

**North State Street Over Ackerman Creek Bridge
Replacement Project NES**

Natural Environment Study

Mendocino County, California
Township 15 North, Range 12 West
USGS Ukiah, California 7.5-Minute Quadrangle
01-MEN-0-CR
BHLS 5910 (081)

November 2015

**STATE OF CALIFORNIA
Department of Transportation**

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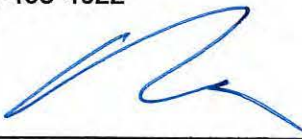
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Summary

The Mendocino County Department of Transportation (County) is planning to replace Bridge No. 10C-0065 on North State Street over Ackerman Creek. The County has nominated this bridge for replacement under the federal-aid Highway Bridge Program administered by the Federal Highway Administration through Caltrans Local Assistance. The existing bridge structure is classified as Functionally Obsolete and has a 2010 sufficiency rating of 75.1. The County is proposing to replace this bridge with a structure capable of meeting all Caltrans Local Programs Manual and Highway Bridge Program (HBP) requirements.

This Natural Environment Study (NES) report has been prepared by the County to evaluate the potential effects of implementation of the proposed North State Street over Ackerman Creek Bridge Replacement Project (Project) on sensitive natural communities, special-status plant and animal species, waters of the United States, and other sensitive biological resources (e.g., migratory birds).

Riparian habitat, which is considered a sensitive natural community by the U.S. Army Corps of Engineers (Corps) and California Department of Fish and Wildlife (CDFW), is present in the biological study area (BSA). Construction of the new bridge and the engineered fishway would result in permanent direct impacts to approximately 0.289 acre of intermittent stream, 0.095 acre of riparian wetland, and 0.257 acre of upland riparian habitat, and temporary impacts on approximately 0.045 acre of intermittent stream, 0.010 acre of riparian wetland, and 0.79 acre of upland riparian habitat. Potential impacts to this sensitive community and recommended avoidance and mitigation measures are addressed.

A delineation of “waters of the United States” concluded that jurisdictional features in the BSA include intermittent stream (Ackerman Creek) and riparian wetland. These features occupy a total of 0.600 acre of the project area. Construction of the new bridge and fishway would potentially result in permanent impacts on up to 0.384 acre and temporary impacts on up to 0.055 acre of waters of the United States. A Wetlands Only Practicable Alternative Finding was prepared pursuant to Executive Order 11990, Protection of Wetlands (1977) and determined that construction of a roughened fishway was the best alternative with respect to minimizing bridge maintenance related to channel head cutting and improving fish passage (Section 4.1.2.3).

Botanical surveys conducted on April 24 and June 20, 2012 concluded that no special-status plant species occur in the BSA. Based upon the review of habitat requirements

and the results of the field assessments, the BSA was determined to represent potential habitat for two federally-listed animal species: California Coastal Evolutionarily Significant Unit (ESU) Chinook salmon (*O. tshawytscha*) and Central California District Population Segment (DPS) steelhead. Six other special-status animal species potentially affected by the project include: western pond turtle (*Actinemys marmorata*), white-tailed kite (*Elanus leucurus*), long-eared owl (*Asio otus*), yellow-breasted chat (*Icteria virens*), yellow warbler (*Setophaga petechia brewsteri*), and pallid bat (*Antrozous pallidus*). Potential impacts and recommended avoidance/minimization measures for the species listed above are addressed in this document.

A Biological Assessment/Essential Fish Habitat Assessment (BA/EFHA) was submitted to the National Marine Fisheries Service (NMFS) to address potential impacts to federally listed fish species and to Essential Fish Habitat (EFH) for Pacific salmon. In the BSA, the federally listed fish species potentially present and that may be affected by project implementation are the threatened Central California Coast DPS steelhead and California Coastal ESU Chinook salmon. Caltrans determined that the proposed project would have no effect on Central California Coast ESU coho and is not likely to adversely affect federally listed species and that it is not likely to eliminate or significantly diminish or disrupt EFH for Pacific salmon inhabiting Ackerman Creek. Caltrans initiated informal consultation with NMFS on January 13, 2015 requesting written concurrence. NMFS completed the review of the request on March 6, 2015 and issued a letter of concurrence with Caltrans' determinations. NMFS' concurrence is based on the condition that direct effects related to construction would be avoided by performing construction when Ackerman Creek is dry. Furthermore, indirect effects would be avoided and minimized by the implementation of measures outlined in the BA/EFHA and these measures are included in this document.

Cliff swallows (*Petrochelidon pyrrhonota*), barn swallows (*Hirundo rustica*), and other migratory birds are known to build nests under artificial structures such as bridges. Bats also can roost in certain crevices under bridges. The existing bridge structure was visually surveyed for evidence of previous migratory bird nesting activity (e.g., remnant mud nests) and for bat roosts during the field assessment. Potential impacts to occupied nests and recommended avoidance/minimization measures are addressed.

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List of Abbreviated Terms

BA	Biological Assessment
BMP	Best Management Practices
BSA	biological study area
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships
DPS	Distinct Population Segment
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
EFH	Essential Fish Habitat
EFHA	Essential Fish Habitat Assessment
°F	degrees Fahrenheit
ft.	foot/feet
m	meter(s)
MBTA	Migratory Bird Treaty Act
mi	mile(s)
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NAD	North American Datum
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service (now NOAA Fisheries)
OHWM	ordinary high water mark
Q ₁₀₀	100-Year-Flood
RWQCB	Regional Water Quality Control Board
RSP	rock slope protection
SWPPP	Storm Water Pollution Prevention Plan
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service
UTM	Universal Transverse Mercator

Chapter 1. Introduction

This Natural Environment Study (NES) report has been prepared by Mendocino County Department of Transportation (County) to evaluate the potential effects of implementation of the proposed North State Street over Ackerman Creek Bridge (10C-0065) Project (Project) on sensitive biological resources.

1.1. Project History

The County is planning to replace Bridge No. 10C-0065 on North State Street over Ackerman Creek. The project is funded through the Federal Aid Highway Bridge Program (HBP) and Local Agency Funding. The existing bridge structure is classified as Functionally Obsolete and has a 2010 sufficiency rating of 75.1. Mendocino County originally applied to Caltrans to replace the bridge through the HBP. The replacement option was rejected in favor of the widening/rehabilitation option due to the Caltrans Sufficiency Rating of the existing bridge being greater than 50. The project has since been re-programmed for replacement as it is more cost effective to replace the bridge than to retrofit the existing bridge due to the potential for scour. In 2010, the County completed improvements to North State Street to reduce high vehicular accident rates. These improvements occurred both north and south of the Ackerman Creek Bridge by adding a center turning lane, bicycle lanes, and sidewalk in select locations to this collector street.

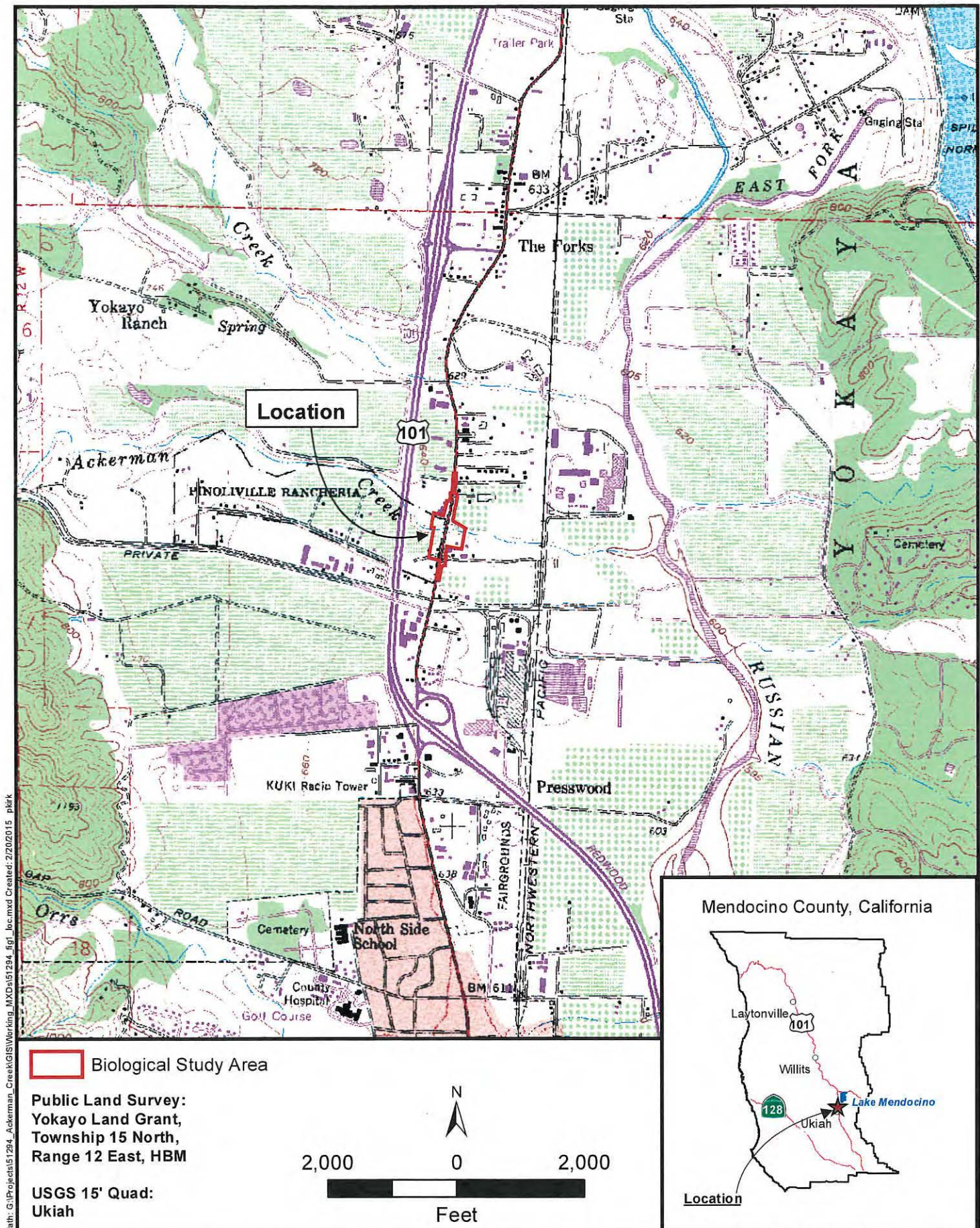
1.2. Project Description

Location

The biological study area (BSA) is located in Ukiah approximately 0.2 miles north of Orr Springs Road and just east of US Highway 101 in Mendocino County (Figure 1). The BSA is located in the unsectioned part of the Yokaya Land Grant in Township 15 North, Range 12 West of the *Ukiah, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle. The project is located at: 39.17927 N, 123.20995 W (Datum NAD 83).

Biological Study Area

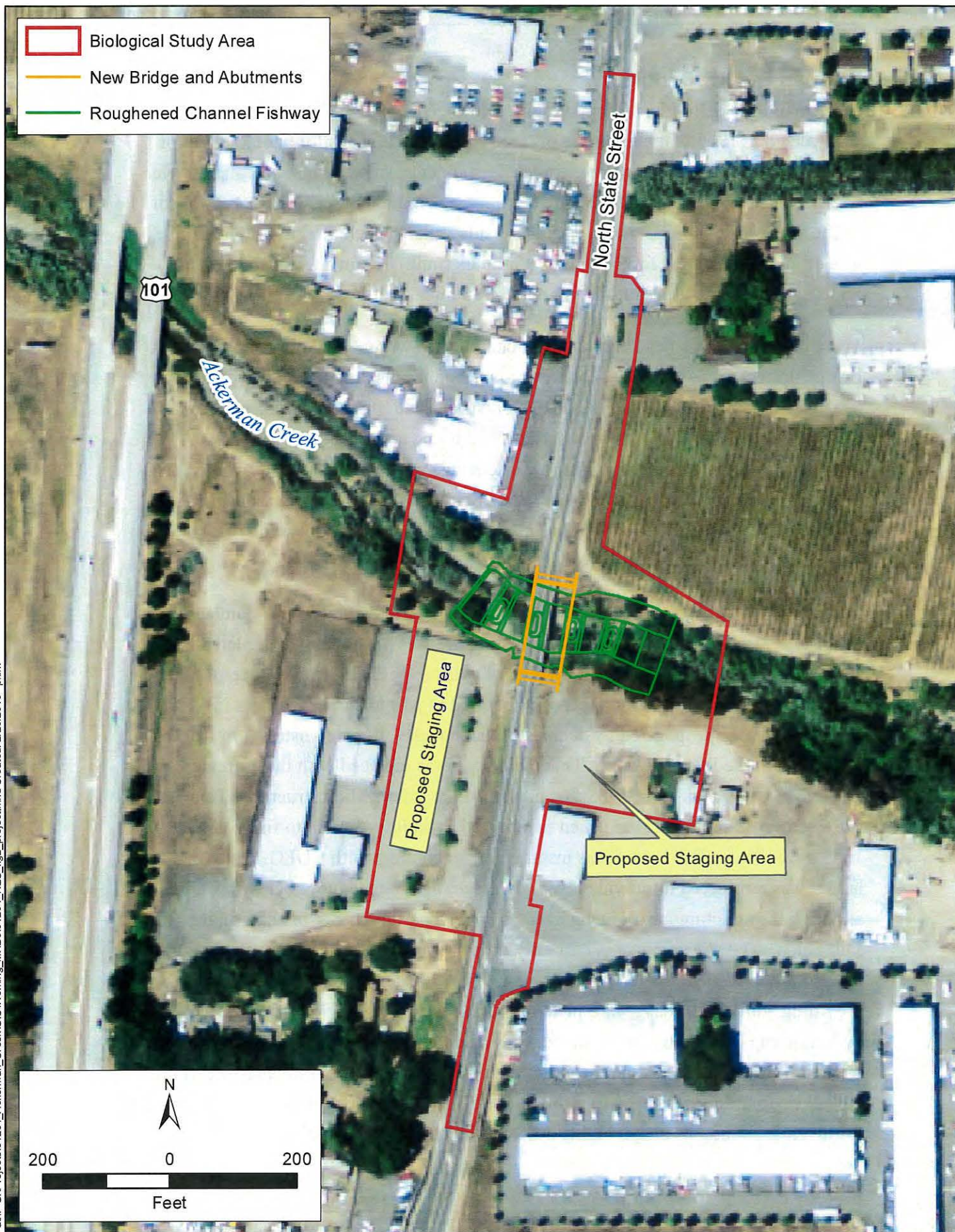
The 8.0-acre BSA includes a portion of North State Street, proposed staging areas southwest and southeast of the bridge, and a reach of Ackerman Creek extending upstream and downstream of the existing bridge (Figure 2).



North State Street at Ackerman Creek Bridge Replacement Project

Figure 1
Location and Vicinity Map

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Existing Facility Conditions

Ackerman Creek Bridge is a continuously reinforced concrete flat slab bridge constructed in 1965 that is made up of three equal 48.7 ft spans for a total length of 146 ft. The three-span structure is founded on concrete piles with solid concrete pier walls and seat abutments. The bridge currently accommodates a single 12-ft lane of traffic with a 2-ft shoulder and substandard sidewalks in each direction. The bridge was originally designed for a 40 miles per hours (mph) design speed, while North State Street through this stretch is signed for 45 mph.

There are several overhead and underground utilities within the Ackerman Creek Bridge project area. Overhead electric and telecommunications are located on joint use poles on both the east and west sides of North State Street. There is an 8-in waterline and a 4-in fiber optic carrier fastened to the eastern side of the bridge. There is a newer 18-in water line fastened to western side of the bridge. Lastly, there is a 4-in and an 8-in natural gas line in North State Street south of the Ackerman Creek Bridge, though it appears that they are not carried across the bridge and cross Ackerman Creek west of the bridge at an approximate depth of 3.5 ft.

Immediately downstream of the existing bridge is a 6- to 8-ft tall check dam and Denil-type fish ladder. This stabilization structure was presumably completed in 1950/51 as part of the California Highways Division's old Highway 101 reinforcement project. This reinforcement project was required in part to stop a head-cut in Ackerman Creek propagated by decreased channel elevation downstream in Ackerman Creek and in the Russian River. This old bridge was replaced with the current Ackerman Creek Bridge in 1965 that preserved the stabilization structure. This stabilization structure has long been recognized as an impediment to fish passage. In 1983 a Denil-type fish ladder was installed under contract with CDFG. Later the ladder was reinforced to provide low-flow access again under contract with CDFG although the structure is still recognized as being a partial barrier to anadromous salmonids. The stream channel currently drops approximately 7-ft over the length of the short-step ladder. The existing Denil-type fish ladder is poorly suited for providing adult fish passage at typical migration flows. At migration flows, the hydraulic capacity of the steel fish ladder is overwhelmed and there is inadequate attraction flow for fish to find the outlet. At low flows, there is inadequate depth in the ladder for adult fish to swim through. Further, the ladder does not provide passage for juvenile salmonids and is highly susceptible to plugging by debris.

Replacement of Existing Three-Span Structure

The existing and functionally obsolete bridge will be replaced with a modern structure that would meet current design criteria. The new bridge will be a single-span approximately 146-ft long, cast-in-place, post-tensioned concrete box girder structure. The new structure will be 64-ft wide to accommodate two 11-ft wide traffic lanes, a 12-ft wide left turn lane, 6-ft wide shoulders and 8-ft sidewalks on both sides. The profile of the new bridge will be lowered in order to reduce the severity of the existing vertical curve and improve sight distance across the bridge. Staging will be required in order to keep the existing bridge open during construction.

The Hydraulic Design Criteria established in the Caltrans Local Procedures Manual prescribe that the facility be capable of conveying the base or 100-year flood (Q_{100}) and passing the 50-year flood (Q_{50}) “without causing objectionable backwater, excessive flow velocities or encroaching on through traffic lanes.” Additionally, the minimum design criteria for this project will provide at least 2-ft of freeboard for drift above the Q_{50} and the ability to withstand the potential scour effects of the base flood (Q_{100}). Analysis performed by Avila and Associates for the Preliminary Design Hydraulic Study dated January 2014 shows that replacing the existing check dam and fish ladder with a more fish friendly alternative significantly lowers the 100-year floodwater surface elevation. Additionally, the single-span bridge configuration with a reconfigured channel provides freeboard for the Q_{50} event well beyond minimum requirements.

The replacement structure will be designed for the standard design and permit truck live loading according to AASHTO LRFD 6th Edition with interims through 2013 including Caltrans Amendments as well as the current *Seismic Design Criteria Version 1.7*, April 2013. The span length would be set based on the hydraulic capacity requirements and structural considerations. Based upon initial field observations, no problem with falsework is anticipated and therefore the use of cast-in-place construction appears appropriate. Bridge abutments will be founded on 16-in diameter driven steel pipe piles. Foundation construction will consist of excavating approximately 20-ft down below existing road grade to the footing foundation elevation in an area the size of the new abutment. Temporary shoring is anticipated to facilitate staged construction and maintain traffic operations. Excavation is required to this level to facilitate existing bridge removal, lowering of the roadway profile, channel re-grading, and ensure the new bridge is founded below future hydraulic impacts. Next, pipe piles will be driven to required tip elevations to support bridge loads. Approximately 25 piles will be required for each abutment, including both

stages of construction. Reinforcement and formwork will then be placed for the bridge abutments prior to casting concrete. Falsework will then be used to support and form the concrete bridge superstructure. Falsework will be placed within the 100-year floodplain of Ackerman Creek and is expected to consist of the typical timber post and steel beams founded on wooden pads. Gravel pads may be used in the dry streambed below the falsework for temporary support. Upon completion of the concrete superstructure, all falsework materials will be removed from the channel. Approximately 10-ft west of the western edge of the bridge deck a PG&E gas transmission line crosses beneath the existing channel. The proposed channel improvements will require that the gas line be re-located.

A roughened channel design consisting of pools and chutes was selected by the project work team, which included consultation with National Marine Fisheries Service (NMFS) engineers. Roughened channels are used to control stream slope to facilitate fish passage using natural “rock” materials. These structures provide debris transport, sediment transport, fish passage, structural stability, fish refuge, and hydraulic diversity. The California Department of Fish and Wildlife (CDFW) and NMFS agreed to work with the project team since not all of the standards for fish passage would be attainable with this design approach. Both agencies have hydraulic design guidelines and criteria for juvenile and adult salmonid passage at road-stream crossings that were used to guide the design (National Marine Fisheries Service 2001; Flosi et al. 2010). The guidelines recognize meeting the hydraulic design criteria should be “a goal for improvement and not the required design threshold.”

Roughened channels, sometimes referred to as nature-like fishways, are constructed channel reaches stabilized with an immobile framework of large rock mixed with smaller material. Roughened channels provide fish passage by controlling the channel profile and adding roughness and structure to it. By design, they create hydraulic diversity that emulates conditions found in steeper or confined natural channels. Unlike individual rock weirs used to control the channel profile, the bed framework forming a roughened channel creates a continuous stable channel structure that is able to flex and move slightly while continuing to function as intended. Unlike stream simulation, a roughened channel is designed with an immobile bed and is not necessarily based on a reference reach in the same channel. Roughened channels are designed using the hydraulic approach (Flosi et al. 2010).

A chute and pool channel consists of a short rock ramp subunit followed by an armored pool subunit. The bed structure of this repeating sequence dissipates energy

through a combination of hydraulic roughness across the chute and the volume of the pool below the chute. The chute is typically constructed with a rock band at the upstream and downstream ends of the chute. Engineered streambed material (ESM) is placed between the rock bands. Both the bands and the ESM are v- or u-shaped in cross section to concentrate flows towards the center of the channel and make for shallower and slower flow along the channel margins. The bed of the pools typically consists of ESM, making them resistant to erosion and controlling the depth and length of the pool (Flosi et al. 2010).

The basis for and design of the roughened channel to provide grade control and fish passage under a replacement bridge at North State Street at Ackerman Creek is detailed in a technical memorandum by Quincy Engineering (2014). The roughened channel design for Ackerman Creek at North Street Bridge consists of 5 cycles of chute and pool. The chutes have a slope of 5 percent and combined with pools slope does not exceed 4 percent. The drop across the chutes does not exceed 2-ft and the pools have a residual pool depth of 2-ft. A series of boulder banks occur on the upstream and downstream sides of the pools to create hydraulic roughness and structural stability. The transition back to native channel at the downstream end of the fishway is comprised of a chute that is (40-ft long, with a slope of 5 percent and drops 2-ft across the chute. At the end of the chute is a stone curtain wall 11.5-ft high. The entire transition is buried sufficiently deep to mitigate any further downstream incision. The chute contains rock bank lines that tie into the existing banks.

For the North State Street crossing, the chutes were found capable of providing suitable fish passage hydraulics and low and moderate fish passage flows; although they would slightly exceed design criteria at higher passage flows for both the juvenile and adult anadromous salmonids. This very small deviation from criteria is minor and the system will demonstrably improve fish passage for all life stages in Ackerman Creek.

CONSTRUCTION STAGING

The ability to phase the construction so that the Ackerman Creek Bridge can remain open to traffic is critical to this project. The bridge replacement construction would require a phased approach where one-half of the new bridge is constructed while traffic is maintained on the existing bridge. First traffic will be shifted to one-half of the existing bridge and bridge removal will occur on the far side of the existing bridge. After removal of a portion of the existing bridge, a portion of the new bridge will be constructed within a portion of the previous footprint. Once the new bridge half is

completed, traffic will be shifted to the new structure and the remainder of old bridge would be removed. The second half of the new bridge would then be constructed in its place and once complete, traffic would be moved to the final configuration after completion of a closure pour and final railing construction.

Upland construction activities and staging with no potential to directly affect listed salmonids would commence prior to the in-channel construction season (June 15-October 31). This may include grading, excavation of bridge abutment footings, footing pours, and preparations for in-channel construction. Although pile driving will occur in uplands, it shall be restricted to the in-channel construction season (discussed in greater detail in the project effects section in Chapter 4) to avoid and minimize potential percussion impacts to salmonids. In-channel construction activities associated with the bridge replacement at Ackerman Creek, removal of the existing grade control structure, construction of the roughened channel and rock weirs, bridge removal and bridge construction, including placement of falsework in the channel of Ackerman Creek will occur in the following sequence:

Construction Season 1

- Shift traffic and demolish a portion of the existing bridge for staged construction.
- Portion of abutments will be constructed from cast-in-place concrete founded on steel pipe piles. These will be installed from the new approaches which are outside of the base flow channel (this could begin prior to or in conjunction with the in-channel work during the first construction season).
- Construct falsework for first half of the new bridge upon gravel pad.
- Construct first half of the new bridge box girder superstructure. New Stage 1 superstructure will be built at grade and then raised during the winter to meet hydraulic clearance criteria for existing flood profile during the winter shut down period. It will then be jacked (lowered) into place at the start of the second season.
- Remove falsework for new bridge.
- Demolish a portion of the existing bridge and dispose of it offsite. Remove the existing bridge using an excavator with a chipping tool will remove the existing bridge, which will be allowed to fall upon the gravel pad. This existing concrete will be removed and disposed of offsite.
- Complete onsite mitigation (installation of BMPs for erosion control and revegetation).

Construction Season 2:

- Lower the bridge portion completed during the season 1. Complete utility relocations to the new bridge.
- Shift traffic onto bridge completed in season 1.
- Begin fishway construction.
- Demolish the remainder (i.e., second half) of the existing bridge.
- Remainder of abutments will be constructed from cast-in-place concrete founded on CISS or CIDH piles. These will be installed from the new approaches, which are outside of the low baseflow channel and may occur prior to the in-channel construction period).
- Construct falsework for remainder of the new bridge upon gravel pad.
- Construct second half of new bridge box girder superstructure.
- Remove falsework for new bridge.
- Remove gravel pad and any temporary materials and equipment.
- Remove existing check dam and Denil-type fish ladder.
- Complete final fishway grading in vicinity of the new bridge.
- Complete onsite mitigation (installation of BMPs for erosion control and revegetation).

During construction, traffic through the construction area will be maintained by staging construction and shifting traffic. A handful of night closures may be required at the end of the second construction season for final approach work. Construction will take two years, which includes two instream work windows that will begin in spring 2016 and end in-late 2017.

CONSTRUCTION CRITERIA AND METHODS

Construction specifications would be in accordance with Caltrans Standard Specifications in force at the time the construction contract is awarded and project Special Provisions. The following paragraphs describe the construction activities associated with the bridge replacement and fish passage improvements in more detail.

Equipment and materials will be staged in the field just north of the east side of the bridge (Figure 2). During construction, traffic through the construction area will be maintained along the existing roadway and bridge.

Temporary work platforms will be constructed of suitably sized salmon spawning gravel “fish rock” unless construction will occur over channel that will ultimately be

excavated as part of the fishway construction. Gravel will be uncrushed, rounded, natural river rock with no sharp edges. It will be washed at least once and have a cleanliness value of 85 or higher based on Caltrans Test No. 227. Gravel would also be completely free of oils, clay, debris, and organic material. The platform will extend approximately 20-ft upstream and 20-ft downstream of the existing bridge. Any remaining flow, which is expected to be minimal, will be diverted through High Density Polyethylene Pipe(s), or K-Railing lined with plastic and gravels, to maintain any flow through the temporary work pad. The material used as fish rock for the proposed action will follow the size criteria identified in Table 1. Temporary work platforms will be removed prior to October 15.

Table 1. Size Criteria for Spawning-sized Gravel “Fish Rock” for Constructing Gravel Work Pad

Particle Size	Percent Passing	Percent Retained
5-inch	95-100	0-5
2-inch	70-85	15-30
1-inch	40-50	56-60
3/4-inch	25-35	60-75
1/2-inch	10-20	85-90
1/4-inch	0-5	95-100

Abutments will be constructed from cast-in-place concrete founded on driven steel pipe piles. These will be installed from the new approaches, which will be outside of the low-flow channel. Temporary shoring will be required due to depth of excavation adjacent to existing traffic lanes. Both abutments will be founded on approximately 25 driven steel pipe piles each. These steel pipe piles are estimated to be approximately 60 to less than 80 ft. in length, 16-in. in diameter, and weigh 83 lbs. per foot (Table 2).

The materials under both abutments are primarily compact clayey silts and sands, with dense gravels. The single-span, cast-in-place, post-tensioned concrete box girder structure will be built on falsework, a temporary framework on which the permanent bridge structure and construction activity will be supported during construction until the permanent bridge structure has reached sufficient strength to support loads. The falsework will be an engineered system, typically consisting of the required bridge concrete formwork supported on a temporary stringers-and-post system. It is likely that this falsework system will use timber and plywood forms, rolled steel girders, and timber posts supported on timber foundation pads. In order to provide an adequate

and level support surface for the timber pads, imported clean gravel will be placed on the ground surface to form a proper work pad. Once the bridge construction has been completed, the falsework system will be disassembled and removed, including the imported clean gravel materials.

Table 2. Pile driving information for the North State Street at Ackerman Creek Bridge Replacement Project.

Structure	Driver type	Pile type	Pile size		Maximum number of Piles	Piles installed per day/strikes per day
			Diameter	Length		
Bridge Abutment Piles	Impact	Steel Pipe	16-inch	60-80	50 (25 per abutment)	6/4,800

Due to the channel incision potential in Ackerman Creek, protection of the abutments is required. New RSP (quarter ton, method B) will be installed along both banks of the Ackerman Creek (approximately 400 lineal feet) from existing ground slope, with a 10-foot wide flat RSP apron at the base. A large excavator with a bucket/thumb attachment would pick and place/fit together the RSP. As the apron is placed, the excavator would progress with the installation. Dump trucks would drop the RSP into the site from a temporary access road adjacent to the new bridge. The RSP would take about 2-3 weeks to install. Voids in the RSP below the ordinary high mark (OHWM) would be filled with gravel and RSP above the OHWM would be filled with well-graded soil suitable for plantings (e.g., willow cuttings, cottonwood seedlings). The planting will occur along the face of the RSP at a variety of elevations.

The existing bridge will be removed in two stages: half at the end of the first construction season, and the other half near the beginning of the second season. An excavator with a chipping tool will remove the bridge, which will be allowed to fall upon the gravel pad. The concrete rubble will then be removed and disposed of offsite. Once the new bridge is complete, the existing bridge has been removed, and the RSP has been placed, the crushed rock atop the gravel work pad will be removed and disposed of offsite.

Construction of a roughened channel is typically done in the following sequence as described in the California Salmonid Stream Habitat Restoration Manual (Flosi et al. 2010) and will be completed during the second in-water construction season. The physical impact area for the new roughened channel will be approximately 105 ft. wide by 400 ft. long (approximately 1 acre).

1. Excavate native material and/or backfill and compact material to the sub-grade elevations for installation of granulated filter blanket (if needed), bank lines and Engineered Streambed Material (ESM). Then excavate trenches for placement of steps, bands, or other rock structures that extend below the ESM or key into the banks.
2. It is typically best to work in sections; going from upstream to downstream so completed work does not backwater the current work area. If water is well controlled, working from downstream going up has the advantage of rock being placed against the downstream bed, which is closer to a natural condition of hydraulic sorting. Plan the sequence of construction so large equipment does not have to cross over completed structures or bank line rock. If they do have to cross over existing structures, smaller fill material from the ESM can be used to protect the structures.
3. Place the footing row(s) and top row of rocks for steps, bands, or other rock structures.
4. Install bank line rock, including any keystone rocks that protrude from the bank. Individually place the larger rock in the bank line gradation. Use the smaller material to fill in the voids between the large rocks. To compact the bank lines, tamp in place followed by jetting or flooding to wash the finer material into remaining voids.
5. Install ESM in lifts across the active channel. The height of each lift should be greater than the D_{50} but less than the D_{84} of the ESM. Plan and specify the lifts and the large rock within each lift so the desired distribution of exposed rock is eventually achieved as described below.
 - a) Begin each lift by individually placing the largest rocks in the lift (size greater than thickness of lift) throughout the channel bed in the proportions called out in the ESM gradation. This ensures the large rocks are positioned vertically and laterally throughout the ESM horizon. It also allows the large rocks to protrude above the finished grade to create hydraulic roughness and diversity. For stability, the rock should not protrude more than one-third of its height above the finished grade of the channel bed.

- b) Place the remaining material into the channel at a thickness equal to one lift. Mix in-place as necessary until the mixture is well graded.
- c) Compact each lift by tamping, followed by jetting or flooding so fine material is worked into the lift. If water continues to rapidly infiltrate through the placed ESM, the bed is not adequately sealed. Add additional fine material to the top of the lift and then jet or flood the material into the bed. Repeat until the bed is adequately sealed. During final flooding of the top lift, an adequately sealed bed will maintain water flowing down-slope across the surface of the roughened channel.

Backfilled RSP along the stream banks will be planted with native vegetation (e.g., willow, alder, or cottonwood) furnished by the Pinoleville Pomo Tribe which maintains a nursery just upstream of the BSA and has previously participated in stream restoration in the vicinity.

Conservation Measures

Conservation measures will be incorporated into the project to minimize potential effects on federally listed species and other biological resources. This section describes those conservation measures proposed to minimize the anticipated temporary and permanent effects associated with the proposed project. The conservation measures listed below, along with other environmental commitments included in this report, are also listed in Table B-1 (Appendix B).

CONSERVATION MEASURE #1 - EROSION AND SEDIMENTATION CONTROL

Erosion control measures shall be implemented during construction of the proposed action. These measures shall conform to the provisions in the Caltrans Standard Specifications and the special provisions included in the contract for the project. Such provisions include the preparation of a Storm Water Pollution Prevention Plan (SWPPP), which describes and illustrates the of best management practices (BMPs) in the project site.

Erosion control measures to be included in the SWPPP or to be implemented by the County include the following:

- To the maximum extent practicable, activities that increase the erosion potential in the project area shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. In channel construction will be conducted

from June 15-October 31 and upland construction will likely occur throughout the year as long as work activities comply with the conservation and avoidance and minimization measures identified herein and for the protection of other sensitive or special-status plant or animal species. For upland construction activities that must take place during the late fall, winter, or spring, then temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and maintained until permanent erosion control structures are in place.

- Areas where wetland and upland vegetation need to be removed shall be identified in advance of ground disturbance and limited to only those areas that have been approved by the County. Exclusionary fencing will be installed around areas that do not need to be disturbed.
- Within 10 days of completion of construction in those areas where subsequent ground disturbance will not occur for 10 calendar days or more, 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 possibility of rain within the next 24 hours, as forecasted by the National Weather Service, weed-free mulch shall be applied to all exposed areas upon completion of the day's activities. Soils shall not be left exposed during the rainy season.
- Suitable BMPs, such as silt fences, straw wattles, or catch basins, shall be placed 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. Further, sediment built up at the base of BMPs will be removed before BMP removal to avoid any accumulated sediments from being mobilized post-construction.
- All dewatering activities will be conducted in compliance with the Caltrans Field Guide for Construction Site Dewatering and Section 13-4.03G of the Caltrans Standard Specifications. Water removed from the excavated area for pier and abutment footings or construction of fishway shall be pumped to a temporary sediment retention basin outside of the channel, through a mechanized water filtration system, or into baker tanks or similar storage system and trucked offsite to an authorized disposal site. If a temporary basin is constructed, it shall be located outside of the active channel and include sediment sock or similar sediment control on the discharge.
- If spoil sites are used, they shall be located such that they do not drain directly into a surface water feature, if possible. If a spoil site drains into a surface

water feature, catch basins shall be constructed to intercept sediment before it reaches the feature. Spoil sites shall be graded and vegetated with native species to reduce the potential for erosion.

- Sediment control measures shall be in place prior to the onset of the rainy season and will be monitored and maintained in good working condition until disturbed areas have been revegetated with native species.
- To the extent practicable with construction of the roughened channel, any new or previously excavated gravel material placed in the channel shall meet Caltrans' cleanness test indicating the relative proportions of clay-sized material clinging to coarse aggregate and screenings (California Test No. 227) with a value of 85 or higher (excluding such materials as soil in the RSP to allow for riparian planting).

CONSERVATION MEASURE #2 - PREVENTION OF ACCIDENTAL SPILLS

Construction specifications shall include the following measures to reduce potential impacts to vegetation and aquatic habitat resources in the project area associated with accidental spills of pollutants (e.g., fuel, oil, asphalt and grease):

- A site-specific spill prevention plan shall be implemented for potentially hazardous materials. 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 50 ft. 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 materials. Maintenance and fueling shall be conducted in an area at least 50 ft. away from Ackerman Creek or within an adequate fueling containment area.
- Equipment operating within the OHWM shall use non-toxic vegetable oil for operating hydraulic equipment opposed to traditional hydraulic fluids that can contain a wide range of chemical compounds.
- Place plastic materials under asphaltic concrete (AC) paving equipment while not in use, to catch and/or contain drips and leaks.
- Minimize sand and gravel from new asphalt from getting into storm drains, streets, and creeks by sweeping. Old or spilled asphalt must be recycled or disposed as approved by the Resident Engineer.

- AC grindings, pieces, or chunks used in embankments or shoulder backing must not be allowed to enter any storm drain or watercourses. Install silt fence until structure is stabilized or permanent controls are in place.
- Collect and remove all broken asphalt and recycle when practical; otherwise, dispose in accordance with Standard Specification 7-1.13.
- During chip seal application and sweeping operations, petroleum or petroleum covered aggregate must not be allowed to enter any storm drain or water courses. Use silt fence until installation is complete.
- Use only non-toxic substances to coat asphalt transport trucks and asphalt spreading equipment.
- Drainage inlet structures and manholes shall be covered with filter fabric during application of seal coat, tack coat, slurry seal, and/or fog seal.
- Seal coat, tack coat, slurry seal, or fog seal shall not be applied if rainfall is predicted to occur during the application or curing period.
- Do not allow saw-cut Portland Concrete Cement (PCC) slurry to enter storm drains or watercourses.

CONSERVATION MEASURE #3 - AIR QUALITY/DUST CONTROL

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

- Water inactive construction sites and exposed stockpile sites at least twice daily, including during non-work days, or until soils are stable.
- Pursuant to the California Vehicle Code (State of California 2009), all trucks hauling soil and other loose material to and from the construction site shall be covered or shall maintain at least 6 in. of freeboard (i.e., minimum vertical distance between top of load and the trailer).
- Any topsoil that is removed for the construction operation shall be stored on-site in piles not to exceed 4 ft. in height to allow development of microorganisms prior to resoiling of the construction area. These topsoil piles shall be clearly marked and flagged. Topsoil piles that will not be immediately returned to use 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 immediately used.

- Equipment or manual watering shall be conducted on all stockpiles, dirt/ gravel roads, and exposed or disturbed soil surfaces, as necessary, to reduce airborne dust.

CONSERVATION MEASURE #4 - REPLACEMENT OF LOST RIPARIAN HABITAT

The following measures shall be implemented to reduce potential impacts to riparian habitat in the BSA:

- The width of the construction disturbance zone within the riparian habitat shall be minimized through careful pre-construction planning.
- Exclusionary fencing shall be installed along the boundaries of all riparian areas to be avoided to ensure that impacts to riparian vegetation outside of the construction area are minimized.
- Riparian habitat areas temporarily disturbed shall be replanted using riparian species that have been recorded along the Ackerman Creek in the action area, including willow (*Salix lasiolepis* and *Salix laevigata*), white alder (*Alnus rhombifolia*), and Fremont cottonwood (*Populus fremontii*).
- Onsite creation/restoration shall occur in areas that have been disturbed during project construction and within interstitial spaces of the RSP. The amount of habitat created/restored shall be at a 3:1 ratio of new plantings per large (6 in. in diameter at breast height) woody plant removed. This replanting ratio will help ensure successful establishment of at least one vigorous plant for each plant removed to accommodate the project.
- Plant spacing intervals will be determined as appropriate based on site conditions following construction.
- Non-native tree species removed during project construction will be replaced with native riparian (e.g., willow, alder, and cottonwood.)
- Revegetation monitoring would be implemented in compliance with regulatory permit conditions and be initiated immediately following completion of the planting. The monitoring surveys will consist of a general site walkover evaluating the survival and health of riparian plantings, signs of drought stress, weed or herbivory problems, and the presence or trash or other debris. Within the mitigation area, less than 50 percent total mortality of planted species (including container stock and hardwood cuttings) would be considered a success. Greater than 50 percent mortality of planted species will be considered acceptable if “volunteer” native species provide complete

vegetation coverage in the mitigation area. If monitoring results indicate that revegetation efforts are not meeting established success criteria, corrective measures would be implemented.

CONSERVATION MEASURE #5 – PREVENTION OF SPREAD OF INVASIVE SPECIES

The following measures shall be implemented to prevent the spread of invasive species in the BSA:

- 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 sites will consist of locally adapted native plant materials to the extent practicable.
- Any personal equipment (including boots/waders), construction materials (falsework members, sand bags, etc.) and construction equipment shall be properly disinfected or cleaned according guidance provided by the State of California Aquatic Invasive Species Management Plan (California Department of Fish and Game 2008a; U.S. Bureau of Reclamation 2012) prior to in-channel work to prevent the spread of aquatic invasive species.

Chapter 2. Study Methods

2.1. Federal Regulatory Requirements

Federal Endangered Species Act

Section 9 of the federal Endangered Species Act of 1973 prohibits acts of disturbance that result in the "take" of threatened or endangered species. As defined by the federal Endangered Species Act, "endangered" refers to any species that is in danger of extinction throughout all or a significant portion of its current range. The term "threatened" is applied to any species likely to become endangered within the foreseeable future throughout all or a significant portion of its current range. Take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Violation of this section can result in penalties of up to \$50,000 and up to one year of imprisonment. Sections 7 and 10 of the federal Endangered Species Act provide a method for permitting an action that may result in "incidental take" of a federally listed species. Incidental take refers to take of a listed species that is incidental to, but not the primary purpose of, an otherwise lawful activity. Incidental take is permitted under Section 7 for projects on federal land or involving a federal action, while Section 10 provides a method for permitting incidental take resulting from state or private action.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance essential fish habitat (EFH) for those species regulated under a federal fisheries management plan. The MSA requires federal agencies to consult with National Marine Fisheries Service (NMFS) on all actions, or proposed actions, authorized, funded, or undertaken by the agencies that may adversely affect EFH (MSA section 305[b][2]). A component of this consultation process is the preparation and submittal of an Essential Fish Habitat Assessment (EFHA).

The EFH mandate applies to all species managed under a fisheries management plan. For the Pacific coast (excluding Alaska), there are three fisheries management plans covering groundfish, coastal pelagic species, and Pacific salmon.

Federal Clean Water Act Section 404

The objective of the Clean Water Act (CWA, 1977, as amended) is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In 1987, the U.S. Army Corps of Engineers (Corps) published a manual standardizing the manner in which wetlands were to be delineated nationwide. To determine whether areas that appear to be wetlands are subject to Corps jurisdiction (i.e., are "jurisdictional" wetlands), a wetlands delineation must be performed and the resulting map of the wetland boundaries verified in writing by the Corps. Wetlands generally include riparian, swamps, marshes, bogs, and similar areas. In addition to verifying wetlands for potential jurisdiction, the Corps is responsible for the issuance of permits for projects that propose the filling of wetlands. Any permanent loss of a jurisdictional wetland as a result of project construction activities is considered a significant impact. Permits under Section 404 of the CWA, as amended, are required for the placement of dredged or fill materials into all waters of the United States, including wetlands and "other waters." Projects are permitted under either individual or general (e.g., nationwide) permits.

Federal Clean Water Act Section 401

The California Regional Water Quality Control Board (RWQCB), North Coast Region, is responsible for enforcing water quality criteria and protecting water resources in the project area. The RWQCB is responsible for controlling discharges to surface waters of the state by issuing waste discharge requirements.

Section 401 of the CWA requires that a project proponent obtain a water quality certification or a waiver for projects requiring a federal permit to allow for discharges of dredged or fill material (i.e., Corps Section 404 permits).

Federal Migratory Bird Treaty Act

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21).

Executive Order 11990 (Wetlands)

Executive Order 11990 is an overall wetlands policy for all agencies managing federal lands, sponsoring federal projects, or providing federal funds to state or local projects.

It requires federal agencies to follow avoidance, mitigation, and preservation procedures with public input before proposing new construction in wetlands.

Executive Order 13112 (Invasive Species)

Executive Order 13112 directs federal agencies to use relevant programs and authorities to:

- prevent the introduction of invasive species;
- detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner;
- monitor invasive species populations accurately and reliably;
- provide for restoration of native species and habitat conditions in ecosystems that have been invaded;
- conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species;
- promote public education on invasive species and the means to address them; and
- not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, In accordance with guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

Executive Order 11988 (Floodplain Management)

Executive Order 11988 requires federal agencies to avoid the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and avoid direct and indirect support of floodplain development.

2.2. California Regulatory Requirements

Department of Fish and Game Code Section 2081, California Endangered Species Act

Under the California Endangered Species Act (CESA), the CDFW has the responsibility for maintaining a list of threatened and endangered species (California

Fish and Game Code 2070)¹. Additionally, CDFW maintains a list of “candidate species” which are species that CDFW has formally recognized as being under review for inclusion on the state’s list of endangered or threatened species. The CDFW also maintains lists of “species of special concern” which serve as “watch lists.” In accordance with the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project area and determine whether the proposed project will have a potentially significant impact on such species. In addition, the CDFW encourages informal consultation on any proposed project that may impact a candidate species. Project-related impacts to species on the CESA endangered or threatened list would be considered significant and would require avoidance. State-listed species are fully protected under the mandates of CESA. “Take” of protected species incidental to otherwise lawful management activities may be authorized under Section 2081 of the Fish and Game Code of California.

Department of Fish and Game Code Section 3503, Birds of Prey

Under Section 3503.5 of the California Fish and Game Code, it is unlawful to take, possess, or destroy any birds in the orders of Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird, except as otherwise provided by this code or any regulation adopted pursuant thereto.

Department of Fish and Game Code Section 3513, Migratory Birds

Migratory birds are also protected in California. The State Fish and Game Code Section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA. Under Code Section 3513 the CDFW may consider impacts similar to those described above under the MBTA a significant impact. Implementation of the measures identified in Section 6.3 will ensure compliance with Fish and Game Code Section 3513.

Department of Fish and Game Code, “Fully Protected” Species

California statutes also accord “fully protected” status to a number of specifically identified birds, mammals, reptiles, amphibians, and fish. These species cannot be

¹ On January 1, 2013, the California Department of Fish and Game changed their name to the California Department of Fish and Wildlife; however, the California Fish and Game Code title remains unchanged at this time.

“taken,” even with an incidental take permit (California Fish and Game Code, Sections 3505, 3511, 4700, 5050, and 5515)

Department of Fish and Game Code Section 1600, Lake or Streambed Alteration

Any entity proposing an activity that will 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, may require a discretionary Streambed Alteration Agreement from the CDFW (Region 1). As a general rule, this requirement applies to any work undertaken within the 100-year floodplain of a stream or river containing fish or wildlife resources.

2.3. Studies Required

Informational Review

Plant and animal special-status species and/or other special habitats having the potential to occur in the BSA were determined, in part, using several database searches and review of an official species list provided by the U.S. Fish and Wildlife Service (USFWS). Prior to conducting field assessments, the following information sources were reviewed:

- *Ukiah, California*, U.S. Geological Survey (USGS) 7.5-minute quadrangle;
- Aerial photography of the BSA and vicinity;
- USFWS list of listed, proposed, and candidate species that may occur in the *Ukiah, California* USGS 7.5-minute quadrangle and Mendocino County (Appendix C);
- California Natural Diversity Data Base (CNDDB) and California Native Plant Society (CNPS) records for the *Ukiah, California* USGS 7.5-minute quadrangle and the eight surrounding quadrangles (Appendix D);
- California Wildlife Habitat Relationships (CWHR) System (California Department of Fish and Game 2008b); and
- Pertinent literature, including the online *Inventory of Rare and Endangered Vascular Plants of California* (California Native Plant Society 2012), and *The Jepson Manual*, 2nd edition. (Baldwin et al. 2012).

Field Investigations and Reports

North State Resources, Inc. (NSR) fishery biologist Mike Gorman conducted a site assessment on November 8, 2011. The field evaluation of habitat conditions was conducted at the scale of geomorphic channel units (i.e., riffles, runs, and pools,

including primary constituent elements of critical habitat and EFH). The stream channel was surveyed for general morphology, presence and extent of suitable spawning gravel, and other notable habitat features and conditions. This information was used in conjunction with existing contemporary aquatic habitat and fishery survey data to characterize the environmental setting in the BSA. The field evaluation included a survey of the existing grade control structure and fish ladder. Caltrans District 1 submitted a Biological Assessment/Essential Fish Habitat Assessment (BA/EFHA) to NMFS requesting informal consultation under Section 7 of the federal Endangered Species Act (ESA) on January 13, 2015.

Protocol-level botanical surveys were conducted on April 24, 2012 and June 20, 2012, in general 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 the California Department of Fish and Wildlife guidelines, a target list of special-status plant species with the potential to occur on the site was developed prior to the survey through interpretation of the CNDDDB and CNPS query results. A list of all plant species observed is provided in Appendix E. All plants were categorized as native or non-native according to *The Jepson Manual, 2nd edition* (Baldwin et al. 2012). No special-status plant species were detected during the protocol-level survey.

On June 20, 2012, a Corps jurisdictional wetland determination was performed according to methodology described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). A copy of the report is included as Appendix F.

Personnel and Survey Dates

Following is a list of personnel and tasks performed during visits to the project site:

- Mike Gorman, Fishery Biologist, North State Resources, Inc.
Aquatic habitat assessment, November 8, 2011.
- Paul Kirk, Biologist, North State Resources, Inc.
Wetland delineation survey, June 20, 2012.
- Sarah Tona, Botanist, North State Resources, Inc.
Botanical surveys, April 24 and June 20, 2012.
- Chris Geach, Fisheries Technician, North State Resources, Inc.
Aquatic habitat assessment, October 22, 2012.

Agency Coordination and Professional Contacts

A meeting between Quincy Engineers, the County, NSR, Caltrans, the CDFW (Richard Macedo, Rick Harris, and Derick Acomb), and NMFS (Tom Daugherty) was held on Tuesday, November 8, 2011. The purpose of the meeting was to discuss project alternatives with natural resource agency personnel to select the least invasive design and begin developing appropriate avoidance and minimization measures. The primary topic of discussion was alternatives for the grade control structure and fish passage. During this meeting, CDFW indicated that a Fish and Game Code Section 2080.1 consistency determination is not warranted since there had been no records for coho salmon within this tributary to the Russian River. Further, it was agreed by NMFS and CDFW that the habitat in the BSA was migratory habitat and very little, if any, spawning or rearing occurs in the BSA.

Jason Jurrens and Jim Foster of Quincy Engineers collaborated with David K. White, NMFS Fish Passage Engineer, and Tom Daugherty, NMFS fishery biologist, via email on the design of the roughened channel feature between December 2012 and June 2014. On May 29, 2014 David White provided a memorandum acknowledging NMFS' review and authorization for the project to this stage (Quincy Engineering 2014).

A Biological Assessment/Essential Fish Habitat Assessment (BA/EFHA) was submitted to the National Marine Fisheries Service (NMFS) to address potential impacts to federally listed fish species and to Essential Fish Habitat (EFH) for Pacific salmon. Caltrans initiated informal consultation with NMFS on January 13, 2015 requesting written concurrence. NMFS completed the review of the request on March 6, 2015 and issued a letter of concurrence with Caltrans' determinations (Appendix A). On November 4, 2015, NMSF sent an e-mail to Caltrans District 1 indicating that there have no changes in special-status fish species listings or status for the project since the letter of concurrence was issued (Appendix C)

On November 3, 2015, a list of federal special-status species with the potential to occur in the *Ukiah, California* USGS 7.5-minute quadrangle and Mendocino County was electronically obtained from the USFWS by Caltrans District 1 (Consultation Code: 08EACT00-2016-SLI-0029) (Appendix C).

Limitations That May Influence Results

Salmon and steelhead are known to spawn and rear in Ackerman Creek, near and upstream of the BSA. Since the listed species are migratory and their abundance,

particularly the relative abundance of different life stages, varies considerably in location and across seasons and years, site-specific studies were not conducted to document presence. The habitat characterization was intended to provide site-specific data on available habitat in the BSA such that potential habitat-related impacts can be adequately described.

Chapter 3. Results: Environmental Setting

3.1. Description of Existing Physical and Biological Conditions

Study Area

The 8.0-acre BSA is located along North State Street in a commercially zoned corridor just west of US Highway 101 and north of the city of Ukiah. Public lands within the BSA includes North State Street and road shoulders that are within the right-of-way, and a portion of Ackerman Creek that includes the existing and proposed bridge alignments. The potential staging areas southwest and southeast of the bridge and portions of parcels along North State Street are private lands.

Physical Conditions

The topography of the BSA is generally characterized by the Ackerman Creek channel and the adjacent river banks and terraces. Within the BSA, the northern bank has a slope of approximately 50 percent; the slope of the southern bank is approximately 10 percent. Just east of the existing bridge, there is fish ladder and dam interrupts flow and changes the composition of the creek bed and bank. The creek is wide and shallow on the west (upstream) side of the dam and deeper with a greater incised channel on the east (downstream) side. The bridge deck is at an approximate elevation of 620 feet and the terraces are relatively flat—sloping gently towards both Ackerman Creek and to the east. All soils within the BSA are gravelly or sandy alluvial soils.

The climate within the project area is Mediterranean with cool, wet winters and hot, dry summers. Ninety-three percent of precipitation occurs between October and May, with snow uncommon—the average annual rainfall is approximately 37 inches. Air temperatures in the study area range between an average January high of 57 °F, and an average July high of 93 °F. The year-round average high is approximately 74 °F (Western Regional Climate Center 2014)

The BSA is located less than one mile from the confluence of Ackerman Creek and the Russian River. Ackerman Creek drains over 20 square miles of contributing area into the Russian River watershed (California Department of Fish and Game 1999). Locally, Ackerman Creek is driven by seasonal precipitation patterns. Ackerman Creek is an intermittent tributary typically flowing only from November into early-June.

Biological Conditions

The BSA is dominated by the commercially-zoned urban landscape along North State Street. Ackerman Creek, an intermittent stream that bisects the BSA, is a riparian corridor that connects to the Russian River to the east. Vegetation communities and the habitat connectivity within the BSA are discussed below.

VEGETATION COMMUNITIES

Vegetation communities were classified based on the vegetation descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988). The vegetation communities occurring within the BSA include barren, riverine, ruderal, valley foothill riparian, and vineyard (Figure 3).

Barren

The barren areas are generally devoid of vegetation and include North State Street, adjacent gravel shoulders, and parking lots. Sparse ruderal vegetation occurs along the edges of the barren areas. Within the BSA ruderal vegetation is dominated by non-native annual grasses and forbs including slender wild oats (*Avena barbata*), black mustard (*Brassica nigra*), fennel (*Foeniculum vulgare*), and rose clover (*Trifolium hirtum*).

Riverine

Riverine habitat is present as the channel of Ackerman Creek, and gravel bars and revetment within the ordinary high water mark (OHWM). The substrate is gravel and sand, and the channel is incised throughout the study area. There is riparian vegetation adjacent to most of the riverine habitat in the study area. There are also “islands” of riparian vegetation within some of the riverine habitat.

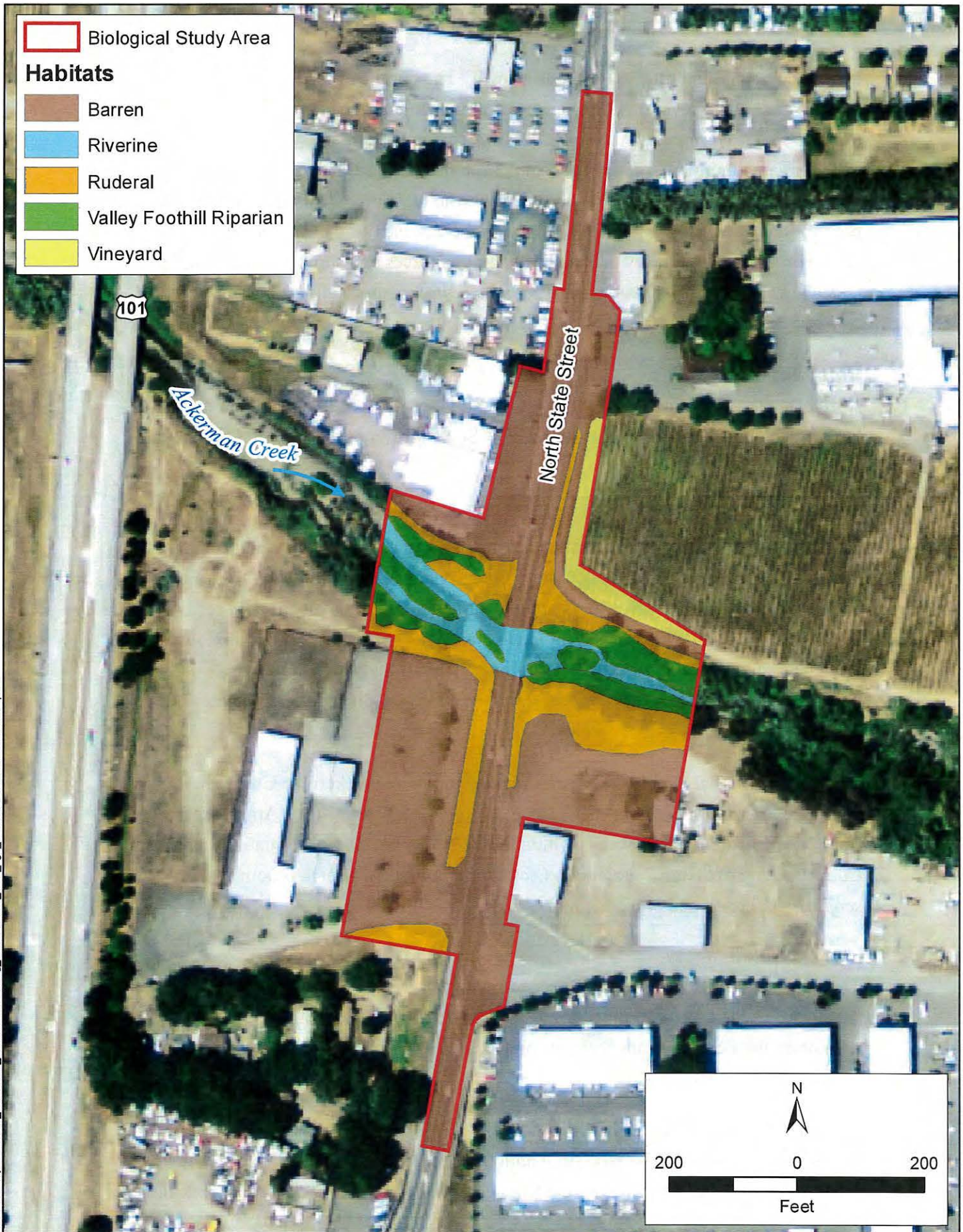
Ruderal

Ruderal habitat includes several disturbed areas within the study area. The ruderal habitat is dominated by non-native annual grasses and forbs including slender wild oats (*Avena barbata*), mustard (*Brassica nigra*), fennel (*Foeniculum vulgare*), and rose clover (*Trifolium hirtum*). On the south east side of the study area a row of planted eucalyptus (*Eucalyptus* sp.) borders the creek and is included as ruderal habitat.

Valley Foothill Riparian

The valley foothill riparian community occurs along the entire length of Ackerman Creek within the study area. Valley foothill riparian vegetation is generally characterized as a multi-layered canopy composed of winter-deciduous trees, with a

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North State Street at Ackerman Creek Bridge Replacement Project

dense understory and little herbaceous growth. The dominant canopy tree is Fremont cottonwood, while several willow species dominate the mid-canopy: arroyo willow (*Salix lasiolepis*), shining willow (*Salix lucida*), and sandbar willow (*Salix exigua*). The riparian community on the west side of the fish ladder is heavily dominated by sandbar willow with a small amount of Himalayan blackberry (*Rubus armeniacus*) present in the understory. The understory on the east side of the fish ladder has much more Himalayan blackberry present. Subdominant trees and shrubs include mulefat (*Baccharis salicifolia*), Oregon ash (*Fraxinus latifolia*), and California grape (*Vitis californica*).

Vineyard

Northeast of the existing bridge there is a small vineyard (i.e., less than 5 acres) that is largely surrounded by commercial property. Several rows of the vineyard are included within the BSA.

INVASIVE SPECIES

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

The ruderal grassland areas and riparian understory along Ackerman Creek are dominated by a variety of non-native grasses, forbs, and shrubs (See Appendix E). The following are noxious weeds within the BSA that have a California Invasive Plant Council rating of “High:” goatgrass (*Aegilops triuncialis*), Scotch broom (*Cytisus scoparius*), fennel, and Himalayan blackberry (Cal-IPC 2014).

HABITAT CONNECTIVITY

The BSA is within a commercially-zoned light industrial development that extends northward of the city of Ukiah along the east of SR 101. The urban landscape that dominates the BSA does not provide connectivity to farmland habitats that are within a quarter-mile of the BSA.

Ackerman Creek within the BSA provides habitat connectivity upstream and downstream of the BSA for terrestrial animals that utilize riparian corridors. The BSA is approximately 0.6 mile west of the Russian River, and when Ackerman Creek flows

there is limited connectivity for aquatic animals moving downstream of BSA. The 7-ft tall check dam downstream of the bridge is supported by short and steep reach of large boulders which are not conducive to terrestrial or aquatic animal movement. The steep fish ladder embedded in these boulders no longer performs the function for which it was designed. During typical migration flows, the hydraulic capacity of the steel fish ladder is overwhelmed and there is inadequate attraction flow for fish to find the outlet. At low flows, there is inadequate depth in the ladder for adult fish to swim through. Further, the ladder does not provide passage for juvenile salmonids and is highly susceptible to plugging by debris.

3.2. Regional Species and Habitats of Concern

Habitats of Concern

RIPARIAN HABITAT

Riparian habitat is considered a sensitive natural community by the Corps, CDFW, and the County, and is present in the BSA. Based upon field observations, all of the valley foothill riparian vegetation in the BSA occurs within or adjacent to waters of the United States. Activities within these areas may be regulated by the Corps under the Clean Water Act. The CDFW requires a discretionary Stream Alteration Agreement to be issued prior to initiating construction within riparian habitat that is adjacent to streambeds. Potential adverse effects to and avoidance and minimization measures for riparian habitat are discussed in Chapter 4.

WATERS OF THE UNITED STATES

NSR conducted a delineation of waters of the United States within the BSA on June 20, 2012 (Appendix F). Verification of the delineation by the Corps is pending. Potentially jurisdictional waters include riparian wetland and intermittent stream. These features occupy a total of 0.600 acre of the BSA. Table 3 provides an acreage and linear distance summary by feature type. The boundaries of waters of the United States within the BSA are illustrated in Figure 4. Potential adverse effects to and avoidance and minimization measures for waters of the United States are discussed in Chapter 4.

Table 3. Acreage Summary of Waters of the United States

Waters of the United States	Total Acreage	Total Linear Feet
Intermittent Stream	0.474	559
Riparian Wetland	0.126	N/A
Total Waters of the United States	0.600	559

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) state or federal candidate or proposed species for listing as threatened or endangered; and/or (4) have a California Rare Plant Rank (RPR) of 1A, 1B, 2A, or 2B.

A list of regionally occurring special-status plant species was compiled based on a review of pertinent literature, the results of the field surveys, and the review of the USFWS species list, and California Natural Diversity Data Base (CNDDB) and California Native Plant Society (CNPS) database records. For each species, habitat requirements were assessed and compared to the habitats within the BSA and immediate vicinity in order to determine whether or not habitat was present within the BSA. Based on this review of habitat requirements and the results of the field assessment, it was determined that the BSA does not provide habitat suitable for any special-status plant species. Table 4 shows the federally listed plants that occur in or may be affected by projects in Mendocino County and were included in the analysis.

ites

ate Street

Ackerman Creek

ited States

Area (ac)
018
014
045
024
025
126

Area (ac)	Length (ft)
474	559
474	559
600	559

d for:

ne County

Notes:

Delineators: Paul Kirk and Sarah Tona
Delineation Date: June 20, 2012

1 inch = 120 feet

North Stat
Bridge

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Table 4. Special-Status Plants Potentially Occurring or Known to Occur in the BSA

Common Name Scientific Name	Status ¹ (Fed/State/R PR)	General Habitat Description	Habitat Assessment ²	Rationale
marsh sandwort <i>Arenaria paludicola</i>	FE/SE/1B.1	Marshes and swamps (freshwater or brackish)/sandy, openings. Elevation: 560-10 feet. Bloom: May-Aug	A	BSA does not contain marsh or swamp.
Howell's spineflower <i>Chorizanthe howellii</i>	FE/ST/1B.2	Coastal dunes, Coastal prairie, Coastal scrub/sandy, often disturbed areas. Elevation: 110-0 feet. Bloom: May-Jul	A	BSA does not contain coastal dunes.
Kellogg's buckwheat <i>Eriogonum kelloggii</i>	FC/SE/1B.2	Lower montane coniferous forest (rocky, serpentinite). Elevation: 1900-4100 feet. Bloom: (May), Jun-Aug.	A	BSA does not contain coniferous forest.
water howellia <i>Howellia aquatilis</i>	FT/—/2B.2	Marshes and swamps (freshwater). Elevation: 4230-3560 feet. Bloom: Jun	A	BSA does not contain marsh or swamp.
Burke's goldfields <i>Lasthenia burkei</i>	FE/SE/1B.1	Meadows and seeps (mesic), Vernal pools. Elevation: 50-1970 feet. Bloom: Apr-Jun	A	BSA does not contain vernal pools.
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE/—/1B.1	Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools/mesic. Elevation: 1540-0 feet. Bloom: Mar-Jun	A	BSA does not contain vernal pools.
few-flowered navarretia <i>leucocephala</i> ssp. <i>pauciflora</i>	FE/ST/1B.1	Vernal pools (volcanic ash flow). Elevation: 2800-1310 feet. Bloom: May-Jun	A	BSA does not contain vernal pools
many-flowered navarretia <i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	FE/SE/1B.2	Vernal pools (volcanic ash flow). Elevation: 3120-100 feet. Bloom: May-Jun	A	BSA does not contain vernal pools
slender Orcutt grass <i>Orcuttia tenuis</i>	FT/SE/1B.1	Vernal pools/Often gravelly. Elevation: 5770-110 feet. Bloom: May-Sep	A	BSA does not contain vernal pools
Red Mountain stonecrop <i>Sedum laxum</i> ssp. <i>eastwoodiae</i>	FC/—/1B.2	Lower montane coniferous forest (serpentinite). Elevation: 1970-3940 feet. Bloom: May-Jul	A	BSA does not contain coniferous forest.

Common Name Scientific Name	Status ¹ (Fed/State/R PR)	General Habitat Description	Habitat Assessment ²	Rationale
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1 Status Codes: Federal Endangered (FE); Federal Threatened (FT); Federal Candidate (FC); State Endangered (SE)

RPR 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. Present (P): The species is present. Critical Habitat (CH): BSA is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

Special-Status Animals

Special-status animal species 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) 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.

A list of regionally occurring special-status animal species was compiled based on a review of pertinent literature, the results of the field surveys, and the review of the USFWS species list, CNDDB database records, and a query of the CWHR system. The CWHR system was used to help determine wildlife species that potentially occur in the vegetation habitats within the BSA. The CWHR is a predictive database system based on scientific information concerning wildlife species and their habitat relationships. Fish and invertebrates are not included in the CWHR system.

For each species, general habitat requirements were assessed and compared to the habitats within the BSA and immediate vicinity in order to determine their potential to be adversely affected by the proposed project. Based on this review of general habitat requirements, and the results of the field assessment, eight special-status animal species were determined to have the potential to be adversely affected by the proposed project. Potential adverse effects to, and avoidance and minimization measures for these special-status species are discussed in Chapter 4. Table 5 provides the rationale for including these eight special-status animal species, and also shows several federally-listed species that were considered and determined to not have habitat in the BSA.

Table 5. Special-Status Animals Potentially Occurring or Known to Occur in the BSA

Common Name Scientific Name	Status ¹ (Fed/State)	General Habitat Description	Habitat Assess- ment ²	Rationale
Federal or State Listed Species				
Central California Coast ESU Coho salmon <i>Oncorhynchus kisutch</i>	FE/SE	Freshwater rivers and streams (Russian River and its tributaries).	A	Ackerman Creek is an intermittent tributary to the Russian River. Although marginal migration, spawning, and rearing habitat for coho salmon is present in Ackerman Creek, coho salmon have not recently been observed in the upper Russian River or its tributaries (Steiner Environmental Consulting 1996; California Department of Fish and Game 2002a, 2002b; Conrad and White 2006; National Marine Fisheries Service 2008; Macedo 2009).
Central California Coast DPS steelhead <i>Oncorhynchus mykiss</i>	FT/—	Freshwater rivers and streams (Russian River and its tributaries)	P	Occurs in Ackerman Creek. Adults migrate upstream during the fall and spawn from December to April. Suitable spawning and rearing habitat primarily occurs upstream of BSA. Habitat in the BSA is primarily used as migratory habitat. Ackerman Creek is recognized as occupied, but was not designated as critical habitat (70 FR 52565).
California Coastal ESU Chinook Salmon <i>Oncorhynchus tshawytscha</i>	FT/	Freshwater rivers and streams (Russian River and its tributaries)	P	Periodically spawn and rear in Ackerman Creek. Adults migrate upstream during the fall and spawn from October to February. Marginal quality spawning and rearing habitat is present within the BSA and the species occurs in the BSA. Ackerman Creek in the BSA is essential fish habitat, but is not designated critical habitat.
marbled murrelet <i>Brachyramphus marmoratus</i>	FT/SE	Marine subtidal and pelagic habitats; requires dense, mature forests of redwood and Douglas-fir for breeding.	A	Marine habitat and mature forest habitats not present in BSA.

Common Name Scientific Name	Status ¹ (Fed/State)	General Habitat Description	Habitat Assess- ment ²	Rationale
northern spotted owl <i>Strix occidentalis caurina</i>	FT/—	In northern California, resides in large stands of old growth, multi-layered mixed conifer, redwood, and Douglas-fir habitats	A	BSA does not have large enough area of mature forest or permanent water.
Other Special-Status Species				
western pond turtle <i>Actinemys marmorata</i>	—/SSC	Slow water aquatic habitat with available basking sites. Hatchlings require shallow water with dense submergent or short emergent vegetation. Require an upland oviposition site in the vicinity of the aquatic site.	HP	Slow water aquatic habitat is present in the BSA downstream of the existing fish ladder and basking sites are present on benches within the channel.
white-tailed kite <i>Elanus leucurus</i>	—/SFP	White-tailed kites are locally common residents and breeders in northern California, especially in agricultural and riparian areas of the coastal plain.	HP	Foraging and potential nesting habitat is present and the species has been observed in the BSA.
long-eared owl <i>Asio otus</i>	—/SSC	Dense riparian and live oak thickets near meadow edges, and nearby woodland and forest habitats; also found in dense conifer stands at higher elevations.	HP	Foraging and roosting habitat not present in the BSA.
Yellow-breasted chat <i>Icteria virens</i>	—/SSC	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.	HP	Riparian vegetation in northeast corner of BSA provides suitable nesting and foraging habitat.

Common Name Scientific Name	Status ¹ (Fed/State)	General Habitat Description	Habitat Assess- ment ²	Rationale
Yellow warbler <i>Setophaga petechia brewsteri</i>	—/SSC	Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.	HP	Riparian vegetation in northeast corner of BSA provides suitable nesting and foraging habitat.
pallid bat <i>Antrozous pallidus</i>	—/SSC	Forages over many habitats; roosts in buildings, large oaks or redwoods, rocky outcrops and rocky crevices in mines and caves, and under bridges. Roosts must protect from high temperatures	HP	Riparian trees and bridge in the BSA provide potential roosting habitat.

¹ Status Codes: Federal Endangered (FE), Federal Threatened (FT); State Endangered (SE); State Fully Protected (SFP); 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. Present (P): The species is present. Critical Habitat (CH): BSA is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

Nesting Migratory Birds

Migratory birds and their nests are protected under the federal Migratory Bird Treaty Act (MBTA) (50 CFR 10 and 21). Cliff swallows (*Petrochelidon pyrrhonota*), barn swallows (*Hirundo rustica*), black phoebes (*Sayornis nigricans*), and other migratory birds are known to build nests under artificial structures such as bridges. The existing bridge structure was visually surveyed for evidence of previous migratory bird nesting activity (e.g., remnant mud nests) during the June 20, 2012 field assessment. Given that the existing bridge structure provides suitable nesting habitat for migratory birds, there is a potential for active nests to be disturbed during project construction. Potential adverse effects to and avoidance and minimization measures for nesting migratory birds are discussed in Section 4.4.

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

4.1. Habitats of Concern

Riparian Habitat

SURVEY RESULTS

Riparian habitat is present within the OHWM channel and along the banks of Ackerman Creek (Figure 3). The dominant vegetation of the riparian habitat includes Fremont cottonwood and willows.

PROJECT IMPACTS

The proposed project may result in direct permanent impacts on approximately 0.289 acre of intermittent stream, 0.095 acre of riparian wetland, and 0.257 acre of upland riparian habitat. These permanent impacts would be due to the construction of the fishway passage primarily and secondarily to the construction of a short roadway drainage channel feature. The proposed project may result in temporary impacts on approximately 0.045 acre of intermittent stream, 0.010 acre of riparian wetland, and 0.79 acre of upland riparian habitat. These temporary impacts would be due to the construction of the new bridge and the fishway passage.

AVOIDANCE AND MINIMIZATION EFFORTS

The project shall be designed and constructed to avoid and minimize removal of riparian vegetation to the maximum extent practicable. Staging areas and construction access routes shall avoid encroachment into riparian vegetation where practicable and minimize encroachment where complete avoidance is not practicable. "Avoided" riparian habitat will be clearly identified in the construction drawings and contractor work plans. Exclusionary fencing will be installed to mark boundaries of all avoided riparian areas. All pedestrian and vehicular traffic into the avoided areas delineated by the fencing shall be prohibited during construction. The exclusionary fencing shall be inspected and maintained on a regular basis throughout project construction.

COMPENSATORY MITIGATION

Impacts to riparian habitat will be compensated for as described in Conservation Measure #4 (Replacement of Lost Riparian Habitat).

CUMULATIVE EFFECTS

The proposed project will not facilitate further development in the area. Thus, the proposed project would not result in cumulatively considerable adverse effects on riparian habitat.

Waters of the United States**SURVEY RESULTS**

The field delineation was conducted by NSR on June 20, 2012. A total of 0.600 acre of waters of the United States was mapped in the BSA (Figure 4). Waters of the United States occurred as intermittent stream (0.474 acre, 559 linear ft.) and riparian wetland (0.126 acre).

PROJECT IMPACTS

Implementation of the proposed project will potentially result in permanent impacts on up to 0.384 acre and temporary impacts on up to 0.055 acre of waters of the United States (See Table 6 and Figure 5).

Table 6. Potential Impacts on Waters of the United States

Waters Type	Permanent	Temporary
Intermittent Stream	0.289	0.045
Riparian Wetland	0.095	0.010
Total	0.384	0.055

Project activities resulting in permanent impacts to waters of the United States are associated with the construction of the armored fishway passage and the construction of a short road drainage northwest of the bridge. Temporary impacts would result from equipment access and grubbing of vegetation during the construction of the new bridge and fishway passage.

WETLANDS ONLY PRACTICABLE ALTERNATIVE FINDING

Executive Order 11990, Protection of Wetlands (1977), calls for no net loss of habitats referred to as wetlands and established a national policy to avoid adverse effects on wetlands wherever there is a practicable alternative.

The majority of the permanent impacts to jurisdictional waters is due to the proposed roughened channel fishway. Ackerman Creek supports populations of anadromous salmonids and improvement of the fish passage is one of the main objectives of the project. Head cutting has occurred in Ackerman Creek in the BSA and vicinity for

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over 50 years due to downstream gravel extraction and threatened the stability of the former and current bridge over Ackerman Creek. Remediation of existing head cutting and avoidance of future head cutting in the BSA are additional primary considerations in the design of the project. Based on the results of the multi-agency environmental coordination, including NFMS, CDFW, and Caltrans, it was determined that the construction of a roughened channel fishway was the most desirable alternative from both a bridge maintenance and fish passage perspective. Avoidance and minimization measures outlined in Section 4.1.2.4 include all practicable measures to minimize harm to wetlands and waters of the United States.

Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetland and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

AVOIDANCE AND MINIMIZATION EFFORTS

To the extent practicable, the discharge of dredged or fill material into “waters of the United States,” including wetlands shall be avoided. However, complete avoidance is not feasible due to the need for the placement of new abutments, thus the following measures shall be implemented to avoid or minimize the potential for project-related impacts on “waters of the United States”:

- To the maximum extent practicable, activities that increase the erosion potential in the project area shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. If these activities must take place during the late fall, winter, or spring, then temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and maintained until permanent erosion control structures are in place.
- Areas where wetland and upland vegetation need to be removed shall be identified in advance of ground disturbance and limited to only those areas that have been approved by the County.
- Within 10 days of completion of construction in those areas where subsequent ground disturbance will not occur for 10 calendar days or more, 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 possibility of rain within the next 24 hours, as forecasted by the National Weather Service, weed-free mulch shall be applied to all exposed areas upon

completion of the day's activities. Soils shall not be left exposed during the rainy season.

- Suitable BMPs, such as silt fences, straw wattles, or catch basins, shall be placed 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 located such that they do not drain directly into a surface water feature, if possible. If a spoil site drains into a surface water feature, catch basins shall be constructed to intercept sediment before it reaches the feature. Spoil sites shall be graded and vegetated to reduce the potential for erosion.
- Sediment control measures shall be in place prior to the onset of the rainy season and will be monitored and maintained in good working condition until disturbed areas have been revegetated.
- Any new or previously excavated gravel material placed in the channel shall be washed at least once and have a cleanliness value of 85 or higher based on Caltrans Test No. 227.
- A site-specific spill prevention plan shall be implemented for potentially hazardous materials. 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 50 ft. 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 materials. Maintenance and fueling shall be conducted in an area at least 50 ft. away from the Ackerman Creek or within an adequate fueling containment area.

COMPENSATORY MITIGATION

Impacts to riparian habitat will be mitigated at a 3:1 ratio as described under Conservation Measure #4 (See Replacement of Lost Riparian Habitat, Section 1.2.5.4).

CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts to “waters of the United States,” including wetlands.

4.2. Special-Status Plant Species

A two-visit botanical survey was conducted on April 24 and June 20, 2012. No special-status plant species were observed. Based on this review of habitat requirements and the results of the field assessment, it was determined that the BSA does not have habitat with potential to support any special-status plant species.

Implementation of the proposed project does not have the potential to result in adverse impacts to regionally occurring special-status plants.

4.3. Special-Status Animal Species

As discussed in Chapter 4, the BSA contains suitable habitat for the eight special-status animals, including two species that are federal or state listed. A discussion of the habitat requirements, potential for occurrence, recommended avoidance and minimization measures, potential project-related effects, and cumulative effects for each of these species is provided below.

Anadromous Fish

A Biological Assessment/Essential Fish Habitat Assessment (BA/EFHA) was submitted on January 13, 2015 to the National Marine Fisheries Service (NMFS) for review under Section 7 of the ESA to address potential impacts to federally listed fish species and to essential fish habitat (EFH) for Pacific salmon. NMFS completed the Section 7 informal consultation on March 6, 2015, and concurred that the proposed project is not likely to adversely affect federally listed species and that it is not likely to eliminate or significantly diminish or disrupt EFH for Pacific salmon inhabiting Ackerman Creek (Appendix A). All conservation measures contained in the BA/EFHA are provided below in Section 4.3.1.3 and in Appendix B.

Central California Coast DPS steelhead (*Oncorhynchus mykiss*). Federal Status: Threatened. State Status: None. The Central California Coast DPS includes all naturally spawned anadromous steelhead populations occurring in coastal streams from the Russian River (inclusive) to Aptos Creek (inclusive), and the drainages of San Francisco, San Pablo, and Suisun Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers; and tributary streams to Suisun

Marsh including Suisun Creek, Green Valley Creek, and an unnamed tributary to Cordelia Slough (referred to as Red Top Creek), exclusive of the Sacramento–San Joaquin River Basin of California’s Central Valley.

Steelhead possess one of the most complex life history patterns of the Pacific salmonid species. Steelhead typically refers to the anadromous form of rainbow trout. Similar to other Pacific salmon, steelhead adults spawn in freshwater and spend a part of their life history at sea. However, unlike Chinook salmon, steelhead exhibit a variety of life history strategies during their freshwater rearing period, and adults may spawn more than once during their life. The typical life history pattern for steelhead is to rear in freshwater streams for two years, followed by up to two or three years of residency in the marine environment. However, juvenile steelhead may rear in freshwater from one to four years (Moyle 2002).

Steelhead parr² in the Russian River have been detected moving downstream towards the estuary (Moyle 2002; Katz et al. 2006) in quantities sufficient to suggest that a significant portion of the Russian River populations attempt to rear there. Rearing conditions for young-of-year and parr in the estuary, however, are poor. This, in combination with degraded habitat upstream, is likely a major determinant in maintaining the current depressed population levels (National Marine Fisheries Service 2008). Steelhead adults may enter the Russian River and its tributaries from November through April, but peak migration generally occurs from mid-December through mid-March. Spawning begins in mid-December and can extend into early May.

Steelhead spawn in gravel and small cobble substrates usually associated with riffle and run habitat types. Cover is extremely important in determining distribution; more cover leads to more fish (Meehan and Bjornn 1991). Ackerman Creek in the study area vicinity is known to provide suitable spawning and juvenile rearing habitat for steelhead.

California Coastal ESU Chinook salmon (*Oncorhynchus tshawytscha*). Federal Status: Threatened. State Status: None. The California Coastal ESU includes all naturally spawned populations of Chinook salmon from rivers and streams south of the Klamath River to and including the Russian River, California (64 FR 50394). Seven artificial propagation programs are considered to be part of the ESU: the Humboldt Fish Action Council (Freshwater Creek), Yager Creek, Redwood Creek,

² Steelhead that have survived one winter.

Hollow Tree, Van Arsdale Fish Station, Mattole Salmon Group, and Mad River Hatchery fall-run Chinook hatchery programs.

The California Coastal ESU Chinook salmon are fall-run, ocean-type fish. California Coastal ESU Chinook salmon usually enter rivers from August to January. These fall-run Chinook salmon typically enter freshwater at an advanced stage of maturity, move rapidly to their spawning areas on the main stem or lower tributaries of rivers, and spawn within a few weeks of freshwater entry (Healey 1991). Run timing is, in part, a response to stream flow characteristics, with most spawning occurring in November and December. They typically spawn in the lower reaches of rivers and tributaries at elevations of 200–1,000 ft. (National Marine Fisheries Service 2008).

Though there are conflicting reports, the high likelihood of suitable habitat under historical conditions offers strong evidence that a substantial population of fall-run Chinook salmon historically existed in the Russian River (Moyle 2002; Bjorkstedt et al. 2005). The historic size of the population remains mostly unknown (Chase et al. 2007). Some reports indicate Chinook salmon historically spawned in the upper drainage and were regularly harvested by local tribes in Coyote Valley prior to construction of Coyote Valley Dam in 1959 (Steiner Environmental Consulting 1996). However, no scientific observations of Chinook salmon exist in the Russian River prior to initial stocking efforts in the late 1880s (National Marine Fisheries Service 2008). Undoubtedly, current Chinook salmon population levels are depressed compared to the historical populations.

SURVEY RESULTS

Central California Coast DPS Steelhead

Steelhead population estimates for Ackerman Creek have not been made. Steelhead regularly spawn in Ackerman Creek; however, most of the suitable spawning habitat and spawning activity occurs upstream of the BSA. Electrofishing surveys conducted as part of a CDFG Stream Survey Inventory in 1999 reported small numbers of YOY and age 1+ steelhead and California roach (*Lavinia symmetricus*) (California Department of Fish and Game 2006). The survey inventory report also summarized historic survey results for Ackerman Creek. Historic surveys, including chemical treatments, resulted in the detection of steelhead, stickleback (*Gasterosteus aculeatus*), Sacramento pikeminnow (*Ptychocheilus grandis*), Sacramento suckers (*Catostomus occidentalis*), California roach and sunfish (*Lepomis* spp). The relative abundance of each varied by survey and geographic sampling location. In general, the relative abundance of steelhead and/or trout was greater with distance upstream and these fish

were often concentrated in the gorge section where there was a higher concentration of deep pool habitats with instream and canopy cover available.

Ackerman Creek in the BSA is located in an alluvial valley adjacent to the Russian River and its channel is classified as a Rosgen type F4³ channel. This section of Ackerman Creek provides only localized pool habitat. Most of the habitat available is run/low-gradient riffle. It was reported by CDFG that only 15% of the pools surveyed in Ackerman Creek have a residual pool depth of three feet or greater. This is important because without sufficient pool depth with adequate cover and protection or groundwater input, much of this habitat is likely unsuitable during the summer months due to high water temperatures, which have been implicated as an issue in Ackerman Creek (California Department of Fish and Game 2006).

Immediately downstream of the existing North State Street Bridge is a grade control structure that has been modified over time to arrest the westward movement of a significant head cut originating at the confluence with the Russian River. The increasing size of the structure necessitated the installation of a Denil-type fish ladder by CDFG in 1983 to address fish passage issues at the structure. It is believed that the existing fish ladder is at least partially functional, but it is felt that upstream passage often occurs during high flow events (pers. comm. T. Daugherty, NMFS).

Habitat upstream of the current bridge consists of a braided channel consisting of gravel and sand substrate low-gradient riffle and run habitats. The riparian habitat is composed mostly of small willow growth with few mature cottonwoods. The channel is generally bi-level meaning that there is a typical bed and flood plain for baseflow, then another broader channel and flood plain for flood flows. In contrast, downstream of the existing bridge and grade control structure, the channel is confined and exhibits evidence of significant incision. There is significant plant growth in the channel and the channel is not well defined. There is a much greater diversity of riparian trees and shrubs providing cover and habitat downstream of the existing grade control structure.

Riparian habitat generally includes the woody vegetation and cover structures associated with “natural” banks that function to provide shade; sediment, nutrient, and chemical regulation; stream bank stability; and input of woody debris and leaves that provide cover and serve as substrates for food-producing invertebrates. The riparian habitat typical of the region consists of dense willow stands, alder, and cottonwood.

³ F4 channel types are entrenched meandering riffle/pool channels on low gradients (<2%) with a high width/depth ratio and a predominantly gravel substrate (Rosgen 1996).

The streambank within the BSA provides varying degrees of quality riparian habitat consisting of arroyo willow, red willow and Himalayan blackberry understory and a mature white alder and Fremont cottonwood overstory. Canopy cover in the BSA ranges from 10–30 percent.

This section of Ackerman Creek is seasonally used as migratory habitat for juvenile and adult salmonids. Most of the suitable spawning and higher-quality rearing habitat exists upstream of the BSA. The current North State Street bridge piers are oriented at an angle to the flow and the channel narrows, creating a restriction. As a result, there has been a moderate amount of sediment deposition upstream of the bridge. Gravel is the dominant particle size, but there is a significant proportion of fine sediment and sand. This material would be considered fair-to-poor quality substrate for salmonid spawning.

California Coastal ESU Chinook Salmon

Ackerman Creek through the BSA is seasonally suitable migration habitat for juvenile and adult Chinook salmon, which could potentially successfully spawn and rear upstream of the site. Regular surveys for Chinook salmon in Ackerman Creek have not been conducted. They were not reported during surveys by CDFG (1994, 1999, 2006), but Chinook salmon are believed to periodically spawn in Ackerman Creek. It is believed that Chinook numbers are low and that fry produced in Ackerman Creek quickly migrate downstream into the Russian River. It is believed from the existing information available on the abundance distribution of Chinook salmon, aquatic habitat conditions, hydrology and water quality that juvenile Chinook salmon would not occur in the BSA during instream work window.

PROJECT IMPACTS

The proposed project includes a number of activities that could pose a potential for the take of federally listed anadromous salmonids. These activity-related stressors and likely responses of steelhead that may occur in the BSA are summarized below according to impact type. Based on the best available scientific information, the aquatic habitat in the BSA is only seasonally suitable and accessible for steelhead and Chinook salmon, if present, during the winter and spring months, due to the absence of flow during the summer and fall, as described in Section 3.1.2.

Direct effects caused by in-water construction activities, including but not limited to barotraumas during pile driving, installation of temporary work platform and falsework, removal of the existing Denil-type fish ladder and grade control structure, construction of chutes-and-pools roughened channel fishway, and minor fuels and oil

spills, would not occur because no life stage of the listed species' occurs in the BSA area during the proposed in-water construction window. Therefore, project effects are limited to the disturbance of habitat that could indirectly affect steelhead through the residual and delayed effects of temporary disturbance of the stream channel and riparian vegetation during construction, which could increase sediment and turbidity in surface runoff from the site during the following winter months. However, the potential and magnitude of this effect is considered low because of the conservation measures to be implemented. Ackerman Creek in the BSA is not designated critical habitat for steelhead or Chinook salmon and habitat is limited to migration and transient rearing habitat—summer holding and spawning habitat do not occur in the BSA.

Percussion Impacts

Approximately 50 16-inch steel pipe piles (25 per abutment) will be driven with a Delmag D19-42 or similar piece of equipment to support both the abutments; half will be driven during the first in-water construction season and half the second to accommodate staged bridge construction. The maximum acoustic impact area for the proposed project is 213-ft. Sound pressure levels in Ackerman Creek would exceed NMFS' thresholds for physical injury within a radial distance of 46-ft from driven piles and for behavioral impacts within a radial distance of 213-ft of piles driven adjacent to the stream at the eastern abutment. Therefore, pile driving shall occur only during the in-water work window, the time period that takes into account both localized life history patterns and physical habitat conditions (i.e., flow and water temperature), to protect steelhead and Chinook salmon from barotraumas.

Increased Turbidity and Suspended Sediment

Activities related to the construction of the new bridge foundation and substructure would result in some localized loss of vegetation and general disturbance to the soil. It would also necessitate the dewatering of excavated areas during footing construction; the volume of which will depend on the depth, source and flow rate of groundwater in the area. Suspended solids and turbidity generally do not acutely affect aquatic organisms unless they reach extremely high levels (i.e., levels of suspended solids reaching 25 mg/L).

The proposed project would not likely result in significant increases of suspended solids and turbidity resulting in acute effects. Increases in turbidity resulting from the replacement of grade control and fish passage structures and would be short lived immediately following first seasonal flows following construction. Studies on

sediment duration in similar types of activities (culvert replacement and streambed modifications) have shown that suspended sediment duration is typically short lived.

Impaired Fish Passage during Construction

All instream construction activities will be completed during the seasonal work window during the dry season when no freshwater life stage of steelhead nor Chinook salmon would be present and subject to direct impacts. Construction activities would not temporarily impair fish passage through the BSA.

The project will remove the existing check dam and Denil-type fish ladder and reform the channel in the BSA using a roughened channel design that would achieve sufficient protection against scour via the rock weirs keyed into the stream bed and provide hydraulic conditions suitable for fish passage through the BSA. The new structure will ultimately improve fish passage in Ackerman Creek, both upstream and downstream, for juvenile and adult salmonids by improving the hydraulic conditions and greatly increasing the range of operational flows.

Loss of Riparian Habitat

A few mature trees along the riverbank within the construction area will need to be removed to accommodate the new bridge alignment and grade control structure and access for construction equipment to work and access the work area. Work activities such as vehicle parking and placement of storage containers on the upland terrace on the east bank may temporarily affect the low growing grasses and forbs in the construction area, but no permanent impacts to this habitat will occur.

Resource protection and conservation measures were included in the project design to account for these temporary impacts to riparian habitat and streamside vegetation in the BSA. Impacts to riparian habitat will not result in a modification or loss of riparian habitat that would decrease survival or recovery of these species. Improvements to fish passage would greatly outweigh any localized temporary impacts to riparian vegetation.

Potential Spill of Hazardous Materials

The potential spill of hazardous materials (i.e., oil, grease, gasoline, solvent) during construction and staging activities into Ackerman creek could have deleterious effects on all life stages of the special-status fish species present within close proximity to construction activities. Additionally, operation of construction equipment in or adjacent to the river will increase the risk of a spill of hazardous materials into the river (i.e., construction equipment leaking fluids). All in-channel work will occur

during the dry season when no surface flow is present in Ackerman Creek and no steelhead or Chinook salmon are present. Out-of-channel construction during the rest of the year on upland habitats has a smaller potential for direct releases to surface waters. Further, conservation measures included as part of the project require a site-specific spill prevention plan and limitations on fueling of equipment, storage of hazardous materials and use of non-toxic vegetable oil for all hydraulic equipment operating within the OHWM minimizing the potential for direct releases of hazardous materials to surface water features. Therefore, adverse effects resulting from a localized spill of hazardous material are highly improbable.

AVOIDANCE AND MINIMIZATION EFFORTS

In addition to the Conservation Measures included in the project description, the following measures shall be implemented to avoid and minimize impacts to steelhead and Chinook salmon:

- All instream work will be completed June 15–October 31.
- To the extent practicable with construction of the roughened channel, any new or previously excavated gravel material placed in the channel shall meet Caltrans' cleanness test indicating the relative proportions of clay-sized material clinging to coarse aggregate and screenings (California Test No. 227) with a value of 85 or higher (excluding such materials as soil in the RSP to allow for riparian planting).
- Equipment and materials shall be stockpiled outside of the riparian habitat.
- Impacts to herbaceous cover will be offset by reseeding any unvegetated and impacted areas with a suitable seed mixture, post construction.
- Any construction equipment operating upon work pads or adjacent to the Ackerman Creek shall be inspected daily for leaks. External oil, grease, and mud shall be removed from equipment and disposed of properly. Spill containment booms shall be maintained onsite at all times during construction operations and/or staging of equipment or fueling supplies. Fueling trucks shall maintain adequate spill containment materials at all times.
- The contractor shall develop and implement site-specific BMPs, a storm water pollution control plan and emergency spill control plan. The contractor shall be responsible for immediate containment and removal of any toxins released.

COMPENSATORY MITIGATION

The proposed project has been designed such that the conservation measures and proposed avoidance and minimization measures will avoid or minimize the potential

effects to steelhead and Chinook salmon, and no compensatory mitigation is required beyond the replacement of riparian habitat included for Conservation Measure #4 described in Section 1.2.5.4.

CUMULATIVE EFFECTS

Cumulative effects are those impacts of future state, local, and private actions affecting endangered and threatened species that are reasonably certain to occur in the BSA. Future projects that result in a federal action will be subject to the consultation requirements established in Section 7 of ESA and, therefore, are not considered cumulative to the proposed action. No reasonably foreseeable future projects within the current project's BSA are known at this time.

Western Pond Turtle

Western pond turtle (*Actinemys marmorata*). Federal Status: None. State Status: Species of Special Concern. Western pond turtles are approximately 3.5–7.5 inches in length and drab brown or olive-colored, lacking prominent markings on their carapace. The name “pond” turtle is somewhat misleading as they are often associated with the quiet waters of rivers and streams. Within their aquatic habitat, they are associated with areas that contain underwater refugia such as rocks, submerged vegetation, or holes along a bank (Hays et al. 1999). They also require basking sites, such as partially submerged logs, rocks, mats of floating vegetation, and open mud banks. In colder areas, the turtles may hibernate underwater in bottom mud or in upland sites that are near water and have deep layers of duff. Overwintering and aestivation sites often occur in upland areas with deep layers of duff or leaf litter. The western pond turtle is a dietary generalist, often foraging on the bottom of water features for aquatic invertebrates.

Western pond turtles are long-lived, the maximum life-span is 50-70 years, and require approximately 10 years to reach sexual maturity (Hays et al. 1999). Mating typically occurs from March through August. Nests are typically located in open areas with good sun exposure and few shrubs or trees and may be a considerable distance from the aquatic site (up to 0.25 mile) (California Department of Fish and Game 1994). Females excavate an upland nest chamber in which the eggs are laid and subsequently buried. Eggs hatch approximately 2.5–4 months later. Hatchling turtles are thought to emerge from the nest and move to the aquatic site in the spring.

SURVEY RESULTS

The western pond turtle was not observed during field assessments/surveys; however, Ackerman Creek within the BSA provides suitable habitat. The CNDDB contains an occurrence record for the western pond turtle 1.46 miles southwest of the BSA.

PROJECT IMPACTS

The proposed project has the potential to result in adverse impacts on western pond turtles as identified below:

- Although unlikely, construction related impacts, especially in-channel work, could result in an adverse effect via direct loss (e.g., due to operation of equipment in or adjacent to the creek channel when flowing or standing water is present). The potential for direct loss only occurs during project construction. Implementation of the avoidance and minimization measures will minimize the potential for direct loss.
- Activities related to the construction of the new bridge and roadway approaches would result in some localized loss of vegetation and general disturbance to the soil. Removal of vegetation and soil can accelerate erosion processes in the BSA and increase the potential for sediment to enter Ackerman Creek. Excessive sedimentation into the stream channel has the potential to reduce habitat quality for western pond turtles (e.g. decreasing availability of potential food items including aquatic invertebrates). Implementation of Conservation Measure #4 (Replacement of Lost Riparian Habitat) will fully mitigate for any loss of riparian habitat and implementation of Conservation Measure #1 (Erosion and Sediment Control) will ensure that disturbed areas are stabilized and appropriate erosion control measures (i.e., silt fencing) have been implemented during, as well as immediately following, construction to minimize and/or prevent erosion and sedimentation effects.
- Construction activities typically include the refueling of construction equipment on location. As a result, minor fuel and oil spills may occur, with a risk of larger releases. Without rapid containment and clean up, these materials could be potentially toxic depending on the location of the spill in proximity to surface water features, including Ackerman Creek. Implementation of Conservation Measure #2 (Prevention of Accidental Spills) will limit the potential for this impact by requiring that the contractor stage equipment and fuels a minimum of 50 ft. from Ackerman Creek, maintaining spill containment booms at the site, and by maintaining construction equipment to avoid mechanical breakdown and potential for fluid leaks.

AVOIDANCE AND MINIMIZATION

In addition to the Conservation Measures included in the project description, the following measures shall be implemented to avoid or minimize project-related impacts on the western pond turtle:

- Because turtles may move into and out of the project site at any time, a pre-construction survey for the species is necessary to confirm its status (presence/absence) on the site immediately prior to the onset of project construction. Therefore, a qualified biologist shall conduct a minimum of one survey of the project site for pond turtles and their nests. The survey shall be conducted a maximum of one week prior to construction. If a pond turtle is found within a construction impact zone, the biologist shall move it to a safe location within similar habitat. 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 when such an activity occurs.
- If a western pond turtle is encountered during construction, activities in the vicinity shall cease until appropriate corrective measures have been implemented or it has been determined that the turtle will not be harmed. Any turtles encountered during construction shall be allowed to move away on their own. Any trapped, injured, or killed turtles shall be reported immediately to CDFW.

COMPENSATORY MITIGATION

None required.

CUMULATIVE EFFECTS

The proposed bridge replacement will not facilitate further development in the area. Further, impacts on western pond turtles in the BSA would be relatively minor due to the small nature of the project. Thus, with implementation of the recommended avoidance and minimization measures, the proposed project would not result in cumulatively considerable adverse effects on the western pond turtle.

Raptors

Long-eared owl (*Asio otus*). **Federal Status: None. State Status: Species of Special Concern.** The long-eared owl occurs as a permanent resident or winter visitor throughout much of the northern portion of the state. It requires wooded areas for roosting and breeding and often frequents riparian habitats. At higher elevations, this

species can be found in dense conifer stands. The long-eared owl typically forages in open habitats, primarily for small rodents. The cause for this species' decline is unclear, although loss of riparian habitat may play a role.

White-tailed kite (*Elanus leucurus*). **Federal Status: None. State Status: Fully Protected.** The white-tailed kite can be found in association with the herbaceous and open stages of a variety of habitat types, including open grasslands, meadows, emergent wetlands, and agricultural lands. The white-tailed kite is found year-round in both the coastal zones and lowlands of the Central Valley in California. Nests are constructed near the top of dense oaks, willows, or other tree stands located adjacent to foraging areas. The species forages in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands. White-tailed kites are seldom observed more than 0.5 mi from an active nest during the breeding season (Zeiner et al. 1990).

SURVEY RESULTS

Neither long-eared owl nor white tailed kite was observed during the field assessments/surveys. However, the riparian habitat along Ackerman Creek provides nesting habitat for both species.

PROJECT IMPACTS

Long-eared owl or white tailed kite may nest in or adjacent to the BSA. Thus, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Loss of fertile eggs or nesting raptors, or any activities resulting in nest abandonment, may adversely affect these species. The Project may also result in a small, temporary reduction of foraging and/or roosting habitat for these species. However, due to the regional abundance of similar habitats, temporary habitat loss is not expected to result in an adverse effect on these species.

AVOIDANCE AND MINIMIZATION

The following measures are recommended to avoid or minimize the potential for project-related impacts to raptor species:

- Pre-construction surveys for nesting raptors shall be conducted by a qualified biologist within the BSA and a 250-ft buffer around the BSA to ensure that no nests will be disturbed during project implementation. At least one survey should be conducted no more than 15 days prior to the initiation of construction activities. During this survey, the biologist should inspect all trees immediately adjacent to the impact areas for raptor nests. If an active

raptor nest is found close enough (i.e., within 250 ft.) to the construction area to be disturbed by these activities, the biologist (in consultation with the CDFW) shall determine the extent of a construction-free buffer zone to be established around the nest. The County will inform Caltrans when such an activity occurs.

- If all necessary approvals have been obtained, potential nesting substrate (e.g., shrubs and trees) that will be removed by the project should be removed before the onset of the nesting season (February 15 through September 30), if practicable. This will help preclude nesting and substantially decrease the likelihood of direct impacts.

COMPENSATORY MITIGATION

None required.

CUMULATIVE EFFECTS

The proposed bridge replacement will not facilitate further development in the area. Further, impacts to raptors in the BSA will be relatively minor due to the small nature of the proposed Project. Thus, with implementation of the recommended avoidance and minimization measures, the proposed Project would not result in cumulatively considerable adverse effects to long-eared owl or white-tailed kite.

Songbirds

Yellow warbler (*Dendroica petechia brewsteri*). Federal Status: None. State Status: Species of Special Concern. The yellow warbler is a Neotropical migrant, that principally occurs in California as a migrant and summer resident from late March through early October (Shuford and Gardali 2008). It is usually found in dense riparian deciduous habitats with cottonwoods, willows, alders, and other small trees and shrubs typical of open-canopy riparian woodlands. The species breeds from mid-April to early August, building an open cup nest in a tree or shrub. They typically produce one clutch size of 4–5 eggs per year. Foraging patterns typically involve gleaning and hovering for insects and spiders.

Yellow-breasted chat (*Icteria virens*). Federal Status: None. State Status: Species of Special Concern. The yellow-breasted chat is a very large warbler with a robust build. A Neotropical migrant, it usually arrives in California in April and departs by late September. In California, they typically occur in early successional riparian habitats with a well-developed shrub layer and an open canopy (Shuford and Gardali 2008). Nesting habitat is usually restricted to the narrow border of streams, creeks, sloughs, and rivers (Shuford and Gardali 2008). Breeding occurs from early

May to early August. Nests are built low to the ground, often in dense shrubs along streams. Clutch size generally varies from 3–5 eggs and, typically, only one clutch is produced per year. Foraging patterns usually involve gleaning insects, spiders, and berries from the foliage of shrubs and low trees.

SURVEY RESULTS

Neither yellow warbler nor yellow-breasted chat was observed during the field assessments/surveys. However, the riparian habitat along Ackerman Creek provides suitable breeding habitat for both species.

PROJECT IMPACTS

Yellow warbler or yellow-breasted chat may nest in or adjacent to the BSA. Thus, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Loss of fertile eggs or nesting raptors, or any activities resulting in nest abandonment, may adversely affect these species. The Project may also result in a small, temporary reduction of foraging and/or roosting habitat for these species. However, due to the regional abundance of similar habitats, temporary habitat loss is not expected to result in an adverse effect on these species.

AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for project-related impacts on nesting yellow warblers and yellow-breasted chats:

- Grading and other construction activities shall be scheduled to avoid the nesting season to the extent possible. The nesting season for these species extends from March through August. If construction occurs outside of the breeding season, no further mitigation is necessary. If the breeding season cannot be completely avoided, the following mitigations shall be implemented.
- A qualified biologist shall conduct a minimum of one pre-construction survey for yellow warblers and yellow-breasted chats within the BSA and a 250-ft buffer around the BSA. The survey should be conducted no more than 15 days prior to the initiation of construction in any given area. The pre-construction survey should be used to ensure that no nests of these species within or immediately adjacent to the BSA would be disturbed during project implementation. If an active nest is found, a qualified biologist should determine the extent of a construction-free buffer zone to be established around the nest. The County will inform Caltrans when such an activity occurs.

- If vegetation is to be removed by the project and all necessary approvals have been obtained, potential nesting substrate (e.g., shrubs and trees) that will be removed by the project should be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.

COMPENSATORY MITIGATION

None required.

CUMULATIVE EFFECTS

The proposed bridge replacement will not facilitate further development in the area. Further, impacts on yellow warblers and yellow-breasted chats in the project area will be relatively minor due to the small nature of the project. Thus, with implementation of the recommended avoidance and minimization measures, the proposed project would not result in cumulatively considerable adverse effects on the yellow warbler or yellow-breasted chat.

Pallid Bat

Pallid bat (*Antrozous pallidus*). **Federal Status: None. State Status: Species of Special Concern.** The pallid bat, a California Species of Special Concern, is a year-round resident throughout California, except in the high Sierra Nevada and in Del Norte and western Siskiyou counties in the northwestern corner of the state. Pallid bats often roost in groups (10 – 100+ individuals). They typically use separate day and night roosts and, in general, day roosts are in more enclosed, protected spaces than are night roosts (Tatarian 2001). The well-protected day roosts are required for maternity roosts where the young are reared (i.e., nursery colonies). Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, large tree cavities and various human structures such as bridges (especially wooden and concrete girder designs), barns, and vacant buildings (Sherwin and Rambaldini 2005). Maternity roosts are established in April, with young born in May through June. The young are typically volant (i.e., flying) by July through early August.

SURVEY RESULTS

Pallid bat was not observed during the field assessments/surveys. The existing bridge does not have any suitable roosting crevices. The riparian habitat along Ackerman Creek may provide suitable night roosting and foraging habitat for pallid bat. The closest CNDDDB occurrence record for pallid bat is a 1987 occurrence recorded along 6.59 miles northeast of the BSA. Given the absence of mines, caves, rock crevices, and large snags, the BSA is not anticipated to provide suitable breeding habitat (e.g.,

maternity roosts) for pallid bat. Given the sparse nature of mature cottonwood stands along Ackerman Creek and the rarity of the species in California, the BSA is not anticipated to provide suitable breeding habitat for western red bat.

PROJECT IMPACTS

The existing bridge does not provide suitable roosting crevices, and the BSA has a low potential to provide suitable breeding habitat for pallid bat. Project implementation is unlikely to have an adverse effect on foraging pallid bats due to the abundance of suitable foraging habitat in the region and the temporary nature of impacts to riparian habitat within the BSA. Therefore, the proposed project is not anticipated to result in significant adverse impacts to these species. However, the following avoidance and minimization measures are recommended to further reduce to potential for adverse impacts on pallid bat.

AVOIDANCE AND MINIMIZATION

To the extent practicable, the removal of any large trees shall occur outside of the breeding season of pallid bat. For the purposes of implementation of this measure, the breeding season is considered to be from April 1 through August 15th.

COMPENSATORY MITIGATION

None required.

Cumulative Effects

The proposed bridge replacement will not facilitate further development in the area. Thus, with implementation of the recommended avoidance and minimization measures, the proposed project would not result in cumulatively considerable adverse effects on pallid bat.

4.4. Nesting Migratory Birds

Survey Results

The existing bridge structure was visually surveyed for evidence of previous migratory bird nesting activity (e.g., remnant mud nests) during the June 20, 2012 field assessment. No nests were observed, however the structure provides suitable nesting habitat for migratory birds. Riparian habitat within the BSA also provides suitable nesting habitat for migratory birds.

Project Impacts

Adverse impacts on songbirds and other migratory birds could occur if they are actively nesting during project construction. Adverse impacts on other migratory birds could occur if they are actively nesting during pre-construction brush removal.

Avoidance and Minimization

The following measures are recommended to avoid or minimize project-related impacts on songbirds and other migratory birds:

- Construction activities on, and removal of, the existing bridge should be scheduled to avoid the nesting season to the extent feasible. The typical nesting season in northern California extends from March through July. Thus, if bridge demolition can be scheduled to occur between August and October 31st, or the period before nesting begins and after nesting is complete, the nesting season would be avoided, and no impacts would be expected.
- If it is not possible to schedule bridge removal to avoid nesting, any existing unoccupied and inactive nests shall be removed from the existing bridge before March 1 of the construction year. Removal of empty or unfinished nests should be repeated as frequently as necessary (can be up to three times per week) to prevent nest completion. A nest exclusion device can be installed (e.g. netting or similar mechanism that keeps birds from building nests) if desired prior to March 1 or after August 1. Any nest exclusion devices should be approved by CDFW prior to installation. Exclusion efforts should be continued until actual removal of the bridge structure. The County will inform Caltrans when such an activity occurs
- Measures outlined in Section 4.3.4.3 will be implemented to avoid or minimize project-related brush removal impacts on nesting migratory birds.

Compensatory Mitigation

None required.

Cumulative Effects

The proposed project will not facilitate further development in the area. Thus, with implementation of the above measures, the proposed project would not result in cumulatively considerable adverse effects.

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Chapter 5. Results: Permits and Technical Studies for Special Laws or Conditions

5.1. Federal Endangered Species Act Consultation

The proposed project is not likely to adversely affect any federally listed species, other than the Central California Coast Distinct Population Segment (DPS) steelhead and California Coastal Evolutionarily Significant Unit (ESU) Chinook salmon. A Biological Assessment/Essential Fish Habitat Assessment (BA/EFHA) was submitted on January 13, 2015 to the National Marine Fisheries Service (NMFS) for review under Section 7 of the Endangered Species Act (ESA) to address potential impacts to federally listed fish species. NMFS completed the Section 7 informal consultation on March 6, 2015 and concurred that the proposed project is not likely to adversely affect these two federally listed fish species (Appendix A).

It is not anticipated that Caltrans or the U.S. Army Corps of Engineers (Corps) will need to consult with U.S. Fish and Wildlife Service (USFWS).

5.2. Federal Fisheries and Essential Fish Habitat Consultation Summary

A BA/EFHA was submitted on January 13, 2015 to NMFS for review under Section 305(b) (2) of the Magnuson-Stevens Fishery Conservation and Management Act to address potential impacts to essential fish habitat (EFH) for Pacific Chinook salmon. NMFS completed the consultation on March 6, 2015 and concurred that the proposed project is not likely to eliminate or significantly diminish or disrupt EFH for Pacific salmon inhabiting Ackerman Creek (Appendix A).

5.3. Migratory Bird Treaty Act

Avoidance and minimization measures would be implemented to avoid adverse effects on migratory birds. These measures are outlined in Section 4.4.3.

5.4. California Endangered Species Act Consultation Summary

No California Endangered Species Act consultation with the California Department of Fish and Wildlife (CDFW) was required.

5.5. California Fish and Game Code

The proposed project would involve work within Ackerman Creek, an intermittent stream. Prior to any activities that would obstruct the flow of, or alter the bed, channel, or bank of any intermittent or ephemeral streams, the County will provide notification of streambed alteration to the CDFW. If required by the CDFW, the County will obtain a streambed alteration agreement and will ensure that all conditions of the agreement are implemented.

During the construction of the temporary work platform, it may be necessary to relocate aquatic animals that are species of special concern, including western pond turtle. Per CDFW guidelines the relocation of species of special concern or other animals for movement "out of harm's way" is permitted via a letter from the CDFW regional office.

Avoidance and minimization measures would be implemented to avoid adverse effects on species of special concern, nesting raptors, migratory birds, and fully protected species as specified in both Chapter 4 and Appendix B.

5.6. Wetlands and Other Waters Coordination Summary

NSR prepared a delineation of waters of the United States report dated February 2015 (Appendix F). The delineation of waters of the United States will be submitted to the Corps after Caltrans reviews and approves the delineation. Jurisdictional waters occupy a total of 0.600 acre of the biological study area (BSA).

Corps Section 404 Permit

To ensure compliance with terms and conditions of Section 404 of the federal Clean Water Act (CWA), the County will submit a Pre-Construction Notification to the Corps requesting verification of authorization to proceed with construction of the proposed project under the Nationwide Permit program (likely Nationwide Permit 14 - Linear Transportation Crossings). The Pre-Construction Notification will be submitted to the Corps prior to any discharge of dredged or fill material into waters of the United States.

Section 401 Water Quality Certification

Section 401 of the CWA requires that a Water Quality Certification be obtained from the North Coast Regional Water Quality Control Board (RWQCB) prior to any discharge of dredged or fill material into waters of the United States. The County will

obtain a Water Quality Certification from the RWQCB prior to any discharge of dredged or fill material into waters of the United States.

5.7. Invasive Species

Implementation of Conservation Measure #5 – Prevention of Spread of Invasive Species will avoid and minimize the spread of invasive species as required by Executive Order 13112.

5.8. Floodplain Management

The proposed bridge will improve floodway conveyance within the project study area. Therefore, the project complies with this executive order.

5.9. Wetlands Only Practicable Alternative Finding

Executive Order 119900, Protection of Wetlands (1977), established a national policy to avoid adverse effects on wetlands wherever there is a practicable alternative. The project design minimized impacts on wetlands to the extent practicable Section 4.1.2.3). All other design considerations would have a greater impact on wetlands. Because the project design with the least impact on wetlands was selected, the project is in compliance with the Wetlands Only Practicable Finding Alternative pursuant to Executive Order 119900, Protection of Wetlands (1977).

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Appendix A NMFS Informal Consultation— Letter of Concurrence

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MENDOCINO COUNTY
TRANSPORTATION



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

West Coast Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404-4731

March 6, 2015

Refer to NMFS No: WCR-2015-2155

Brandon Larsen
Senior Environmental Planner
Department of Transportation, District 1
Office of Local Assistance
1656 Union Street
Eureka, California 95502

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens
Fishery Conservation and Management Act Essential Fish Habitat Response for the
Ackerman Creek Bridge Replacement Project

Dear Mr. Larsen:

On January 13, 2015, NOAA's National Marine Fisheries Service (NMFS) received your request for a written concurrence that the California Department of Transportation's (Caltrans) Ackerman Creek Bridge Replacement Project is not likely to adversely affect (NLAA) species listed as threatened under the Endangered Species Act (ESA). The Mendocino County Department of Public Works, in Cooperation with Caltrans and the Federal Highway Administration (FHWA), is proposing this bridge replacement project. Caltrans is acting as the federal agency for this consultation following provisions of the Memorandum of Understanding between FHWA and Caltrans State Assumption of Responsibility for Categorical Exclusions, which became effective on June 7, 2007. This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparation of letters of concurrence.

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The concurrence letter will be available through NMFS' Public Consultation Tracking System [<https://pcts.nmfs.noaa.gov/pcts-web/homepage.pcts>¹]. A complete record of this consultation is on file at NMFS North-Central Coast Field Office in Ukiah, California.

¹ Once on the PCTS homepage, use the following PCTS tracking number within the Quick Search column: WCR-2015-2155.



Proposed Action and Action Area

An existing bridge that crosses Ackerman Creek at North State Street in Ukiah, California will be replaced with a new single-span bridge. The new bridge will be 146 feet long, and 64 feet wide to accommodate traffic and turn lanes, shoulders, and sidewalks. Each bridge abutment will require twenty-five 16-inch diameter driven steel piles. Falsework to support and form the concrete bridge structure will be placed within the 100-year flood plain and consist of timber post and steel beams on wooden pads. The new bridge is proposed at a lower elevation to reduce the severity of the existing vertical curve and improve sight distance across the bridge. The lower road elevation causes potential issues with meeting hydraulic design criteria required by Caltrans. To meet the 50 and 100-year flood flow requirement at the bridge an existing check dam with a fish ladder will be replaced with a new roughened channel fish weir. The proposed fish weir will lower the stream elevation allowing the new bridge to meet hydraulic criteria for large floods and improve fish migration for salmonids. NMFS fish passage engineers have worked with the project proponents to design a more natural fishway consisting of chutes and pools. Five chutes and five pools are proposed to be constructed of large rock and engineered stream bed material placed between the rocks to set the structure. The overall slope of the fish weir will be four percent with pools having residual depths of two-feet and a total length of 320 feet. Rock slope protection is proposed along each bank of the fish weir to protect the structure from scour during high flow events.

There are no interrelated or interdependent activities associated with the proposed project.

The action area associated with this project includes the area at the crossing and the stream reach of Ackerman Creek within the area of the fish weir and downstream to the confluence with the Russian River (approximately 0.5 miles). Caltrans' biological assessment identifies approximately 6.7 acres in the area of the crossing that could have direct or indirect effects. In addition, there is potential for indirect effects to extend downstream to the confluence with the Russian River.

Action Agency's Effects Determination

Caltrans has determined the proposed project is not likely to adversely affect (NLAA) ESA-listed species and requested NMFS' concurrence for that determination. The NLAA determination relies on the construction work window and other measures to avoid the presence of listed salmonids during the summer months and minimize effects to the stream channel and associated aquatic habitat.

Available information indicates threatened California Coastal (CC) Chinook salmon, and Central California Coast (CCC) steelhead may be affected by the proposed project. CC Chinook salmon, and CCC steelhead are listed as threatened (70 FR 37160). Ackerman Creek is not designated as critical habitat for these listed salmonids (70 FR 52488). EFH is present within action area with available spawning, rearing and migration habitat available for CC Chinook salmon. Caltrans has made the determination that the proposed project will not significantly diminish EFH in the action area. EFH areas of Ackerman Creek are used by adult Chinook salmon for migration to more suitable spawning areas upstream of the project site.

The proposed project is located along the lower reach of Ackerman Creek approximately a half-mile upstream of its confluence with the Russian River. Generally, this stream reach flows with the onset of winter rains in November and goes dry during the spring sometime between May and June. CCC steelhead are known to spawn throughout Ackerman Creek, and rearing is limited to upstream reaches that remain wetted through the summer in some years. CC Chinook salmon spawning is reported occasionally in the low gradient reach just upstream of the project that is within the Pinoleville Pomo Tribe Rancheria. Ackerman Creek is similar to most streams in the Ukiah Valley that flow during the winter and spring and are dry during the summer and fall months. Therefore, steelhead use the project reach for upstream and downstream passage when elevated winter flow conditions exist and juveniles/smolt use the reach as they migrate downstream during spring.

Consultation History

Caltrans, the County of Mendocino, and Quincy Engineers hosted a meeting at the proposed project site on November 18, 2010 to discuss project alternative with the resource agencies, California Department of Fish and Wildlife and NMFS. Fish passage design and alternatives to minimized impacts at the site were discussed. Between December 2012 and June 2014, Quincy Engineering worked with NMFS to design the roughened channel fish weir. On May 29, 2014, NMFS provided a memorandum to Quincy Engineering acknowledging review and comments for the design report and 65 percent drawings dated March 2014. NMFS then received initiation of informal consultation from Caltrans on January 13, 2015, for ESA and MSA species.

ENDANGERED SPECIES ACT

Effects of the Action

Under the ESA, "effects of the action" means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is not likely to adversely affect listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

Direct effects related to construction include potential for barotraumas during pile driving, installation of temporary work platform and falsework, removal of the existing bridge, fish ladder and grade control structure, construction of roughened channel fish weir, and potential for spills from construction equipment. Potential for direct effects are avoided or minimized with proposed work windows and measures that minimize or mitigate the project's impacts. Without the proposed construction window or minimization measures, the project could directly affect rearing or migrating salmonids, or degrade habitat that could lead to indirect effects to various life stages of Chinook salmon or steelhead. Direct effects such as fish removal and relocation, and pile-driving effects are avoided by performing construction when the stream is dry.

Ackerman Creek is known to dry during the late spring, and generally by May there is no surface flow from its confluence of the Russian River upstream for approximately two miles where it increases in gradient. The proposed work window of June 15 to October 15 is expected to avoid any direct affects to ESA listed salmonids.

Indirect effects from the project include removal of riparian vegetation, sediment delivery and possible spills or delivery of hazardous materials to the stream channel. To avoid these indirect effects, Caltrans has proposed measures to minimize indirect effects to Ackerman Creek. Disturbance of riparian vegetation along the length of the fish weir will encompass approximately 350 feet on each side of the stream channel. Vegetation will be retained where possible and in areas of removal will be replaced with native riparian species. In addition, the proposed project includes measures to avoid the spread of invasive plant species. Other potential effects such as sediment delivery or indirect effects to water quality or hazardous materials spills will be minimized or avoided to the extent that these affects are expected to be insignificant. Spill containment materials shall be maintained onsite, and equipment will be inspected daily for leaks, as well as other BMPs to avoid accidental spills from construction equipment from entering dry channel. Sediment and erosion control measures including preparing and following a Storm Water Pollution Prevention Plan, and other BMPs that have been included to avoid delivery of sediment to the stream channel. Therefore, any impacts to water quality are expected to be temporary, minor, localized and insignificant. Overall, the project is not expected to result in a net change to existing habitat values or adversely affect essential physical or biological features associated with salmonid habitat for CCC steelhead or CC Chinook salmon.

Beneficial effects are expected from the replacement of the old fish ladder with an improved fish passage structure. The new roughened channel fish weir is expected to reduce the gradient at the site and allow adult and juvenile passage at a greater range of flows. Improved passage at this site will likely provide more benefit to adult Chinook salmon since they have less ability to pass high gradient reaches and passage flows during the late fall are typically less frequent.

Conclusion

Based on this analysis, NMFS concurs with Caltrans that the proposed action is not likely to adversely affect the subject listed species.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by Caltrans or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) new information reveals effects of the action that may affect listed species in a manner or to an extent not previously considered; (2) the identified action is subsequently modified in a manner that causes an effect to the listed species was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

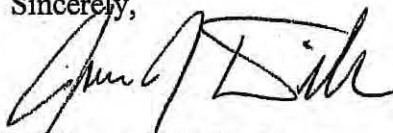
MAGNUSON-STEVEN'S FISHERY CONSERVATION AND MANAGEMENT ACT

Under the MSA, this consultation is intended to promote the protection, conservation and enhancement of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10), and "adverse effect" means any impact which reduces either the quality or quantity of EFH (50 CFR 600.910(a)). Adverse effects may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. NMFS has determined that the proposed action would adversely affect EFH for various federally managed fish species within the Pacific Salmonid FMP. The effects to EFH include delivery of small quantities of sediment, and minor losses of riparian habitat described in the ESA section above, to a short reach (approximately 350 feet) of Ackerman Creek, a tributary to the Russian River. However, the anticipated adverse effects are so minimal in nature that no EFH Conservation Recommendations are necessary at this time to avoid, minimize, mitigate, or otherwise offset the adverse effects to EFH.

Caltrans must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR 600.920(l)). This concludes the MSA portion of this consultation.

Please direct questions regarding this letter to Thomas Daugherty, North-Central Coast Office, North Coast Branch, at (707) 468-4057 or tom.daugherty@noaa.gov.

Sincerely,


for William W. Stelle, Jr.
Regional Administrator

cc: Howard Dashiell – County of Mendocino DOT
bcc: CHRON File (pdf)
Division- File copy 151422WCR2015SR00060

Appendix B Environmental Commitments

Table B-1. North State Street over Ackerman Creek Bridge Replacement Project Environmental Commitments

Conservation Measure, Avoidance and Minimization Measure, or Mitigation Measure		Responsi- bility	Timing	NES Reference
Conservation Measure #1 - Erosion and Sedimentation Control				Section 1.2.5.1
	Erosion control measures to be included in the SWPPP or to be implemented by the County include the following:			
	Areas where wetland and upland vegetation need to be removed shall be identified in advance of ground disturbance and limited to only those areas that have been approved by the County.	County	Before Construction	
	To the maximum extent practicable, activities that increase the erosion potential in the project area shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. In channel construction will be conducted from June 15-October 31 and upland construction will likely occur throughout the year as long as work activities comply with the conservation and avoidance and minimization measures identified herein and for the protection of other sensitive or special-status plant or animal species. For upland construction activities that must take place during the late fall, winter, or spring, then temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and maintained until permanent erosion control structures are in place.	Contractor	Before and During Construction	
	Suitable BMPs, such as silt fences, straw wattles, or catch basins, shall be placed 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. Further, sediment built up at the base of BMPs will be removed before BMP removal to avoid any accumulated sediments from being mobilized post-construction.			
	If spoil sites are used, they shall be located such that they do not drain directly into a surface water feature, if possible. If a spoil site drains into a surface water feature, catch basins shall be constructed to intercept sediment before it reaches the feature. Spoil sites shall be graded and vegetated to reduce the potential for erosion.			
	Sediment control measures shall be in place prior to the onset of the rainy season and will be monitored and maintained in good working condition until disturbed areas have been revegetated with native species.			
	Any new or previously excavated gravel material placed in the channel shall meet Caltrans' cleanness test indicating the relative proportions of clay-sized material clinging to coarse aggregate and screenings (California Test No. 227) with a value of 85 or higher (excluding such materials as soil in the RSP to allow for riparian planting).	Contractor	During Construction	

Conservation Measure, Avoidance and Minimization Measure, or Mitigation Measure		Responsibility	Timing	NES Reference
	Within 10 days of completion of construction in those areas where subsequent ground disturbance will not occur for 10 calendar days or more, 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 possibility of rain within the next 24 hours, as forecasted by the National Weather Service, weed-free mulch shall be applied to all exposed areas upon completion of the day's activities. Soils shall not be left exposed during the rainy season.	County	After Construction	
Conservation Measure #2 - Prevention of Accidental Spills				Section 1.2.5.2
	Construction specifications shall include the following measures to reduce potential impacts to vegetation and aquatic habitat resources in the project area associated with accidental spills of pollutants (e.g., fuel, oil, and grease):	Contractor	During construction	
	A site-specific spill prevention plan shall be implemented for potentially hazardous materials. 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 50 ft 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 materials. Maintenance and fueling shall be conducted in an area at least 50 ft away from Ackerman Creek or within an adequate fueling containment area.			
	Equipment operating within the OHWM shall use non-toxic vegetable oil for operating hydraulic equipment instead of traditional hydraulic fluids.			
	Place plastic materials under asphaltic concrete (AC) paving equipment while not in use, to catch and/or contain drips and leaks.			
	Minimize sand and gravel from new asphalt from getting into storm drains, streets, and creeks by sweeping. Old or spilled asphalt must be recycled or disposed as approved by the Resident Engineer.			
	AC grindings, pieces, or chunks used in embankments or shoulder backing must not be allowed to enter any storm drain or watercourses. Install silt fence until structure is stabilized or permanent controls are in place.			
	Collect and remove all broken asphalt and recycle when practical; otherwise, dispose in accordance with Standard Specification 7-1.13.			
	During chip seal application and sweeping operations, petroleum or petroleum covered aggregate must not be allowed to enter any storm drain or water courses. Use silt fence until installation is complete.			
	Use only non-toxic substances to coat asphalt transport trucks and asphalt spreading equipment.			

Conservation Measure, Avoidance and Minimization Measure, or Mitigation Measure		Responsi- bility	Timing	NES Reference
	Drainage inlet structures and manholes shall be covered with filter fabric during application of seal coat, tack coat, slurry seal, and/or fog seal.			
	Seal coat, tack coat, slurry seal, or fog seal shall not be applied if rainfall is predicted to occur during the application or curing period.			
	Do not allow saw-cut Portland Concrete Cement (PCC) slurry to enter storm drains or watercourses.			
Conservation Measure #3 - Air Quality/Dust Control				Section 1.2.5.3
	The County shall include provisions in the construction bid documents that the contractor shall implement a dust control program to limit fugitive dust emissions. The dust control program shall include, but not be limited to, the following elements, as appropriate:	County	Before Construction	
	Water inactive construction sites and exposed stockpile sites at least twice daily or until soils are stable.	Contractor	During Construction	
	Pursuant to the California Vehicle Code (State of California 2009), all trucks hauling soil and other loose material to and from the construction site shall be covered or shall maintain at least 6 in. of freeboard (i.e., minimum vertical distance between top of load and the trailer).	Contractor	During Construction	
	Any topsoil that is removed for the construction operation shall be stored on-site in piles not to exceed 4 ft in height to allow development of microorganisms prior to resoiling of the construction area. These topsoil piles shall be clearly marked and flagged. Topsoil piles that will not be immediately returned to use shall be revegetated with a non-persistent erosion control mixture.	Contractor	During Construction	
	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 immediately used.			
	Equipment or manual watering shall be conducted on all stockpiles, dirt/ gravel roads, and exposed or disturbed soil surfaces, as necessary, to reduce airborne dust.			
Conservation Measure #4 - Replacement of Lost Riparian Habitat				Section 1.2.5.4
	The following measures shall be implemented to reduce potential impacts to riparian habitat in the BSA:			
	The width of the construction disturbance zone within the riparian habitat shall be minimized through careful pre-construction planning.	Contractor	During Construction	
	Exclusionary fencing shall be installed along the boundaries of all riparian areas to be avoided to ensure that impacts to riparian vegetation outside of the construction area are minimized.			
	Riparian habitat areas temporarily disturbed shall be replanted using riparian species that have been recorded along Ackerman Creek in the BSA, Fremont cottonwood (<i>Populus fremontii</i>), willows (<i>Salix lasiolepis</i> , <i>S. exigua</i> and <i>S. laevigata</i>), and Oregon ash (<i>Fraxinus latifolia</i>).		After Construction	

Conservation Measure, Avoidance and Minimization Measure, or Mitigation Measure		Responsibility	Timing	NES Reference
	Onsite creation/restoration shall occur in areas disturbed during project construction and the amount of habitat created/restored shall be at a 3:1 ratio of new plantings per each large woody plant removed that is greater or equal to 6 inches diameter at breast height (dbh). These replanting ratios will help ensure successful establishment of at least one vigorous plant for each large woody plant removed to accommodate the project.			
	Plant spacing intervals will be determined as appropriate based on site conditions following construction.			
	Non-native tree species removed during project construction will be replaced with native riparian species.			
	Revegetation monitoring would be implemented in compliance with regulatory permit conditions and be initiated immediately following completion of the planting. The monitoring surveys will consist of a general site walkover evaluating the survival and health of riparian plantings, signs of drought stress, weed or herbivory problems, and the presence or trash or other debris. Within the mitigation area, less than 50 percent total mortality of planted species (including container stock and hardwood cuttings) would be considered a success. Greater than 50 percent mortality of planted species will be considered acceptable if "volunteer" native species provide complete vegetation coverage in the mitigation area. If monitoring results indicate that revegetation efforts are not meeting established success criteria, corrective measures would be implemented.	County	After Construction	
Conservation Measure #5 – Prevention of Spread of Invasive Species				Section 1.2.5.5
	All equipment used for off-road construction activities will be weed-free prior to entering the BSA.	Contractor	During and After Construction	
	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 sites will consist of locally adapted native plant materials to the extent practicable.			
	Any personal equipment (including boots/waders), construction materials (falsework members, sand bags, etc.) and construction equipment shall be properly disinfected or cleaned according guidance provided by the State of California Aquatic Invasive Species Management Plan (California Department of Fish and Game 2008a; U.S. Bureau of Reclamation 2012) prior to in-channel work to prevent the spread of aquatic invasive species.			
Riparian Habitat - Avoidance And Minimization				Section 5.4.2.3
	The project shall be designed and constructed to avoid and minimize removal of riparian vegetation to the maximum extent practicable. Staging areas and construction access routes shall avoid encroachment into riparian vegetation where practicable and minimize encroachment where complete avoidance is not practicable. "Avoided" riparian habitat will be clearly identified in the construction drawings and contractor work plans. Exclusionary fencing will be installed to mark boundaries of all avoided riparian areas. All pedestrian and vehicular traffic into the avoided areas delineated by the fencing shall be prohibited during construction. The exclusionary fencing shall be inspected and maintained on a regular basis throughout project construction.	County	Before and During Construction	

Conservation Measure, Avoidance and Minimization Measure, or Mitigation Measure		Responsibility	Timing	NES Reference
Riparian Habitat – Compensatory Mitigation				Section 5.4.2.4
	Impacts to riparian habitat will be compensated for as described in Conservation Measure #4 (Replacement of Lost Riparian Habitat).	County	After Construction	
Waters of the U.S. – Avoidance and Minimization				Section 5.3.4
	To the extent practicable, the discharge of dredged or fill material into “waters of the United States,” including wetlands shall be avoided (this also includes waters not subject to Corps jurisdiction, but subject to RWQCB jurisdiction). However, complete avoidance is not feasible due to the need for the placement of new pier walls, thus the following measures shall be implemented to avoid or minimize the potential for project-related impacts on “waters of the United States”:			
	To the maximum extent practicable, activities that increase the erosion potential in the project area shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. If these activities must take place during the late fall, winter, or spring, then temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and maintained until permanent erosion control structures are in place.	Contractor	During Construction	
	Areas where wetland and upland vegetation need to be removed shall be identified in advance of ground disturbance and limited to only those areas that have been approved by the County.	County	Before Construction	
	Within 10 days of completion of construction in those areas where subsequent ground disturbance will not occur for 10 calendar days or more, 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 possibility of rain within the next 24 hours, as forecasted by the National Weather Service, weed-free mulch shall be applied to all exposed areas upon completion of the day’s activities. Soils shall not be left exposed during the rainy season.	County	After Construction	
	Suitable BMPs, such as silt fences, straw wattles, or catch basins, shall be placed 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.	Contractor	During Construction	
	If spoil sites are used, they shall be located such that they do not drain directly into a surface water feature, if possible. If a spoil site drains into a surface water feature, catch basins shall be constructed to intercept sediment before it reaches the feature. Spoil sites shall be graded and vegetated to reduce the potential for erosion.	Contractor	During Construction	
	Sediment control measures shall be in place prior to the onset of the rainy season and will be monitored and maintained in good working condition until disturbed areas have been revegetated.	Contractor	During Construction	
	Any new or previously excavated gravel material placed in the channel shall be washed at least once and have a cleanliness value of 85 or higher based on Caltrans Test No. 227.	Contractor	During Construction	

Conservation Measure, Avoidance and Minimization Measure, or Mitigation Measure		Responsibility	Timing	NES Reference
	A site-specific spill prevention plan shall be implemented for potentially hazardous materials. 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.	Contractor	During Construction	
	Equipment and hazardous materials shall be stored 50 ft away from surface water features.	Contractor	During Construction	
	Vehicles and equipment used during construction shall receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Maintenance and fueling shall be conducted in an area at least 50 ft away from the Ackerman Creek or within an adequate fueling containment area.	Contractor	During Construction	
<i>Waters of the U.S. – Compensatory Mitigation</i>				<i>Section 5.3.5</i>
	Impacts to riparian habitat will be mitigated at a 3:1 ratio as described under Conservation Measure #4.	County	After Construction	
<i>Salmonids - Avoidance and Minimization Efforts</i>				<i>Section 5.2.1.2</i>
	In addition to the Conservation Measures included in the project description, the following measures shall be implemented:			
	All instream work will be completed between June 15 and October 15.	County	During Construction	
	To the extent practicable with construction of the roughened channel, any new or previously excavated gravel material placed in the channel shall meet Caltrans' cleanness test indicating the relative proportions of clay-sized material clinging to coarse aggregate and screenings (California Test No. 227) with a value of 85 or higher (excluding such materials as soil in the RSP to allow for riparian planting).	Contractor	Before and During Construction	
	Equipment and materials shall be stockpiled outside of the riparian habitat.	Contractor	Before and During Construction	
	Impacts to herbaceous cover will be offset by reseeding any unvegetated and impacted areas with a suitable seed mixture, post construction.	Contractor	During Construction	
	Any construction equipment operating upon work pads or adjacent to the Ackerman Creek shall be inspected daily for leaks. External oil, grease, and mud shall be removed from equipment and disposed of properly. Spill containment booms shall be maintained onsite at all times during construction operations and/or staging of equipment or fueling supplies. Fueling trucks shall maintain adequate spill containment materials at all times.	Contractor	During Construction	

Conservation Measure, Avoidance and Minimization Measure, or Mitigation Measure		Responsibility	Timing	NES Reference
	Any structure/culvert placed within a stream where fish do/may occur shall be designed, constructed, and maintained such that they do not constitute a barrier to upstream or downstream movement of aquatic life or cause an avoidance reaction by fish that impedes their upstream or downstream movement. This includes, but is not limited to, the supply of water at an appropriate depth, temperature, and velocity to facilitate upstream and downstream fish migration. For this project, this equates to designing the culverts to meet guidelines outlined in NMFS (2001).	County	Before, During, and After Construction	
	The contractor shall develop and implement site-specific BMPs, a water pollution control plan and emergency spill control plan. The contractor shall be responsible for immediate containment and removal of any toxins released.	County and Contractor	Before, During, and After Construction	
	Impacts to herbaceous cover will be offset by reseeding any unvegetated and impacted areas with a suitable seed mixture post construction.	Contractor	After Construction	
Salmonids - Compensatory Mitigation				Section 5.2.1.4
	The proposed project has been designed such that the conservation measures and proposed avoidance and minimization measures will avoid or minimize the potential effects to steelhead and Chinook salmon, and no compensatory mitigation is required beyond the replacement of riparian habitat included for Conservation Measure #4 described in Section 1.2.5..	County	After Construction	
Turtles - Avoidance and Minimization				Section 5.2.2.3
	In addition to the five Conservation Measures listed above, the following measures shall be implemented to avoid or minimize project-related impacts on the western pond turtle:			
	Because turtles may move into and out of the project site at any time, a pre-construction survey for the species is necessary to confirm its status (presence/absence) on the site immediately prior to the onset of project construction. Therefore, a qualified biologist shall conduct a minimum of one survey of the project site for pond turtles and their nests. The survey shall be conducted a maximum of one week prior to construction. If a pond turtle is found within a construction impact zone, the biologist shall move it to a safe location within similar habitat. 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 when such an activity occurs.	County	Before Construction	
	If a western pond turtle is encountered during construction, activities in the vicinity shall cease until appropriate corrective measures have been implemented or it has been determined that the turtle will not be harmed. Any turtles encountered during construction shall be allowed to move away on their own. Any trapped, injured, or killed turtles shall be reported immediately to CDFW.	Contractor	During construction	
Raptors - Avoidance and Minimization				Section 5.2.3.3
	The following measures are recommended to avoid or minimize the potential for project-related impacts to long-eared owl ,white tailed kite, and other raptor species:			

Conservation Measure, Avoidance and Minimization Measure, or Mitigation Measure		Responsibility	Timing	NES Reference
	Pre-construction surveys for nesting raptors shall be conducted by a qualified biologist within the BSA and a 250-ft buffer around the BSA to ensure that no nests will be disturbed during project implementation. At least one survey should be conducted no more than 15 days prior to the initiation of construction activities. During this survey, the biologist should inspect all trees immediately adjacent to the impact areas for nests. If an active raptor nest is found close enough (i.e., within 250 ft) to the construction area to be disturbed by these activities, the biologist (in consultation with the CDFW) shall determine the extent of a construction-free buffer zone to be established around the nest. The County will inform Caltrans when such an activity occurs.	County	Before Construction	
	If all necessary approvals have been obtained, potential nesting substrate (e.g., shrubs and trees) that will be removed by the project should be removed before the onset of the nesting season (February 15 through September 30), if practicable. This will help preclude nesting and substantially decrease the likelihood of direct impacts.	Contractor	Before Construction	
Songbirds - Avoidance and Minimization				Section 5.2.4.3
	The following measures shall be implemented to avoid or minimize the potential for project-related impacts on nesting yellow warbler and yellow-breasted chat:			
	Grading and other construction activities shall be scheduled to avoid the nesting season to the extent possible. The nesting season for these species extends from March through August. If construction occurs outside of the breeding season, no further mitigation is necessary. If the breeding season cannot be completely avoided, the following mitigations shall be implemented.	Contractor	During Construction	
	A qualified biologist shall conduct a minimum of one pre-construction survey for yellow warblers and yellow-breasted chats within the BSA and a 250-ft buffer around the BSA. The survey should be conducted no more than 15 days prior to the initiation of construction in any given area. The pre-construction survey should be used to ensure that no nests of these species within or immediately adjacent to the BSA would be disturbed during project implementation. If an active nest is found, a qualified biologist should determine the extent of a construction-free buffer zone to be established around the nest. The County will inform Caltrans when such an activity occurs.	County	Before Construction	
	If vegetation is to be removed by the project and all necessary approvals have been obtained, potential nesting substrate (e.g., shrubs and trees) that will be removed by the project should be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts	County	Before Construction	
Bats - Avoidance and Minimization				Section 5.2.5.3
	To the extent practicable, the removal of any large trees shall occur outside of the breeding season of pallid bat. For the purposes of implementation of this measure, the breeding season is considered to be from April 1 through August 15th.	County	Before Construction	

Conservation Measure, Avoidance and Minimization Measure, or Mitigation Measure		Responsi- bility	Timing	NES Reference
<i>Nesting Migratory Birds - Avoidance and Minimization</i>				<i>Section 5.4.1.3</i>
	The following measures are recommended to avoid or minimize project-related impacts on nesting migratory birds:			
	Construction activities on, and removal of, the existing bridge should be scheduled to avoid the nesting season to the extent feasible. The typical nesting season in northern California extends from March through July. Thus, if bridge demolition can be scheduled to occur between August and December, or the period before nesting begins and after nesting is complete, the nesting season would be avoided, and no impacts would be expected.	County and Contractor	Before Construction	
	If it is not possible to schedule bridge removal to avoid nesting, any existing unoccupied and inactive nests shall be removed from the existing bridge before March 1 of the construction year. Removal of empty or unfinished nests should be repeated as frequently as necessary (can be up to three times per week) to prevent nest completion. A nest exclusion device can be installed (e.g. netting or similar mechanism that keeps birds from building nests) if desired prior to March 1 or after August 1. Any nest exclusion devices should be approved by CDFW prior to installation. Exclusion efforts should be continued until actual removal of the bridge structure. The County will inform Caltrans when such an activity occurs.	County and Contractor	Before Construction	
	Measures outlined in Section 4.3.4.3 (Songbirds – Avoidance and Minimization) will also be implemented to avoid or minimize project-related brush removal impacts on nesting migratory birds.	County	Before Construction	

Appendix C USFWS List/NMSF Listing Correspondence



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Arcata Fish and Wildlife Office

1655 HEINDON ROAD

ARCATA, CA 95521

PHONE: (707)822-7201 FAX: (707)822-8411



Consultation Code: 08EACT00-2016-SLI-0029

November 03, 2015

Event Code: 08EACT00-2016-E-00028

Project Name: North State Street Over Ackerman Creek Bridge Replacement Project

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, 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 U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

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: North State Street Over Ackerman Creek Bridge Replacement Project

Official Species List

Provided by:

Arcata Fish and Wildlife Office
1655 HEINDON ROAD
ARCATA, CA 95521
(707) 822-7201

Consultation Code: 08EACT00-2016-SLI-0029

Event Code: 08EACT00-2016-E-00028

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: North State Street Over Ackerman Creek Bridge Replacement Project

Project Description: The project is located in Ukiah at 39.17927, -123.20995 at the crossing of North State Street over Ackerman Creek. The project will replace the existing bridge and construct a roughened-channel fish passage structure to replace a poorly functioning fish ladder. The project is scheduled for summer 2016.

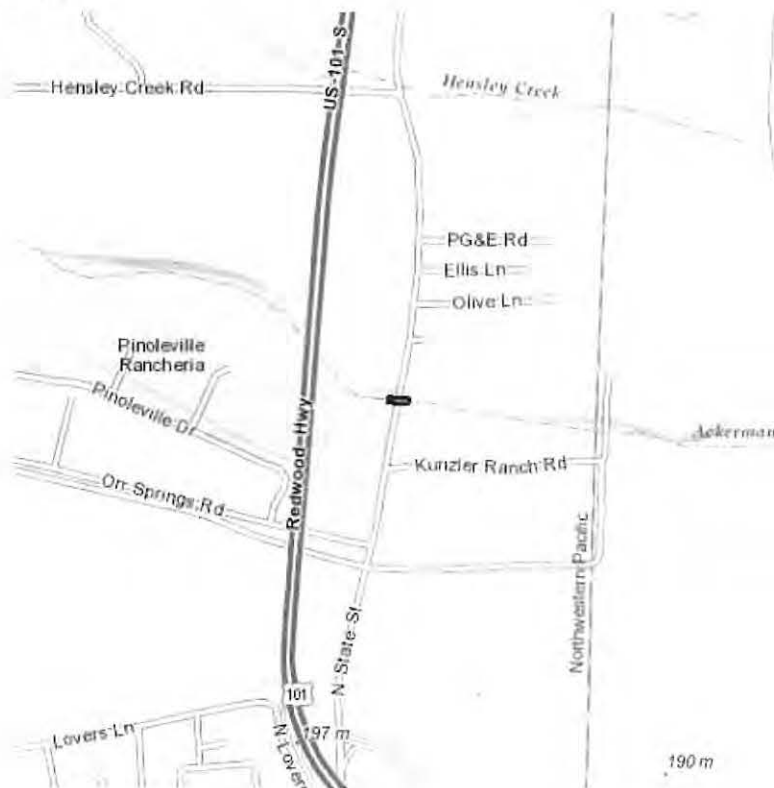
Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your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



United States Department of Interior
Fish and Wildlife Service

Project name: North State Street Over Ackerman Creek Bridge Replacement Project

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-123.20987552404402 39.17924165343578, -123.209687769413 39.1792291783718, -123.20969849824905 39.17911482351565, -123.21024298667906 39.17916264465994, -123.21022152900696 39.17925828685097, -123.20987552404402 39.17924165343578)))

Project Counties: Mendocino, CA



United States Department of Interior
Fish and Wildlife Service

Project name: North State Street Over Ackerman Creek Bridge Replacement Project

Endangered Species Act Species List

There are a total of 9 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	Status	Has Critical Habitat	Condition(s)
California red-legged frog (<i>Rana draytonii</i>) Population: Entire	Threatened	Final designated	
Birds			
Marbled murrelet (<i>Brachyramphus marmoratus</i>) Population: CA, OR, WA	Threatened	Final designated	
Northern Spotted owl (<i>Strix occidentalis caurina</i>) Population: Entire	Threatened	Final designated	
western snowy plover (<i>Charadrius nivosus ssp. nivosus</i>) Population: Pacific coastal pop.	Threatened	Final designated	
Yellow-Billed Cuckoo (<i>Coccyzus americanus</i>) Population: Western U.S. DPS	Threatened	Proposed	
Flowering Plants			
Burke's goldfields (<i>Lasthenia burkei</i>)	Endangered		



United States Department of Interior
Fish and Wildlife Service

Project name: North State Street Over Ackerman Creek Bridge Replacement Project

Contra Costa goldfields (<i>Lasthenia conjugens</i>)	Endangered	Final designated	
Showy Indian clover (<i>Trifolium amoenum</i>)	Endangered		
Mammals			
fisher (<i>Martes pennanti</i>) Population: West coast DPS	Proposed Threatened		



United States Department of Interior
Fish and Wildlife Service

Project name: North State Street Over Ackerman Creek Bridge Replacement Project

Critical habitats that lie within your project area

There are no critical habitats within your project area.

From: "Kelly, Michael@DOT" <Michael.Kelly@dot.ca.gov>
To: Jackson Ford <fordj@co.mendocino.ca.us>
CC: "Larsen, Brandon@DOT" <brandon.larsen@dot.ca.gov>
Date: 11/4/2015 10:50 AM
Subject: FW: Updated species list for Ackerman Creek

Hey Jackson.

This email from NMFS confirms that there have been no changes in ESA listings or status for Ackerman Creek since we received the LOC. This email suits our purposes for FHWA documentation, so it can be added as an addendum to the existing list in the NES.

Let me know if you have any questions.

Mike

Mike Kelly
Caltrans District 1 Local Assistance
Associate Environmental Planner, Biologist
Office: 707-441-4548
Mobile: 707-502-9942

From: Joel Casagrande - NOAA Federal [mailto:joel.casagrande@noaa.gov]
Sent: Wednesday, November 04, 2015 10:17 AM
To: Kelly, Michael@DOT
Cc: Darren Howe - NOAA Federal
Subject: Re: Updated species list

Hi Mike,
No changes to what was provided in our LOC in terms of species, critical habitats, and their listing status.
Thanks,
Joel

On Wed, Nov 4, 2015 at 8:26 AM, Kelly, Michael@DOT
<Michael.Kelly@dot.ca.gov<mailto:Michael.Kelly@dot.ca.gov>> wrote:

Hi guys.

We need an updated species list due to our FHWA requirement that we have a list less than six months old when we sign the final environmental document. This one is for the bridge replacement and fishway on North State Street over Ackerman Creek. I've attached the LOC for reference.

Just an email confirming that no new species have been added and no status changes have occurred would work for us too.

Thanks!

Mike

Mike Kelly
Caltrans District 1 Local Assistance
Associate Environmental Planner, Biologist
Office: 707-441-4548<tel:707-441-4548>
Mobile: 707-502-9942<tel:707-502-9942>

--

Joel Casagrande

Fisheries Biologist

NOAA Fisheries West Coast Region

777 Sonoma Avenue, Room 325

Santa Rosa, CA. 95404

(707) 575-6016, Fax (707) 578-3435

www.westcoast.fisheries.noaa.gov<<http://www.westcoast.fisheries.noaa.gov>>

[<https://lh3.googleusercontent.com/i6JyqT5Ex9nrQ2VKwojazrg6OoSv5Ujbcw83f1COiYpJxjgpdX496MxVaNzgv2JcbsKNfe59HkWqmY58Ib2yJ9z8xw4d9DmaAw4SQmYK8YBnizRFAs6lWtMNKQ>]

Appendix D CNDDDB and CNPS Results



Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad is (Boonville (3912313) or Cow Mountain (3912321) or Elledge Peak (3912312) or Laughlin Range (3912333) or Orrs Springs (3912323) or Potter Valley (3912331) or Purdys Gardens (3912311) or Redwood Valley (3912332) or Ukiah (3912322))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAABH01050	<i>Rana boylei</i> foothill yellow-legged frog	None	None	G3	S3	SSC
ABNKC01010	<i>Pandion haliaetus</i> osprey	None	None	G5	S4	WL
ABNKC12060	<i>Accipiter gentilis</i> northern goshawk	None	None	G5	S3	SSC
ABPBXA0020	<i>Ammodramus savannarum</i> grasshopper sparrow	None	None	G5	S3	SSC
ABPBXB0020	<i>Agelaius tricolor</i> tricolored blackbird	None	None	G2G3	S1S2	SSC
AMACC08010	<i>Corynorhinus townsendii</i> Townsend's big-eared bat	None	Candidate Threatened	G3G4	S2	SSC
AMACC10010	<i>Antrozous pallidus</i> pallid bat	None	None	G5	S3	SSC
AMAFF23030	<i>Arborimus pomo</i> Sonoma tree vole	None	None	G3	S3	SSC
AMAJF01021	<i>Pekania pennanti</i> fisher - West Coast DPS	Proposed Threatened	Candidate Threatened	G5T2T3Q	S2S3	SSC
ARAAD02030	<i>Emys marmorata</i> western pond turtle	None	None	G3G4	S3	SSC
CTT42130CA	<i>Serpentine Bunchgrass</i> Serpentine Bunchgrass	None	None	G2	S2.2	
CTT83220CA	<i>Northern Interior Cypress Forest</i> Northern Interior Cypress Forest	None	None	G2	S2.2	
IIHYM24380	<i>Bombus caliginosus</i> obscure bumble bee	None	None	G4?	S1S2	
NBMUS2P050	<i>Entosthodon kochii</i> Koch's cord moss	None	None	G2	S2	1B.3
NBMUS32330	<i>Grimmia torenii</i> Toren's grimmia	None	None	G2	S2	1B.3
NLLEC5P420	<i>Usnea longissima</i> Methuselah's beard lichen	None	None	G4	S4	4.2
PDAST5L010	<i>Lasthenia burkei</i> Burke's goldfields	Endangered	Endangered	G1	S1	1B.1
PDAST5N0F0	<i>Layia septentrionalis</i> Colusa layia	None	None	G2	S2	1B.2
PDAST9D010	<i>Tracyina rostrata</i> beaked tracyina	None	None	G1	S1	1B.2



Selected Elements by Element Code
California Department of Fish and Wildlife
California Natural Diversity Database



Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDBOR0V0P0	<i>Plagiobothrys lithocaryus</i> Mayacamas popcornflower	None	None	GH	SH	1A
PDBRA2G0J4	<i>Streptanthus glandulosus ssp. hoffmanii</i> Hoffman's bristly jewelflower	None	None	G4T2	S2	1B.3
PDCAB01010	<i>Brasenia schreberi</i> watershield	None	None	G5	S3	2B.3
PDCPR07080	<i>Viburnum ellipticum</i> oval-leaved viburnum	None	None	G4G5	S3?	2B.3
PDERI041G2	<i>Arctostaphylos stanfordiana ssp. raichei</i> Raiche's manzanita	None	None	G3T1	S1	1B.1
PDLIM02020	<i>Limnanthes bakeri</i> Baker's meadowfoam	None	Rare	G1	S1	1B.1
PDLIN01010	<i>Hesperolinon adenophyllum</i> glandular western flax	None	None	G3	S3	1B.2
PDMAL0Q0D0	<i>Malacothamnus mendocinensis</i> Mendocino bush-mallow	None	None	GXQ	SX	1A
PDORO01010	<i>Kopsiopsis hookeri</i> small groundcone	None	None	G4G5	S1S2	2B.3
PDPLM0C0E1	<i>Navarretia leucocephala ssp. bakeri</i> Baker's navarretia	None	None	G4T2	S2	1B.1
PDRHA04220	<i>Ceanothus confusus</i> Rincon Ridge ceanothus	None	None	G1	S1	1B.1
PDROS0W010	<i>Horkelia bolanderi</i> Bolander's horkelia	None	None	G1	S1	1B.2
PMCYP032Y0	<i>Carex comosa</i> bristly sedge	None	None	G5	S2	2B.1
PMLILOV0M0	<i>Fritillaria roderickii</i> Roderick's fritillary	None	Endangered	G1Q	S1	1B.1
PMORC1X050	<i>Piperia candida</i> white-flowered rein orchid	None	None	G3	S3	1B.2
PMPOA4Y070	<i>Pleuropogon hooverianus</i> North Coast semaphore grass	None	Threatened	G2	S2	1B.1

Record Count: 35

CNPS Inventory of Rare and Endangered Plants

Status: Plant Press Manager window with 25 items - Wed, Nov. 4, 2015, 18:27 ET b

Reformat list as: Standard List - with Plant Press controls

ECOLOGICAL REPORT

scientific	family	life form	blooming	communities	elevation	CNPS
<u>Arctostaphylos stanfordiana</u> ssp. <u>raichei</u>	Ericaceae	perennial evergreen shrub	Feb-Apr	•Chaparral (Chprl) •Lower montane coniferous forest (LCFrS) (openings)/rocky, often serpentinite	450 - 1035 meters	List 1B.1
<u>Brasenia schreberi</u>	Cabombaceae	perennial rhizomatous herb aquatic	Jun-Sep	•Marshes and swamps (MshSw)/freshwater	30 - 2200 meters	List 2B.3
<u>Carex comosa</u>	Cyperaceae	perennial rhizomatous herb	May-Sep	•Coastal prairie (CoPrr) •Marshes and swamps (MshSw)(lake margins) •Valley and foothill grassland (VFGrs)	0 - 625 meters	List 2B.1
<u>Ceanothus confusus</u>	Rhamnaceae	perennial evergreen shrub	Feb-Jun	•Closed-cone coniferous forest (CCFrS) •Chaparral (Chprl) •Cismontane woodland (CmWld)/volcanic or serpentinite	75 - 1065 meters	List 1B.1
<u>Cuscuta jepsonii</u>	Convolvulaceae	annual vine parasitic	Jul-Sep	•North Coast coniferous forest (NCFrS)/Streambanks	1200 - 2300 meters	List 1B.2
<u>Entosthodon kochii</u>	Funariaceae	moss	•Cismontane woodland (CmWld)(soil)	180 - 1000 meters	List 1B.3	
<u>Fissidens pauperculus</u>	Fissidentaceae	moss	•North Coast coniferous forest (NCFrS)(damp coastal soil)	10 - 1024 meters	List 1B.2	
<u>Fritillaria roderickii</u>	Liliaceae	perennial bulbiferous herb	Mar-May	•Coastal bluff scrub (CBScr) •Coastal prairie (CoPrr) •Valley and foothill grassland (VFGrs)	15 - 400 meters	List 1B.1
<u>Grimmia torenii</u>	Grimmiaceae	moss	•Chaparral (Chprl) •Cismontane woodland (CmWld) •Lower montane coniferous forest (LCFrS)/Openings, rocky, boulder and	325 - 1160 meters	List 1B.3	

				rock walls, carbonate, volcanic		
<u>Hemizonia congesta</u> ssp. <u>congesta</u>	Asteraceae	annual herb	Apr-Nov	•Valley and foothill grassland (VFGrs)/sometimes roadsides	20 - 560 meters	List 1B.2
<u>Hesperolinon adenophyllum</u>	Linaceae	annual herb	May-Aug	•Chaparral (Chprl) •Cismontane woodland (CmWld) •Valley and foothill grassland (VFGrs)/usually serpentinite	150 - 1315 meters	List 1B.2
<u>Horkelia bolanderi</u>	Rosaceae	perennial herb	(May), Jun-Aug Months in parentheses are uncommon.	•Chaparral (Chprl) •Lower montane coniferous forest (LCFr) •Meadows and seeps (Medws) •Valley and foothill grassland (VFGrs)/edges, vernally mesic areas	450 - 1100 meters	List 1B.2
<u>Kopsiopsis hookeri</u>	Orobanchaceae	perennial rhizomatous herb parasitic	Apr-Aug	•North Coast coniferous forest (NCFrs)	90 - 885 meters	List 2B.3
<u>Lasthenia burkei</u>	Asteraceae	annual herb	Apr-Jun	•Meadows and seeps (Medws)(mesic) •Vernal pools (VnPIs)	15 - 600 meters	List 1B.1
<u>Layia septentrionalis</u>	Asteraceae	annual herb	Apr-May	•Chaparral (Chprl) •Cismontane woodland (CmWld) •Valley and foothill grassland (VFGrs)/sandy, serpentinite	100 - 1095 meters	List 1B.2
<u>Limnanthes bakeri</u>	Limnanthaceae	annual herb	Apr-May	•Meadows and seeps (Medws) •Marshes and swamps (MshSw) (freshwater) •Valley and foothill grassland (VFGrs) (vernally mesic) •Vernal pools (VnPIs)	175 - 910 meters	List 1B.1
<u>Malacothamnus mendocinensis</u>	Malvaceae	perennial deciduous shrub	May-Jun	•Chaparral (Chprl)/Rocky, roadsides	425 - 575 meters	List 1A
<u>Navarretia leucocephala</u> ssp. <u>bakeri</u>	Polemoniaceae	annual herb	Apr-Jul	•Cismontane woodland (CmWld) •Lower montane coniferous forest (LCFr) •Meadows and seeps (Medws) •Valley and foothill	5 - 1740 meters	List 1B.1

				grassland (VFGrS) •Vernal pools (VnPIs)/Mesic		
<u>Piperia candida</u>	Orchidaceae	perennial herb	(Mar), May-Sep Months in parentheses are uncommon.	•Broadleafed upland forest (BUFrS) •Lower montane coniferous forest (LCFrS) •North Coast coniferous forest (NCFrS)/sometimes serpentinite	30 - 1310 meters	List 1B.2
<u>Plagiobothrys lithocaryus</u>	Boraginaceae	annual herb	Apr-May	•Chaparral (Chprl) •Cismontane woodland (CmWld) •Valley and foothill grassland (VFGrS)/mesic	300 - 450 meters	List 1A
<u>Pleuropogon hooverianus</u>	Poaceae	perennial rhizomatous herb	Apr-Jun	•Broadleafed upland forest (BUFrS) •Meadows and seeps (Medws) •North Coast coniferous forest (NCFrS)/open areas, mesic	10 - 671 meters	List 1B.1
<u>Sanguisorba officinalis</u>	Rosaceae	perennial rhizomatous herb	Jul-Oct	•Bogs and fens (BgFns) •Broadleafed upland forest (BUFrS) •Meadows and seeps (Medws) •Marshes and swamps (MshSw) •North Coast coniferous forest (NCFrS) •Riparian forest (RpFrS)/often serpentinite	60 - 1400 meters	List 2B.2
<u>Streptanthus glandulosus</u> ssp. <u>hoffmanii</u>	Brassicaceae	annual herb	Mar-Jul	•Chaparral (Chprl) •Cismontane woodland (CmWld) •Valley and foothill grassland (VFGrS) (often serpentinite)/rocky	120 - 475 meters	List 1B.3
<u>Tracyina rostrata</u>	Asteraceae	annual herb	May-Jun	•Cismontane woodland (CmWld) •Valley and foothill grassland (VFGrS)	90 - 790 meters	List 1B.2
<u>Viburnum ellipticum</u>	Adoxaceae	perennial deciduous shrub	May-Jun	•Chaparral (Chprl) •Cismontane woodland (CmWld) •Lower montane coniferous forest (LCFrS)	215 - 1400 meters	List 2B.3

Appendix E Plant Species Observed

**PLANT SPECIES OBSERVED AT THE NORTH STATE STREET OVER ACKERMAN CREEK
BRIDGE REPLACEMENT PROJECT STUDY AREA
MENDOCINO COUNTY, CALIFORNIA**

FIELD VISIT DATES: April 24 and June 20, 2012.

SCIENTIFIC NAME	COMMON NAME	FAMILY NAME	NATIVITY¹
<i>Aegilops triuncialis</i>	goatgrass	Poaceae	Naturalized
<i>Artemisia douglasiana</i>	mugwort	Asteraceae	Native
<i>Avena fatua</i>	wild oat	Poaceae	Naturalized
<i>Baccharis salicifolia</i>	mule fat	Asteraceae	Native
<i>Brassica nigra</i>	black mustard	Brassicaceae	Naturalized
<i>Bromus diandrus</i>	ripgut brome	Poaceae	Naturalized
<i>Bromus hordeaceus</i>	soft chess	Poaceae	Naturalized
<i>Bromus madritensis ssp. madritensis</i>	foxtail chess	Poaceae	Naturalized
<i>Carduus pycnocephalus</i>	italian plumeless thistle	Asteraceae	Naturalized
<i>Carex nudata</i>	torrent sedge	Cyperaceae	Native
<i>Cirsium vulgare</i>	bull thistle	Asteraceae	Naturalized
<i>Conium maculatum</i>	poison hemlock	Apiaceae	Naturalized
<i>Cynosurus echinatus</i>	bristly dogtail grass	Poaceae	Naturalized
<i>Cyperus eragrostis</i>	tall flatsedge	Cyperaceae	Native
<i>Cytisus scoparius</i>	scotch broom	Fabaceae	Naturalized
<i>Elymus glaucus</i>	blue wildrye	Poaceae	Native
<i>Erodium botrys</i>	long-beaked stork's bill	Geraniaceae	Naturalized
<i>Eschscholzia californica</i>	california poppy	Papaveraceae	Native
<i>Foeniculum vulgare</i>	fennel	Apiaceae	Naturalized
<i>Fraxinus latifolia</i>	oregon ash	Oleaceae	Native
<i>Geranium dissectum</i>	cut-leaved geranium	Geraniaceae	Naturalized
<i>Holcus lanatus</i>	common velvet grass	Poaceae	Naturalized
<i>Hordeum murinum</i>	false barley	Poaceae	Naturalized
<i>Hypericum perforatum</i>	klamathweed	Hypericaceae	Naturalized
<i>Marah fabacea</i>	california man-root	Cucurbitaceae	Native
<i>Melilotus albus</i>	white sweetclover	Fabaceae	Naturalized
<i>Phalaris minor</i>	little-seed canarygrass	Poaceae	Naturalized
<i>Plantago lanceolata</i>	english plantain	Plantaginaceae	Naturalized
<i>Populus fremontii</i>	Fremont cottonwood	Salicaceae	Native
<i>Quercus garryana</i>	oregon oak	Fagaceae	Native
<i>Rosa californica</i>	california rose	Rosaceae	Native
<i>Rubus armeniacus</i>	himalayan blackberry	Rosaceae	Naturalized
<i>Rubus ursinus</i>	california blackberry	Rosaceae	Native
<i>Rumex acetosella</i>	sheep sorrel	Polygonaceae	Naturalized
<i>Rumex crispus</i>	curly dock	Polygonaceae	Naturalized
<i>Salix exigua</i>	sandbar willow	Salicaceae	Native
<i>Salix lasiolepis</i>	arroyo willow	Salicaceae	Native
<i>Salix melanopsis</i>	Dusky willow	Salicaceae	Native
<i>Torilis arvensis</i>	field hedge-parsley	Apiaceae	Naturalized
<i>Verbascum thapsus</i>	woolly mullein	Scrophulariaceae	Native
<i>Vicia villosa</i>	winter vetch	Fabaceae	Naturalized
<i>Vitis californica</i>	California wild grape	Vitaceae	Native

¹Nativity designation per *The Jepson Manual*, 2nd edition (Baldwin et al. 2012)

Appendix F Delineation of Waters of the United States

North State Street at Ackerman Creek Bridge Replacement Project

Delineation of Waters of the United States

Prepared for:

Mendocino County Department of Transportation

Attn: Jackson Ford
340 Lake Mendocino Drive
Ukiah, CA 95482

Prepared by:



North State Resources, Inc.

5000 Bechelli Lane, Ste. 203
Redding, CA 96002
(530) 222-5347
Project No. 51294

February 2015

***North State Street at Ackerman Creek
Bridge Replacement Project***
Delineation of Waters of the United States

Mendocino County, California
Township 15 North, Range 12 West
USGS Ukiah, California 7.5-Minute Quadrangle
01-MEN-0-CR
BHLS 5910 (081)

February 2015

STATE OF CALIFORNIA
Department of Transportation

Consultant
Prepared by:



Paul Kirk, Biologist
North State Resources, Inc.

Date: 2/20/2015

Local Agency
Approved By:

Jackson Ford, Environmental Compliance Specialist
Mendocino County Department of Transportation
(707) 463-4622

Date: _____

Caltrans
Approved By:

Steven Hansen, Associate Environmental Planner
District 1, Caltrans Office of Local Assistance
(707) 445-6410

Date: _____

Caltrans SEP
Approved By:

Brandon Larsen, Senior Environmental Planner
District 1, Caltrans
(707) 445-6410

Date: _____

North State Street at Ackerman Creek Bridge Replacement Project

Delineation of Waters of the United States

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Appendices

Appendix A Routine Wetland Delineation Data Forms
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Section 1. Summary

On behalf of the Mendocino County Department of Transportation (County), North State Resources, Inc. (NSR) conducted a delineation of waters of the United States occurring within the approximately 8.0-acre North State Street at Ackerman Creek Bridge Replacement Project site (study area). The study area is located on North State Street where it crosses Ackerman Creek just north of the City of Ukiah, Mendocino County, California. The purpose of the project is to replace and widen the Ackerman Creek Bridge to accommodate future traffic volumes and increase vehicle safety on the bridge.

NSR biologists conducted the field delineation on June 20, 2012, and mapped a total of 0.600 acre of waters of the United States in the study area. Waters of the United States occurred as intermittent stream (0.474 acre, 559 linear feet) and riparian wetland (0.126 acre).

This delineation of waters of the United States is subject to verification by the United States Army Corps of Engineers (Corps) – San Francisco 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.

Section 2. Project Location

The study area is located just north of the City of Ukiah, where North State Street crosses Ackerman Creek. It is in the *Ukiah, California* 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle. The center of study area is located at approximately UTM 10 0481862 E, 4336692 N (NAD 83 datum). The location of the study area is shown in Figure 1.

The study area includes the following Assessor Parcel Numbers (APN) or portions thereof:

169-211-15	169-211-26	169-211-13	169-211-16	169-211-25
170-150-16	170-150-17	170-150-02	169-242-12	169-242-08.

2.1 Proximity to Major Highways and Streets

To access the study area from U.S. Highway 101 (Route 101) take the North State Street exit (Exit #551) and travel north approximately 0.6 mile. Parking is available off of North State Street on large shoulders on either side of Ackerman Creek Bridge.

2.2 USGS Hydrologic Unit

The study area is located within the *Russian, California* USGS Hydrologic Map Unit (Cataloging Unit Number 18010110).

Section 3. Environmental Setting

3.1 Current/Recent Land Use

The study area is along North State Street, which is a main two-lane road just north of the City of Ukiah. The study area encompasses the road and shoulders, Ackerman Creek on either side of the bridge, and portions of adjacent private parcels including vacant parking lots, a barren residential yard, and a vineyard. There is an irrigation supply warehouse northwest of the bridge. South of the bridge is a vacant building and a few residences and businesses.

3.2 Site Topography and Elevation

The topography of the study area is generally characterized as a portion of Ackerman Creek channel and the adjacent river banks. With a 50 percent slope, the bank along the northern side of the creek is steeper than the bank on the south side, with a 10 percent slope. The bridge deck is at an approximate elevation of 620 feet above mean sea level (msl). A fish ladder and dam interrupts flow and changes the composition of the creek bed and bank. The creek is wide and shallow on the west (upstream) side of the dam and deeper with a greater incised channel on the east (downstream) side. Ackerman Creek flows into the Russian River approximately 0.65 mile east of the study area.

3.3 Climate

Climate within the study area is as follows based on historical data collected in Ukiah, California (Western Regional Climate Center 2014):

Type: The study area is characterized by a Mediterranean climate with cool, wet winters and hot, dry summers.

Precipitation: Precipitation in the study area primarily falls as rain. Average annual rainfall is approximately 37 inches.

Air Temperature: Air temperatures in the study area range between an average January high of 57 °F, and an average July high of 93 °F. The year-round average high is approximately 74 °F.

Growing Season: The growing season (i.e., 50% probability of air temperature 28 °F or higher) in the study area is approximately 316 days and occurs between February and December. The soil temperature regime is thermic.

3.4 Hydrology/Hydrologic Features

The hydrology is provided by Ackerman Creek, which drains eastward through the study area. Ackerman Creek is a direct tributary to the Russian River, a Traditional Navigable Water, approximately 0.65 mile east of the study area. No stream flow data is available for the study area, but Ackerman Creek has consistent seasonal flows (California Department of Fish and Game 2006).

3.5 Soil Map Units

The soil map units and miscellaneous land types within the study area and vicinity are described in the *Soil Survey of Mendocino County, Eastern Part and Southwestern Part of Trinity County* (U.S. Department of Agriculture Soil Conservation Service 1991). Soil map units in and around the study area are shown in Figure 2. Three soil map units occur within the study area and are described below:

- **Feliz clay loam, 0 to 2 percent slopes (125).** This is a non-hydric, well drained soil formed in alluvium from sedimentary rock. The depth to a restrictive layer is greater than 80 inches.
- **Talmage very gravelly sandy loam, 0 to 2 percent slopes (204).** This is a non-hydric, somewhat excessively drained soil formed in alluvium. The depth to a restrictive layer is greater than 80 inches.
- **Xerofluvents-Riverwash complex, 0-2 percent slopes (218).** This is a partially-hydric, excessively drained soil formed in alluvium. The depth to a restrictive layer is greater than 80 inches.

3.6 Habitat Types

Habitat types were classified based on the descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988). The habitat types occurring within the study area include barren, valley foothill riparian, riverine, ruderal, and vineyard.

Barren

The barren habitat is generally devoid of vegetation and includes North State Street, adjacent gravel shoulders and parking areas, and a vacant parking lot. Sparse opportunistic weedy species may be present within barren habitat.

Valley Foothill Riparian

Valley foothill riparian habitat occurs along the entire length of Ackerman Creek within the study area. Valley foothill riparian habitat is generally characterized as a multi-layered canopy composed of winter-deciduous trees, with a dense understory and little herbaceous growth. The dominant canopy tree is Fremont cottonwood (*Populus fremontii*, FACW¹), while several willow species dominate the mid-canopy: arroyo willow (*Salix lasiolepis*, FACW), shining willow (*Salix lucida*, FACW), and sandbar willow (*Salix exigua*, FACW). The habitat on the west side of the fish ladder is heavily dominated by sandbar willow with a small amount of Himalayan blackberry (*Rubus armeniacus*, FACU) present in the understory. The understory on the east side of the fish ladder has much more Himalayan blackberry present. Subdominant trees and shrubs include mulefat (*Baccharis*

¹ Wetland indicator status for plant species is based on the National Wetland Plant List (Lichvar 2012):

Obligate Wetland (OBL) – Plants that occur almost always in wetlands

Facultative Wetland (FACW) – Plants that usually occur in wetlands, but also occur in non-wetlands (i.e., uplands)

Facultative (FAC) – Plants with a similar likelihood of occurring in both wetlands and uplands

Facultative Upland (FACU) – Plants that usually occur in uplands, but also occur in wetlands

Obligate Upland (UPL) – Plants that occur almost always in uplands

salicifolia, FACW), Oregon ash (*Fraxinus latifolia*, FACW), and California grape (*Vitis californica*, FACU).

Riverine

Riverine habitat is present as the channel of Ackerman Creek, and gravel bars and revetment within the ordinary high water mark (OHWM). The substrate is gravel and sand, and the channel is incised throughout the study area. There is riparian vegetation adjacent to most of the riverine habitat in the study area. There are also “islands” of riparian vegetation within some of the riverine habitat.

Ruderal

Ruderal habitat includes several disturbed areas within the study area. The ruderal habitat is dominated by non-native annual grasses and forbs including slender wild oats (*Avena barbata*, UPL), mustard (*Brassica nigra*, UPL), fennel (*Foeniculum vulgare*, NI), and rose clover (*Trifolium hirtum*, NI). On the south east side of the study area a row of planted eucalyptus (*Eucalyptus* sp.) borders the creek and is included as ruderal habitat.

Vineyard

Northeast of the existing bridge there is a small vineyard (i.e., less than 5 acres) that is largely surrounded by commercial property. Several rows of the vineyard are included within the study area.

Section 4. Methods

The on-site routine delineation of wetlands and “other waters” in the study area was based on field observations of positive indicators for wetland vegetation, hydrology, and soils; and indicators of an 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: Western Mountains, Valleys, and Coast Region* (U.S. Army Corps of Engineers 2010). Taxonomic nomenclature for plant species is in accordance with *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 2012), and the “50/20 Rule” was applied to determine plant dominance (U.S. Army Corps of Engineers 2010). Presence of primary and secondary wetland hydrology indicators were documented for each wetland feature.

A soil pit was dug in each representative wetland feature. Soil pits were dug to a depth sufficient to document the presence or confirm the absence of hydric soil or hydrology indicators. Soils were examined in order 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* (U.S. Department of Agriculture and Natural Resources Conservation Service 2012). 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 traditional navigable waters (TNWs) and their tributaries. 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.

A total of three data points representing each feature type and associated uplands were characterized and documented throughout the study area. Field observations were conducted on June 20, 2012. Routine wetland determination data forms are presented in Appendix A. Representative photographs of the delineated features and data point locations are presented in Appendix B.

The boundaries of delineated features and the data point locations were mapped using a Trimble Pathfinder Pro XH Global Positioning System (GPS) capable of sub-foot accuracy. Where the use of the GPS was not practicable, the features were delineated by hand onto ortho-rectified color aerial photographs. After the field delineation, the GPS data were overlain onto an aerial photograph of the study area to generate the delineation map (Figure 3).

Section 5. Results

The boundaries and acreages of waters of the United States within the study area are illustrated in Figure 3. Waters of the United States within the study area occupy a total of 0.600 acre, and include intermittent stream (0.474 acre, 559 linear feet) and riparian wetland (0.126 acre). Representative photographs of waters of the United States are provided in Appendix B.

5.1 Characterization of Delineated Features

Other Waters

Intermittent Stream

Intermittent streams include natural drainages that exhibit an ordinary high water mark and convey waters intermittently during the late fall, winter and spring months. Intermittent streams are usually dry during the summer and early fall months.

Ackerman Creek was identified as an intermittent stream based on mapping symbols used on the *Ukiah, California 7.5-minute USGS quadrangle* and in the *Ackerman Creek Stream Inventory Report* (California Department of Fish and Game 2006). Within the study area, the stream substrate is gravel and sand, and the channel is incised on the north side. Large boulder revetment is located around the fish ladder, on the east side of the bridge. The active channel on the west side of the fish ladder is wider, approximately 60 feet wide with an island of riparian vegetation in the center. The east side of the fish ladder is approximately 45 feet wide with riparian vegetation present along the center as well. During this survey, no water was flowing in the channel, and there was ponded water about 6 feet wide, located downstream of the fish ladder. High flows during winter months are evidenced by scour around the bridge piling foundations and debris line or drift deposits in the streamside

vegetation. The gravel bars within the stream are largely devoid of perennial vegetation (e.g., sedges or rushes).

Ackerman Creek (IS1) is considered a relatively permanent water (RPW), which is defined as “waters that typically flow year-round except in times of drought, or waters that have a continuous flow at least seasonally” (Environmental Protection Agency and U.S. Army Corps of Engineers 2011). Ackerman Creek (IS1) qualifies as waters of the United States because it is an RPW and is a tributary to the Russian River, a traditional navigable water (TNW).

Wetlands

Riparian Wetland

Riparian wetlands generally consist of wetland areas associated with intermittent and perennial streams, or other semi-permanent or permanent wetland types. Riparian wetland is restricted to the vegetated gravel bars that are located both east and west of the existing bridge within the OHWM. The riparian wetland immediately upstream of the bridge (RW1) is characterized as a dense stand of young sandbar willows. The riparian wetlands east of the bridge are less dense than RW1, and include a variety of hydrophytic trees and shrubs: Fremont cottonwood, shining willow, arroyo willow, and Oregon ash. This feature is frequently flooded which is evidenced by drift deposits in willow branches, erosion under the bridge, and the presence of a bed and bank.

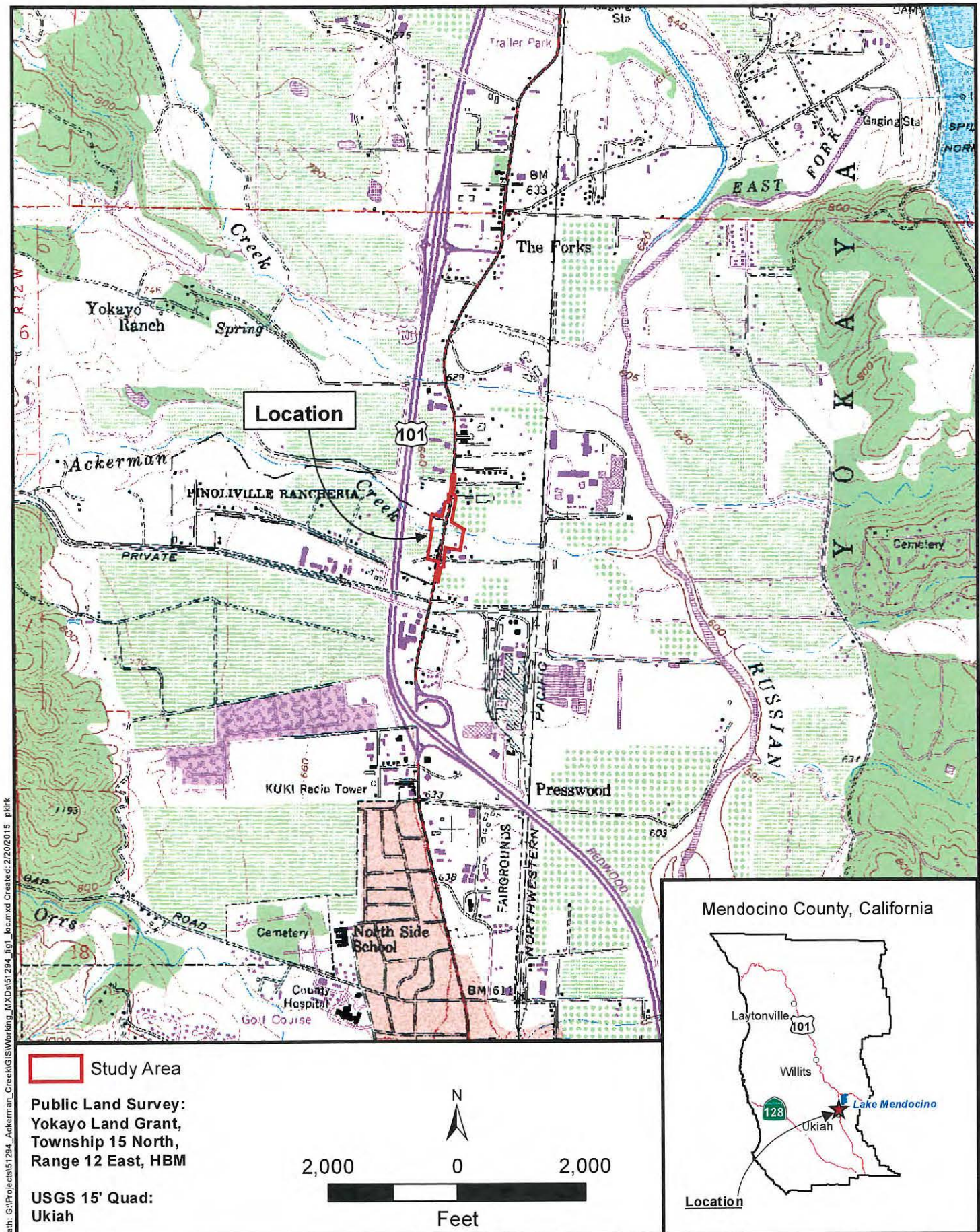
The soils of the riparian wetland features in the study area were problematic in that these features occurred on sand/cobble bars within Ackerman Creek and hydric soil were lacking. Indicators of hydric soils are often absent due to deposition of new soil material, low iron and manganese levels, and lack of organic content. Hydric soil criteria for these features are met due to the fact that they are vegetated gravel bars dominated by hydrophytic vegetation and are frequently flooded. The riparian wetlands qualify as waters of the United States because they are within an RPW, and contribute to the biological and chemical integrity of a downstream TNW.

5.2 Conclusion

A total of 0.600 acre of waters of the United States was delineated within the study area. Waters of the United States identified within this report 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.

Section 6. References

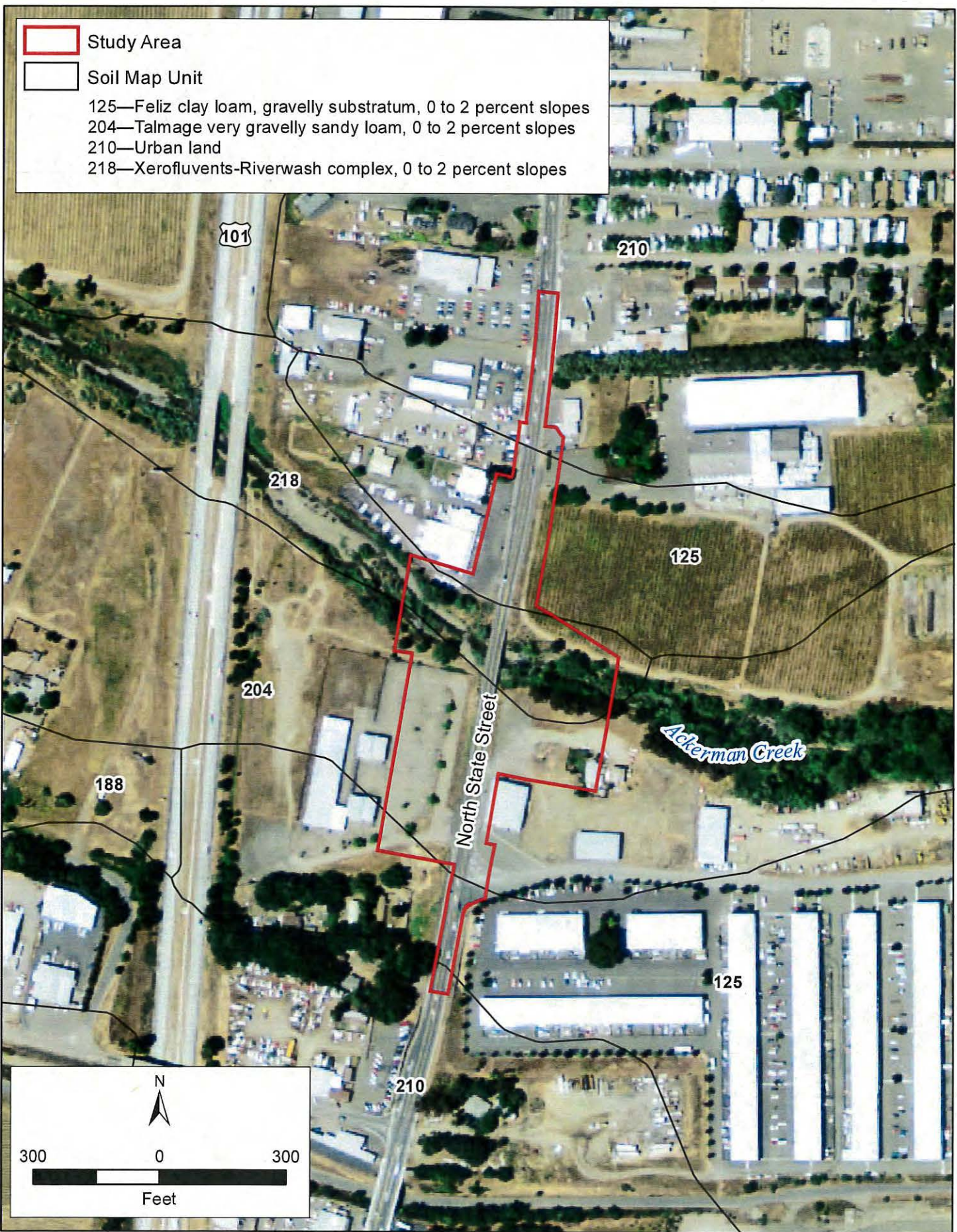
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North State Street at Ackerman Creek Bridge Replacement Project

Figure 1
Location and Vicinity

Path: G:\Projects\51294_Ackerman_Creek\GIS\Working_MXD\51294_fig2_soil.mxd Created: 2/20/2015 plirk



North State Street at Ackerman Creek Bridge Replacement Project

ites

ate Street

ited States

Area (ac)
018
014
045
024
025
126

Area (ac)	Length (ft)
474	559
474	559
600	559

d for:

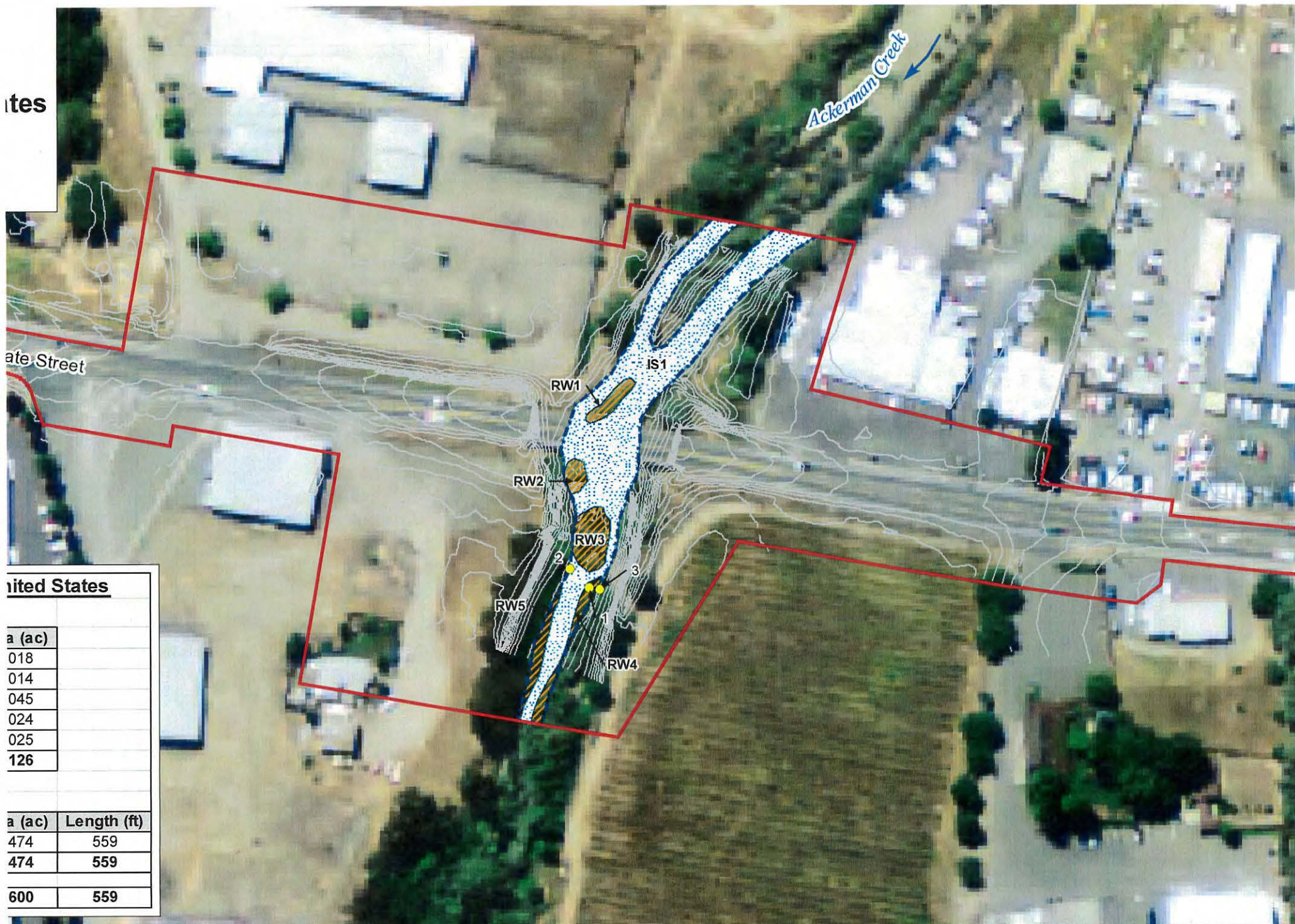
ne County

Notes:

Delineators: Paul Kirk and Sarah Tona
Delineation Date: June 20, 2012

1 inch = 120 feet

North Stat
Bridge



Appendix A

Routine Wetland Delineation Data Forms



North State Resources, Inc.

Wetland Determination Data Form—Western Mountains, Valleys, & Coast Region

Habitat Type Valley Foothill Ripa
Wetland Type Riparian wetlandProject/Site: Ackerman Creek City/County: Ukiah, Mendocino Date: 6-26-2012Applicant/Owner: Mendocino County DOT State: CA Data Point: 1Investigator(s): Sarah Tona, Paul Kirk Section, Township, Range Unnumbered, T15N, R12ELandform (hillslope, terrace, etc.) Flood plain Local relief (concave, convex, none) Concave Slope % 3Subregion (LRR): C UTM 18: 481910 E Long: 4336682 N Datum: NAD 83Soil Map Unit Name: 218, Xerofluvents-River Wash Complex NWI Classification: Are climatic/hydrologic conditions on the site typical for this time of year? Y (If no, explain in remarks.)Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? YAre vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

USACE JURISDICTION

Adjacent to Waters X Tributary to Waters Isolated (with interstate commerce) Isolated (non jurisdictional) Explain: Feature within OTHWM of Ackerman Cr. (RIPW).

EVALUATION OF FEATURES DESIGNATED "OTHER WATERS OF THE UNITED STATES"

Indicators: Defined bed and bank Scour Ordinary High Water Mark Mapped Feature Designation: Perennial Intermittent Ephemeral Blue-line on USGS Quad Natural Drainage Artificial Drainage Navigable Water picture 120-120
facing east

REMARKS DP documents a Riparian wetland that is within the OTHWM of a perennial stream. Wetland located on a gravel/rock stream bed. Dominated by Fremont cottonwood with willows in the understory. Current driftlines present in the lower branches of shrubs.

VEGETATION (USE SCIENTIFIC NAMES)

Tree Stratum Scientific Names (Plot Size: 30 ft radius)1. Populus fremontii Absolute % Cover 10 Dominant Species? Y Indicator Status NI2. Fraxinus latifolia 3 N FACW3. 4. 50% = 6.5 20% = 2.6 Total Cover: 13Sapling/Shrub Stratum (Plot Size: 20 ft radius)1. Salix laevigata % Cover 25 Species? Y Status FACW2. Salix melanopsis 20 Y OBL3. Rubus armeriacus 8 N FACU4. Baccharis salicifolia 5 N FACW50% = 29 20% = 11.6 Total Cover: 58Herb Stratum (Plot Size:)1. % Cover Species? Status 2. 3. 4. 5. 6. 7. 8. 50% = 20% = Total Cover: Woody/Vine Stratum (Plot Size: 20 ft)1. Vitis californica % Cover 10 Species? Y Status FACU2. 50% = 5 20% = 2 Total Cover: 82% 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: 4 (B)Percent of dominant species that are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index Worksheet

Total % Cover of: Multiply by OBL Species 20 x 1 = 20FACW Species 33 x 2 = 66FAC Species x 3 = FACU Species 28 x 4 = 112UPL Species x 5 = Column Totals 81 (A) 198 (B)Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators

Dominance Text is >50%

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

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
6	Gravels and	coarse	Sand	Unconsolidated				

¹Types: C = Concentration D = Depletion RM = Reduced Matrix ²Location: PL = Pore Lining RC = Root Channel M = Matrix**HYDRIC SOIL INDICATORS:** (Applicable to all LRRs, unless otherwise noted)**INDICATORS FOR PROBLEMATIC****HYDRIC SOILS³**

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (except MLRA 1) (F1) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Matrix (F3) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Dark Surface (F6) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Redox Depressions (F8) |

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Materials (TF2)
- ☒ Other (Explain in Remarks) (Problem soils)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.Restrictive Layer (if present): Type: cobble Depth (Inches) 6 Hydric Soil Present? Y

REMARKS Pit dug on gravel bar, approximately one foot from standing water, and 18 inches above feature is a vegetated gravel bar w/in the OHWM, and is dominated by hydrophytic vegetation

HYDROLOGY**WETLAND INDICATORS**

Primary Indicators (Minimum of one is required. Check all that apply.)

Secondary Indicators (2 or more required)

- | | | |
|--|--|--|
| ☐ Surface Water (A1) | ☐ Water Stained Leaves (B9) except MLRA 1,2,4A, and 4B) | ☐ Water Stained Leaves (B9) except MLRA 1,2,4A, and 4B) |
| ☐ High Water Table (A2) | ☐ Salt Crust (B11) | ☐ Drainage Patterns (B10) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) | ☐ Dry-Season Water Table (C2) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) | ☐ Saturation Visible on Aerial Imagery (C9) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres along Living Roots (C3) | ☐ Geomorphic Position (D2) |
| ☒ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) | ☐ Shallow Aquitard (D3) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) | ☐ FAC-Natural Test (D5) |
| ☐ Iron Deposits (B5) | ☐ Stunted or Stressed Plants (D1) (LRR A) | ☐ Raised Ant Mounds (D6) (LRR A) |
| ☐ Surface Soil Cracks (B6) | ☐ Other (Explain in Remarks) | ☐ Frost-Heave Hummocks (D7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | | |
| ☐ Sparsely Vegetated Concave Surface (B8) | | |

FIELD OBSERVATIONS

Surface Water Present? Yes ☐ No ☒ Depth (Inches) _____ Wetland Hydrology? Yes ☒ No ☐

Water Table Present? Yes ☐ No ☒ Depth (Inches) _____

Saturation Present? Yes ☐ No ☒ Depth (Inches) _____ (includes capillary fringe)

DESCRIBE RECORDED DATA (stream gauge, monitoring well, aerial photos, and previous inspections), if available:

REMARKS Drift deposits from recent flooding present in lower branches of shrubs.



North State Resources, Inc.

Wetland Determination Data Form—Western Mountains, Valleys, & Coast Region

Habitat Type Riverine
Wetland Type Perennial Stream

Project/Site: Ackerman Creek City/County: Ukiah, Mendocino Date: 6-20-2012
 Applicant/Owner: Mendocino Co. DOT State: _____ Data Point: 2
 Investigator(s): Sarah Tona, Paul Kirk Section, Township, Range Unnumber, T15N, R12E
 Landform (hillslope, terrace, etc.): Flood Plain Local relief (concave, convex, none) concave Slope % 3
 Subregion (LRR): C Lat: UTM10 481904 E Long: 4336676 N Datum: NAD83
 Soil Map Unit Name: 218, Xerofluvent- Riverwash complex NWI Classification: _____

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

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

Hydrophytic vegetation? _____ Hydric soil? _____ Wetland hydrology? _____ Is sampled area a wetland? _____

USACE JURISDICTION

Adjacent to Waters _____ Tributary to Waters _____ Isolated (with interstate commerce) _____ Isolated (non jurisdictional) _____
 Explain: _____

EVALUATION OF FEATURES DESIGNATED "OTHER WATERS OF THE UNITED STATES"

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

Pict. 122 facing South

REMARKS DP documents the OTHWM of a perennial stream (Ackerman Creek). It is downstream of the bridge (North State Street). A sparsely vegetated gravel bar is just below the OTHWM, with a riparian wetland located more center of the stream, 20 feet away.

VEGETATION (USE SCIENTIFIC NAMES)

Tree Stratum Scientific Names (Plot Size: _____) Absolute % Cover Dominant Species? Indicator Status

1. _____
 2. _____
 3. _____
 4. _____

50% = _____ 20% = _____ Total Cover: _____

Sapling/Shrub Stratum (Plot Size: _____) % 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 Size: _____) % Cover Species? Status

1. _____
 2. _____

50% = _____ 20% = _____ Total Cover: _____

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

Dominance Test Worksheet Active channel at th time is 5 feet wide, that are OBL, FACW, or FAC: _____ (A) 6 inches d

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

Percent of dominant species that are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index Worksheet

Total % Cover of: _____ Multiply by

OBL Species _____ x 1 = _____

FACW Species _____ x 2 = _____

FAC Species _____ x 3 = _____

FACU Species _____ x 4 = _____

UPL Species _____ x 5 = _____

Column Totals _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators

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

Hydrophytic Vegetation Present? NA

SOILS

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

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

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

HYDRIC SOIL INDICATORS: (Applicable to all LRRs, unless otherwise noted)

INDICATORS FOR PROBLEMATIC

HYDRIC SOILS³

☐ Histosol (A1)	☐ Sandy Redox (S5)	☐ 2 cm Muck (A10)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)	☐ Red Parent Materials (TF2)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (except MLRA 1) (F1)	☐ Other (Explain in Remarks)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present.
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)	
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)	
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)	
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)	

Restrictive Layer (if present): Type: _____ Depth (Inches) _____ Hydric Soil Present? NA

REMARKS NO soil pit dug. cobbles size of 2-6 inches form 75% of stream bed. Gravels and Sands present to a less degree.

HYDROLOGY

WETLAND INDICATORS

Primary Indicators (Minimum of one is required. Check all that apply.)

Secondary Indicators (2 or more required)

☐ Surface Water (A1)	☐ Water Stained Leaves (B9) except MLRA 1,2,4A, and 4B)	☐ Water Stained Leaves (B9) except MLRA 1,2,4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)	☐ Drainage Patterns (B10)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Dry-Season Water Table (C2)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Geomorphic Position (D2)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Shallow Aquitard (D3)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ FAC-Natural Test (D5)
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)	☐ Raised Ant Mounds (D6) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)	☐ Frost-Heave Hummocks (D7)
☐ Inundation Visible on Aerial Imagery (B7)		
☐ Sparsely Vegetated Concave Surface (B8)		

FIELD OBSERVATIONS

Surface Water Present? Yes X (In active channel) No _____ Depth (Inches) 6 Wetland Hydrology? Yes NA No _____

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:

standing water present in channel adjacent to DP: ~ 5 ft. wide

REMARKS 0 HWM indicated by drift deposits and bed and bank. and 6 in. deep.



North State Resources, Inc.

Valley Foothill

Habitat Type Riparian
Wetland Type Upland

Wetland Determination Data Form—Western Mountains, Valleys, & Coast Region

Project/Site: Ackerman Creek City/County: Ukiah, Mendocino Sampling Date: 6/20/12
 Applicant/Owner: Mendocino Co. DOT State: CA Sampling Point: 3
 Investigator(s): Paul Kirk, Sarah Tera Section, Township, Range Unnumbered, T15N, R12E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none) Convex Slope % 2
 Subregion (LRR) # C UTM 10 Lat: 38°19'10"E Long: 43°36'05"W Datum: NAD83
 Soil Map Unit Name: Xerofluvents - Riverwash complex NWI Classification: —
 Are climatic/hydrologic conditions on the site typical for this time of year? Y (If no, explain in remarks.)
 Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? Y
 Are vegetation N, soil N, or hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

USACE Jurisdiction

Adjacent to Waters — Tributary to Waters — Isolated (with interstate commerce) — Isolated (non jurisdictional) —
 Explain: —

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

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

Remarks DP is an upland pair to DP1. It is located on a channel terrace that is dominated by willow and blackberry and is above the OHWM.

Vegetation (Use Scientific Names)

Tree Stratum (Plot Size: —)

	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
2. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
3. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
4. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

50% = — 20% = — Total Cover: —Sapling/Shrub Stratum (Plot Size: 20 ft. dia)

	% Cover	Species?	Status
1. <u>Salix laevigata</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>
2. <u>Rubus armeniacus</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
4. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

50% = 20 20% = 8 Total Cover: 40Herb Stratum (Plot Size: —)

	% Cover	Species?	Status
1. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
2. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
3. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
4. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
5. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
6. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
7. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
8. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

50% = — 20% = — Total Cover: —Woody/Vine Stratum (Plot Size: —)

	% Cover	Species?	Status
1. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
2. <u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

50% = — 20% = — Total Cover: —% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust —

Dominance Test Worksheet

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

Prevalence Index Worksheet

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

Hydrophytic Vegetation Indicators

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

Hydrophytic Vegetation Present? N

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
3	gravel and	coarse sand,	unconsolidated					

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

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

Indicators for Problematic Hydric Soils³

- | | |
|--|---|
| ☐ Histosol (A1) | ☐ Sandy Redox (S5) |
| ☐ Histic Epipedon (A2) | ☐ Stripped Matrix (S6) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (except MLRA 1) (F1) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Matrix (F3) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Dark Surface (F6) |
| ☐ Sandy Mucky Mineral (S1) | ☐ Depleted Dark Surface (F7) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Redox Depressions (F8) |

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Materials (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present): Type: cobble Depth (Inches) 3 Hydric Soil Present? N

Remarks DP located on portion of sandy, gravelly terrace above the OHWM.

Hydrology

Wetland Indicators

Primary Indicators (Minimum of one is required. Check all that apply.)

Secondary Indicators (2 or more required)

- | | | |
|--|--|--|
| ☐ Surface Water (A1) | ☐ Water Stained Leaves (B9) except MLRA 1,2,4A, and 4B) | ☐ Water Stained Leaves (B9) except MLRA 1,2,4A, and 4B) |
| ☐ High Water Table (A2) | ☐ Salt Crust (B11) | ☐ Drainage Patterns (B10) |
| ☐ Saturation (A3) | ☐ Aquatic Invertebrates (B13) | ☐ Dry-Season Water Table (C2) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) | ☐ Saturation Visible on Aerial Imagery (C9) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres along Living Roots (C3) | ☐ Geomorphic Position (D2) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) | ☐ Shallow Aquitard (D3) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) | ☐ FAC-Natural Test (D5) |
| ☐ Iron Deposits (B5) | ☐ Stunted or Stressed Plants (D1) (LRR A) | ☐ Raised Ant Mounds (D6) (LRR A) |
| ☐ Surface Soil Cracks (B6) | ☐ Other (Explain in Remarks) | ☐ Frost-Heave Hummocks (D7) |
| ☐ Inundation Visible on Aerial Imagery (B7) | | |
| ☐ Sparsely Vegetated Concave Surface (B8) | | |

Field Observations

Surface Water Present? Yes ☐ No ☒ Depth (inches) _____ Wetland Hydrology? Yes ☐ No ☒

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

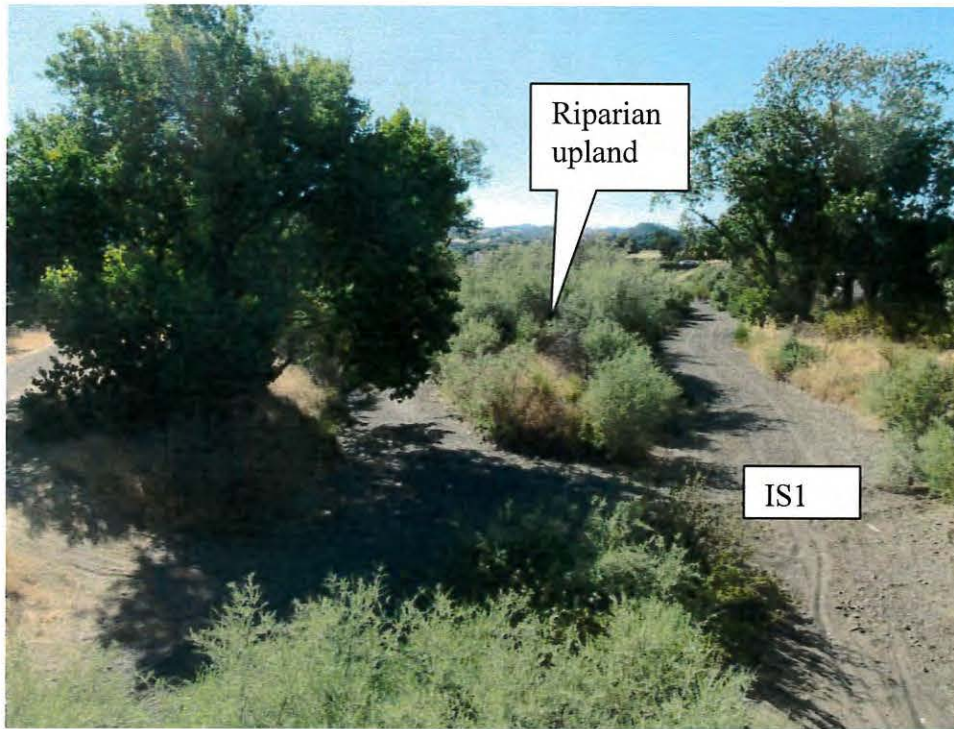
Saturation Present? Yes ☐ No ☒ Depth (inches) _____ (includes capillary fringe)

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

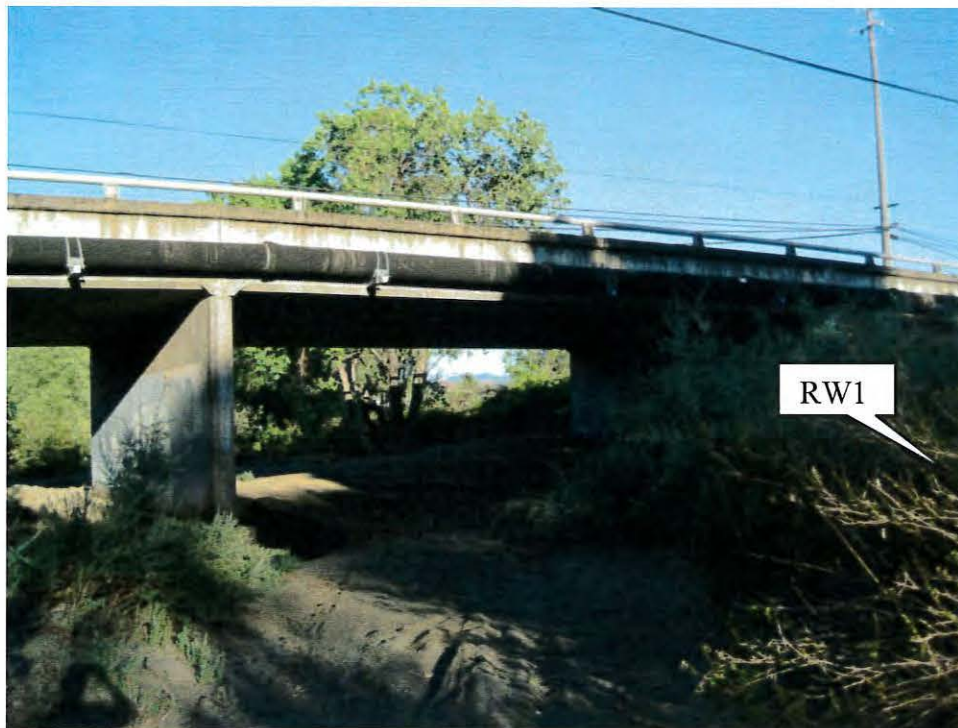
Remarks DP located outside of OHWM. No indicators of frequent flooding or long duration ponding observed.

Appendix B

Representative Photographs



Photograph 1. View shows Ackerman Creek (IS1) upstream of the North State Street Bridge. Ackerman Creek is an intermittent stream, and there was no water in IS1 upstream of the bridge. Riparian wetland (RW1) is an island within the OHWM. An island of riparian upland is located upstream of RW1. Orientation: looking west. Date: 6/20/12.



Photograph 2. View shows the sandy substrate of Ackerman Creek (IS1) upstream of the bridge. Orientation: looking east. Date: 6/20/12.



Photograph 3. View shows Ackerman Creek (IS1) and fish ladder downstream of the bridge. OHWM is evidenced by bed and bank and drift in shrubs rooted on the banks. The cottonwood at the right of the photograph and willows at the bottom of the fish ladder shows portions of riparian wetlands, RW2 and RW3, respectively. Orientation: looking southeast. Date: 6/20/12.



Photograph 4. View shows standing water in Ackerman Creek (IS1) downstream of the fish ladder. Cobbles and gravels dominate IS1 substrate downstream of the fish ladder. Data point 1 is located in the willows at left of photographs that are part of the riparian wetland (RW3). Orientation: looking northeast. Date: 6/20/12.