)
- ____ Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Salt Crust (B11)
- ____ Biotic Crust (B12)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

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

Water Table Present? Yes X No ____ Depth (inches) Surface

Saturation Present? Yes X 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 OHWM.

North State Resources, Inc.

Data Point 10

Wetland Determination Data Form–Arid West Region

Feature Type RW

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: 39.8127 64 Long: 550261.21 Datum: NAD83

Soil Map Unit Name: Sehorn - Millsholm 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 Riparian wetland adjacent to Stony Creek.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: 100' x 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus fremontii	15	Y	FAC
2. Salix gooddingii	5	Y	FACW
3.			
4.			
50%= 10 20%= 4 Total Cover:	20		

Sapling/Shrub Stratum (Plot: 10' x 10')	% Cover	Species?	Status
1. Baccharis salicifolia	45	Y	FAC
2. Vitis californica	20	Y	FACU
3.			
4.			
50%= 32.5 20%= 13 Total Cover:	65		

Herb Stratum (Plot Size: 5' x 10')	% Cover	Species?	Status
1. Cynodon dactylon	10	Y	FACU
2.			
3.			
4			
5			
6.			
7.			
8.			
50%= 5 20%= 2 Total Cover:	10		

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 ≤ 3.0[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? (Y) / N

Remarks

Data Point 16

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

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF21)
- X Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

[3]Indicators 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 OHWM 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.)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ Drift Deposits (B3) (Nonriverine)
- ____ Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Salt Crust (B11)
- ____ Biotic Crust (B12)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No 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

North State Resources, Inc.

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 Tona Section, Township, Range S27, T22N, R5W
Landform (hillslope, terrace, etc.) hillslope Local relief (concave, convex, none) Upland Slope % 3
Subregion (LRR): C Lat: 4398121.44 Long: 5502772.04 Datum: NAD83
Soil Map Unit Name: Sehorn-Millsholm 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: 10x10)			
1. Centaurea Solstitialis	10	N	UPL
2. Bromus diandrus	20	Y	UPL
3. Bromus madritensis	40	Y	UPL
4. Avena sp.	10	N	UPL
5. Festuca myuros	10	N	UPL
6.			
7.			
8.			
50%=45 20%=18 Total Cover:	90		
Woody/Vine Stratum (Plot: 20x20)			
1. Vitis californica	20	Y	FACU
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
N 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? Y (N)

Remarks

Data Point 11

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	7.5YR 4/3	100	—					

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF21)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

[3]Indicators 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.)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1) (Nonriverine)
- ____ Sediment Deposits (B2) (Nonriverine)
- ____ Drift Deposits (B3) (Nonriverine)
- ____ Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Salt Crust (B11)
- ____ Biotic Crust (B12)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes ____ No 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
Town: West of Orland
Photo begin file#

Time: 0930
State: CA
Photo end file#

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: on County Road 200A where it crosses Stony Creek
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 OHWM.

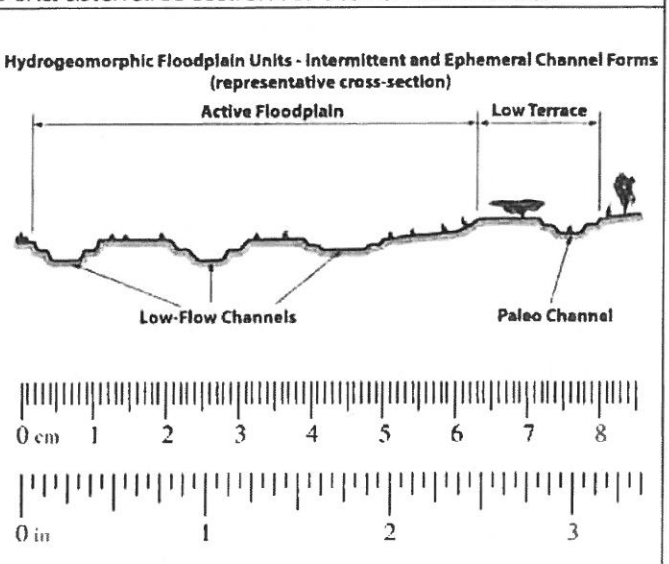
Brief site description:
Flashy perennial stream with a wide gravel bar and more than one channel.

Checklist of resources (if available):

- [X] Aerial photography
  Dates: 2014
- [X] Topographic maps
  Scale: 5' contours
- [ ] Geologic maps
- [ ] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] 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	
	2.56		64	Cobble	Gravel
	0.157		4	Pebble	
				Granule	
	0.079		2.00		
	0.039		1.00	Very coarse sand	
	0.020		0.50	Coarse sand	
1/2	0.0098		0.25	Medium sand	Sand
1/4	0.005		0.125	Fine sand	
1/8	0.0025		0.0625	Very fine sand	
				Coarse silt	
1/16	0.0012		0.031	Medium silt	
1/32	0.00061		0.0156	Fine silt	Silt
1/64	0.00031		0.0078	Very fine silt	
1/128	0.00015		0.0039		
				Clay	Mud



☒ 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.

☒ Locate the low-flow channel (lowest part of the channel). Record observations.

Characteristics of the low-flow channel:

Average sediment texture: Pebble

Total veg cover: 0 % Tree: 0 % Shrub: 0 % Herb: 0 %

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: None, has 1-3' of water flowing at time of visit.

Other: ☐ ☐ ☐ ☐

☒ Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☐ Tree ☒ Shrub ☐ Herb

☐ Change in overall vegetation maturity

☐ Change in dominant species present

☐ Other ☒ Presence of bed and bank

☒ Drift and/or debris

☒ Other: Sediment deposits

☐ Other:

Scattered young Baccharis salicifolia, and mature Tamarix.

☒ Continue walking the high channel cross-section. Record observations below.

Characteristics of the low-flow channel:

Average sediment texture: Granule

Total veg cover: ____ % Tree: ____ % Shrub: 6 % Herb: 5 %

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☒ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Aster shrub

Bromus tectorum

Hypochaeris glabra

Festuca myuros

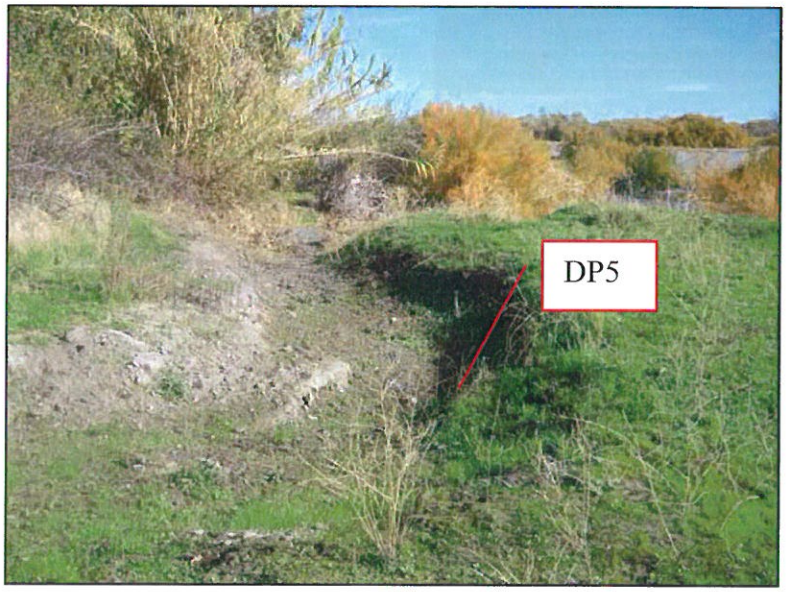
Other: ☐ ☐ ☐ ☐

[X]	Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary. Characteristics used to delineate the active floodplain/ low terrace boundary: [X] Change in average sediment texture [X] Change in total veg cover ☐ Tree [X] Shrub [X] Herb [X] Change in overall vegetation maturity [X] Change in dominant species present [X] Other [X] Presence of bed and bank [X] Drift and/or debris ☐ Other: _____ ☐ Other: _____
[X]	Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions. Consistency of indicators used to delineate the active floodplain/low terrace boundary: Y [X] N ☐ Change in average sediment texture Y [X] N ☐ Change in total veg cover ☐ Tree [X] Shrub [X] Herb Y [X] N ☐ Change in overall vegetation maturity Y [X] N ☐ Change in dominant species present Y [X] N ☐ Other: Y [X] N ☐ Presence of bed and bank Y [X] N ☐ Drift and/or debris Y ☐ N ☐ Other: _____ Y ☐ N ☐ Other: _____
[X]	If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above. They are consistent
[Y]	Continue walking the channel cross-section. Record characteristics of the low terrace. Characteristics of the low terrace: Average sediment texture: Coarse Sand Total veg cover: 76 % Tree: 0 % Shrub: 40 % Herb: 60 % Community successional stage: ☐ NA [X] Mid (herbaceous, shrubs, saplings) ☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees) Dominant species present: Baccharis salicifolia, Muhlenbergia rigens Centaurea solstitialis, Arundo donax, Ambrosia artemisifolia Other: ☐ _____ ☐ _____ ☐ _____ ☐ _____
[X]	If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary. Active floodplain/low terrace boundary acquired via: ☐ Mapping on aerial photograph [X] GPS ☐ Digitized on computer ☐ Other: _____

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

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

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