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DEPUTY DIRECTOR
ROGER JANES
BUSINESS ADMINISTRATOR

P. O. BOX 1810 - 1810 E. HAZELTON AVENUE
STOCKTON, CALIFORNIA 95201
(209) 468-3000 FAX (209) 468-2999
www.co.san-joaquin.ca.us

Working for YOU

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

TO: ___Office of Planning and Research
1400 Tenth Street
Sacramento, California 95814

__ San Joaquin County Clerk
44 N. San Joaquin Street, Suite 260
Stockton, California 95202

FROM: San Joaquin County Public Works Department
1810 E. Hazelton Avenue
Stockton, California 95205

PROJECT: STANLEY ROAD BRIDGE SCOUR MITIGATION PROJECT, SAN JOAQUIN COUNTY

The San Joaquin County Department of Public Works has prepared an environmental evaluation document (Initial Study) in accordance with the California Environmental Quality Act (CEQA) and intends to adopt a Mitigated Negative Declaration (MND) based on the finding that there is no substantial evidence that the action as proposed will have a significant effect on the environment. The reasons to support this finding are documented in the Initial Study.

PROJECT LOCATION

Stanley Road Bridge (29C-112) south of State Route 4 (Farmington Road) over Littlejohns Creek

BACKGROUND

Stanley Road Bridge was constructed in 1974. The State Department of Transportation (Caltrans) has determined that the banks have eroded over the years and exposed 3 feet of the steel pile cans at Bent No. 2 and 1.3 feet of the steel cans of piled 3 and 4 and at Bent No. 3. Countermeasures such as the installation of rock rip rap and gabions were implemented by the County in 1982 and 1988, respectively. The installed scour countermeasures are continuously deteriorating, compromising the ability to protect the embankments and increasing scour susceptibility. The gabion slope protection at Abutment No. 1 had deteriorated along the base near Bent No. 2 and was first reported in a routine Bridge Inspection Report (BIR) dated 2/28/2001. Caltrans recommended the replacement of the damaged gabion slope protection and the need to properly protect the exposed pile cans at Bent Nos. 2 and 3.

PROPOSED PROJECT DESCRIPTION

The County is proposing to improve existing scour protection and revetment within the project area. To accomplish this goal the existing earthen channel of Littlejohns Creek at the Stanley Road Bridge will be cut to a maximum depth of 1.5-4.5 feet, and then filled with a layer of Rock Slope Protection (RSP), matching both upstream and downstream conditions and channel grade. RSP will be installed on approximately 0.14 acre (78 linear feet) of the existing earthen channel of Littlejohns Creek at the Stanley Road Bridge. Permission to enter and perform work would be used for construction access, temporary cofferdams, and in-stream access ramp. The existing Stanley Road right-of-way (approximately 0.33 acre) would be used for project access. In-stream construction work is not expected to exceed 18 days.

PROJECT: STANLEY ROAD BRIDGE SCOUR MITIGATION PROJECT, SAN JOAQUIN COUNTY

HAZARDOUS WASTE PRESENCE

This project has no known association with identified hazardous waste sites pursuant to 65962.5 of the Government Code.

A copy of the Initial Study/ Mitigated Negative Declaration may be reviewed at the following locations:

- San Joaquin County Department of Public Works, 1810 East Hazelton Avenue, Stockton, California 95205 (Copies are available for a fee at this location.)

- San Joaquin County Department of Public Works website: http://www.sjgov.org/pubworks/

This Notice of Intent is being sent to applicable local public agencies as well as organizations and individuals of local interest. Written comments on this document may be submitted during the 30-day public review period which begins **Thursday July 24, 2014** and must be received by the San Joaquin County Public Works Department no later than **5:00 p.m.** on **Monday August 25, 2014**. Contact Firoz Vohra, Transportation Engineering, at (209) 468-3035 and fvohra@sjgov.org for questions.

STANLEY ROAD BRIDGE
NO. 29C-112

STATE HWY 4

N LITTLE JOHNS CREEK

LITTLE JOHNS CREEK

S LITTLE JOHNS CREEK

STANLEY RD

ESCALON-BELLOTA RD

MARIPOSA RD

NELSON RD

OAKWOOD RD

VAN ALLEN RD

MOBLEY RD

BERKELEY

SECURITY WY

TEMPLE CREEK RD

BIEDERMAN RD

BNSF RR

JACK TONE RD

SKIFF RD

WILDWOOD RD

CARROLTON RD

DODDS RD

DROGE RD

AVENA RD

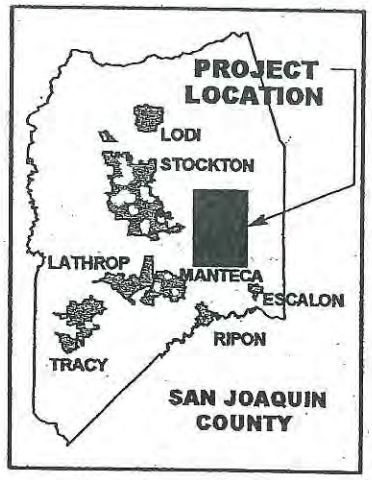
LONE TREE CREEK

LONE TREE ROAD

LONE TREE

--- VICINITY MAP ---

STANLEY ROAD BRIDGE NO. 29C-112 across LITTLEJOHNS CREEK



NO SCALE
DATE: May 3, 2010
SAN JOAQUIN COUNTY, Dept. of Public Works

The County of San Joaquin does not warrant the accuracy, completeness, or suitability for any particular purpose
The information on this map is not intended to replace engineering, financial or primary records research.

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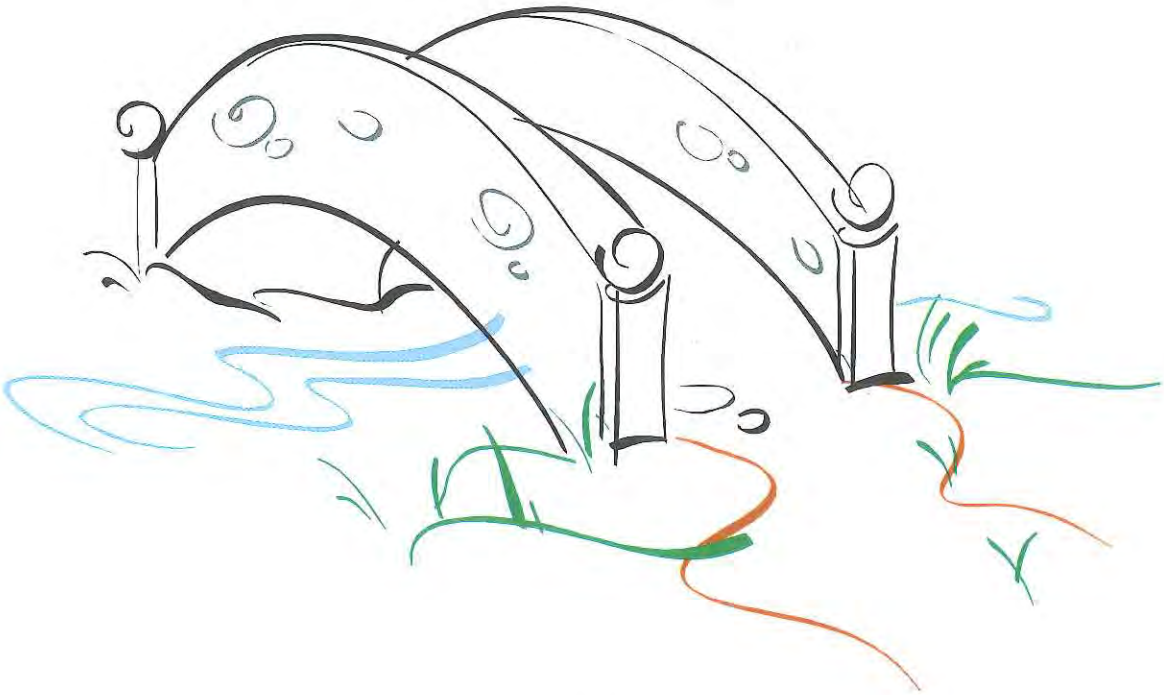
Stanley Road Bridge Scour Mitigation Project



Initial Study/Mitigated Negative Declaration

July 2014

Public Works
San Joaquin County
Working for YOU

CALIFORNIA ENVIRONMENTAL QUALITY ACT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
[Pursuant to Public Resources Code Section 21080(c) and California Code of Regulations, Title 14, Sections 15070-15071]

PROJECT TITLE

Stanley Road Bridge Scour Mitigation Project

PROJECT LOCATION

Stanley Road Bridge (29C-112) south of State Route 4 (Farmington Road) over Littlejohns Creek (Figure1)

PROJECT APPLICANT

San Joaquin County Department of Public Works (SJCDPW) (Lead Agency)
1810 E. Hazelton Avenue
Stockton, California 95205

CONTACT

Mark Hopkins, Senior Planner
Phone: (209) 468-3085 FAX: (209) 468-2999
Email: mhopkins@sjgov.org

In compliance with the California Environmental Quality Act (CEQA) (California Public Resources Code, Section 21000, et seq.), this Initial Study has been prepared to determine whether an Environmental Impact Report (EIR) or a Negative Declaration needs to be prepared or to identify the significant environmental effects to be analyzed in an EIR.

GENERAL PLAN AND ZONING DESIGNATIONS

The Stanley Road Bridge Scour Mitigation land designation is Resource Conservation (OS/RC) for the General Plan and General Agriculture (AG Zone) for County Zoning. The General Plan designation provides for areas with significant resources that generally are to remain in open space. The County Zoning is established to preserve agricultural lands for the continuation of commercial agricultural enterprises. Minimum parcel sizes within the AG Zone are 20, 40, 80, and 160 acres, as specified by the precise zoning.

EXISTING SETTING

Stanley Road Bridge is a three span structure with a continuous reinforced concrete (RC) slab on four pile RC bents and RC diaphragm abutments with "U" wingwalls. The bridge is 32 feet wide and 86 feet in length. The bridge embankments extend from the face of the abutments to the adjacent bents where the embankment toes are located.

BACKGROUND

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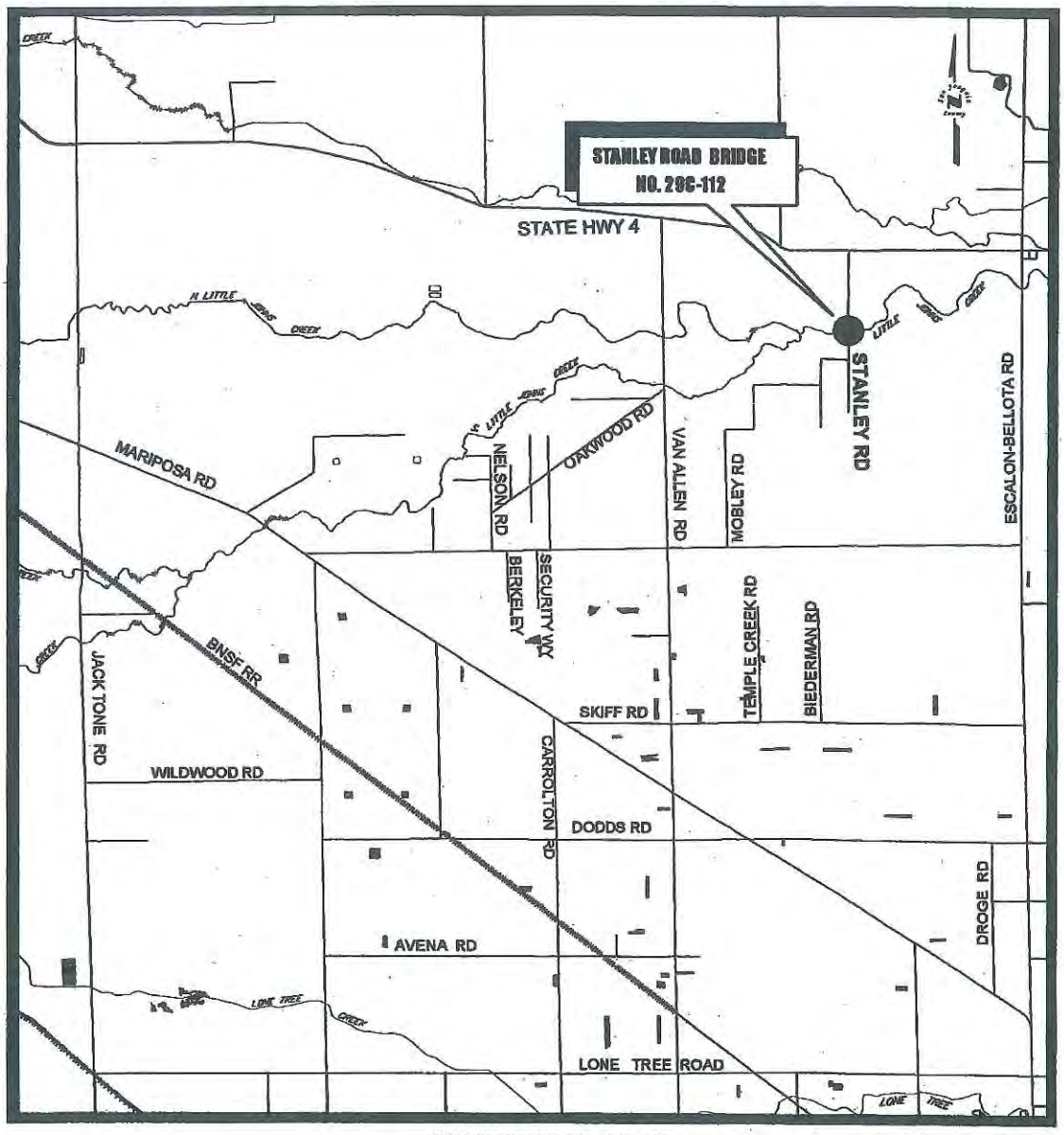
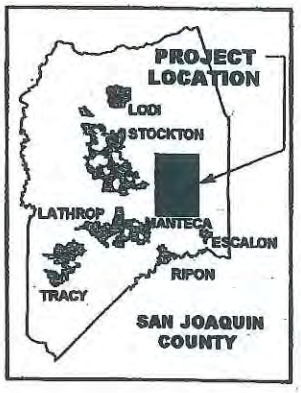
ALTERNATIVES CONSIDERED

Alternatives considered: "no build".



— VICINITY MAP —

STANLEY ROAD BRIDGE NO. 29C-112 across LITTLEJOHNS CREEK



NO SCALE
DATE: May 3, 2010
SAN JOAQUIN COUNTY, Dept. of Public Works
The County of San Joaquin does not warrant the accuracy, completeness, or suitability for any particular purpose
The information on this map is not intended to replace engineering, financial or primary records research.
E:\112_Vicinity Map.dwg .

Figure 1

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
■ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gases Emissions	☐ Hazards & Hazardous Materials	■ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	■ Mandatory Findings of Significance

DETERMINATION:

On the basis of this initial evaluation:

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

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

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

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

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

Mark Hopkins, Senior Planner
San Joaquin County Public Works Department

Date 7/14/14

ISSUES:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS				
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	■
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	■
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	■
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	■

San Joaquin County is centrally located in the agricultural heartland of California, known as the San Joaquin Valley. The terrain is generally level with the foothills of the Diablo Range to the southwest and the foothills of the Sierra Nevada Range to the east. In addition to the vast acreage of agricultural land, a complex network of sloughs, canals, rivers, and creeks forms a distinctive landscape. The Delta wetlands, river corridors, valley oak tree groves, and sloping foothills and ridges of the Diablo and Sierra Nevada Ranges are the key scenic landscape features in San Joaquin County (Baseline 1992).

The County has designated several roads as scenic routes. These routes were selected based on several factors, including those roads which lead to recreational areas, exhibit scenery with agricultural/rural values or topographical interest, provide access to historical sites, or offer views of waterways (Baseline 1992).

Impact Discussion:

a – d) The project and surrounding area consist of rural and agricultural properties. There are no designated scenic vistas or scenic highways within the vicinity of the project area. While the area has a visual character or quality of central valley farmland, the proposed project will not have an impact on the overall setting or create a new source of substantial light or glare, which would adversely affect day or nighttime views; therefore, there will be no impact.

ISSUES:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

II. AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	■
b) Conflict with existing zoning for agriculture use, or a Williamson Act contract?	☐	☐	☐	■
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	■
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	■
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	■

The Important Farmland Inventory System, initiated in 1975 by the U.S. Department of Agriculture Soil Conservation Service (now known as the Natural Resources Conservation Service [NRCS]), classifies land according to soil and climatic characteristics (Baseline Environmental Consulting 1992). In order to be shown on the Farmland Mapping and Monitoring Program's (FMMP) Important Farmland Maps as Prime Farmland and Prime Farmland of Statewide Importance, the land must have been used for irrigated agricultural production at some time during the four years prior to the Important Farmland Map

date, which is determined by FMMP staff during examination of current aerial photos, local comment letters, and field verification, and must meet the physical and chemical soil criteria as determined by the NRCS (NRCS 2006).

The California Land Conservation Act of 1965 (commonly known as the Williamson Act) established a voluntary tax incentive program for preserving agricultural and open space lands. A property owner enters into a 10-year contract with the County, which places restrictions on the land in exchange for tax savings. The property is taxed according to the income it is capable of generating from agriculture and other compatible uses, rather than its full market value. Williamson Act contracts are renewed automatically each year unless they are canceled or a Notice of Non-renewal is filed with the County (Baseline 1992).

According to the Land Cover map by the State of California's Department of Forestry and Fire Protection Department, agricultural land is considered to make up the vast majority of San Joaquin County and the project area. As such, there is no forest land within the project area.

Impact Discussion:

a-e) The project and surrounding area consists of rural and agricultural property. The project will be placing scour mitigation measures within the channel, which will not require conversion of land around the project; therefore, there will be no impact.

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

San Joaquin County is located at the northern end of the San Joaquin Valley Air Basin (SJVAB). The pollution potential is very high due to the topographic and meteorological conditions which often trap air pollutants in the SJVAB. Air quality is determined primarily by the type and amount of contaminants emitted into the atmosphere, the size and topography of the basin, and meteorological conditions. The low mixing heights and light winds typical of the SJVAB are conducive to the accumulation of air pollutants (San Joaquin County 1992).

The SJVAB does not currently meet health-based standards set by the EPA for ozone and particulate matter. Ozone is formed when heat and sunlight transform volatile organic compounds and nitrogen oxides from vehicle exhaust, industrial processes, and other operations, resulting in smog that is trapped in the valley because of the surrounding mountain ranges. Particulate matter is small particles of man-made compounds, soot, ash, or dust, suspended in the air. In addition to health concerns, ozone damages crops, ornamental vegetation, and man-made materials, while particulate matter obscures visibility (SJVAPCD 2006).

The following table identifies health effects of some of the common pollutants found in our air, and examples of some of the sources of these pollutants (SJVAPCD 2007):

POLLUTANT	HEALTH EFFECTS	EXAMPLES OF SOURCES
Particulate matter (PM10: Less than or Equal to 10 Microns)	• Increased respiratory disease • Lung damage • Premature death	• Cars and truck especially diesels • Fireplaces, woodstoves • Windblown dust from roadways, agriculture and construction
Ozone (O_3)	• Breathing difficulties • Lung damage	• Formed by chemical reactions of air pollutants in the presence of sunlight. Common sources: motor vehicles, industries, and consumer products
Carbon monoxide (CO)	• Chest pain in heart patients • Headaches, nausea • Reduced mental alertness • Death at very high levels	• Any source that burns fuel such as motor vehicles, construction and farming equipment and residential heaters and stoves
Nitrogen dioxide (NO_2)	• Lung damage	• See Carbon Monoxide sources
Toxic air contaminants	• Cancer • Chronic eye, lung or skin irritation • Neurological and reproductive disorders	• Motor vehicles, especially diesel • Industrial sources such as chrome and platers • Neighborhood businesses such as dry cleaners and service stations • Building materials and products

Sensitive Receptors

Sensitive receptors are locations of human populations, such as residences, hospitals, schools, day care centers, retirement homes, and convalescent facilities where there is reasonable expectation of continuous human exposure to poor air quality standards (CARCB 2007).

Impact Discussion:

a, b) The proposed project would not conflict with, or obstruct, implementation of the applicable air quality plan, violate any air quality standard, or contribute substantially to an existing or projected air quality violation. Construction of the project could result in temporary marginal pollutants and/or odors associated with construction equipment and dust from earthmoving activities; however, construction activities would be in compliance with the SJVAPCD fugitive dust control requirements for construction sites to reduce any impacts to less than significant.

c) A project is deemed inconsistent with air quality plans if it would result in population and/or employment growth that exceeds growth estimates set forth in the applicable air quality plan. Accordingly, proposed projects need to be evaluated to determine whether they would generate population and employment growth, and if so, whether that growth would exceed the growth rates specified in the relevant air plans. The proposed project would not induce population or employment growth, because this is a scour mitigation project. Therefore, the proposed project would have no impact.

d, e) There are sensitive receptors or substantial numbers of people within the vicinity of the project area that maybe exposed to air emissions generated from the construction of this project. The project could result in temporary marginal pollutants and/or odors associated with construction equipment and dust from earthmoving activities. However, construction activities would be in compliance with the SJVAPCD fugitive dust control requirements for construction sites to reduce any impacts to less than significant.

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

Regulatory Setting

In 1973, the federal Endangered Species Act (ESA) was passed by Congress to protect ecosystems supporting special-status species and to be administered by the U.S. Fish and Wildlife Service (USFWS). The California Endangered Species Act (CESA) was passed as a parallel act to be administered by the California Department of Fish and Game (CDFG). Special-status species include:

- USFWS-designated listing of threatened or endangered species, as well as candidate species;
- CDFG-designated listing of rare, threatened, or endangered species, as well as candidate species;
- Species considered to be rare or endangered under the conditions of Section 15380 of the CEQA Guidelines, such as those identified in the Inventory of Rare and Endangered Vascular Plants of California by the California Native Plant Society; and
- Other species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing, or rejection for state or federal status, such as Species of Special Concern designated by the CDFG.

The USFWS and CDFG both publish lists of special-status species, which satisfy criteria classifying them as endangered. Species that have been proposed for listing, but have not yet been accepted are classified as candidate species. Generally, the term endangered (federal, state) refers to a species that is in danger of becoming extinct throughout all or a significant portion of its range, while a threatened (federal, state) or rare (state) species is one that could become endangered in the foreseeable future.

Special Status Species

Database listings from the USFWS and CDFG for the United States Geological Survey (USGS) quadrangle Peters was reviewed to determine if there have been any occurrences of special status species within the vicinity of the project area. The results were narrowed to a 1-mile radius of the project area and confirmed by the Natural Environment Study performed by North State Resources (January2014).

No special-status plant species were detected during the reconnaissance-level survey conducted on April 22, 2012. For each species listed in the USFWS special list and CNDDB and CNPA database records, habitat requirements were assessed and compared to the habitats within the BSA and immediate vicinity in order to determine their potential to occur. Based on this informational review and field assessment, the BSA does not provide suitable habitat for any special-status plant species.

There are several special status wildlife species recorded within the quadrangle: Hardhead (*Mylopharodon* conocephalus), Western pond turtle (*Emys* marmorata), Swainson's hawk (*Buteo swainsoni*), White-tailed kite (*Elanus leucurus*), Burrowing owl (*Athene cunicularia*), Loggerhead shrike (*Lanius ludovivianus*), California yellow warbler (*Dendroica petechia brewsteri*), Yellow-breasted chat (*Icteria virens*), and Tricolored blackbird (*Agelaius tricolor*) ; however, the project area does not provide suitable habitat for most of the above species due to the fact that Littlejohns Creek provides very low quality habitat potential for most species. The project area and its vicinity do provide potential nesting habitat and foraging habitat for the special status species Swainson's hawk and Burrowing owl, as well as other protected non-special-status migratory birds and raptors whose nests and eggs are protected by the California Fish and Game Code Sections 3503 and 3503.5 and the federal Migratory Bird Treaty Act (MBTA).

In the Central Valley, birds like Swainson's hawk, white-tailed kites, and loggerhead shrikes typically nest in oak or cottonwood trees in or near riparian habitats, oak groves, roadside trees, and isolated trees. They prefer nesting sites that provide sweeping views of nearby foraging grounds consisting of grasslands, irrigated pastures, alfalfa, hay, row crops, and grain crops. According to the CDFG database search, 1 Swainson's hawk nest site was documented within the 5-mile radius, whereas white-tailed kite and loggerhead shrike were not.

Impact Discussion:

a) San Joaquin County Department of Public Works is proposing scour mitigation measures in the channel. Noise associated with the construction activities could result in the disturbance of nesting special-status and protected non-special status migratory birds and raptors, if present in the area. Also, construction will be within a low-flow period, reducing conflicts with any migratory fish through the area. To avoid construction-related impacts, the SJCDPW will require a qualified biologist to conduct a pre-construction survey for nesting birds (if construction occurs within the breeding/nesting season) and to observe fish and/or water levels. A pre-construction survey for nesting birds has become standard for all SJCDPW projects occurring from February 15 to September 1, and is not considered a mitigation measure for SJCDPW. If the survey findings indicate the presence of a special status species or nesting protected species, the SJCDPW and a qualified biologist will consult with CDFG to determine the appropriate action. Furthermore, the County does not want to incorrectly anticipate mitigations from outside agencies until permitting is complete. Therefore, the proposed project will have a less than significant impact with mitigation.

b) A narrow, fragmented band of riparian vegetation occurs west of Stanley Road within the BSA, confirmed by the Natural Environment Study performed by North State Resources (January 2014). The anticipated area of riparian vegetation removal is approximately 0.03 acre of vegetation located downstream and adjacent to Stanley Road Bridge. Removal will include a small valley oak (5-6 inches dbh), scattered patches of Himalayan blackberry and ruderal herbaceous upland vegetation on the south side of Littlejohns Creek, and limited to an area dominated by Himalayan blackberry on the north side of Littlejohns Creek. The dewatered work area and disturbance to in-stream and riparian habitat shall be kept to the minimum area necessary to perform work. Aquatic and upland habitats to be avoided will be flagged and/or signed. No construction activities or personnel will be allowed to enter the avoidance areas. Flagging and signage will remain in place until construction activities are complete and will be removed upon completion of construction. Therefore, the proposed project will have a less than significant impact with mitigation.

c) Section 404 of the Clean Water Act prohibits the discharge of dredged or fill material into waters of the United States, including wetlands, without a permit issued by the U.S. Army Corps of Engineers (33 USC 1344). Since the proposed project will require the discharge of dredged or fill material into waters of the United States, a permit will be acquired. Therefore, the proposed project will have a less than significant impact with mitigation.

d) Littlejohns Creek is a slow-moving, perennial stream that is highly managed for water control and conveyance. Native & non-native fish have the potential to or are known to occur within Littlejohns Creek in the BSA. Common carp and mosquito fish were observed during the site visit on April 22, 2012. Inactive cliff swallow nests were observed on the Stanley Road Bridge and indicate previous nesting by this species on the bridge structure (North State Resources, January 2014). There is low quality habitat potential for several special status species. If construction activities during the nesting season cannot be avoided, existing cliff swallow nests on Stanley Road Bridge will be removed prior to the nesting season (between September 1 and February 1) to discourage continued nesting on this structure prior to construction. An effective deterrent to cliff swallow nesting will also be installed prior to the nesting season and will be monitored for integrity and effectiveness until the project is complete. Furthermore, the County does not want to incorrectly anticipate mitigations from outside agencies until permitting is complete. Therefore, the proposed project will have a less than significant impact with mitigation.

e) The small valley oak tree (5-6 inches dbh) being removed by the proposed project does not qualify as a native or heritage oak per San Joaquin County Development Title (San Joaquin County 1992a). Therefore, the proposed project will have no impact.

f) In order to address concerns about impacts to sensitive resources, San Joaquin County adopted the *San Joaquin County Multi-Species Habitat Conservation and Open Space Plan* (SJMSCP) in 2004. The key purpose of the SJMSCP is to 1) provide a strategy for balancing the need to conserve open space and the need to convert open space to non-open space uses while protecting the region's agricultural economy; 2) preserve landowner property rights; 3) provide for the long-term management of plant, fish, and wildlife species, especially those that are currently listed, or may be listed in the future, under the federal and state ESAs; 4) provide and maintain multiple-use open spaces which contribute to the quality of life of the residents of San Joaquin County; and 5) accommodate a growing population while minimizing costs to project proponents and society at large. The SJMSCP is locally implemented by the San Joaquin Council of Governments (SJCOG). Participation in the SJMSCP satisfies requirements of both the state and federal ESAs and ensures that impacts are mitigated below a level of significance for CEQA compliance (SJCOG 2001). Because San Joaquin County signed the initial agreement to participate in the SJMSCP, any land conversion would anticipate participation in the SJMSCP; however, this project is working within an altered channel that has previously been modified to increase capacity and the project is not changing use or flow. Therefore, the proposed project will have no impact.

ISSUES:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES				
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☐	☐	■
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☐	■
c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☐	☐	■
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	■

Regulatory Setting
Cultural resources in California are protected by a number of federal, state, and local regulations and ordinances. The most frequently applied legislation consists of the provisions of CEQA that provide for the documentation and protection of significant prehistoric and historic resources. Prior to the approval of discretionary projects and the commencement of agency undertakings, the potential impacts of the project on archaeological and historical resources must be considered (Public Resources Code Sections 21083.2 and 21084.1 and the CEQA Guidelines [California Code of Regulations Title 14, Section 15064.5]).

The CEQA Guidelines define a significant historical resource as "a resource listed or considered eligible for listing on the California Register of Historical Resources" (CRHR) (Public Resources Code Section 5024.1). A cultural resource may be eligible for listing on the CRHR if it:

1. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. is associated with the lives of persons important in our past;
3. embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of an important creative individual, or possesses high artistic values; or
4. has yielded, or may be likely to yield, information important in prehistory or history.

A Historical Property Survey Report (HPSR) and Archaeological Survey Report (ASR) were completed by North State Resources, Inc. for the Project in May 2012 as part of National Environmental Protection Act (NEPA) compliance. Investigations for the HPSR and ASR found that no cultural resources are present in the Project study area.

Investigation and Native American Consultation Results
San Joaquin County staff did a records search with the Central California Information Center at California State University Stanislaus and the Native American Heritage Commission (NAHC), which indicated that no known historical resources are present within the project area. The NAHC provided contact information for Native Americans who may have information regarding the project area. San Joaquin County sent letters to these contacts in July 2011. San Joaquin County further retained the services of a sub-consultant, North State Resources, Inc, to confirm the record search, follow-up with Native Americans, and provide documentation of their finding (March 2012).

Impact Discussion:

a – d) San Joaquin County Department of Public Works is proposing scour mitigation measures within the channel. North State Resources has confirmed the records search with Native American contact follow-up in addition to performing further archival research for historic cultural sites. The findings are negative. Therefore, the proposed project will have no impact.

ISSUES:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS				
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	■
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	■
ii) Strong seismic ground shaking?	☐	☐	☐	■
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	■
iv) Landslides?	☐	☐	☐	■
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	■	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	■	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	■

Geology

San Joaquin County is located in the San Joaquin Valley, which comprises the southernmost portion of the Great Valley Geomorphic Province of California. The Great Valley is an elongated lowland bounded by the tilted block of the Sierra Nevada on the east and the Coast Ranges to the west. The Sacramento River drains the northern portion and the San Joaquin River drains the southern portion (DWR 2006).

Soils
The soil type in the project area consists primarily of archerdale clay loam (85%), a non-hydric, well-drained alluvium derived from mixed parent material with a depth to restrictive layer and water table more than 80 inches, and minor components including Cogna, Finrod and Hollenbeck soils but in very small percentages each.

Seismic Hazards
Seismic hazards refer to earthquake-induced *ground rupture, ground shaking, liquefaction, or water movement*. Of the known earthquake faults in San Joaquin County, none are classified by the State Geologist as active (San Joaquin County 1992, CDCS 2006). Localized ground shaking and liquefaction are the most significant seismic hazards in San Joaquin County. The most likely sources of these hazards are from the San Andreas, Hayward, Calaveras, Midland, Green Valley-Concord, or Tracy-Stockton Faults (San Joaquin County 1992).

Ground rupture can occur horizontally and/or vertically, which can cause significant damage such as cracked building foundations, destroyed roads and bridges, and broken utility lines. Ground rupture is most likely to occur along lines of previous fault systems, meaning that the southern portion of the San Joaquin County is more vulnerable to this hazard. However, ground rupture usually is restricted to earthquakes of more than 5.5 magnitude on the Richter scale. While San Joaquin County has experienced earthquakes of this magnitude in the past, there is no known occurrence of local ground rupture (San Joaquin County 1992).

Ground shaking is the most widespread effect of earthquakes, and poses a greater seismic threat than local ground rupture. Strong ground shaking from an earthquake could cause significant damage, especially to unreinforced masonry buildings built before 1933. Mobilehomes and structures not properly secured to foundations can be vulnerable during ground shaking (San Joaquin County 1992).

Liquefaction occurs when a water-saturated, cohesionless soil loses its strength and liquefies during intense and prolonged ground shaking. Areas which have the greatest potential for liquefaction are those areas where the water table is less than 50 feet below the surface and soils are predominantly clean, comprised of relatively uniform sands, and are of loose to medium density. The type of ground motion expected from large earthquakes felt in San Joaquin County is expected to be a rolling type motion, which would be less likely to cause liquefaction (San Joaquin County 1992).

Water Movement resulting from seismic activity includes landslide splashes and seismic seiches. An added hazard is flooding due to dam or levee failures. There are no historical records of seismic-generated water movements occurring in or adjacent to San Joaquin County. This should not, however, rule out the possibility of one occurring in the future. A seismically-induced wave in the Delta channels could damage levees, causing localized flooding. The occurrence of a seismic-generated landslide splash in one of the reservoirs located in San Joaquin County could result in dam failure and flooding (San Joaquin County 1992).

Geologic Hazards
Geologic hazards in San Joaquin County include *subsidence, expansive soils, erosion, and soil instability leading to landslides.* Subsidence, expansive soils, and erosion occur in the Delta, and pose serious problems for agricultural production. Slope stability hazards are mostly confined to the foothills and mountain terrain that border the San Joaquin Valley, the steep banks of the major rivers which pass through the Valley floor, and the levees of the Delta (San Joaquin County 1992).

Subsidence is the gradual, local settling or sinking of the earth's surface with little or no horizontal motion. It is usually the result of gas, oil, or water extraction, hydrocompaction, or peat oxidation. In San Joaquin County, subsidence is generally attributed to the overdrafting of groundwater basins and from peat oxidation of the Delta islands. Effects of subsidence include lower levees, lower

islands, flooding, infrastructure failure, crop losses, disruption to recreation, and increased maintenance costs. Overdrafting, a cause of subsidence, occurs when the groundwater is pumped out faster than it can be replenished. As a result, the overlying ground sinks (San Joaquin County 1992).

Subsidence can also occur from earthquake motion, which is a settlement or shakedown of soils that can result in localized subsidence. This settlement is likely to occur in areas where water tables are deep (otherwise liquefaction could occur), the soils are of loose to medium density, and the soil profile includes a strata of loose, clean, uniformly graded sand. However, given the expected types of ground motion from an earthquake, the potential for seismically-induced subsidence is considered relatively low (San Joaquin County 1992).

Expansive soils, such as clay, swell when they absorb water and shrink as they dry. The basic cause of expansion is the attraction and absorption of water in the expandable crystal structures of clays. Clay areas must be recognized because they can cause building foundation cracking during wet or dry periods. Moreover, various structural portions of a building may become distorted, so that doors and windows do not function properly. These hazards can be avoided through proper drainage and foundation design. The State Subdivision Map Act requires soil reports for all major subdivisions. If expansive soils are recognized through appropriate soil testing, corrective measures can be designed into the foundations (San Joaquin County 1992).

Erosion is the process of detachment and movement of soil particles by wind and water. Erosion can result in the loss of topsoil, and sedimentation of the loosened soil particles can harm water quality and pose health hazards (County 1992). The Delta and southeastern portion of the County are highly susceptible to wind erosion. Water erosion is highest in areas of steep slopes, loose soils, and high rates of runoff, which are found in the southwestern and eastern portions of the County. Moderate water erosion has been identified in the lower, much gentler topography of the higher terraces and lower hills of the eastern portion of San Joaquin County. In addition, soils along the San Joaquin, Stanislaus, and Mokelumne rivers also have a moderate erosion potential (Baseline 1992).

Slope instability is a result of the downslope movement of earth materials, often referred to as mass movements (creep, mudflows, landslides, rockfalls, etc.), which is a normal geological process by which slopes are flattened and valleys are widened. Although most of these movements are considered to be minor or insignificant, there are three areas where slope failures could pose a major geological hazard: 1) the foothills and mountain terrain which border the San Joaquin Valley, 2) the steep banks of the major rivers which pass through the Valley floor, and 3) the levees of the Delta (San Joaquin County 1992).

Impact Discussion:

a: i) San Joaquin County does not have any classified active faults (CDCS 2006). While it is not possible to eliminate all seismic and geological hazards, the County's proposed project will be placing scour mitigation measures within the existing channel. Therefore, the proposed project will have no impact.

ii, iii) Localized ground shaking and liquefaction are the most significant seismic-related hazards in San Joaquin County. The project area is located within an area underlain by recent alluvial and estuarine sediments. Due to the shallow depth to groundwater, these deposits potentially include saturated granular sediments. Such sediments may liquefy under moderate to strong ground shaking from a large regional earthquake. While it is not possible to eliminate all seismic and geological hazards, the County's proposed project will be placing scour mitigation measures within the existing channel. Therefore, the proposed project will have no impact.

iv) Slope stability hazards within San Joaquin County are mostly confined to three areas: 1) the foothills and mountain terrain which border the San Joaquin Valley, 2) the steep banks of the major rivers which pass through the Valley floor, and 3) the levees of the Delta. The County's proposed project will be placing scour mitigation measures and doing pile repair within the existing channel. Therefore, the proposed project will have no impact.

b) The project area is located in an area identified as having a moderate water erosion and wind erosion potential. The County is placing scour mitigation measures within the channel. Therefore, the proposed project will have a less than significant impact.

c) The project area is located within an area underlain by fan terrace and alluvial fan sediments. Due to the depth of the groundwater, these deposits potentially include saturated granular sediments, which may liquefy under strong ground shaking from a large regional earthquake. While it is not possible to eliminate all seismic and geological hazards, the County is placing scour mitigation measures within the channel. Therefore, the proposed project will have a less than significant impact

d) San Joaquin County Department of Public Works is proposing scour mitigation measures within the channel, working with specific construction specifications. Therefore, the proposed project will have a less than significant impact.

e) San Joaquin County Department of Public Works is proposing scour mitigation measures within the channel, working with specific construction specifications. Therefore, the proposed project will have no impact.

ISSUES:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GREENHOUSE GASES EMISSIONS				
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	■
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	■

Impact Discussion:

a-b) The proposed project will be placing scour mitigation measures within the channel and will not alter the location, distribution, or traffic density of the area. Furthermore, the proposed project will not affect housing/businesses or create a demand for additional housing/businesses. Finally, the proposed project will not result in increased transportation needs. Therefore, the proposed project will have no impact.

ISSUES:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS				
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	■
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	■
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	■
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	■
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	■
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	■
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	■

Hazardous materials include all flammable, reactive, corrosive, or toxic substances, which, because of these properties, pose potential harm to the public or environment. Hazardous materials include, but are not limited to, agricultural chemicals, natural gas and petroleum, explosives, radioactive materials, and various commercial substances that are used, stored, or produced (San Joaquin County 1992).

Hazardous waste is waste, or a combination of waste, that either causes or significantly contributes to an increase in mortality or an increase in serious irreversible illness, incapacitating reversible illness, or poses a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of (San Joaquin County 1992).

Numerous Federal and State laws regulate hazardous materials and wastes, such as the EPA and California Department of Health Services (CDHS). However, depending on the waste, the Air Resources Board, the State Water Resources Control Board (SWRCB), or another agency may be involved. Locally, the San Joaquin County Environmental Health Department (SJCEHD), San Joaquin County Office of Emergency Services (SJCOES), and the San Joaquin Valley Air Pollution Control District (SJVAPCD)are responsibile for enforcing some state standards (San Joaquin County 1992).

The SJCEHD regulates large and small quantity hazardous waste generators, administers the underground storage tank program, and oversees the investigation and cleanup of contaminated underground tank sites under a contract with the SWRCB. Enforcement of San Joaquin County hazardous material regulations is under the jurisdiction of the SJCOES. The SJVAPCD regulates air emissions from industrial operations and contaminated soils (San Joaquin County 1992).

San Joaquin County Public Works reviewed available records pertaining to the proposed project with federal, state, and local resources.

Impact Discussion:

a–c) The proposed project will be placing scour mitigation measures within the channel. The work area is within San Joaquin County right-of-way in Littlejohns Creek. Therefore, the proposed project will have no impact.

d) The proposed project area included on any lists identified under California Government Code Section 65962.5 (www.leginfo.ca.gov). Furthermore, the SJCEHD did not have any case files for the project area or immediately adjoining properties.

e, f) The proposed project area is not located in an airport land use plan or within two miles of a public airport. The proposed project will not result in a safety hazard for people residing or working in the project area as the proposed project will not create developments and/or facilities that would be occupied by people. Therefore, there will be no impact.

g) The proposed project may impair implementation of, or physically interfere with, an adopted emergency response plan if the bridge is closed. This is due to the long traffic detour, if a closure is implemented. Therefore, the proposed project will have a less than significant impact.

h) According to the California Department of Forestry and Fire Protection Natural Fire Hazard map (2000), the proposed project area is not located within a fire hazard area. Furthermore, the proposed project will not create developments and/or facilities that would be occupied by people; therefore, there will be no impact.

ISSUES:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY				
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	■	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	■
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	■	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	■
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	■	☐
f) Otherwise substantially degrade water quality?	☐	■	☐	☐
g) Place housing within a 100-year floodplain hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	■
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	■

ISSUES:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	■
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	■

Four major rivers flow through or along the boundaries of San Joaquin County: the San Joaquin, Stanislaus, Mokelumne, and Calaveras Rivers. The flows in these rivers are controlled by dams, which impound six major reservoirs to provide water supplies and flood control. Numerous tributaries and irrigation canals drain into the major rivers, which drain into the Delta (Baseline 1992).

The San Joaquin Valley is comprised of several subbasins, identified by geologic and hydrologic barriers. The project area is located within the Eastern San Joaquin Subbasin, which is defined by the areal extent of unconsolidated to semiconsolidated sedimentary deposits that are bound by the Mokelumne River on the north and northwest, San Joaquin River on the west, Stanislaus River on the south, and consolidated bedrock on the east. It is drained by the San Joaquin River and several of its major tributaries such as the Stanislaus, Calaveras, and Mokelumne Rivers (DWR 2006).

Water-bearing formations of significance in the Eastern San Joaquin Subbasin consist of the Alluvium and Modesto/Riverbank Formations, Flood Basin Deposits, Laguna Formation, and Mehrten Formation. The Mehrten Formation is considered to be the oldest fresh water-bearing formation on the east side of the basin. Annual precipitation in this subbasin ranges from about 11 inches in the southwest to about 25 inches in the northeast (DWR 2006).

Flood Hazard Areas

High flow discharge of moderate duration in the rivers and streams of San Joaquin County can result in flooding during intense rainstorms during the rainy season (from November to April.) In addition, snow melt in the Sierra Nevada mountain range can produce high discharge flows of relatively longer duration during early spring. Flood hazards in San Joaquin County are related to 100-year floods, levee failures in the Delta, and dam failures (Baseline 1992).

100-year Floods

The boundary of the 100-year floodplain is the basic planning criterion used to demarcate unacceptable public safety hazards. The 100-year floodplain boundary defines the geographic area that would be inundated by a flood having a one percent (1%) chance of being equaled or exceeded in a given year, which is based on hydrology, topography, and the modeling of flow during predicted rainstorms. Outside the boundary, the degree of flooding risk is not considered sufficient to justify the imposition of floodplain management regulations, while inside the 100-year floodplain a tighter level of regulation is required to protect public health, safety, and welfare (San Joaquin County 1992).

San Joaquin County has been participating in the National Flood Insurance Program (NFIP) since 1973. This federal program is administered by the Federal Emergency Management Act (FEMA). The primary benefit of participating in this program is that it provides an opportunity for property owners to purchase flood insurance if their community has made a commitment to implement floodplain management regulations that are specified by FEMA. Failure to implement these regulations could result in suspension from the program (San Joaquin County 1992).

The Army Corps of Engineers, under contract to FEMA, prepared a flood insurance study report, known as the Flood Insurance Rate Map (FIRM), and a series of maps which depict locations of the 100-year flood, flood elevations, floodways, 500-year flood boundaries, and flood insurance rate zones (San Joaquin County 1992).

Levees
All of the major rivers and some streams in San Joaquin County contain levees. The potential of levee failure is highest in the Delta because these levees often contain unstable material and have been constructed on an unstable base, such as a mixture of peat and silt. A breach in a levee under non-flood conditions would be localized to the specific Delta tract, while 100-year conditions could lead to levee failures on a series of Delta islands (San Joaquin County 1992).

Dams
There are 15 major dams that have been identified as having the potential to inundate portions of San Joaquin County in the event of a dam failure. A dam failure can occur as the result of an earthquake, an isolated incident due to structural instability, or a heavy rain that exceeds design capacity (San Joaquin County 1992).

The amended Dam Safety Act (DSA) required that dam owners submit inundation maps to the Office of Emergency Services (OES) for dams whose total failure would cause the loss of life or personal injury. The DSA also requires local jurisdictions to adopt emergency procedures for the evacuation and control of populated areas below such dams. The SJCOES *Dam Failure Plan* includes a description of the dams, direction of flood waters, responsibilities and actions of individual jurisdictions, and evacuation plans (San Joaquin County 1992).

Seiches, Tsunamis, Mudflows
A seiche is a wave that oscillates in lakes, bays, or gulfs from a few minutes to a few hours as a result of seismic or atmospheric disturbances (wind and atmospheric pressure variations), including tsunamis (Merriam Webster 1994). A tsunami is a system of gravity waves formed in the sea by a large-scale disturbance of the sea level over a short duration of time. Tsunamis can be generated by submarine volcanic eruptions, coastal landslides into a bay or harbor, meteor impact, or by vertical displacement of the earth's crust along a subduction zone/fault (OES 2006). A mudslide, also called mudflow, is a flow of dirt and debris that occurs after intense rainfall or snow melt, volcanic eruptions, earthquakes and severe wildfires. The speed of the slide depends on the amount of precipitation, steepness of slope, vibration of the ground, and alternate freezing and thawing of the ground (Merriam Webster 1994).

Impact Discussion:

a, c, f) The proposed project will be placing scour mitigation measures within the channel. This requires minor excavation and the placement of a layer of ¼ ton class Rock Slope Protection (RSP) to conform to the upstream and downstream conditions. Also, the County is potentially placing gabion mats along the embankment to reduce depths of excavation and potential erosion. The proposed project will be working within the channel. Project permits (404, 401, LSSA, CVFPB), SWPPP, and a general construction permit will govern any mitigation required. Therefore, the proposed project will have a less than significant impact with mitigation.

b) The proposed project will have no impact on groundwater supplies.

d) The proposed project will have no impact, from the work taking place within Littlejohns Creek.

g, h) The project area is located within a 100-year flood zone. While a 500-year floodplain zone is adjacent to the 100-year flood zone, the proposed project is not considered a critical action (i.e., fire station, hospital, school, facilities producing or storing toxic materials, etc.). In addition, the proposed project will not result in the construction of aboveground structures. Therefore, the proposed project will have no impact.

i) The SJCOES has identified that the project area and surrounding area could potentially be inundated from a failure of the Farmington Dam, located at the northeastern edge of San Joaquin County (SJCOES 2006). While the project area has the potential to be flooded, whether by the overtopping of levees from intense rainstorms or levee or dam failures, the proposed project would not expose people or structures to a significant risk of loss, injury, or death as the proposed project will not result in the construction of aboveground structures that will be occupied by people. Therefore, the proposed project would have no impact.

j) Tsunamis and seiches are primarily a threat to coastal communities. Further, while the project area is located near the Delta waterways to the west, there are no bays, harbors, or enclosed bodies of water near the project area. The project area is relatively flat, and would not be exposed to mudflows. Therefore, there would be no impact.

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

The San Joaquin County General Plan establishes general land use categories (designations) for the unincorporated portions of San Joaquin County. The San Joaquin County zoning ordinance implements the General Plan's goals and policies.

The General Plan and zoning designation for the project is Resource Conservation (OS/RC) and General Agricultural (AG Zone). The Resource Conservation (OS/RC) designation provides for areas with significant resources that generally are to remain in open space. The General Agriculture (AG Zone) zoning is established to preserve agricultural lands for the continuation of commercial agriculture enterprises. Minimum parcel sizes within the AG Zone are 20, 40, 80, and 160 acres, as specified by the precise zoning. Typical uses include crop production, feed and grain storage and sales, crop spraying, and animal raising and sales. The density is a maximum of one primary residence per 40 acres (San Joaquin County 1992).

Impact Discussion:

a) The proposed project will not divide an established community. Therefore, the proposed project will have no impact.

b) The proposed project is located within OS/RC and A/G designations, and will not require the purchase of right-of-way. The proposed project will not conflict with any applicable land use plans, policies, or regulations of any agencies with jurisdiction over the project. The proposed project will have no impact.

c) The proposed project may be subject to the San Joaquin Multi-Species Conservation Plan for the channel access and work done within the channel area. Participation in the San Joaquin Multi-Species Conservation Plan may be required for permitting purposes. Therefore, the proposed project will have a less than significant impact.

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

The primary extractive resources in San Joaquin County are sand, gravel, and natural gas. Peat soil, placer gold and silver are extracted to a much lesser extent. These are all nonrenewable resources. The San Joaquin County government seeks to protect these resources and manage their production in an environmentally sound manner. Reclamation plays a central role in determining the impact of extractive activities on the environment by controlling waste and erosion and rehabilitating streambeds. Sand and gravel are important resources used primarily for construction materials, such as asphalt and concrete. Because materials are costly to transport, they are extracted as close as possible to their use (San Joaquin County 1992).

Impact Discussion:

a, b) The project area is not located within an area identified as having known mineral resources. Therefore, the proposed project will not result in the loss of availability of a known mineral resource that would be of local, regional, and statewide value. The proposed project will have no impact.

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

The County Development Title states that 65 decibels (dB) or less is considered acceptable for residential development and that development shall be planned and designed to minimize noise interference from outside noise sources (San Joaquin County 1992a).

Exemptions include noise sources associated with construction provided that such activities do not take place before 6:00 a.m. or after 9 p.m. on any day. The same applies to noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities (San Joaquin County 1992a).

The sound levels associated with common noise sources and their effects are presented in the following table (San Joaquin County 1992):

TYPICAL SOUND LEVELS FOR COMMON NOISE SOURCES

Quality of Sound	Sound Level, dBA	Typical Sounds
Uncomfortably Loud (Threshold of Pain)	130	
	120	Jet takeoff at 200 feet Thunder
	110	Rock Band
Very Loud	100	
	90	Power lawn mower
		Diesel bus at 5 feet
		Motorcycle at 25 feet
	80	Inside sports car, 55 mph
Loud	70	Garbage disposal at 3 feet
		Freeway traffic at 50 feet
	60	Vacuum cleaner
		Inside department store
Quiet	50	Normal conversation
		Quiet street
	40	Average residence
		Quiet room
Very Quiet	30	
		Whisper at 5 feet
Barely Audible	20	
		Leaves rustling
	10	
Threshold of Hearing		Mosquito at 3 feet
	0	

The San Joaquin County Development Title further stipulates that proposed projects that will create new stationary noise sources or expand existing stationary noise sources shall be required to mitigate the noise levels from these stationary noise sources so as not to exceed the noise level standards specified in the following table (San Joaquin County 1992a).

MAXIMUM ALLOWABLE NOISE EXPOSURE

TRANSPORTATION NOISE SOURCES		
Noise Sensitive Land Use (Use Types)	Outdoor Activity Areas[1] dB Ldn	Interior Spaces dB Ldn
Residential	65	45
Administrative Office	--	45
Child Care Services – Child Care Centers	--	45
Community Assembly	65	45
Cultural & Library Services	--	45
Educational Services: General	--	45
Funeral & Interment Services – Undertaking	65	45
Lodging Services	65	45
Medical Services	65	45
Professional Services	--	45
Public Services (excluding Hospitals)	--	45
Recreation – Indoor Spectator	--	45
Religious Assembly	65	45

STATIONARY NOISE SOURCES	Outdoor Activity Areas	Outdoor Activity Areas
	Daytime[2] (7 a.m. to 10 p.m.)	Nighttime[2] (7 a.m. to 10 p.m.)
Hourly Equivalent Sound Level (Leq), dB	50	45
Maximum Sound Level (Lmax), dB	70	65

[1] Where the location of outdoor activity areas is unknown or is not applicable, the noise standard shall be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards shall be applied on the receiving side of noise barriers or other property line noise mitigation measures.

[2] Each of the noise level standards shall be reduced by 5 dB for impulsive noise, single tone noise, or noise consisting primarily of speech or music.

Impact Discussion:

a – c) The project area is primarily located in an unpopulated area, next to a major roadway in San Joaquin County. No sensitive receptors are within the project limits. The proposed project will not create any new noise sources. Therefore, there will be no impact.

d) Construction of the proposed project will create a temporary increase to the existing background noise levels from the adjacent roadway. However, the impact will be less than significant as the area is sparsely populated and adjacent to State Route Highway 4, a major highway corridor. However, construction of the roadway will occur during daylight hours, so the noise level increase will be marginal. Therefore, the proposed project will have a less than significant impact.

e, f) The project area is not located within an airport land use plan or within two miles of a public airport. The proposed project will not result in the construction of aboveground structures that would be occupied by people. Therefore, there will be no impact.

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

Residences in proximity to the project area are associated with agricultural uses. The surrounding area is rural and sparsely populated.

Impact Discussion:

a-c) The proposed project will not alter the location, distribution, density or growth rate of the human population in the area. The proposed project will not affect housing or create a demand for additional housing. There is existing housing adjacent to the project area. The proposed project will not result in displacement of housing or people. Therefore, the project will have no impact.

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

Fire Protection

The Linden-Peters and Collegeville Fire Districts provide fire protection services for the project area vicinity (San Joaquin County 1992).

Police Protection

Police services in unincorporated areas of San Joaquin County are provided by the San Joaquin County Sheriff Department. The California Highway Patrol assists in maintaining routine patrols and investigating traffic accidents on public roads in unincorporated areas (San Joaquin County 1992).

Schools

The project limits is located within the Linden Unified School District (San Joaquin County 1992).

Parks

No parks exist in the project area vicinity.

Other Facilities

Other public facilities include water, wastewater, and storm drainage, which are discussed further in section XVII, Utilities and Service Systems within this document.

Impact Discussion:

a) The proposed project will not result in substantial adverse physical impacts to existing service ratios, response times or other performance objectives for fire protection, police protection, schools, parks, or other public facilities, as it will not result in a development requiring additional responsibilities for these public services. Therefore, the proposed project will have no impact.

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

The surrounding area provides fishing, and wildlife viewing opportunities at the nearby Littlejohns Creek.

Impact Discussion:

a) There are no existing neighborhood/regional parks, or other recreational facilities in the project area vicinity. The proposed project will not require the need for new parks. Therefore, the proposed project will have no impact.

b) The proposed project will not include construction or expansion of recreational facilities. Therefore, the proposed project will have no impact.

ISSUES:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. TRANSPORTATION/TRAFFIC				
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	■
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	■
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	■
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	■
e) Result in inadequate emergency access?	☐	☐	☐	■
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	■

San Joaquin County road standards propose a level of service (LOS) of C or better on all San Joaquin County roads, except in a city area where the city has adopted a LOS C, and LOS D on all freeways and state highways. Intersections shall operate at an overall LOS D or better on minor arterials and roadways of higher classification, and LOS C on all other roads (San Joaquin County 2002).

Impact Discussion:

a, b) The proposed project will not individually or cumulatively cause an increase in substantial traffic in relation to the existing traffic load and capacity of the street system, or to the existing LOS established by San Joaquin County for designated roads or highways, as there would be no increase vehicle trips. Therefore, the proposed project will have no impact.

c) The proposed project will not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. Therefore, the proposed project will have no impact.

d-g) The proposed project will not result in a design feature change that will substantially increase hazards, result in inadequate emergency access, result in inadequate parking capacity, or result in a conflict with adopted policies, plans, or programs supporting alternative transportation. Therefore, the proposed project will have no impact.

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

Wastewater Treatment

The collection, treatment, and disposal of wastewater in San Joaquin County occurs in primarily two ways: community collection and treatment systems with discharge into various rivers, watercourses, and the Delta, or individual on-site treatment systems with discharge into the ground (San Joaquin County 1992).

Storm Drainage
Storm water runoff is that portion of rainfall not absorbed into the soil that leaves a site by surface flow. A storm drainage system designed to prevent flooding can consist of both natural and man-made structures used to collect, convey, and store rainwater during storms. The captured storm water is eventually discharged to a natural body of water via the terminal drainage (San Joaquin County 1992).

Water Supply
The Eastern San Joaquin County Groundwater Basin is the primary source of potable domestic water in San Joaquin County. The boundaries of the groundwater basin extend from the San Joaquin-Sacramento County line and Dry Creek in the north to the Stanislaus River in the south, and from the San Joaquin River and eastern edge of the Delta to the west to approximately the San Joaquin County line to the east (DWR 2006).

Groundwater has been the preferred water source for domestic consumption because the cost of good quality, fresh groundwater is substantially less than the cost of importing treated surface water. Groundwater generally requires little treatment, whereas surface water must be filtered and treated for domestic use. In addition, it is much less costly to locate wells near the end users with short transmission lines to transport water a longer distance through larger, more capital intensive systems. However, overdrafting in the past few decades has caused a steady decline in groundwater levels in San Joaquin County, creating a zone of depression in western San Joaquin County areas and allowing the intrusion of highly saline Delta water into the groundwater basin. A number of proposed projects to provide areas with supplemental water will decrease groundwater pumping to safe yield levels (San Joaquin County 1992).

The second major source of water is supplied by major rivers such as the Mokelumne, Calaveras, Stanislaus, and San Joaquin Rivers, and reservoirs such as the Camanche, Pardee, Farmington, Woodward, New Hogan, and New Melones. Surface water is subject to a complex federal and state legal system establishing the rights of individuals and agencies to water flows through permits, licenses, court decrees, contracts, and federally prescribed flood control regulations (San Joaquin County 1992).

The third major source of water is the Delta, particularly in southwest San Joaquin County. Exporting fresh water from the Delta, however, has caused many problems. Reverse flows, declining fisheries, water quality problems, and levee erosion are among the many problems associated with water transfers from the Delta (San Joaquin County 1992).

Solid Waste
The San Joaquin County Solid Waste Division is the lead for the administration of solid wastes and the operation of related facilities. The San Joaquin County Environmental Health Department is involved in administering local and state regulations regarding waste management and has been appointed as the Local Enforcement Agency (LEA) in the unincorporated areas (San Joaquin County 1992).

Impact Discussion:

a -e) The proposed project will be placing scour mitigation measures within Littlejohns Creek. This project is within San Joaquin County right-of-way and is on an existing channel. Therefore, the project will have no impact.

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

Impact Discussion:

a) San Joaquin County Department of Public Works is proposing placing scour mitigation measures within Littlejohns Creek. Noise associated with construction activities could result in the disturbance of nesting special-status and protected non-special status migratory birds and raptors, if present in the area. Also, construction will be within a low flow period reducing conflicts with any fisheries migrating through the area. To avoid the construction-related impacts, SJCDPW will require a qualified biologist to conduct a pre-construction survey for nesting birds if construction occurs within the breeding/nesting season and observe fish and/or water levels. The proposed project will be working within the channel. Project permits (404, 401, LSSA, CVFPB), SWPPP and general construction permit will govern any mitigation required for water quality. Therefore, the proposed project will have less than significant impact with mitigation.

b-c) San Joaquin County Department of Public Works is proposing placing scour mitigation measures within Littlejohns Creek. Therefore, the project will have no impact.

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Stanley Road Bridge Scour Mitigation Project
Bridge No. 29C-112

Natural Environment Study

Stanley Road Bridge (29C-112) Scour Mitigation Project
San Joaquin County, California
Township 1 North, Range 9 East, Section 19
7.5′ USGS Quadrangle: Peters, California (1981)
District 10-SJ-Stanley Road-PM
Federal Project No. 5929(224)

January 2014

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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April 2014

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Department of Transportation
and
SAN JOAQUIN COUNTY
Department of Public Works

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Summary

The San Joaquin County Department of Public Works (County) is proposing to improve existing scour protection and revetment in response to scour and channel degradation within Littlejohns Creek at the Stanley Road Bridge (29C-112).

This Natural Environment Study has been prepared to evaluate the potential effects of the proposed project on special-status plant and animal species, waters of the United States, and other sensitive biological resources (e.g., nesting birds, bats roosts, and riparian habitat). A field assessment of the biological study area (BSA) was conducted on April 22, 2012. The total area of the BSA is approximately 0.96 acre.

Based on the review of habitat requirements of regionally occurring special-status species and the results of the field assessment, the BSA does not provide suitable habitat for special-status plant species. The BSA provides marginal to poor quality habitat for nine special-status animal species. These species include: hardhead (*Mylopharodon conocephalus*), western pond turtle (*Emys marmorata*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), yellow warbler (*Dendroica petechia*), yellow-breasted chat (*Icteria virens*), and tricolored blackbird (*Agelaius tricolor*). Potential impacts and recommended avoidance and minimization measures for special-status animal species are addressed.

Suitable habitat for migratory birds and nesting raptors is present within the BSA and vicinity. Cliff swallows (*Petrochelidon pyrrhonota*), barn swallows (*Hirundo rustica*), 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 field assessment, and inactive cliff swallow nests were observed. Potential impacts on nesting birds and recommended avoidance and minimization measures are addressed.

No potential bat roosting habitat (i.e., crevices and/or gaps in bridge structure) were observed on the Stanley Road Bridge structure. No disturbance to potential bat roosting habitat, including potential roost trees, is anticipated to result from project implementation.

Upland riparian habitat is present in the BSA. Potential impacts on riparian habitat and recommended avoidance and minimization measures are addressed.

Aquatic habitat is present in the BSA. Aquatic habitat within the BSA is expected to support populations of native and non-native warmwater fish species. Aquatic habitat within the BSA does not provide holding, spawning or rearing habitat suitable for special-status anadromous fish species such as Chinook salmon (*Oncorhynchus tshawytscha*) or steelhead (*Oncorhynchus mykiss* ssp. *irideus*). Potential impacts on aquatic habitat and recommended avoidance and minimization measures are addressed.

The project will require the following environmental permits: authorization from the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act for discharge of dredged or fill material into waters of the United States, a water quality certification from the Central Valley Regional Water Quality Control Board pursuant to Section 401 of the Clean Water Act, and a Streambed Alteration Agreement from the California Department of Fish and Wildlife pursuant to Section 1602 of the California Fish and Game Code.

Table of Contents

Summary i

List of Abbreviated Terms iii

Chapter 1. Introduction 1
- 1.1. Project History 1
- 1.2. Project Description 1
  - 1.2.1. Location 1
  - 1.2.2. Proposed Project Action 1
  - 1.2.3. Vegetation Clearing 3
  - 1.2.4. Construction of Cofferdams and Access Ramp 3
  - 1.2.5. Work Area Dewatering 5
  - 1.2.6. Excavation 5
  - 1.2.7. Installation of Filter Fabric and Rock Slop Protection 5
  - 1.2.8. Site Rehabilitation 6
  - 1.2.9. Project Impact Area 6
  - 1.2.10. Conservation Measures 6

Chapter 2. Study Methods 10
- 2.1. Regulatory Requirements 10
  - 2.1.1. Federal Endangered Species Act 10
  - 2.1.2. Federal Clean Water Act Section 404 10
  - 2.1.3. Federal Migratory Bird Treaty Act 10
  - 2.1.4. Executive Order 11990 (Wetlands) 11
  - 2.1.5. Executive Order 13112 (Invasive Species) 11
  - 2.1.6. Executive Order 11988 (Floodplain Management) 11
  - 2.1.7. Fish and Game Code Section 2081, California Endangered Species Act 12
  - 2.1.8. Fish and Game Code Section 3503, Birds of Prey 12
  - 2.1.9. Fish and Game Code Section 3513, Migratory Birds 12
  - 2.1.10. Fish and Game Code, "Fully Protected" Species 12
  - 2.1.11. Fish and Game Code Section 1600, Lake or Streambed Alteration 13
- 2.2. Studies Required 14
- 2.3. Personnel and Survey Dates 15
- 2.4. Agency Coordination and Professional Contacts 15
- 2.5. Limitations That May Influence Results 15

Chapter 3. Results: Environmental Setting 16
- 3.1. Description of Existing Biological and Physical Conditions 16
  - 3.1.1. Study Area 16
  - 3.1.2. Physical Conditions 16
  - 3.1.3. Biological Conditions 17
- 3.2. Special-Status Species 19
- 3.3. Waters of the United States 21
- 3.4. Other Sensitive Biological Resources 21
  - 3.4.1. Migratory Birds and Raptors 21
  - 3.4.2. Riparian Habitat 22
  - 3.4.3. Native and Non-Native Fish 22

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation 25
- 4.1. Potential Impacts on Special-Status Plant Species 25
- 4.2. Potential Impacts on Special-Status Animal Species 25

4.2.1. Hardhead and Other Fish Species 25
4.2.2. Western Pond Turtle 28
4.2.3. Swainson's Hawk 29
4.2.4. Burrowing Owl 31
4.2.5. White-Tailed Kite 32
4.2.6. Loggerhead Shrike 33
4.2.7. Yellow Warbler and Yellow-Breasted Chat 35
4.2.8. Tricolored Blackbird 36
4.3. Other Sensitive Biological Resources 36
4.3.1. Nesting Raptors and Migratory Birds 36
4.3.2. Riparian Habitat 38
4.4. Waters of the United States, Including Wetlands 39
4.4.1. Survey Results 39
4.4.2. Potential Impacts 39
4.4.3. Avoidance And Minimization Measures 39
4.4.4. Compensatory Mitigation 40
4.4.5. Cumulative Effects 40

Chapter 5. Results: Permits and Technical Studies for Special Laws or Conditions..... 41
5.1. Federal Endangered Species Act 41
5.2. Magnuson-Stevens Fishery Conservation and Management Act 41
5.3. Clean Water Act 41
5.4. Migratory Bird Treaty Act 41
5.5. Executive Order 13112 (Invasive Species) 42
5.6. California Endangered Species Act 42
5.7. California Fish and Game Code 42

Chapter 6. References 43
6.1. Literature Cited 43
6.2. Personal Communications 44

Appendix A **USFWS List**

Appendix B **CNDDB and CNPS Records**

Appendix C **Delineation of Waters of the United States**

Appendix D **Representative Photographs**

Appendix E **Review of Regionally Occurring Special-Status Species**

Figures

Figure 1. Study Area and Vicinity 2

Figure 2. Proposed Project 4

Figure 3. Habitat Types 18

Figure 4. Waters of the United States 23

Figure 5. Project Impact Areas 26

List of Abbreviated Terms

BSA	Biological Study Area
BMP	Best Management Practice
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
County	San Joaquin County Department of Public Works
CWHR	California Wildlife Habitat Relationships Program
CWA	Clean Water Act
DBH	Diameter at Breast Height
ESA	Endangered Species Act
°F	degrees Fahrenheit
MBTA	Migratory Bird Treaty Act
NES	Natural Environment Study
NRCS	Natural Resources Conservation Service
NSR	North State Resources, Inc.
OHWM	Ordinary High Water Mark
Project	Stanley Road Bridge Scour Mitigation Project
RSP	Rock Slope Protection
RWQCB	California Regional Water Quality Control Board
TCE	Temporary Construction Easement
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator

Chapter 1. Introduction

1.1. Project History

In response to scour and channel degradation within Littlejohns Creek at the Stanley Road Bridge, the San Joaquin County Department of Public Works (County) is proposing the Stanley Road Bridge Scour Mitigation Project (project) to improve existing scour protection and revetment. The purpose of this project is to ensure public safety by protecting the structural integrity of bridge footings and abutments. Scour protection and revetment will be constructed within approximately 0.14 acre (78 linear feet) of the existing earthen channel of Littlejohns Creek at the Stanley Road Bridge. An approximately 0.44-acre temporary construction easement (TCE) would be used for construction access, temporary cofferdams, in-stream access ramp, and staging. The existing Stanley Road right-of-way (approximately 0.33 acre) would be used for project access. The total biological study area (BSA) is approximately 0.96 acre.

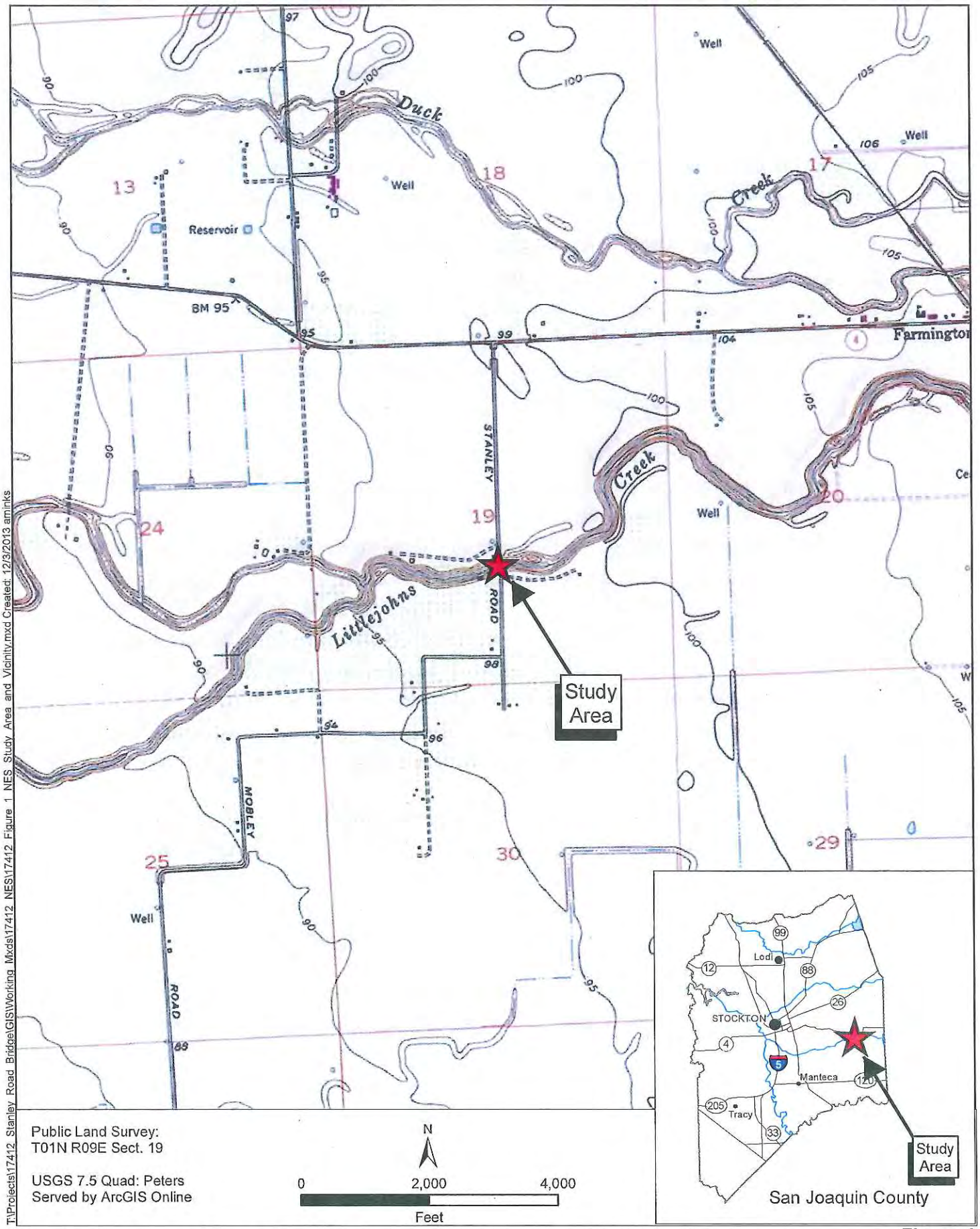
1.2. Project Description

1.2.1. Location

The BSA is located on and adjacent to Stanley Road at Littlejohns Creek approximately 0.7 mile south of Highway 4 (Farmington Road) and 1.6 miles west-southwest of the community of Farmington in San Joaquin County, California. The BSA is located in the *Peters, California* 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle: Section 19, Township 01N, Range 09E. The center of the BSA is near UTM Zone 10 0673349E, 4198774 N (NAD 1983). Figure 1 shows the location of the BSA.

1.2.2. Proposed Project Action

The County is proposing to improve existing scour protection and revetment within the project area. To accomplish this goal the existing earthen channel of Littlejohns Creek at the Stanley Road Bridge will be cut to a maximum depth of 1.5-4.5 feet, and then filled with a layer of California Department of Transportation (Caltrans) Light Class Rock Slope Protection (RSP) (average rock weight of approximately 200 pounds), matching both upstream and downstream conditions and channel grade. RSP will be installed on approximately 0.14 acre (78 linear feet) of the existing earthen channel of Littlejohns Creek at the Stanley Road Bridge. An approximately 0.44-acre TCE would be used for construction access, temporary cofferdams, in-stream access



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Stanley Road Bridge Scour Mitigation Project

Figure 1
Study Area and Vicinity

ramp, and staging (Figure 2). The existing Stanley Road right-of-way (approximately 0.33 acre) would be used for project access. Between 4 and 10 construction workers are expected to be on-site during any given day, depending on the construction phase. Project implementation is expected to occur over the course of about four weeks. A map showing the BSA and the proposed work areas is presented as Figure 2.

Construction is expected to be completed within 28 days and within a single construction season. In-stream construction work is not expected to exceed 18 days. Work is expected to start in spring or summer of 2014 or 2015 and would be completed before the fall rainy season. The construction date will be dependent on the timeline for obtaining the required funding and regulatory authorizations. No utility relocation is needed for this project.

1.2.3. Vegetation Clearing

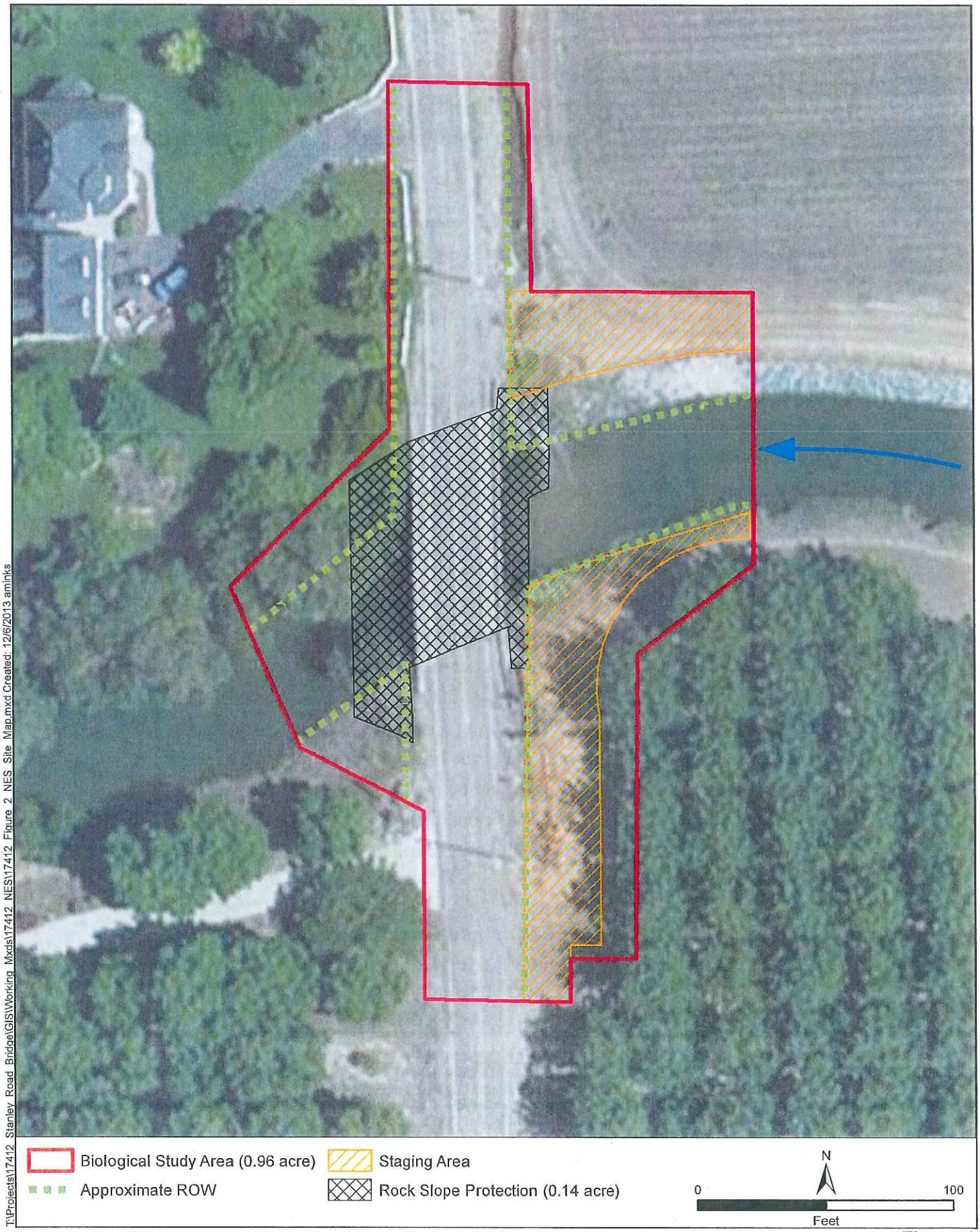
Vegetation clearing would be conducted to prepare for construction of the temporary cofferdams, access ramp and placement of RSP. A total of approximately 0.03 acre of riparian vegetation located west (downstream) of the Stanley Road Bridge would be removed during project implementation. Approximately 0.015 acre of vegetation would be cleared along the north bank of Littlejohns Creek and 0.015 acre of vegetation would be cleared along the south bank of Littlejohns Creek. Vegetation to be removed includes a small valley oak tree (*Quercus lobata*) (5–6 inches in diameter at breast height [dbh]) on the south bank and Himalayan blackberry (*Rubus armeniacus*) on the north bank. Vegetation clearing would be conducted by hand crews and is expected to take less than 1 day to complete.

1.2.4. Construction of Cofferdams and Access Ramp

Prior to construction of the cofferdams and access ramp, a flexible, large-diameter corrugated pipe would be placed within Littlejohns Creek to serve as a work area bypass for water flowing through the work area. The bypass would extend from the upstream to downstream sides of the BSA within Littlejohns Creek.

The upstream cofferdam would be constructed immediately downstream of the bypass inlet by depositing appropriately engineered fill up to 10 feet high (i.e., above existing grade) from bank to bank. The upstream cofferdam would be appropriately designed to support construction equipment (e.g., tractor and excavator) and serve as an access ramp for construction crews and equipment.

The downstream cofferdam would be constructed immediately upstream of the bypass outlet by depositing appropriately engineered fill up to 4 feet high (i.e., above existing



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Stanley Road Bridge Scour Mitigation Project

Figure 2
Proposed Project

grade) from bank to bank. The downstream cofferdam would likely remain below the ordinary high water mark (OHWM) of Littlejohns Creek. RSP would be placed on the downstream end of the lower cofferdam to stabilize the temporary fill and protect it from erosion.

Construction of the cofferdams and access ramp would take approximately 7 days using hand labor or mechanical equipment (e.g., a tractor and an excavator). This phase of the project would also require one or two haul trucks to import fill. The haul trucks would remain outside the banks of Littlejohns Creek.

1.2.5. Work Area Dewatering

Following cofferdam construction, any water remaining within the work area would be removed with a mechanical pump and discharged downstream. The dewatered portion of the creek bed would measure approximately 0.11 acre and would encompass about 140 linear feet of creek. Dewatering would be completed in about 1 day.

1.2.6. Excavation

After the work area is dewatered, about 0.14 acre (78 linear feet) of the channel bed and bank would be excavated to a depth ranging from 1.5-4.5 feet to create space for placement of RSP. On the south bank, beneath the bridge and near the pier, scour has undercut the existing gabions and has caused them to fail. Excavation of the channel at this location would require removal of the remaining gabions. Additionally, concrete blocks at the downstream end of the bridge must be removed to allow for installation of the RSP. Excavation would be performed using either hand labor or mechanical equipment (e.g., an excavator and haul truck), and would be completed in about 2 days. Excavated material would be stockpiled within the staging area outside the creek (Figure 2).

1.2.7. Installation of Filter Fabric and Rock Slop Protection

Following excavation, a layer of filter fabric would be placed by hand on the channel bed and banks to prevent erosion. RSP with a thickness of 1.5 feet would be placed atop the filter fabric in the channel and on the banks. RSP with a thickness of 2.5 feet would be placed within 3 feet of the bridge piers. The channel bed and banks would be excavated to depths sufficient to ensure that the RSP is flush with the desired upstream and downstream channel surface level. Gabion mats may be used along the banks to reduce the depth of excavation. The RSP placement area (i.e., the disturbed surface area) would occupy approximately 0.14 acre (78 linear feet) of Littlejohns

Creek. Installation of RSP and any necessary gabion mats would be completed in 4 to 6 days.

1.2.8. Site Rehabilitation

The cofferdams and bypass would be removed by using an excavator and hand crews, and the remaining fill dirt would be exported from the BSA. This would be completed in 2 to 3 days.

1.2.9. Project Impact Area

The project impact area would be contained within areas of proposed RSP (approximately 0.14 acre), associated TCE (approximately 0.44 acre), and the existing Stanley Road right-of-way (approximately 0.33 acre). The total area of potential ground disturbance is approximately 0.96 acre.

1.2.10. Conservation Measures

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

1.2.10.1. Conservation Measure #1 - Erosion and Sedimentation Control

Erosion control measures shall be implemented during construction of the proposed project. These measures shall conform to the provisions in Section 20-2 and 20-3 of the Caltrans Standard Specifications and the special provisions included in the contract for the project. Such provisions shall include the preparation of a Storm Water Pollution Prevention Plan, which describes and illustrates placement of Best Management Practices (BMPs) within the project site.

Erosion control measures to be included in the Storm Water Pollution Prevention Plan or otherwise implemented by the County include the following:

- To the extent practicable, activities that increase the erosion potential shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall 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 shall be maintained until permanent erosion control structures are in place.

- Vegetation clearing and ground disturbing activity shall be limited to the minimum area necessary for project implementation.

- Areas where woody vegetation needs to be removed shall be identified in advance of ground disturbance and shall be limited to only those areas that have been approved by the County. Within 10 days of completion of construction in those areas, weed-free mulch shall be applied to disturbed areas to reduce the potential for short-term erosion. Prior to a rain event, or when there is a greater than 50 percent 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 at the 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. Erosion control measures that employ monofilament netting shall be prohibited within the work area.

- If spoil sites are used, they shall be sited 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 shall be monitored and maintained in good working condition until disturbed areas have been revegetated.

1.2.10.2. CONSERVATION MEASURE #2 - PREVENTION OF ACCIDENTAL SPILLS

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

- A site-specific spill prevention plan shall be implemented 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 a minimum of 50 feet away from surface water features.

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

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

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

- Water inactive construction sites and exposed stockpile sites at least twice daily or until soils are stable.

- Pursuant to California Vehicle Code, all trucks hauling soil and other loose material to and from the construction site shall be covered or should maintain at least 6 inches of freeboard (i.e., minimum vertical distance between top of load and the trailer).

- Any topsoil that is removed during construction shall be stored on-site in piles not to exceed 4 feet in height to allow development of microorganisms prior to replacement of soil in 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.

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

- All equipment used for off-road construction activities shall be weed-free prior to entering the project area.
- If project implementation calls for mulches or fill, they shall be weed free.
- Any seed mixes or other vegetative material used for revegetation of disturbed sites shall consist of locally adapted native plant materials to the extent practicable.

Chapter 2. Study Methods

2.1. Regulatory Requirements

2.1.1. Federal Endangered Species Act

Section 9 of the federal Endangered Species Act of 1973 (ESA) prohibits acts of disturbance that result in the "take" of threatened or endangered species. As defined by the ESA, "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."

2.1.2. Federal Clean Water Act Section 404

The Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. CWA Section 404 establishes a permit program administered by the U.S. Army Corps of Engineers (Corps) to regulate the discharge of dredged or fill material into waters of the U.S. (including special aquatic sites such as wetlands). The purpose of the permit is to prevent water quality degradation and to prevent the overall loss of waters of the United States. Permits under CWA Section 404 are required for the placement of dredged or fill materials into all waters of the United States, including wetlands and "other waters" (e.g., streams). CWA Section 401 requires that an applicant for a Federal license or permit that allows activities resulting in a discharge to waters of the United States to obtain a state certification that the discharge complies with other provisions of CWA. The Lahontan Regional Water Quality Board administers the certification program for the eastern portion of Alpine County.

2.1.3. 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).

2.1.4. 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.

2.1.5. Executive Order 13112 (Invasive Species)

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

- 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 their introduction, and provide for environmentally sound control of invasive species.
- Promote public education on invasive species and the means to address them.
- 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, pursuant to 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.

2.1.6. 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.

2.1.7. Fish and Game Code Section 2081, California Endangered Species Act

Under the California Endangered Species Act (CESA), the California Department of Fish and Wildlife (CDFW) has the responsibility for maintaining a list of threatened and endangered species (California Fish and Game Code 2070). Additionally, the CDFW maintains a list of "candidate species," which are species that the 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." Pursuant to 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 affect a candidate species. Project-related impacts on CESA endangered or threatened species would be considered significant. Take of protected species incidental to otherwise lawful management activities may be authorized under Section 2081 of the Fish and Game Code.

2.1.8. Fish and Game Code Section 3503, Birds of Prey

Under Section 3503.5 of the 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.

2.1.9. Fish and Game Code Section 3513, Migratory Birds

Migratory birds are also protected in California. The 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.

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

2.1.11. 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 need a Streambed Alteration Agreement from the CDFW prior to proceeding with the activity. As a general rule, this requirement may also apply to any work undertaken within the floodplain of a stream or river containing fish or wildlife resources.

2.2. Studies Required

Special-status species and other sensitive biological resource having the potential to occur in the BSA were identified, 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:

- *Peters, California*, USGS 7.5-minute quadrangle;
- Aerial photographs of the BSA and vicinity;
- USFWS list of endangered and threatened species that may occur in the *Peters, California*, USGS 7.5-minute quadrangle and San Joaquin County (Appendix A);
- California Natural Diversity Data Base (CNDDB) (California Department of Fish and Wildlife 2013) and California Native Plant Society (CNPS) records for the *Peters, California* USGS 7.5-minute quadrangle and the eight surrounding quadrangles (Appendix B);
- California Wildlife Habitat Relationships (CWHR) Version 8.2 Species Summary Report for San Joaquin County; and
- Pertinent literature including *The Jepson Manual, Higher Plants of California, 1st edition* (Hickman 1993) and *The Jepson Manual: Vascular Plants of California, 2nd edition* (Baldwin et. al. 2012).

On April 22, 2012, John Hunt, biologist for North State Resources, Inc. (NSR), conducted a reconnaissance-level biological survey to characterize the habitats within the BSA and to evaluate the potential for project-related impacts on special-status species and other sensitive biological resources. He conducted the survey on foot and viewed all areas within the BSA. Potentially occurring special-status animals and other sensitive biological resources are discussed in Chapter 3.

On April 22, 2012, John Hunt (NSR biologist) conducted a delineation of waters of the United States within the BSA according to methods described in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid

West Region (U.S. Army Corps of Engineers 2008). A copy of the delineation report is provided in Appendix C.

2.3. Personnel and Survey Dates

John Hunt, NSR Biologist, performed the following tasks during visits to the proposed project site:

- Reconnaissance-level biological survey, April 22, 2012
- Delineation of waters of the United States, April 22, 2012

2.4. Agency Coordination and Professional Contacts

On November 25, 2013 a list (Document No. 131125110116 [Appendix A]) of federally listed, proposed, and candidate species with the potential to be affected by projects in San Joaquin County and the *Peters, California* USGS 7.5-minute quadrangle was obtained from the USFWS Sacramento Fish and Wildlife Office.

On January 10, 2014, Caltrans informally consulted with the USFWS via email about the potential for the federally-listed giant garter snake (*Thamnophis gigas*) to occur within the BSA (Kleinfelter, pers. comm. 2014). On January 13, 2014, the USFWS informed Caltrans via email that giant garter snake is unlikely to be present within the BSA (Schofield, pers. comm. 2014).

2.5. Limitations That May Influence Results

The April 22, 2012 botanical survey was timed appropriately to identify all species during their blooming period, except Ione manzanita (November–March), Palmate-bracted bird's-beak (May–October), Delta button-celery (June–October), Sanford's arrowhead (May–October), Suisun Marsh aster (May–November), and Greene's tuctoria (May–July). However, based on the informational review and field assessment, the BSA does not provide suitable habitat for any special-status plant species. All other field studies were conducted in accordance with applicable protocols and no problems were encountered. Therefore, no limitations that may influence the results of field studies associated with this project are known to have occurred.

Chapter 3. Results: Environmental Setting

3.1. Description of Existing Biological and Physical Conditions

3.1.1. Study Area

The 0.96-acre BSA is located on and adjacent to Stanley Road at its intersection with Littlejohns Creek. Land uses within and in the vicinity of the BSA include county right-of-way (ROW), orchard, row crops, and rural residences. Lands within and adjacent to the BSA are privately owned.

3.1.2. Physical Conditions

The topography of the BSA is generally characterized a nearly level. The primary topographic feature in the BSA is the channel of Littlejohns Creek, which bisects the BSA from east to west. Elevation within the BSA ranges from approximately 95 feet above mean sea level in agricultural and residential areas above the banks of Littlejohns Creek to approximately 80 feet above mean sea level within the channel of Littlejohns Creek. Precipitation in the BSA primarily falls as rain and the average annual rainfall is approximately 14 inches. Air temperatures range from an average January high of 54 °Fahrenheit (°F) to an average July high of 94 °F. The year-round average high temperature is approximately 75 °F (Western Regional Climate Center 2012).

A description of soil map units was obtained from the U.S. Department of Agriculture's Web Soil Survey and described in the *Custom Soil Resource Report for San Joaquin County, California* (Soil Survey Staff NRCS 2012). Only one soil map unit occurs within the BSA and is described as follows:

- Archerdale clay loam, 0 to 2 percent slopes (Soil Map Unit 107) – This is a non-hydric, well-drained alluvium derived from mixed parent material with a depth to restrictive layer and water table more than 80 inches.

Hydrology within the BSA is provided via Littlejohns Creek and adjacent agricultural and urban runoff. Littlejohns Creek is a perennial stream whose headwaters are located approximately 20 miles east of the BSA in the Sierra Nevada foothills. From its headwaters, Littlejohns Creek flows approximately 27 river-miles to the Farmington Flood Control Basin dam, approximately 5 miles east of the BSA, which controls flows within Littlejohns Creek. Downstream from the BSA, Littlejohns

Creek flows into French Camp Slough, approximately 12 miles west of the BSA and 3 miles south of the city of Stockton. French Camp Slough flows generally northwest for approximately 7 miles before it empties into Walker Slough and the San Joaquin River immediately southwest of the city of Stockton.

Runoff from surrounding agricultural lands and adjacent residences appears to provide a negligible contribution to hydrology within the BSA. A constructed agricultural ditch and an associated 24-inch culvert parallels the east side of Stanley Road in the northeast corner of the BSA. The ditch drains agricultural runoff from flood-irrigated row crops northeast of the BSA through the culvert into Littlejohns Creek

3.1.3. Biological Conditions

Habitat types were classified based on adaptations of vegetation descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988). Habitat types occurring within the BSA include perennial stream, riparian, orchards, urban, and barren. A map of habitat types within the BSA is presented as Figure 3. Representative photographs of the BSA are provided in Appendix D.

3.1.3.1. Perennial Stream

Littlejohns Creek is a slow-moving, perennial stream that bisects the BSA from east to west. The stream and its banks are highly managed for water control and conveyance. Upstream of the Stanley Road Bridge, the banks of Littlejohns Creek have been contoured to a uniform slope of approximately 45 degrees. The north bank upstream from Stanley Road and both banks at the bridge abutments are armored with revetment to just below the OHWM. The banks of Littlejohns Creek downstream of the Stanley Road Bridge are not armored with revetment, but are contoured to a relatively uniform slope. The south bank of Littlejohns Creek downstream of Stanley Road forms a small bench approximately 15 feet wide above the OHWM. The aquatic habitat within Littlejohns Creek consists entirely of slow-moving, open water with scattered patches of water-meal (*Wolffia globosa*) and duckweed (*Lemna* sp.). No emergent vegetation or wetlands are found in association with Littlejohns Creek within the BSA.

3.1.3.2. Riparian

A narrow, fragmented band of riparian vegetation occurs downstream (i.e., west) of Stanley Road within the BSA. Trees within this riparian area are limited to several small to mid-sized valley oaks. Scattered patches of Himalayan blackberry are mixed amongst an herbaceous layer dominated by tall annual willow herb (*Epilobium brachycarpum*), short-pod mustard (*Hirschfeldia incana*), rip gut brome (*Bromus diandrus*), and other ruderal species.

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Stanley Road Bridge Scour Mitigation Project

Figure 3
Habitat Types

3.1.3.3. ORCHARDS

Orchards within the BSA consisted entirely of walnut orchards with a ground cover largely dominated by nonnative annual grasses.

3.1.3.4. BARREN

Barren areas within and adjacent to the BSA consist of agricultural margins, access roads, and portions of the rocked banks along Littlejohns Creek upstream (i.e., east) of Stanley Road. These areas are actively cleared of vegetation by mechanical and/or chemical means.

3.1.3.5. URBAN

Urban habitat within the BSA consists of Stanley Road, residences on the north and south side of Littlejohns Creek west of Stanley Road and associated driveways accessing residences within the BSA. Vegetation within these areas consists largely of ornamental trees, shrubs, and lawns.

3.2. Special-Status Species

For the purpose of this evaluation, special-status plant species include plants that are (1) listed as threatened or endangered under the CESA or 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 1A, 1B, or 2.

No special-status plant species were detected during the reconnaissance-level survey conducted on April 22, 2012. 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 CNDDB and 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 their potential to occur (Appendix E, Table E-1). Based on this informational review and field assessment, the BSA does not provide suitable habitat for any special-status plant species.

Special-status animal species include species that are (1) listed as threatened or endangered under the CESA or 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, CWHR species summary report, USFWS species list, CNDDB and CNPS database records, and results of the field survey. For each species, 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 (Appendix E, Table E-2). Based on the review of habitat requirements and the results of the field assessment, nine special-status animal species were determined to have the potential to be adversely affected by the proposed project (Table 1). These species are further discussed in Chapter 5.

Table 1. Special-Status Animals with Potential to be Adversely Affected by the Proposed Project

Common Name *Scientific Name*	Status[1] (Fed/State)	General Habitat Description	Potential for Significant Impacts (Yes/No?)[2]
Hardhead *Mylopharodon conocephalus*	—/SC	Prefers deep, rock- and sand-bottomed pools of small to large rivers. Generally found in clear, deep, well-oxygenated streams with low flow.	Yes, low potential. Low quality habitat for species is present within BSA and the species may occur in very small numbers. Species presence and persistence is questionable as a result of poor quality habitat in conjunction with competition by non-native, warmwater fish species.
Western pond turtle *Emys marmorata*	—/SC	Slow water aquatic habitat with available basking sites. Hatchlings require shallow water with dense submergent or short emergent vegetation. Requires an upland oviposition site in the vicinity of the aquatic site.	Yes, low potential. Low quality habitat for species is present within BSA. Emergent structure is not present within the BSA and basking sites are limited to the relatively steep and narrow banks of Littlejohns Creek.
Swainson's hawk *Buteo swainsoni*	—/T	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; forages in adjacent livestock pasture, grassland, or grain fields.	Yes, high potential. Trees and shrubs within 0.5 mile of the BSA provide nesting habitat. A pair of Swainson's hawks was observed approximately 0.6 mile northeast of the BSA during the field assessment.
White-tailed kite *Elanus leucurus*	—/FP	Nests in tall shrubs and trees; forages in grasslands, agricultural fields, and marshes.	Yes, medium potential. Trees and shrubs within the BSA provide nesting habitat.
Burrowing owl *Athene cunicularia*	—/SC	Open grasslands and ruderal habitats. Requires burrows and similar habitat for roosting and nesting cover. May dig burrows in soft soil, but generally occupies existing burrows created by other species or manmade burrow structures.	Yes, low potential. Although no potential burrowing owl habitat is found within the BSA, low quality potential habitat is found along the boundary of the row crop fields immediately northeast of the BSA.

Common Name *Scientific Name*	Status[1] (Fed/State)	General Habitat Description	Potential for Significant Impacts (Yes/No?)[2]
Loggerhead shrike *Lanius ludovicianus*	—/SC	Forages in open grassland habitats throughout the Central Valley of California. Nests in shrubs and trees.	Yes, medium potential. Trees and shrubs within the BSA provide nesting habitat and the irrigated row crops to the northwest provide suitable foraging habitat.
California yellow warbler *Dendroica petechia brewsteri*	—/SC	Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.	Yes, low potential. Poor quality habitat is present in the northwestern corner of the BSA. Himalayan blackberry in this area will be partly removed during project implementation.
Yellow-breasted chat *Icteria virens*	—/SC	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.	Yes, low potential. Poor quality habitat is present in the northwestern corner of the BSA. Himalayan blackberry in this area will be partly removed during project implementation.
Tricolored blackbird *Agelaius tricolor*	—/SC	Breeds near fresh water, primarily in dense emergent vegetation, but may also nest in blackberry, rose, willow thickets, and small trees in open country, rangeland, and cropland and near marshes or wetlands.	Yes, low potential. Poor quality habitat is present as riparian thickets of Himalayan blackberry undergrowth in the western portion of the BSA. Vegetation in this area will be partly removed during project implementation.

[1]Federal and State Codes: T = Threatened; SC = Species of Special Concern; FP = Fully Protected Species.

[2] No = The BSA and immediate vicinity do not support habitat for the species.

Low = The BSA and immediate vicinity provide only limited or marginal habitat for the species, the BSA may be outside the characteristic range of the species, or the species rarely occurs in the project region. The species was not observed within the BSA.

Medium = The BSA and/or immediate vicinity provides suitable, but not ideal habitat conditions. The species was not observed within the BSA.

High = The BSA and/or immediate vicinity provides ideal habitat conditions. The species was observed in the BSA or is known to occur in the BSA.

3.3. Waters of the United States

A delineation of waters of the United States within the BSA was conducted on April 22, 2012 (Appendix C). Waters of the United States within the BSA consist of perennial stream (Littlejohns Creek) and occupy a total of 0.23 acre (209 linear feet). Figure 4 illustrates the boundaries of waters of the United States within the BSA.

3.4. Other Sensitive Biological Resources

3.4.1. Migratory Birds and Raptors

Raptor species (birds of prey) and migratory birds, other than those listed as special-status species, could nest in the vicinity of the BSA. All raptor species and their nests are protected from take according to California Fish and Game Code. All migratory

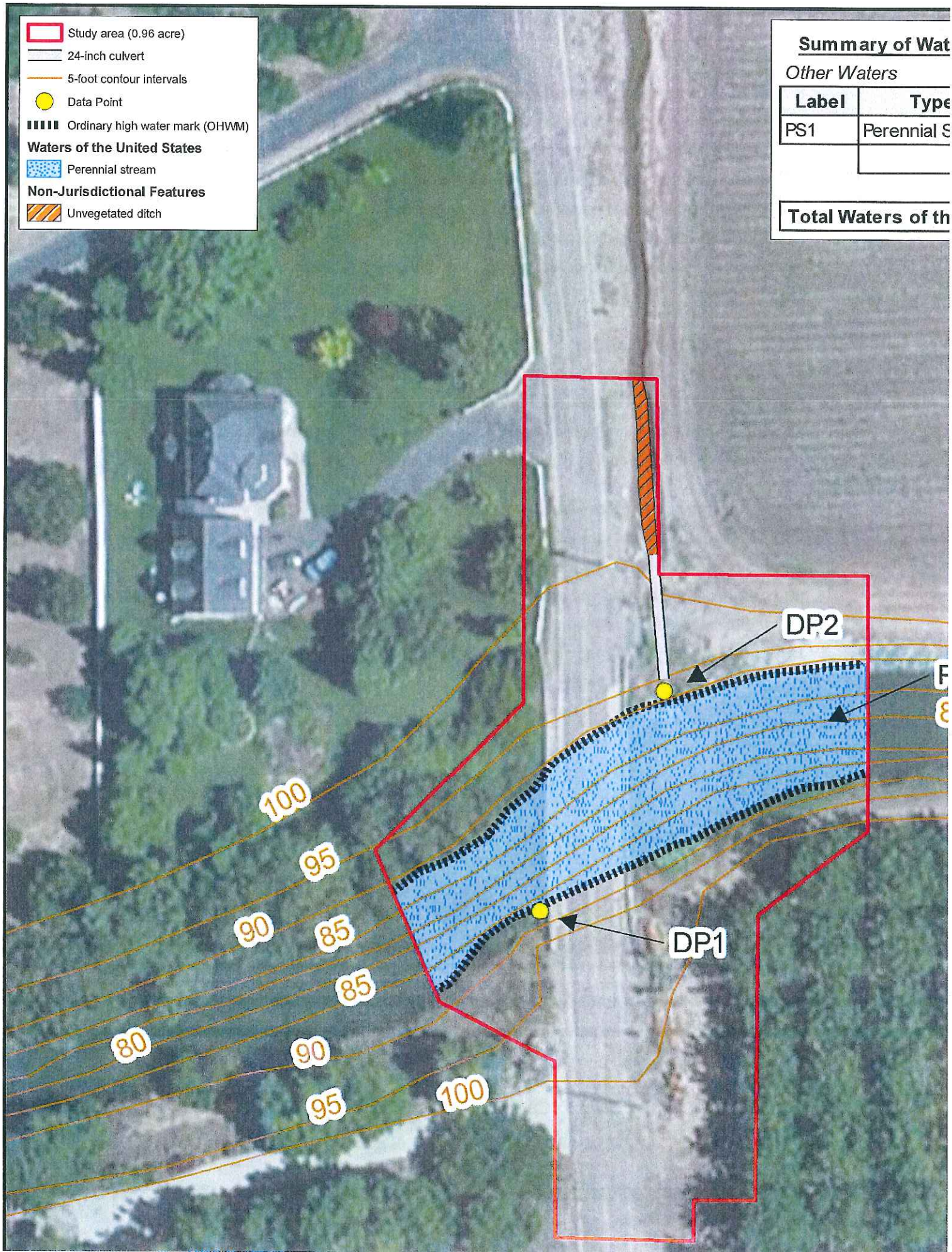
birds and their nests are protected from take under the federal MBTA. Cliff swallows (*Petrochelidon pyrrhonota*), barn swallows (*Hirundo rustica*), black phoebes (*Sayornis nigricans*), and other migratory birds are known to build nests under artificial structures such as bridges. The existing bridge structure was visually surveyed for evidence of previous migratory bird nesting activity (e.g., remnant mud nests) during the field assessment. Inactive cliff swallow nests were observed on the Stanley Road Bridge and indicate previous nesting by this species on the bridge structure.

3.4.2. Riparian Habitat

Riparian habitat is generally considered to be a sensitive natural community and is present in the BSA. Riparian habitat occurs as a narrow, fragmented corridor of valley oak and Himalayan blackberry along Littlejohns Creek. This riparian habitat provides food, shade, shelter, nesting sites and other resources for wildlife.

3.4.3. Native and Non-Native Fish

Native non-native fish, such as Sacramento pike-minnow (*Ptychocheilus grandis*), green sunfish (*Lepomis cyanellus*), and black bass (*Micropterus* spp.) have the potential or are known to occur within Littlejohns Creek in the BSA. Common carp (*Cyprinus carpio*) and mosquito fish (*Gambusia affinis*) were observed within Littlejohns Creek during the site visit on April 22, 2012.



Summary of Wat

Other Waters

Label	Type
PS1	Perennial S

Total Waters of th

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

A discussion of sensitive biological resources, potential impacts, and mitigation measures is presented below. A map of temporary and permanent project impacts within the BSA is presented as Figure 5.

4.1. Potential Impacts on Special-Status Plant Species

The BSA does not contain suitable habitat for regionally occurring special-status plants. Implementation of the proposed project is not expected to adversely affect any special-status plant species. No mitigation is required.

4.2. Potential Impacts on Special-Status Animal Species

As discussed in Chapter 3, nine special-status animal species were determined to have the potential to be impacted by the project. These species include hardhead, western pond turtle, Swainson's hawk, white-tailed kite, burrowing owl, loggerhead shrike, California yellow warbler, yellow-breasted chat, and tricolored blackbird.

A discussion of the regulatory status, habitat requirements, potential for occurrence, potential project-related impacts, avoidance and minimization measures, and cumulative effects for each of these species is provided below.

With the implementation of the avoidance and minimization measures presented in Section 5.3 (below), the proposed project is not expected to adversely affect any special-status animal species.

4.2.1. Hardhead and Other Fish Species

Hardhead is listed as a state species of special concern. Hardheads are typically found in well-oxygenated low- to mid-elevation streams, with deep gravel-bottom pools (McGinnis 2006).

4.2.1.1. Survey Results

Hardhead prefer clear, relatively deep, well-oxygenated low-flow streams. Littlejohn's Creek provides very low habitat potential. Hardhead may occur in very low numbers within the BSA; however, persistent populations are not expected due to poor habitat conditions and competition from non-native warm-water fishes. No

Area of potential effect (0.96 acre)

Construction easement (0.44 acre)

Temporary Impacts:

Cofferdam (0.03 acre; 30 feet)

Dewatered channel access (0.02 acre; 22 feet)

Existing revetment (0.03 acre)

Ordinary high water mark

Permanent Impacts:

New RSP: In-stream (0.08 acre; 79 feet)

New RSP: Riparian areas (0.03 acre)

N

0 50

Feet

T:\Projects\17412 Stanley Road Bridge\GIS\Working Mxds\17412 NES\17412 Figure 5 NES Impacts Map.mxd Created: 12/2/2013 lhunt

Stanley Road Bridge Scour Mitigation Project

Figure 5
Project Impact Areas

suitable spawning habitat for this species (i.e., well-oxygenated rocky or gravel substrate) is found within the BSA.

4.2.1.2. PROJECT IMPACTS

Because project implementation would involve modification or alteration of the streambed, as well as the stream bank, project implementation has the potential for limited short-term impacts on hardhead, as well as other native and non-native fish within and adjacent to the BSA.

It is anticipated that temporary cofferdams (about 0.03 acre; Figure 5) would be constructed both upstream and downstream of the work area, with flexible bypass pipes that could be moved within the channel as necessary. A pumping system would dewater the work area between the cofferdams (about 0.10 acre). Excavation of the existing earthen channel bottom and banks would occur to a maximum depth of 4.5 feet. Because of the depth of the existing channel bottom and steep banks, it is expected that a temporary ramp would be constructed in order to provide equipment access to the work area.

Potential adverse impacts on hardhead include stress, injury or mortality resulting from: dewatering of the work area; exclusion from and prevention of passage through the work area; sedimentation and turbidity; spills of fuel, oil, or other hazardous materials, and other pro-related disturbance.

4.2.1.3. AVOIDANCE AND MINIMIZATION

In addition to Conservation Measures provided in Chapter 1, the following measures shall be implemented to avoid or minimize the potential for significant impacts on hardhead and other fish species.

Measure 1	The dewatered work area and disturbance to in-stream and riparian habitat shall be kept to the minimum area necessary to perform work.
Measure 2	Erosion control measures, such as installation of filter fabric, temporary rocking, and/or installation of a t-pipe shall be installed at the bypass outflow to minimize potential for erosion of the streambed downstream of the work area.
Measure 3	Prior to in-channel work and during the dewatering activities, a qualified biologist shall monitor the area and

remove any fishes from within the work area and safely relocate them into Littlejohns Creek. All fish removed from the work area shall be documented and released into Littlejohns Creek outside of the work area. Erosion control measures that employ monofilament netting shall be prohibited within the work area.

Measure 4 A maximum 0.2-inch (5-millimeter) diameter mesh screen will be used to cover the intake pipe on all pumps used for dewatering the work area within the cofferdams.

4.2.1.4. COMPENSATORY MITIGATION

None required.

4.2.1.5. CUMULATIVE EFFECTS

Implementation of the avoidance and minimization measures outlined above will avoid significant impacts on hardhead and other native fishes. No permanent impacts on fish passage through the BSA would result from project implementation. The project would not result in cumulatively considerable adverse impacts on hardhead and other native fishes.

4.2.2. Western Pond Turtle

Western pond turtle is listed as a species of special concern by the CDFW. This species is found in a wide range of aquatic habitats with emergent structure for basking and feeding. Western pond turtles also utilize adjacent upland sites for nesting, often travelling great distances over land to suitable nesting sites.

4.2.2.1. POTENTIAL FOR OCCURRENCE

Habitat for western pond turtles within the BSA is marginal, with no emergent structure (e.g., emergent snags or rock structures) and potential basking sites limited to the banks of Littlejohns Creek. Western pond turtle was not observed during the site visit. Low quality nesting habitat is found along the south bank of Littlejohns Creek downstream of Stanley Road.

4.2.2.2. PROJECT IMPACTS

Because project implementation would involve modification or alteration of the streambed, as well as the stream bank, project implementation has the potential for limited short-term impacts on western pond turtle. Potential adverse impacts on

western pond turtle include stress, injury or mortality to individuals or their nests resulting from: site access by project vehicles and equipment, heavy equipment operation, installation of cofferdams and RSP, and excavation activities; temporary loss of habitat and movement corridors during installation of bypass and cofferdams, work area dewatering and installation of RSP; sedimentation and turbidity resulting from work within the channel of Littlejohns Creek; and fuel and oil spills within the banks of Littlejohns Creek.

4.2.2.3. AVOIDANCE AND MINIMIZATION

In addition to Conservation Measures provided in Chapter 1 and Avoidance and Minimization Measures 1–2 above, the following measure shall be implemented to avoid or minimize the potential for significant impacts on western pond turtle.

Measure 5 If western pond turtles are encountered within the BSA during construction, work activity in the immediate vicinity will cease until any individuals have left the work area.

Measure 6 Prior to initiation of construction activities, workers shall participate in environmental awareness training provided by a qualified biologist. The training shall instruct workers regarding: 1) how to identify the turtle; 2) the habitats used by the turtle; 3) the potential for turtle egg clutches (i.e., nest sites) to be discovered during vegetation clearing; and 4) what to do if a turtle or suspected egg clutch is encountered during construction activities.

4.2.2.4. COMPENSATORY MITIGATION

None required.

4.2.2.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on western pond turtle.

4.2.3. Swainson's Hawk

Swainson's hawks are a state-listed threatened species. In the Central Valley, this species generally nests in isolated stands of trees and along forested edges near open habitats, such as annual grasslands and row crops that provide foraging habitat. The

nesting season (nesting building to post-fledging) for this species generally occurs between April 1st and July 30th (Swainson's Hawk Technical Advisory Committee 2000), but some active nesting activity may occur into August.

4.2.3.1. SURVEY RESULTS

Although the April 22, 2012 reconnaissance-level biological survey was not intended to follow Swainson's hawk survey protocol, a pair of Swainson's hawks was observed approximately 0.6 mile northeast of the BSA above a cluster of farmhouse trees on private property. Additionally, there are 16 CNDDB records of Swainson's hawks nesting within 10 miles of the BSA. Row crops to the northeast of the BSA provide potential foraging habitat for Swainson's hawk. Bands of riparian habitat and isolated stands of trees within 0.5 mile of the BSA provide potential nesting habitat for this species.

4.2.3.2. PROJECT IMPACTS

If Swainson's hawks are nesting within 0.25 mile of the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment (Swainson's Hawk Technical Advisory Committee 2000). No significant impacts on Swainson's hawk foraging habitat are anticipated to result from project implementation.

4.2.3.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for significant impacts on Swainson's hawk.

Measure 7 To the extent practicable, construction activities shall be conducted outside of the nesting season or towards the end of the nesting season (e.g., conduct activities from August through September). If construction activities are conducted completely outside of the nesting season (i.e., after August 31), no further measures are necessary. If construction activities are to occur during the nesting season, the following measure shall be implemented.

Measure 8 A minimum of one pre-construction survey for active Swainson's hawk nests within 0.25 mile (where accessible) of the project area shall be conducted by a qualified biologist within 15 days prior to the initiation

of construction activities. If any Swainson's hawk nests are identified, appropriate conservation measures (as determined by a qualified biologist) shall be implemented. These measures may include, but are not limited to establishing a construction-free buffer zone around the active nest site (600 feet), biological monitoring of the active nest site, and delaying construction activities in the vicinity of the active nest site until the young have fledged.

4.2.3.4. COMPENSATORY MITIGATION

None required.

4.2.3.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on Swainson's hawk.

4.2.4. Burrowing Owl

Burrowing owl is listed as a species of special concern by the CDFW. This species is found in grasslands and open ruderal or agricultural lands in the Central Valley. Burrowing owls require burrows and similar ground-level cavities (e.g., abandoned culverts, rock cavities, and man-made nest structures) for nesting and roosting. In the Central Valley, the nesting season for this species occurs between February 1 and August 31 (California Burrowing Owl Consortium 1993; California Department Fish Game 2012).

4.2.4.1. SURVEY RESULTS

Marginal potential habitat for burrowing owl is found on the levees and untilled areas fringing row crops and Littlejohns Creek immediately northeast of the BSA. Although these areas contain few ground squirrel burrows, burrowing owls have been recorded from similar ruderal row crop margins within the San Joaquin Valley. During the April 22, 2012 site visit, no evidence (e.g., whitewash, feathers pellets) of burrowing owl occupancy was observed. There are three CNDDB records of burrowing owls nesting within 10 miles of the BSA.

4.2.4.2. PROJECT IMPACTS

If burrowing owls are nesting near the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to

nest abandonment. No direct impacts on potential burrowing owl nesting habitat is anticipated to result from project implementation.

4.2.4.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for significant impacts on burrowing owl.

Measure 9 Pre-construction surveys for active burrows within 500 feet (where accessible) of the project activities shall be conducted by a qualified biologist within 15 days prior to the initiation of construction activities. If any active burrows are identified, appropriate conservation measures (as determined by a qualified biologist) shall be implemented. These measures may include, but are not limited to establishing a construction-free buffer zone around active burrows, biological monitoring of the burrows, delaying construction activities in the vicinity of active burrows during the nesting season, and relocating owls during the non-nesting season (passive relocation) from burrows that will be disturbed.

4.2.4.4. COMPENSATORY MITIGATION

None required.

4.2.4.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on burrowing owls.

4.2.5. White-Tailed Kite

White-tailed kites are a California fully protected species. This species generally nests in tall shrubs or trees and is found in a variety of relatively open to open habitats such as ruderal agricultural settings, open scrub lands, and grasslands throughout the Central Valley of California. In the Central Valley, the nesting season for this species occurs between March and August (California Department of Fish and Game 2008).

4.2.5.1. SURVEY RESULTS

Though there are no CNDDB recorded occurrences for white-tailed kite within 10 miles of the BSA, habitat within and adjacent to the BSA provides potential foraging and nesting habitat for white-tailed kite.

4.2.5.2. PROJECT IMPACTS

If white-tailed kites are nesting within or near the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.2.5.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for significant impacts on white-tailed kite.

Measure 10 Implement Avoidance and Minimization Measure 7. If construction activities during the nesting season cannot be avoided, pre-construction surveys for nesting white-tailed kites and other raptors within 500 feet (where accessible) of the project area shall be conducted by a qualified biologist within 15 days prior to the initiation of construction activities. Areas to be surveyed shall be limited to those areas subject to increased disturbance as a result of construction activities. Areas where existing traffic, human activity, etc. is greater or equal to construction-related disturbance need not be surveyed. If any active white-tailed kite nests are identified, appropriate conservation measures (as determined by a qualified biologist) shall be implemented. These measures may include, but are not limited to establishing a construction-free buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities in the vicinity of the active nest site until the young have fledged.

4.2.5.4. COMPENSATORY MITIGATION

None required.

4.2.5.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on white-tailed kite.

4.2.6. Loggerhead Shrike

Loggerhead shrike is listed as a species of special concern by the CDFW. This species is generally found in open grasslands, relatively open scrubs and ruderal agricultural

settings throughout the Central Valley of California. Loggerhead shrikes are tree or shrub nesters which generally require barbed-wire fences, thorn bushes or similar barbed structures for impaling and storing prey items. In the Central Valley, the nesting season for this species occurs between March and August (California Department of Fish and Game 2008).

4.2.6.1. SURVEY RESULTS

Potential low quality nesting and foraging habitat is found within and adjacent the BSA.

4.2.6.2. PROJECT IMPACTS

If loggerhead shrikes are nesting within the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.2.6.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for significant impacts on loggerhead shrike.

Measure 11 Implement Avoidance and Minimization Measure 7. If construction activities during the nesting season cannot be avoided, pre-construction surveys for nesting loggerhead shrikes and other migratory birds shall be conducted by a qualified biologist within 15 days prior to the initiation of construction activities. The survey shall be conducted in accessible areas within 250 feet of the project area. If active nests are observed, appropriate conservation measures (as determined by a qualified biologist) shall be implemented. These measures may include, but are not limited to establishing a construction-free buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities in the vicinity of the active nest site until the young have fledged. In general, the avoidance buffer shall be a minimum of 50 feet. However, the size of the avoidance buffer may be increased or decreased as determined by the monitoring biologist based on the planned construction activities, the sensitivity of the species to disturbance, the setting

of the nest site, the concealment of the nest from project activities, and other ecological factors.

4.2.6.4. COMPENSATORY MITIGATION

None required.

4.2.6.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on loggerhead shrike.

4.2.7. Yellow Warbler and Yellow-Breasted Chat

Yellow warbler and yellow-breasted chat are listed as species of special concern by the CDFW. Yellow warbler and yellow-breasted chat nest in similar habitat and are generally found nesting in association with dense riparian vegetation. In the Central Valley, the nesting season for these species occurs between mid-April and mid-August (California Department of Fish Game 2008).

4.2.7.1. SURVEY RESULTS

Though there are no CNDDB recorded occurrences for yellow warbler or yellow-breasted chat within 10 miles of the BSA. Marginal potential nesting habitat is found within and adjacent to the BSA in riparian habitat along the north bank of Littlejohns Creek downstream from the Stanley Road Bridge.

4.2.7.2. PROJECT IMPACTS

If yellow warblers or yellow-breasted chats are nesting within the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.2.7.3. AVOIDANCE AND MINIMIZATION

Avoidance and Minimization Measure 11 shall be implemented to avoid or minimize the potential for significant impacts on yellow warbler and yellow-breasted chat.

4.2.7.4. COMPENSATORY MITIGATION

None required.

4.2.7.5. CUMULATIVE EFFECTS

With implementation of the above measure, the proposed project would not result in cumulatively considerable adverse impacts on yellow warbler and yellow-breasted chat.

4.2.8. Tricolored Blackbird

Tricolored blackbird is listed as a species of special concern by the CDFW. Tricolored blackbirds are colonial nesters that typically breed near fresh water, primarily in dense emergent vegetation, but may also nest in blackberry, rose, willow thickets and small trees in open country, rangeland, cropland, and near marshes or wetlands. In the Central Valley, the nesting season for this species occurs between mid-April and late July (California Department of Fish and Game 2008).

4.2.8.1. Survey Results

Though there are no CNDDB recorded occurrences for tricolored blackbird within 10 miles of the BSA. Marginal potential nesting habitat is found within and adjacent to the BSA in riparian habitat along the north bank of Littlejohns Creek downstream from the Stanley Road Bridge and marginal foraging habitat is found in row crops to the northeast of the BSA.

4.2.8.2. Project Impacts

If tricolored blackbirds are nesting within the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.2.8.3. Avoidance and Minimization

Mitigation Measure 11 shall be implemented to avoid or minimize the potential for significant impacts on tricolored blackbird.

4.2.8.4. Compensatory Mitigation

None required.

4.2.8.5. Cumulative Effects

With implementation of the above measure, the proposed project would not result in cumulatively considerable adverse impacts on tricolored blackbirds.

4.3. Other Sensitive Biological Resources

4.3.1. Nesting Raptors and Migratory Birds

All raptor species, including relatively common species and their nests, are protected from take according to California Fish and Game Code. All migratory birds and their nests are protected from take under the federal MBTA.

4.3.1.1. SURVEY RESULTS

Raptor species (birds of prey) and migratory birds, other than those listed as special-status species, could nest in the vicinity of the BSA. Inactive cliff swallow nests observed on April 22, 2012 indicate previous nesting by this species on the Stanley Road Bridge.

4.3.1.2. PROJECT IMPACTS

If migratory birds or raptor species are nesting within the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.3.1.3. AVOIDANCE AND MINIMIZATION

In addition to Avoidance and Minimization Measures 10 and 11, the following measure shall be implemented to avoid or minimize the potential for significant impacts on nesting raptors and migratory birds.

Measure 12

If construction activities during the nesting season cannot be avoided, existing cliff swallow nests on the Stanley Road Bridge shall be removed prior to the nesting season (i.e., between September 1 and February 1) to discourage continued nesting on this structure prior to construction. An effective deterrent to cliff swallow nesting should be installed on the Stanley Road Bridge prior to the nesting season. If a nesting deterrent is used, the deterrent shall be monitoring for integrity and effectiveness until the project is completed. If nesting activities cannot be effectively deterred, continuous removal of cliff swallow nest starts prior to egg-laying may be necessary before construction activities are initiated. Disturbance or removal of active nests (i.e., nests containing eggs) shall not be conducted without the appropriate authorization(s) from the USFWS and/or the CDFW.

4.3.1.4. COMPENSATORY MITIGATION

None required.

4.3.1.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on nesting raptors and migratory birds.

4.3.2. Riparian Habitat

Riparian habitat is generally considered be a sensitive natural community. Additionally, consideration of project effects on riparian habitat may be evaluated by the CDFW for projects requiring a Streambed Alteration Agreement or where work will be undertaken within the floodplain of a stream or river containing fish or wildlife resources.

4.3.2.1. POTENTIAL FOR OCCURRENCE

Because of the existing Stanley Road Bridge and extensive revetment of Littlejohns Creek, existing riparian habitat within the BSA is limited to narrow bands downstream of the Stanley Road Bridge. Riparian habitat along the south bank of Littlejohns Creek is dominated by ruderal herbaceous upland vegetation and scattered patches of Himalayan blackberry. Riparian habitat along the north bank of Littlejohns Creek is dominated by valley oak with an understory of Himalayan blackberry.

4.3.2.2. PROJECT IMPACTS

The anticipated area of riparian vegetation removal is limited to approximately 0.03 acre of vegetation located downstream and adjacent to the Stanley Road Bridge. Removal of riparian vegetation along the south side of Littlejohns Creek (approximately 0.015 acre) will include a small valley oak (5–6 inches dbh), scattered patches of Himalayan blackberry and ruderal herbaceous upland vegetation. Removal of riparian vegetation along the north side of Littlejohns Creek (approximately 0.015 acre) will be limited to an area dominated by Himalayan blackberry.

4.3.2.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for adverse effects on riparian habitat.

Measure 13	The dewatered work area and disturbance to in-stream and riparian habitat shall be kept to the minimum area necessary to perform work.
Measure 14	Aquatic and upland habitats to be avoided shall be flagged and/or signed. No construction activities or personnel shall be allowed to enter the avoidance areas.

Flagging and signage shall remain in place until construction activities are complete and shall be removed upon completion of construction.

4.3.2.4. COMPENSATORY MITIGATION

None required.

4.3.2.5. CUMULATIVE EFFECTS

With implementation of the above avoidance and minimization measure, the proposed project would not result in cumulatively considerable adverse impacts on riparian habitat.

4.4. Waters of the United States, Including Wetlands

4.4.1. Survey Results

A delineation of waters of the United States within the BSA was conducted on April 22, 2012. Waters of the United States within the BSA occupy a total of 0.23 acre (209 linear feet), and include only Littlejohns Creek, which is classified as a perennial stream.

4.4.2. Potential Impacts

Construction of the proposed project would involve installation of RSP across the channel of Littlejohns Creek, a water of the United States. Based on existing project detail, implementation of the proposed project would result in permanent impacts on approximately 0.08 acre (79 linear feet) of Littlejohns Creek. The permanent impacts would result from the placement of approximately 0.08 acre (79 linear feet) of RSP within Littlejohns Creek from approximately 10 feet upstream to approximately 25 feet downstream of the Stanley Road Bridge.

In addition to the permanent impacts, the proposed project would result in temporary impacts on approximately 0.05 acre (52 linear feet) of Littlejohns Creek. These impacts include construction of the temporary upstream and downstream cofferdams (approximately 0.03 acre; 30 linear feet), temporary dewatering of additional channel work area (approximately 0.02 acre; 22 linear feet) to provide access for installation of permanent RSP, and personnel and equipment working in the channel during excavation and placement of materials (Figure 5).

4.4.3. Avoidance And Minimization Measures

In addition to the Conservation Measures provided in Chapter 1 and Avoidance and Minimization Measures 10, 13, and 14, the following measures shall be implemented

to avoid or minimize the potential for significant impacts on waters of the United States.

Measure 15	Vegetation clearing shall be limited to the minimum area necessary within 200 feet of the banks of Littlejohns Creek.
Measure 16	Prior to any discharge of dredged or fill material into Littlejohns Creek, the required permits/authorizations shall be obtained from the Corps and the RWQCB. All terms and conditions of the required permits/authorizations shall be implemented.
Measure 17	Prior to any activities that would obstruct the flow of, or alter the bed, channel, or bank of Littlejohns Creek, notification of streambed alteration shall be submitted to the CDFW. If required, a streambed alteration agreement shall be obtained from CDFW and all conditions of the agreement shall be implemented.
Measure 18	Construction activities that will affect Littlejohns Creek shall be conducted during the dry season (i.e., late summer through early fall) to minimize erosion.
Measure 19	All waters of the United States that are temporarily affected by project construction shall be restored as close as practicable to their original contour and conditions within 10 days of the completion of construction activities.

4.4.4. Compensatory Mitigation

None required.

4.4.5. Cumulative Effects

With implementation of the avoidance and minimization measures, the proposed project would not result in cumulatively considerable adverse effects on waters of the United States.

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

5.1. Federal Endangered Species Act

No federally listed species would be affected by the project. No Endangered Species Act consultation with the USFWS or the National Marine Fisheries Service (NMFS) is required.

5.2. Magnuson-Stevens Fishery Conservation and Management Act

No Essential Fish Habitat (EFH) would be affected by the proposed project. No Magnuson-Stevens Fishery Conservation and Management Act consultation with the National Marine Fisheries Service (NMFS) is anticipated to be required.

5.3. Clean Water Act

To ensure compliance with terms and conditions of Section 404 of the 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 (NWP) program (likely NWP 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 of the CWA requires that a Water Quality Certification be obtained from the Regional Water Quality Control Board 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.

5.4. Migratory Bird Treaty Act

Avoidance and minimization measures would be implemented to avoid adverse effects on migratory birds and their nests.

5.5. Executive Order 13112 (Invasive Species)

Implementation of Conservation Measure #4 – Prevention of Spread of Invasive Species will avoid or minimize the potential for the spread of invasive species, as required by Executive Order 13112.

5.6. California Endangered Species Act

Avoidance and minimization measures would be implemented to avoid the take of state-listed species. Consultation with the CDFW under the California Endangered Species Act is not expected to be required.

5.7. California Fish and Game Code

The proposed project would involve work within Littlejohns Creek, a perennial 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.

Chapter 6. References

6.1. Literature Cited

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Western Regional Climate Center. 2012. Stockton Metropolitan Airport, Stockton, California (048558) climate summary: Monthly climate summary 10/1/1948 to 9/30/2012. Accessed March 8, 2013.

6.2. Personal Communications

Kleinfelter, R., Associate Environmental Planner/Biologist, Caltrans. January 10, 2014. Email to Jen Schofield of USFWS.

Schofield, J., Contract Biologist-Caltrans Liaison, USFWS. January 13, 2014. Email to Rachel Kleinfelter of Caltrans.

Appendix A USFWS List

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 131125110116

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

Branchinecta conservatio
- Conservancy fairy shrimp (E)

Branchinecta lynchi
- Critical habitat, vernal pool fairy shrimp (X)
- vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
- valley elderberry longhorn beetle (T)

Lepidurus packardi
- vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus
- delta smelt (T)

Oncorhynchus mykiss
- Central Valley steelhead (T) (NMFS)
- Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
- Central Valley spring-run chinook salmon (T) (NMFS)
- winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
- California tiger salamander, central population (T)

Rana draytonii
- California red-legged frog (T)

Reptiles

Thamnophis gigas
- giant garter snake (T)

Plants

Tuctoria greenei
- Greene's tuctoria (=Orcutt grass) (E)

Quads Containing Listed, Proposed or Candidate Species:

PETERS (461A)

County Lists

Listed Species

Invertebrates

Branchinecta conservatio
Conservancy fairy shrimp (E)
Critical habitat, Conservancy fairy shrimp (X)
S

Branchinecta longiantenna
longhorn fairy shrimp (E)
S

Branchinecta lynchi
Critical habitat, vernal pool fairy shrimp (X)
vernal pool fairy shrimp (T)
S

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)
S

Elaphrus viridis
delta green ground beetle (T)
S

Lepidurus packardi
Critical habitat, vernal pool tadpole shrimp (X)
vernal pool tadpole shrimp (E)
S

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)
S

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)
S

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)
S

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)

Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)
S

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)
Critical habitat, CA tiger salamander, central population (X)
S

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)
S

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)
S

Thamnophis gigas
giant garter snake (T)
S

Birds

Rallus longirostris obsoletus
California clapper rail (E)
S

Vireo bellii pusillus
Least Bell's vireo (E)
S

Mammals

Neotoma fuscipes riparia
riparian (San Joaquin Valley) woodrat (E)
S

Sylvilagus bachmani riparius
riparian brush rabbit (E)
S

Vulpes macrotis mutica
San Joaquin kit fox (E)
S

Plants

Amsinckia grandiflora
Critical habitat, large-flowered fiddleneck (X)
large-flowered fiddleneck (E)
S

Arctostaphylos myrtifolia
Ione manzanita (T)
S

Castilleja campestris ssp. succulenta
Critical habitat, succulent (=fleshy) owl's-clover (X)
succulent (=fleshy) owl's-clover (T)
S

Cordylanthus palmatus
palmate-bracted bird's-beak (E)
S

Lasthenia conjugens
Critical habitat, Contra Costa goldfields (X)
S

Orcuttia viscida
Critical habitat, Sacramento Orcutt grass (X)
Sacramento Orcutt grass (E)
S

Tuctoria greenei
Greene's tuctoria (=Orcutt grass) (E)
S

Candidate Species

Birds

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (C)
S

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may

result in take, then that agency must engage in a formal consultation with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be February 23, 2014.

Appendix B CNDDB and CNPS Records

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Peters (3712181) or Waterloo (3812112) or Linden (3812111) or Valley Springs SW (3812018) or Stockton East (3712182) or Farmington (3712088) or Manteca (3712172) or Avena (3712171) or Escalon (3712078))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAAAA01180	***Ambystoma californiense*** California tiger salamander	Threatened	Threatened	G2G3	S2S3	SSC
AAABF02020	***Spea hammondii*** western spadefoot	None	None	G3	S3	SSC
ABNKC19070	***Buteo swainsoni*** Swainson's hawk	None	Threatened	G5	S2	
ABNSB10010	***Athene cunicularia*** burrowing owl	None	None	G4	S2	SSC
ABPBXB0020	***Agelaius tricolor*** tricolored blackbird	None	None	G2G3	S2	SSC
AFCJB25010	***Mylopharodon conocephalus*** hardhead	None	None	G3	S3	SSC
AMACC10010	***Antrozous pallidus*** pallid bat	None	None	G5	S3	SSC
AMACD02011	***Eumops perotis californicus*** western mastiff bat	None	None	G5T4	S3?	SSC
ARADB36150	***Thamnophis gigas*** giant garter snake	Threatened	Threatened	G2G3	S2S3	
CTT44110CA	***Northern Hardpan Vernal Pool*** Northern Hardpan Vernal Pool	None	None	G3	S3.1	
ICBRA03030	***Branchinecta lynchi*** vernal pool fairy shrimp	Threatened	None	G3	S2S3	
ICBRA03150	***Branchinecta mesovallensis*** midvalley fairy shrimp	None	None	G2	S2	
ICBRA06010	***Linderiella occidentalis*** California linderiella	None	None	G3	S2S3	
ICBRA10010	***Lepidurus packardi*** vernal pool tadpole shrimp	Endangered	None	G3	S2S3	
IICOL48011	***Desmocerus californicus dimorphus*** valley elderberry longhorn beetle	Threatened	None	G3T2	S2	
IICOL4C020	***Lytta moesta*** moestan blister beetle	None	None	G2	S2	
IIHYM35030	***Andrena blennospermatis*** Blennosperma vernal pool andrenid bee	None	None	G2	S2	
IIHYM35210	***Andrena subapasta*** vernal pool andrenid bee	None	None	G1G3	S1S3	
PDAPI0Z0S0	***Eryngium racemosum*** Delta button-celery	None	Endangered	G1Q	S1	1B.1

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDCAM0C010	***Legenere limosa*** legenere	None	None	G2	S2.2	1B.1
PDPLM0C0X1	***Navarretia myersii ssp. myersii*** pincushion navarretia	None	None	G1T1	S1	1B.1
PDRAN0B1J0	***Delphinium recurvatum*** recurved larkspur	None	None	G3	S3	1B.2
PMALI040Q0	***Sagittaria sanfordii*** Sanford's arrowhead	None	None	G3	S3	1B.2
PMJUN011L1	***Juncus leiospermus var. ahartii*** Ahart's dwarf rush	None	None	G2T1	S1	1B.2
PMPOA6N010	***Tuctoria greenei*** Greene's tuctoria	Endangered	Rare	G1	S1	1B.1

Record Count: 25

CNPS Inventory of Rare and Endangered Plants

Status: Plant Press Manager window with 8 items - Mon. Nov. 25, 2013 13:06 ET c

Reformat list as: Standard List - with Plant Press controls

ECOLOGICAL REPORT

scientific	family	life form	blooming	communities	elevation	CNPS
Delphinium recurvatum	Ranunculaceae	perennial herb	Mar-Jun	•Chenopod scrub (ChScr) •Cismontane woodland (CmWld) •Valley and foothill grassland (VFGrs)/alkaline	3 - 790 meters	List 1B.2
Eryngium racemosum	Apiaceae	annual/perennial herb	Jun-Oct	•Riparian scrub (RpScr)(vernally mesic clay depressions)	3 - 30 meters	List 1B.1
Juncus leiospermus var. ahartii	Juncaceae	annual herb	Mar-May	•Valley and foothill grassland (VFGrs)(mesic)	30 - 229 meters	List 1B.2
Legenere limosa	Campanulaceae	annual herb	Apr-Jun	•Vernal pools (VnPls)	1 - 880 meters	List 1B.1
Navarretia myersii ssp. myersii	Polemoniaceae	annual herb	Apr-May	•Vernal pools (VnPls)/often acidic	20 - 330 meters	List 1B.1
Sagittaria sanfordii	Alismataceae	perennial rhizomatous herb emergent	May-Oct	•Marshes and swamps (MshSw) (assorted shallow freshwater)	0 - 650 meters	List 1B.2
Symphyotrichum lentum	Asteraceae	perennial rhizomatous herb	May-Nov	•Marshes and swamps (MshSw) (brackish and freshwater)	0 - 3 meters	List 1B.2
Tuctoria greenei	Poaceae	annual herb	May-Jul (Sep); Months in parentheses are uncommon.	•Vernal pools (VnPls)	30 - 1070 meters	List 1B.1

Appendix C Delineation of Waters of the United States

Stanley Road Bridge Scour Mitigation Project
Bridge No. 29C-112

Delineation of Waters of the United States

Stanley Road Bridge (29C-112) Scour Mitigation Project
San Joaquin County, California
Township 1 North, Range 9 East, Section 19
7.5′ USGS Quadrangle: Peters, California (1981)
District 10-SJ-Stanley Road-PM
Federal Project No. 5929(224)

January 2014

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Stanley Road Bridge Scour Mitigation Project

Delineation of Waters of the United States

Section 1 Summary **1**

Section 2 Project Location **1**
- 2.1 Proximity to Major Highways and Streets 1
- 2.2 USGS Hydrologic Unit 1

Section 3 Environmental Setting **3**
- 3.1 Current/Recent Land Use 3
- 3.2 Site Topography and Elevation 3
- 3.3 Climate 3
- 3.4 Hydrology/Hydrologic Features 4
- 3.5 Soil Map Units 4
- 3.6 Habitat Types 4

Section 4 Methods **6**
- 4.1 Field Delineation 6

Section 5 Results **7**
- 5.1 Characterization of Delineated Features 7
- 5.2 Conclusion 9

Section 6 References **9**

Figures

Figure 1. Project Location and Study Area 2
Figure 2. Soil Map Units 5
Figure 3. Waters of the United States 8

Appendices

Appendix A Routine Wetland Delineation Data Forms
Appendix B Representative Photographs

Section 1 Summary

The San Joaquin County Department of Public Works (County) conducted a delineation of waters of the United States occurring within the approximately 0.96-acres Stanley Road Bridge Scour Mitigation Project study area (study area). The study area is located on and adjacent to Stanley Road at Littlejohns Creek approximately 1.6 miles west-southwest of the community of Farmington in San Joaquin County, California. The County is proposing to install measures to reduce scour at the Stanley Road Bridge over Littlejohns Creek.

The field delineation was conducted on April 22, 2012, mapping total of 0.23 acres of waters of the United States in the study area. Waters of the United States within the study area are limited to a section of perennial stream (0.23 acres, 209 linear feet) along Littlejohns Creek. No wetlands occur within the study area.

This delineation of waters of the United States is subject to verification by the United States Army Corps of Engineers (USACE). All parties shall treat the information contained herein as preliminary until USACE provides written verification of the boundaries of its jurisdiction.

Section 2 Project Location

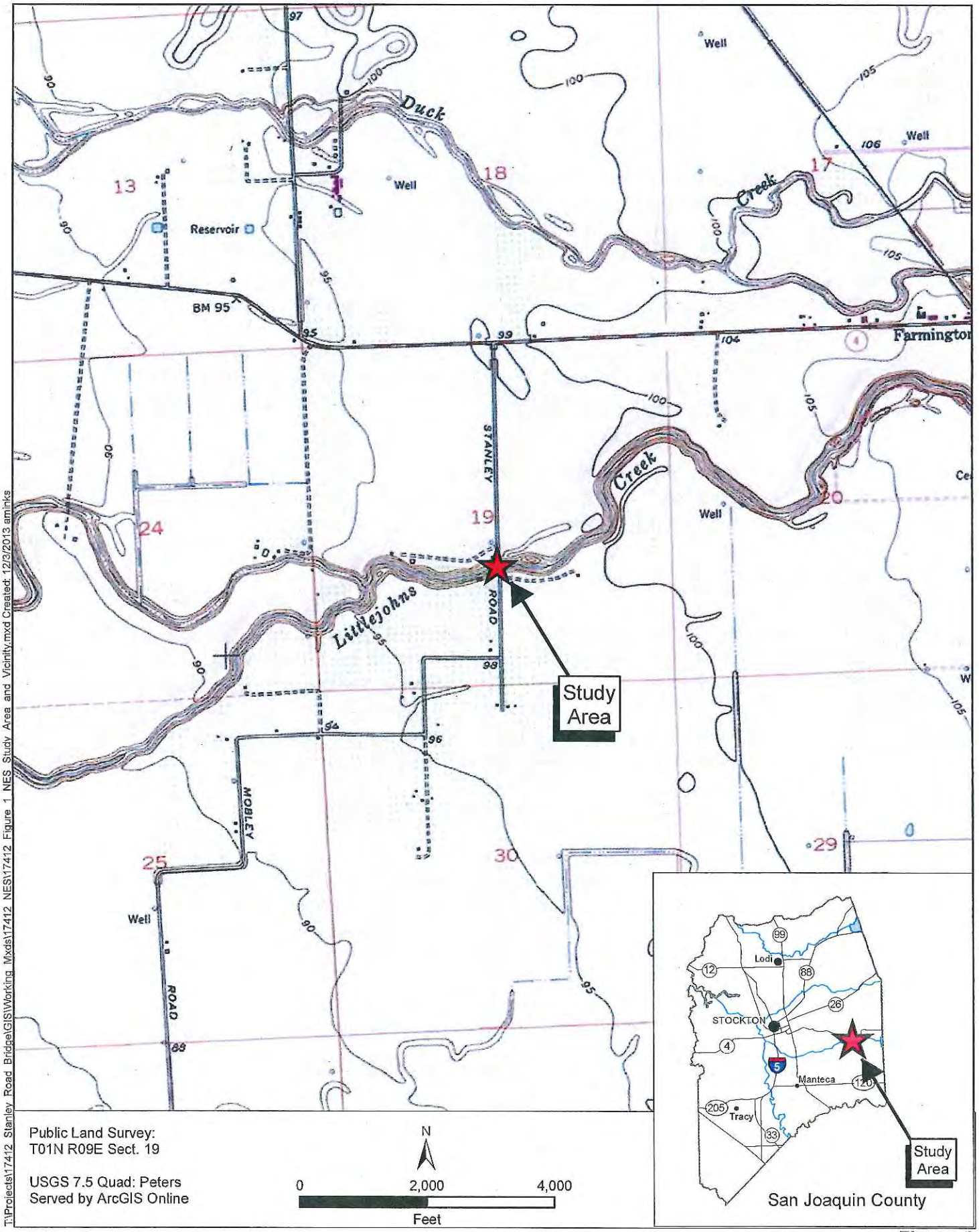
The 0.96-acres study area is located on and adjacent to Stanley Road at Littlejohns Creek approximately 0.7 mile south of Highway 4 (Farmington Road) and 1.6 miles west-southwest of the community of Farmington in San Joaquin County, California. The study area is located in the *Peters, California* 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle: Section 19, Township 01N, Range 09E, MDBM. The center of the study area is near UTM Zone 10 0673349E, 4198774 N (NAD 83 datum). The location of the study area is shown in Figure 1.

2.1 Proximity to Major Highways and Streets

Driving directions to the study area are as follows: from Stockton, California, take State Highway 99 to Exit 252B and merge to State Highway 4/Farmington Road heading east. Follow State Highway 4/Farmington Road approximately 12 miles east to Stanley Road. Follow Stanley Road approximately 0.7 mile south to Stanley Road Bridge. From Farmington, California, take State Highway 4/Farmington Road west approximately 1.5 miles. Follow Stanley Road approximately 0.7 mile south to Stanley Road Bridge.

2.2 USGS Hydrologic Unit

The study area is within the *Middle San Joaquin-Lower Merced-Lower Stanislaus* USGS Hydrologic Map Unit (Cataloging Unit Number 18040004).



T:\Projects\17412 Stanley Road Bridge\GIS\Working Mxds\17412 NES\17412 Figure 1 NES Study Area and Vicinity.mxd Created: 12/3/2013 aminks

Stanley Road Bridge Scour Mitigation Project

Figure 1
Study Area and Vicinity

Section 3 Environmental Setting

3.1 Current/Recent Land Use

The study area lies along Stanley Road which terminates within a rural residential area approximately 0.2 mile south of the study area. Agriculture is the primary land use within this region, with crops consisting largely of orchards, vineyards, and row crops. Land uses in the immediate vicinity of the study area include walnut orchards, row crops, farm-related structures, and low-density rural residences. Two residences are located immediately adjacent to the study area on the west side of Stanley Road; one residence is on the north side of Littlejohns Creek and the other is on the south side of the creek. Agricultural access roads are located near the northeast and southeast corners of the bridge, and residential driveways are located near the northwest and southwest corners of the bridge. Walnut orchards are located to the south and northwest of the study area and row crops are located to the northeast of the study area. Littlejohns Creek has been largely modified and incised as a result of landscape modification and vegetation clearing.

3.2 Site Topography and Elevation

The primary topographic feature in the study area is the channel of Littlejohns Creek, which bisects the study area from east to west. The elevation of the agricultural lands and residences above the banks of Littlejohns Creek are approximately 90 to 95 feet above mean sea level. The channelized banks of Littlejohns Creek slope at approximately 45 degrees to the Ordinary High Water Mark (OHWM) at approximately 80 to 85 feet above mean sea level.

3.3 Climate

Based on historical data collected at the Stockton Metropolitan Airport, Stockton, California (Western Regional Climate Center 2012), the climate within the study area is as follows:

> ***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 precipitation is approximately 14 inches.
>
> ***Air Temperature:*** Air temperatures in the study area range from an average January high of 54 °F to an average July high of 94 °F. The year-round average high temperature is approximately 75°F.
>
> ***Growing Season:*** The growing season (i.e., 50 percent probability of air temperature 28 °F or higher) in the study area is year round. The soil temperature regime is thermic.

3.4 Hydrology/Hydrologic Features

Littlejohns Creek and adjacent agricultural and urban runoff are the hydrologic features within the study area. Littlejohns Creek is a perennial stream whose headwaters are located approximately 20 miles east in the Sierra Nevada foothills. From its headwaters, Littlejohns Creek flows approximately 27 river-miles to the Farmington Flood Control Basin dam, approximately 5 miles east of the study area, which controls flows within Littlejohns Creek. Downstream from the study area, Littlejohns Creek flows into French Camp Slough, approximately 12 miles west of the study area and 3 miles south of the city of Stockton. French Camp Slough flows generally northwest for approximately 7 miles before it empties into Walker Slough which in turn empties into the San Joaquin River immediately southwest of the city of Stockton.

Runoff from surrounding agricultural lands and adjacent residences appears to provide a negligible contribution to hydrology within the study area. A constructed, unvegetated ditch drains south into a 24-inch culvert paralleling the east side of Stanley Road in the northeast corner of the study area. This ditch drains agricultural runoff from flood-irrigated row crops northeast of the study area through the culvert into Littlejohns Creek. Runoff from this culvert flows into Littlejohns Creek over existing rock revetment (Photograph 3-4, Appendix B). The drainage below the culvert outlet is over a constructed feature (i.e., rock revetment) and is not likely to qualify as waters of the United States because it: 1) is not a natural stream that has been altered; 2) was not excavated in waters of the United States; 3) does not have relatively permanent flowing or standing water; 4) does not connect two or more jurisdictional waters of the United States; and 5) does not drain natural water bodies (including wetlands) into the tributary system of a traditional navigable or interstate water (*Draft Guidance on Identifying Waters Protected by the Clean Water Act*, U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, April 2011).

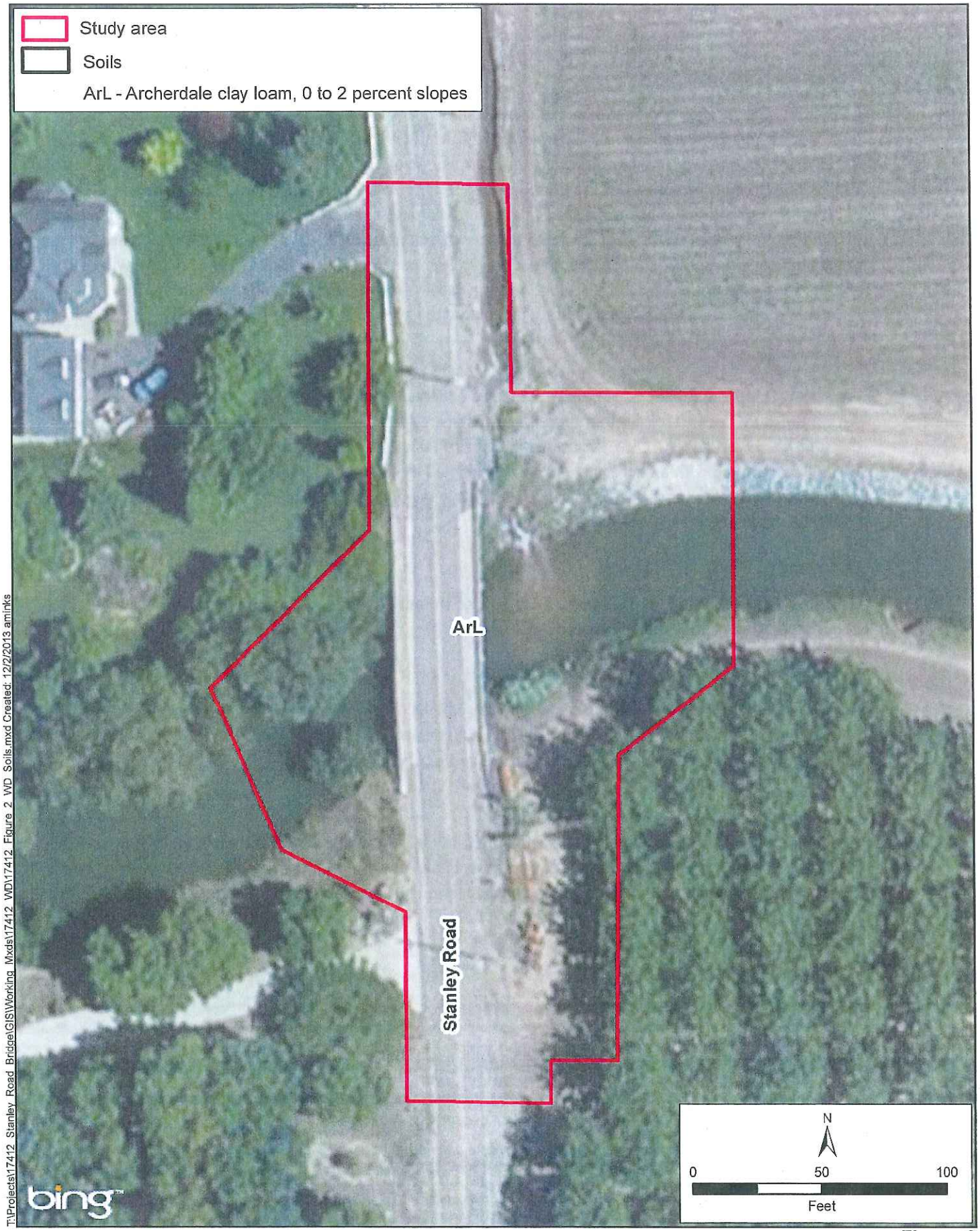
3.5 Soil Map Units

A description of soil map units was obtained from the U.S. Department of Agriculture's Web Soil Survey and described in the *Custom Soil Resource Report for San Joaquin County, California* (Soil Survey Staff NRCS 2012). Figure 2 shows the soil map units within the study area. Only one soil map unit occurs within the study area and is described as follows:

- **Archerdale clay loam, 0 to 2 percent slopes** –This is a non-hydric, well-drained alluvium derived from mixed parent material with a depth to restrictive layer and water table more than 80 inches.

3.6 Habitat Types

Habitat types were classified based on adaptations of vegetation descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988). Habitat types occurring within the study area include perennial stream, riparian, orchards, urban, and barren.



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Stanley Road Bridge Scour Mitigation Project

Figure 2
Soils Map Units

Perennial Stream

Littlejohns Creek, a perennial stream, bisects the study area. This stream and its banks appear to be highly managed for water control. Upstream of the Stanley Road Bridge, the banks of Littlejohns Creek have been rocked and contoured to a uniform slope of approximately 45 degrees. The banks of Littlejohns Creek downstream of the Stanley Road Bridge do not contain rock revetment, but are contoured to a relatively uniform slope. The aquatic habitat within Littlejohns Creek consists entirely of slow-moving, open water with scattered patches of water-meal (*Wolffia globosa*) (OBL[1]) and duckweed (*Lemna* sp.) (OBL). No emergent vegetation or wetlands are found in association with Littlejohns Creek within the study area. Common carp (*Cyprinus carpio*) and mosquito fish (*Gambusia affinis*) were observed feeding just below the surface of Littlejohns Creek.

Riparian

A narrow, fragmented band of riparian vegetation occurs downstream (i.e., west) of Stanley Road within the study area. Trees within this riparian area are limited to several small to mid-sized valley oaks (*Quercus lobata*) (FACU). Scattered patches of Himalayan blackberry (*Rubus armeniacus*) (FACU) are mixed with an herbaceous layer dominated by tall annual willow herb (*Epilobium brachycarpum*) (NI), short-pod mustard (*Hirschfeldia incana*) (NI), rip gut brome (*Bromus diandrus*) (NI), and other ruderal species.

Orchards

Orchards within the study area consisted entirely of walnut orchards with a ground cover largely dominated by nonnative annual grasses.

Barren

Barren areas within and adjacent to the study area consist of agricultural margins, access roads, and portions of rocked banks along Littlejohns Creek upstream (i.e., east) of Stanley Road. These areas are actively cleared of vegetation by mechanical and/or chemical means.

Urban

Urban habitat within the study area consists of Stanley Road, residences on the north and south side of Littlejohns Creek west of Stanley Road and associated driveways accessing residences within the study area. Vegetation within these areas consists largely of ornamental trees, shrubs, and lawns.

Section 4 Methods

4.1 Field Delineation

The delineation of waters of the United States within the study area was based on field observations of indicators for hydrophytic vegetation, hydrology, and hydric soils for wetlands, and on indicators of an OHWM for other waters of the United States. This method is consistent with the approach

[1] Wetland indicator status for plant species is based on *North American Digital flora: national Wetland Plant List, version 2.4.0 (Region 0)* (Lichvar and Kartesz 2009) and includes the following categories:
Facultative Upland (FACU) – Plants that usually occur in uplands, but also occur in wetlands
Obligate Upland (UPL) – Plants that occur almost always in uplands
Not an Indicator (NI) – Plants not included in Lichvar and Kartesz 2009

outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008), and USACE regulations. Taxonomic nomenclature for plant species is in accordance with *The Jepson Manual* (Baldwin et. al. 2012). Wetland indicator status for plant species was confirmed using the National Wetland Plant List, version 2.4.0 (Lichvar and Kartesz 2009).

Soils were examined in order to assess field indicators of hydric soils in accordance with the criteria outlined in *Field Indicators of Hydric Soils in the United States* (US Department of Agriculture, Natural Resources Conservation Service 2010). Soil colors were determined using a Munsell® soil color chart. The hydric status of each soil map unit occurring within the study area was reviewed using the *Web Soil Survey* (Soil Survey Staff, Natural Resources Conservation Service 2012).

Delineation of "other waters" was based on presence of an OHWM as defined in USACE regulations (33 CFR 328.3 and 33 CFR 328.4) and whether the feature qualified as tributary to navigable 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.

The field delineation was conducted on April 22, 2012. Routine wetland determination data forms are presented in Appendix A.

The boundaries of Littlejohns Creek and the associated data point location 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 OHWM was delineated by hand onto an orthorectified color aerial photograph (Microsoft 2012). After the field delineation, GPS data and the field mapping were overlain on an aerial photograph of the study area to generate the delineation map. The boundaries and acreages of waters of the United States within the study area are illustrated in Figure 3.

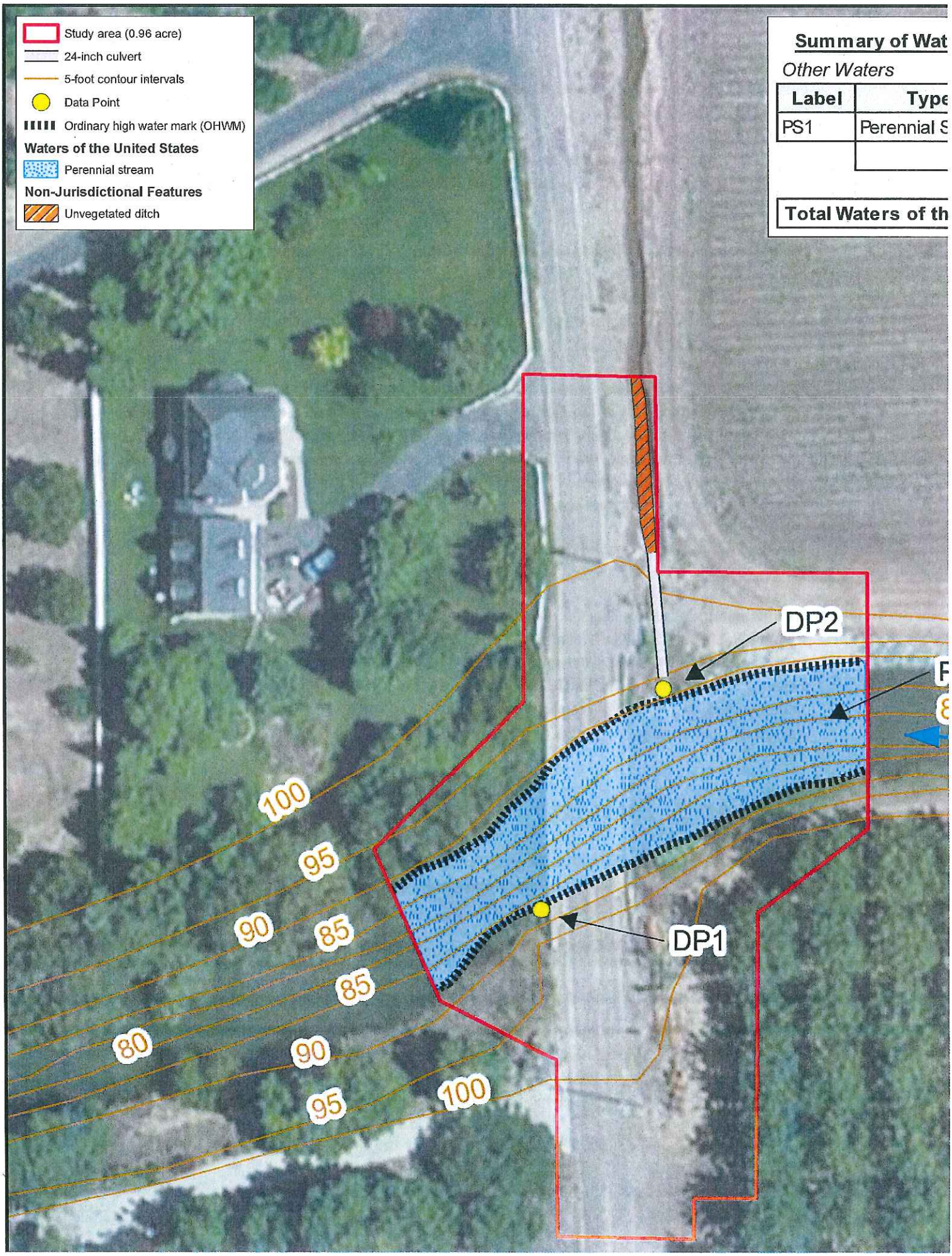
Section 5 Results

Waters of the United States within the study area occupy a total of 0.23 acres (209 linear feet), and are represented by one feature type: perennial stream (Figure 3). Appendix B contains representative photographs of waters of the United States.

5.1 Characterization of Delineated Features

Perennial Stream (PS1)

Perennial streams consist of natural drainages that usually convey waters throughout the year. These features exhibit indicators of being frequently flooded for a very long duration during the growing season. These indicators typically include watermarks, drift lines, sediment deposits, and drainage patterns. Also present is evidence of scour and deposition, a well-defined bed and bank, and a well-defined OHWM.


Study area (0.96 acre)
24-inch culvert
5-foot contour intervals
Data Point
Ordinary high water mark (OHWM)
Waters of the United States
Perennial stream
Non-Jurisdictional Features
Unvegetated ditch
Summary of Wat
Other Waters
Label
Type
PS1
Perennial S
Total Waters of th
DP2
DP1
100
95
90
85
85
80
90
95
100

Littlejohns Creek is a perennial stream (PS1) within the study area that is shown as a blue line on the *Peters, California* 7.5-minute USGS topographic quadrangle. Within the study area, the active channel of Littlejohns Creek has been contoured to accommodate predictable regulated flows as a result of the upstream Farmington Flood Control Basin dam. Within the study area, the OHWM of Littlejohns Creek was evidenced by bed and bank, drift deposits, and water marks. Downstream of Stanley Road, where the banks of the stream are not covered by rock bank protection, shelving was evident. No wetland features were observed within the OHWM of Littlejohns Creek. Within the study area, Littlejohns Creek is approximately 55 feet wide and 209 feet long.

5.2 Conclusion

A total of 0.23 acres (209 linear feet) of waters of the United States was delineated within the study area. No wetlands were observed within the study area. Waters of the United States identified within this report are subject to verification by USACE. All interested parties shall treat the information contained herein as preliminary pending written verification of jurisdictional boundaries by the USACE.

Section 6 References

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Appendix A

Routine Wetland Delineation Data Forms

North State Resources

Habitat Type Perennial Stream
Wetland Type NOT APPLICABLE

Wetland Determination Data Form - Arid West Region

Project/Site: Stanislaus Road Bridge City/County: San Joaquin Co. Sampling Date: 04/22/2012
Applicant/Owner: San Joaquin County State: CA Sampling Point: 1
Investigator(s): JOHN W. HUNT
Landform (hillslope, terrace, etc.) Perrenial Stream Local relief (concave, convex, none) Concave Slope % 0-3
Subregion (LRR) C Soil Map Unit Name: Archerdale Clay Loam
Are climatic/hydrologic conditions on the site typical for this time of year? Yes *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? Yes
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? ____ Other waters? X

USACE Jurisdiction

Adjacent to Waters ____ Tributary to Waters X 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 ____

Remarks Perennial stream - Littlejohn's Creek: OHWM mapped as evidenced by defined bed + bank, scour, drift deposits and water marks.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			

Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			

Herb Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
50%= ____ 20%= ____ Total Cover:			

Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators
____ Dominance Text is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? ____

* OHWM of Perennial Stream.

Sampling Point 1

Soils

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

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

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

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

Remarks Perrenial Stream - Littlejohns Creek.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes X No ____ Depth (inches) > 30 Wetland Hydrology? Yes X No ____

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

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

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

Remarks Perennial Stream - Littlejohn's Creek - OHWM evidenced by Bed + Bank, Water marks, and Drift + Sediment deposits

* Water Depth in channel > 30" deep and 25-30 feet across.

North State Resources

Habitat Type Rock Revetment Skirt

Wetland Determination Data Form - Arid West Region

Wetland Type NA

Project/Site: Stanley Road Bridge City/County: San Joaquin Co. Sampling Date: 04/22/2012

Applicant/Owner: San Joaquin County State: CA Sampling Point: (2)

Investigator(s): John W. Hunt

Landform (hillslope, terrace, etc.) Levee/Stream Bank Local relief (concave, convex, none) Sloped Slope % 30-40%

Subregion (LRR) C Soil Map Unit Name:

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

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

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 Other waters? N

USACE Jurisdiction

Adjacent to Waters X Tributary to Waters ____ Isolated (with interstate commerce) ____ Isolated (non jurisdictional) ____

Explain: Nonjurisdictional upland drainage for irrigated row crops.

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 X Navigable Water ____

→ Rock revetment on levee below culvert.

Remarks

Rock revetment below culvert draining irrigated row crops through levee along Littlejohns Creek.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover: ____			

Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover: ____			

Herb Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
50%= ____ 20%= ____ Total Cover: ____			

Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
50%= ____ 20%= ____ Total Cover: ____			

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

Dominance Test Worksheet

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

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

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators

____ Dominance Text is >50%

____ Prevalence Index is ≤ 3.0[1]

____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation? ____

No vegetation Rock.

Sampling Point 2

Soils

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

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

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

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

Remarks No evidence of frequent flooding or long-duration ponding. – No ~~evidence~~ rock revetment

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

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 No evidence of frequent flooding or long-duration ponding.

Appendix B

Representative Photographs

Photograph 1. View upstream (east) along Littlejohns Creek from Stanley Road. The banks have been contoured and armored with rock. Within the study area, streamside vegetation upstream of Stanley Road is regularly removed either chemically or mechanically. A row crop field is shown on the north bank (left side of photograph) and walnut orchards are shown on the south bank (right side of photograph).

Photograph 2. View downstream (west) along Littlejohns Creek from Stanley Road. The banks have been contoured but are not armored with rock. Within the study area, streamside vegetation downstream of Stanley Road is dominated by ruderal upland herbaceous vegetation and also includes scattered Himalayan blackberry and valley oaks.

Photograph 3. View north toward a constructed, unvegetated ditch that drains south into a 24-inch culvert (Photograph 4, below) paralleling the east side of Stanley Road in the northeast corner of the study area. This ditch drains agricultural runoff from flood-irrigated row crops northeast of the study area through the culvert into Littlejohns Creek. This culvert empties onto existing rock revetment along the banks of Littlejohns Creek. Runoff from this culvert flows into Littlejohns Creek over existing rock revetment. This drainage is not likely to qualify as waters of the United States because it: 1) is not a natural stream that has been altered; 2) was not excavated in waters of the United States; 3) does not have relatively permanent flowing or standing water; 4) does not connect two or more jurisdictional waters of the United States; and 5) does not drain natural water bodies (including wetlands) into the tributary system of a traditional navigable or interstate water (*Draft Guidance on Identifying Waters Protected by the Clean Water Act*, U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, April 2011).

Photograph 4. View of 24-inch culvert outlet that drains irrigation water from a constructed unvegetated ditch (Photograph 3, above) into Littlejohns Creek. This culvert empties onto existing rock revetment along the banks of Littlejohns Creek. Runoff from this culvert flows into Littlejohns Creek over existing rock revetment (. The drainage below the culvert outlet is over a constructed feature (i.e., rock revetment) and is not likely to qualify as waters of the United States because it: 1) is not a natural stream that has been altered; 2) was not excavated in waters of the United States; 3) does not have relatively permanent flowing or standing water; 4) does not connect two or more jurisdictional waters of the United States; and 5) does not drain natural water bodies (including wetlands) into the tributary system of a traditional navigable or interstate water (*Draft Guidance on Identifying Waters Protected by the Clean Water Act*, U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, April 2011).

Appendix D Representative Photographs

Photograph 1. View of the BSA upstream (east) along Littlejohns Creek from Stanley Road. The banks have been contoured and cleared of vegetation. The north bank (left side of photograph) has been armored with rock. Within the BSA, streamside vegetation upstream of Stanley Road is regularly removed either chemically or mechanically. A row crop field is present along the north bank and walnut orchards are present along the south bank (right side of photograph).

Photograph 2. View of the south bank of Littlejohns Creek upstream from Stanley Road. The bank at this location is primarily earthen with evidence of partial revetment (i.e., scattered pieces of broke concrete and rock). The vegetation along this bank appears to be regularly cleared. Himalayan blackberry is growing at along the banks at the toe of the levee. Walnut orchards can be seen in the background with spring growth of understory dominated by nonnative annual grasses.

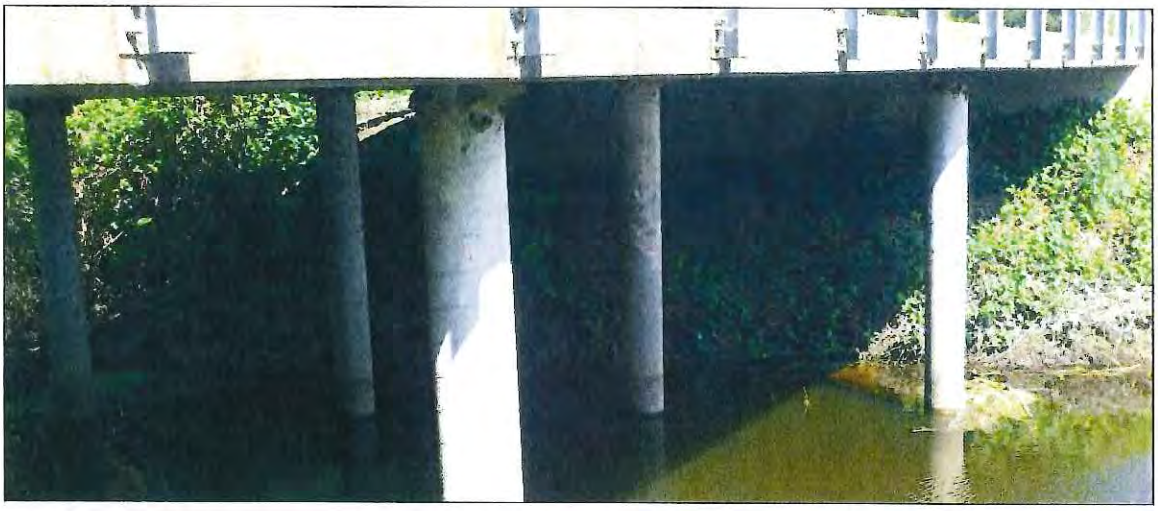
Photograph 3. View of the north bank of Littlejohns Creek upstream from Stanley Road. The bank at this location has been revetted with rock. The vegetation along this bank is regularly cleared. Sparse patches Himalayan blackberry, wild radish (*Raphanus sativa*), and water hemlock (*Conium maculatum*) were observed growing up through crevices in the revetment. A disked field being prepared for row crops can be seen in the background.

Photograph 4. View of constructed, unvegetated agricultural drainage ditch north of Littlejohns Creek along the east side of Stanley Road. This ditch carries drainage from flood irrigated row crops to the north and east of the BSA and drains south into Littlejohns Creek.

Photograph 5. View of the BSA downstream (west) along Littlejohns Creek from Stanley Road. The banks have been contoured but are not armored with rock. Within the BSA, streamside vegetation downstream of Stanley Road is dominated by ruderal upland herbaceous vegetation and also includes scattered Himalayan blackberry and valley oaks. In-stream vegetation is limited to duckweed (*Lemna* sp.) and water-meal (*Wolffia globosa*) forming a thin floating vegetative film. No emergent vegetation or wetlands were observed within the BSA.

Photograph 6. View upstream toward the BSA and Stanley Road. The banks have been contoured and cleared of vegetation. The south bank (right side of photograph) is dominated by herbaceous ruderal upland species and sparse patches of Himalayan blackberry along the banks. Riparian trees can be observed hanging over the north bank (left side of photograph) of Littlejohns Creek. A thin film of duckweed and water-meal missed with small-size floating woody debris can be observed on the surface of Littlejohns Creek in the foreground.

Photograph 7. View of the north bank downstream of the Stanley Road Bridge. A narrow band of riparian trees can be observed hanging over the north bank (left side of photograph) of Littlejohns Creek. Vegetation here is dominated by a valley oak with and understory of Himalayan blackberry.



Photograph 8. View of the north bank of Littlejohns Creek below the Stanley Road Bridge. Both banks of Littlejohns Creek below the bridge are revetted. Vegetation underneath the bridge is dominated by Himalayan blackberry.

Photograph 9. View of proposed staging area immediately south of Littlejohns Creek on the east side of Stanley Road. This area is largely unvegetated and is regularly used as a staging and access area for agricultural operations adjacent the BSA.

Appendix E Review of Regionally Occurring Special-Status Species

Appendix E-1. Review of Regionally Occurring Special-Status Plant Species

Common Name *Scientific Name*	Status[1] (Fed/State/RPR)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Recurved larkspur *Delphinium recurvatum*	—/—/1B.2	Chenopod scrub, cismontane woodland, valley and foothill grassland/alkaline. Elevation: 9–2,460 feet. Blooming period: March–June.	No. Habitat for species is not present within BSA.
Large-flowered fiddleneck *Amsinckia grandiflora*	E/E/1B.1	Cismontane woodland, valley foothill grassland. Elevation: 700–1,600 feet. Blooming period: April–May.	No. Habitat for species is not present within BSA.
Ione mananita *Arctostaphylos myrtifolia*	T/—/1B.2	Chaparral , cismontane woodland/acidic, Ione soil, clay or sandy. Elevation: 100–1,600 feet. Blooming period: November–March.	No. Habitat for species is not present within BSA.
Succulent owl's clover *Castilleja campestris* ssp. *succulenta*	T/E/1B.2	Vernal pools (often acidic). Elevation: 150–2,300 feet. Blooming period: April-May.	No. Habitat for species is not present within BSA.
Palmate-bracted bird's-beak *Chloropyron palmatus*	E/E/1B.1	Chenopod scrub, valley and foothill grassland (alkaline). Elevation: 0-500 feet. Blooming period: May–October.	No. Habitat for species is not present within BSA.
Contra Costa goldfields *Lasthenia conjugens*	E/—/1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland , vernal pools /mesic. Elevation: 0–1,600 feet. Blooming period: March–June.	No. Habitat for species is not present within BSA.
Sacramento Orcutt grass *Orcuttia viscida*	E/E/1B.1	Vernal pools. Elevation: 90–310 feet. Blooming period: April–July.	No. Habitat for species is not present within BSA.
Delta button-celery *Eryngium racemosum*	—/E/1B.1	Riparian scrub in vernally mesic clay depressions. Elevation: 9–98 feet. Blooming period: June–October.	No. No appropriate microsites (i.e. clay soils) not present within BSA.
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	—/—/1B.2	Valley and foothill grassland (mesic). Elevation: 98–751 feet. Blooming period: March–May.	No. Habitat for species is not present within BSA.
Legenere *Legenere limosa*	—/—/1B.1	Vernal pools. Elevation: 3–2,886 feet. Blooming period: April–June.	No. Habitat for species is not present within BSA.

Common Name *Scientific Name*	Status[1] (Fed/State/RPR)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Pincushion navarretia *Navarretia myersii* ssp. *myersii*	—/—/1B.1	Vernal pools/often acidic. Elevation: 65–1,082 feet. Blooming period: April–May.	No. Habitat for species is not present within BSA.
Sanford's arrowhead *Sagittaria sanfordii*	—/—/1B.2	Marshes and swamps (assorted shallow freshwater). Elevation: 0–2,132 feet. Blooming period: May–October.	No. Habitat for species is not present within BSA.
Suisun Marsh aster *Symphyotrichum lentum*	—/—/1B.2	Marshes and swamps (brackish and freshwater). Elevation: 0–9 feet. Blooming period: May–November.	No. Habitat for species is not present within BSA.
Greene's tuctoria *Tuctoria greenei*	E/R/1B.1	Vernal pools. Elevation: 98–3,509 feet. Blooming period: May–July (September).	No. Habitat for species is not present within BSA.

[1]Federal and State Codes: E = Endangered; T = Threatened; R = Rare.

RPR Codes and Extensions:

1B. Plants rare, threatened, or endangered in California and elsewhere.
- xx.1 Seriously endangered in California
- xx.2 Fairly endangered in California

[2]No = The BSA and immediate vicinity do not support habitat for the species. The species was not observed within the BSA.

Appendix F-2. Review of Regionally Occurring Special-Status Animal Species

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Invertebrates			
Conservancy fairy shrimp *Branchinecta conservatio*	E/—	Highly turbid, large vernal pools.	No. Habitat for species is not present within BSA.
Vernal pool fairy shrimp *Branchinecta lynchi*	T/—	Grass or mud-bottomed swales, earth slump or basalt-flow depression pools in grasslands.	No. Habitat for species is not present within BSA.
Vernal pool tadpole shrimp *Lepidurus packardi*	E/—	Grass or mud-bottomed swales in grasslands on old alluvial soils underlain by hardpan.	No. Habitat for species is not present within BSA.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/—	Elderberry shrubs associated with riparian forests that occur along rivers and streams.	No. No elderberry shrubs present within BSA.
Fishes			
Central Valley fall/late fall-run Chinook salmon ESU *Oncorhynchus tshawytscha*	—/SC	Spawn and rear in Sacramento and San Joaquin rivers and suitable perennial tributaries. Requires cool water temperatures for spawning, egg-incubation and juvenile rearing. Spawn in riffles with gravel and cobble. Spawn in riffles with gravel and cobble.	No. Habitat for species is not present within BSA.
Chinook salmon - Central Valley spring-run ESU *Oncorhynchus tshawytscha*	T/T	Enter the Sacramento River from late March through September, holding in cool water habitats through the summer, then spawning from mid-August through early October. Remnant runs remain in Butte, Mill, Deer, Antelope, and Beegum Creeks, tributaries to the Sacramento River.	No. Habitat for species is not present within BSA.

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Steelhead - Central Valley DPS *Oncorhynchus mykiss irideus*	T/—	Spawn and rear in Sacramento and San Joaquin rivers and their tributaries. Tends primarily to use tributaries of the Sacramento, Feather, Yuba, and lower American river drainages. Populations in the San Joaquin drainage have been reduced to a few small, isolated wild runs and some hatchery stock. Require cool, swift shallow water; clean, loose gravel for spawning; and runs and suitable large pools in which to rear and over-summer.	No. Habitat for species is not present within BSA.
Delta smelt *Hypomesus transpacificus*	T/E	Estuarine systems in the Sacramento-San Joaquin Delta. During low outflow years, in reaches with slow flow.	No. Habitat for species is not present within BSA.
Hardhead ***Mylopharodon conocephalus***	**—/SC**	**Prefers deep, rock and sand-bottomed pools of small to large rivers. Generally found in clear, deep, well-oxygenated streams with low flow.**	**Yes, low potential. Low quality habitat for species is present within BSA. Species may occur in very small numbers. Species presence and persistence is questionable as a result of poor quality habitat in conjunction with competition with non-native warm-water species.**
Amphibians			
California tiger salamander *Ambystoma californiense*	T/T;SC	Vernal or temporary pools in annual grasslands, or open stages of woodlands.	No. Habitat for species is not present within 1.5 miles of the BSA.
Western spadefoot *Spea hammondii*	—/SC	Grasslands with temporary pools.	No. Habitat for species is not present within 1.5 miles of the BSA.
California red-legged frog *Rana draytonii*	T/SC	Require aquatic habitat for breeding, also uses a variety of other habitat types including riparian and upland areas. Adults utilize dense, shrubby or emergent vegetation associated with deep-water pools with fringes of cattails & dense stands of overhanging vegetation.	No. BSA occurs outside of species range.
Foothill yellow-legged frog *Rana boylii*	—/SC	Cool, fast moving rocky streams in a variety of habitats.	No. Habitat for species is not present within 1.5 miles of the BSA.

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
		Reptiles	
Western pond turtle ***Emys marmorata***	**—/SC**	**Slow water aquatic habitat with available basking sites. Hatchlings require shallow water with dense submergent or short emergent vegetation. Requires an upland oviposition site in the vicinity of the aquatic site.**	**Yes, low potential. Low quality habitat for species is present within BSA. Emergent structure is not present within the BSA and basking sites are limited to the relatively steep and narrow banks of Littlejohns Creek.**
Giant garter snake *Thamnophis gigas*	T/T	Freshwater marshes and low gradient streams with emergent vegetation, upland basking sites and adequate active-season (May-October) water; adapted to drainage canals and irrigation ditches with mud substrate.	NO. The BSA is within the known range of this species. The nearest CNDDB record is a historic account located approximately 6 miles northeast along Duck Creek. No observations of this population have been recorded in the last 20 years, and the population was presumed extirpated after extensive surveys in the 1980s and 1990s.
		Birds	
White-tailed kite ***Elanus leucurus***	**—/FP**	**Nests in tall shrubs and trees, forages in grasslands, agricultural fields and marshes.**	**Yes, medium potential. Trees and shrubs within the BSA provide nesting habitat.**
Northern harrier *Circus cyaneus*	—/SC	Forages in marshes, grasslands and ruderal habitats; nests in extensive marshes and wet fields.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Swainson's hawk ***Buteo swainsoni***	**—/T**	**Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; forages in adjacent livestock pasture, grassland, or grain fields.**	**Yes, high potential. Trees and shrubs within 0.5 mile of the BSA provide nesting habitat. A pair of Swainson's hawks was observed approximately 0.6 mile northeast of the BSA.**
Bald eagle *Haliaeetus leucocephalus*	—/E;FP	Uncommon to common in riverine and open wetland habitats. Perches high in large, stoutly limbed trees, on snags or broken-topped trees, or on rocks near water. Roosts communally in winter in dense, sheltered, remote conifer stands.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Golden eagle *Aquila chrysaetos*	—/FP	Breeds on cliffs or in large trees or electrical towers, forages in open areas.	No. Nesting habitat for species is not present within 500 feet of the BSA.

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
California black rail *Laterallus jamaicensis coturniculus*	—/T;FP	Coastal and inland marsh habitat.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	C/E	Valley foothill and desert riparian habitats in scattered locations in California; requires densely foliaged, deciduous trees and shrubs, especially willows, for roosting and nesting.	No. Nesting habitat for species is not present within 0.5 mile of the BSA.
Burrowing owl *Athene cunicularia*	**—/SC**	**Open grasslands and ruderal habitats. Requires burrows and similar habitat for roosting and nesting cover. May dig burrows in soft soil, but generally occupies existing burrows created by other species or manmade burrow structures.**	**Yes, low potential. Although no potential burrowing owl habitat is found within the BSA, low quality potential habitat is found along the boundary of the row crop field immediately northeast of the BSA.**
Long-eared owl *Asio otus*	—/SC	Dense riparian and live oak thickets near meadow edges, and nearby woodland and forest habitats; also found in dense conifer stands at higher elevations.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Short-eared owl *Asio flammeus*	—/SC	Breeds in dense vegetation in open grassland and marshes.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Purple martin *Progne subis*	—/SC	Breeding habitat includes old-growth, multi-layered, open forest and woodland with snags; forages over riparian areas, forest, and woodlands.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Loggerhead shrike *Lanius ludovicianus*	**—/SC**	**Forages in open grassland habitats throughout the Central Valley of California. Nests in shrubs and trees.**	**Yes, medium potential. Trees and shrubs within the BSA provide nesting habitat and the irrigated row crops to the northwest provide foraging habitat.**
California yellow warbler *Dendroica petechia brewsteri*	**—/SC**	**Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.**	**Yes, low potential. Low quality nesting habitat is present as valley oak and a thicket of Himalayan blackberry undergrowth in the northwestern corner of the BSA. Himalayan blackberry in this area will be partly removed during project implementation.**

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Yellow-breasted chat ***Icteria virens***	**—/SC**	**Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.**	**Yes, low potential. Low quality nesting habitat is present as valley oak and a thicket of Himalayan blackberry undergrowth in the northwestern corner of the BSA. Himalayan blackberry in this area will be partly removed during project implementation.**
Tricolored blackbird ***Agelaius tricolor***	**—/SC**	**Breeds near fresh water, primarily in dense emergent vegetation, but may also nest in blackberry, rose, willow thickets and small trees in open country, rangeland, cropland and near marshes or wetlands.**	**Yes, low potential. Low quality nesting habitat is present as riparian thickets of Himalayan blackberry undergrowth in the western portion of the BSA. Vegetation in this area will be partly removed during project implementation.**
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	—/SC	Nests in emergent vegetation of swamps, marshes and wetlands.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Mammals			
Riparian (=San Joaquin Valley) woodrat *Neotoma fuscipes riparia*	E/SC	Riparian habitat and other areas supporting mixtures of trees and brush along the mainstem of the San Joaquin River.	No. BSA is outside of the known range of this species.
Western red bat *Lasiurus blossevillii*	—/SC	Generally roosts in trees along edge habitats. Prefers roost sites over dark ground cover with good cover above and open below.	No. Low quality roosting habitat is present as medium-sized trees along the northwestern boundary of the BSA, but this habitat will not be disturbed by project activity.
Townsend's big-eared bat *Corynorhinus townsendii*	—/SC	Roosts in colonies in caves, mines, tunnels, or buildings in mesic habitats. The species forages along habitat edges, gleaning insects from bushes and trees. Habitat must include appropriate roosting, maternity and hibernacula sites free from disturbance by humans.	No. Roosting habitat for this species is not present within BSA.
Pallid bat *Antrozous pallidus*	—/SC	Forages over many habitats; roosts in buildings, large oaks or redwoods, rocky outcrops and rocky crevices in mines and caves.	No. Roosting habitat for this species is not present within BSA.

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Western mastiff bat *Eumops perotis californicus*	—/SC	Forages over many habitats, requires tall cliffs or buildings for roosting.	No. Roosting habitat for this species is not present within BSA.
Riparian brush rabbit *Sylvilagus bachmani riparius*	E/E	Riparian areas with dense shrub layer, low-growing vines, some tall shrubs, and scrubby trees throughout San Joaquin Valley.	No. BSA is outside of the known range of this species.
Ringtail *Bassariscus astutus*	—/FP	Riparian habitats and in brush stands of most forest and shrub habitats. Dens in rock recesses, hollow trees, logs, snags, abandoned burrows or woodrat nests.	No. Denning habitat for species is not present within BSA.
San Joaquin kit fox *Vulpes macrotis mutica*	E/T	Open habitats in deserts, and grasslands.	No. Habitat for species is not present within BSA.
American badger *Taxidea taxus*	—/SC	Herbaceous, shrub, and open stages of most habitats with dry, friable soils.	No. Habitat for species is not present within BSA.

[1]Federal and State Codes: E = Endangered; T = Threatened; C = Candidate; SC = Species of Special Concern; FP = Fully Protected Species.

[2] No = The BSA and immediate vicinity do not support suitable habitat for the species.

Low = The BSA and immediate vicinity provide only limited or marginal habitat, or may be outside the characteristic range and/or very rare in project region. The species was not observed within the BSA.

Medium = The BSA and/or immediate vicinity provides suitable, but not ideal habitat conditions. The species was not observed within the BSA.

High = The BSA and/or immediate vicinity provides ideal habitat conditions. The species was observed in BSA or is known to occur in the BSA.

Bold font = The project has the potential to adversely affect this species.

Water Quality Assessment Report

Stanley Road Bridge (29C-112) Scour Mitigation Project

Stanley Road Bridge (29C-112) Scour Mitigation Project
San Joaquin County, California
Township 1 North, Range 9 East, Section 19
7.5′ USGS Quadrangle: Peters, California (1981)
District 10-SJ-Stanley Road-PM
Expenditure Authorization: 10-957025L

January 2013

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Water Quality Assessment Report

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January 2013

STATE OF CALIFORNIA
Department of Transportation
and
SAN JOAQUIN COUNTY
Department of Public Works

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The environmental review, certification and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S.C. 326.

Executive Summary

The San Joaquin County Department of Public Works (County), in cooperation with the California Department of Transportation - District 10 (Caltrans) and the Federal Highway Administration (FHWA), is proposing to perform a project to design a uniform channel section supporting Stanley Road Bridge with scour countermeasures to prevent channel degradation of Littlejohn's Creek. Recent history has shown that along Littlejohns Creek, the channel bed has experienced minor cutting in the upper reaches of the creek, increasing the side slopes. Streambed cutting is increased due to a constriction of the channel from the bridge abutments and piers. Stanley Road Bridge is located southeast of the City of Stockton in a rural area of the county that is surrounded by agricultural land. Construction would occur within previously disturbed areas of County right of way, while staging would require temporary easements on adjacent properties. The scope of work includes:

- Clearing and grubbing along the banks;
- Temporary installation of an access ramp and cofferdams, or alternative diversion methods, to access the channel during periods when the creek is flowing;
- Excavation of the existing earthen channel bottom and banks to a maximum depth of 4.5 feet;
- Placement of a layer of Rock Slope Protection (RSP) to conform to the upstream and downstream conditions; and
- Creation of a smooth channel transition throughout the project area and reduction of channel degradation at abutments and piers that may lead to bridge instability.

Littlejohns Creek is listed on the Section 303(d) Total Maximum Daily Load list for *Escherichia coli* (*E. coli*) and an "unknown" toxicity. Project authorization under sections 401, 402, and 404 of the Federal Clean Water Act would be acquired prior to the onset of construction. At a minimum, construction would adhere to the Caltrans Storm Water Management Plan; however, all permitting agencies will dictate the standard Storm Water Management Plan required for this project. During construction, Best Management Practices, set forth by the permitting agencies, will be used to ensure that the project would not substantially affect water quality in Littlejohns Creek.

This study provides the level of data and analysis needed to support project-level environmental documentation pursuant to the National Environmental Policy Act (NEPA)

and the California Environmental Quality Act (CEQA). This study generally follows Caltrans' Standard Environmental Reference (SER) for Water Quality Assessment Reports (California Department of Transportation 2012a). The SER provides information appropriate to all transportation projects developed under the auspices of Caltrans, and to all local agency highway or local street and road projects with funding or approvals from the FHWA.

Table of Contents

Executive Summary i

1. Introduction 1

1.1. Project Description 1
1.1.1. No-Project Alternative 1
1.1.2. Alternative 1 (Proposed Project) 1
1.1.2.1. Overview 1
1.1.3. Vegetation Clearing 3
1.1.4. Construction of Cofferdams and Access Ramp 3
1.1.5. Work Area Dewatering 4
1.1.6. Excavation 4
1.1.7. Installation of Filter Fabric and Rock Slop Protection 4
1.1.8. Site Rehabilitation 7
1.1.9. Project Impact Area 7

1.2. Approach to Water Quality Assessment 7

2. Regulatory Setting 9

2.1. Federal Laws and Requirements 9
2.1.1. Clean Water Act 9
2.1.1.1. Section 303 9
2.1.1.2. Section 401 9
2.1.1.3. Section 402 10
2.1.1.4. Section 404 10

2.2. State Laws and Requirements 10
2.2.1. Porter-Cologne Water Quality Control Act 10

2.3. Regional and Local Water Quality Regulations 11
2.3.1. Drainage and Flood Control Improvements 11

3. Affected Environment 12

3.1. Introduction 12

3.2. General Setting 12
3.2.1. Population and Land Use 12
3.2.2. Topography 12
3.2.3. Hydrology 13
3.2.3.1. Regional Hydrology 13
3.2.3.2. Local Hydrology 13
Precipitation and Climate 13
Surface Streams 13
Floodplains 14
Municipal Supply 14
3.2.3.3. Groundwater Hydrology 14
3.2.4. Geology/Soils 15

3.2.5. Biological Communities 15
3.2.5.1. Aquatic Habitat 16
Special Status Species 16
Stream/Riparian Habitats 16
Wetlands 16
Fish Passage 17

3.3. Water Quality Objectives/Standards and Beneficial Uses 17
3.3.1. Surface Water Quality Objectives/Standards and Beneficial Uses 17
3.3.1.1. Groundwater Quality Objectives/Standards and Beneficial Uses 19
3.3.1.2. Groundwater Quality Objectives 20

3.4. Existing Water Quality 20
3.4.1. Regional Water Quality 20
3.4.2. List of Impaired Waters 21
3.4.3. Areas of Special Biological Significance 21

4. Environmental Consequences 22

4.1. Introduction 22

4.2. Potential Impacts to Water Quality 22
4.2.1. Anticipated changes to the Physical/Chemical Characteristics of the Aquatic Environment 22
4.2.1.1. Substrate 22
4.2.1.2. Currents, Circulation or Drainage Patterns 22
4.2.1.3. Suspended Particulates (Turbidity) 22
4.2.1.4. Oil, Grease and Chemical Pollutants 22
4.2.1.5. Temperature, Oxygen Depletion, and Other Parameters 22
4.2.1.6. Flood Control Functions 23
4.2.1.7. Storm, Wave and Erosion Buffers 23
4.2.1.8. Erosion and Accretion Patterns 23
4.2.1.9. Aquifer Recharge/Groundwater 23
4.2.1.10. Baseflow 23
4.2.2. Anticipated Changes to the Biological Characteristics of the Aquatic Environment 23
4.2.2.1. Special aquatic sites 23
4.2.2.2. Habitat for Fish and Other Aquatic Organisms 24
Fish Passage (Beneficial Uses) 24
4.2.2.3. Wildlife Habitat 24
Wildlife Passage (Beneficial Uses) 25
4.2.2.4. Endangered or Threatened Species 25
4.2.2.5. Invasive Species 25
4.2.3. Anticipated Changes to the Human Use Characteristics of the Aquatic Environment 26
4.2.3.1. Existing and Potential Water Supplies; Water Conservation 26
4.2.3.2. Recreational or Commercial Fisheries 26
4.2.3.3. Other Water Related Recreation 26

4.2.3.4. Aesthetics of the Aquatic Ecosystem....26
4.2.3.5. Parks, National and Historic Monuments, National Seashores, Wild and Scenic Rivers, Wilderness Areas, etc. 26
4.2.3.6. Traffic/Transportation Patterns....26
4.2.3.7. Energy Consumption of Generation 26
4.2.3.8. Navigation....27
4.2.3.9. Safety 27
4.2.4. Short-term Impacts During Construction....27
4.2.4.1. Physical/Chemical Characteristics of the Aquatic Environment 27
4.2.4.2. Biological Characteristics of the Aquatic Environment 27
4.2.4.3. Human Use Characteristics of the Aquatic Environment 28
4.2.5. Long-Term Impacts During Operation and Maintenance....28
4.2.5.1. Physical/Chemical Characteristics of the Aquatic Environment 28
4.2.5.2. Biological Characteristics of the Aquatic Environment 29
4.2.5.3. Human Use Characteristics of the Aquatic Environment 29

4.3. Cumulative Impacts....29

5. Avoidance and Minimization Measures....30

6. References....33

6.1. Preparers 33
6.1.1. North State Resources, Inc....33

6.2. Literature Cited 33

List of Figures

Figure 1. Project Location....2
Figure 2. Project Design....5

List of Tables

Table 1. Surface Water Quality Objectives 18
Table 2. Groundwater Quality Objectives 20

1. Introduction

1.1. Project Description

The Stanley Road Bridge over Littlejohns Creek is located approximately 0.7 mile south of the Stanley Road/State Route 4 intersection and 1.7 miles southwest of the census-designated place Farmington, San Joaquin County, California (Figure 1). The study area is located on the *Peters, California* 7.5-minute U.S. Geological Survey map, Township 1 North, Range 9 East, Section 19 Mount Diablo Base and Meridian.

A 2009 Caltrans Bridge Inspection Report determined that the north and south piers of the bridge have experienced significant lateral scour into the toe of the channel, as well as minor vertical scour exposing up to 3 feet of the pile cans (Domenichelli and Associates 2012). In recent years, the channel bed of Littlejohns Creek through the study area has experienced minor cutting due to a constriction of the channel from the bridge abutments and piers, which has resulted in steeper side slopes. A hydraulic study (Domenichelli and Associates 2012) conducted in support of the scour mitigation project concluded that the scour potential of Littlejohns Creek within the study area consists of channel degradation, contraction scour, and further local pier and abutment scour. The purpose of the project is to create a smooth channel transition throughout the study area and reduce the potential for further channel degradation at the bridge abutments and piers. This project is needed to protect the bridge and to allow its continued use in a safe manner.

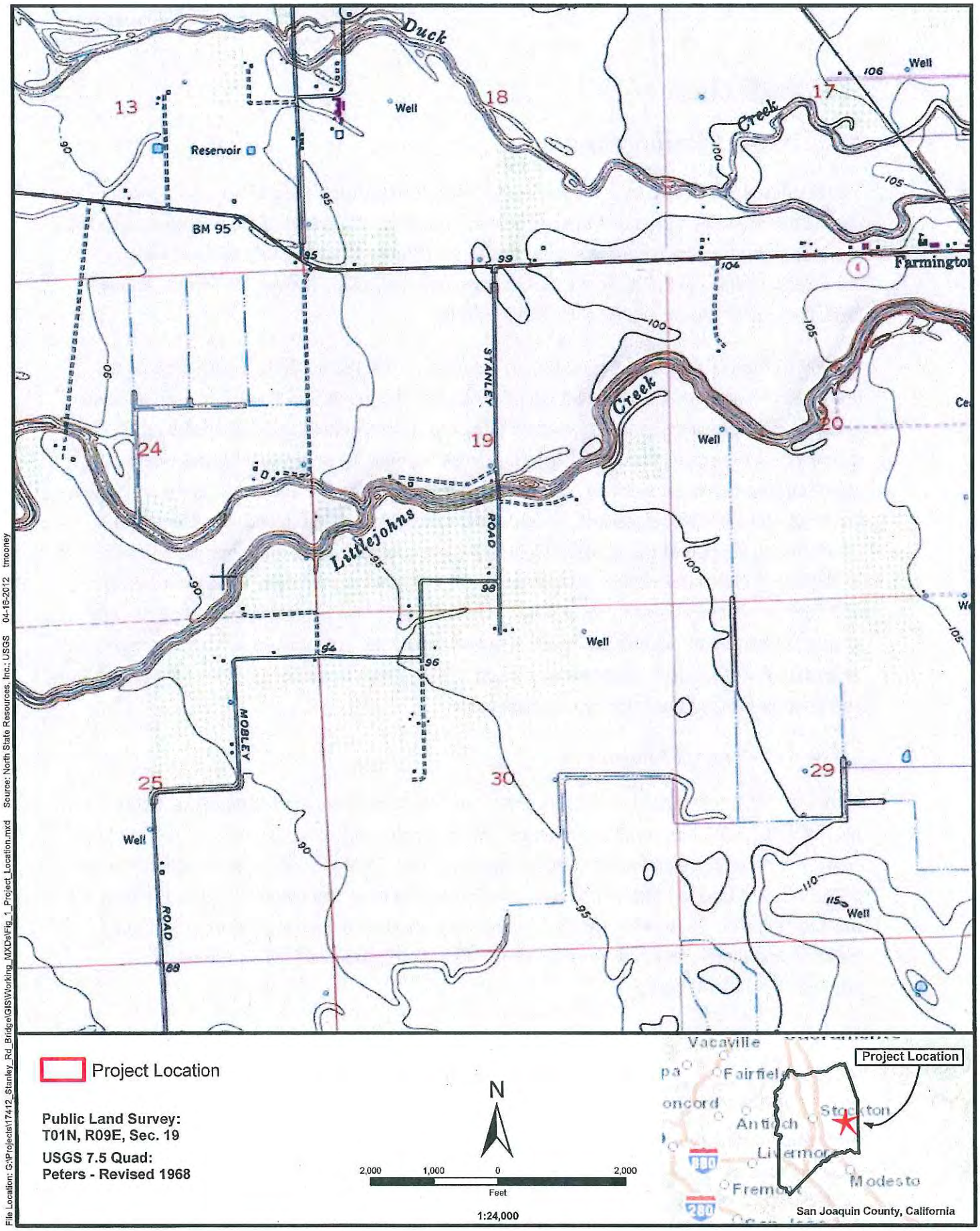
1.1.1. No-Project Alternative

Under the No-Build Alternative, the County would not perform scour mitigation. Scour potential in Littlejohns Creek at the Stanley Road Bridge would remain high, which could result in further channel degradation, contraction scour, local pier scour, and abutment scour of the existing bridge. This alternative was determined to be impracticable since it would not meet the purpose and need of the project and over time could lead to the bridge becoming unstable and therefore unsafe for public use. This alternative receives no further consideration in this report.

1.1.2. Alternative 1 (Proposed Project)

1.1.2.1. Overview

The County is proposing to improve existing scour protection and revetment within the project area. To accomplish this goal the existing earthen channel of Littlejohns Creek at the Stanley Road Bridge will be cut to a maximum depth of 4.5 feet, and then filled with a layer of Rock Slope Protection (RSP) to conform to both upstream and downstream conditions and



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North State Resources, Inc.

Stanley Road Bridge Project

Figure 1
Project Location

channel grade. RSP will be installed on approximately 0.14 acre (78 linear feet) of the existing earthen channel of Littlejohns Creek at the Stanley Road Bridge. An approximately 0.49-acre TCE would be used for construction access, temporary cofferdams, in-stream access ramp, and staging. The existing Stanley Road right-of-way (approximately 0.33 acre) would be used for project access. Between 4 and 10 construction workers are expected to be on-site during any given day, depending on the construction phase. Project implementation is expected to occur over the course of about four weeks. A map showing the proposed work areas is presented as Figure 2.

1.1.3. Vegetation Clearing

Vegetation clearing would be conducted to prepare for construction of the temporary cofferdams, access ramp and placement of RSP. A total of approximately 0.03 acre of riparian vegetation located west (downstream) of the Stanley Road Bridge would be removed during project implementation. Approximately 0.015 acre of vegetation would be cleared along the north bank of Littlejohns Creek and 0.015 acre of vegetation would be cleared along the south bank of Littlejohns Creek. Vegetation to be removed includes a small valley oak tree (5–6 inches in diameter at breast height [dbh]) on the south bank and Himalayan blackberry on the north bank. Vegetation clearing would be conducted by hand crews and is expected to take less than 1 day to complete.

1.1.4. Construction of Cofferdams and Access Ramp

Prior to construction of the cofferdams and access ramp, a flexible, large-diameter corrugated pipe would be placed within Littlejohns Creek to serve as a work area bypass for water flowing through the work area. The bypass would extend from the upstream to downstream sides of the study area within Littlejohns Creek.

The upstream cofferdam would be constructed immediately downstream of the bypass inlet by depositing appropriately engineered fill up to 10 feet high (i.e., above existing grade) from bank to bank. The upstream cofferdam would be appropriately designed to support construction equipment (e.g., tractor and excavator) and serve as an access ramp for construction crews and equipment.

The downstream cofferdam would be constructed immediately upstream of the bypass outlet by depositing appropriately engineered fill up to 4 feet high (i.e., above existing grade) from bank to bank. The downstream cofferdam would likely remain below the ordinary high water mark (OHWM) of Littlejohns Creek. RSP would be placed on the downstream end of the lower cofferdam to stabilize the temporary fill and protect it from erosion.

Construction of the cofferdams and access ramp would take approximately 7 days using hand labor or mechanical equipment (e.g., a tractor and an excavator). This phase of the project would also require one or two haul trucks to import fill. The haul trucks would remain outside the banks of Littlejohns Creek.

The temporary disturbed surface area (DSA) for the cofferdams and access ramp would be about 0.5 acre.

1.1.5. Work Area Dewatering

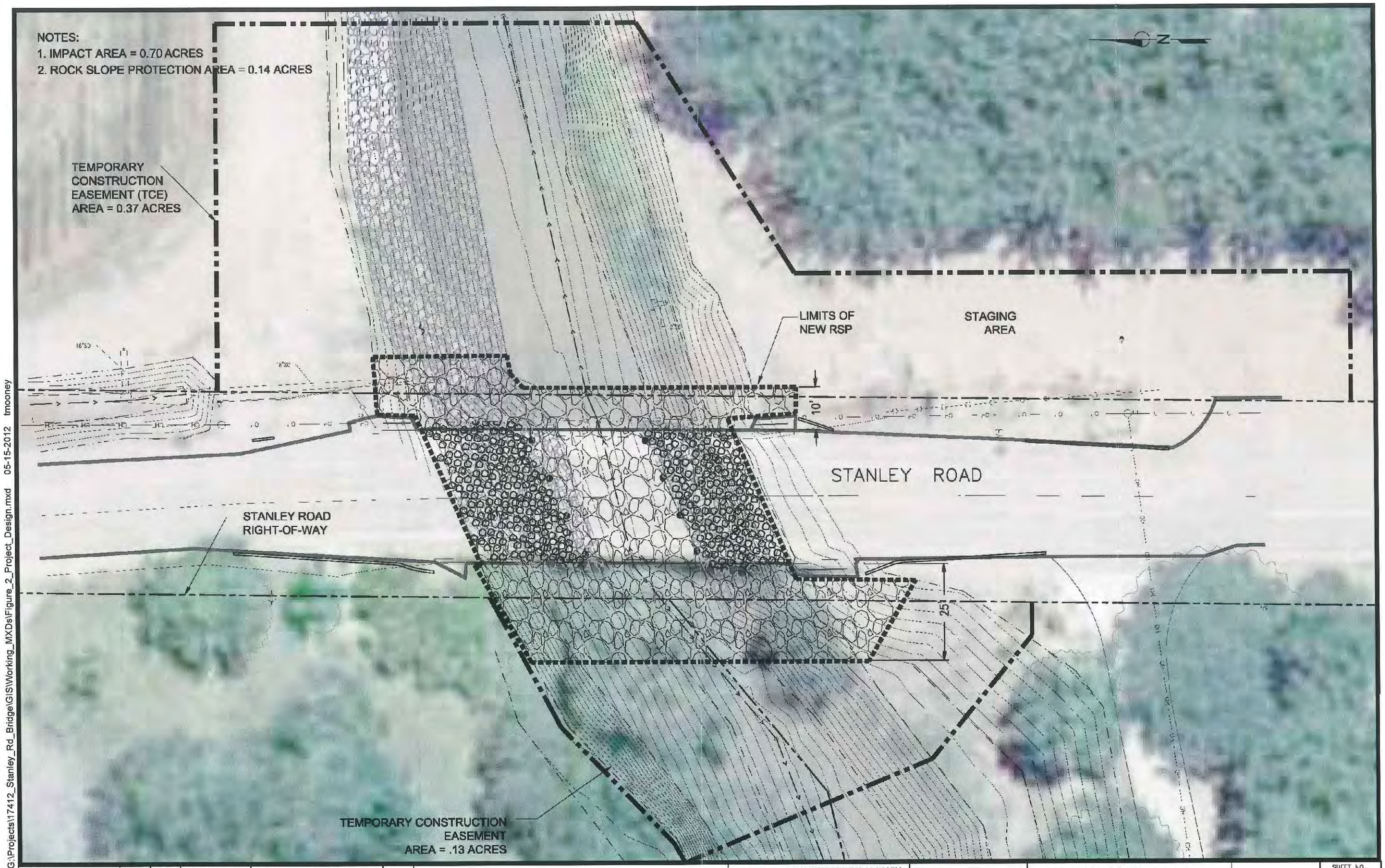
Following cofferdam construction, any water remaining within the work area would be removed with a mechanical pump and discharged downstream. The dewatered portion of the creek bed would measure approximately 0.11 acre and would encompass about 140 linear feet of creek. Dewatering would be completed in about 1 day.

1.1.6. Excavation

After the work area is dewatered, about 0.14 acre (78 linear feet) of the channel bed and bank would be excavated to a maximum depth of 4.5 feet to create space for placement of RSP. On the south bank, beneath the bridge and near the pier, scour has undercut the existing gabions and has caused them to fail. Excavation of the channel at this location would require removal of the remaining gabions. Additionally, concrete blocks at the downstream end of the bridge must be removed to allow for installation of the RSP. Excavation would be performed using either hand labor or mechanical equipment (e.g., an excavator and haul truck), and would be completed in about 2 days. Excavated material would be stockpiled within the staging area outside the creek.

1.1.7. Installation of Filter Fabric and Rock Slop Protection

Following excavation, a layer of filter fabric would be placed by hand on the channel bed and banks to prevent erosion. Generally ¼ ton class RSP will be installed along the channel bottom between the center piers, light class RSP will be installed for the remainder of the channel bottom and upward along the banks, and wire mat filled with backing number 2 class RSP will be installed closer to the bridge deck. The channel bed and banks would be excavated to depths sufficient to ensure that the RSP is flush with the desired upstream and downstream channel surface level.



PROJECT ENGINEER	DATE	CHECKED	DATE	APPROVED	DATE
DRAWER	SHEET NO.	SHEET NAME			SCALE
		STANLEY ROAD BRIDGE 29C-112			NTS

COUNTY OF SAN JOAQUIN
DEPARTMENT OF PUBLIC WORKS BRIDGE DIVISION

SIEGFRIED

DOMENICHELLI & ASSOCIATES

SHEET NO. 1 of 1

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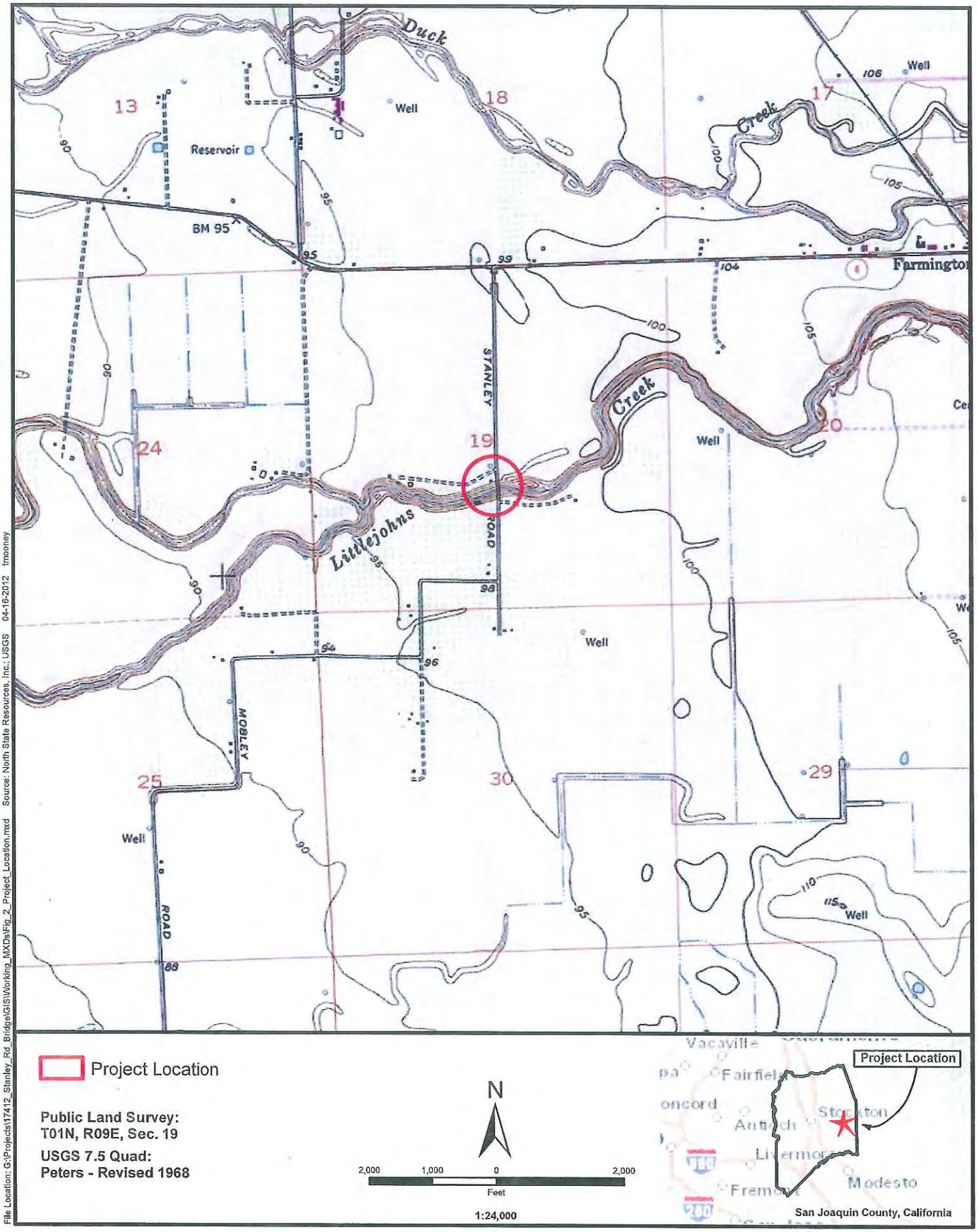
North State Resources, Inc.

Stanley Road Bridge Project

Figure 2
Project Design



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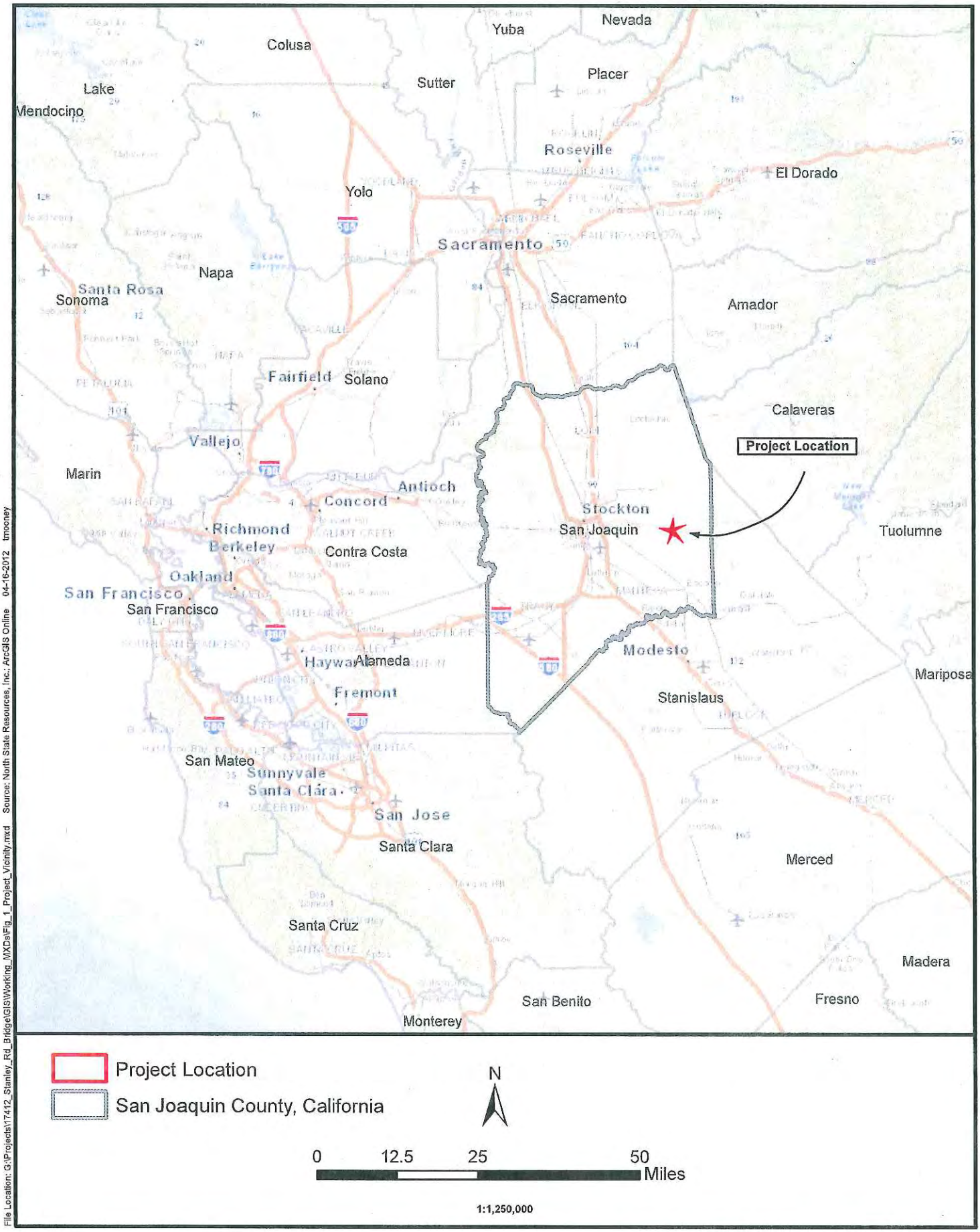
North State Resources, Inc.

Stanley Road Bridge Project

Figure 2
Project Location



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North State Resources, Inc.

Stanley Road Bridge Project

Figure 1
Project Vicinity

Chapter 2. Highway Project Location and Description

2.1. Project Location

The Project is located in San Joaquin County within Caltrans District 10 on Stanley Road approximately one half-mile south of the intersection of Stanley Road with Farmington Road (Route 4) (Figures 1 and 2). Within the APE and directly under the Stanley Road Bridge (Bridge 29C-112), the channel and adjacent banks of Littlejohns Creek would be re-graded and rock rip-rap would be installed to reduce the effects of scouring resulting from seasonal water flows and flooding (Figure 3). The Project is located on the *Peters, California* 7.5-minute USGS quadrangle in Township 1 North, Range 9E, Section 19.

2.2. Project Description

The Project is situated in a rural agricultural setting currently planted with orchards and row crops. Two residences are located in the vicinity of the APE on the west side of Stanley Road, one on the north side and the other on the south side of Little Johns Creek. The purpose of the project is to ensure public safety by protecting the structural integrity of bridge footings and abutments. To accomplish this goal, approximately 0.14 acre (78 linear feet) of the existing earthen channel at the Stanley Road Bridge will be cut to a maximum depth of 4.55 feet, and then filled with ¼ ton Caltrans Rock Slope Protection (RSP) or 18-inch Wire RSP Mat (Figure 3). Areas of the channel which have already been scoured to a depth below the surrounding channel elevation will not require cut before they are filled to create a smooth transition through the bridge section. An approximately 0.44-acre temporary construction easement would be used for construction access, temporary cofferdams, in-stream access ramp, and staging. The existing Stanley Road right-of-way (approximately 0.33 acre) would be used for project access. No new right-of-way is required for the proposed Project. The total area of potential effect (APE) is approximately 0.96 acre.

The horizontal APE is situated to the north and south of Little Johns Creek up to approximately 150 ft. from both the north and south bridge approaches. On the east side of the creek, the APE extends on either side of the creek to a point about 100 ft. east of Bridge 29C-0112. The APE also extends to the west along Little Johns Creek to a point approximately 50 ft. west of the western edge of the bridge. The APE is largely contained within open field and orchard margins although trees and grasses are present in the northwest corner.

Chapter 1. Introduction

On behalf of the San Joaquin County Department of Public Works (County), North State Resources, Inc. (NSR) has completed an archaeological investigation for the approximately 0.96-acre Stanley Road Bridge Scour Mitigation Project Area of Potential Effects (APE) located near the town of Farmington, San Joaquin County, California (Figures 1 and 2). The County is proposing to implement a scour-reduction program at the intersection of Littlejohns Creek and Stanley Road (Project). The APE is located at Stanley Road Bridge (Bridge 29C-0112) along Stanley Road approximately one half-mile south of the intersection of Stanley Road and Farmington Road (Route 4) (Figure 3). The bridge location is depicted on the *Peters, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle in Township 1 North, Range 9E, Section.

This Archaeological Survey Report documents the cultural resources investigations conducted for the Project. The survey, archival research, and tribal consultation discussed in this report were completed for Caltrans and the San Joaquin County Department of Public Works to comply with Section 106 of the National Historic Preservation Act (Section 106). Archival research, consultation with the Native American community, and an intensive archaeological survey of the entire APE was conducted by NSR on March 22, 2012.

Archival research, follow-up Native American consultation, field investigations, and documentation efforts were conducted by NSR cultural resources specialist Brian Ludwig, Ph.D. (Caltrans PQS Level 4), who meets the *Secretary of the Interior's Professional Qualifications Standards* (36 CFR Part 61). Dr. Ludwig has 30 years of cultural resources management experience including 12 years in northern and central California.

Table of Contents

Chapter 1. Introduction 1

Chapter 2. Highway Project Location and Description 2
- 2.1. Project Location 2
- 2.2. Project Description 2

Chapter 3. Sources Consulted 7
- 3.1. Summary of Methods and Results 7
- 3.2. Summary of Others Consulted 7
- 3.3. Summary of Native American Consultation 8

Chapter 4. Background 9
- 4.1. Environment 9
  - 4.1.1. Flora 9
  - 4.1.2. Fauna 9
  - 4.1.3. Soils 10
- 4.2. Ethnography 10
- 4.3. Prehistory 13
- 4.4. History 17
  - 4.4.1. Farmington 19

Chapter 5. Field Methods 20

Chapter 6. Study Findings and Conclusions 21
- 6.1. Survey Results 21

Chapter 7. Other Resources 22
- 7.1. Unidentified Cultural Materials 22

Chapter 8. References Cited 23

List of Figures

Figure 1. Project Vicinity 3

Figure 2. Project Location 4

Figure 2. APE Map 5

Appendices

Appendix A CCIC Record Search Results

Appendix B Native American Consultation

Summary of Findings

The San Joaquin County Department of Public Works (County) is proposing to construct scour mitigation features at the Stanley Road Bridge over Littlejohns Creek (Bridge 29C-0112) near Farmington, California (the Project). The scour mitigation at this bridge is part of a single scour mitigation project that includes four separate bridge crossings. The Area of Potential Effects (APE) is situated in San Joaquin County, California, at the intersection of Littlejohns Creek and Stanley Road. The Project is located at the Stanley Road Bridge and is depicted on the *Peters, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle in Township 1 North, Range 9 East, Section 19.

This Archaeological Survey Report documents the cultural resources investigations conducted for the approximately 0.96-acre Project APE (Figure 1). The survey, archival research, and tribal consultation discussed in this report were completed for Caltrans and the San Joaquin County Department of Public Works to comply with Section 106 of the National Historic Preservation Act (Section 106).

Mineral soil visibility in much of the APE was excellent, with 100% of the ground surface usually being visible. No prehistoric or historic-era cultural sites, features, or artifacts were noted on the ground surface or in cut banks visible along Littlejohns Creek within or in the immediate vicinity of the APE. In addition, no potentially sensitive landforms or soil deposits possibly indicative of early Native American or historic activities were noted as a result of the archaeological survey.

It is Caltrans' policy to avoid cultural resources whenever possible. Further investigations may be needed if a site[s] cannot be avoided by the undertaking. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional surveying will be required if the undertaking changes to include areas not previously surveyed.

Stanley Road Bridge (29C-112) Scour Project

Caltrans District 10, San Joaquin County, California
Expenditure Authorization 10-957025L
7.5' USGS Quadrangle: Peters, California (1981)
Archaeological APE Acreage: 0.96 acre
Potentially Significant Cultural Resources: None

STATE OF CALIFORNIA
Department of Transportation

Prepared By: _____ Date: November 1, 2012

Brian Ludwig, PhD., Principal Archaeological Investigator
(916) 446-2566
1321 20th St., Sacramento, California 95811
North State Resources, Inc.

Stanley Road Bridge (29C-0112) Scour Mitigation Project

Archaeological Survey Report

Caltrans District 10, San Joaquin County, California
Expenditure Authorization 10-957025L
7.5' USGS Quadrangle: Peters, California (1981)
Archaeological APE Acreage: 0.96 acre
Potentially Significant Cultural Resources: None

November 2012

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

HISTORIC PROPERTY SURVEY REPORT

Prepared by *(sign on line)*:
District ___ Caltrans PQS: _____ Date

Prepared by: *(sign on line)* _____ 11/1/12

Consultant / discipline: *Brian Ludwig, PhD/Archaeologist* _____ Date
Affiliation *North State Resources, Inc./Sacramento, CA*

Reviewed for approval by: *(sign on line)*

District 10 Caltrans PQS: _____ 2/4/13 Date
Gary Scholz - Principal Investigator
Prehistoric Archaeology

Approved by: *(sign on line)*

District 10 EBC: _____ 2/4/13 Date
Julie Myrah - Maintenance and Planning Services Branch Chief

NSR reviewed historic USGS and GLO maps, other local maps, and reference materials related to the town of Farmington and nearby developments on March 12, 2012. No indications of prehistoric habitation or historic-era developments were noted within or in the immediate vicinity of the APE.

_ Results: *(provide a brief summary of records search and research results, as well as inventory findings)*

- Central California Information Center (CCIC), Native American Heritage Commission, and independent NSR research did not result in the documentation of any prehistoric or historic-era cultural resources within or in the vicinity (1/2 mile radius) of the APE. CCIC File# 8018L, July 25, 2011.

5. PROPERTIES IDENTIFIED

X **Bridges listed as Category 5** in the Caltrans Historic Highway Bridge Inventory are present within the APE. Appropriate pages from the Caltrans Historic Bridge Inventory are attached.

6. LIST OF ATTACHED DOCUMENTATION

X Project Vicinity, Location, and APE Maps

X California Historic Bridge Inventory sheet

X Archaeological Survey Report (ASR)

- Ludwig, Brian.
  2012 Stanley Road Bridge (29C-0112) Scour Mitigation Project Archaeological Survey Report. San Joaquin County, California. North State Resources. Sacramento, CA

7. HPSR to File

X As assigned by FHWA, Caltrans has determined a Finding of **No Historic Properties Affected**, according to Section 106 PA Stipulation IX.A and 36 CFR 800.4(d)(1), is appropriate for this undertaking.

8. HPSR to SHPO

X Not applicable.

9. Findings for State-Owned Properties

X Not applicable; project does not involve Caltrans right-of-way or Caltrans-owned property.

10. CEQA IMPACT FINDINGS

X Not applicable; Caltrans is not the lead agency under CEQA.

11. HPSR PREPARATION AND DEPARTMENT APPROVAL

side of the creek, the APE extends on either side of the creek to a point about 100 ft. east of Bridge 29C-0112. The APE also extends to the west along Little Johns Creek to a point approximately 50 ft. west of the western edge of the bridge. The APE is largely contained within open field and orchard margins although trees and grasses are present in the northwest corner.

3. CONSULTING PARTIES / PUBLIC PARTICIPATION

X Native American Tribes, Groups and Individuals

- **Katherine Erolinda Perez** – P.O. Box 717, Linden, CA 95236
  San Joaquin County contacted by letter on August 8, 2011
  NSR attempted contact by phone on March 22 and March 29, 2012: No answer received
- **Jay Johnson – Southern Sierra Miwuk Nation** – 5235 Alred Rd., Mariposa, CA 95338
  San Joaquin County contacted by letter on August 8, 2011
  NSR attempted contact by phone on March 22 and March 29, 2012: No answer received
- **Anthony Brochini – Southern Sierra Miwuk Nation** – P.O. Box 1200, Mariposa, CA 95338
  San Joaquin County contacted by letter on August 8, 2011
  NSR attempted contact by phone on March 22 and March 29, 2012: No answer received
- **Les James – Southern Sierra Miwuk Nation** – P.O. Box 1200, Mariposa, CA 95338
  San Joaquin County contacted by letter on August 8, 2011
  NSR attempted contact by phone on March 22 and March 29, 2012: No answer received

X Native American Heritage Commission

San Joaquin County contacted by letter, July 2011. NAHC responded to County on July 19, 2011.

4. SUMMARY OF IDENTIFICATION EFFORTS

X	National Register of Historic Places	Month & Year: 1979-2002 & supplements
X	California Register of Historical Resources	Year: 1992 & supplemental information to date
X	California Inventory of Historic Resources	Year: 1976
X	California Historical Landmarks	Year: 1995 & supplemental information to date
X	California Points of Historical Interest	Year: 1992 & supplemental information to date
X	State Historic Resources Commission	Year: 1980-present, minutes from quarterly meetings
X	Caltrans Historic Highway Bridge Inventory	Year: 2006 & supplemental information to date

X Archaeological Site Records [*List names of Institutions & date below*]

- No Archaeological Site records exist for within or in the vicinity (1/2 mile radius) of the APE

_ Other sources consulted *[e.g., historical societies, city archives, etc. List names and dates below]*

- San Joaquin County Historical Society and Museum – Lodi, California.

For the federal undertaking described in Part 1: To minimize redundancy and paperwork for the California Department of Transportation and the State Historic Preservation Officer, and in the spirit intended under the federal Paperwork Reduction Act (U.S.C. 44 Chapter 35), this document also satisfies consideration under California Environmental Quality Act Guidelines Section §15064.5(a) and, as appropriate, Public Resources Code §5024 (a)(b) and (d).

HISTORIC PROPERTY SURVEY REPORT

1. UNDERTAKING DESCRIPTION AND LOCATION

District	County	Route	Post Miles	Unit	E-FIS Project Number	Phase
10	San Joaquin	n/a	n/a	n/a	n/a	n/a

District	*County*	*Funding Source*	*Federal-Aid Proj. No.*	*Location*	*E-FIS Proj. No*	*Phase*
10	San Joaquin	10-957025L	BPMP 5929 (224)	Stanley Rd., ½ mi. south of Farmington Rd. (Rt. 4) over Littlejohns Creek	n/a	n/a

(For Local Assistance projects off the highway system, use headers in italics)

Project Description:

The San Joaquin County Department of Public Works (County) proposes a project to design a uniform channel section supporting Stanley Road Bridge with scour countermeasures to prevent channel degradation of Littlejohn's Creek. Recent history has shown that along Littlejohn's Creek, the channel bed has experienced minor erosion in the upper reaches of the creek, increasing the side slopes. Streambed erosion is increased due to a constriction of the channel from the bridge abutments and piers.

Stanley Road Bridge is located southeast of the City of Stockton in a rural area of the County that is surrounded by agricultural land. Staging will require temporary easements on adjacent properties.

The scope of work includes:

- Clearing and grubbing along the banks
- Temporary installation of an access ramp and coffer dams, or alternative diversion methods, to access the channel during potential flow periods within the creek
- Excavation of the existing earthen channel bottom and banks to a maximum depth of 4.55 feet
- Placement of ¼ ton class Rock Slope Protection (RSP) with filter fabric in the channel
- Placement of gabion mats and Caltrans Light Class RSP with filter fabric

The purpose of the project is to create a smooth channel transition throughout the project area and reduce channel degradation at abutments and piers leading to bridge instability.

See attached **Figure 1** (Project Vicinity Map), and **Figure 2** (Project Location Map).

2. AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) for the project was established in consultation with Jacqueline Wait, Caltrans PQS Lead Archaeological Surveyor and Sinaren Pheng, District Local Assistance Engineer, on June 25, 2012. The APE maps are located in Figure 3 in this Historic Property Survey Report.

The APE was established as the area situated to the north and south of Little Johns Creek up to approximately 150 ft. from both the north and south Bridge 29C-0112 approaches. On the east

For the federal undertaking described in Part 1: To minimize redundancy and paperwork for the California Department of Transportation and the State Historic Preservation Officer, and in the spirit intended under the federal Paperwork Reduction Act (U.S.C. 44 Chapter 35), this document also satisfies consideration under California Environmental Quality Act Guidelines Section §15064.5(a) and, as appropriate, Public Resources Code §5024 (a)(b) and (d).

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6.1. Preparers

6.1.1. North State Resources, Inc.

Scott Goebl, Project Manager
Connie MacGregor Carpenter, Environmental Analyst
Brooke McDonald, Technical Editor
Sylvia Cantu, Document Production

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- 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 feet away from surface water features or within an adequate fueling containment area.

- Areas where woody vegetation needs to be removed shall be identified in advance of ground disturbance and shall be limited to only those areas that have been approved by the County. Within 10 days of completion of construction in those areas, weed-free mulch shall be applied to disturbed areas to reduce the potential for short-term erosion. Prior to a rain event, or when there is a greater than 50 percent 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 at the 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 sited 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 shall be monitored and maintained in good working condition until disturbed areas have been revegetated.

WQ-4 Construction specifications shall include the following measures to minimize the potential for adverse effects resulting from accidental spills of pollutants (e.g., fuel, oil, grease):

- A site-specific spill prevention plan shall be implemented 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 a minimum of 50 feet away from surface water features.

5. Avoidance and Minimization Measures

The following measures are recommended to minimize short-term construction and long-term operational water quality impacts associated with implementation of the project:

WQ-1 The County shall comply with any permit requirements identified by the Central Valley RWQCB as it relates to construction activities for the project, including dewatering.

WQ-2 In addition to the above listed regulatory compliance measures, the County shall comply with all other applicable federal, state, and local regulatory requirements pertaining to water quality.

WQ-3 Erosion control measures shall be implemented during construction of the proposed project. These measures shall conform to the provisions in Section 20-2 and 20-3 of the Caltrans Standard Specifications and the special provisions included in the contract for the project. Such provisions shall include the preparation of a Storm Water Pollution Prevention Plan, which describes and illustrates placement of Best Management Practices (BMPs) within the project site.

Erosion control measures to be included in the Storm Water Pollution Prevention Plan or otherwise implemented by the County include the following:

- To the extent practicable, activities that increase the erosion potential shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall 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 shall be maintained until permanent erosion control structures are in place.

- Vegetation clearing and ground disturbing activity shall be limited to the minimum area necessary for project implementation.

Long-term physical or chemical impacts associated with operation of the project are not anticipated.

4.2.5.2. Biological Characteristics of the Aquatic Environment

The project would have very little long-term impact on the biological characteristics of the aquatic environment because very little vegetation would be removed (0.06 acre) and because improvements within the streambed would not adversely affect the quality of the aquatic habitat.

4.2.5.3. Human Use Characteristics of the Aquatic Environment

The project would have very little long-term impact on the human use characteristics of the aquatic environment. After construction, the project would not affect water supplies or conservation, recreation, traffic, navigation, energy consumption, parks, or safety. In addition, aesthetic changes would not be noticeable to the casual observer because the RSP would be located beneath the bridge and would be below the water level for most of the year.

4.3. Cumulative Impacts

Activities proposed under the project are intended to reduce further degradation of the abutments and piers supporting the Stanley Road Bridge and to stabilize the creek channel through the study area thereby reducing the potential for erosion and sedimentation into downstream waters. Use of BMPs during construction would ensure that the project would not contribute to any adverse cumulative impacts to the water quality of Littlejohns Creek or any waters to which it is tributary.

fuel, oil, or other hazardous materials, and other project-related disturbance. The cofferdams could temporarily inhibit fish passage through the study area, but would not permanently affect fish passage. Because the project would involve modification or alteration of the streambed, as well as the stream bank and a small amount of riparian habitat (0.06 acre), the project has the potential for limited impacts on wildlife habitat. During construction, the presence of people and equipment within the creek channel and banks could temporarily inhibit or prevent wildlife from passing through the work area. Most wildlife, however, would be able to bypass the work area. One aquatic species that is both state- and federally-listed as threatened has a low potential for occurrence within the study area: giant garter snake. However, no impacts on giant garter snake are anticipated as a result of the proposed project. Ground disturbance activities during construction could cause the spread of invasive plant species. The measures described earlier in Section 4.2.2 would ensure that the project would not result in significant short-term construction impacts on the biological characteristics of the aquatic environment.

4.2.4.3. Human Use Characteristics of the Aquatic Environment

The project would have very little short-term impact on the human use characteristics of the aquatic environment. The project would not affect water supplies or conservation. Construction activities would temporarily preclude recreational activities, including fishing, in the immediate vicinity of the study area; however, adequate recreational opportunities would remain available in the project vicinity. During construction, the aesthetics of the study area would be impaired, but only for a short duration. Stanley Road is not heavily travelled, therefore, temporary aesthetic changes would not be observed by a substantial number of people. The project would not substantially affect traffic on Stanley Road or navigation on Littlejohns Creek. Mechanized construction activities would consume petroleum-based fuels, but the volume of fuel used would not be substantial. The project would have very little effect on public safety.

4.2.5. Long-Term Impacts During Operation and Maintenance

4.2.5.1. Physical/Chemical Characteristics of the Aquatic Environment

The project would stabilize the Littlejohns Creek channel in the vicinity of the Stanley Road Bridge, thus reducing the potential for scour, erosion, and sedimentation. There would be no substantial change in the amount of impervious surface as a result of the project nor would there be a change in the existing storm water runoff patterns or the volume of water carried by Littlejohns Creek through the study area. Groundwater would not be substantially affected by operation of the project. Although the addition of RSP to the channel banks within the study area would slightly increase the amount of impervious surface in the immediate study area, the effects on groundwater and the water table would be negligible.

4.2.3.8. Navigation

Littlejohns Creek is not used for navigation.

4.2.3.9. Safety

The project would not affect public safety. During construction, the public would be excluded from the work site. The RSP would not present safety hazards.

4.2.4. Short-term Impacts During Construction

4.2.4.1. Physical/Chemical Characteristics of the Aquatic Environment

Project construction would be necessary below the ordinary high water mark of Littlejohns Creek. Construction of an access road into the channel as well as excavation of the channel bottom would expose soils on both banks and along the channel bottom. Erosion and sedimentation into downstream waters could result if runoff were to occur during construction. This could be compounded by the compaction of soils by heavy equipment operating in the active construction site, which could affect soil infiltration rates. In addition, the lubricants and fuels used by heavy equipment and other mechanized construction equipment are a potential source of pollutants. Flows within Littlejohns Creek would be diverted around the active construction site to dewater the work area and to reduce the potential for sediment and pollutants to adversely affect downstream water quality. Clearing and grubbing of vegetation and grading activities on the channel banks to create suitable beds for the placement of RSP may result in exposed or stockpiled soils that would be susceptible to storm water flows. Properly designed, implemented, and maintained construction BMPs would prevent the occurrence of adverse water quality impacts during construction.

The project would not use groundwater during construction and therefore, would not deplete groundwater supplies. Although lubricants and fuels used by heavy equipment and other mechanized construction equipment are a potential source of pollutants, construction would be scheduled during the generally dry summer period (such as May through October). Therefore, it is unlikely that precipitation would fall in amounts great enough to carry construction pollutants into the groundwater. Short-term impacts to groundwater during project construction are not anticipated.

4.2.4.2. Biological Characteristics of the Aquatic Environment

No wetlands or other special aquatic sites are located in the study area; therefore, none would be affected. Because the project would involve modification or alteration of the streambed, as well as the stream bank, the project has the potential for limited short-term impacts on native and non-native fish within and adjacent to the study area. Potential adverse impacts include stress, injury, or mortality resulting from: dewatering of the work area; exclusion from and prevention of passage through the work area; sedimentation and turbidity; spills of

- Using locally adapted seed mixes or other vegetative material used for revegetation of disturbed sites to the extent practicable (NSR 2012).

4.2.3. Anticipated Changes to the Human Use Characteristics of the Aquatic Environment

4.2.3.1. Existing and Potential Water Supplies; Water Conservation

No water intakes are located within the study area. Stream flows would be bypassed around the work site to ensure continuous flow within the creek during construction. The project would not cause any changes that would affect water supplies or conservation.

4.2.3.2. Recreational or Commercial Fisheries

No commercial fishing occurs within the creek. Construction activities would temporarily preclude recreational fishing in the immediate vicinity of the study area; however, adequate recreational fishing opportunities would remain available in the immediate project vicinity.

4.2.3.3. Other Water Related Recreation

Construction activities would temporarily preclude water related recreation in the immediate vicinity of the study area; however, adequate recreational opportunities would remain available in the project vicinity.

4.2.3.4. Aesthetics of the Aquatic Ecosystem

During construction, the aesthetics of the study area would be impaired. After construction, however, aesthetic changes would not be noticeable to the casual observer because the RSP would be located beneath the bridge and would be below the water level for most of the year.

4.2.3.5. Parks, National and Historic Monuments, National Seashores, Wild and Scenic Rivers, Wilderness Areas, etc.

There are no such features in the study area.

4.2.3.6. Traffic/Transportation Patterns

No substantial waterborne traffic or transportation patterns occur within the creek. Therefore, the project would result in a minimal change in such patterns during construction. After construction, the project would not affect waterborne traffic or transportation patterns. Some minor traffic delays could occur on Stanley Road during construction; however, traffic volume on Stanley Road is minimal.

4.2.3.7. Energy Consumption of Generation

Mechanized construction activities would consume petroleum-based fuels. After construction, the project would not consume energy.

- Flagging and/or signing aquatic and upland habitats to be avoided (NSR 2012).

Wildlife Passage (Beneficial Uses)

During construction, the presence of people and equipment within the creek channel and banks could temporarily inhibit or prevent wildlife from passing through the work area. Most wildlife, however, would be able to bypass the work area. The project would present no permanent barriers to wildlife passage after construction.

4.2.2.4. Endangered or Threatened Species

No endangered species have the potential to occur within the study area. One aquatic species that is both state- and federally-listed as threatened has a low potential for occurrence within the study area: giant garter snake. Because potential giant garter snake habitat within and near the BSA is limited by low-quality higher elevation refugia and a lack of emergent herbaceous wetland vegetation, no impacts on giant garter snake are anticipated as a result of the proposed project. To ensure avoidance of significant impacts on giant garter snake, the County will implement several measures to avoid or minimize the potential for significant impacts on this species. These include:

- Limiting construction to the period between May 1 and October 1 (i.e., the active period for GGS).
- Awareness training for all construction personnel prior to beginning work.
- Minimization of vegetation clearing and vehicle/equipment movement within 200 feet of the creek.
- Implementation of measures to protect water quality.
- Immediate notification of the US Fish and Wildlife Service if a giant garter snake is found during construction activities (NSR 2012).

4.2.2.5. Invasive Species

Ground disturbance activities during construction could cause the spread of invasive plant species. However, the County will implement several measures to prevent the spread of invasive species. These include:

- Ensuring all equipment used for off-road construction activities are weed-free prior to entering the project area.
- Using weed free mulches or fill.

4.2.2.2. Habitat for Fish and Other Aquatic Organisms

Because the project would involve modification or alteration of the streambed, as well as the stream bank, the project has the potential for limited short-term impacts on native and non-native fish within and adjacent to the study area. Potential adverse impacts include stress, injury or mortality resulting from: dewatering of the work area; exclusion from and prevention of passage through the work area; sedimentation and turbidity; spills of fuel, oil, or other hazardous materials, and other project-related disturbance. However, the County will implement several measures to avoid or minimize the potential for significant impacts on fish species. These include:

- Keeping the dewatered work area and disturbance to in-stream and riparian habitat to the minimum area necessary to perform work.
- Installation of erosion control measures, such as filter fabric, temporary rocking, and/or installation of a t-pipe at the bypass outflow to minimize potential for erosion of the streambed downstream of the work area.
- Monitoring of in-channel work and dewatering activities by a qualified biologist; removal of any fishes from within the work area and safe relocation into Littlejohns Creek.
- Placement of a mesh screen to cover the intake pipe on all pumps used for dewatering the work area (NSR 2012).

Fish Passage (Beneficial Uses)

The cofferdams could temporarily inhibit fish passage through the study area, but would neither significantly nor permanently affect fish passage. No anadromous fish species pass through the study area. The conservation measures described in the previous section would avoid or minimize the potential for significant impacts on fish species.

4.2.2.3. Wildlife Habitat

Because the project would involve modification or alteration of the streambed, as well as the stream bank and a small amount of riparian habitat (0.06 acre), the project has the potential for limited impacts on wildlife habitat. However, the County will implement several measures to avoid or minimize the potential for significant impacts on wildlife habitat. These include the measure listed in Section 4.2.2.2 above and the following:

- Limiting vegetation clearing to the minimum area necessary within 200 feet of the banks of Littlejohns Creek.

project would not alter land uses or land management activities, and therefore, would not generate increased litter, nor would it permanently affect the water quality parameters that are used as the basis for surface water quality objectives within the Sacramento-San Joaquin River basin.

4.2.1.6. Flood Control Functions

The project would not change the creek's capacity or alter its ability to convey flood waters. Construction would not occur during the flood season. Therefore, the project would not alter the creek's flood control functions.

4.2.1.7. Storm, Wave and Erosion Buffers

The creek is relatively narrow, ranging in width from between approximately 82 feet and 138 feet at the top of its bank. The creek is not wide enough to be substantially affected by storms or other forms of wave generation. No wetlands are located within the study area, so none would be removed. The project would not remove substantial areas of riparian vegetation that might serve as storm, wave, or erosion buffers.

4.2.1.8. Erosion and Accretion Patterns

The project is designed to reduce erosion caused by scour. Stream currents in the vicinity of the bridge would likely be altered by the project, resulting in minor changes to accretion patterns.

4.2.1.9. Aquifer Recharge/Groundwater

The proposed RSP would cause a relatively small increase in impervious surfaces in the immediate vicinity of the bridge, but would not create an impermeable barrier between surface water and groundwater. Construction activities could temporarily increase the potential for oil, grease, or chemical pollutants to enter the groundwater.

4.2.1.10. Baseflow

The proposed RSP would cause a relatively small increase in impervious surfaces in the immediate vicinity of the bridge, but would not create an impermeable barrier between surface water and groundwater. Therefore, the project would not affect baseflow.

4.2.2. Anticipated Changes to the Biological Characteristics of the Aquatic Environment

4.2.2.1. Special aquatic sites

The project would remove a small amount of riparian habitat. However, no wetlands or other special aquatic sites are located in the study area; therefore, none would be affected.

4. Environmental Consequences

4.1. Introduction

This section discusses the potential environmental consequences associated with implementation of the Stanley Road Bridge Scour Mitigation Project.

4.2. Potential Impacts to Water Quality

4.2.1. Anticipated changes to the Physical/Chemical Characteristics of the Aquatic Environment

4.2.1.1. Substrate

Within the study area, the project would replace the creek's earthen and sediment substrate with RSP to eliminate scour and channel degradation.

4.2.1.2. Currents, Circulation or Drainage Patterns

The project is designed to create a smooth channel transition throughout the study area to reduce channel degradation at the bridge abutments and piers that may lead to instability. Therefore, stream currents in the vicinity of the bridge would likely be altered to achieve the project purpose. During construction, temporary cofferdams would be constructed both upstream and downstream of the work area, and stream flows would be routed through flexible bypass pipes. The project would not permanently affect circulation, drainage patterns, flow, volume, rate, depth, or seasonal changes.

4.2.1.3. Suspended Particulates (Turbidity)

The project is designed to reduce erosional scour and, therefore, is expected to reduce turbidity within the creek. During construction, earthmoving activities within the creek could cause a short-term increase in turbidity without proper BMPs.

4.2.1.4. Oil, Grease and Chemical Pollutants

The project would not alter land uses or change drainage patterns in a manner that would cause additional oil, grease, or chemical pollutants to enter the creek. Construction activities could temporarily increase the potential for oil, grease, or chemical pollutants to enter the creek.

4.2.1.5. Temperature, Oxygen Depletion, and Other Parameters

The project would not remove substantial areas of riparian vegetation that provide shade to the creek, nor would the project alter the source or volume of water flowing into the creek. Therefore, the project would not substantially affect the creek's water temperature. The project is not expected to affect the creek in a manner that would deplete oxygen levels. The

Sediment in area waterways also inhibits pumping for municipal and industrial uses, and can directly smother aquatic ecosystems. Salt, leached from soils and carried by subsurface collection systems (tile drains) from poorly drained agricultural lands, is also a concern, resulting in excessive levels of total dissolved solids in drainage waters. However, not all regional water quality concerns stem from agricultural practices. Significant portions of the major rivers in the basin and in the Delta are also impaired by discharges from mines, urban areas, and industries.

Roads also contribute to pollutant concentrations in waterways. Pollutant concentrations have been shown to increase with higher traffic levels; decrease with increased precipitation; increase during long dry periods; and be higher in agricultural and commercial areas than in residential areas, transportation corridors, and open land use areas (California Department of Transportation 2003). Typical pollutants associated with road corridors included sediment, nutrients, organic compounds, metals, bacteria, and oil and grease.

3.4.2. List of Impaired Waters

Section 303(d) of the CWA requires states to identify waters within their borders that are not attaining water quality standards. Littlejohns Creek has been listed as impaired on the 303(d) TMDL required list for *E. coli* and an unknown toxicity (California State Water Resources Control Board 2011). The source of both of these pollutants is unknown. The Central Valley RWQCB expected TMDL completion date for both coliform and the unknown toxicity is 2021.

3.4.3. Areas of Special Biological Significance

The study area is not within a designated California Area of Biological Significance (California Environmental Protection Agency 2011).

3.3.1.2. Groundwater Quality Objectives

The following objectives are relevant to the protection of designated beneficial uses and apply to all ground waters of the Sacramento and San Joaquin River basins. The objectives do not require improvement over naturally occurring background concentrations. Groundwater quality objectives within the Sacramento-San Joaquin River basin have been established for the parameters summarized in Table 2 (Central Valley Regional Water Quality Control Board 2011).

Table 2. Groundwater Quality Objectives

Parameter	Concentration
Bacteria	In groundwater used for domestic or municipal supply (MUN), the most probable number of coliform organisms over any seven day period shall be less than 2.2 organisms/100 ml.
Chemical Constituents	Shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At a minimum, designated MUN ground waters shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCL) specified in Title 22 CFR.
Radioactivity	At a minimum, designated MUN ground waters shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCL) specified in Title 22 CFR.
Taste and Odors	Shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.
Toxicity	Shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses.

Source: (Central Valley Regional Water Quality Control Board 2011)

3.4. Existing Water Quality

3.4.1. Regional Water Quality

Long-term agricultural land uses in the Sacramento-San Joaquin river basin, specifically the widespread use of pesticides and fertilizers, have resulted in contamination of surface and groundwater, affecting humans, fish, and aquatic wildlife. Nitrate and DBCP (1,2,-Dibromo-3-choloropropane) levels exceeding the state drinking water standards occur extensively in groundwater in the basin and public and domestic supply wells have been closed because of the levels of these and other contaminants in several locations (California State Water Resources Control Board 2011). Sediment discharge from intensive agriculture is another common problem in the basin, affecting fisheries and serving as a means whereby toxic substances can enter the aquatic system.

Table 1. Surface Water Quality Objectives

Parameter	Concentration
Pesticides	• Shall not be present in concentrations that adversely affect beneficial uses or accumulate in bottom sediments or aquatic life in amounts affecting beneficial uses. • Total identifiable persistent chlorinated hydrocarbon pesticides shall not be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the EPA or the Executive Officer. • Shall not be present in concentrations that exceed those allowable by applicable antigradation policies (State Water Resources control Board Resolution No. 68-16 and 40 CFR, Section 131.12). • Shall not be present in concentrations that exceed the lowest levels technically and economically achievable.
Radioactivity	Shall not be present in concentrations that are harmful to human, plant, animal, or aquatic life, nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
Sediment	The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
Settleable Material	Shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
Suspended Material	Shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.
Tastes and Odors	Shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.
Temperature	Shall not be increased by more than 5 degrees Fahrenheit above natural receiving water temperature.
Toxicity	Shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
Turbidity	All surface waters in the region shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.

Source: (Central Valley Regional Water Quality Control Board 2011)

3.3.1.1. Groundwater Quality Objectives/Standards and Beneficial Uses

The Basin Plan designates existing and potential uses for groundwater within its planning region. Groundwater within the San Joaquin River basin is considered to be of beneficial use for municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

Table 1. Surface Water Quality Objectives

Parameter	Concentration
Bacteria (fecal coliform)	Shall not exceed a geometric mean of 200 organisms/100 ml, nor shall more than 10 percent of the total number of samples taken during any 30-day period exceed 400 organisms/100 ml.
Biostimulatory Substances	Shall not contain biostimulatory substances that promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
Chemical Constituents	Shall not contain chemical constituents in concentrations that adversely affect beneficial uses. In tributary waters to the San Joaquin River, these include:
• Arsenic	Maximum concentration: 0.01 mg/l
• Barium	Maximum concentration: 0.01 mg/l
• Copper	Maximum concentration: 0.01 mg/l
• Cyanide	Maximum concentration: 0.01 mg/l
• Iron	Maximum concentration: 0.3 mg/l
• Manganese	Maximum concentration: 0.05 mg/l
• Silver	Maximum concentration: 0.01 mg/l
• Zinc	Maximum concentration: 0.1 mg/l
Color	Shall be free of discoloration that causes nuisance or adversely affects beneficial uses.
Dissolved Oxygen	Shall not fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration shall not fall below 75 percent of saturation.
Floating Material	Shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses.
Oil and Grease	Shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
pH	Shall not be depressed below 6.5 or raised above 8.5.

Fish Passage

Native and non-native fish, such as Sacramento pike-minnow (*Ptychocheilus grandis*), green sunfish (*Lepomis cyanellus*), and black bass (*Micropterus* spp.) either have the potential or are known to occur within Littlejohns Creek in the study area. Common carp (*Cyprinus carpio*) and mosquito fish (*Gambusia affinis*) were observed within Littlejohns Creek during the site visit on April 22, 2012 (NSR 2012). None of these are special-status species and none are anadromous. Hardhead, a state species of special concern, may also occur in very low numbers within the study area. Habitat for these species is present upstream and downstream of the study area. The species of fish that are present in the study area would likely pass through the project area on a routine basis.

3.3. Water Quality Objectives/Standards and Beneficial Uses

3.3.1. Surface Water Quality Objectives/Standards and Beneficial Uses

Beneficial uses of water are defined in the Sacramento and San Joaquin rivers Basin Plan as those uses necessary for the survival and well-being of humans, plants, and wildlife, including agricultural use, municipal and domestic water supply, industrial use, recreation, and wildlife habitat (Central Valley Regional Water Quality Control Board 2011).

Although the beneficial uses for Littlejohns Creek have not been defined by either the Central Valley RWQCB (Central Valley Regional Water Quality Control Board 2011) or the County (San Joaquin County 2010), the creek is a tributary to the San Joaquin River, via French Camp Slough. Beneficial uses of the surface waters of the San Joaquin River include irrigation, recreation, transportation, and estuary/wildlife area (San Joaquin County 2010).

The Basin Plan contains water quality objectives that consider past, present, and future beneficial uses; environmental characteristics of the hydrographic unit; the ability to achieve desired water quality conditions; economic considerations; the need for regional housing, and the need to develop and use recycled water. Surface water quality objectives within the Sacramento-San Joaquin River basin have been established for the parameters summarized in Table 1.

(*Carpodacus mexicanus*), Brewer's blackbird (*Euphagus cyanocephalus*), western kingbird (*Tyrannus verticalis*), European starling (*Sturnus vulgaris*) and brown-headed cowbird (*Molothrus ater*) in addition to black phoebe (*Syronis nigricans*) and cliff swallow (*Petrochilodon pyrrhonota*), which were observed nesting under the bridge. Fish species observed within the creek include common carp (*Cyprinus carpio*) and mosquito fish (*Gambusia affinis*).

3.2.5.1. Aquatic Habitat

Special Status Species

The study area does not provide suitable habitat for any special-status plant species and none were detected during the reconnaissance-level survey conducted on April 22, 2012 by NSR (NSR 2012). Based on a review of habitat requirements and the results of the field assessment, 10 special-status animal species were determined to have the potential to occur within the study area. Six of these species are associated with an aquatic or riparian environment: giant garter snake (*Thamnophis gigas*), hardhead (*Mylopharodon conocephalus*), western pond turtle (*Emys marmorata*), California yellow warbler (*Dendroica petechia brewsteri*), yellow-breasted chat (*Icteria virens*), and tricolored blackbird (*Agelaius tricolor*). The study area, however, provide low to poor quality habitat for each of these species, and all have a low potential for occurrence (NSR 2012).

Stream/Riparian Habitats

Littlejohns Creek is a perennial stream whose habitat consists entirely of slow-moving, open water with scattered patches of watermeal (*Woffia globosa*) and duckweed (*Lemna* sp.). The creek supports no emergent vegetation or wetlands within the study area.

The creek supports a narrow, fragmented band of riparian vegetation downstream of the bridge and within the study area. Trees within this riparian band are limited to several small- to mid-sized Valley oaks (*Quercus lobata*). Scattered patches of Himalayan blackberry (*Rubus discolor*) are intermixed with an herbaceous layer dominated by rip gut brome (*Bromus diandrus*), tall annual willow herb (*Epilobium brachycarpum*), short-pod mustard (*Hirschfeldia incana*), and other ruderal species. Wildlife likely pass through this narrow riparian corridor, which also provides food, shade, shelter, nesting sites and other resources for wildlife.

Wetlands

No emergent vegetation or wetlands are found in association with Littlejohns Creek within the study area (NSR 2012).

3.2.4. Geology/Soils

Soils within the study area and vicinity consist almost entirely (85 percent) of Archerdale clay loam occurring on 0–2 percent slopes (Natural Resources Conservation Service 2012). Minor components include Cogna, Finrod, and Hollenbeck soils but only in very small percentages each. Archerdale clay loam is situated in fan terraces and the parent material consists of alluvium from mixed rock sources. These are well-drained, non-saline soils that are infrequently flooded and have a depth of over 80 inches to the water table. The typical profile consists of clay loam up to approximately 8 inches below the ground surface, and clay from about 8 inches to at least 60 inches below the ground surface. The erosion potential for Archerdale clay loam is slight (Natural Resources Conservation Service 2012).

The *Geologic Map of California* indicates the geology of the study area is comprised of Quaternary alluvium, lake, playa, and terrace deposits (Jennings and Strand 1960). These are unconsolidated and semi-consolidated deposits that are mostly non-marine in origin.

The soil profiles and geologic map for the study area and vicinity indicate that alluvial processes have shaped the region for a considerable period of time. The majority of soil in the undertaking area is alluvial in nature and common to landforms located in the Central Valley. Although the geology and soils indicate that flooding episodes rarely occur in the study area, over time such events have deposited deep soils along stream channels such as Littlejohns Creek.

3.2.5. Biological Communities

The dominant natural vegetative communities in the project vicinity are prairie grasslands and tule marshes, with some areas of riparian woodland comprised of Valley oak (*Quercus lobata*), cottonwood (*Populus fremontii*), sycamore (*Platanus racemosa*), and willows (*Salix* spp.; Kuchler 1977). Within the study area, biological communities include perennial stream, riparian, orchard, and barren areas.

Walnut orchards are located to the south and northwest of the study area and row crops are located to the northeast of the study area. Barren areas within and adjacent to the study area consists of Stanley Road, agricultural margins, agricultural access roads, and portions of rocked banks along Littlejohns Creek. These barren areas are either paved or appear to be actively cleared of vegetation by mechanical and/or chemical methods.

Wildlife within the study area is largely concentrated along the narrow band of riparian vegetation downstream of the bridge. Wildlife species observed by North State Resources biologists in April 2012 included house sparrow (*Passer domesticus*), house finch

Within the study area, the Littlejohns Creek channel ranges in width (at top of bank) between approximately 82 feet and 138 feet (Domenichelli and Associates 2012). RSP has been previously applied to a portion of the northeast bank, but the remaining bank sections are earthen with some vegetation above the ordinary high water mark. The bank vegetation includes grasses and herbaceous vegetation on the east side of the bridge and mature trees and shrubs on the west side of the bridge.

Floodplains

The Federal Emergency Management Agency (FEMA) has mapped the portion of the creek within the study area as a Special Flood Hazard Area that is subject to inundation by the one percent annual chance flood, or the 100-year flood. FEMA has also designated this portion of the creek as a Floodway Area, thereby requiring the stream channel and adjacent floodplain areas to be kept free of encroachment to allow for the one percent annual flood flows to pass without substantial increases in flood heights (Federal Emergency Management Agency 2009).

Municipal Supply

Although the Basin Plan does not specify Littlejohns Creek as a municipal water source, the creek is a tributary to the San Joaquin River, which is a designated source of drinking water for the city of Stockton and other Central Valley communities (Central Valley Regional Water Quality Control Board 2011). There are no municipal wells within the project study area or vicinity.

3.2.3.3. Groundwater Hydrology

Littlejohns Creek is within the Eastern San Joaquin Groundwater Subbasin (California Department of Water Resources 2006). Alluvium and Modesto/Riverbank formations (undifferentiated) that underlie the region consist primarily of sand and gravel fans with clay, silt, and sand interfan areas. Groundwater in the region around the study area contains significant levels of calcium-magnesium bicarbonate and calcium-sodium bicarbonate anions (California Department of Water Resources 2006). The subbasin is recharged by precipitation, subsurface inflow, and seepage from irrigation water applied to upland areas. However, the rate of groundwater extraction has been found to exceed the rate of safe annual yield, causing the saline front to move eastward from the Stockton area at a rate of 140 to 150 feet per year (California Department of Water Resources 2006). Excavation for the project would be relatively shallow (a maximum of 4.5 feet), and would not be expected to encroach into the local groundwater subbasin.

3.2.3. Hydrology

3.2.3.1. Regional Hydrology

The San Joaquin River Basin covers 15,880 square miles. The basin includes the entire area drained by the San Joaquin River and its tributaries, including the portion of the Delta south of the Sacramento River and south of the American River watershed (California Department of Water Resources 2011). The Eastern San Joaquin Subbasin is drained by the San Joaquin River and its major tributaries: the Stanislaus, Calaveras, and Mokelumne rivers (California Department of Water Resources 2006).

3.2.3.2. Local Hydrology

Precipitation and Climate

The regional climatic pattern is characterized as Mediterranean, with cool but mild winters and hot, dry summers. Average annual precipitation the study area is 13.8 inches and comes mostly from rain. In an average year, about 80 percent of all precipitation falls from October through April. Temperature ranges in the Central Valley are much greater than in the nearby coastal areas and the Sierra Nevada, and thick fog is fairly common during the winter. For the period from October 1, 1948 to February 26, 2012, average high temperatures in Stockton (about 12 miles east of the bridge) ranged from 53.7°Fahrenheit (F) (January) to 94.2°F (July). The annual average maximum was 74.5°F. During this period, monthly average minimum temperatures ranged from 37.6°F (January) to 60.4°F (July). The annual average minimum was 48.5°F (Western Regional Climate Center 2012).

Surface Streams

Littlejohns Creek is an important local source of agricultural irrigation water. Under natural conditions, Littlejohns Creek is an intermittent stream. Littlejohns Creek is now regulated by numerous dams upstream, including the Farmington Dam. Summer releases from water storage reservoirs upstream of the study area and irrigation return flows have caused the stream to flow year-round (San Joaquin County Resource Conservation District 2011). The Duck Creek Diversion Structure at Farmington Dam (located approximately five air miles southeast of the study area) diverts flow from Duck Creek into Littlejohns Creek. This diversion, operated by the Corps, has an objective flow of 2,000 cubic feet per second below the Farmington Dam (U.S. Army Corps of Engineers 1999). Although the stream channel at the Stanley Road Bridge is approximately 20-feet deep, as measured from the centerline of the channel bottom to the underside of the bridge deck, the water depth averages around 12 feet (Domenichelli and Associates 2012). Flow velocity averages about 5 feet per second (fps) (Domenichelli and Associates 2012). During storm events, flow velocities remain fairly slow at just over 6 fps (Domenichelli and Associates 2012) but water levels can rise to more than 20 feet; enough to overflow the channel banks in some portions of the study area.

3. Affected Environment

3.1. Introduction

The study area for this analysis consists of an approximately 0.96-acre area centered on the Stanley Road Bridge crossing of Littlejohns Creek in a rural residential and agricultural portion of San Joaquin County east of Stockton.

3.2. General Setting

The project is located in the 1,175,697-acre Middle San Joaquin-Lower Merced-Lower Stanislaus Hydrologic Unit (No. 18040002) (U.S. Environmental Protection Agency 2011). The project is located in the San Joaquin River Watershed of this hydrologic unit. The San Joaquin River serves as a primary source of agricultural irrigation water for the San Joaquin Valley. The San Joaquin River generally flows in northward direction, eventually converging with the Sacramento River in the eastern portion of the San Joaquin-Sacramento Delta. Water from the Delta flows west into San Francisco Bay and, ultimately, into the Pacific Ocean.

3.2.1. Population and Land Use

The project is situated in a rural, agricultural portion of the county. Land uses in the project vicinity include orchards, row crops, farm-related structures, and low-density rural residences. Two residences are located immediately adjacent to the study area on the west side of Stanley Road; one residence is on the north side of Littlejohns Creek and the other is on the south side of the creek. Agricultural access roads are located near the northeast and southeast corners of the bridge, and residential driveways are located near the northwest and southwest corners of the bridge.

3.2.2. Topography

The study area is located in the Central Valley geomorphic province, which is characterized by relatively flat terrain. Topography in the study area is generally flat with the exception of the incised channel of Littlejohns Creek. The elevation within study area ranges from approximately 80 feet above mean sea level (msl) at the lowest point in the channel to approximately 102 feet above msl at the surface of Stanley Road. The bridge deck sits at an elevation of 102.6 feet msl and the bottom soffit of the bridge deck is at an elevation of 101.06 feet msl (Domenichelli and Associates 2012).

Cologne Act, the State regulates discharges to waters of the state through the adoption of water quality policies, plans, and objectives protecting the state's waters for the use and enjoyment of the people. This act requires that a Report of Waste Discharge be filed with the appropriate RWQCB for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. Waters of the state include not only waters of the United States, but also those groundwater and surface water features not regulated by the Corps under Section 404 of the CWA. Following receipt of a Report of Waste Discharge, the RWQCB issues either Waste Discharge Requirements (WDRs) or a waiver for WDRs. Beginning in March 2003, the SWRCB began requiring NPDES permit compliance for discharge from construction activities disturbing 1 or more acres of soil.

The Porter-Cologne Act also requires each of the nine RWQCBs throughout the state to adopt a Water Quality Control Plan or Basin Plan. Each Basin Plan designates beneficial uses for water resources within the basin, establishes water quality objectives, contains programs designed to achieve water quality objectives, and references plans and policies adopted by the SWRCB. Each RWQCB is responsible for establishing water quality objectives that will afford reasonable protections to the beneficial uses and prevent nuisances to water resources within its jurisdictional area. The Porter-Cologne Act allows for some flexibility in changes to water quality provided the beneficial uses are not adversely affected.

Littlejohns Creek is located within the Central Valley RWQCB's Sacramento and San Joaquin river basin planning area and is covered by the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan; Central Valley Regional Water Quality Control Board 2011).

2.3. Regional and Local Water Quality Regulations

2.3.1. Drainage and Flood Control Improvements

Improvements to drainages and flood control structures are subject to review and approval by the San Joaquin County Flood Control and Water Conservation District. This agency, which is staffed by the San Joaquin County Department of Public Works, is responsible for overseeing the construction, operation, and maintenance of flood control, water supply, drainage, and groundwater recharge projects within San Joaquin County. Accordingly, the project is subject to review and approval by the County. Methods for reducing impacts associated with storm water runoff from project features (e.g., soils disturbed during construction) have been incorporated into the project design.

2.1.1.3. Section 402

Section 402 of the CWA established the National Pollutant Discharge Elimination System (NPDES) as the basic structure for regulating the discharge of pollutants into waters of the U.S. The main goal of the NPDES is to protect human health and the environment. Under the NPDES, a permit is required for the discharge of pollutants to the waters of the United States from municipal storm drain systems, specific industrial activities, and construction activities resulting in ground disturbance of 1 acre or more. NPDES permits establish enforceable effluent limitations on discharges, require monitoring of discharges, designate reporting requirements, and require the permittee to implement best management practices (BMPs) to protect water quality. In California, the federal Environmental Protection Agency (EPA) has delegated authority to implement the NPDES to the State Water Resources Control Board (SWRCB) and its nine RWQCBs.

2.1.1.4. Section 404

The Corps and the EPA regulate the placement of dredged or fill material into "waters of the United States" under Section 404 of the Clean Water Act. Waters of the United States include lakes, rivers, streams, and their tributaries and wetlands. Wetlands are defined for regulatory purposes as "areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 Code of Federal Regulations [CFR] 328.3, 40 CFR 230.3). The Corps may issue either individual permits on a case-by-case basis or general permits on a program level for any fill proposed within waters under Corps jurisdiction. General permits are pre-authorized and are issued to cover classes of activities that are expected to cause only minimal adverse environmental effects. Nationwide permits (NWPs) are general permits issued to cover particular fill activities. All NWPs have general conditions that must be met for the permits to apply to a particular project, as well as specific conditions that apply to each NWP.

Although Littlejohns Creek within the study area has not been delineated for the purposes of the project, the creek would most likely meet the criteria of a water of the United States. The proposed excavation and fill activities within Littlejohns Creek would most likely require Section 404 authorization by the Corps.

2.2. State Laws and Requirements

2.2.1. Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (1969) is California's statutory authority for the protection of water quality, predating the CWA. Under the Porter-

2. Regulatory Setting

Several regulatory authorities at the federal, state, and local levels control the flow, quality, and supply of water in California either directly or indirectly. This section focuses on laws related directly to the water quality aspect of the project.

2.1. Federal Laws and Requirements

2.1.1. Clean Water Act

In 1972 Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source unlawful. Known today as the Clean Water Act (CWA), Congress has amended the act several times. The following discussion describes the CWA sections relevant to the project.

2.1.1.1. Section 303

Section 303 of the CWA requires each state to adopt water quality objectives for surface waters. Section 303(d) of the CWA further requires states to maintain lists of impaired water bodies that may require additional protections (beyond traditional control measures) to ensure that water quality standards are realized and maintained. The State of California has calculated the total maximum daily load (TMDL) volumes for water bodies throughout the state. TMDLs are the sum of individual pollutant load allocations from point sources, nonpoint sources, and natural background conditions, with an appropriate margin of safety. TMDL constituents that are considered to cause impairment to water bodies include inorganic and organic chemical compounds, metals, sediment, and biological agents. Littlejohns Creek is listed on the Section 303(d) TMDL list for *E. coli* and an "unknown" toxicity (California State Water Resources Control Board 2011).

2.1.1.2. Section 401

Section 401 of the CWA specifies that any applicant for a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters, shall provide the federal licensing or permitting agency a certification from the state agency with jurisdiction over those waters that the project will comply with water quality standards, including beneficial uses, water quality objectives, and the state anti-degradation policy. For projects in San Joaquin County, the responsible state agency is the Central Valley Regional Water Quality Control Board (RWQCB). Discharges of dredged or fill material into Littlejohns Creek are subject to the U.S. Army Corps of Engineers (Corps) jurisdiction under Section 404 of the CWA (see discussion below). Therefore, a Section 401 Water Quality Certification would be required for this project.

In accordance with the SER "Content and Recommended Format" for technical water quality studies, this report addresses the following:

- *Regulatory Setting* – Includes an overview of federal, state, and local regulations.
- *Affected Environment* – Includes an overview of geography, topography, and geology; a discussion of regional water quality objectives for the affected water body; and a description of the existing water quality of the affected water body.
- *Environmental Consequences* – Addresses potential short-term construction and long-term operational effects of the project on area water quality, including an assessment of site-specific and cumulative impacts.
- *Avoidance and Minimization Measures* – Recommends measures to avoid or minimize potentially significant water quality impacts as a result of the project.

The RSP placement area (i.e., the disturbed surface area) would occupy approximately 0.14 acre (78 linear feet) of Littlejohns Creek. Installation of RSP and the wire mats would be completed in 4 to 6 days.

1.1.8. Site Rehabilitation

The cofferdams and bypass would be removed by using an excavator and hand crews, and the remaining fill dirt would be exported from the project area. This would be completed in 2 to 3 days.

1.1.9. Project Impact Area

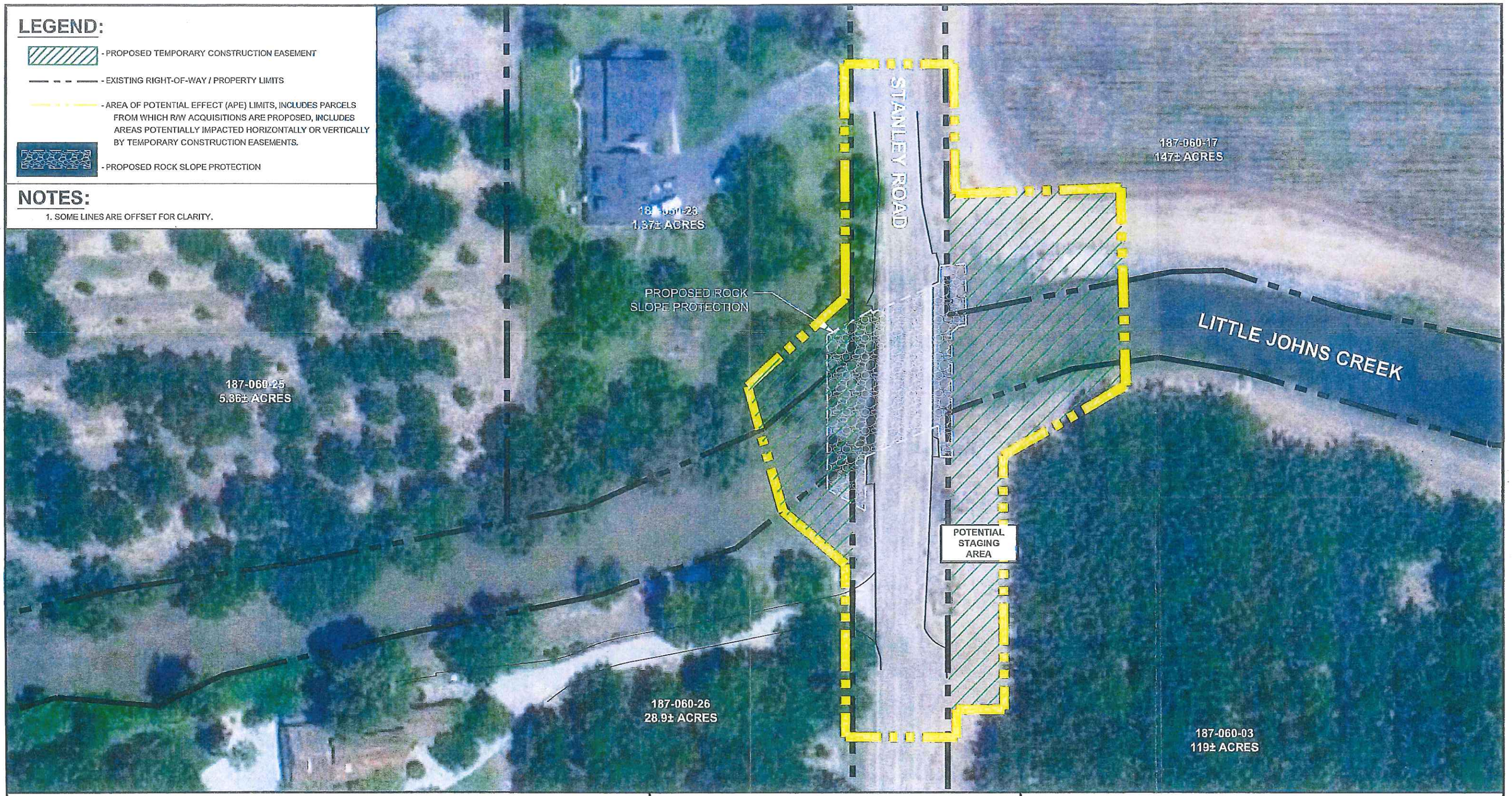
The project impact area would be contained within areas of proposed RSP (approximately 0.14 acre), associated TCE (approximately 0.49 acre), and the existing Stanley Road right-of-way (approximately 0.33 acre). The total area of potential ground disturbance is approximately 0.96 acre.

1.2. Approach to Water Quality Assessment

The purpose of this WQAR is to fulfill the requirements of NEPA and CEQA. The document includes a discussion of the proposed project, the physical setting of the study area, and the regulatory framework with respect to water quality. This report also provides data on surface water and groundwater resources within the study area and the water quality of these waters, describes water quality impairments and beneficial uses, identifies potential water quality impacts and benefits associated with the proposed project, and recommends measures to minimize short-term construction and long-term operational water quality impacts caused by the project.

This study follows Caltrans' SER for WQARs (California Department of Transportation 2012a). The SER contains information appropriate to all transportation projects developed under the auspices of Caltrans, and to all local agency highway, street, and road projects with funding or approvals from the FHWA.

The purpose of the SER is to provide a single, standard reference on compliance with NEPA and related federal laws, executive orders, regulations, and policies. The reference is intended for statewide use by local agencies, Caltrans, and FHWA staff. The SER also provides information on compliance with CEQA and related state laws, executive orders, and regulations.



Mahmoud Saqqa 6/11/12
Mahmoud Saqqa, PE — Date
Senior Bridge Engineer
San Joaquin County Department of Public Works

Jacqueline Wait 25 June 2012
Caltrans District 10 PQS — Date

6/25/12
Caltrans District 10 Local Assistance Engineer — Date

0 25 50 100 200
GRAPHIC SCALE: 1" = 50'

N

AREA OF POTENTIAL EFFECTS (APE)

STANLEY ROAD BRIDGE No. 29C-112 SCOUR MITIGATION
OVER LITTLE JOHNS CREEK
SAN JOAQUIN COUNTY, CALIFORNIA
10-SJ-0-CR
BPMP-5929(224)

Chapter 3. Sources Consulted

3.1. Summary of Methods and Results

Archival research for the Project included a record search request submitted by the County to the Central California Information Center (CCIC) of the California Historical Resources Information System that included the APE and a distance of up to approximately 100 meters (m) from its boundaries (Appendix A). The purpose of this research was to determine if any prehistoric or historic-era cultural resources were known to exist within or in the vicinity of the APE. This record search was conducted on July 25, 2011, and included but was not necessarily restricted to a review of the following sources:

- *National Register of Historic Places* (updates through June 2010)
- *California Register of Historic Resources* (updates through June 2010)
- *California Historical Landmarks* (updates through June 2010)
- *California Inventory of Historic Resources* (California Department of Parks and Recreation 1976)
- *Historic Properties Directory* (updates through June 2010)
- General Land Office Plat maps
- Historic USGS topographic quadrangles

The CCIC records search provided to the County noted that no prehistoric or historic-era sites, features, or artifacts were known to exist within the APE and that no previous studies had been conducted within the APE or in the immediate area (one half-mile radius of the APE).

3.2. Summary of Others Consulted

Additional research was conducted at the San Joaquin County Historical Society and Museum and through the on-line site for the San Joaquin County Surveyor. This research included a review of additional regional maps, surveyor's records, and local histories. None of the sources consulted suggest that any historic-era developments occurred within or immediately adjacent to the APE, with the exception of the construction of a bridge over Littlejohns Creek sometime between 1915 and 1952. The 1968 photo-revised 1952 *Peters, California* quadrangle shows two buildings near the APE, one adjacent to the north bank of Littlejohns Creek and one on the south bank. These likely represent the two existing residences at these locations but neither is within or adjacent to the APE.

In addition to the research conducted at the San Joaquin County Historical Society, NSR cultural resources specialist Brian Ludwig, Ph.D., conducted additional archival research, consisting of a review of the 1915 U.S. Geological Survey *Peters, California* 7.5-minute quadrangle map. This map shows the historical location of what would become Stanley Road within the Project APE. The road does not cross Littlejohns Creek nor are there any buildings or structures depicted in the immediate vicinity. However, by 1952 the *Peters, California* quadrangle appears to show a bridge at this location and Stanley Road continues to the south for approximately ½ mile and into Section 30 before ending within areas depicted as under cultivation.

The results of the CCIC and NSR archival research suggest there is a low to moderate potential for cultural resources to be located within and adjacent to the APE. The main historical themes relevant to the APE and vicinity consist of farming and transportation (Stanley Road). With these activities having occurred in and near the APE, it is expected that resources associated with these themes could be documented during an archaeological survey.

3.3. Summary of Native American Consultation

In accordance with the consultation provisions of Section 106 and to determine if any culturally significant Native American properties were situated within or near the APE, the County sent a letter to the Native American Heritage Commission (NAHC) requesting a search of the NAHC Sacred Lands File and a list of appropriate Native American representatives who might have an interest in or concerns about the Project. The NAHC replied to the County on July 19, 2011, stating that no culturally significant properties were located in or near the APE. The NAHC also provided a list of four Native American representatives who the County then contacted individually by letter (Appendix B). In order to update and enhance the consultation effort, NSR also contacted the listed individuals by phone on March 22 and again on March 29, 2012. The representatives contacted by the County and NSR consisted of the following individuals:

- Katherine Erolinda Perez: Ohlone/Northern Valley Yokuts
- Jay Johnson: Southern Sierra Miwuk Nation
- Anthony Brochini: Southern Sierra Miwuk Nation
- Les James: Southern Sierra Miwuk Nation

No responses were received by letter nor were phone messages returned (see Appendix B).

Chapter 4. Background

4.1. Environment

Regionally, the Project APE is located in the Central Valley geomorphic province. The elevation in the immediate area of the APE ranges from approximately 95 feet (ft) to 100 ft above mean sea level. Current land uses within and adjacent to the APE include the alignment of Stanley Road and the bridge over Littlejohns Creek, several rural residential parcels, and agricultural land currently planted with orchards and row crops.

4.1.1. Flora

Floral occurrences within and near the APE are influenced in large part by the overall climate. The climatic pattern is characterized as Mediterranean, with cool, wet winters and hot, dry summers. Soil studies suggest that the general climate may have been wetter in the past. However, periods of persistent drought in California occurred between 1,100 and 1,000 years before present (BP) and again between 800 and 660 BP. Shorter drought periods have also been documented over the last 2,000 years using dendrochronology, soil core borings, and other methods.

The dominant natural vegetative communities in this area are prairie grasslands and tule marshes, with some areas of riparian woodland (Kuchler 1977), particularly along the edges of Marsh Creek. Valley oak (*Quercus lobata*), cottonwood (*Populus fremontii*), sycamore (*Platanus racemosa*), and willows (*Salix* spp.) once grew on the verge of streams and rivers. Tule marshes are represented by stands of tules, cattails, sedges, rushes, and clumps of willows. Vegetation tended to be sparse in the prairie grasslands, limited to grasses and flowering herbs. However, a single valley oak could produce 300–500 pounds of acorns each year (Baumhoff 1963), and tule roots could be ground into meal to supplement the abundant faunal resources (Wallace 1978). Native Americans burned off the grasslands annually to increase the following year's seed crop (Cook 1960). In addition, tule supplied reeds for housing, clothing, rafts, and baskets.

4.1.2. Fauna

Faunal species that would have frequented the APE and surrounding area included mule deer (*Odocoileus hemionus*), tule elk (*Cervus elaphus*), pronghorn antelope (*Antilocapra americana*), weasel (*Mustela frenata*), river otter (*Lutra canadensis*), raccoon (*Procyon lotor*), and beaver (*Castor canadensis*). Migratory waterfowl such as Canada geese (*Branta canadensis*) and swans (*Olor* sp.) passed through during the winter, joining great blue and black-crowned night herons (*Ardea herodias, Nycticorax nycticorax*), ibis (*Plegadis guarauna*), cranes (*Grus canadensis*), cormorants (*Phalacrocorax* sp.), and bald eagles (*Haliaetus leucocephalus*). Badgers (*Taxidea*

taxus), coyotes (*Canis latrans*), skunks (*Mephitis mephitis*), jackrabbits (*Lepus californicus*), and cottontail rabbits (*Sylvilagus audubonii*) inhabited higher ground. In the nearby waterways, Chinook salmon (*Oncorhynchus tshawytscha*), steelhead trout (*Salmo gairdneri*), Pacific lamprey (*Lampetra tridentate*), and white sturgeon (*Acipenser transmontanus*) seasonally joined other fish species indigenous to the area. Predators such as mountain lions (*Felis concolor*), grizzly bears (*Ursus arctos*), wolves (*Canis lupus*), kit fox (*Vulpes macrotis)*, and bobcats (*Lynx rufus*) also roamed the area (Moratto 1984).

4.1.3. Soils

Soils within and near the APE consist primarily (85%) of Archerdale clay loam occurring on 0% to 2% slopes. Minor components include Cogna, Finrod, and Hollenbeck soils, but only in very small percentages each. Archerdale clay loam is situated in fan terraces and the parent material consists of alluvium from mixed rock sources. These are well-drained, non-saline soils infrequently flooded with a depth of over 80 in. to water table. The typical profile consists of clay loam up to approximately 8 in. below surface, and clay from about 8 in. to at least 60 in. below the ground surface (Natural Resources Conservation Service 2012).

The *Geologic Map of California* indicates that the geology of the APE consists of Quaternary alluvium, lake, playa, and terrace deposits. These are unconsolidated and semi-consolidated deposits that are mostly non-marine in origin.

The soil profiles and geologic map for the APE and surrounding area indicate that alluvial processes have shaped the region over a considerable period of time. The majority of the soil in the undertaking area is alluvial and is common to landforms located in the Central Valley. Although the geology and soils indicate flooding episodes rarely occur in the APE, over time such events have deposited deep soils along stream channels such as Littlejohns Creek. Consequently, archaeological resources could be buried and visible in cut banks, or visible on the ground surface.

4.2. Ethnography

Ethnographically, the Northern Valley Yokuts occupied the Project vicinity—that is, the land on either side of the San Joaquin River from the Delta to south of Mendota. The Diablo Range probably marked the Yokuts' western boundary (Wallace 1978); the eastern edge would have lain along the Sierra Nevada foothills. Milliken (1997) places the *Yatchicumne* Yokut group in the area now encompassed by the City of Stockton, and the *Passasime* Yokuts in the French Camp and Duck Creek slough areas.

Yokuts occupation of the northern parts of the range may be relatively recent, as linguistic evidence points toward an earlier Miwok occupation. The Yokuts gradually expanded their range northward and clearly occupied the area during the Spanish Colonial period, as evidenced by mixed historic and prehistoric artifact assemblages. The late prehistoric Yokuts may have been the largest ethnic group in pre-contact California. The triblet, populated by a few hundred to a few thousand occupants, served as the basic political unit (Moratto 1984).

Because little evidence is available regarding the social organization of the Northern Valley Yokuts, much of the information pertaining to this group is drawn from what is known of other Yokuts peoples. Based on the organization of other Yokuts groups in California, the basic social unit was most likely the family. Marriages were frequently arranged and typically included a bride price (Kroeber 1925:492). Postmarital residence was matrilocal, despite the fact that most Yokuts groups practiced patrilineal descent (Kroeber 1925:493). They probably practiced a totemic moiety system based on such patrilineal descent, similar to other groups such as the Miwok and Chukchansi.

According to Milliken (2001:23), the Yokuts and other groups in California were typically organized into "autonomous political communities of intermarried families" that engaged in a variety of activities, including cooperative dances, labor coordination, dispute resolution, and defense of territories. These political communities were first described by Kroeber (1925) as tribelets, consisting of perhaps 300 people, each guided by a headman. These tribelets were composed of various family and household groups, including "parents, children, collateral, lineal, or affinal relatives, and sometimes non-relatives" (Bean 1978:673). The tribal members congregated into one main settlement, although smaller communities, "some mere hamlets containing two or three houses," were also common (Wallace 1978:466).

While it is not clear what impact the early Spanish explorations had on the native populations of the valley, the effects on native groups by later Spanish, Mexican, and American incursions are much better known and documented. One of the most devastating periods for native populations in California occurred as the result of the establishment of Spanish missions in Alta California beginning in 1769. This process actually commenced during the 16th century when Spanish friars first established missions in Baja California (Aschmann 1959). The intent and motivation of the missions were "conditioned by the desire of the invading or dominant race to convert the other to a new way of thinking, that is to say, to a new religion" (Cook 1976). Although the larger goal was to cement economic and political control over the California territory, religious conversion was also a major consideration.

The effects of missionization on Native Americans are evidenced by the drastic population decline during the mission period. The factors that contributed to this decline included disease and chronic ailments, food shortages, and cultural, physical, and psychological disruption. Among the most deadly diseases chronicled during the mission period were measles, smallpox, dysentery, various fevers, malaria, typhus, pleurisy, and pneumonia (e.g., Archibald 1978, Cook 1976, Stodder and Martin 1992). In addition, as native populations became physically exhausted, the missionaries "gathered converts from farther and farther inland," and many natives from the northern valley were taken to the San Jose, Santa Clara, Soledad, San Juan Bautista, and San Antonio missions. To acquire more converts and to reduce the supposed threat of non-converted native peoples, it was proposed at one time to extend the mission system inland, but these efforts never materialized (Beattie 1929).

During the subsequent Mexican Period (beginning in 1821), government authorities treated the native populations much the same as the Spanish had. They refused to recognize aboriginal right of ownership, but did concede vaguely-defined "rights" of occupancy (Castillo 1978:104). Regardless, native people continued to be seized for forced labor and their property was often confiscated. In northern California, native groups, including the Yokuts, were forced into the hacienda-peon society so common in Mexico. Interior tribes suffered extensively from brutality and violence at the hands of the Mexican colonists, especially if they resisted. This eventually led to guerrilla warfare tactics by native people, who "changed from peaceful, sedentary, localized groups to semi-warlike, semi-nomadic groups" (Castillo 1978:106). In the Central Valley, this native offensive continued to escalate until 1845, at which time hostilities rapidly decreased due to successful attacks by American colonists entering the valley (Castillo 1978:106).

While mission recruitment and disease had severe impacts on the native populations of the San Joaquin Valley, the subsequent American occupation (beginning in 1848) proved to be even more disastrous. Especially during the Gold Rush years, native populations were quickly overwhelmed. Although the northern San Joaquin Valley was not gold country, thousands of miners bound for southern gold fields crossed through it, "relentlessly pushing aside any natives in their path" (Wallace 1978:469). Areas that had once escaped direct contact with Europeans became more attractive to miners, such as the more remote valleys of the Sierra Nevada, Cascades, and Siskiyous. Subsequently, the rich soils of the Sacramento–San Joaquin Delta and the Central Valley began to be used for farming and ranching, causing the remaining Yokuts to be driven away from their traditional hunting and gathering lands. Ultimately, the destruction of native peoples in parts of the San Joaquin Valley "was so complete and done so early that many groups, especially on the west side, are almost totally unrecorded ethnographically" (Riddell 2002:55; also see Heizer 1974).

As part of this "process of dispossession" (Wallace 1978:469), a reservation system was developed in 1850, with the leaders of surviving groups signing treaties stripping them of their traditional territories in return for reservation lands. Three Northern Valley Yokuts tribes, the Hewchi, Chawchila, and Pitkachi, signed the treaty. However, these treaties were rejected by the new government of California, which "left nothing for the unfortunate little tribes to do except drift about, scrabbling for a living as best they could, since they had already been moved off the surrendered land" (Wallace 1978:469). Eventually many found work as ranch and farm laborers, for which they were poorly paid and housed. Conditions finally became so bad that federal authorities set aside some land for them on the Fresno and Tule River reserves. By the 1970s, most Northern Valley Yokuts were living among the general population or with other Indian groups.

Currently, the Nototonme/North Valley Yokut Tribe, Inc., a group of native people represented by Spokesperson Katherine Erolina Perez, represents the Northern Valley Yokuts in the Stockton region. The group is dedicated to the preservation of the Tribe's cultural heritage, including the preservation, documentation, and interpretation of their past through research on archaeological and human remains.

4.3. Prehistory

In general, few substantive archaeological studies have been conducted in the vicinity of the APE that have focused on the prehistory of the region. Consequently, it is difficult at best to provide specific details on the nature and character of prehistoric archaeological manifestations directly applicable to interpreting early Native American lifeways or chronology for the immediate area. However, a number of important investigations and discoveries have been made primarily to the east in the Stockton area that have resulted in the identification of sites and materials that have been instrumental in defining the cultural sequences seen in the archaeological record. Some of these sites include CA-SJO-17 on Mormon Slough (Fenenga 1970), CA-SJO-91 on French Camp Slough (Johnson 1970) and CA-SJO-155/165 to the southwest of the City of Stockton (Rolen 1981). These sites were apparently all found on landforms consisting largely of the Piper series of soils representing relatively high knolls in the otherwise low and largely inundated Sacramento-San Joaquin Delta. Although the APE occurs well to the east of these sites, they were critical to the development of an understanding of the prehistoric cultural sequences identified in California's Central Valley.

More recent investigations in the general region surrounding the APE have identified numerous and significant prehistoric deposits. Most notably, these include sites CA-SJO-93, CA-SJO-264, and CA-SJO-265 to the north, CA-SJO-158 and CA-SJO-160 just south of downtown Stockton, and CA-SJO-189 to the southwest of Stockton. The investigations at CA-SJO-93, CA-SJO-264,

and CA-SJO-265 (Delacorte 2001) were of particular interest in that the excavations there revealed numerous human interments, baked clay objects frequently overlooked in archaeological assemblages in the Central Valley, Napa obsidian from north of the Bay Area, and a diverse array of flaked lithic artifacts, faunal remains, and shell beads and ornaments. Werner and Flaherty's work on sites CA-SJO-158 and CA-SJO-160 (1997) recorded a number of milling features and lithic scatters that likely would be representative of sites documented near the APE. The findings resulting from several investigations at CA-SJO-189 (Emig et al. 1981, Lloyd 2006, Lloyd and Baolin 2005) indicated that this site was probably also situated on Piper soils and it contained 20 human interments and dense concentrations of flaked lithic materials, faunal remains, and shell beads. These and other studies conducted in and around San Joaquin County have contributed towards developing, refining, and in some cases redefining the temporal sequence of cultural manifestations in the Central Valley that are applicable to the APE and surrounding area.

Defining the prehistory of the Project APE and surrounding region relies on the classification of archaeological manifestations excavated and interpreted throughout much of the 20th century including those mentioned above. The Central California Taxonomic System (CCTS) was developed as a framework for comparing different archaeological sites in central California (Lillard et al. 1939, Heizer 1949). The earliest versions of the CCTS concentrated on the concept of cultural *horizons*. However, the Horizon concept was considered too broad and later was broken down into cultural *patterns* (Bennyhoff 1968) and further subdivided later yet into Phases or Aspects. A number of refinements added more subdivisions (Willy and Phillips 1958) and broke the system up by geographical as well as temporal differences (Bennyhoff 1977).

In the early 1970s, Fredrickson (1973, 1974) proposed a sequence of cultural manifestations or patterns for the central districts of the North Coast Ranges, placing them in a framework of cultural periods he believed were applicable to California as a whole. The idea of cultural patterns was distinct from the concepts of previous researchers (Beardsley 1954), who tended to emphasize assemblages of material goods as the basis for their classifications. Fredrickson took a much broader view of archaeological material culture and defined the term Pattern as "...an adaptive mode shared in general outline by a number of analytically separable cultures over an appreciable period of time within an appreciable geographic space" (Fredrickson 1973). These different cultural modes could be characterized by:

- Similar technological skills and devices (specific cultural items);
- Similar economic modes (production, distribution, consumption), including especially participation in trade networks and practices surrounding wealth (often inferential); and
- Similar mortuary and ceremonial practices (Fredrickson 1973).

Fredrickson also recognized that the economic/cultural component of each pattern could be manifested in neighboring geographic regions according to the presence of stylistically different artifact assemblages. He introduced the term aspect as a cultural subset of the pattern, defining it as a set of historically related technological and stylistic cultural assemblages. Fredrickson argued that temporal periods should be kept separate from the dating and definition of particular patterns given the coexistence of more than one cultural pattern operating at any given point in time in California prehistory (Fredrickson 1974). This integrative framework provides the means for discussing temporally equivalent cultural patterns across a broad geographic space.

The earliest well-documented entry and spread of humans into California occurred at the beginning of the **Paleo-Indian Period (12,000–8,000 BP)**. Social units are thought to have been small and highly mobile. Known sites have been identified in the contexts of ancient pluvial lake shores and coastlines evidenced by such characteristic hunting implements as fluted projectile points and chipped stone crescent forms. Pre-historic adaptations over the ensuing centuries have been identified in the archaeological record by numerous researchers working in the area since the early 1900s, as summarized by Fredrickson (1974) and Moratto (1984).

Few archaeological sites have been found in the valley that date to the Paleo-Indian or the **Lower Archaic (8,000–5,000 BP)** time periods; however, archaeologists have recovered a great deal of data from sites occupied by the Middle Archaic Period. The lack of sites from earlier periods may be because of high sedimentation rates, leaving the earliest sites deeply buried and inaccessible. During the **Middle Archaic Period (5,000–2,500 BP)**, the broad regional patterns of foraging subsistence strategies gave way to more intensive procurement practices. Subsistence economies were more diversified, possibly including the introduction of acorn processing technology. Populations were growing and occupying more diverse settings. Permanent villages that were occupied throughout the year were established, primarily along major waterways. The onset of status distinctions and other indicators of growing sociopolitical complexity mark the **Upper Archaic Period (2,500 BP–1,300 BP)**. Exchange systems become more complex and formalized and evidence of regular, sustained trade between groups was seen for the first time.

Several technological and social changes characterized the **Emergent Period (1,300 BP–200 BP)**. The bow and arrow were introduced, ultimately replacing the dart and atlatl. Territorial boundaries between groups became well established. It became increasingly common that distinctions in an individual's social status could be linked to acquired wealth. Exchange of goods between groups became more regularized, with more goods, including raw materials, entering into the exchange networks. In the latter portion of this period (500 BP–200 BP), exchange relations became highly regularized and sophisticated. The clamshell disk bead

became a monetary unit for exchange, and increasing quantities of goods moved greater distances while specialists arose to govern various aspects of production and exchange.

Fredrickson's Middle and Upper Archaic and Emergent Periods are further broken down under the CCTS. These three time periods are well represented in archaeological assemblages in the general vicinity of the APE. The assemblages are discussed in detail in Bennyhoff and Fredrickson (1969) and Moratto (1984) and summarized here:

The **Windmiller Pattern (5,000 BP–2,500 BP)** of archaeological assemblages included an increased emphasis on acorn use as well as a continuation of hunting and fishing activities. Ground and polished charmstones, twined basketry, baked-clay artifacts, and worked shell and bone were hallmarks of Windmiller culture. Widely ranging trade patterns brought goods in from the Coast Ranges and trans-Sierran sources as well as closer trading partners. Distinctive burial practices (ventrally extended, oriented westward) identified with the Windmiller Pattern also appeared in the Sierra foothills, indicating possible seasonal migration into the Sierra. Perforated charmstones were associated with some burials. Mano and metate and small mortars were used, but were rare.

The **Berkeley Pattern (Ragir's [1972] Cosumnes Culture [2,200 BP–1,300 BP])** represented a greater reliance on acorns as a food source than was seen previously. Distinctive stone and shell artifacts distinguished it from earlier or later cultural expressions. Burials were predominantly placed in a tightly flexed position and frequently included red ochre. Minimally shaped mortar and pestle technology was much more prevalent than the mano/metate. Non-stemmed projectile points become more common. Dating of the Berkeley Pattern varies across central California; in the Stockton region, the Windmiller Pattern continued longer than in other areas, gradually giving way to the changes that marked the Berkeley Pattern and which might represent the emergence of the Northern Valley Yokuts in this area. The Meganos Aspect of the Berkeley Pattern represented a localized intrusion of Windmiller people into the Stockton region (Bennyhoff 1982). These people combined Windmiller and Berkeley Pattern traits, as seen in mortuary practices and the stone tool industry. A particular aspect of Meganos culture was a tendency for burials to be placed in non-midden cemeteries in the tops of sand mounds near the mouths of the Sacramento and San Joaquin Rivers (Bennyhoff 1968).

The **Augustine Pattern (1,300 BP– 200BP)** was marked by increasing populations resulting from more intensive food procurement strategies, as well as a marked change in burial practices and increased trade activities. Intensive fishing, hunting and gathering, complex exchange systems, and a wider variety in mortuary patterns were all hallmarks of this period. Mortars and pestles were more carefully shaped; bow and arrow technology was present. Fishing implements

became more common, trade increased, and cremation was used for some higher status individuals.

Bennyhoff (1968) divided the Bay and Delta area into five archaeological districts in the late prehistoric to historic period. These districts were based on a combination of geography, artifactual constituents, and time. When these factors are applied to ethnographic maps of known prehistoric groups, it is clear that each district reflects a different ethnographic group. In the case of the APE and the surrounding area, the Stockton District is that portion of the northern San Joaquin Valley and adjoining foothills that was inhabited or exploited by the Northern Valley Yokuts.

4.4. History

The earliest recorded journey into the San Joaquin Valley by Europeans was by Spanish explorer Captain Pedro Fages (governor of Alta California from 1782 to 1791), who entered the valley from the south in 1772, searching for the deserters (Magruder 1950:13; Smith 1939:1). Fages' journey is "a surprising story of an entirely unknown California expedition," two years before Anza and four years before Garcés (Magruder 1950:13; also see Bancroft 1966; Bolton 1930, 1935, 1966). At this time, no permanent settlements were established in the valley by the Spanish, partly because the climate and access to supplies were preferable along the coast, and partly due to hostilities between the Europeans and the native populations (Smith 1939:1).

The first American known to have entered the valley was Jedediah Strong Smith, a trapper, explorer, and trader who traveled north from southern California to the American River in Sacramento in 1826 and 1827 (Magruder 1950:25-26). Subsequently, a number of trapping and mining expeditions were led into the valley by entrepreneurs such as Ewing Young, Joseph Walker, and Peter Lebec (Magruder 1950:26-31). Smith, Young, and Walker "trapped beaver and otter on every stream between Stockton and Grapevine Pass" (Smith 1939:1). Another well-known early explorer to the valley was Gen. John Charles Fremont, who made three major expeditions to the Far West in 1842, 1843, and 1845 (Magruder 1950:32; also see Wallace 1978:324, 362, 702), the latter of which culminated in the Bear Flag revolt against the Mexican authorities in Sonoma (e.g., see Hittell 1885).

The APE is situated south of what was originally the Campo de los Franceses land grant. This grant was made to Guillermo Gulnac in 1843, and consisted of over 48,000 acres near French Camp (Beck and Haase 1974). Gulnac entered into a partnership with Captain C. M. Weber, a German immigrant. Weber stayed briefly in New Orleans and Salt Lake City before making his way to Sutter's Fort, where he was employed as an overseer and general assistant to Sutter. After receiving a half interest in the rancho from Gulnac, Weber moved to Stockton in 1847 and

later purchased the other half interest. Weber actively encouraged settlement and convinced others to move to the region by offering them land, ultimately laying the groundwork for future and more intensive settlement and economic development (Prouty 1980).

One of the most prominent endeavors to develop during the Mexican and American periods was the raising of large herds of cattle for meat, hides, and tallow. The cattle industry in San Joaquin County and throughout California reached its greatest prosperity during the first years of the American Period. Mexican Period land grants had created large, pastoral estates in California, and a high demand for beef during the Gold Rush led to a cattle boom that lasted from 1849 to 1855. In 1855, however, the demand for California beef began to decline as a result of sheep imports from New Mexico, cattle imports from the Mississippi and Missouri valleys, and the development of stock breeding farms. When the beef market collapsed, the California ranchers were unprepared. Many had borrowed heavily during the boom, mortgaging their land at interest rates as high as ten percent per month. The collapse of the cattle market meant that many of these ranchos were lost through foreclosure, while others were sold to pay debts and taxes (Cleland, 1941:108-114).

During the American period, in addition to cattle and sheep ranches, a growing number of farms appeared in San Joaquin County, including in the Stockton and nearby Farmington areas. A rural community cultural pattern existed in the Project vicinity from approximately 1870 to 1930. This pattern consisted of communities made up of population aggregates that lived within well-defined geographic boundaries, shared common bonds, and cooperated to solve shared problems. They lived on farmsteads, tied together by a common school district, church, post office, and country store. These farmsteads and dispersed farming communities gave way to horse ranches, dairies, and nurseries, which in turn were replaced by the establishment of the roadside service complex. The roadside service industry thrived in the highly mobile, mechanized pre- and post-war society, which was linked by state and federal roadways.

Critical to the development of San Joaquin County, the City of Stockton, and the small town of Farmington (located about 15 miles directly east of the APE) was the development of rail lines to provide for the transportation of products to regional markets. One of the earliest to be proposed in the area was a 48-mile line from Stockton, through Farmington, and on into Copperopolis, where large quantities of copper were being recovered from the recently developed mines. In 1863, the initial bonds for the Stockton & Copperopolis Railroad were approved by the residents of San Joaquin County, including those of Farmington who expressed the following sentiment:

> *This community is composed of solid firms and sturdy mechanics, who have lived where the steam whistle of the locomotive greeted the ears daily, and we have noticed that the*

railroad enhances the value of property and vitalizes all kinds of business. We, therefore, sanction and favor railroad enterprises in our vicinity.

The line, however, would not be constructed until 1871. Some of the later investors in the line were connected with the Central Pacific, which eventually purchased the Stockton & Copperopolis Railroad and absorbed it into the larger Central Pacific system (Tinkham 1923)

4.4.1. Farmington

The town site of Farmington was originally settled in 1848 by David Wells and George Thayer, who emigrated from Oregon. According to Tinkham (1923), they erected a tule house on the present-day town site and apparently gained title to 320 acres of pasture and agricultural land. Informally known as the "Oregon Ranch" or "Oregon Tent," the ranch was purchased as a stock farm in 1852 by Nathaniel S. Harrold. He increased his holdings until he owned over 5,000 acres within and adjacent to Farmington.

In 1858, W. B. Stamper purchased large tracts of land in and around Oregon Ranch and in 1859 succeeded in having the settlement renamed Farmington in homage to the foundation of the area economy. The town prospered further when the Oakdale Railroad (a short line built between Peters and Farmington by Central Pacific in 1871) was built. It greatly benefited the town, and by the early 1890s, there were three hotels, two merchandising stores, a livery stable, three blacksmith shops, a harness store, two churches, and an Odd Fellows lodge (Farmington Lodge No. 296). Although the town never grew much past its early 20th century configuration, it still serves as an important local commercial and residential community, retaining many early buildings and much of its rural setting and character.

Chapter 5. Field Methods

The 0.96-acre APE was surveyed by NSR archaeologist Brian Ludwig, Ph.D., on March 22, 2012, walking parallel transects, although areas exhibiting extreme to precipitous slopes (the immediate banks of Littlejohns Creek) were not traversed. Surface visibility was variable but generally excellent (up to 100%), with many areas having been recently scraped or plowed for agricultural activities. The overall APE and surrounding area were documented with digital photography.

Chapter 6. Study Findings and Conclusions

6.1. Survey Results

No prehistoric or historic-era sites, features, artifacts, or potentially sensitive landforms or soil deposits were noted as a result of the archaeological survey.

Chapter 7. Other Resources

7.1. Unidentified Cultural Materials

If previously unidentified cultural materials are unearthed during construction, it is Caltrans' policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological surveying will be needed if undertaking limits are extended beyond the present survey APE limits.

Surface surveys are not infallible and buried resources might not be detected during a surface survey. Archival research can yield general observations about archaeological sensitivity (i.e., the possibility of encountering archaeological deposits, buried or not). Sensitivity can be assessed based on the characteristics and distribution of known (i.e., archived) cultural resources and environmental factors. These do not exclude the possibility of buried archaeological deposits.

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Appendix A Central California Information Center Record Search Results

CENTRAL CALIFORNIA INFORMATION CENTER

California Historical Resources Information System

Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307 - FAX (209) 667-3324

Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

Date: July 25, 2011

CCIC File #: 8018 L
Project: Stanley Road Bridge (#29C-112) Scour Mitigation

Mark Hopkins, Senior Planner/Biologist
Transportation Engineering Division
San Joaquin County Public Works
P.O. Box 1810
Stockton, CA 95201

Dear Mr. Hopkins,

We have conducted a records search as per your request for the above-referenced project area located on the Peters USGS 7.5-minute quadrangle map in San Joaquin County.

Search of our files includes review of our maps for the specific project area and the immediate vicinity of the project area, and review of the National Register of Historic Places, the California Register of Historical Resources, the *California Inventory of Historic Resources* (1976), the *California Historical Landmarks* (1990), and the California Points of Historical Interest listing (May 1992 and updates), the Directory of Properties in the Historic Property Data File (HPDF) and the Archaeological Determinations of Eligibility (ADOE) (Office of Historic Preservation current computer lists dated 03-09-2011), the CALTRANS State and Local Bridge Survey (1989 and updates), the *Survey of Surveys* (1989), GLO Plats, and other pertinent historic data available at the CCIC for each specific county.

The following details the results of the records search:

Prehistoric or historic resources within the project area:

(1) No prehistoric or historic archaeological resources or historic properties have been reported to the Information Center, but this does not preclude the possibility that cultural features over 45 years old are in the project area.

(2) The bridge in question (#29C-112) was built in 1974 and is considered by Caltrans to be ineligible for the NRHP. Reference: Caltrans' *Structure Maintenance & Investigations, Historical Significance—Local Agency Bridges* (Jan. 2011).

(3) The GLO Plat map T1N/R9E (sheet #41-014, dated 1851-1855), and Map No. 2 from Thompson and West (1879; 1968 reprint) show the creek at this location. The latter map also shows a possible building or complex of buildings near the SE end of the bridge, part of the estate of J.F. & N. Harrison of Douglas Township. No lithograph was available to verify the location of the buildings on this estate. The 1952 (Photorevised 1968) Peters USGS 7.5' map shows a building near the NW end of the bridge (south of the well that is shown on your record search map), as well as two private or access roads (which can also be seen on your map). This building may be over 45 years old.

Prehistoric or historic resources within the immediate vicinity of the project area:

None have been reported to the Information Center.

Resources that are known to have value to local cultural groups:

None have been formally reported to the Information Center.

Previous investigations within the project area:

None have been reported to the Information Center:

Previous investigations within the immediate vicinity of the project area:

None have been reported to the Information Center.

Recommendations/Comments: Based on existing data in our files the project area has a moderate-to-high sensitivity for the possible discovery of prehistoric and/or historic archaeological resources on and under the surface of the ground around the bridge. The property at the NW end of the bridge may also contain standing structures over 45 year old that may be considered potential cultural resources. We recommend professional archaeological survey of the project area as well as archaeological monitoring during any excavation for this project that disturbs native soils.

The Statewide Referral List for Historical Resources Consultants is posted for your use on the internet at http://chrisinfo.org

Please be advised that a historical resource is defined as a building, structure, object, prehistoric or historic archaeological site, or district possessing physical evidence of human activities over 45 years old. There may be unidentified features involved in your project that are 45 years or older and considered as historical resources requiring further study and evaluation by a qualified professional of the appropriate discipline.

We advise you that in accordance with Federal and State law, if any historical resources are discovered during project-related activities, all work is to stop and the lead agency and a qualified professional are to be consulted to determine the importance and appropriate treatment of the find. If Native American remains are found the County Coroner and the Native American Heritage Commission, Sacramento (916-653-4082) are to be notified immediately for recommended procedures.

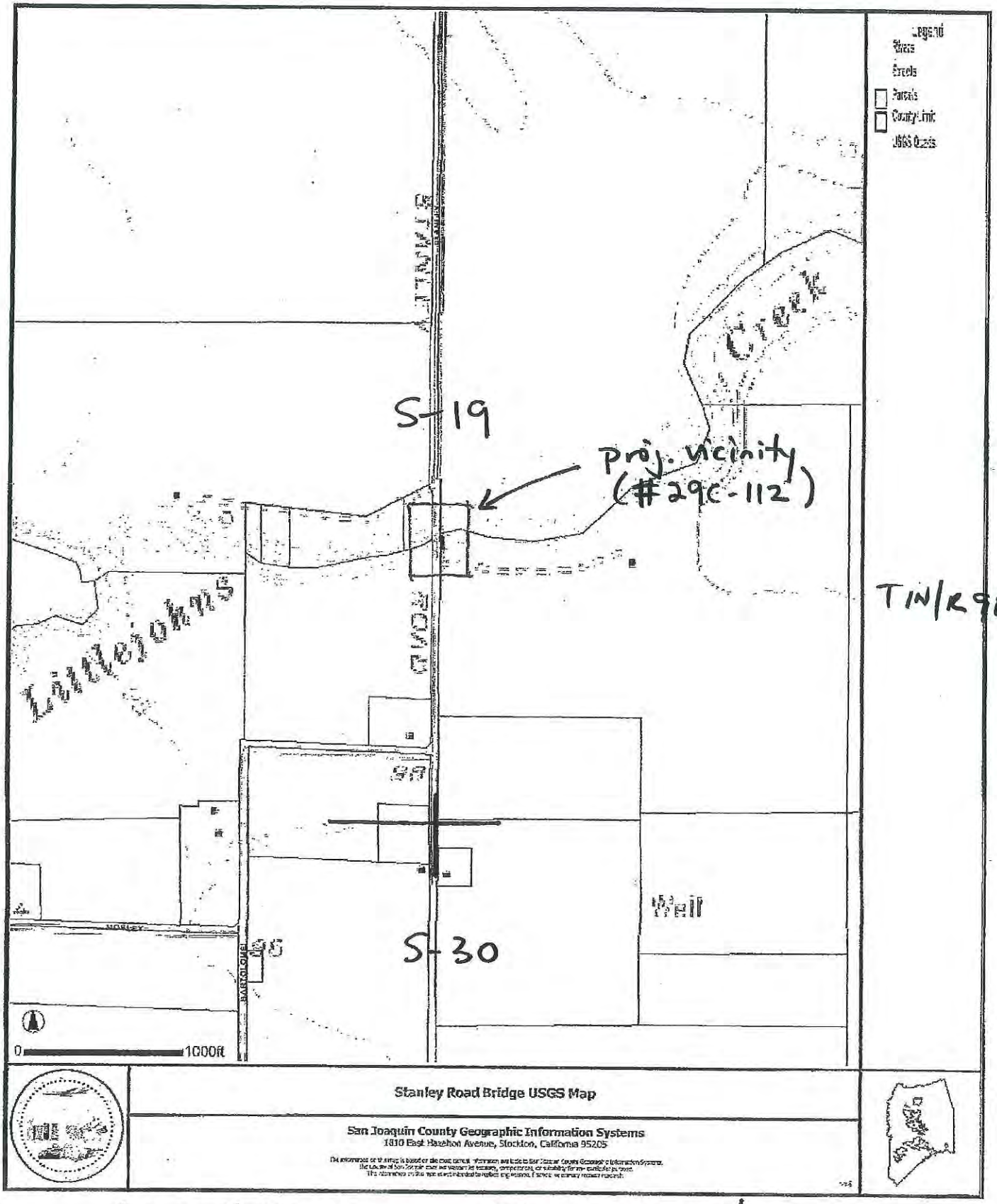
We further advise you that if you retain the services of a historical resources consultant, the firm or individual you retain is responsible for submitting any report of findings prepared for you to the Central California Information Center, including one copy of the narrative report and two copies of any records that document historical resources found as a result of field work. If the consultant wishes to obtain copies of materials not included with this records search reply, additional copy or records search fees may apply.

We thank you for contacting this office regarding historical resource preservation. Please let us know when we can be of further service. Billing is attached, payable within 60 days of receipt of the invoice.

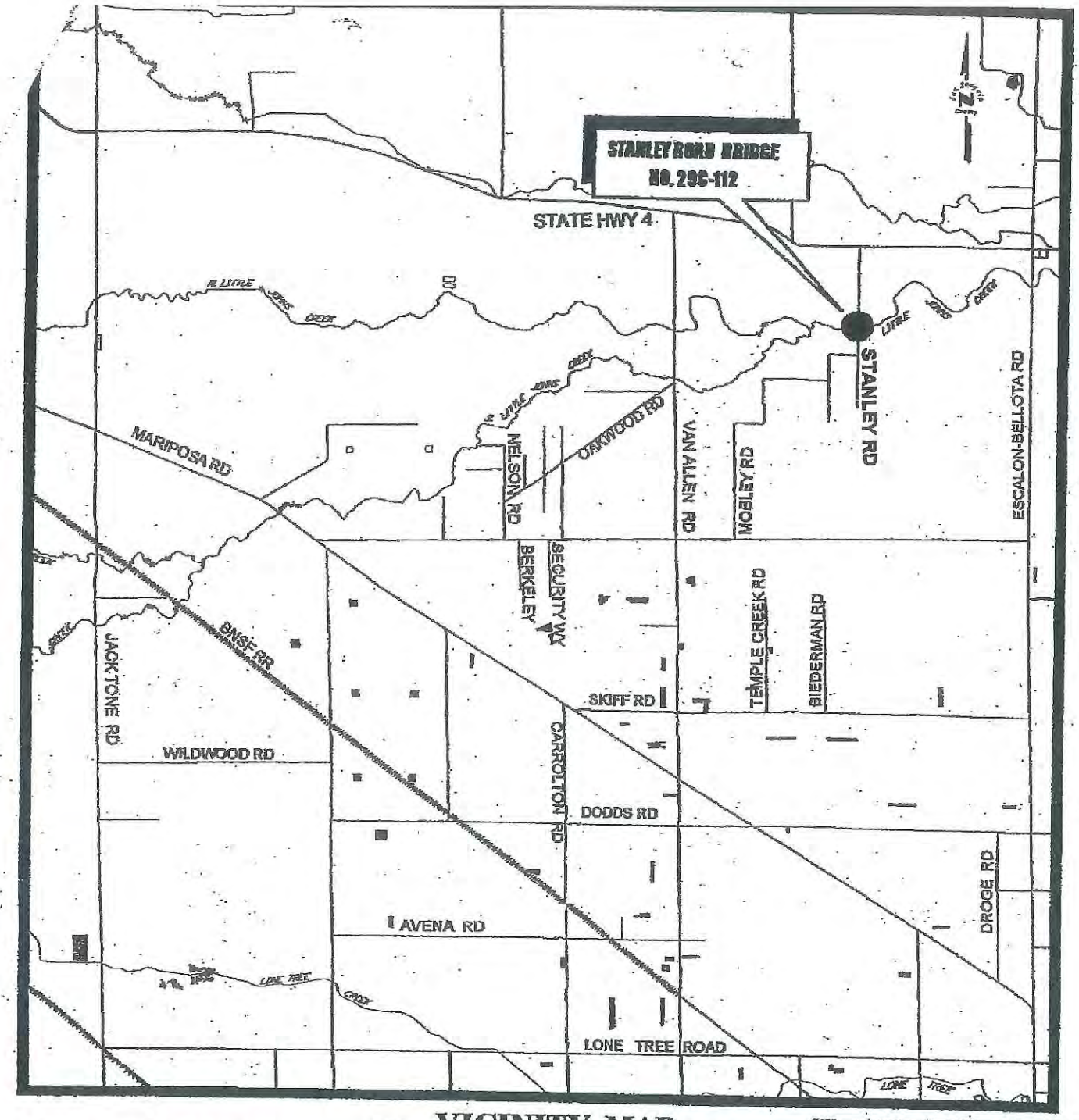
Sincerely,

R. Hards

Robin Hards, Assistant Research Technician
E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System



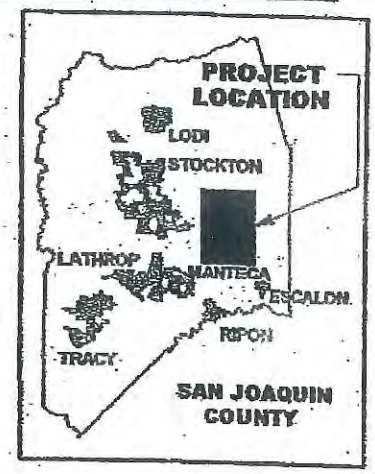
CCIC # 8018L Peters USGS 7.5'



— VICINITY MAP —

CCIC # 8018L

STANLEY ROAD BRIDGE NO. 29C-112 across LITTLEJOHNS CREEK



NO SCALE
DATE: May 3, 2010
SAN JOAQUIN COUNTY, Dept. of Public Works
The County of San Joaquin does not warrant the accuracy, completeness, or suitability for any particular purpose.
The information on this map is not intended to replace engineering, financial or primary records research.

E3112_Vicinity Map.dwg

Appendix B Correspondence and Contact Log2 Native American Consultation

North State Resources, Inc.

CONVERSATION LOG

☒ **Telephone** ☐ **Meeting Notes** ☐ **Other**

Contact: Mr. Anthony Brochini	**Date:** 3-22-12
Title: Chairperson	**Time:** 1:10 pm
Tribe: Southern Sierra Miwuk Nation	**Phone #:** 209-379-1120
Project Name: Stanley Road Bridge Scour Mitigation Project	**NSR Contact:** Brian Ludwig, Ph.D.
Project #: 17412	**Other: -**

Left phone message for Mr. Brochini regarding San Joaquin County's proposed scour mitigation project and referenced the 2011 consultation letter from the County. Call was not returned.

☐ CORPORATE OFFICE
5000 Bechelli Lane, Suite 203
Redding, California, 96002
Phone 530.222.5347
Fax 530.222.4958

☐ 1321 20th Street
Sacramento, CA 95814
Phone 916.446.2566
Fax 916.446.2792

☑ 500 Orient Street, Suite 150
Chico, CA 95928
Phone 530.345.4552
Fax 530.345.4805

☐ 305 Chestnut Street
Mount Shasta, CA 96067
Phone 530.926.3595
Fax 530.926.3857

North State Resources, Inc.

CONVERSATION LOG

☒ **Telephone** ☐ **Meeting Notes** ☐ **Other**

Contact: Mr. Anthony Brochini	**Date:** 3-29-12
Title: Chairperson	**Time:** 1:35 pm
Tribe: Southern Sierra Miwuk Nation	**Phone #:** 209-379-1120
Project Name: Stanley Road Bridge Scour Mitigation Project	**NSR Contact:** Brian Ludwig, Ph.D.
Project #: 17412	**Other: -**

Left second phone message for Mr. Brochini regarding San Joaquin County's proposed scour mitigation project and referenced the 2011 consultation letter from the County. Call was not returned as of April 16, 2012.

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North State Resources, Inc.

CONVERSATION LOG

☒ **Telephone** ☐ **Meeting Notes** ☐ **Other**

Contact: Mr. Les James	**Date:** 3-22-12
Title: Spiritual Leader	**Time:** 1:15 pm
Tribe: Southern Sierra Miwuk Nation	**Phone #:** 209-966-3690
Project Name: Stanley Road Bridge Scour Mitigation Project	**NSR Contact:** Brian Ludwig, Ph.D.
Project #: 17412	**Other:** -

Left phone message for Mr. James regarding San Joaquin County's proposed scour mitigation project and referenced the 2011 consultation letter from the County. Call was not returned.

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North State Resources, Inc.

CONVERSATION LOG

☒ **Telephone** ☐ **Meeting Notes** ☐ **Other**

Contact: Mr. Les James	**Date:** 3-29-12
Title: Spiritual Leader	**Time:** 2:00 pm
Tribe: Southern Sierra Miwuk Nation	**Phone #:** 209-966-3690
Project Name: Stanley Road Bridge Scour Mitigation Project	**NSR Contact:** Brian Ludwig, Ph.D.
Project #: 17412	**Other:** -
Left second phone message for Mr. James regarding San Joaquin County's proposed scour mitigation project and referenced the 2011 consultation letter from the County. Call was not returned as of April 16, 2012.	

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North State Resources, Inc.

CONVERSATION LOG

☒ **Telephone** ☐ **Meeting Notes** ☐ **Other**

Contact: Mr. Jay Johnson	**Date:** 3-22-12
Title: Spiritual Leader	**Time:** 1:05 pm
Tribe: Southern Sierra Miwuk Nation	**Phone #:** 209-966-6038
Project Name: Stanley Road Bridge Scour Mitigation Project	**NSR Contact:** Brian Ludwig, Ph.D.
Project #: 17412	**Other:** -

Left phone message for Mr. Johnson regarding San Joaquin County's proposed scour mitigation project and referenced the 2011 consultation letter from the County. Call was not returned.

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North State Resources, Inc.

CONVERSATION LOG

☒ **Telephone** ☐ **Meeting Notes** ☐ **Other**

Contact: Mr. Jay Johnson	**Date:** 3-29-12
Title: Spiritual Leader	**Time:** 1:30 pm
Tribe: Southern Sierra Miwuk Nation	**Phone #:** 209-966-6038
Project Name: Stanley Road Bridge Scour Mitigation Project	**NSR Contact:** Brian Ludwig, Ph.D.
Project #: 17412	**Other:** -

Left second phone message for Mr. Johnson regarding San Joaquin County's proposed scour mitigation project and referenced the 2011 consultation letter from the County. Call was not returned as of April 16, 2012.

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North State Resources, Inc.

CONVERSATION LOG

☒ **Telephone** ☐ **Meeting Notes** ☐ **Other**

Contact: Ms. Katherine Erolinda Perez	**Date:** 3-22-12
Title: -	**Time:** 1:00 pm
Tribe: Ohlone, Northern Valley Yokuts, Bay Miwok	**Phone #:** 209-887-3415
Project Name: Stanley Road Bridge Scour Mitigation Project	**NSR Contact:** Brian Ludwig, Ph.D.
Project #: 17412	**Other:** -

Left message for Ms. Perez regarding San Joaquin County's proposed scour mitigation project and referenced the 2011 consultation letter from the County. Call was not returned.

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North State Resources, Inc.

CONVERSATION LOG

☒ **Telephone** ☐ **Meeting Notes** ☐ **Other**

Contact: Katherine Erolinda Perez	**Date:** 3-29-12
Title: -	**Time:** 1:25 pm
Tribe: Ohlone, Northern Valley Yokuts, Bay Miwok	**Phone #:** 209-887-3415
Project Name: Stanley Road Bridge Scour Mitigation Project	**NSR Contact:** Brian Ludwig, Ph.D.
Project #: 17412	**Other:** -

Left second phone message for Ms. Perez regarding San Joaquin County's proposed scour mitigation project and referenced the 2011 consultation letter from the County. Call was not returned as of 16 April, 2012.

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STATE OF CALIFORNIA
Edmund G. Brown Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

July 19, 2011

Mark Hopkins
Public Works
P.O. Box 1810—1810 E. Hazelton Avenue
Stockton, CA 95201

Sent by Fax: 209-468-2999
Number of Pages: 2

Re: Proposed Stanley Road Bridge Scour Mitigation, San Joaquin County

Dear Mr. Hopkins

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
San Joaquin County
July 18, 2011

Katherine Erolinda Perez
PO Box 717
Linden , CA 95236
canutes@verizon.net
(209) 887-3415

Ohlone/Costanoan
Northern Valley Yokuts
Bay Miwok

Southern Sierra Miwuk Nation
Jay Johnson, Spiritual Leader
5235 Allred Road
Mariposa , CA 95338
209-966-6038

Miwok
Paiute
Northern Valley Yokut

Southern Sierra Miwuk Nation
Anthony Brochini, Chairperson
P.O. Box 1200
Mariposa , CA 95338
ony_brochini@nps.gov
209-379-1120
209-628-0085 cell

Miwok
Paiute
Northern Valley Yokut

Southern Sierra Miwuk Nation
Les James, Spiritual Leader
PO Box 1200
Mariposa , CA 95338
209-966-3690

Miwok
Paiute
Northern Valley Yokut

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Stanley Road Bridge Scour Mitigation, San Joaquin County

THOMAS M. GAU
DIRECTOR

MICHAEL SELLING
DEPUTY DIRECTOR

STEVEN WINKLER
DEPUTY DIRECTOR

ROGER JANES
BUSINESS ADMINISTRATOR

Public Works
San Joaquin County
Working for YOU

P. O. BOX 1810 - 1810 E. HAZELTON AVENUE
STOCKTON, CALIFORNIA 95201
(209) 468-3000 FAX (209) 468-2999
www.sjgov.org/pubworks

August 8, 2011

Katherine Erolinda Perez
Post Office Box 717
Linden, California 95236

SUBJECT: STANLEY ROAD BRIDGE SCOUR MITIGATION – SAN JOAQUIN COUNTY

Dear Ms. Perez:

The San Joaquin County Department of Public Works is contacting all individuals identified by the Native American Heritage Commission as persons who may have information to contribute regarding potential Native American concerns in the project area (see enclosed map). Any information or concerns that the tribe may have regarding village sites, traditional lands, or modern Native American uses in any portion of the project vicinity would be helpful in determining potential project impacts; the San Joaquin County Department of Public Works understands the confidentiality of cultural resource sites and will work with the individual(s) to determine the appropriate project planning in order to avoid adverse impacts.

Project Description:

The proposed project would repair/place scour mitigation for issues under Stanley Road Bridge at Littlejohns Creek. All work will be within San Joaquin County right-of-way; however, the project will require temporary construction easements, earthwork, and disturbance of native soil.

Project Area	USGS Quad	Township	Range	Section
Stanley Road Bridge	Peter	1N	9E	19

Please contact me at (209) 468-3085 if you have any questions or require additional information.

Sincerely,

MARK S. HOPKINS
Senior Planner

MSH:to
TE-11H016-T1

Enclosure

THOMAS M. GAU
DIRECTOR

MICHAEL SELLING
DEPUTY DIRECTOR

STEVEN WINKLER
DEPUTY DIRECTOR

ROGER JANES
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www.sjgov.org/pubworks

August 8, 2011

Jay Johnson, Spiritual Leader
Southern Sierra Miwuk Nation
5235 Allred Road
Mariposa, California 95338

SUBJECT: STANLEY ROAD BRIDGE SCOUR MITIGATION – SAN JOAQUIN COUNTY

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Stanley Road Bridge	Peter	1N	9E	19

Please contact me at (209) 468-3085 if you have any questions or require additional information.

Sincerely,

MARK S. HOPKINS
Senior Planner

MSH:to
TE-11H016-T2

Enclosure

THOMAS M. GAU
DIRECTOR

MICHAEL SELLING
DEPUTY DIRECTOR

STEVEN WINKLER
DEPUTY DIRECTOR

ROGER JANES
BUSINESS ADMINISTRATOR

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August 8, 2011

Anthony Brochini, Chairperson
Southern Sierra Miwuk Nation
Post Office Box 1200
Mariposa, California 95338

SUBJECT: STANLEY ROAD BRIDGE SCOUR MITIGATION – SAN JOAQUIN COUNTY

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Project Area	USGS Quad	Township	Range	Section
Stanley Road Bridge	Peter	1N	9E	19

Please contact me at (209) 468-3085 if you have any questions or require additional information.

Sincerely,

MARK S. HOPKINS
Senior Planner

MSH:to
TE-11H016-T3

Enclosure

THOMAS M. GAU
DIRECTOR

MICHAEL SELLING
DEPUTY DIRECTOR

STEVEN WINKLER
DEPUTY DIRECTOR

ROGER JANES
BUSINESS ADMINISTRATOR

Public Works
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STOCKTON, CALIFORNIA 95201
(209) 468-3000 FAX (209) 468-2999
www.sjgov.org/pubworks

August 8, 2011

Les James, Spiritual Leader
Southern Sierra Miwuk Nation
Post Office Box 1200
Mariposa, California 95338

SUBJECT: STANLEY ROAD BRIDGE SCOUR MITIGATION – SAN JOAQUIN COUNTY

Dear Mr. James:

The San Joaquin County Department of Public Works is contacting all individuals identified by the Native American Heritage Commission as persons who may have information to contribute regarding potential Native American concerns in the project area (see enclosed map). Any information or concerns that the tribe may have regarding village sites, traditional lands, or modern Native American uses in any portion of the project vicinity would be helpful in determining potential project impacts; the San Joaquin County Department of Public Works understands the confidentiality of cultural resource sites and will work with the individual(s) to determine the appropriate project planning in order to avoid adverse impacts.

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Project Area	USGS Quad	Township	Range	Section
Stanley Road Bridge	Peter	1N	9E	19

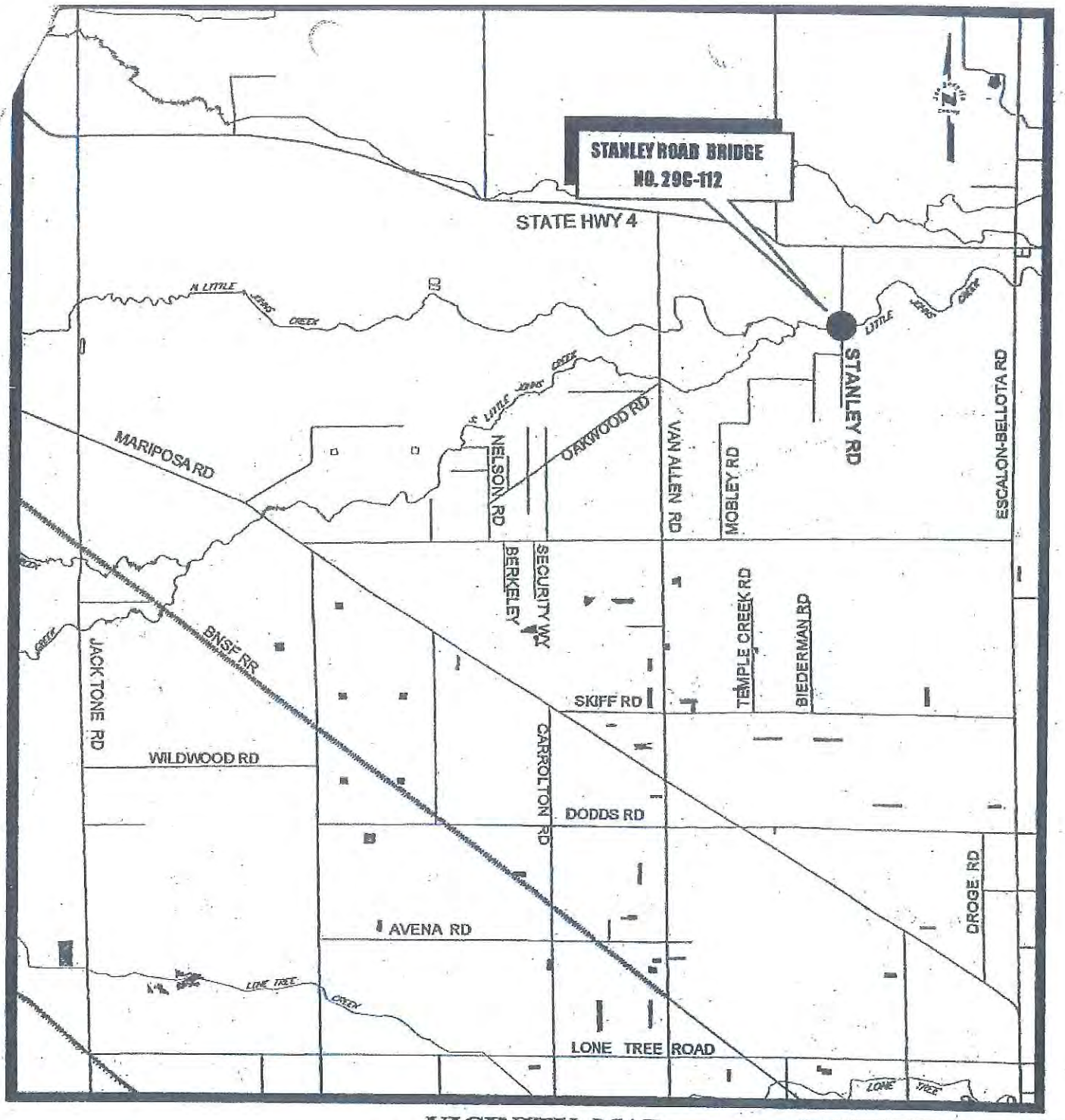
Please contact me at (209) 468-3085 if you have any questions or require additional information.

Sincerely,

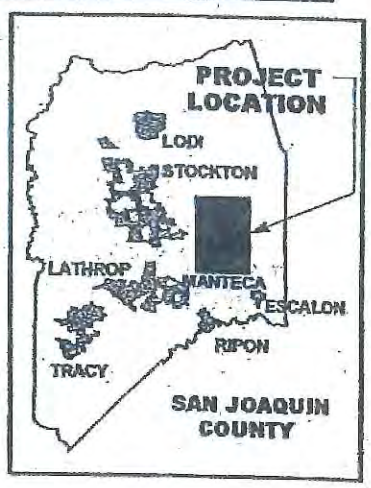
MARK S. HOPKINS
Senior Planner

MSH:to
TE-11H016-T4

Enclosure



— VICINITY MAP —

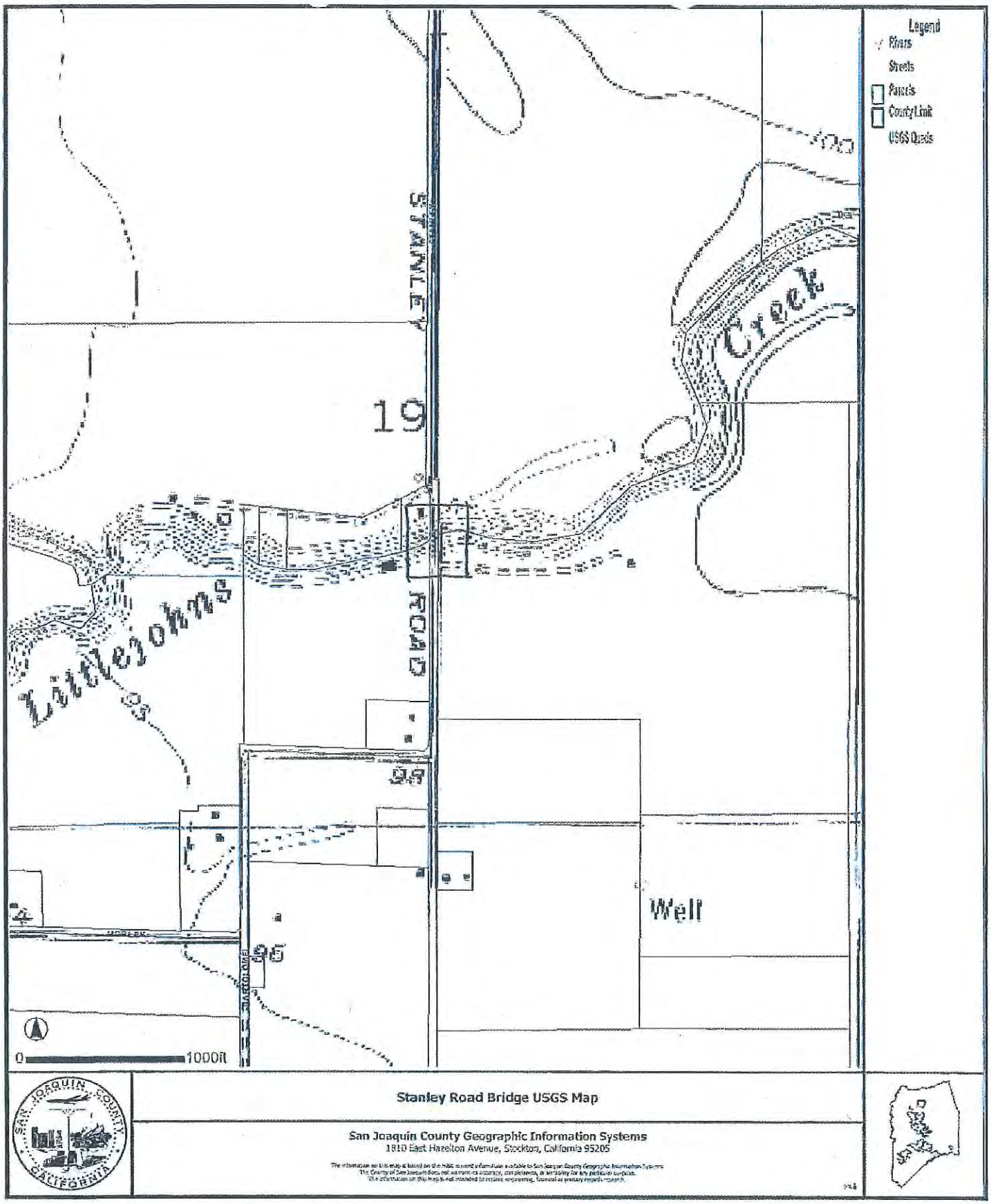


STANLEY ROAD BRIDGE NO. 29C-112 across LITTLEJOHNS CREEK

NO SCALE
DATE: May 3, 2010
SAN JOAQUIN COUNTY, Dept. of Public Works

The County of San Joaquin does not warrant the accuracy, completeness, or suitability for any particular purpose
The information on this map is not intended to replace engineering, financial or primary records research.

E:\112_Vicinity Map.dwg


Legend
Rivers
Streets
Parcels
County Line
USGS Quads
STANLEY
ROAD
19
Creek
Littlejohns
Well
0
1000ft
Stanley Road Bridge USGS Map
San Joaquin County Geographic Information Systems
1810 East Hazelton Avenue, Stockton, California 95205

CATEGORICAL EXEMPTION/CATEGORICAL EXCLUSION DETERMINATION FORM

10-SJ- San Joaquin County Dist.-Co.-Rte. (or Local Agency)	**BPMP 5929(224)** Federal-Aid Project No. (Local Project)/Project No.

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

San Joaquin County (County) proposes to install scour protection and revetment at Stanley Road bridge (29C-112) over Littlejohns Creek near Farmington in San Joaquin County, California. Scope of work includes excavation, fill, rock slope protection (RSP), and temporary cofferdams. No additional right of way will be acquired for this project. The purpose of this project is to prevent bridge failure and provide a uniform channel along Littlejohns Creek. This project is needed due to scour and degradation beneath the bridge.

CEQA COMPLIANCE *(for State Projects only)*

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

- If this project falls within exempt class 3, 4, 5, 6 or 11, it does not impact an environmental resource of hazardous or critical concern where designated, precisely mapped and officially adopted pursuant to law.
- There will not be a significant cumulative effect by this project and successive projects of the same type in the same place, over time.
- There is not a reasonable possibility that the project will have a significant effect on the environment due to unusual circumstances.
- This project does not damage a scenic resource within an officially designated state scenic highway.
- This project is not located on a site included on any list compiled pursuant to Govt. Code § 65[illegible]
- This project does not cause a substantial adverse change in the significance of a historical resource.

Not Applicable

CALTRANS CEQA DETERMINATION (Check one)

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

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

☐ **Categorically exempt.** (Class [illegible] 14 CCR 15300 et seq.)

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

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

NEPA COMPLIANCE

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

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

CALTRANS NEPA DETERMINATION (Check one)

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

- ☐ **23 CFR 771.117(c): activity (c)(___)**
- ☐ **23 CFR 771.117(d): activity (d)(___)**
- ☒ **Activity 1 listed in Appendix A of the MOU between FHWA and the State**

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

Julie Myrah	**Parminder Singh**
Print Name: Environmental Branch Chief	Print Name: DLA Engineer
Julie Myrah 6/13/14	PSingh 6/16/14
Signature Date	Signature Date
Date of Categorical Exclusion Checklist completion: 5/30/14	Date of ECR or equivalent : 6/6/14

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

CATEGORICAL EXEMPTION/CATEGORICAL EXCLUSION DETERMINATION FORM
Continuation Sheet

10-SJ- San Joaquin County Dist.-Co.-Rte. (or Local Agency)	BPMP 5929(224) Federal-Aid Project No. (Local Project)/Project No.

Continued from page 1:

Environmental Provisions:

- Biological Resources:
  - All aquatic and upland riparian habitats shall be clearly delineated with Environmentally Sensitive Area (ESA) flagging and/or signage within the Biological Study Area (BSA). Flagging and signage shall remain in place until construction activities are complete and shall be removed upon completion of construction. No construction activities or personnel shall be allowed to enter the avoidance areas.
  - Erosion control measures shall be installed at the bypass outflow to minimize potential for erosion of the streambed downstream of the work area. Erosion control measures that employ monofilament netting shall be prohibited within the work area.
  - Prior to in-channel work and during the dewatering activities, a qualified biologist shall monitor the area and remove any fish or aquatic species from within the work area. All fish or aquatic species removed from the work area shall be documented and safely relocated into Littlejohns Creek outside the work area.
  - A maximum 0.2 inch (5 millimeter) diameter mesh screen will be used to cover the intake pipe on all pumps used for dewatering the work area within the cofferdams.
  - Vegetation clearing shall be limited to the minimum area necessary within 200 ft of the banks of Littlejohns Creek.
  - Prior to construction, a qualified biologist will conduct environmental awareness training for all construction personnel concerning biological issues including how to avoid impacts to sensitive species.
  - Pre-construction surveys for western pond turtles (WPT) and nest sites shall be conducted within 15 days to construction. If any active nest sites or overwintering WPT are identified, appropriate conservation measures shall be implemented per the NES April 2014. If WPT are encountered during construction, cease activity in immediate vicinity until individuals have left the work area.
  - If construction occurs during nesting season (February 1 – August 31), then pre-construction surveys for migratory birds and raptors shall be conducted within 15 days prior. Surveys for Swainson's hawk will follow the recommended timing and methodology outlined by the Swainson's hawk Technical Advisory Committee. During the nesting period, active raptor nests shall be avoided by 600 feet and other migratory bird nests shall be avoided by 100-250 feet, as determined appropriate in guidelines regarding raptors, passerines, or other specific avian species. These distances shall be clearly delineated with ESA fencing per the NES(MI) April 2014.
- Cultural Resources:
  - If cultural materials are discovered during construction, including human remains, do not disturb the resources and immediately stop all work within a 60-foot radius of the discovery and within any nearby area suspected to overlie the discovery. Immediately notify all appropriate parties including the Caltrans District 10 Local Assistance archaeologist, the Local Assistance Engineer (DLAE), and the County Coroner if human remains are found. Do not move cultural materials or take them from the job site. Do not resume work within the discovery area until authorized. Additional protocols for human remains are given in the State Health and Safety Code Section §7050.5 and §5097.98.
- Hazardous Waste:
  - If excess soils will be disposed of, use Caltrans Standard Special Provision (SSP) 7-1.02K(6)(j)(iii) Earth Material Containing Lead.
- Water Quality:
  - Erosion control measures shall conform to Caltrans Standard Specifications and SSP 20-2 and 20-3. Measures shall include a Storm Water Pollution Prevention Plan (SWPPP).
  - All waters of the U.S. that are temporarily affected by project construction shall be restored as close as practicable to their original contour and conditions within 10 days of the completion of construction activities. This includes applying weed-free mulch to disturbed areas to reduce potential for short-term erosion.
  - Construction specifications shall include measures to minimize the potential for adverse affects resulting from accidental spills of pollutants (e.g. fuel, oil, grease).
  - Equipment and hazardous materials shall be stored and fueled a minimum of 50 feet away from surface water features.
- If scope of work changes, environmental reevaluation will be needed

Permits:
Section 404 Nationwide permit from Corps
Section 401 Water Quality Certification from RWQCB
Section 1602 Streambed Alteration Agreement

Local Assistance NEPA Environmental Commitment Record

Project Name Stanley Road Bridge Scour Repair

Local Agency and Contact Name San Joaquin County – Mark Hopkins

Federal Aid Number BPMP 5929(224)

Local Agency Phone and E-mail (209) 468-3085, [mhopkins@sjgov.org]

Project Description San Joaquin County (County) proposes to install scour protection and revetment at Stanley Road bridge (29C-112) over Littlejohns Creek near Farmington in San Joaquin County, California. Scope of work includes excavation and fill, rock slope protection (RSP), and temporary cofferdams. No additional right of way will be acquired for this project. The purpose and need of this project is to improve the existing channel scour and prevent further degradation within Littlejohns Creek.

Approx. Start Date of Construction Summer 2015

Task and Brief Description	Page of CE	Responsible Party	Timing/ Phase	Specific Action(s) Taken to Comply with Task	Local Agency Certification of Task Completion		Remarks
					Initial	Date	
Biological Commitments							
All aquatic and upland riparian habitats shall be clearly delineated with Environmentally Sensitive Area (ESA) flagging and/or signage within the Biological Study Area (BSA). Flagging and signage shall remain in place until construction activities are complete and shall be removed upon completion of construction. No construction activities or personnel shall be allowed to enter the avoidance areas.	2	Local Agency / Contractor	Before and during construction				
Erosion control measures shall be installed at the bypass outflow to minimize potential for erosion of the streambed downstream of the work area. Erosion control measures that employ monofilament netting shall be prohibited within the work area.	2	Local Agency / Contractor	Before and during construction				
Prior to in-channel work and during the dewatering activities, a qualified biologist shall monitor the area and remove any fish or aquatic species from within the work area. All fish or aquatic species removed from the work area shall be documented and safely relocated into Littlejohns Creek outside the work area.	2	Local Agency / Contractor	Before and during construction				
A maximum 0.2 inch (5 millimeter) diameter mesh screen will be used to cover the intake pipe on all pumps used for dewatering the work area within the cofferdams.	2	Local Agency / Contractor	During construction				

Task and Brief Description	Page of CE	Responsible Party	Timing/ Phase	Specific Action(s) Taken to Comply with Task	Local Agency Certification of Task Completion		Remarks
					Initial	Date	
Vegetation clearing shall be limited to the minimum area necessary within 200 ft of the banks of Littlejohns Creek.	2	Local Agency / Contractor	During construction				
Prior to construction, a qualified biologist will conduct environmental awareness training for all construction personnel concerning biological issues including how to avoid impacts to sensitive species.	2	Local Agency / Contractor	Before construction				
Pre-construction surveys for western pond turtles (WPT) and nest sites shall be conducted within 15 days to construction. If any active nest sites or overwintering WPT are identified, appropriate conservation measures shall be implemented per the NES April 2014. If WPT are encountered during construction, cease activity in immediate vicinity until individuals have left the work area.	2	Local Agency / Contractor	Before and during construction				
If construction occurs during nesting season (February 1 – August 31), then pre-construction surveys for migratory birds and raptors shall be conducted within 15 days prior. Surveys for Swainson's hawk will follow the recommended timing and methodology outlined by the Swainson's hawk Technical Advisory Committee. During the nesting period, active raptor nests shall be avoided by 600 feet and other migratory bird nests shall be avoided by 100-250 feet, as determined appropriate in guidelines regarding raptors, passerines, or other specific avian species. These distances shall be clearly delineated with ESA fencing per the NES(MI) April 2014.	2	Local Agency / Contractor	Before and during construction				
Cultural Resource Commitments							
If cultural materials are discovered during construction, including human remains, do not disturb the resources and immediately stop all work within a 60-foot radius of the discovery and within any nearby area suspected to overlie the discovery. Immediately notify all appropriate parties including the Caltrans District 10 Local Assistance archaeologist, the Local Assistance Engineer (DLAE), and the County Coroner if human remains are found. Do not move cultural materials or take them from the job site. Do not resume work within the discovery area until authorized. Additional protocols for human remains are given in the State Health and Safety Code Section §7050.5 and §5097.98.	2	Local Agency / Contractor	During construction				

Task and Brief Description	Page of CE	Responsible Party	Timing/ Phase	Specific Action(s) Taken to Comply with Task	Local Agency Certification of Task Completion		Remarks
					Initial	Date	
Hazardous Waste Commitments							
If excess soil will be disposed, use Caltrans Standard Special Provision (SSP) 7-1.02K(6)(j)(iii) Earth Material Containing Lead.	2	Local Agency / Contractor	During and after construction				
Water Quality Commitments							
Erosion control measures shall conform to Caltrans Standard Specifications and SSP 20-2 and 20-3. Measures shall include a Storm Water Pollution Prevention Plan (SWPPP).	2	Local Agency / Contractor	Before and during construction				
All waters of the U.S. that are temporarily affected by project construction shall be restored as close as practicable to their original contour and conditions within 10 days of the completion of construction activities. This includes applying weed-free mulch to disturbed areas to reduce potential for short-term erosion.	2	Local Agency / Contractor	During and after construction				
Construction specifications shall include measures to minimize the potential for adverse affects resulting from accidental spills of pollutants (e.g. fuel, oil, grease):	2	Local Agency / Contractor	During construction				
Equipment and hazardous materials shall be stored and fueled a minimum of 50 feet away from surface water features.	2	Local Agency / Contractor	During construction				
Other Commitments							
If scope of work changes, environmental reevaluation will be needed	2	Local Agency	Before and during construction	Contact Caltrans if scope of work changes.			
Permits							
Section 404 Nationwide permit from Corps	2	Local Agency	Before construction	Provide Caltrans copy of permit within 2 weeks of approval.			
Section 401 Water Quality Certification from RWQCB	2	Local Agency	Before construction	Provide Caltrans with copy of certification within 2 weeks of approval.			
Section 1602 Streambed Alteration Agreement	2	Local Agency	Before construction	Provide Caltrans copy of agreement within 2 weeks of approval.			

Replace section 7-1.02K(6)(j)(iii) with:

7-1.02K(6)(j)(iii) Earth Material Containing Lead

Section 7-1.02K(6)(j)(iii) includes specifications for handling, removing, and disposing of earth material containing lead.

Submit a lead compliance plan.

Lead is present in earth material on the job site. The average lead concentrations are below 1,000 mg/kg total lead and below 5 mg/L soluble lead. The material on the job site:

1. Is not a hazardous waste
2. Does not require disposal at a permitted landfill or solid waste disposal facility

Lead is typically found within the top 2 feet of material in unpaved areas of the highway. Reuse all of the excavated material on the right-of-way. Haul and place the surplus excavated material on the right-of-way at _____.

Lead has been detected in material to a depth of _____ in unpaved areas of the highway. Levels of lead found on the job site range from less than ____ to ____ mg/kg total lead with an average concentration of _____ mg/kg total lead as analyzed by EPA test method 6010 or EPA test method 7000 series and based upon a 95 percent upper confidence limit. Levels of lead found within the project limits have a predicted average soluble concentration of ____ mg/L as analyzed by the California Waste Extraction Test and based upon a 95 percent upper confidence limit.

Handle the material under all applicable laws, rules, and regulations, including those of the following agencies:

1. Cal/OSHA
2. CA RWQCB, Region__—_____
3. CA Department of Toxic Substances Control
4. _____

Manage the material as shown in the following table.

Earth Material Management

Location	Depth	Management requirements

If the material is disposed of:

1. Disclose the lead concentration of the material to the receiving property owner when obtaining authorization for disposal on the property
2. Obtain the receiving property owner's acknowledgment of lead concentration disclosure in the written authorization for disposal
3. You are responsible for any additional sampling and analysis required by the receiving property owner

If you choose to dispose of the material at a commercial landfill:

1. Transport it to a Class III or Class II landfill appropriately permitted to receive the material
2. You are responsible for identifying the appropriately permitted landfill to receive the material and for all associated trucking and disposal costs, including any additional sampling and analysis required by the receiving landfill

EXHIBIT F: Biological Report (NESMI)

EXHIBIT F

Stanley Road Bridge Scour Mitigation Project
Bridge No. 29C-112

Natural Environment Study

Stanley Road Bridge (29C-112) Scour Mitigation Project
San Joaquin County, California
Township 1 North, Range 9 East, Section 19
7.5′ USGS Quadrangle: Peters, California (1981)
District 10-SJ-Stanley Road-PM
Federal Project No. 5929(224)

January 2014

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Natural Environment Study

Stanley Road Bridge (29C-112) Scour Mitigation Project
San Joaquin County, California
Township 1 North, Range 9 East, Section 19
7.5′ USGS Quadrangle: Peters, California (1981)
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Federal Project No. 5929(224)

April 2014

STATE OF CALIFORNIA
Department of Transportation
and
SAN JOAQUIN COUNTY
Department of Public Works

Prepared By: Scott Goebl and Patrick Martin, North State Resources, Inc.

Submitted By: _____ Date: 4/28/14
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Recommended For Approval By: _____ Date: 5/27/14
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(209) 948-3667
California Department of Transportation, District 10

Approved By: _____ Date: 5/27/14
Julie Myrah, MPS Branch Chief
Caltrans, District 10
(209) 948-7427

Summary

The San Joaquin County Department of Public Works (County) is proposing to improve existing scour protection and revetment in response to scour and channel degradation within Littlejohns Creek at the Stanley Road Bridge (29C-112).

This Natural Environment Study has been prepared to evaluate the potential effects of the proposed project on special-status plant and animal species, waters of the United States, and other sensitive biological resources (e.g., nesting birds, bats roosts, and riparian habitat). A field assessment of the biological study area (BSA) was conducted on April 22, 2012. The total area of the BSA is approximately 0.96 acre.

Based on the review of habitat requirements of regionally occurring special-status species and the results of the field assessment, the BSA does not provide suitable habitat for special-status plant species. The BSA provides marginal to poor quality habitat for nine special-status animal species. These species include: hardhead (*Mylopharodon conocephalus*), western pond turtle (*Emys marmorata*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), yellow warbler (*Dendroica petechia*), yellow-breasted chat (*Icteria virens*), and tricolored blackbird (*Agelaius tricolor*). Potential impacts and recommended avoidance and minimization measures for special-status animal species are addressed.

Suitable habitat for migratory birds and nesting raptors is present within the BSA and vicinity. Cliff swallows (*Petrochelidon pyrrhonota*), barn swallows (*Hirundo rustica*), 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 field assessment, and inactive cliff swallow nests were observed. Potential impacts on nesting birds and recommended avoidance and minimization measures are addressed.

No potential bat roosting habitat (i.e., crevices and/or gaps in bridge structure) were observed on the Stanley Road Bridge structure. No disturbance to potential bat roosting habitat, including potential roost trees, is anticipated to result from project implementation.

Upland riparian habitat is present in the BSA. Potential impacts on riparian habitat and recommended avoidance and minimization measures are addressed.

Aquatic habitat is present in the BSA. Aquatic habitat within the BSA is expected to support populations of native and non-native warmwater fish species. Aquatic habitat within the BSA does not provide holding, spawning or rearing habitat suitable for special-status anadromous fish species such as Chinook salmon (*Oncorhynchus tshawytscha*) or steelhead (*Oncorhynchus mykiss* ssp. *irideus*). Potential impacts on aquatic habitat and recommended avoidance and minimization measures are addressed.

The project will require the following environmental permits: authorization from the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act for discharge of dredged or fill material into waters of the United States, a water quality certification from the Central Valley Regional Water Quality Control Board pursuant to Section 401 of the Clean Water Act, and a Streambed Alteration Agreement from the California Department of Fish and Wildlife pursuant to Section 1602 of the California Fish and Game Code.

Table of Contents

Summary i

List of Abbreviated Terms iii

Chapter 1. Introduction 1
- 1.1. Project History 1
- 1.2. Project Description 1
  - 1.2.1. Location 1
  - 1.2.2. Proposed Project Action 1
  - 1.2.3. Vegetation Clearing 3
  - 1.2.4. Construction of Cofferdams and Access Ramp 3
  - 1.2.5. Work Area Dewatering 5
  - 1.2.6. Excavation 5
  - 1.2.7. Installation of Filter Fabric and Rock Slop Protection 5
  - 1.2.8. Site Rehabilitation 6
  - 1.2.9. Project Impact Area 6
  - 1.2.10. Conservation Measures 6

Chapter 2. Study Methods 10
- 2.1. Regulatory Requirements 10
  - 2.1.1. Federal Endangered Species Act 10
  - 2.1.2. Federal Clean Water Act Section 404 10
  - 2.1.3. Federal Migratory Bird Treaty Act 10
  - 2.1.4. Executive Order 11990 (Wetlands) 11
  - 2.1.5. Executive Order 13112 (Invasive Species) 11
  - 2.1.6. Executive Order 11988 (Floodplain Management) 11
  - 2.1.7. Fish and Game Code Section 2081, California Endangered Species Act 12
  - 2.1.8. Fish and Game Code Section 3503, Birds of Prey 12
  - 2.1.9. Fish and Game Code Section 3513, Migratory Birds 12
  - 2.1.10. Fish and Game Code, "Fully Protected" Species 12
  - 2.1.11. Fish and Game Code Section 1600, Lake or Streambed Alteration 13
- 2.2. Studies Required 14
- 2.3. Personnel and Survey Dates 15
- 2.4. Agency Coordination and Professional Contacts 15
- 2.5. Limitations That May Influence Results 15

Chapter 3. Results: Environmental Setting 16
- 3.1. Description of Existing Biological and Physical Conditions 16
  - 3.1.1. Study Area 16
  - 3.1.2. Physical Conditions 16
  - 3.1.3. Biological Conditions 17
- 3.2. Special-Status Species 19
- 3.3. Waters of the United States 21
- 3.4. Other Sensitive Biological Resources 21
  - 3.4.1. Migratory Birds and Raptors 21
  - 3.4.2. Riparian Habitat 22
  - 3.4.3. Native and Non-Native Fish 22

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation 25
- 4.1. Potential Impacts on Special-Status Plant Species 25
- 4.2. Potential Impacts on Special-Status Animal Species 25

4.2.1. Hardhead and Other Fish Species 25
4.2.2. Western Pond Turtle 28
4.2.3. Swainson's Hawk 29
4.2.4. Burrowing Owl 31
4.2.5. White-Tailed Kite 32
4.2.6. Loggerhead Shrike 33
4.2.7. Yellow Warbler and Yellow-Breasted Chat 35
4.2.8. Tricolored Blackbird 36
4.3. Other Sensitive Biological Resources 36
4.3.1. Nesting Raptors and Migratory Birds 36
4.3.2. Riparian Habitat 38
4.4. Waters of the United States, Including Wetlands 39
4.4.1. Survey Results 39
4.4.2. Potential Impacts 39
4.4.3. Avoidance And Minimization Measures 39
4.4.4. Compensatory Mitigation 40
4.4.5. Cumulative Effects 40

Chapter 5. Results: Permits and Technical Studies for Special Laws or Conditions 41
5.1. Federal Endangered Species Act 41
5.2. Magnuson-Stevens Fishery Conservation and Management Act 41
5.3. Clean Water Act 41
5.4. Migratory Bird Treaty Act 41
5.5. Executive Order 13112 (Invasive Species) 42
5.6. California Endangered Species Act 42
5.7. California Fish and Game Code 42

Chapter 6. References 43
6.1. Literature Cited 43
6.2. Personal Communications 44

Appendix A **USFWS List**

Appendix B **CNDDB and CNPS Records**

Appendix C **Delineation of Waters of the United States**

Appendix D **Representative Photographs**

Appendix E **Review of Regionally Occurring Special-Status Species**

Figures

Figure 1. Study Area and Vicinity 2
Figure 2. Proposed Project 4
Figure 3. Habitat Types 18
Figure 4. Waters of the United States 23
Figure 5. Project Impact Areas 26

List of Abbreviated Terms

BSA	Biological Study Area
BMP	Best Management Practice
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
County	San Joaquin County Department of Public Works
CWHR	California Wildlife Habitat Relationships Program
CWA	Clean Water Act
DBH	Diameter at Breast Height
ESA	Endangered Species Act
°F	degrees Fahrenheit
MBTA	Migratory Bird Treaty Act
NES	Natural Environment Study
NRCS	Natural Resources Conservation Service
NSR	North State Resources, Inc.
OHWM	Ordinary High Water Mark
Project	Stanley Road Bridge Scour Mitigation Project
RSP	Rock Slope Protection
RWQCB	California Regional Water Quality Control Board
TCE	Temporary Construction Easement
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator

Chapter 1. Introduction

1.1. Project History

In response to scour and channel degradation within Littlejohns Creek at the Stanley Road Bridge, the San Joaquin County Department of Public Works (County) is proposing the Stanley Road Bridge Scour Mitigation Project (project) to improve existing scour protection and revetment. The purpose of this project is to ensure public safety by protecting the structural integrity of bridge footings and abutments. Scour protection and revetment will be constructed within approximately 0.14 acre (78 linear feet) of the existing earthen channel of Littlejohns Creek at the Stanley Road Bridge. An approximately 0.44-acre temporary construction easement (TCE) would be used for construction access, temporary cofferdams, in-stream access ramp, and staging. The existing Stanley Road right-of-way (approximately 0.33 acre) would be used for project access. The total biological study area (BSA) is approximately 0.96 acre.

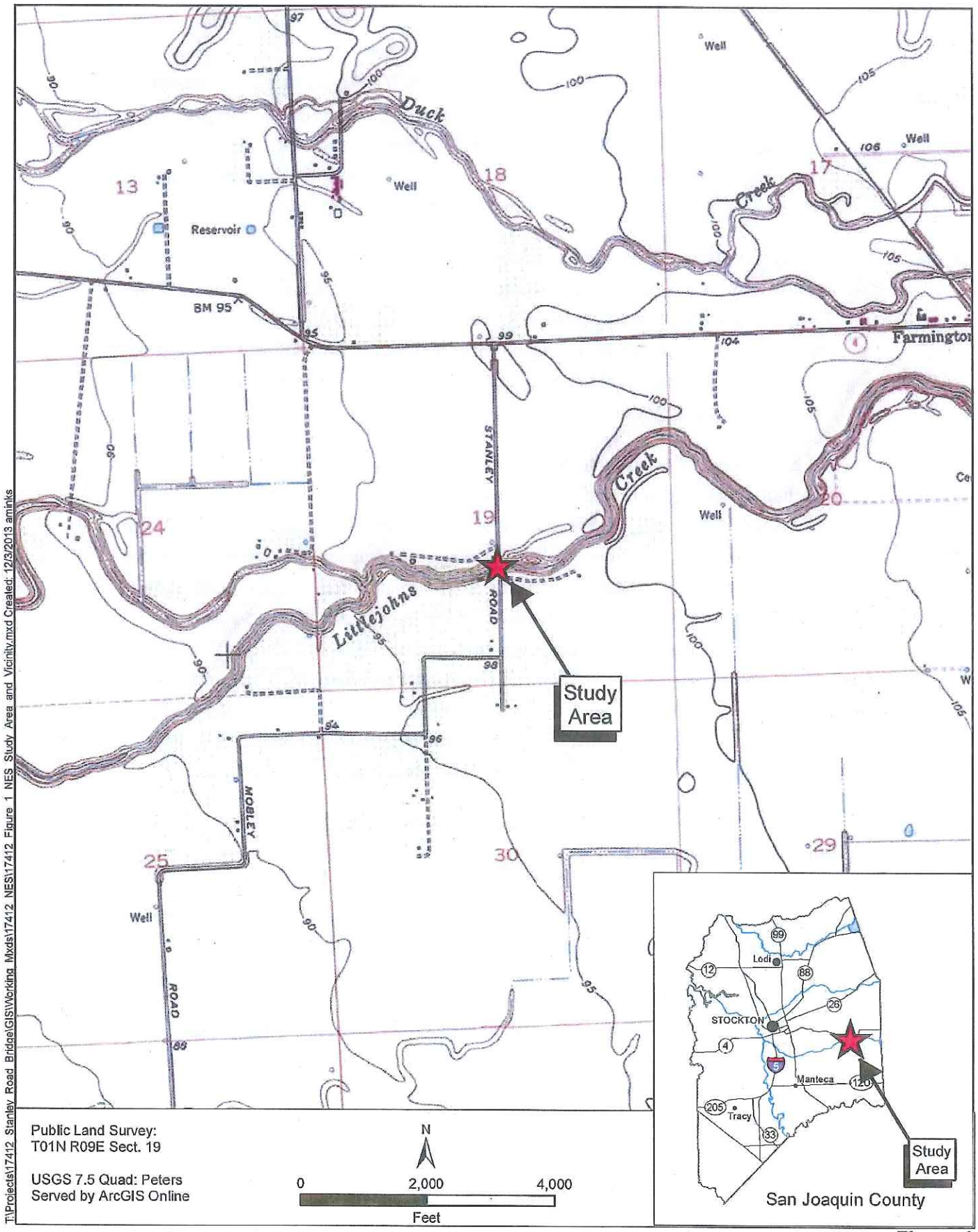
1.2. Project Description

1.2.1. Location

The BSA is located on and adjacent to Stanley Road at Littlejohns Creek approximately 0.7 mile south of Highway 4 (Farmington Road) and 1.6 miles west-southwest of the community of Farmington in San Joaquin County, California. The BSA is located in the *Peters, California* 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle: Section 19, Township 01N, Range 09E. The center of the BSA is near UTM Zone 10 0673349E, 4198774 N (NAD 1983). Figure 1 shows the location of the BSA.

1.2.2. Proposed Project Action

The County is proposing to improve existing scour protection and revetment within the project area. To accomplish this goal the existing earthen channel of Littlejohns Creek at the Stanley Road Bridge will be cut to a maximum depth of 1.5-4.5 feet, and then filled with a layer of ~~California Department of Transportation (Caltrans) Light Class~~ Rock Slope Protection (RSP) ~~(average rock weight of approximately 200 pounds)~~, matching both upstream and downstream conditions and channel grade. RSP will be installed on approximately 0.14 acre (78 linear feet) of the existing earthen channel of Littlejohns Creek at the Stanley Road Bridge. An approximately 0.44-acre TCE would be used for construction access, temporary cofferdams, in-stream access



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Stanley Road Bridge Scour Mitigation Project

Figure 1
Study Area and Vicinity

ramp, and staging (Figure 2). The existing Stanley Road right-of-way (approximately 0.33 acre) would be used for project access. Between 4 and 10 construction workers are expected to be on-site during any given day, depending on the construction phase. Project implementation is expected to occur over the course of about four weeks. A map showing the BSA and the proposed work areas is presented as Figure 2.

Construction is expected to be completed within 28 days and within a single construction season. In-stream construction work is not expected to exceed 18 days. Work is expected to start in spring or summer of 2014 or 2015 and would be completed before the fall rainy season. The construction date will be dependent on the timeline for obtaining the required funding and regulatory authorizations. No utility relocation is needed for this project.

1.2.3. Vegetation Clearing

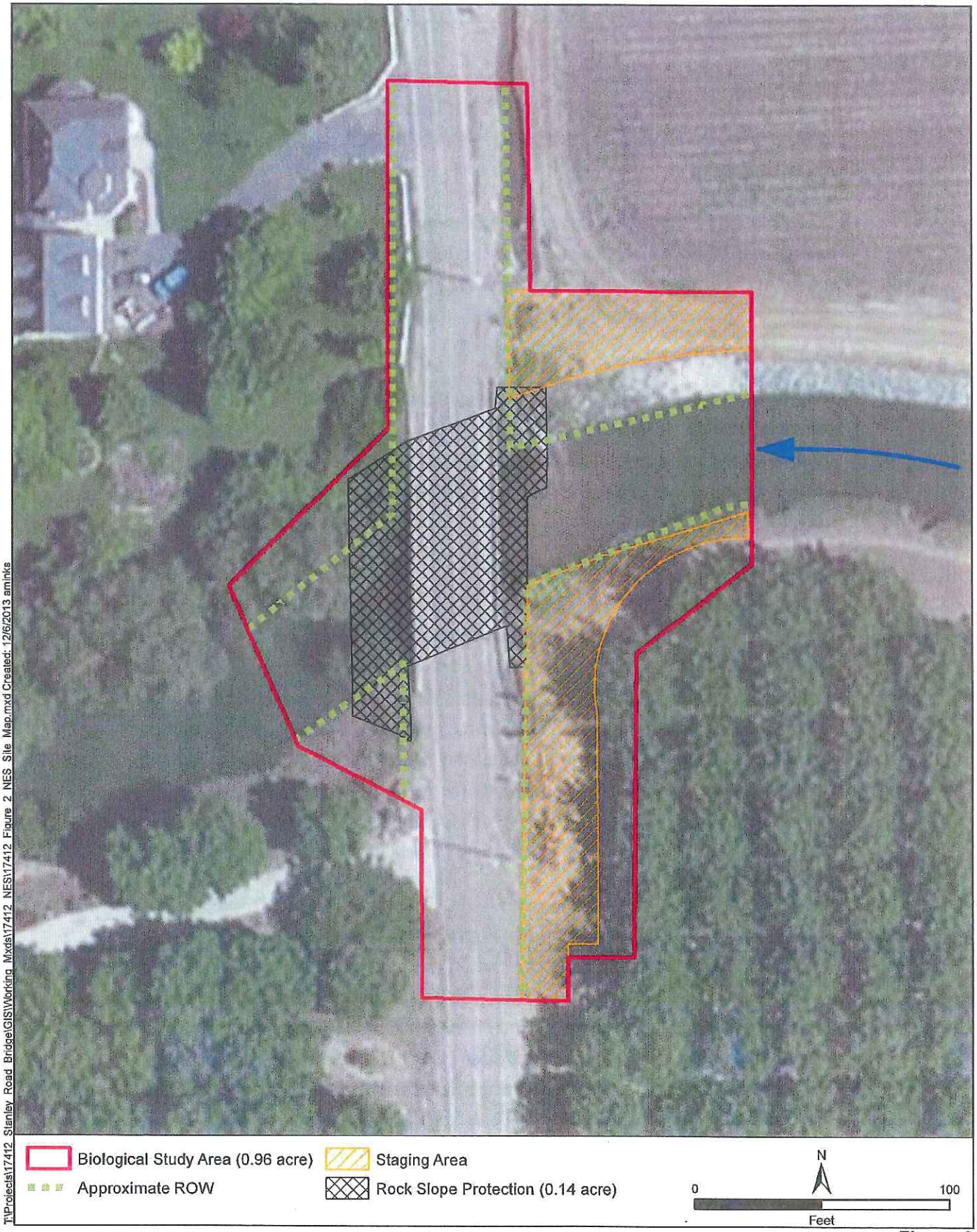
Vegetation clearing would be conducted to prepare for construction of the temporary cofferdams, access ramp and placement of RSP. A total of approximately 0.03 acre of riparian vegetation located west (downstream) of the Stanley Road Bridge would be removed during project implementation. Approximately 0.015 acre of vegetation would be cleared along the north bank of Littlejohns Creek and 0.015 acre of vegetation would be cleared along the south bank of Littlejohns Creek. Vegetation to be removed includes a small valley oak tree (*Quercus lobata*) (5–6 inches in diameter at breast height [dbh]) on the south bank and Himalayan blackberry (*Rubus armeniacus*) on the north bank. Vegetation clearing would be conducted by hand crews and is expected to take less than 1 day to complete.

1.2.4. Construction of Cofferdams and Access Ramp

Prior to construction of the cofferdams and access ramp, a flexible, large-diameter corrugated pipe would be placed within Littlejohns Creek to serve as a work area bypass for water flowing through the work area. The bypass would extend from the upstream to downstream sides of the BSA within Littlejohns Creek.

The upstream cofferdam would be constructed immediately downstream of the bypass inlet by depositing appropriately engineered fill up to 10 feet high (i.e., above existing grade) from bank to bank. The upstream cofferdam would be appropriately designed to support construction equipment (e.g., tractor and excavator) and serve as an access ramp for construction crews and equipment.

The downstream cofferdam would be constructed immediately upstream of the bypass outlet by depositing appropriately engineered fill up to 4 feet high (i.e., above existing



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Stanley Road Bridge Scour Mitigation Project

Figure 2
Proposed Project

grade) from bank to bank. The downstream cofferdam would likely remain below the ordinary high water mark (OHWM) of Littlejohns Creek. RSP would be placed on the downstream end of the lower cofferdam to stabilize the temporary fill and protect it from erosion.

Construction of the cofferdams and access ramp would take approximately 7 days using hand labor or mechanical equipment (e.g., a tractor and an excavator). This phase of the project would also require one or two haul trucks to import fill. The haul trucks would remain outside the banks of Littlejohns Creek.

1.2.5. Work Area Dewatering

Following cofferdam construction, any water remaining within the work area would be removed with a mechanical pump and discharged downstream. The dewatered portion of the creek bed would measure approximately 0.11 acre and would encompass about 140 linear feet of creek. Dewatering would be completed in about 1 day.

1.2.6. Excavation

After the work area is dewatered, about 0.14 acre (78 linear feet) of the channel bed and bank would be excavated to a depth ranging from 1.5-4.5 feet to create space for placement of RSP. On the south bank, beneath the bridge and near the pier, scour has undercut the existing gabions and has caused them to fail. Excavation of the channel at this location would require removal of the remaining gabions. Additionally, concrete blocks at the downstream end of the bridge must be removed to allow for installation of the RSP. Excavation would be performed using either hand labor or mechanical equipment (e.g., an excavator and haul truck), and would be completed in about 2 days. Excavated material would be stockpiled within the staging area outside the creek (Figure 2).

1.2.7. Installation of Filter Fabric and Rock Slop Protection

Following excavation, a layer of filter fabric would be placed by hand on the channel bed and banks to prevent erosion. RSP with a thickness of 1.5 feet would be placed atop the filter fabric in the channel and on the banks. RSP with a thickness of 2.5 feet would be placed within 3 feet of the bridge piers. The channel bed and banks would be excavated to depths sufficient to ensure that the RSP is flush with the desired upstream and downstream channel surface level. Gabion mats may be used along the banks to reduce the depth of excavation. The RSP placement area (i.e., the disturbed surface area) would occupy approximately 0.14 acre (78 linear feet) of Littlejohns

Creek. Installation of RSP and any necessary gabion mats would be completed in 4 to 6 days.

1.2.8. Site Rehabilitation

The cofferdams and bypass would be removed by using an excavator and hand crews, and the remaining fill dirt would be exported from the BSA. This would be completed in 2 to 3 days.

1.2.9. Project Impact Area

The project impact area would be contained within areas of proposed RSP (approximately 0.14 acre), associated TCE (approximately 0.44 acre), and the existing Stanley Road right-of-way (approximately 0.33 acre). The total area of potential ground disturbance is approximately 0.96 acre.

1.2.10. Conservation Measures

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

1.2.10.1. Conservation Measure #1 - Erosion and Sedimentation Control

Erosion control measures shall be implemented during construction of the proposed project. These measures shall conform to the provisions in Section 20-2 and 20-3 of the Caltrans Standard Specifications and the special provisions included in the contract for the project. Such provisions shall include the preparation of a Storm Water Pollution Prevention Plan, which describes and illustrates placement of Best Management Practices (BMPs) within the project site.

Erosion control measures to be included in the Storm Water Pollution Prevention Plan or otherwise implemented by the County include the following:

- To the extent practicable, activities that increase the erosion potential shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall 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 shall be maintained until permanent erosion control structures are in place.

- Vegetation clearing and ground disturbing activity shall be limited to the minimum area necessary for project implementation.

- Areas where woody vegetation needs to be removed shall be identified in advance of ground disturbance and shall be limited to only those areas that have been approved by the County. Within 10 days of completion of construction in those areas, weed-free mulch shall be applied to disturbed areas to reduce the potential for short-term erosion. Prior to a rain event, or when there is a greater than 50 percent 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 at the 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. Erosion control measures that employ monofilament netting shall be prohibited within the work area.

- If spoil sites are used, they shall be sited 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 shall be monitored and maintained in good working condition until disturbed areas have been revegetated.

1.2.10.2. CONSERVATION MEASURE #2 - PREVENTION OF ACCIDENTAL SPILLS

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

- A site-specific spill prevention plan shall be implemented 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 a minimum of 50 feet away from surface water features.

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

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

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

- Water inactive construction sites and exposed stockpile sites at least twice daily or until soils are stable.

- Pursuant to California Vehicle Code, all trucks hauling soil and other loose material to and from the construction site shall be covered or should maintain at least 6 inches of freeboard (i.e., minimum vertical distance between top of load and the trailer).

- Any topsoil that is removed during construction shall be stored on-site in piles not to exceed 4 feet in height to allow development of microorganisms prior to replacement of soil in 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.

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

- All equipment used for off-road construction activities shall be weed-free prior to entering the project area.
- If project implementation calls for mulches or fill, they shall be weed free.
- Any seed mixes or other vegetative material used for revegetation of disturbed sites shall consist of locally adapted native plant materials to the extent practicable.

Chapter 2. Study Methods

2.1. Regulatory Requirements

2.1.1. Federal Endangered Species Act

Section 9 of the federal Endangered Species Act of 1973 (ESA) prohibits acts of disturbance that result in the "take" of threatened or endangered species. As defined by the ESA, "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."

2.1.2. Federal Clean Water Act Section 404

The Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. CWA Section 404 establishes a permit program administered by the U.S. Army Corps of Engineers (Corps) to regulate the discharge of dredged or fill material into waters of the U.S. (including special aquatic sites such as wetlands). The purpose of the permit is to prevent water quality degradation and to prevent the overall loss of waters of the United States. Permits under CWA Section 404 are required for the placement of dredged or fill materials into all waters of the United States, including wetlands and "other waters" (e.g., streams). CWA Section 401 requires that an applicant for a Federal license or permit that allows activities resulting in a discharge to waters of the United States to obtain a state certification that the discharge complies with other provisions of CWA. The Lahontan Regional Water Quality Board administers the certification program for the eastern portion of Alpine County.

2.1.3. 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).

2.1.4. 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.

2.1.5. Executive Order 13112 (Invasive Species)

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

- 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 their introduction, and provide for environmentally sound control of invasive species.
- Promote public education on invasive species and the means to address them.
- 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, pursuant to 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.

2.1.6. 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.

2.1.7. Fish and Game Code Section 2081, California Endangered Species Act

Under the California Endangered Species Act (CESA), the California Department of Fish and Wildlife (CDFW) has the responsibility for maintaining a list of threatened and endangered species (California Fish and Game Code 2070). Additionally, the CDFW maintains a list of "candidate species," which are species that the 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." Pursuant to 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 affect a candidate species. Project-related impacts on CESA endangered or threatened species would be considered significant. Take of protected species incidental to otherwise lawful management activities may be authorized under Section 2081 of the Fish and Game Code.

2.1.8. Fish and Game Code Section 3503, Birds of Prey

Under Section 3503.5 of the 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.

2.1.9. Fish and Game Code Section 3513, Migratory Birds

Migratory birds are also protected in California. The 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.

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

2.1.11. 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 need a Streambed Alteration Agreement from the CDFW prior to proceeding with the activity. As a general rule, this requirement may also apply to any work undertaken within the floodplain of a stream or river containing fish or wildlife resources.

2.2. Studies Required

Special-status species and other sensitive biological resource having the potential to occur in the BSA were identified, 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:

- *Peters, California*, USGS 7.5-minute quadrangle;
- Aerial photographs of the BSA and vicinity;
- USFWS list of endangered and threatened species that may occur in the *Peters, California*, USGS 7.5-minute quadrangle and San Joaquin County (Appendix A);
- California Natural Diversity Data Base (CNDDB) (California Department of Fish and Wildlife 2013) and California Native Plant Society (CNPS) records for the *Peters, California* USGS 7.5-minute quadrangle and the eight surrounding quadrangles (Appendix B);
- California Wildlife Habitat Relationships (CWHR) Version 8.2 Species Summary Report for San Joaquin County; and
- Pertinent literature including *The Jepson Manual, Higher Plants of California, 1st edition* (Hickman 1993) and *The Jepson Manual: Vascular Plants of California, 2nd edition* (Baldwin et. al. 2012).

On April 22, 2012, John Hunt, biologist for North State Resources, Inc. (NSR), conducted a reconnaissance-level biological survey to characterize the habitats within the BSA and to evaluate the potential for project-related impacts on special-status species and other sensitive biological resources. He conducted the survey on foot and viewed all areas within the BSA. Potentially occurring special-status animals and other sensitive biological resources are discussed in Chapter 3.

On April 22, 2012, John Hunt (NSR biologist) conducted a delineation of waters of the United States within the BSA according to methods described in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid

West Region (U.S. Army Corps of Engineers 2008). A copy of the delineation report is provided in Appendix C.

2.3. Personnel and Survey Dates

John Hunt, NSR Biologist, performed the following tasks during visits to the proposed project site:

- Reconnaissance-level biological survey, April 22, 2012
- Delineation of waters of the United States, April 22, 2012

2.4. Agency Coordination and Professional Contacts

On November 25, 2013 a list (Document No. 131125110116 [Appendix A]) of federally listed, proposed, and candidate species with the potential to be affected by projects in San Joaquin County and the *Peters, California* USGS 7.5-minute quadrangle was obtained from the USFWS Sacramento Fish and Wildlife Office.

On January 10, 2014, Caltrans informally consulted with the USFWS via email about the potential for the federally-listed giant garter snake (*Thamnophis gigas*) to occur within the BSA (Kleinfelter, pers. comm. 2014). On January 13, 2014, the USFWS informed Caltrans via email that giant garter snake is unlikely to be present within the BSA (Schofield, pers. comm. 2014).

2.5. Limitations That May Influence Results

The April 22, 2012 botanical survey was timed appropriately to identify all species during their blooming period, except Ione manzanita (November–March), Palmate-bracted bird's-beak (May–October), Delta button-celery (June–October), Sanford's arrowhead (May–October), Suisun Marsh aster (May–November), and Greene's tuctoria (May–July). However, based on the informational review and field assessment, the BSA does not provide suitable habitat for any special-status plant species. All other field studies were conducted in accordance with applicable protocols and no problems were encountered. Therefore, no limitations that may influence the results of field studies associated with this project are known to have occurred.

Chapter 3. Results: Environmental Setting

3.1. Description of Existing Biological and Physical Conditions

3.1.1. Study Area

The 0.96-acre BSA is located on and adjacent to Stanley Road at its intersection with Littlejohns Creek. Land uses within and in the vicinity of the BSA include county right-of-way (ROW), orchard, row crops, and rural residences. Lands within and adjacent to the BSA are privately owned.

3.1.2. Physical Conditions

The topography of the BSA is generally characterized a nearly level. The primary topographic feature in the BSA is the channel of Littlejohns Creek, which bisects the BSA from east to west. Elevation within the BSA ranges from approximately 95 feet above mean sea level in agricultural and residential areas above the banks of Littlejohns Creek to approximately 80 feet above mean sea level within the channel of Littlejohns Creek. Precipitation in the BSA primarily falls as rain and the average annual rainfall is approximately 14 inches. Air temperatures range from an average January high of 54 °Fahrenheit (°F) to an average July high of 94 °F. The year-round average high temperature is approximately 75 °F (Western Regional Climate Center 2012).

A description of soil map units was obtained from the U.S. Department of Agriculture's Web Soil Survey and described in the *Custom Soil Resource Report for San Joaquin County, California* (Soil Survey Staff NRCS 2012). Only one soil map unit occurs within the BSA and is described as follows:

- Archerdale clay loam, 0 to 2 percent slopes (Soil Map Unit 107) – This is a non-hydric, well-drained alluvium derived from mixed parent material with a depth to restrictive layer and water table more than 80 inches.

Hydrology within the BSA is provided via Littlejohns Creek and adjacent agricultural and urban runoff. Littlejohns Creek is a perennial stream whose headwaters are located approximately 20 miles east of the BSA in the Sierra Nevada foothills. From its headwaters, Littlejohns Creek flows approximately 27 river-miles to the Farmington Flood Control Basin dam, approximately 5 miles east of the BSA, which controls flows within Littlejohns Creek. Downstream from the BSA, Littlejohns

Creek flows into French Camp Slough, approximately 12 miles west of the BSA and 3 miles south of the city of Stockton. French Camp Slough flows generally northwest for approximately 7 miles before it empties into Walker Slough and the San Joaquin River immediately southwest of the city of Stockton.

Runoff from surrounding agricultural lands and adjacent residences appears to provide a negligible contribution to hydrology within the BSA. A constructed agricultural ditch and an associated 24-inch culvert parallels the east side of Stanley Road in the northeast corner of the BSA. The ditch drains agricultural runoff from flood-irrigated row crops northeast of the BSA through the culvert into Littlejohns Creek

3.1.3. Biological Conditions

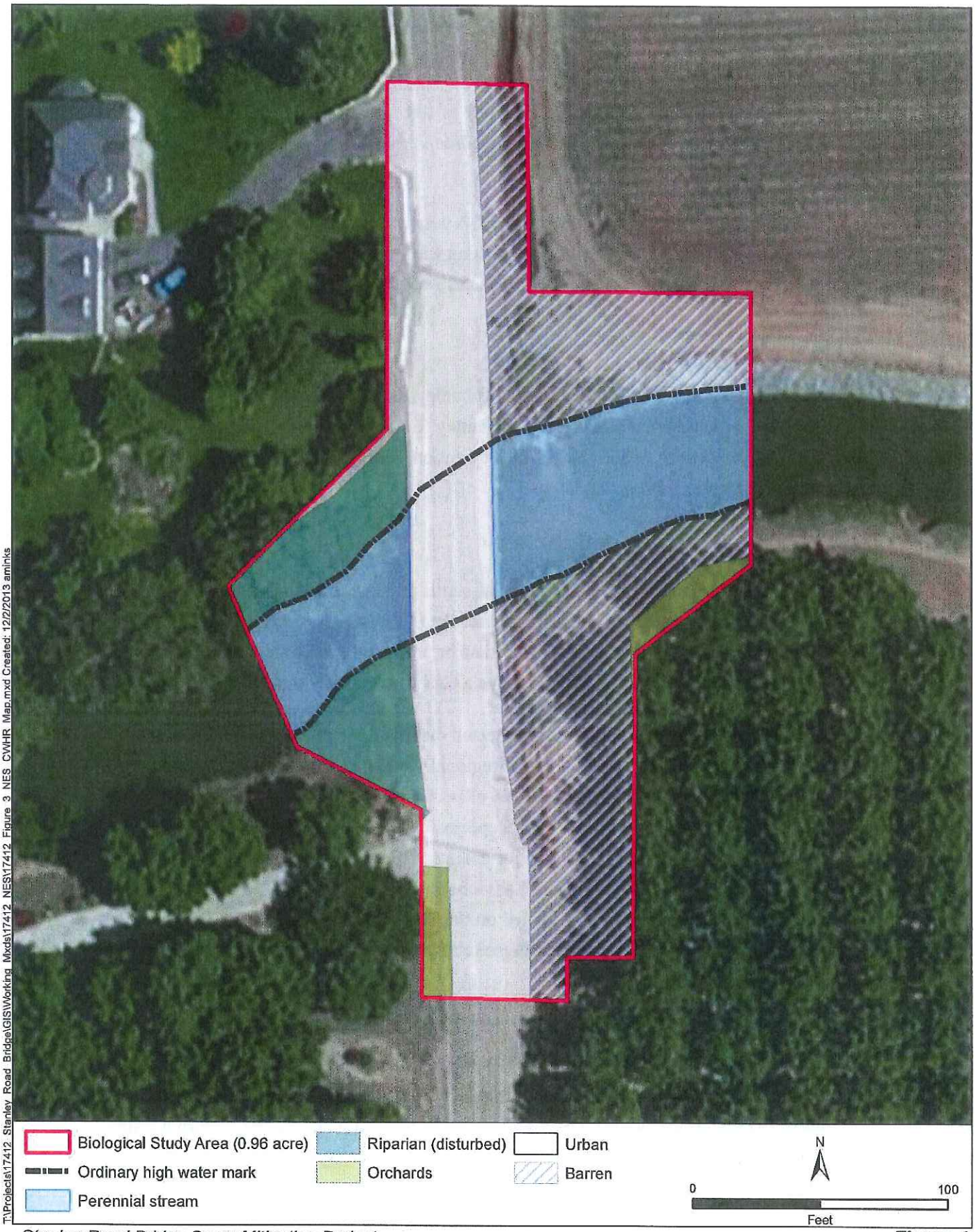
Habitat types were classified based on adaptations of vegetation descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988). Habitat types occurring within the BSA include perennial stream, riparian, orchards, urban, and barren. A map of habitat types within the BSA is presented as Figure 3. Representative photographs of the BSA are provided in Appendix D.

3.1.3.1. Perennial Stream

Littlejohns Creek is a slow-moving, perennial stream that bisects the BSA from east to west. The stream and its banks are highly managed for water control and conveyance. Upstream of the Stanley Road Bridge, the banks of Littlejohns Creek have been contoured to a uniform slope of approximately 45 degrees. The north bank upstream from Stanley Road and both banks at the bridge abutments are armored with revetment to just below the OHWM. The banks of Littlejohns Creek downstream of the Stanley Road Bridge are not armored with revetment, but are contoured to a relatively uniform slope. The south bank of Littlejohns Creek downstream of Stanley Road forms a small bench approximately 15 feet wide above the OHWM. The aquatic habitat within Littlejohns Creek consists entirely of slow-moving, open water with scattered patches of water-meal (*Wolffia globosa*) and duckweed (*Lemna* sp.). No emergent vegetation or wetlands are found in association with Littlejohns Creek within the BSA.

3.1.3.2. Riparian

A narrow, fragmented band of riparian vegetation occurs downstream (i.e., west) of Stanley Road within the BSA. Trees within this riparian area are limited to several small to mid-sized valley oaks. Scattered patches of Himalayan blackberry are mixed amongst an herbaceous layer dominated by tall annual willow herb (*Epilobium brachycarpum*), short-pod mustard (*Hirschfeldia incana*), rip gut brome (*Bromus diandrus*), and other ruderal species.



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Stanley Road Bridge Scour Mitigation Project

Figure 3
Habitat Types

3.1.3.3. ORCHARDS

Orchards within the BSA consisted entirely of walnut orchards with a ground cover largely dominated by nonnative annual grasses.

3.1.3.4. BARREN

Barren areas within and adjacent to the BSA consist of agricultural margins, access roads, and portions of the rocked banks along Littlejohns Creek upstream (i.e., east) of Stanley Road. These areas are actively cleared of vegetation by mechanical and/or chemical means.

3.1.3.5. URBAN

Urban habitat within the BSA consists of Stanley Road, residences on the north and south side of Littlejohns Creek west of Stanley Road and associated driveways accessing residences within the BSA. Vegetation within these areas consists largely of ornamental trees, shrubs, and lawns.

3.2. Special-Status Species

For the purpose of this evaluation, special-status plant species include plants that are (1) listed as threatened or endangered under the CESA or 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 1A, 1B, or 2.

No special-status plant species were detected during the reconnaissance-level survey conducted on April 22, 2012. 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 CNDDB and 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 their potential to occur (Appendix E, Table E-1). Based on this informational review and field assessment, the BSA does not provide suitable habitat for any special-status plant species.

Special-status animal species include species that are (1) listed as threatened or endangered under the CESA or 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, CWHR species summary report, USFWS species list, CNDDB and CNPS database records, and results of the field survey. For each species, 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 (Appendix E, Table E-2). Based on the review of habitat requirements and the results of the field assessment, nine special-status animal species were determined to have the potential to be adversely affected by the proposed project (Table 1). These species are further discussed in Chapter 5.

Table 1. Special-Status Animals with Potential to be Adversely Affected by the Proposed Project

Common Name *Scientific Name*	Status[1] (Fed/State)	General Habitat Description	Potential for Significant Impacts (Yes/No?)[2]
Hardhead *Mylopharodon conocephalus*	—/SC	Prefers deep, rock- and sand-bottomed pools of small to large rivers. Generally found in clear, deep, well-oxygenated streams with low flow.	Yes, low potential. Low quality habitat for species is present within BSA and the species may occur in very small numbers. Species presence and persistence is questionable as a result of poor quality habitat in conjunction with competition by non-native, warmwater fish species.
Western pond turtle *Emys marmorata*	—/SC	Slow water aquatic habitat with available basking sites. Hatchlings require shallow water with dense submergent or short emergent vegetation. Requires an upland oviposition site in the vicinity of the aquatic site.	Yes, low potential. Low quality habitat for species is present within BSA. Emergent structure is not present within the BSA and basking sites are limited to the relatively steep and narrow banks of Littlejohns Creek.
Swainson's hawk *Buteo swainsoni*	—/T	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; forages in adjacent livestock pasture, grassland, or grain fields.	Yes, high potential. Trees and shrubs within 0.5 mile of the BSA provide nesting habitat. A pair of Swainson's hawks was observed approximately 0.6 mile northeast of the BSA during the field assessment.
White-tailed kite *Elanus leucurus*	—/FP	Nests in tall shrubs and trees; forages in grasslands, agricultural fields, and marshes.	Yes, medium potential. Trees and shrubs within the BSA provide nesting habitat.
Burrowing owl *Athene cunicularia*	—/SC	Open grasslands and ruderal habitats. Requires burrows and similar habitat for roosting and nesting cover. May dig burrows in soft soil, but generally occupies existing burrows created by other species or manmade burrow structures.	Yes, low potential. Although no potential burrowing owl habitat is found within the BSA, low quality potential habitat is found along the boundary of the row crop fields immediately northeast of the BSA.

Common Name *Scientific Name*	Status[1] (Fed/State)	General Habitat Description	Potential for Significant Impacts (Yes/No?)[2]
Loggerhead shrike *Lanius ludovicianus*	—/SC	Forages in open grassland habitats throughout the Central Valley of California. Nests in shrubs and trees.	Yes, medium potential. Trees and shrubs within the BSA provide nesting habitat and the irrigated row crops to the northwest provide suitable foraging habitat.
California yellow warbler *Dendroica petechia brewsteri*	—/SC	Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.	Yes, low potential. Poor quality habitat is present in the northwestern corner of the BSA. Himalayan blackberry in this area will be partly removed during project implementation.
Yellow-breasted chat *Icteria virens*	—/SC	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.	Yes, low potential. Poor quality habitat is present in the northwestern corner of the BSA. Himalayan blackberry in this area will be partly removed during project implementation.
Tricolored blackbird *Agelaius tricolor*	—/SC	Breeds near fresh water, primarily in dense emergent vegetation, but may also nest in blackberry, rose, willow thickets, and small trees in open country, rangeland, and cropland and near marshes or wetlands.	Yes, low potential. Poor quality habitat is present as riparian thickets of Himalayan blackberry undergrowth in the western portion of the BSA. Vegetation in this area will be partly removed during project implementation.

[1]Federal and State Codes: T = Threatened; SC = Species of Special Concern; FP = Fully Protected Species.

[2] No = The BSA and immediate vicinity do not support habitat for the species.

Low = The BSA and immediate vicinity provide only limited or marginal habitat for the species, the BSA may be outside the characteristic range of the species, or the species rarely occurs in the project region. The species was not observed within the BSA.

Medium = The BSA and/or immediate vicinity provides suitable, but not ideal habitat conditions. The species was not observed within the BSA.

High = The BSA and/or immediate vicinity provides ideal habitat conditions. The species was observed in the BSA or is known to occur in the BSA.

3.3. Waters of the United States

A delineation of waters of the United States within the BSA was conducted on April 22, 2012 (Appendix C). Waters of the United States within the BSA consist of perennial stream (Littlejohns Creek) and occupy a total of 0.23 acre (209 linear feet). Figure 4 illustrates the boundaries of waters of the United States within the BSA.

3.4. Other Sensitive Biological Resources

3.4.1. Migratory Birds and Raptors

Raptor species (birds of prey) and migratory birds, other than those listed as special-status species, could nest in the vicinity of the BSA. All raptor species and their nests are protected from take according to California Fish and Game Code. All migratory

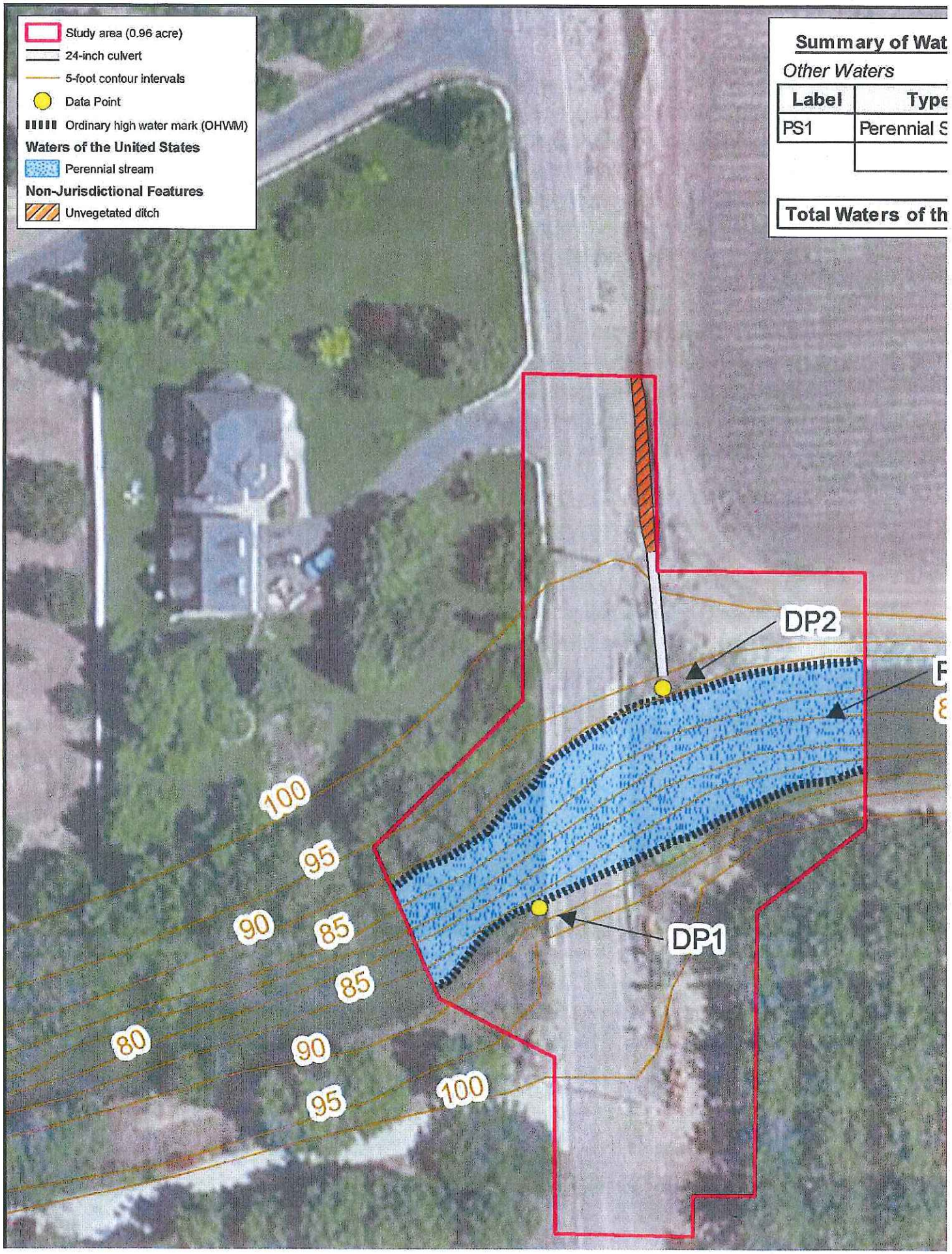
birds and their nests are protected from take under the federal MBTA. Cliff swallows (*Petrochelidon pyrrhonota*), barn swallows (*Hirundo rustica*), black phoebes (*Sayornis nigricans*), and other migratory birds are known to build nests under artificial structures such as bridges. The existing bridge structure was visually surveyed for evidence of previous migratory bird nesting activity (e.g., remnant mud nests) during the field assessment. Inactive cliff swallow nests were observed on the Stanley Road Bridge and indicate previous nesting by this species on the bridge structure.

3.4.2. Riparian Habitat

Riparian habitat is generally considered to be a sensitive natural community and is present in the BSA. Riparian habitat occurs as a narrow, fragmented corridor of valley oak and Himalayan blackberry along Littlejohns Creek. This riparian habitat provides food, shade, shelter, nesting sites and other resources for wildlife.

3.4.3. Native and Non-Native Fish

Native non-native fish, such as Sacramento pike-minnow (*Ptychocheilus grandis*), green sunfish (*Lepomis cyanellus*), and black bass (*Micropterus* spp.) have the potential or are known to occur within Littlejohns Creek in the BSA. Common carp (*Cyprinus carpio*) and mosquito fish (*Gambusia affinis*) were observed within Littlejohns Creek during the site visit on April 22, 2012.



Summary of Wat

Other Waters

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

A discussion of sensitive biological resources, potential impacts, and mitigation measures is presented below. A map of temporary and permanent project impacts within the BSA is presented as Figure 5.

4.1. Potential Impacts on Special-Status Plant Species

The BSA does not contain suitable habitat for regionally occurring special-status plants. Implementation of the proposed project is not expected to adversely affect any special-status plant species. No mitigation is required.

4.2. Potential Impacts on Special-Status Animal Species

As discussed in Chapter 3, nine special-status animal species were determined to have the potential to be impacted by the project. These species include hardhead, western pond turtle, Swainson's hawk, white-tailed kite, burrowing owl, loggerhead shrike, California yellow warbler, yellow-breasted chat, and tricolored blackbird.

A discussion of the regulatory status, habitat requirements, potential for occurrence, potential project-related impacts, avoidance and minimization measures, and cumulative effects for each of these species is provided below.

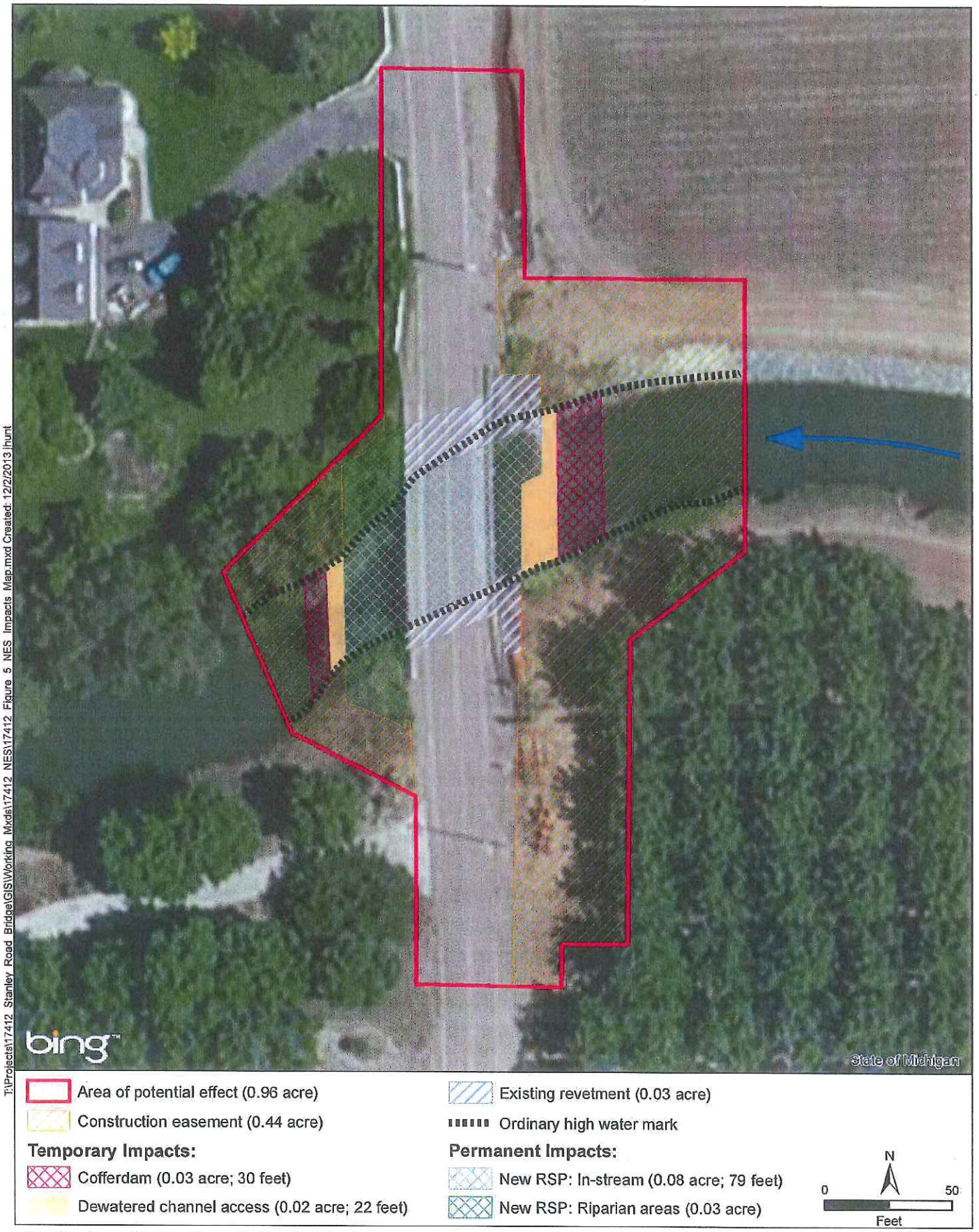
With the implementation of the avoidance and minimization measures presented in Section 5.3 (below), the proposed project is not expected to adversely affect any special-status animal species.

4.2.1. Hardhead and Other Fish Species

Hardhead is listed as a state species of special concern. Hardheads are typically found in well-oxygenated low- to mid-elevation streams, with deep gravel-bottom pools (McGinnis 2006).

4.2.1.1. Survey Results

Hardhead prefer clear, relatively deep, well-oxygenated low-flow streams. Littlejohn's Creek provides very low habitat potential. Hardhead may occur in very low numbers within the BSA; however, persistent populations are not expected due to poor habitat conditions and competition from non-native warm-water fishes. No



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Stanley Road Bridge Scour Mitigation Project

Figure 5
Project Impact Areas

suitable spawning habitat for this species (i.e., well-oxygenated rocky or gravel substrate) is found within the BSA.

4.2.1.2. PROJECT IMPACTS

Because project implementation would involve modification or alteration of the streambed, as well as the stream bank, project implementation has the potential for limited short-term impacts on hardhead, as well as other native and non-native fish within and adjacent to the BSA.

It is anticipated that temporary cofferdams (about 0.03 acre; Figure 5) would be constructed both upstream and downstream of the work area, with flexible bypass pipes that could be moved within the channel as necessary. A pumping system would dewater the work area between the cofferdams (about 0.10 acre). Excavation of the existing earthen channel bottom and banks would occur to a maximum depth of 4.5 feet. Because of the depth of the existing channel bottom and steep banks, it is expected that a temporary ramp would be constructed in order to provide equipment access to the work area.

Potential adverse impacts on hardhead include stress, injury or mortality resulting from: dewatering of the work area; exclusion from and prevention of passage through the work area; sedimentation and turbidity; spills of fuel, oil, or other hazardous materials, and other pro-related disturbance.

4.2.1.3. AVOIDANCE AND MINIMIZATION

In addition to Conservation Measures provided in Chapter 1, the following measures shall be implemented to avoid or minimize the potential for significant impacts on hardhead and other fish species.

Measure 1	The dewatered work area and disturbance to in-stream and riparian habitat shall be kept to the minimum area necessary to perform work.
Measure 2	Erosion control measures, such as installation of filter fabric, temporary rocking, and/or installation of a t-pipe shall be installed at the bypass outflow to minimize potential for erosion of the streambed downstream of the work area.
Measure 3	Prior to in-channel work and during the dewatering activities, a qualified biologist shall monitor the area and

	remove any fishes from within the work area and safely relocate them into Littlejohns Creek. All fish removed from the work area shall be documented and released into Littlejohns Creek outside of the work area. Erosion control measures that employ monofilament netting shall be prohibited within the work area.
Measure 4	A maximum 0.2-inch (5-millimeter) diameter mesh screen will be used to cover the intake pipe on all pumps used for dewatering the work area within the cofferdams.

4.2.1.4. COMPENSATORY MITIGATION

None required.

4.2.1.5. CUMULATIVE EFFECTS

Implementation of the avoidance and minimization measures outlined above will avoid significant impacts on hardhead and other native fishes. No permanent impacts on fish passage through the BSA would result from project implementation. The project would not result in cumulatively considerable adverse impacts on hardhead and other native fishes.

4.2.2. Western Pond Turtle

Western pond turtle is listed as a species of special concern by the CDFW. This species is found in a wide range of aquatic habitats with emergent structure for basking and feeding. Western pond turtles also utilize adjacent upland sites for nesting, often travelling great distances over land to suitable nesting sites.

4.2.2.1. POTENTIAL FOR OCCURRENCE

Habitat for western pond turtles within the BSA is marginal, with no emergent structure (e.g., emergent snags or rock structures) and potential basking sites limited to the banks of Littlejohns Creek. Western pond turtle was not observed during the site visit. Low quality nesting habitat is found along the south bank of Littlejohns Creek downstream of Stanley Road.

4.2.2.2. PROJECT IMPACTS

Because project implementation would involve modification or alteration of the streambed, as well as the stream bank, project implementation has the potential for limited short-term impacts on western pond turtle. Potential adverse impacts on

western pond turtle include stress, injury or mortality to individuals or their nests resulting from: site access by project vehicles and equipment, heavy equipment operation, installation of cofferdams and RSP, and excavation activities; temporary loss of habitat and movement corridors during installation of bypass and cofferdams, work area dewatering and installation of RSP; sedimentation and turbidity resulting from work within the channel of Littlejohns Creek; and fuel and oil spills within the banks of Littlejohns Creek.

4.2.2.3. AVOIDANCE AND MINIMIZATION

In addition to Conservation Measures provided in Chapter 1 and Avoidance and Minimization Measures 1–2 above, the following measure shall be implemented to avoid or minimize the potential for significant impacts on western pond turtle.

Measure 5	If western pond turtles are encountered within the BSA during construction, work activity in the immediate vicinity will cease until any individuals have left the work area.
Measure 6	Prior to initiation of construction activities, workers shall participate in environmental awareness training provided by a qualified biologist. The training shall instruct workers regarding: 1) how to identify the turtle; 2) the habitats used by the turtle; 3) the potential for turtle egg clutches (i.e., nest sites) to be discovered during vegetation clearing; and 4) what to do if a turtle or suspected egg clutch is encountered during construction activities.

4.2.2.4. COMPENSATORY MITIGATION

None required.

4.2.2.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on western pond turtle.

4.2.3. Swainson's Hawk

Swainson's hawks are a state-listed threatened species. In the Central Valley, this species generally nests in isolated stands of trees and along forested edges near open habitats, such as annual grasslands and row crops that provide foraging habitat. The

nesting season (nesting building to post-fledging) for this species generally occurs between April 1st and July 30th (Swainson's Hawk Technical Advisory Committee 2000), but some active nesting activity may occur into August.

4.2.3.1. SURVEY RESULTS

Although the April 22, 2012 reconnaissance-level biological survey was not intended to follow Swainson's hawk survey protocol, a pair of Swainson's hawks was observed approximately 0.6 mile northeast of the BSA above a cluster of farmhouse trees on private property. Additionally, there are 16 CNDDB records of Swainson's hawks nesting within 10 miles of the BSA. Row crops to the northeast of the BSA provide potential foraging habitat for Swainson's hawk. Bands of riparian habitat and isolated stands of trees within 0.5 mile of the BSA provide potential nesting habitat for this species.

4.2.3.2. PROJECT IMPACTS

If Swainson's hawks are nesting within 0.25 mile of the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment (Swainson's Hawk Technical Advisory Committee 2000). No significant impacts on Swainson's hawk foraging habitat are anticipated to result from project implementation.

4.2.3.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for significant impacts on Swainson's hawk.

Measure 7	To the extent practicable, construction activities shall be conducted outside of the nesting season or towards the end of the nesting season (e.g., conduct activities from August through September). If construction activities are conducted completely outside of the nesting season (i.e., after August 31), no further measures are necessary. If construction activities are to occur during the nesting season, the following measure shall be implemented.
Measure 8	A minimum of one pre-construction survey for active Swainson's hawk nests within 0.25 mile (where accessible) of the project area shall be conducted by a qualified biologist within 15 days prior to the initiation

of construction activities. If any Swainson's hawk nests are identified, appropriate conservation measures (as determined by a qualified biologist) shall be implemented. These measures may include, but are not limited to establishing a construction-free buffer zone around the active nest site (600 feet), biological monitoring of the active nest site, and delaying construction activities in the vicinity of the active nest site until the young have fledged.

4.2.3.4. COMPENSATORY MITIGATION

None required.

4.2.3.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on Swainson's hawk.

4.2.4. Burrowing Owl

Burrowing owl is listed as a species of special concern by the CDFW. This species is found in grasslands and open ruderal or agricultural lands in the Central Valley. Burrowing owls require burrows and similar ground-level cavities (e.g., abandoned culverts, rock cavities, and man-made nest structures) for nesting and roosting. In the Central Valley, the nesting season for this species occurs between February 1 and August 31 (California Burrowing Owl Consortium 1993; California Department Fish Game 2012).

4.2.4.1. SURVEY RESULTS

Marginal potential habitat for burrowing owl is found on the levees and untilled areas fringing row crops and Littlejohns Creek immediately northeast of the BSA. Although these areas contain few ground squirrel burrows, burrowing owls have been recorded from similar ruderal row crop margins within the San Joaquin Valley. During the April 22, 2012 site visit, no evidence (e.g., whitewash, feathers pellets) of burrowing owl occupancy was observed. There are three CNDDB records of burrowing owls nesting within 10 miles of the BSA.

4.2.4.2. PROJECT IMPACTS

If burrowing owls are nesting near the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to

nest abandonment. No direct impacts on potential burrowing owl nesting habitat is anticipated to result from project implementation.

4.2.4.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for significant impacts on burrowing owl.

Measure 9 Pre-construction surveys for active burrows within 500 feet (where accessible) of the project activities shall be conducted by a qualified biologist within 15 days prior to the initiation of construction activities. If any active burrows are identified, appropriate conservation measures (as determined by a qualified biologist) shall be implemented. These measures may include, but are not limited to establishing a construction-free buffer zone around active burrows, biological monitoring of the burrows, delaying construction activities in the vicinity of active burrows during the nesting season, and relocating owls during the non-nesting season (passive relocation) from burrows that will be disturbed.

4.2.4.4. COMPENSATORY MITIGATION

None required.

4.2.4.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on burrowing owls.

4.2.5. White-Tailed Kite

White-tailed kites are a California fully protected species. This species generally nests in tall shrubs or trees and is found in a variety of relatively open to open habitats such as ruderal agricultural settings, open scrub lands, and grasslands throughout the Central Valley of California. In the Central Valley, the nesting season for this species occurs between March and August (California Department of Fish and Game 2008).

4.2.5.1. SURVEY RESULTS

Though there are no CNDDB recorded occurrences for white-tailed kite within 10 miles of the BSA, habitat within and adjacent to the BSA provides potential foraging and nesting habitat for white-tailed kite.

4.2.5.2. PROJECT IMPACTS

If white-tailed kites are nesting within or near the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.2.5.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for significant impacts on white-tailed kite.

Measure 10 Implement Avoidance and Minimization Measure 7. If construction activities during the nesting season cannot be avoided, pre-construction surveys for nesting white-tailed kites and other raptors within 500 feet (where accessible) of the project area shall be conducted by a qualified biologist within 15 days prior to the initiation of construction activities. Areas to be surveyed shall be limited to those areas subject to increased disturbance as a result of construction activities. Areas where existing traffic, human activity, etc. is greater or equal to construction-related disturbance need not be surveyed. If any active white-tailed kite nests are identified, appropriate conservation measures (as determined by a qualified biologist) shall be implemented. These measures may include, but are not limited to establishing a construction-free buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities in the vicinity of the active nest site until the young have fledged.

4.2.5.4. COMPENSATORY MITIGATION

None required.

4.2.5.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on white-tailed kite.

4.2.6. Loggerhead Shrike

Loggerhead shrike is listed as a species of special concern by the CDFW. This species is generally found in open grasslands, relatively open scrubs and ruderal agricultural

settings throughout the Central Valley of California. Loggerhead shrikes are tree or shrub nesters which generally require barbed-wire fences, thorn bushes or similar barbed structures for impaling and storing prey items. In the Central Valley, the nesting season for this species occurs between March and August (California Department of Fish and Game 2008).

4.2.6.1. SURVEY RESULTS

Potential low quality nesting and foraging habitat is found within and adjacent the BSA.

4.2.6.2. PROJECT IMPACTS

If loggerhead shrikes are nesting within the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.2.6.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for significant impacts on loggerhead shrike.

Measure 11 Implement Avoidance and Minimization Measure 7. If construction activities during the nesting season cannot be avoided, pre-construction surveys for nesting loggerhead shrikes and other migratory birds shall be conducted by a qualified biologist within 15 days prior to the initiation of construction activities. The survey shall be conducted in accessible areas within 250 feet of the project area. If active nests are observed, appropriate conservation measures (as determined by a qualified biologist) shall be implemented. These measures may include, but are not limited to establishing a construction-free buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities in the vicinity of the active nest site until the young have fledged. In general, the avoidance buffer shall be a minimum of 50 feet. However, the size of the avoidance buffer may be increased or decreased as determined by the monitoring biologist based on the planned construction activities, the sensitivity of the species to disturbance, the setting

of the nest site, the concealment of the nest from project activities, and other ecological factors.

4.2.6.4. COMPENSATORY MITIGATION

None required.

4.2.6.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on loggerhead shrike.

4.2.7. Yellow Warbler and Yellow-Breasted Chat

Yellow warbler and yellow-breasted chat are listed as species of special concern by the CDFW. Yellow warbler and yellow-breasted chat nest in similar habitat and are generally found nesting in association with dense riparian vegetation. In the Central Valley, the nesting season for these species occurs between mid-April and mid-August (California Department of Fish Game 2008).

4.2.7.1. SURVEY RESULTS

Though there are no CNDDB recorded occurrences for yellow warbler or yellow-breasted chat within 10 miles of the BSA. Marginal potential nesting habitat is found within and adjacent to the BSA in riparian habitat along the north bank of Littlejohns Creek downstream from the Stanley Road Bridge.

4.2.7.2. PROJECT IMPACTS

If yellow warblers or yellow-breasted chats are nesting within the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.2.7.3. AVOIDANCE AND MINIMIZATION

Avoidance and Minimization Measure 11 shall be implemented to avoid or minimize the potential for significant impacts on yellow warbler and yellow-breasted chat.

4.2.7.4. COMPENSATORY MITIGATION

None required.

4.2.7.5. CUMULATIVE EFFECTS

With implementation of the above measure, the proposed project would not result in cumulatively considerable adverse impacts on yellow warbler and yellow-breasted chat.

4.2.8. Tricolored Blackbird

Tricolored blackbird is listed as a species of special concern by the CDFW. Tricolored blackbirds are colonial nesters that typically breed near fresh water, primarily in dense emergent vegetation, but may also nest in blackberry, rose, willow thickets and small trees in open country, rangeland, cropland, and near marshes or wetlands. In the Central Valley, the nesting season for this species occurs between mid-April and late July (California Department of Fish and Game 2008).

4.2.8.1. Survey Results

Though there are no CNDDB recorded occurrences for tricolored blackbird within 10 miles of the BSA. Marginal potential nesting habitat is found within and adjacent to the BSA in riparian habitat along the north bank of Littlejohns Creek downstream from the Stanley Road Bridge and marginal foraging habitat is found in row crops to the northeast of the BSA.

4.2.8.2. Project Impacts

If tricolored blackbirds are nesting within the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.2.8.3. Avoidance and Minimization

Mitigation Measure 11 shall be implemented to avoid or minimize the potential for significant impacts on tricolored blackbird.

4.2.8.4. Compensatory Mitigation

None required.

4.2.8.5. Cumulative Effects

With implementation of the above measure, the proposed project would not result in cumulatively considerable adverse impacts on tricolored blackbirds.

4.3. Other Sensitive Biological Resources

4.3.1. Nesting Raptors and Migratory Birds

All raptor species, including relatively common species and their nests, are protected from take according to California Fish and Game Code. All migratory birds and their nests are protected from take under the federal MBTA.

4.3.1.1. SURVEY RESULTS

Raptor species (birds of prey) and migratory birds, other than those listed as special-status species, could nest in the vicinity of the BSA. Inactive cliff swallow nests observed on April 22, 2012 indicate previous nesting by this species on the Stanley Road Bridge.

4.3.1.2. PROJECT IMPACTS

If migratory birds or raptor species are nesting within the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.3.1.3. AVOIDANCE AND MINIMIZATION

In addition to Avoidance and Minimization Measures 10 and 11, the following measure shall be implemented to avoid or minimize the potential for significant impacts on nesting raptors and migratory birds.

Measure 12 If construction activities during the nesting season cannot be avoided, existing cliff swallow nests on the Stanley Road Bridge shall be removed prior to the nesting season (i.e., between September 1 and February 1) to discourage continued nesting on this structure prior to construction. An effective deterrent to cliff swallow nesting should be installed on the Stanley Road Bridge prior to the nesting season. If a nesting deterrent is used, the deterrent shall be monitoring for integrity and effectiveness until the project is completed. If nesting activities cannot be effectively deterred, continuous removal of cliff swallow nest starts prior to egg-laying may be necessary before construction activities are initiated. Disturbance or removal of active nests (i.e., nests containing eggs) shall not be conducted without the appropriate authorization(s) from the USFWS and/or the CDFW.

4.3.1.4. COMPENSATORY MITIGATION

None required.

4.3.1.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on nesting raptors and migratory birds.

4.3.2. Riparian Habitat

Riparian habitat is generally considered be a sensitive natural community. Additionally, consideration of project effects on riparian habitat may be evaluated by the CDFW for projects requiring a Streambed Alteration Agreement or where work will be undertaken within the floodplain of a stream or river containing fish or wildlife resources.

4.3.2.1. POTENTIAL FOR OCCURRENCE

Because of the existing Stanley Road Bridge and extensive revetment of Littlejohns Creek, existing riparian habitat within the BSA is limited to narrow bands downstream of the Stanley Road Bridge. Riparian habitat along the south bank of Littlejohns Creek is dominated by ruderal herbaceous upland vegetation and scattered patches of Himalayan blackberry. Riparian habitat along the north bank of Littlejohns Creek is dominated by valley oak with an understory of Himalayan blackberry.

4.3.2.2. PROJECT IMPACTS

The anticipated area of riparian vegetation removal is limited to approximately 0.03 acre of vegetation located downstream and adjacent to the Stanley Road Bridge. Removal of riparian vegetation along the south side of Littlejohns Creek (approximately 0.015 acre) will include a small valley oak (5–6 inches dbh), scattered patches of Himalayan blackberry and ruderal herbaceous upland vegetation. Removal of riparian vegetation along the north side of Littlejohns Creek (approximately 0.015 acre) will be limited to an area dominated by Himalayan blackberry.

4.3.2.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for adverse effects on riparian habitat.

Measure 13	The dewatered work area and disturbance to in-stream and riparian habitat shall be kept to the minimum area necessary to perform work.
Measure 14	Aquatic and upland habitats to be avoided shall be flagged and/or signed. No construction activities or personnel shall be allowed to enter the avoidance areas.

Flagging and signage shall remain in place until construction activities are complete and shall be removed upon completion of construction.

4.3.2.4. COMPENSATORY MITIGATION

None required.

4.3.2.5. CUMULATIVE EFFECTS

With implementation of the above avoidance and minimization measure, the proposed project would not result in cumulatively considerable adverse impacts on riparian habitat.

4.4. Waters of the United States, Including Wetlands

4.4.1. Survey Results

A delineation of waters of the United States within the BSA was conducted on April 22, 2012. Waters of the United States within the BSA occupy a total of 0.23 acre (209 linear feet), and include only Littlejohns Creek, which is classified as a perennial stream.

4.4.2. Potential Impacts

Construction of the proposed project would involve installation of RSP across the channel of Littlejohns Creek, a water of the United States. Based on existing project detail, implementation of the proposed project would result in permanent impacts on approximately 0.08 acre (79 linear feet) of Littlejohns Creek. The permanent impacts would result from the placement of approximately 0.08 acre (79 linear feet) of RSP within Littlejohns Creek from approximately 10 feet upstream to approximately 25 feet downstream of the Stanley Road Bridge.

In addition to the permanent impacts, the proposed project would result in temporary impacts on approximately 0.05 acre (52 linear feet) of Littlejohns Creek. These impacts include construction of the temporary upstream and downstream cofferdams (approximately 0.03 acre; 30 linear feet), temporary dewatering of additional channel work area (approximately 0.02 acre; 22 linear feet) to provide access for installation of permanent RSP, and personnel and equipment working in the channel during excavation and placement of materials (Figure 5).

4.4.3. Avoidance And Minimization Measures

In addition to the Conservation Measures provided in Chapter 1 and Avoidance and Minimization Measures 10, 13, and 14, the following measures shall be implemented

to avoid or minimize the potential for significant impacts on waters of the United States.

Measure 15	Vegetation clearing shall be limited to the minimum area necessary within 200 feet of the banks of Littlejohns Creek.
Measure 16	Prior to any discharge of dredged or fill material into Littlejohns Creek, the required permits/authorizations shall be obtained from the Corps and the RWQCB. All terms and conditions of the required permits/authorizations shall be implemented.
Measure 17	Prior to any activities that would obstruct the flow of, or alter the bed, channel, or bank of Littlejohns Creek, notification of streambed alteration shall be submitted to the CDFW. If required, a streambed alteration agreement shall be obtained from CDFW and all conditions of the agreement shall be implemented.
Measure 18	Construction activities that will affect Littlejohns Creek shall be conducted during the dry season (i.e., late summer through early fall) to minimize erosion.
Measure 19	All waters of the United States that are temporarily affected by project construction shall be restored as close as practicable to their original contour and conditions within 10 days of the completion of construction activities.

4.4.4. Compensatory Mitigation

None required.

4.4.5. Cumulative Effects

With implementation of the avoidance and minimization measures, the proposed project would not result in cumulatively considerable adverse effects on waters of the United States.

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

5.1. Federal Endangered Species Act

No federally listed species would be affected by the project. No Endangered Species Act consultation with the USFWS or the National Marine Fisheries Service (NMFS) is required.

5.2. Magnuson-Stevens Fishery Conservation and Management Act

No Essential Fish Habitat (EFH) would be affected by the proposed project. No Magnuson-Stevens Fishery Conservation and Management Act consultation with the National Marine Fisheries Service (NMFS) is anticipated to be required.

5.3. Clean Water Act

To ensure compliance with terms and conditions of Section 404 of the 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 (NWP) program (likely NWP 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 of the CWA requires that a Water Quality Certification be obtained from the Regional Water Quality Control Board 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.

5.4. Migratory Bird Treaty Act

Avoidance and minimization measures would be implemented to avoid adverse effects on migratory birds and their nests.

5.5. Executive Order 13112 (Invasive Species)

Implementation of Conservation Measure #4 – Prevention of Spread of Invasive Species will avoid or minimize the potential for the spread of invasive species, as required by Executive Order 13112.

5.6. California Endangered Species Act

Avoidance and minimization measures would be implemented to avoid the take of state-listed species. Consultation with the CDFW under the California Endangered Species Act is not expected to be required.

5.7. California Fish and Game Code

The proposed project would involve work within Littlejohns Creek, a perennial 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.

Chapter 6. References

6.1. Literature Cited

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6.2. Personal Communications

Kleinfelter, R., Associate Environmental Planner/Biologist, Caltrans. January 10, 2014. Email to Jen Schofield of USFWS.

Schofield, J., Contract Biologist-Caltrans Liaison, USFWS. January 13, 2014. Email to Rachel Kleinfelter of Caltrans.

Appendix A USFWS List

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 131125110116

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

Branchinecta conservatio
- Conservancy fairy shrimp (E)

Branchinecta lynchi
- Critical habitat, vernal pool fairy shrimp (X)
- vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
- valley elderberry longhorn beetle (T)

Lepidurus packardi
- vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus
- delta smelt (T)

Oncorhynchus mykiss
- Central Valley steelhead (T) (NMFS)
- Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
- Central Valley spring-run chinook salmon (T) (NMFS)
- winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
- California tiger salamander, central population (T)

Rana draytonii
- California red-legged frog (T)

Reptiles

Thamnophis gigas
- giant garter snake (T)

Plants

Tuctoria greenei
- Greene's tuctoria (=Orcutt grass) (E)

Quads Containing Listed, Proposed or Candidate Species:

PETERS (4614)

County Lists

Listed Species

Invertebrates

Branchinecta conservatio
Conservancy fairy shrimp (E)
Critical habitat, Conservancy fairy shrimp (X)
S

Branchinecta longiantenna
longhorn fairy shrimp (E)
S

Branchinecta lynchi
Critical habitat, vernal pool fairy shrimp (X)
vernal pool fairy shrimp (T)
S

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)
S

Elaphrus viridis
delta green ground beetle (T)
S

Lepidurus packardi
Critical habitat, vernal pool tadpole shrimp (X)
vernal pool tadpole shrimp (E)
S

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)
S

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)
S

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)
S

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)

Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)
S

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)
Critical habitat, CA tiger salamander, central population (X)
S

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)
S

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)
S

Thamnophis gigas
giant garter snake (T)
S

Birds

Rallus longirostris obsoletus
California clapper rail (E)
S

Vireo bellii pusillus
Least Bell's vireo (E)
S

Mammals

Neotoma fuscipes riparia
riparian (San Joaquin Valley) woodrat (E)
S

Sylvilagus bachmani riparius
riparian brush rabbit (E)
S

Vulpes macrotis mutica
San Joaquin kit fox (E)
S

Plants

Amsinckia grandiflora
Critical habitat, large-flowered fiddleneck (X)
large-flowered fiddleneck (E)
S

Arctostaphylos myrtifolia
Ione manzanita (T)
S

Castilleja campestris ssp. succulenta
Critical habitat, succulent (=fleshy) owl's-clover (X)
succulent (=fleshy) owl's-clover (T)
S

Cordylanthus palmatus
palmate-bracted bird's-beak (E)
S

Lasthenia conjugens
Critical habitat, Contra Costa goldfields (X)
S

Orcuttia viscida
Critical habitat, Sacramento Orcutt grass (X)
Sacramento Orcutt grass (E)
S

Tuctoria greenei
Greene's tuctoria (=Orcutt grass) (E)
S

Candidate Species

Birds

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (C)
S

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may

result in take, then that agency must engage in a formal consultation with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be February 23, 2014.

Appendix B CNDDB and CNPS Records

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Peters (3712181) or Waterloo (3812112) or Linden (3812111) or Valley Springs SW (3812018) or Stockton East (3712182) or Farmington (3712088) or Manteca (3712172) or Avena (3712171) or Escalon (3712078))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAAAA01180	***Ambystoma californiense*** California tiger salamander	Threatened	Threatened	G2G3	S2S3	SSC
AAABF02020	***Spea hammondii*** western spadefoot	None	None	G3	S3	SSC
ABNKC19070	***Buteo swainsoni*** Swainson's hawk	None	Threatened	G5	S2	
ABNSB10010	***Athene cunicularia*** burrowing owl	None	None	G4	S2	SSC
ABPBXB0020	***Agelaius tricolor*** tricolored blackbird	None	None	G2G3	S2	SSC
AFCJB25010	***Mylopharodon conocephalus*** hardhead	None	None	G3	S3	SSC
AMACC10010	***Antrozous pallidus*** pallid bat	None	None	G5	S3	SSC
AMACD02011	***Eumops perotis californicus*** western mastiff bat	None	None	G5T4	S3?	SSC
ARADB36150	***Thamnophis gigas*** giant garter snake	Threatened	Threatened	G2G3	S2S3	
CTT44110CA	***Northern Hardpan Vernal Pool*** Northern Hardpan Vernal Pool	None	None	G3	S3.1	
ICBRA03030	***Branchinecta lynchi*** vernal pool fairy shrimp	Threatened	None	G3	S2S3	
ICBRA03150	***Branchinecta mesovallensis*** midvalley fairy shrimp	None	None	G2	S2	
ICBRA06010	***Linderiella occidentalis*** California linderiella	None	None	G3	S2S3	
ICBRA10010	***Lepidurus packardi*** vernal pool tadpole shrimp	Endangered	None	G3	S2S3	
IICOL48011	***Desmocerus californicus dimorphus*** valley elderberry longhorn beetle	Threatened	None	G3T2	S2	
IICOL4C020	***Lytta moesta*** moestan blister beetle	None	None	G2	S2	
IIHYM35030	***Andrena blennospermatis*** Blennosperma vernal pool andrenid bee	None	None	G2	S2	
IIHYM35210	***Andrena subapasta*** vernal pool andrenid bee	None	None	G1G3	S1S3	
PDAPI020S0	***Eryngium racemosum*** Delta button-celery	None	Endangered	G1Q	S1	1B.1

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDCAMDC010	***Legenere limosa*** legenere	None	None	G2	S2.2	1B.1
PDPLM0C0X1	***Navarretia myersii ssp. myersii*** pincushion navarretia	None	None	G1T1	S1	1B.1
PDRAN0B1J0	***Delphinium recurvatum*** recurved larkspur	None	None	G3	S3	1B.2
PMALI040Q0	***Sagittaria sanfordii*** Sanford's arrowhead	None	None	G3	S3	1B.2
PMJUN011L1	***Juncus leiospermus var. ahartii*** Ahart's dwarf rush	None	None	G2T1	S1	1B.2
PMPOA6N010	***Tuctoria greenei*** Greene's tuctoria	Endangered	Rare	G1	S1	1B.1

Record Count: 25

CNPS Inventory of Rare and Endangered Plants

Status: Plant Press Manager window with 8 items - Mon, Nov. 25, 2013 13:06 ET c

Reformat list as: Standard List - with Plant Press controls

ECOLOGICAL REPORT

scientific	family	life form	blooming	communities	elevation	CNPS
Delphinium recurvatum	Ranunculaceae	perennial herb	Mar-Jun	•Chenopod scrub (ChScr) •Cismontane woodland (CmWld) •Valley and foothill grassland (VFGrs)/alkaline	3 - 790 meters	List 1B.2
Eryngium racemosum	Apiaceae	annual/perennial herb	Jun-Oct	•Riparian scrub (RpScr)(vernally mesic clay depressions)	3 - 30 meters	List 1B.1
Juncus leiospermus var. ahartii	Juncaceae	annual herb	Mar-May	•Valley and foothill grassland (VFGrs)(mesic)	30 - 229 meters	List 1B.2
Legenere limosa	Campanulaceae	annual herb	Apr-Jun	•Vernal pools (VnPls)	1 - 880 meters	List 1B.1
Navarretia myersii ssp. myersii	Polemoniaceae	annual herb	Apr-May	•Vernal pools (VnPls)/often acidic	20 - 330 meters	List 1B.1
Sagittaria sanfordii	Alismataceae	perennial rhizomatous herb emergent	May-Oct	•Marshes and swamps (MshSw) (assorted shallow freshwater)	0 - 650 meters	List 1B.2
Symphyotrichum lentum	Asteraceae	perennial rhizomatous herb	May-Nov	•Marshes and swamps (MshSw) (brackish and freshwater)	0 - 3 meters	List 1B.2
Tuctoria greenei	Poaceae	annual herb	May-Jul (Sep), Months in parentheses are uncommon.	•Vernal pools (VnPls)	30 - 1070 meters	List 1B.1

Appendix C Delineation of Waters of the United States

Stanley Road Bridge Scour Mitigation Project
Bridge No. 29C-112

Delineation of Waters of the United States

Stanley Road Bridge (29C-112) Scour Mitigation Project
San Joaquin County, California
Township 1 North, Range 9 East, Section 19
7.5′ USGS Quadrangle: Peters, California (1981)
District 10-SJ-Stanley Road-PM
Federal Project No. 5929(224)

January 2014

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Stanley Road Bridge Scour Mitigation Project

Delineation of Waters of the United States

Section 1 Summary **1**

Section 2 Project Location **1**
- 2.1 Proximity to Major Highways and Streets 1
- 2.2 USGS Hydrologic Unit 1

Section 3 Environmental Setting **3**
- 3.1 Current/Recent Land Use 3
- 3.2 Site Topography and Elevation 3
- 3.3 Climate 3
- 3.4 Hydrology/Hydrologic Features 4
- 3.5 Soil Map Units 4
- 3.6 Habitat Types 4

Section 4 Methods **6**
- 4.1 Field Delineation 6

Section 5 Results **7**
- 5.1 Characterization of Delineated Features 7
- 5.2 Conclusion 9

Section 6 References **9**

Figures

Figure 1. Project Location and Study Area 2
Figure 2. Soil Map Units 5
Figure 3. Waters of the United States 8

Appendices

Appendix A Routine Wetland Delineation Data Forms
Appendix B Representative Photographs

Section 1 Summary

The San Joaquin County Department of Public Works (County) conducted a delineation of waters of the United States occurring within the approximately 0.96-acres Stanley Road Bridge Scour Mitigation Project study area (study area). The study area is located on and adjacent to Stanley Road at Littlejohns Creek approximately 1.6 miles west-southwest of the community of Farmington in San Joaquin County, California. The County is proposing to install measures to reduce scour at the Stanley Road Bridge over Littlejohns Creek.

The field delineation was conducted on April 22, 2012, mapping total of 0.23 acres of waters of the United States in the study area. Waters of the United States within the study area are limited to a section of perennial stream (0.23 acres, 209 linear feet) along Littlejohns Creek. No wetlands occur within the study area.

This delineation of waters of the United States is subject to verification by the United States Army Corps of Engineers (USACE). All parties shall treat the information contained herein as preliminary until USACE provides written verification of the boundaries of its jurisdiction.

Section 2 Project Location

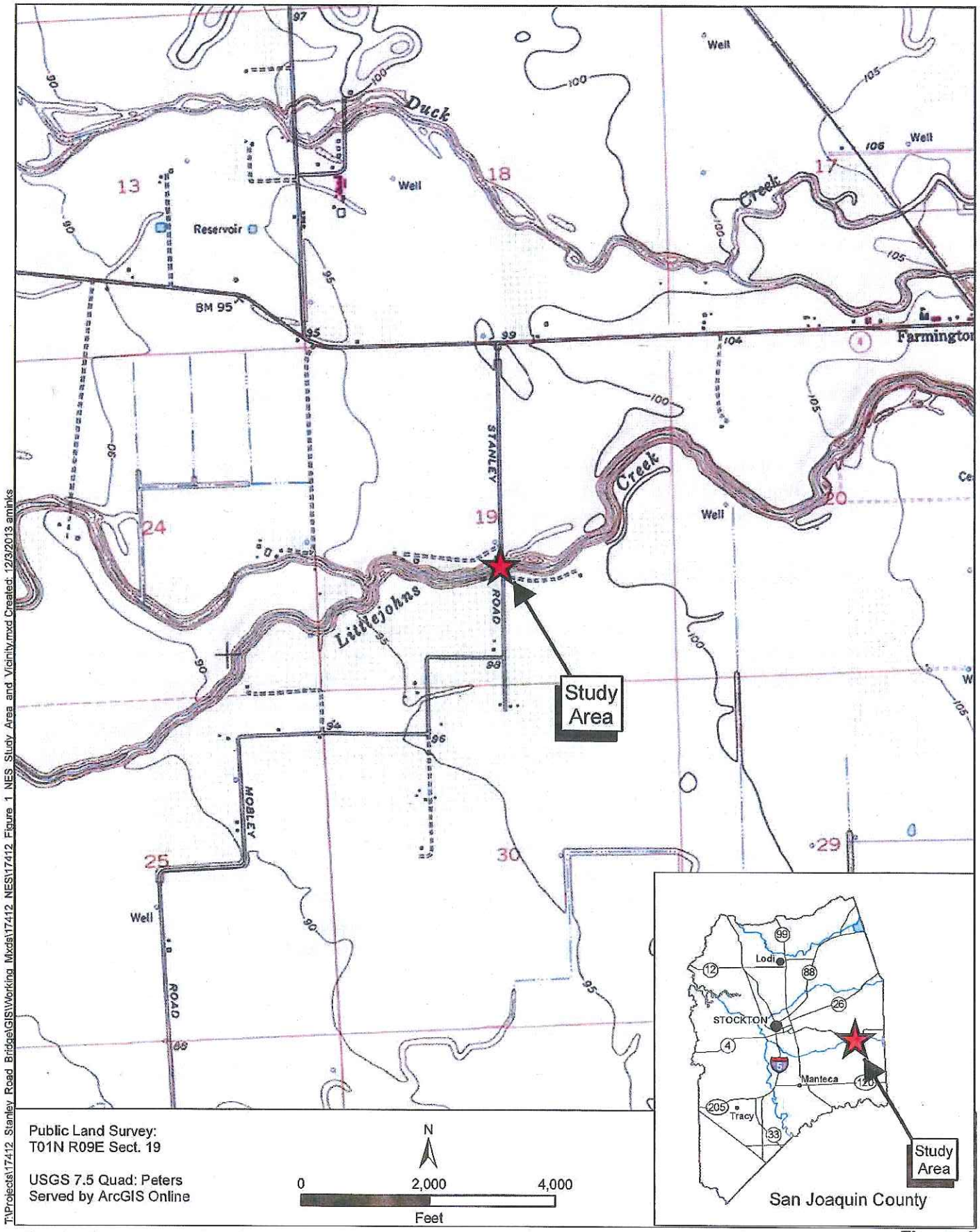
The 0.96-acres study area is located on and adjacent to Stanley Road at Littlejohns Creek approximately 0.7 mile south of Highway 4 (Farmington Road) and 1.6 miles west-southwest of the community of Farmington in San Joaquin County, California. The study area is located in the *Peters, California* 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle: Section 19, Township 01N, Range 09E, MDBM. The center of the study area is near UTM Zone 10 0673349E, 4198774 N (NAD 83 datum). The location of the study area is shown in Figure 1.

2.1 Proximity to Major Highways and Streets

Driving directions to the study area are as follows: from Stockton, California, take State Highway 99 to Exit 252B and merge to State Highway 4/Farmington Road heading east. Follow State Highway 4/Farmington Road approximately 12 miles east to Stanley Road. Follow Stanley Road approximately 0.7 mile south to Stanley Road Bridge. From Farmington, California, take State Highway 4/Farmington Road west approximately 1.5 miles. Follow Stanley Road approximately 0.7 mile south to Stanley Road Bridge.

2.2 USGS Hydrologic Unit

The study area is within the *Middle San Joaquin-Lower Merced-Lower Stanislaus* USGS Hydrologic Map Unit (Cataloging Unit Number 18040004).



Stanley Road Bridge Scour Mitigation Project

Figure 1
Study Area and Vicinity

Section 3 Environmental Setting

3.1 Current/Recent Land Use

The study area lies along Stanley Road which terminates within a rural residential area approximately 0.2 mile south of the study area. Agriculture is the primary land use within this region, with crops consisting largely of orchards, vineyards, and row crops. Land uses in the immediate vicinity of the study area include walnut orchards, row crops, farm-related structures, and low-density rural residences. Two residences are located immediately adjacent to the study area on the west side of Stanley Road; one residence is on the north side of Littlejohns Creek and the other is on the south side of the creek. Agricultural access roads are located near the northeast and southeast corners of the bridge, and residential driveways are located near the northwest and southwest corners of the bridge. Walnut orchards are located to the south and northwest of the study area and row crops are located to the northeast of the study area. Littlejohns Creek has been largely modified and incised as a result of landscape modification and vegetation clearing.

3.2 Site Topography and Elevation

The primary topographic feature in the study area is the channel of Littlejohns Creek, which bisects the study area from east to west. The elevation of the agricultural lands and residences above the banks of Littlejohns Creek are approximately 90 to 95 feet above mean sea level. The channelized banks of Littlejohns Creek slope at approximately 45 degrees to the Ordinary High Water Mark (OHWM) at approximately 80 to 85 feet above mean sea level.

3.3 Climate

Based on historical data collected at the Stockton Metropolitan Airport, Stockton, California (Western Regional Climate Center 2012), the climate within the study area is as follows:

> ***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 precipitation is approximately 14 inches.
>
> ***Air Temperature:*** Air temperatures in the study area range from an average January high of 54 °F to an average July high of 94 °F. The year-round average high temperature is approximately 75°F.
>
> ***Growing Season:*** The growing season (i.e., 50 percent probability of air temperature 28 °F or higher) in the study area is year round. The soil temperature regime is thermic.

3.4 Hydrology/Hydrologic Features

Littlejohns Creek and adjacent agricultural and urban runoff are the hydrologic features within the study area. Littlejohns Creek is a perennial stream whose headwaters are located approximately 20 miles east in the Sierra Nevada foothills. From its headwaters, Littlejohns Creek flows approximately 27 river-miles to the Farmington Flood Control Basin dam, approximately 5 miles east of the study area, which controls flows within Littlejohns Creek. Downstream from the study area, Littlejohns Creek flows into French Camp Slough, approximately 12 miles west of the study area and 3 miles south of the city of Stockton. French Camp Slough flows generally northwest for approximately 7 miles before it empties into Walker Slough which in turn empties into the San Joaquin River immediately southwest of the city of Stockton.

Runoff from surrounding agricultural lands and adjacent residences appears to provide a negligible contribution to hydrology within the study area. A constructed, unvegetated ditch drains south into a 24-inch culvert paralleling the east side of Stanley Road in the northeast corner of the study area. This ditch drains agricultural runoff from flood-irrigated row crops northeast of the study area through the culvert into Littlejohns Creek. Runoff from this culvert flows into Littlejohns Creek over existing rock revetment (Photograph 3-4, Appendix B). The drainage below the culvert outlet is over a constructed feature (i.e., rock revetment) and is not likely to qualify as waters of the United States because it: 1) is not a natural stream that has been altered; 2) was not excavated in waters of the United States; 3) does not have relatively permanent flowing or standing water; 4) does not connect two or more jurisdictional waters of the United States; and 5) does not drain natural water bodies (including wetlands) into the tributary system of a traditional navigable or interstate water (*Draft Guidance on Identifying Waters Protected by the Clean Water Act*, U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, April 2011).

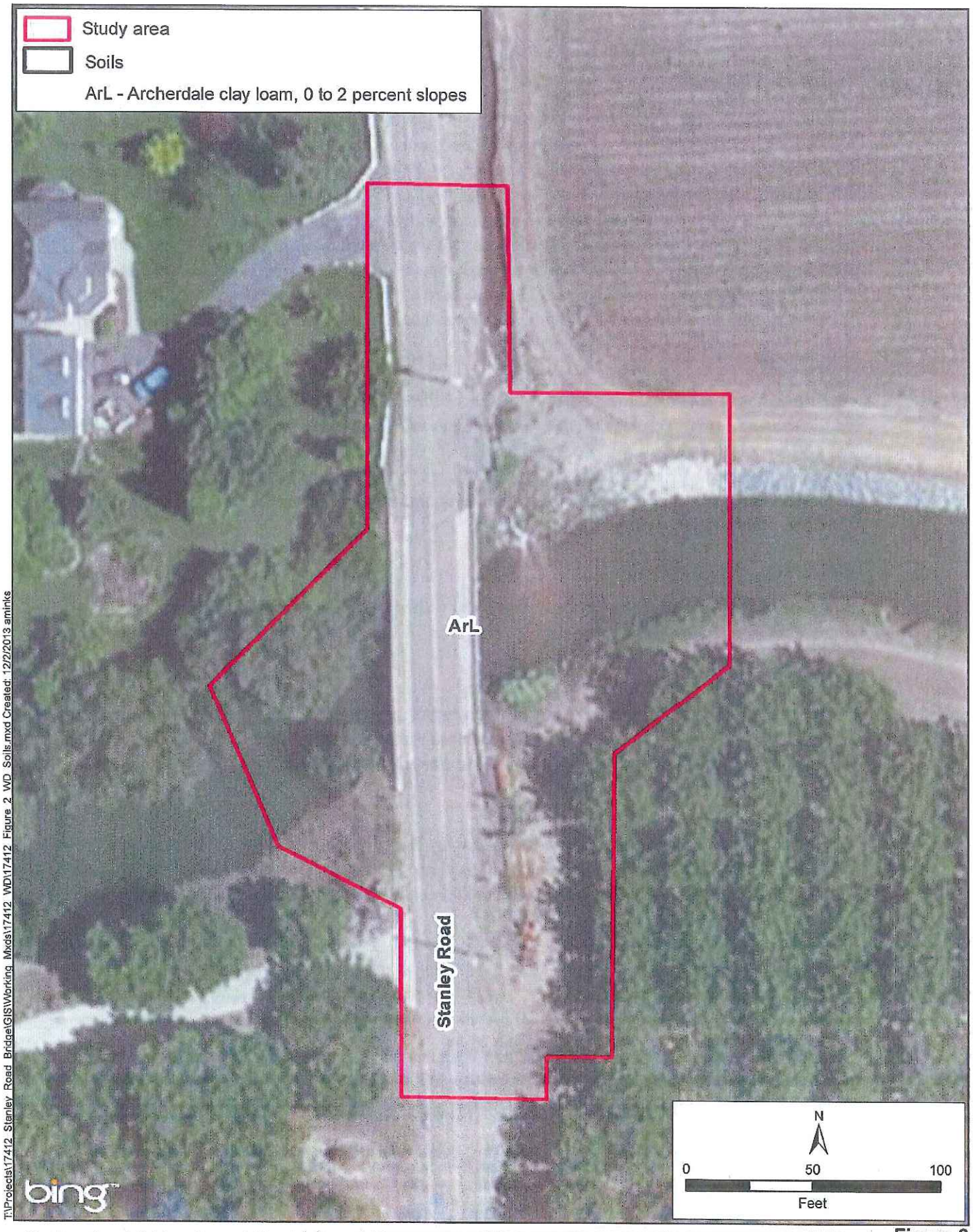
3.5 Soil Map Units

A description of soil map units was obtained from the U.S. Department of Agriculture's Web Soil Survey and described in the *Custom Soil Resource Report for San Joaquin County, California* (Soil Survey Staff NRCS 2012). Figure 2 shows the soil map units within the study area. Only one soil map unit occurs within the study area and is described as follows:

- **Archerdale clay loam, 0 to 2 percent slopes** –This is a non-hydric, well-drained alluvium derived from mixed parent material with a depth to restrictive layer and water table more than 80 inches.

3.6 Habitat Types

Habitat types were classified based on adaptations of vegetation descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988). Habitat types occurring within the study area include perennial stream, riparian, orchards, urban, and barren.



Stanley Road Bridge Scour Mitigation Project

Figure 2
Soils Map Units

Perennial Stream

Littlejohns Creek, a perennial stream, bisects the study area. This stream and its banks appear to be highly managed for water control. Upstream of the Stanley Road Bridge, the banks of Littlejohns Creek have been rocked and contoured to a uniform slope of approximately 45 degrees. The banks of Littlejohns Creek downstream of the Stanley Road Bridge do not contain rock revetment, but are contoured to a relatively uniform slope. The aquatic habitat within Littlejohns Creek consists entirely of slow-moving, open water with scattered patches of water-meal (*Wolffia globosa*) (OBL[1]) and duckweed (*Lemna* sp.) (OBL). No emergent vegetation or wetlands are found in association with Littlejohns Creek within the study area. Common carp (*Cyprinus carpio*) and mosquito fish (*Gambusia affinis*) were observed feeding just below the surface of Littlejohns Creek.

Riparian

A narrow, fragmented band of riparian vegetation occurs downstream (i.e., west) of Stanley Road within the study area. Trees within this riparian area are limited to several small to mid-sized valley oaks (*Quercus lobata*) (FACU). Scattered patches of Himalayan blackberry (*Rubus armeniacus*) (FACU) are mixed with an herbaceous layer dominated by tall annual willow herb (*Epilobium brachycarpum*) (NI), short-pod mustard (*Hirschfeldia incana*) (NI), rip gut brome (*Bromus diandrus*) (NI), and other ruderal species.

Orchards

Orchards within the study area consisted entirely of walnut orchards with a ground cover largely dominated by nonnative annual grasses.

Barren

Barren areas within and adjacent to the study area consist of agricultural margins, access roads, and portions of rocked banks along Littlejohns Creek upstream (i.e., east) of Stanley Road. These areas are actively cleared of vegetation by mechanical and/or chemical means.

Urban

Urban habitat within the study area consists of Stanley Road, residences on the north and south side of Littlejohns Creek west of Stanley Road and associated driveways accessing residences within the study area. Vegetation within these areas consists largely of ornamental trees, shrubs, and lawns.

Section 4 Methods

4.1 Field Delineation

The delineation of waters of the United States within the study area was based on field observations of indicators for hydrophytic vegetation, hydrology, and hydric soils for wetlands, and on indicators of an OHWM for other waters of the United States. This method is consistent with the approach

[1] Wetland indicator status for plant species is based on *North American Digital flora: national Wetland Plant List, version 2.4.0 (Region 0)* (Lichvar and Kartesz 2009) and includes the following categories:
Facultative Upland (FACU) – Plants that usually occur in uplands, but also occur in wetlands
Obligate Upland (UPL) – Plants that occur almost always in uplands
Not an Indicator (NI) – Plants not included in Lichvar and Kartesz 2009

outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008), and USACE regulations. Taxonomic nomenclature for plant species is in accordance with *The Jepson Manual* (Baldwin et. al. 2012). Wetland indicator status for plant species was confirmed using the National Wetland Plant List, version 2.4.0 (Lichvar and Kartesz 2009).

Soils were examined in order to assess field indicators of hydric soils in accordance with the criteria outlined in *Field Indicators of Hydric Soils in the United States* (US Department of Agriculture, Natural Resources Conservation Service 2010). Soil colors were determined using a Munsell® soil color chart. The hydric status of each soil map unit occurring within the study area was reviewed using the *Web Soil Survey* (Soil Survey Staff, Natural Resources Conservation Service 2012).

Delineation of "other waters" was based on presence of an OHWM as defined in USACE regulations (33 CFR 328.3 and 33 CFR 328.4) and whether the feature qualified as tributary to navigable 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.

The field delineation was conducted on April 22, 2012. Routine wetland determination data forms are presented in Appendix A.

The boundaries of Littlejohns Creek and the associated data point location 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 OHWM was delineated by hand onto an orthorectified color aerial photograph (Microsoft 2012). After the field delineation, GPS data and the field mapping were overlain on an aerial photograph of the study area to generate the delineation map. The boundaries and acreages of waters of the United States within the study area are illustrated in Figure 3.

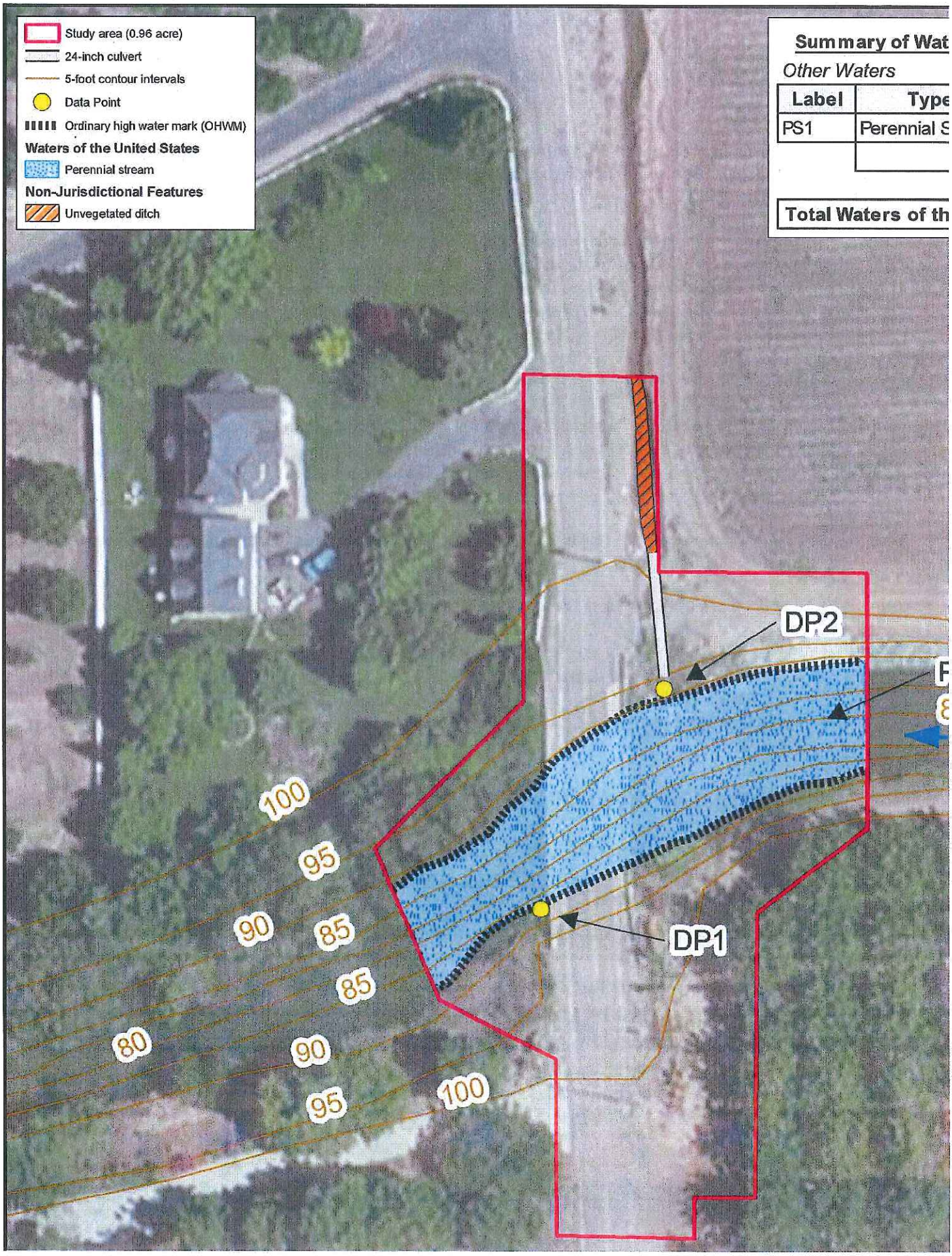
Section 5 Results

Waters of the United States within the study area occupy a total of 0.23 acres (209 linear feet), and are represented by one feature type: perennial stream (Figure 3). Appendix B contains representative photographs of waters of the United States.

5.1 Characterization of Delineated Features

Perennial Stream (PS1)

Perennial streams consist of natural drainages that usually convey waters throughout the year. These features exhibit indicators of being frequently flooded for a very long duration during the growing season. These indicators typically include watermarks, drift lines, sediment deposits, and drainage patterns. Also present is evidence of scour and deposition, a well-defined bed and bank, and a well-defined OHWM.


Study area (0.96 acre)
24-inch culvert
5-foot contour intervals
Data Point
Ordinary high water mark (OHWM)
Waters of the United States
Perennial stream
Non-Jurisdictional Features
Unvegetated ditch
Summary of Wat
Other Waters
Label
Type
PS1
Perennial S
Total Waters of th
DP2
DP1
100
95
90
85
85
80
90
95
100

Littlejohns Creek is a perennial stream (PS1) within the study area that is shown as a blue line on the *Peters, California* 7.5-minute USGS topographic quadrangle. Within the study area, the active channel of Littlejohns Creek has been contoured to accommodate predictable regulated flows as a result of the upstream Farmington Flood Control Basin dam. Within the study area, the OHWM of Littlejohns Creek was evidenced by bed and bank, drift deposits, and water marks. Downstream of Stanley Road, where the banks of the stream are not covered by rock bank protection, shelving was evident. No wetland features were observed within the OHWM of Littlejohns Creek. Within the study area, Littlejohns Creek is approximately 55 feet wide and 209 feet long.

5.2 Conclusion

A total of 0.23 acres (209 linear feet) of waters of the United States was delineated within the study area. No wetlands were observed within the study area. Waters of the United States identified within this report are subject to verification by USACE. All interested parties shall treat the information contained herein as preliminary pending written verification of jurisdictional boundaries by the USACE.

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Appendix A

Routine Wetland Delineation Data Forms

North State Resources

Habitat Type: Perennial Stream
Wetland Type: NOT APPLICABLE

Wetland Determination Data Form - Arid West Region

Project/Site: Stanley Road Bridge City/County: San Joaquin Co. Sampling Date: 04/22/2012
Applicant/Owner: San Joaquin County State: CA Sampling Point: 1
Investigator(s): John W. Hunt
Landform (hillslope, terrace, etc.) Perrenial Stream Local relief (concave, convex, none) Concave Slope % 0-3
Subregion (LRR) C Soil Map Unit Name: Archerdale clay loam
Are climatic/hydrologic conditions on the site typical for this time of year? Yes *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? Yes
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? ____ Other waters? X

USACE Jurisdiction

Adjacent to Waters ____ Tributary to Waters X 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 ____

Remarks Perrenial stream - Littlejohn's Creek: OHWM mapped as evidenced by defined bed & bank, scour, drift deposits and water marks.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			

Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			

Herb Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
50%= ____ 20%= ____ Total Cover:			

Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

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

Prevalence Index Worksheet

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators
____ Dominance Text is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1]*Indicators of hydric soil and wetland hydrology must be present.*

Hydrophytic Vegetation? ____

* OHWM of Perennial Stream.

Sampling Point 1

Soils

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

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

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

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

Remarks Perennial STREAM - Littlejohns Creek.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes X No ____ Depth (inches) > 30 Wetland Hydrology? Yes X No ____

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

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

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

Remarks Perennial Stream - Littlejohn's Creek - OHWM evidenced by BED & BANK, WATERMARKS, AND DRIFT & SEDIMENT DEPOSITS

*Water Depth in channel > 30" deep and 25-30 feet across.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type Rock Revetment Skirt
Wetland Type NA

Project/Site: Stanley Road Bridge City/County: San Joaquin Co. Sampling Date: 04/22/2012
Applicant/Owner: San Joaquin County State: CA Sampling Point: 2
Investigator(s): John W. Hunt
Landform (hillslope, terrace, etc.) Levee/Stream Bank Local relief (concave, convex, none) Sloped Slope % 30-40%
Subregion (LRR) C Soil Map Unit Name:
Are climatic/hydrologic conditions on the site typical for this time of year? Y (If no, explain in remarks.)
Are vegetation Y, soil Y, or hydrology Y significantly disturbed? Are normal circumstances present? N - Rocked levee
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 Other waters? N

USACE Jurisdiction

Adjacent to Waters X Tributary to Waters ____ Isolated (with interstate commerce) ____ Isolated (non jurisdictional) ____
Explain: Nonjurisdictional upland drainage for irrigated row crops.

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 X Navigable Water ____

→ Rock revetment on levee below culvert.

Remarks

Rock revetment below culvert draining irrigated row crops through levee along Littlejohns Creek.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			

Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			

Herb Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
50%= ____ 20%= ____ Total Cover:			

Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators
____ Dominance Text is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1]*Indicators of hydric soil and wetland hydrology must be present.*

Hydrophytic Vegetation? ____

No vegetation
Rock.

Sampling Point 2

Soils

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

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

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

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

Remarks No evidence of frequent flooding or long-duration ponding. - No ESFUS Rock Revetment

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

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 No evidence of frequent flooding or long-duration ponding.

Appendix B

Representative Photographs

Photograph 1. View upstream (east) along Littlejohns Creek from Stanley Road. The banks have been contoured and armored with rock. Within the study area, streamside vegetation upstream of Stanley Road is regularly removed either chemically or mechanically. A row crop field is shown on the north bank (left side of photograph) and walnut orchards are shown on the south bank (right side of photograph).

Photograph 2. View downstream (west) along Littlejohns Creek from Stanley Road. The banks have been contoured but are not armored with rock. Within the study area, streamside vegetation downstream of Stanley Road is dominated by ruderal upland herbaceous vegetation and also includes scattered Himalayan blackberry and valley oaks.

Photograph 3. View north toward a constructed, unvegetated ditch that drains south into a 24-inch culvert (Photograph 4, below) paralleling the east side of Stanley Road in the northeast corner of the study area. This ditch drains agricultural runoff from flood-irrigated row crops northeast of the study area through the culvert into Littlejohns Creek. This culvert empties onto existing rock revetment along the banks of Littlejohns Creek. Runoff from this culvert flows into Littlejohns Creek over existing rock revetment. This drainage is not likely to qualify as waters of the United States because it: 1) is not a natural stream that has been altered; 2) was not excavated in waters of the United States; 3) does not have relatively permanent flowing or standing water; 4) does not connect two or more jurisdictional waters of the United States; and 5) does not drain natural water bodies (including wetlands) into the tributary system of a traditional navigable or interstate water (*Draft Guidance on Identifying Waters Protected by the Clean Water Act*, U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, April 2011).

Photograph 4. View of 24-inch culvert outlet that drains irrigation water from a constructed unvegetated ditch (Photograph 3, above) into Littlejohns Creek. This culvert empties onto existing rock revetment along the banks of Littlejohns Creek. Runoff from this culvert flows into Littlejohns Creek over existing rock revetment (. The drainage below the culvert outlet is over a constructed feature (i.e., rock revetment) and is not likely to qualify as waters of the United States because it: 1) is not a natural stream that has been altered; 2) was not excavated in waters of the United States; 3) does not have relatively permanent flowing or standing water; 4) does not connect two or more jurisdictional waters of the United States; and 5) does not drain natural water bodies (including wetlands) into the tributary system of a traditional navigable or interstate water (*Draft Guidance on Identifying Waters Protected by the Clean Water Act*, U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, April 2011).

Appendix D Representative Photographs

Photograph 1. View of the BSA upstream (east) along Littlejohns Creek from Stanley Road. The banks have been contoured and cleared of vegetation. The north bank (left side of photograph) has been armored with rock. Within the BSA, streamside vegetation upstream of Stanley Road is regularly removed either chemically or mechanically. A row crop field is present along the north bank and walnut orchards are present along the south bank (right side of photograph).

Photograph 2. View of the south bank of Littlejohns Creek upstream from Stanley Road. The bank at this location is primarily earthen with evidence of partial revetment (i.e., scattered pieces of broke concrete and rock). The vegetation along this bank appears to be regularly cleared. Himalayan blackberry is growing at along the banks at the toe of the levee. Walnut orchards can be seen in the background with spring growth of understory dominated by nonnative annual grasses.

Photograph 3. View of the north bank of Littlejohns Creek upstream from Stanley Road. The bank at this location has been revetted with rock. The vegetation along this bank is regularly cleared. Sparse patches Himalayan blackberry, wild radish (*Raphanus sativa*), and water hemlock (*Conium maculatum*) were observed growing up through crevices in the revetment. A disked field being prepared for row crops can be seen in the background.

Photograph 4. View of constructed, unvegetated agricultural drainage ditch north of Littlejohns Creek along the east side of Stanley Road. This ditch carries drainage from flood irrigated row crops to the north and east of the BSA and drains south into Littlejohns Creek.

Photograph 5. View of the BSA downstream (west) along Littlejohns Creek from Stanley Road. The banks have been contoured but are not armored with rock. Within the BSA, streamside vegetation downstream of Stanley Road is dominated by ruderal upland herbaceous vegetation and also includes scattered Himalayan blackberry and valley oaks. In-stream vegetation is limited to duckweed (*Lemna* sp.) and water-meal (*Wolffia globosa*) forming a thin floating vegetative film. No emergent vegetation or wetlands were observed within the BSA.

Photograph 6. View upstream toward the BSA and Stanley Road. The banks have been contoured and cleared of vegetation. The south bank (right side of photograph) is dominated by herbaceous ruderal upland species and sparse patches of Himalayan blackberry along the banks. Riparian trees can be observed hanging over the north bank (left side of photograph) of Littlejohns Creek. A thin film of duckweed and water-meal missed with small-size floating woody debris can be observed on the surface of Littlejohns Creek in the foreground.

Photograph 7. View of the north bank downstream of the Stanley Road Bridge. A narrow band of riparian trees can be observed hanging over the north bank (left side of photograph) of Littlejohns Creek. Vegetation here is dominated by a valley oak with and understory of Himalayan blackberry.

Photograph 8. View of the north bank of Littlejohns Creek below the Stanley Road Bridge. Both banks of Littlejohns Creek below the bridge are revetted. Vegetation underneath the bridge is dominated by Himalayan blackberry.

Photograph 9. View of proposed staging area immediately south of Littlejohns Creek on the east side of Stanley Road. This area is largely unvegetated and is regularly used as a staging and access area for agricultural operations adjacent the BSA.

Appendix E Review of Regionally Occurring Special-Status Species

Appendix E-1. Review of Regionally Occurring Special-Status Plant Species

Common Name *Scientific Name*	Status[1] (Fed/State/RPR)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Recurved larkspur *Delphinium recurvatum*	—/—/1B.2	Chenopod scrub, cismontane woodland, valley and foothill grassland/alkaline. Elevation: 9–2,460 feet. Blooming period: March–June.	No. Habitat for species is not present within BSA.
Large-flowered fiddleneck *Amsinckia grandiflora*	E/E/1B.1	Cismontane woodland, valley foothill grassland. Elevation: 700–1,600 feet. Blooming period: April–May.	No. Habitat for species is not present within BSA.
Ione mananita *Arctostaphylos myrtifolia*	T/—/1B.2	Chaparral , cismontane woodland/acidic, Ione soil, clay or sandy. Elevation: 100–1,600 feet. Blooming period: November–March.	No. Habitat for species is not present within BSA.
Succulent owl's clover *Castilleja campestris* ssp. *succulenta*	T/E/1B.2	Vernal pools (often acidic). Elevation: 150–2,300 feet. Blooming period: April-May.	No. Habitat for species is not present within BSA.
Palmate-bracted bird's-beak *Chloropyron palmatus*	E/E/1B.1	Chenopod scrub, valley and foothill grassland (alkaline). Elevation: 0-500 feet. Blooming period: May–October.	No. Habitat for species is not present within BSA.
Contra Costa goldfields *Lasthenia conjugens*	E/—/1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland , vernal pools /mesic. Elevation: 0–1,600 feet. Blooming period: March–June.	No. Habitat for species is not present within BSA.
Sacramento Orcutt grass *Orcuttia viscida*	E/E/1B.1	Vernal pools. Elevation: 90–310 feet. Blooming period: April–July.	No. Habitat for species is not present within BSA.
Delta button-celery *Eryngium racemosum*	—/E/1B.1	Riparian scrub in vernally mesic clay depressions. Elevation: 9–98 feet. Blooming period: June–October.	No. No appropriate microsites (i.e. clay soils) not present within BSA.
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	—/—/1B.2	Valley and foothill grassland (mesic). Elevation: 98–751 feet. Blooming period: March–May.	No. Habitat for species is not present within BSA.
Legenere *Legenere limosa*	—/—/1B.1	Vernal pools. Elevation: 3–2,886 feet. Blooming period: April–June.	No. Habitat for species is not present within BSA.

Common Name *Scientific Name*	Status[1] (Fed/State/RPR)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Pincushion navarretia *Navarretia myersii* ssp. *myersii*	—/—/1B.1	Vernal pools/often acidic. Elevation: 65–1,082 feet. Blooming period: April–May.	No. Habitat for species is not present within BSA.
Sanford's arrowhead *Sagittaria sanfordii*	—/—/1B.2	Marshes and swamps (assorted shallow freshwater). Elevation: 0–2,132 feet. Blooming period: May–October.	No. Habitat for species is not present within BSA.
Suisun Marsh aster *Symphyotrichum lentum*	—/—/1B.2	Marshes and swamps (brackish and freshwater). Elevation: 0–9 feet. Blooming period: May–November.	No. Habitat for species is not present within BSA.
Greene's tuctoria *Tuctoria greenei*	E/R/1B.1	Vernal pools. Elevation: 98–3,509 feet. Blooming period: May–July (September).	No. Habitat for species is not present within BSA.

[1]Federal and State Codes: E = Endangered; T = Threatened; R = Rare.

RPR Codes and Extensions:

1B. Plants rare, threatened, or endangered in California and elsewhere.
- xx.1 Seriously endangered in California
- xx.2 Fairly endangered in California

[2]No = The BSA and immediate vicinity do not support habitat for the species. The species was not observed within the BSA.

Appendix F-2. Review of Regionally Occurring Special-Status Animal Species

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Invertebrates			
Conservancy fairy shrimp *Branchinecta conservatio*	E/—	Highly turbid, large vernal pools.	No. Habitat for species is not present within BSA.
Vernal pool fairy shrimp *Branchinecta lynchi*	T/—	Grass or mud-bottomed swales, earth slump or basalt-flow depression pools in grasslands.	No. Habitat for species is not present within BSA.
Vernal pool tadpole shrimp *Lepidurus packardi*	E/—	Grass or mud-bottomed swales in grasslands on old alluvial soils underlain by hardpan.	No. Habitat for species is not present within BSA.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/—	Elderberry shrubs associated with riparian forests that occur along rivers and streams.	No. No elderberry shrubs present within BSA.
Fishes			
Central Valley fall/late fall-run Chinook salmon ESU *Oncorhynchus tshawytscha*	—/SC	Spawn and rear in Sacramento and San Joaquin rivers and suitable perennial tributaries. Requires cool water temperatures for spawning, egg-incubation and juvenile rearing. Spawn in riffles with gravel and cobble. Spawn in riffles with gravel and cobble.	No. Habitat for species is not present within BSA.
Chinook salmon - Central Valley spring-run ESU *Oncorhynchus tshawytscha*	T/T	Enter the Sacramento River from late March through September, holding in cool water habitats through the summer, then spawning from mid-August through early October. Remnant runs remain in Butte, Mill, Deer, Antelope, and Beegum Creeks, tributaries to the Sacramento River.	No. Habitat for species is not present within BSA.

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Steelhead - Central Valley DPS *Oncorhynchus mykiss irideus*	T/—	Spawn and rear in Sacramento and San Joaquin rivers and their tributaries. Tends primarily to use tributaries of the Sacramento, Feather, Yuba, and lower American river drainages. Populations in the San Joaquin drainage have been reduced to a few small, isolated wild runs and some hatchery stock. Require cool, swift shallow water; clean, loose gravel for spawning; and runs and suitable large pools in which to rear and over-summer.	No. Habitat for species is not present within BSA.
Delta smelt *Hypomesus transpacificus*	T/E	Estuarine systems in the Sacramento-San Joaquin Delta. During low outflow years, in reaches with slow flow.	No. Habitat for species is not present within BSA.
Hardhead ***Mylopharodon conocephalus***	**—/SC**	**Prefers deep, rock and sand-bottomed pools of small to large rivers. Generally found in clear, deep, well-oxygenated streams with low flow.**	**Yes, low potential. Low quality habitat for species is present within BSA. Species may occur in very small numbers. Species presence and persistence is questionable as a result of poor quality habitat in conjunction with competition with non-native warm-water species.**
Amphibians			
California tiger salamander *Ambystoma californiense*	T/T;SC	Vernal or temporary pools in annual grasslands, or open stages of woodlands.	No. Habitat for species is not present within 1.5 miles of the BSA.
Western spadefoot *Spea hammondii*	—/SC	Grasslands with temporary pools.	No. Habitat for species is not present within 1.5 miles of the BSA.
California red-legged frog *Rana draytonii*	T/SC	Require aquatic habitat for breeding, also uses a variety of other habitat types including riparian and upland areas. Adults utilize dense, shrubby or emergent vegetation associated with deep-water pools with fringes of cattails & dense stands of overhanging vegetation.	No. BSA occurs outside of species range.
Foothill yellow-legged frog *Rana boylii*	—/SC	Cool, fast moving rocky streams in a variety of habitats.	No. Habitat for species is not present within 1.5 miles of the BSA.

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
		Reptiles	
Western pond turtle ***Emys marmorata***	**—/SC**	**Slow water aquatic habitat with available basking sites. Hatchlings require shallow water with dense submergent or short emergent vegetation. Requires an upland oviposition site in the vicinity of the aquatic site.**	**Yes, low potential. Low quality habitat for species is present within BSA. Emergent structure is not present within the BSA and basking sites are limited to the relatively steep and narrow banks of Littlejohns Creek.**
Giant garter snake *Thamnophis gigas*	T/T	Freshwater marshes and low gradient streams with emergent vegetation, upland basking sites and adequate active-season (May-October) water; adapted to drainage canals and irrigation ditches with mud substrate.	NO. The BSA is within the known range of this species. The nearest CNDDB record is a historic account located approximately 6 miles northeast along Duck Creek. No observations of this population have been recorded in the last 20 years, and the population was presumed extirpated after extensive surveys in the 1980s and 1990s.
		Birds	
White-tailed kite ***Elanus leucurus***	**—/FP**	**Nests in tall shrubs and trees, forages in grasslands, agricultural fields and marshes.**	**Yes, medium potential. Trees and shrubs within the BSA provide nesting habitat.**
Northern harrier *Circus cyaneus*	—/SC	Forages in marshes, grasslands and ruderal habitats; nests in extensive marshes and wet fields.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Swainson's hawk ***Buteo swainsoni***	**—/T**	**Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; forages in adjacent livestock pasture, grassland, or grain fields.**	**Yes, high potential. Trees and shrubs within 0.5 mile of the BSA provide nesting habitat. A pair of Swainson's hawks was observed approximately 0.6 mile northeast of the BSA.**
Bald eagle *Haliaeetus leucocephalus*	—/E;FP	Uncommon to common in riverine and open wetland habitats. Perches high in large, stoutly limbed trees, on snags or broken-topped trees, or on rocks near water. Roosts communally in winter in dense, sheltered, remote conifer stands.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Golden eagle *Aquila chrysaetos*	—/FP	Breeds on cliffs or in large trees or electrical towers, forages in open areas.	No. Nesting habitat for species is not present within 500 feet of the BSA.

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
California black rail *Laterallus jamaicensis coturniculus*	—/T;FP	Coastal and inland marsh habitat.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	C/E	Valley foothill and desert riparian habitats in scattered locations in California; requires densely foliaged, deciduous trees and shrubs, especially willows, for roosting and nesting.	No. Nesting habitat for species is not present within 0.5 mile of the BSA.
Burrowing owl *Athene cunicularia*	**—/SC**	**Open grasslands and ruderal habitats. Requires burrows and similar habitat for roosting and nesting cover. May dig burrows in soft soil, but generally occupies existing burrows created by other species or manmade burrow structures.**	**Yes, low potential. Although no potential burrowing owl habitat is found within the BSA, low quality potential habitat is found along the boundary of the row crop field immediately northeast of the BSA.**
Long-eared owl *Asio otus*	—/SC	Dense riparian and live oak thickets near meadow edges, and nearby woodland and forest habitats; also found in dense conifer stands at higher elevations.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Short-eared owl *Asio flammeus*	—/SC	Breeds in dense vegetation in open grassland and marshes.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Purple martin *Progne subis*	—/SC	Breeding habitat includes old-growth, multi-layered, open forest and woodland with snags; forages over riparian areas, forest, and woodlands.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Loggerhead shrike *Lanius ludovicianus*	**—/SC**	**Forages in open grassland habitats throughout the Central Valley of California. Nests in shrubs and trees.**	**Yes, medium potential. Trees and shrubs within the BSA provide nesting habitat and the irrigated row crops to the northwest provide foraging habitat.**
California yellow warbler *Dendroica petechia brewsteri*	**—/SC**	**Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.**	**Yes, low potential. Low quality nesting habitat is present as valley oak and a thicket of Himalayan blackberry undergrowth in the northwestern corner of the BSA. Himalayan blackberry in this area will be partly removed during project implementation.**

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Yellow-breasted chat ***Icteria virens***	**—/SC**	**Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.**	**Yes, low potential. Low quality nesting habitat is present as valley oak and a thicket of Himalayan blackberry undergrowth in the northwestern corner of the BSA. Himalayan blackberry in this area will be partly removed during project implementation.**
Tricolored blackbird ***Agelaius tricolor***	**—/SC**	**Breeds near fresh water, primarily in dense emergent vegetation, but may also nest in blackberry, rose, willow thickets and small trees in open country, rangeland, cropland and near marshes or wetlands.**	**Yes, low potential. Low quality nesting habitat is present as riparian thickets of Himalayan blackberry undergrowth in the western portion of the BSA. Vegetation in this area will be partly removed during project implementation.**
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	—/SC	Nests in emergent vegetation of swamps, marshes and wetlands.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Mammals			
Riparian (=San Joaquin Valley) woodrat *Neotoma fuscipes riparia*	E/SC	Riparian habitat and other areas supporting mixtures of trees and brush along the mainstem of the San Joaquin River.	No. BSA is outside of the known range of this species.
Western red bat *Lasiurus blossevillii*	—/SC	Generally roosts in trees along edge habitats. Prefers roost sites over dark ground cover with good cover above and open below.	No. Low quality roosting habitat is present as medium-sized trees along the northwestern boundary of the BSA, but this habitat will not be disturbed by project activity.
Townsend's big-eared bat *Corynorhinus townsendii*	—/SC	Roosts in colonies in caves, mines, tunnels, or buildings in mesic habitats. The species forages along habitat edges, gleaning insects from bushes and trees. Habitat must include appropriate roosting, maternity and hibernacula sites free from disturbance by humans.	No. Roosting habitat for this species is not present within BSA.
Pallid bat *Antrozous pallidus*	—/SC	Forages over many habitats; roosts in buildings, large oaks or redwoods, rocky outcrops and rocky crevices in mines and caves.	No. Roosting habitat for this species is not present within BSA.

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Western mastiff bat *Eumops perotis californicus*	—/SC	Forages over many habitats, requires tall cliffs or buildings for roosting.	No. Roosting habitat for this species is not present within BSA.
Riparian brush rabbit *Sylvilagus bachmani riparius*	E/E	Riparian areas with dense shrub layer, low-growing vines, some tall shrubs, and scrubby trees throughout San Joaquin Valley.	No. BSA is outside of the known range of this species.
Ringtail *Bassariscus astutus*	—/FP	Riparian habitats and in brush stands of most forest and shrub habitats. Dens in rock recesses, hollow trees, logs, snags, abandoned burrows or woodrat nests.	No. Denning habitat for species is not present within BSA.
San Joaquin kit fox *Vulpes macrotis mutica*	E/T	Open habitats in deserts, and grasslands.	No. Habitat for species is not present within BSA.
American badger *Taxidea taxus*	—/SC	Herbaceous, shrub, and open stages of most habitats with dry, friable soils.	No. Habitat for species is not present within BSA.

[1]Federal and State Codes: E = Endangered; T = Threatened; C = Candidate; SC = Species of Special Concern; FP = Fully Protected Species.

[2] No = The BSA and immediate vicinity do not support suitable habitat for the species.

Low = The BSA and immediate vicinity provide only limited or marginal habitat, or may be outside the characteristic range and/or very rare in project region. The species was not observed within the BSA.

Medium = The BSA and/or immediate vicinity provides suitable, but not ideal habitat conditions. The species was not observed within the BSA.

High = The BSA and/or immediate vicinity provides ideal habitat conditions. The species was observed in BSA or is known to occur in the BSA.

Bold font = The project has the potential to adversely affect this species.

Stanley Road Bridge Scour Mitigation Project
Bridge No. 29C-112

Natural Environment Study

Stanley Road Bridge (29C-112) Scour Mitigation Project
San Joaquin County, California
Township 1 North, Range 9 East, Section 19
7.5′ USGS Quadrangle: Peters, California (1981)
District 10-SJ-Stanley Road-PM
Federal Project No. 5929(224)

January 2014

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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April 2014

STATE OF CALIFORNIA
Department of Transportation
and
SAN JOAQUIN COUNTY
Department of Public Works

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Summary

The San Joaquin County Department of Public Works (County) is proposing to improve existing scour protection and revetment in response to scour and channel degradation within Littlejohns Creek at the Stanley Road Bridge (29C-112).

This Natural Environment Study has been prepared to evaluate the potential effects of the proposed project on special-status plant and animal species, waters of the United States, and other sensitive biological resources (e.g., nesting birds, bats roosts, and riparian habitat). A field assessment of the biological study area (BSA) was conducted on April 22, 2012. The total area of the BSA is approximately 0.96 acre.

Based on the review of habitat requirements of regionally occurring special-status species and the results of the field assessment, the BSA does not provide suitable habitat for special-status plant species. The BSA provides marginal to poor quality habitat for nine special-status animal species. These species include: hardhead (*Mylopharodon conocephalus*), western pond turtle (*Emys marmorata*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), yellow warbler (*Dendroica petechia*), yellow-breasted chat (*Icteria virens*), and tricolored blackbird (*Agelaius tricolor*). Potential impacts and recommended avoidance and minimization measures for special-status animal species are addressed.

Suitable habitat for migratory birds and nesting raptors is present within the BSA and vicinity. Cliff swallows (*Petrochelidon pyrrhonota*), barn swallows (*Hirundo rustica*), 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 field assessment, and inactive cliff swallow nests were observed. Potential impacts on nesting birds and recommended avoidance and minimization measures are addressed.

No potential bat roosting habitat (i.e., crevices and/or gaps in bridge structure) were observed on the Stanley Road Bridge structure. No disturbance to potential bat roosting habitat, including potential roost trees, is anticipated to result from project implementation.

Upland riparian habitat is present in the BSA. Potential impacts on riparian habitat and recommended avoidance and minimization measures are addressed.

Aquatic habitat is present in the BSA. Aquatic habitat within the BSA is expected to support populations of native and non-native warmwater fish species. Aquatic habitat within the BSA does not provide holding, spawning or rearing habitat suitable for special-status anadromous fish species such as Chinook salmon (*Oncorhynchus tshawytscha*) or steelhead (*Oncorhynchus mykiss* ssp. *irideus*). Potential impacts on aquatic habitat and recommended avoidance and minimization measures are addressed.

The project will require the following environmental permits: authorization from the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act for discharge of dredged or fill material into waters of the United States, a water quality certification from the Central Valley Regional Water Quality Control Board pursuant to Section 401 of the Clean Water Act, and a Streambed Alteration Agreement from the California Department of Fish and Wildlife pursuant to Section 1602 of the California Fish and Game Code.

Table of Contents

Summary i

List of Abbreviated Terms iii

Chapter 1. Introduction 1
1.1. Project History 1
1.2. Project Description 1
1.2.1. Location 1
1.2.2. Proposed Project Action 1
1.2.3. Vegetation Clearing 3
1.2.4. Construction of Cofferdams and Access Ramp 3
1.2.5. Work Area Dewatering 5
1.2.6. Excavation 5
1.2.7. Installation of Filter Fabric and Rock Slop Protection 5
1.2.8. Site Rehabilitation 6
1.2.9. Project Impact Area 6
1.2.10. Conservation Measures 6

Chapter 2. Study Methods 10
2.1. Regulatory Requirements 10
2.1.1. Federal Endangered Species Act 10
2.1.2. Federal Clean Water Act Section 404 10
2.1.3. Federal Migratory Bird Treaty Act 10
2.1.4. Executive Order 11990 (Wetlands) 11
2.1.5. Executive Order 13112 (Invasive Species) 11
2.1.6. Executive Order 11988 (Floodplain Management) 11
2.1.7. Fish and Game Code Section 2081, California Endangered Species Act 12
2.1.8. Fish and Game Code Section 3503, Birds of Prey 12
2.1.9. Fish and Game Code Section 3513, Migratory Birds 12
2.1.10. Fish and Game Code, "Fully Protected" Species 12
2.1.11. Fish and Game Code Section 1600, Lake or Streambed Alteration 13
2.2. Studies Required 14
2.3. Personnel and Survey Dates 15
2.4. Agency Coordination and Professional Contacts 15
2.5. Limitations That May Influence Results 15

Chapter 3. Results: Environmental Setting 16
3.1. Description of Existing Biological and Physical Conditions 16
3.1.1. Study Area 16
3.1.2. Physical Conditions 16
3.1.3. Biological Conditions 17
3.2. Special-Status Species 19
3.3. Waters of the United States 21
3.4. Other Sensitive Biological Resources 21
3.4.1. Migratory Birds and Raptors 21
3.4.2. Riparian Habitat 22
3.4.3. Native and Non-Native Fish 22

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation 25
4.1. Potential Impacts on Special-Status Plant Species 25
4.2. Potential Impacts on Special-Status Animal Species 25

4.2.1. Hardhead and Other Fish Species 25
4.2.2. Western Pond Turtle 28
4.2.3. Swainson's Hawk 29
4.2.4. Burrowing Owl 31
4.2.5. White-Tailed Kite 32
4.2.6. Loggerhead Shrike 33
4.2.7. Yellow Warbler and Yellow-Breasted Chat 35
4.2.8. Tricolored Blackbird 36
4.3. Other Sensitive Biological Resources 36
4.3.1. Nesting Raptors and Migratory Birds 36
4.3.2. Riparian Habitat 38
4.4. Waters of the United States, Including Wetlands 39
4.4.1. Survey Results 39
4.4.2. Potential Impacts 39
4.4.3. Avoidance And Minimization Measures 39
4.4.4. Compensatory Mitigation 40
4.4.5. Cumulative Effects 40

Chapter 5. Results: Permits and Technical Studies for Special Laws or Conditions..... 41
5.1. Federal Endangered Species Act 41
5.2. Magnuson-Stevens Fishery Conservation and Management Act 41
5.3. Clean Water Act 41
5.4. Migratory Bird Treaty Act 41
5.5. Executive Order 13112 (Invasive Species) 42
5.6. California Endangered Species Act 42
5.7. California Fish and Game Code 42

Chapter 6. References 43
6.1. Literature Cited 43
6.2. Personal Communications 44

Appendix A **USFWS List**

Appendix B **CNDDB and CNPS Records**

Appendix C **Delineation of Waters of the United States**

Appendix D **Representative Photographs**

Appendix E **Review of Regionally Occurring Special-Status Species**

Figures

Figure 1. Study Area and Vicinity 2
Figure 2. Proposed Project 4
Figure 3. Habitat Types 18
Figure 4. Waters of the United States 23
Figure 5. Project Impact Areas 26

List of Abbreviated Terms

BSA	Biological Study Area
BMP	Best Management Practice
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
County	San Joaquin County Department of Public Works
CWHR	California Wildlife Habitat Relationships Program
CWA	Clean Water Act
DBH	Diameter at Breast Height
ESA	Endangered Species Act
°F	degrees Fahrenheit
MBTA	Migratory Bird Treaty Act
NES	Natural Environment Study
NRCS	Natural Resources Conservation Service
NSR	North State Resources, Inc.
OHWM	Ordinary High Water Mark
Project	Stanley Road Bridge Scour Mitigation Project
RSP	Rock Slope Protection
RWQCB	California Regional Water Quality Control Board
TCE	Temporary Construction Easement
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator

Chapter 1. Introduction

1.1. Project History

In response to scour and channel degradation within Littlejohns Creek at the Stanley Road Bridge, the San Joaquin County Department of Public Works (County) is proposing the Stanley Road Bridge Scour Mitigation Project (project) to improve existing scour protection and revetment. The purpose of this project is to ensure public safety by protecting the structural integrity of bridge footings and abutments. Scour protection and revetment will be constructed within approximately 0.14 acre (78 linear feet) of the existing earthen channel of Littlejohns Creek at the Stanley Road Bridge. An approximately 0.44-acre temporary construction easement (TCE) would be used for construction access, temporary cofferdams, in-stream access ramp, and staging. The existing Stanley Road right-of-way (approximately 0.33 acre) would be used for project access. The total biological study area (BSA) is approximately 0.96 acre.

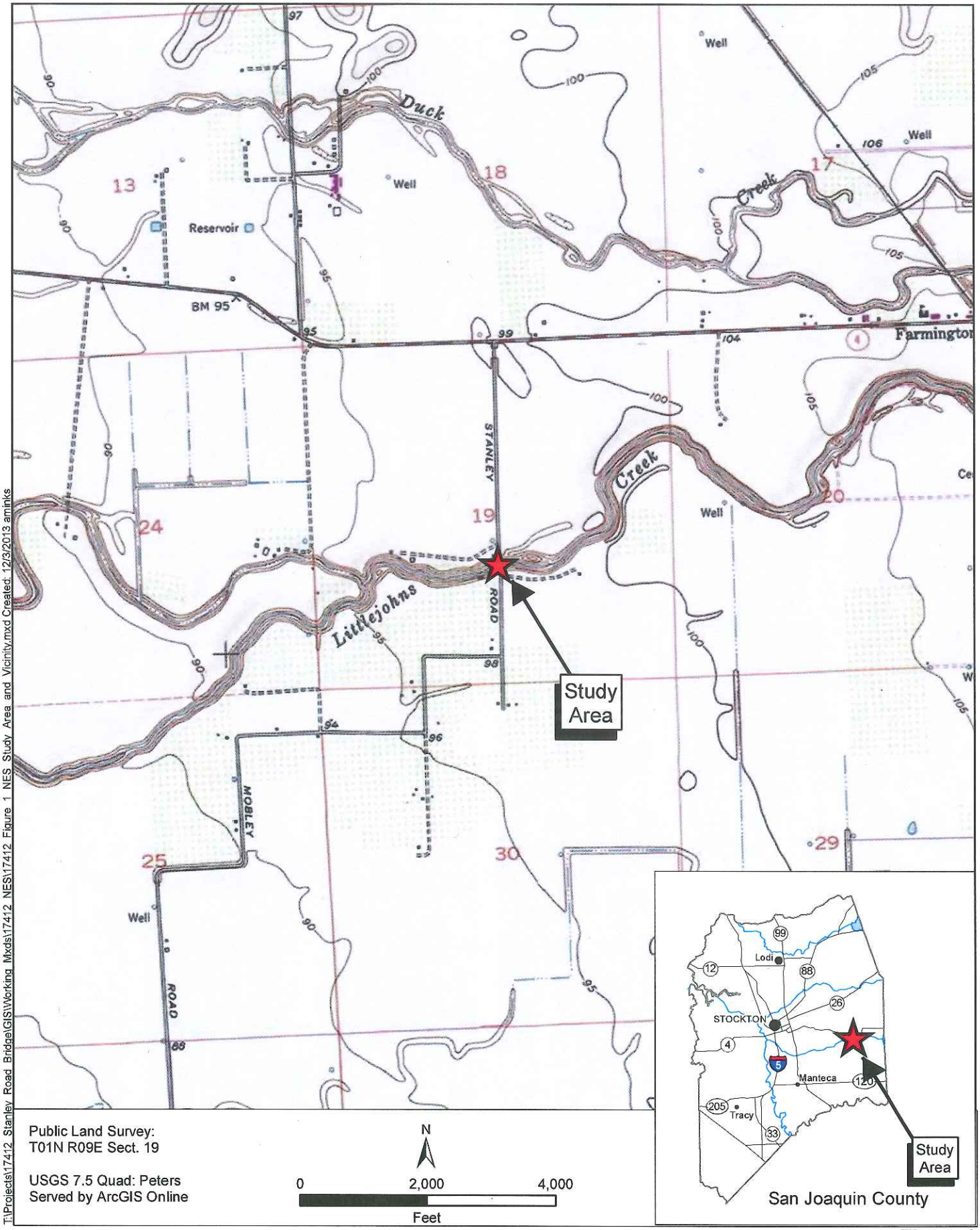
1.2. Project Description

1.2.1. Location

The BSA is located on and adjacent to Stanley Road at Littlejohns Creek approximately 0.7 mile south of Highway 4 (Farmington Road) and 1.6 miles west-southwest of the community of Farmington in San Joaquin County, California. The BSA is located in the *Peters, California* 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle: Section 19, Township 01N, Range 09E. The center of the BSA is near UTM Zone 10 0673349E, 4198774 N (NAD 1983). Figure 1 shows the location of the BSA.

1.2.2. Proposed Project Action

The County is proposing to improve existing scour protection and revetment within the project area. To accomplish this goal the existing earthen channel of Littlejohns Creek at the Stanley Road Bridge will be cut to a maximum depth of 1.5-4.5 feet, and then filled with a layer of ~~California Department of Transportation (Caltrans) Light Class~~ Rock Slope Protection (RSP) ~~(average rock weight of approximately 200 pounds)~~, matching both upstream and downstream conditions and channel grade. RSP will be installed on approximately 0.14 acre (78 linear feet) of the existing earthen channel of Littlejohns Creek at the Stanley Road Bridge. An approximately 0.44-acre TCE would be used for construction access, temporary cofferdams, in-stream access



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Stanley Road Bridge Scour Mitigation Project

Figure 1
Study Area and Vicinity

ramp, and staging (Figure 2). The existing Stanley Road right-of-way (approximately 0.33 acre) would be used for project access. Between 4 and 10 construction workers are expected to be on-site during any given day, depending on the construction phase. Project implementation is expected to occur over the course of about four weeks. A map showing the BSA and the proposed work areas is presented as Figure 2.

Construction is expected to be completed within 28 days and within a single construction season. In-stream construction work is not expected to exceed 18 days. Work is expected to start in spring or summer of 2014 or 2015 and would be completed before the fall rainy season. The construction date will be dependent on the timeline for obtaining the required funding and regulatory authorizations. No utility relocation is needed for this project.

1.2.3. Vegetation Clearing

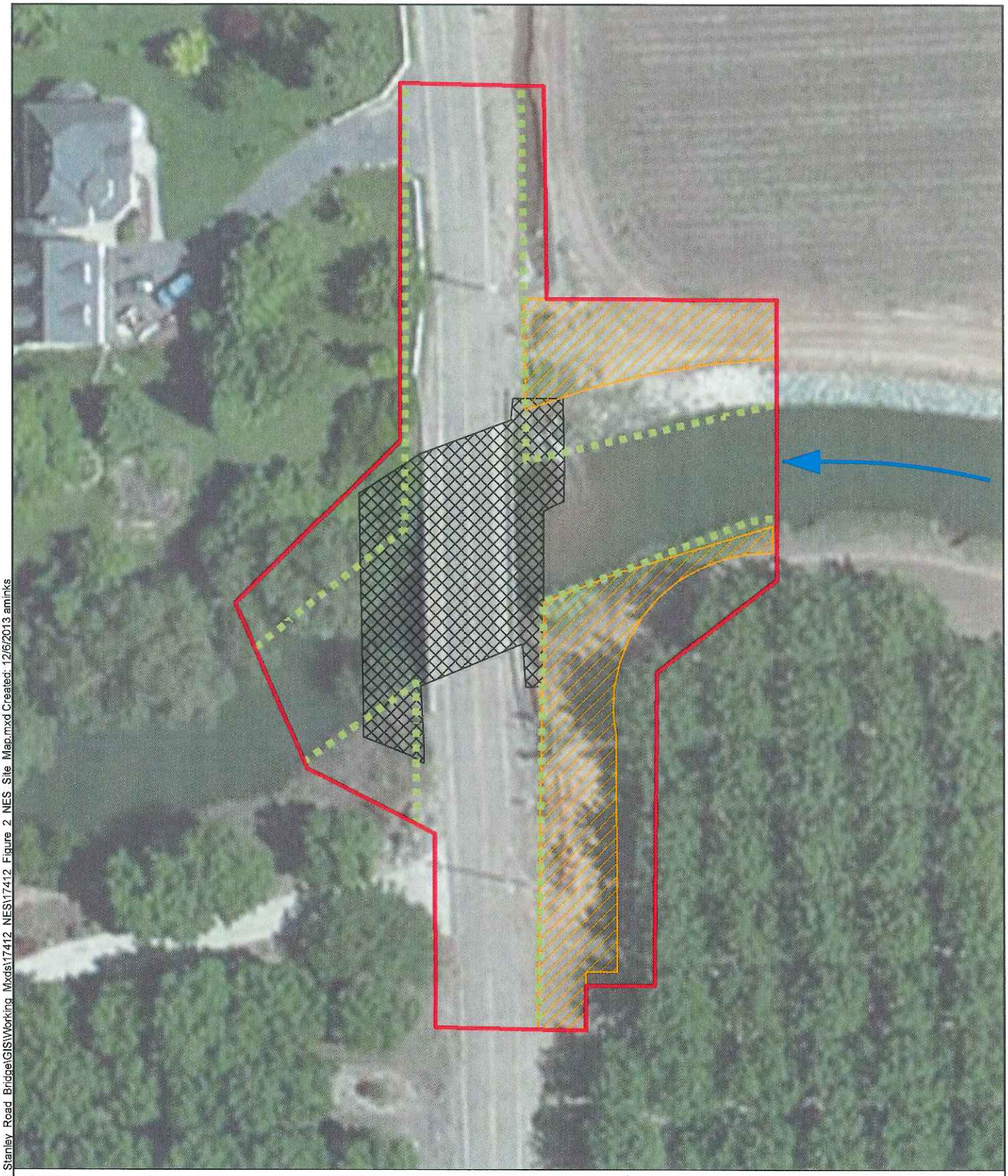
Vegetation clearing would be conducted to prepare for construction of the temporary cofferdams, access ramp and placement of RSP. A total of approximately 0.03 acre of riparian vegetation located west (downstream) of the Stanley Road Bridge would be removed during project implementation. Approximately 0.015 acre of vegetation would be cleared along the north bank of Littlejohns Creek and 0.015 acre of vegetation would be cleared along the south bank of Littlejohns Creek. Vegetation to be removed includes a small valley oak tree (*Quercus lobata*) (5–6 inches in diameter at breast height [dbh]) on the south bank and Himalayan blackberry (*Rubus armeniacus*) on the north bank. Vegetation clearing would be conducted by hand crews and is expected to take less than 1 day to complete.

1.2.4. Construction of Cofferdams and Access Ramp

Prior to construction of the cofferdams and access ramp, a flexible, large-diameter corrugated pipe would be placed within Littlejohns Creek to serve as a work area bypass for water flowing through the work area. The bypass would extend from the upstream to downstream sides of the BSA within Littlejohns Creek.

The upstream cofferdam would be constructed immediately downstream of the bypass inlet by depositing appropriately engineered fill up to 10 feet high (i.e., above existing grade) from bank to bank. The upstream cofferdam would be appropriately designed to support construction equipment (e.g., tractor and excavator) and serve as an access ramp for construction crews and equipment.

The downstream cofferdam would be constructed immediately upstream of the bypass outlet by depositing appropriately engineered fill up to 4 feet high (i.e., above existing



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Stanley Road Bridge Scour Mitigation Project

Figure 2
Proposed Project

grade) from bank to bank. The downstream cofferdam would likely remain below the ordinary high water mark (OHWM) of Littlejohns Creek. RSP would be placed on the downstream end of the lower cofferdam to stabilize the temporary fill and protect it from erosion.

Construction of the cofferdams and access ramp would take approximately 7 days using hand labor or mechanical equipment (e.g., a tractor and an excavator). This phase of the project would also require one or two haul trucks to import fill. The haul trucks would remain outside the banks of Littlejohns Creek.

1.2.5. Work Area Dewatering

Following cofferdam construction, any water remaining within the work area would be removed with a mechanical pump and discharged downstream. The dewatered portion of the creek bed would measure approximately 0.11 acre and would encompass about 140 linear feet of creek. Dewatering would be completed in about 1 day.

1.2.6. Excavation

After the work area is dewatered, about 0.14 acre (78 linear feet) of the channel bed and bank would be excavated to a depth ranging from 1.5-4.5 feet to create space for placement of RSP. On the south bank, beneath the bridge and near the pier, scour has undercut the existing gabions and has caused them to fail. Excavation of the channel at this location would require removal of the remaining gabions. Additionally, concrete blocks at the downstream end of the bridge must be removed to allow for installation of the RSP. Excavation would be performed using either hand labor or mechanical equipment (e.g., an excavator and haul truck), and would be completed in about 2 days. Excavated material would be stockpiled within the staging area outside the creek (Figure 2).

1.2.7. Installation of Filter Fabric and Rock Slop Protection

Following excavation, a layer of filter fabric would be placed by hand on the channel bed and banks to prevent erosion. RSP with a thickness of 1.5 feet would be placed atop the filter fabric in the channel and on the banks. RSP with a thickness of 2.5 feet would be placed within 3 feet of the bridge piers. The channel bed and banks would be excavated to depths sufficient to ensure that the RSP is flush with the desired upstream and downstream channel surface level. Gabion mats may be used along the banks to reduce the depth of excavation. The RSP placement area (i.e., the disturbed surface area) would occupy approximately 0.14 acre (78 linear feet) of Littlejohns

Creek. Installation of RSP and any necessary gabion mats would be completed in 4 to 6 days.

1.2.8. Site Rehabilitation

The cofferdams and bypass would be removed by using an excavator and hand crews, and the remaining fill dirt would be exported from the BSA. This would be completed in 2 to 3 days.

1.2.9. Project Impact Area

The project impact area would be contained within areas of proposed RSP (approximately 0.14 acre), associated TCE (approximately 0.44 acre), and the existing Stanley Road right-of-way (approximately 0.33 acre). The total area of potential ground disturbance is approximately 0.96 acre.

1.2.10. Conservation Measures

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

1.2.10.1. Conservation Measure #1 - Erosion and Sedimentation Control

Erosion control measures shall be implemented during construction of the proposed project. These measures shall conform to the provisions in Section 20-2 and 20-3 of the Caltrans Standard Specifications and the special provisions included in the contract for the project. Such provisions shall include the preparation of a Storm Water Pollution Prevention Plan, which describes and illustrates placement of Best Management Practices (BMPs) within the project site.

Erosion control measures to be included in the Storm Water Pollution Prevention Plan or otherwise implemented by the County include the following:

- To the extent practicable, activities that increase the erosion potential shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall 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 shall be maintained until permanent erosion control structures are in place.

- Vegetation clearing and ground disturbing activity shall be limited to the minimum area necessary for project implementation.

- Areas where woody vegetation needs to be removed shall be identified in advance of ground disturbance and shall be limited to only those areas that have been approved by the County. Within 10 days of completion of construction in those areas, weed-free mulch shall be applied to disturbed areas to reduce the potential for short-term erosion. Prior to a rain event, or when there is a greater than 50 percent 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 at the 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. Erosion control measures that employ monofilament netting shall be prohibited within the work area.

- If spoil sites are used, they shall be sited 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 shall be monitored and maintained in good working condition until disturbed areas have been revegetated.

1.2.10.2. CONSERVATION MEASURE #2 - PREVENTION OF ACCIDENTAL SPILLS

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

- A site-specific spill prevention plan shall be implemented 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 a minimum of 50 feet away from surface water features.

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

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

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

- Water inactive construction sites and exposed stockpile sites at least twice daily or until soils are stable.

- Pursuant to California Vehicle Code, all trucks hauling soil and other loose material to and from the construction site shall be covered or should maintain at least 6 inches of freeboard (i.e., minimum vertical distance between top of load and the trailer).

- Any topsoil that is removed during construction shall be stored on-site in piles not to exceed 4 feet in height to allow development of microorganisms prior to replacement of soil in 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.

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

- All equipment used for off-road construction activities shall be weed-free prior to entering the project area.
- If project implementation calls for mulches or fill, they shall be weed free.
- Any seed mixes or other vegetative material used for revegetation of disturbed sites shall consist of locally adapted native plant materials to the extent practicable.

Chapter 2. Study Methods

2.1. Regulatory Requirements

2.1.1. Federal Endangered Species Act

Section 9 of the federal Endangered Species Act of 1973 (ESA) prohibits acts of disturbance that result in the "take" of threatened or endangered species. As defined by the ESA, "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."

2.1.2. Federal Clean Water Act Section 404

The Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. CWA Section 404 establishes a permit program administered by the U.S. Army Corps of Engineers (Corps) to regulate the discharge of dredged or fill material into waters of the U.S. (including special aquatic sites such as wetlands). The purpose of the permit is to prevent water quality degradation and to prevent the overall loss of waters of the United States. Permits under CWA Section 404 are required for the placement of dredged or fill materials into all waters of the United States, including wetlands and "other waters" (e.g., streams). CWA Section 401 requires that an applicant for a Federal license or permit that allows activities resulting in a discharge to waters of the United States to obtain a state certification that the discharge complies with other provisions of CWA. The Lahontan Regional Water Quality Board administers the certification program for the eastern portion of Alpine County.

2.1.3. 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).

2.1.4. 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.

2.1.5. Executive Order 13112 (Invasive Species)

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

- 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 their introduction, and provide for environmentally sound control of invasive species.
- Promote public education on invasive species and the means to address them.
- 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, pursuant to 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.

2.1.6. 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.

2.1.7. Fish and Game Code Section 2081, California Endangered Species Act

Under the California Endangered Species Act (CESA), the California Department of Fish and Wildlife (CDFW) has the responsibility for maintaining a list of threatened and endangered species (California Fish and Game Code 2070). Additionally, the CDFW maintains a list of "candidate species," which are species that the 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." Pursuant to 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 affect a candidate species. Project-related impacts on CESA endangered or threatened species would be considered significant. Take of protected species incidental to otherwise lawful management activities may be authorized under Section 2081 of the Fish and Game Code.

2.1.8. Fish and Game Code Section 3503, Birds of Prey

Under Section 3503.5 of the 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.

2.1.9. Fish and Game Code Section 3513, Migratory Birds

Migratory birds are also protected in California. The 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.

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

2.1.11. 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 need a Streambed Alteration Agreement from the CDFW prior to proceeding with the activity. As a general rule, this requirement may also apply to any work undertaken within the floodplain of a stream or river containing fish or wildlife resources.

2.2. Studies Required

Special-status species and other sensitive biological resource having the potential to occur in the BSA were identified, 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:

- *Peters, California*, USGS 7.5-minute quadrangle;
- Aerial photographs of the BSA and vicinity;
- USFWS list of endangered and threatened species that may occur in the *Peters, California*, USGS 7.5-minute quadrangle and San Joaquin County (Appendix A);
- California Natural Diversity Data Base (CNDDB) (California Department of Fish and Wildlife 2013) and California Native Plant Society (CNPS) records for the *Peters, California* USGS 7.5-minute quadrangle and the eight surrounding quadrangles (Appendix B);
- California Wildlife Habitat Relationships (CWHR) Version 8.2 Species Summary Report for San Joaquin County; and
- Pertinent literature including *The Jepson Manual, Higher Plants of California, 1st edition* (Hickman 1993) and *The Jepson Manual: Vascular Plants of California, 2nd edition* (Baldwin et. al. 2012).

On April 22, 2012, John Hunt, biologist for North State Resources, Inc. (NSR), conducted a reconnaissance-level biological survey to characterize the habitats within the BSA and to evaluate the potential for project-related impacts on special-status species and other sensitive biological resources. He conducted the survey on foot and viewed all areas within the BSA. Potentially occurring special-status animals and other sensitive biological resources are discussed in Chapter 3.

On April 22, 2012, John Hunt (NSR biologist) conducted a delineation of waters of the United States within the BSA according to methods described in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid

West Region (U.S. Army Corps of Engineers 2008). A copy of the delineation report is provided in Appendix C.

2.3. Personnel and Survey Dates

John Hunt, NSR Biologist, performed the following tasks during visits to the proposed project site:

- Reconnaissance-level biological survey, April 22, 2012
- Delineation of waters of the United States, April 22, 2012

2.4. Agency Coordination and Professional Contacts

On November 25, 2013 a list (Document No. 131125110116 [Appendix A]) of federally listed, proposed, and candidate species with the potential to be affected by projects in San Joaquin County and the *Peters, California* USGS 7.5-minute quadrangle was obtained from the USFWS Sacramento Fish and Wildlife Office.

On January 10, 2014, Caltrans informally consulted with the USFWS via email about the potential for the federally-listed giant garter snake (*Thamnophis gigas*) to occur within the BSA (Kleinfelter, pers. comm. 2014). On January 13, 2014, the USFWS informed Caltrans via email that giant garter snake is unlikely to be present within the BSA (Schofield, pers. comm. 2014).

2.5. Limitations That May Influence Results

The April 22, 2012 botanical survey was timed appropriately to identify all species during their blooming period, except Ione manzanita (November–March), Palmate-bracted bird's-beak (May–October), Delta button-celery (June–October), Sanford's arrowhead (May–October), Suisun Marsh aster (May–November), and Greene's tuctoria (May–July). However, based on the informational review and field assessment, the BSA does not provide suitable habitat for any special-status plant species. All other field studies were conducted in accordance with applicable protocols and no problems were encountered. Therefore, no limitations that may influence the results of field studies associated with this project are known to have occurred.

Chapter 3. Results: Environmental Setting

3.1. Description of Existing Biological and Physical Conditions

3.1.1. Study Area

The 0.96-acre BSA is located on and adjacent to Stanley Road at its intersection with Littlejohns Creek. Land uses within and in the vicinity of the BSA include county right-of-way (ROW), orchard, row crops, and rural residences. Lands within and adjacent to the BSA are privately owned.

3.1.2. Physical Conditions

The topography of the BSA is generally characterized a nearly level. The primary topographic feature in the BSA is the channel of Littlejohns Creek, which bisects the BSA from east to west. Elevation within the BSA ranges from approximately 95 feet above mean sea level in agricultural and residential areas above the banks of Littlejohns Creek to approximately 80 feet above mean sea level within the channel of Littlejohns Creek. Precipitation in the BSA primarily falls as rain and the average annual rainfall is approximately 14 inches. Air temperatures range from an average January high of 54 °Fahrenheit (°F) to an average July high of 94 °F. The year-round average high temperature is approximately 75 °F (Western Regional Climate Center 2012).

A description of soil map units was obtained from the U.S. Department of Agriculture's Web Soil Survey and described in the *Custom Soil Resource Report for San Joaquin County, California* (Soil Survey Staff NRCS 2012). Only one soil map unit occurs within the BSA and is described as follows:

- Archerdale clay loam, 0 to 2 percent slopes (Soil Map Unit 107) – This is a non-hydric, well-drained alluvium derived from mixed parent material with a depth to restrictive layer and water table more than 80 inches.

Hydrology within the BSA is provided via Littlejohns Creek and adjacent agricultural and urban runoff. Littlejohns Creek is a perennial stream whose headwaters are located approximately 20 miles east of the BSA in the Sierra Nevada foothills. From its headwaters, Littlejohns Creek flows approximately 27 river-miles to the Farmington Flood Control Basin dam, approximately 5 miles east of the BSA, which controls flows within Littlejohns Creek. Downstream from the BSA, Littlejohns

Creek flows into French Camp Slough, approximately 12 miles west of the BSA and 3 miles south of the city of Stockton. French Camp Slough flows generally northwest for approximately 7 miles before it empties into Walker Slough and the San Joaquin River immediately southwest of the city of Stockton.

Runoff from surrounding agricultural lands and adjacent residences appears to provide a negligible contribution to hydrology within the BSA. A constructed agricultural ditch and an associated 24-inch culvert parallels the east side of Stanley Road in the northeast corner of the BSA. The ditch drains agricultural runoff from flood-irrigated row crops northeast of the BSA through the culvert into Littlejohns Creek

3.1.3. Biological Conditions

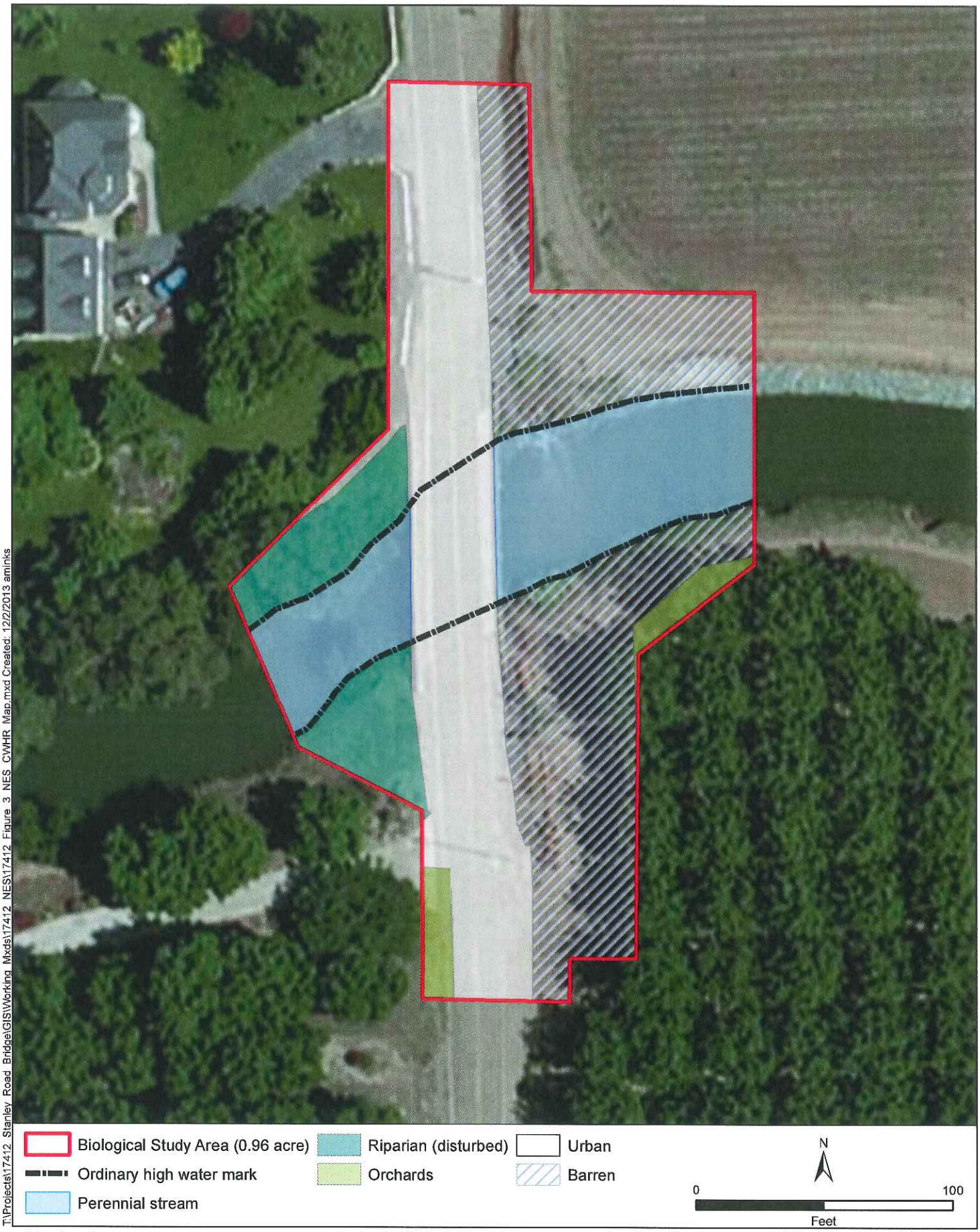
Habitat types were classified based on adaptations of vegetation descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988). Habitat types occurring within the BSA include perennial stream, riparian, orchards, urban, and barren. A map of habitat types within the BSA is presented as Figure 3. Representative photographs of the BSA are provided in Appendix D.

3.1.3.1. Perennial Stream

Littlejohns Creek is a slow-moving, perennial stream that bisects the BSA from east to west. The stream and its banks are highly managed for water control and conveyance. Upstream of the Stanley Road Bridge, the banks of Littlejohns Creek have been contoured to a uniform slope of approximately 45 degrees. The north bank upstream from Stanley Road and both banks at the bridge abutments are armored with revetment to just below the OHWM. The banks of Littlejohns Creek downstream of the Stanley Road Bridge are not armored with revetment, but are contoured to a relatively uniform slope. The south bank of Littlejohns Creek downstream of Stanley Road forms a small bench approximately 15 feet wide above the OHWM. The aquatic habitat within Littlejohns Creek consists entirely of slow-moving, open water with scattered patches of water-meal (*Wolffia globosa*) and duckweed (*Lemna* sp.). No emergent vegetation or wetlands are found in association with Littlejohns Creek within the BSA.

3.1.3.2. Riparian

A narrow, fragmented band of riparian vegetation occurs downstream (i.e., west) of Stanley Road within the BSA. Trees within this riparian area are limited to several small to mid-sized valley oaks. Scattered patches of Himalayan blackberry are mixed amongst an herbaceous layer dominated by tall annual willow herb (*Epilobium brachycarpum*), short-pod mustard (*Hirschfeldia incana*), rip gut brome (*Bromus diandrus*), and other ruderal species.



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Stanley Road Bridge Scour Mitigation Project

Figure 3
Habitat Types

3.1.3.3. ORCHARDS

Orchards within the BSA consisted entirely of walnut orchards with a ground cover largely dominated by nonnative annual grasses.

3.1.3.4. BARREN

Barren areas within and adjacent to the BSA consist of agricultural margins, access roads, and portions of the rocked banks along Littlejohns Creek upstream (i.e., east) of Stanley Road. These areas are actively cleared of vegetation by mechanical and/or chemical means.

3.1.3.5. URBAN

Urban habitat within the BSA consists of Stanley Road, residences on the north and south side of Littlejohns Creek west of Stanley Road and associated driveways accessing residences within the BSA. Vegetation within these areas consists largely of ornamental trees, shrubs, and lawns.

3.2. Special-Status Species

For the purpose of this evaluation, special-status plant species include plants that are (1) listed as threatened or endangered under the CESA or 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 1A, 1B, or 2.

No special-status plant species were detected during the reconnaissance-level survey conducted on April 22, 2012. 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 CNDDB and 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 their potential to occur (Appendix E, Table E-1). Based on this informational review and field assessment, the BSA does not provide suitable habitat for any special-status plant species.

Special-status animal species include species that are (1) listed as threatened or endangered under the CESA or 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, CWHR species summary report, USFWS species list, CNDDB and CNPS database records, and results of the field survey. For each species, 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 (Appendix E, Table E-2). Based on the review of habitat requirements and the results of the field assessment, nine special-status animal species were determined to have the potential to be adversely affected by the proposed project (Table 1). These species are further discussed in Chapter 5.

Table 1. Special-Status Animals with Potential to be Adversely Affected by the Proposed Project

Common Name *Scientific Name*	Status[1] (Fed/State)	General Habitat Description	Potential for Significant Impacts (Yes/No?)[2]
Hardhead *Mylopharodon conocephalus*	—/SC	Prefers deep, rock- and sand-bottomed pools of small to large rivers. Generally found in clear, deep, well-oxygenated streams with low flow.	Yes, low potential. Low quality habitat for species is present within BSA and the species may occur in very small numbers. Species presence and persistence is questionable as a result of poor quality habitat in conjunction with competition by non-native, warmwater fish species.
Western pond turtle *Emys marmorata*	—/SC	Slow water aquatic habitat with available basking sites. Hatchlings require shallow water with dense submergent or short emergent vegetation. Requires an upland oviposition site in the vicinity of the aquatic site.	Yes, low potential. Low quality habitat for species is present within BSA. Emergent structure is not present within the BSA and basking sites are limited to the relatively steep and narrow banks of Littlejohns Creek.
Swainson's hawk *Buteo swainsoni*	—/T	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; forages in adjacent livestock pasture, grassland, or grain fields.	Yes, high potential. Trees and shrubs within 0.5 mile of the BSA provide nesting habitat. A pair of Swainson's hawks was observed approximately 0.6 mile northeast of the BSA during the field assessment.
White-tailed kite *Elanus leucurus*	—/FP	Nests in tall shrubs and trees; forages in grasslands, agricultural fields, and marshes.	Yes, medium potential. Trees and shrubs within the BSA provide nesting habitat.
Burrowing owl *Athene cunicularia*	—/SC	Open grasslands and ruderal habitats. Requires burrows and similar habitat for roosting and nesting cover. May dig burrows in soft soil, but generally occupies existing burrows created by other species or manmade burrow structures.	Yes, low potential. Although no potential burrowing owl habitat is found within the BSA, low quality potential habitat is found along the boundary of the row crop fields immediately northeast of the BSA.

Common Name *Scientific Name*	Status[1] (Fed/State)	General Habitat Description	Potential for Significant Impacts (Yes/No?)[2]
Loggerhead shrike *Lanius ludovicianus*	—/SC	Forages in open grassland habitats throughout the Central Valley of California. Nests in shrubs and trees.	Yes, medium potential. Trees and shrubs within the BSA provide nesting habitat and the irrigated row crops to the northwest provide suitable foraging habitat.
California yellow warbler *Dendroica petechia brewsteri*	—/SC	Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.	Yes, low potential. Poor quality habitat is present in the northwestern corner of the BSA. Himalayan blackberry in this area will be partly removed during project implementation.
Yellow-breasted chat *Icteria virens*	—/SC	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.	Yes, low potential. Poor quality habitat is present in the northwestern corner of the BSA. Himalayan blackberry in this area will be partly removed during project implementation.
Tricolored blackbird *Agelaius tricolor*	—/SC	Breeds near fresh water, primarily in dense emergent vegetation, but may also nest in blackberry, rose, willow thickets, and small trees in open country, rangeland, and cropland and near marshes or wetlands.	Yes, low potential. Poor quality habitat is present as riparian thickets of Himalayan blackberry undergrowth in the western portion of the BSA. Vegetation in this area will be partly removed during project implementation.

[1]Federal and State Codes: T = Threatened; SC = Species of Special Concern; FP = Fully Protected Species.

[2] No = The BSA and immediate vicinity do not support habitat for the species.

Low = The BSA and immediate vicinity provide only limited or marginal habitat for the species, the BSA may be outside the characteristic range of the species, or the species rarely occurs in the project region. The species was not observed within the BSA.

Medium = The BSA and/or immediate vicinity provides suitable, but not ideal habitat conditions. The species was not observed within the BSA.

High = The BSA and/or immediate vicinity provides ideal habitat conditions. The species was observed in the BSA or is known to occur in the BSA.

3.3. Waters of the United States

A delineation of waters of the United States within the BSA was conducted on April 22, 2012 (Appendix C). Waters of the United States within the BSA consist of perennial stream (Littlejohns Creek) and occupy a total of 0.23 acre (209 linear feet). Figure 4 illustrates the boundaries of waters of the United States within the BSA.

3.4. Other Sensitive Biological Resources

3.4.1. Migratory Birds and Raptors

Raptor species (birds of prey) and migratory birds, other than those listed as special-status species, could nest in the vicinity of the BSA. All raptor species and their nests are protected from take according to California Fish and Game Code. All migratory

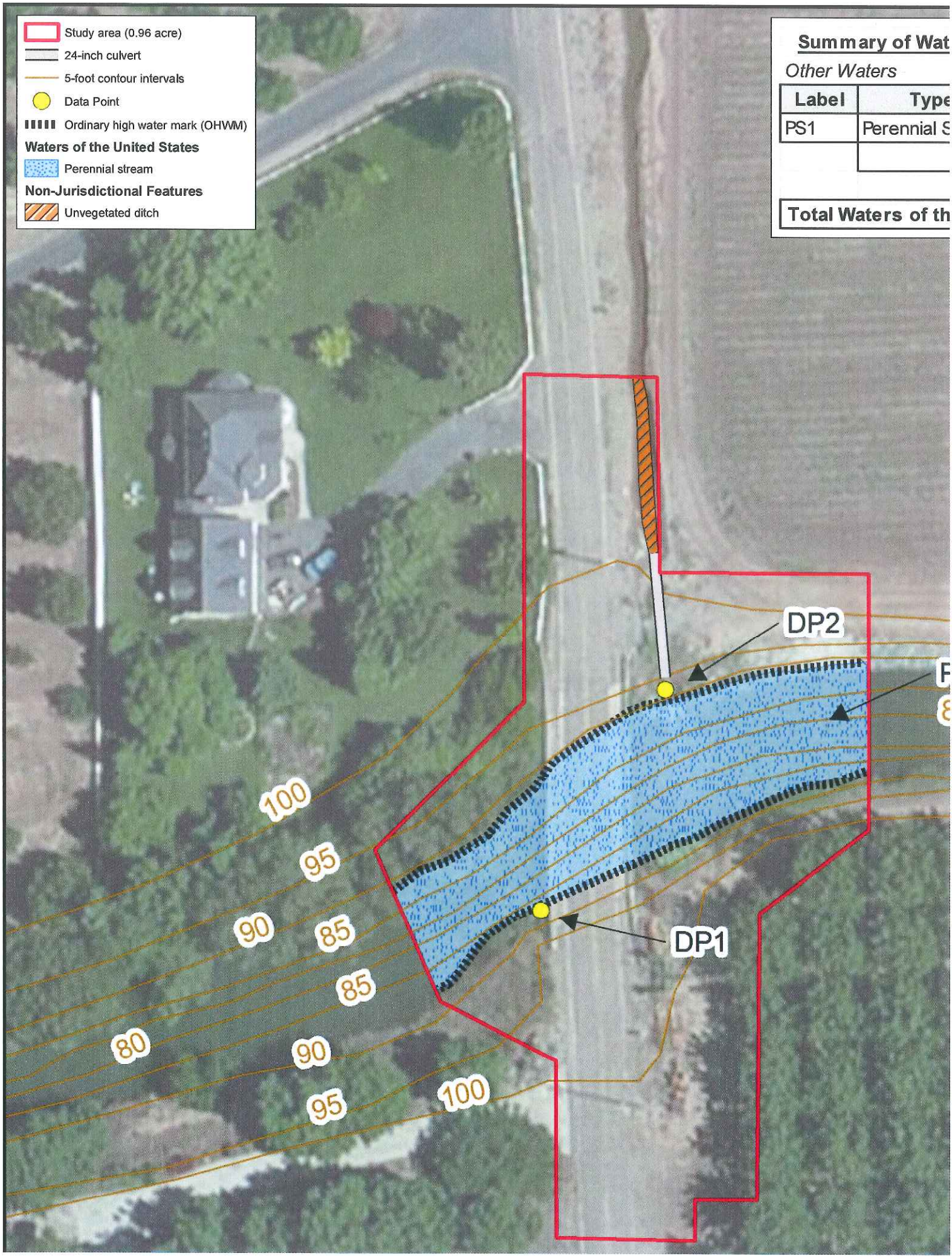
birds and their nests are protected from take under the federal MBTA. Cliff swallows (*Petrochelidon pyrrhonota*), barn swallows (*Hirundo rustica*), black phoebes (*Sayornis nigricans*), and other migratory birds are known to build nests under artificial structures such as bridges. The existing bridge structure was visually surveyed for evidence of previous migratory bird nesting activity (e.g., remnant mud nests) during the field assessment. Inactive cliff swallow nests were observed on the Stanley Road Bridge and indicate previous nesting by this species on the bridge structure.

3.4.2. Riparian Habitat

Riparian habitat is generally considered to be a sensitive natural community and is present in the BSA. Riparian habitat occurs as a narrow, fragmented corridor of valley oak and Himalayan blackberry along Littlejohns Creek. This riparian habitat provides food, shade, shelter, nesting sites and other resources for wildlife.

3.4.3. Native and Non-Native Fish

Native non-native fish, such as Sacramento pike-minnow (*Ptychocheilus grandis*), green sunfish (*Lepomis cyanellus*), and black bass (*Micropterus* spp.) have the potential or are known to occur within Littlejohns Creek in the BSA. Common carp (*Cyprinus carpio*) and mosquito fish (*Gambusia affinis*) were observed within Littlejohns Creek during the site visit on April 22, 2012.



Summary of Wat

Other Waters

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

A discussion of sensitive biological resources, potential impacts, and mitigation measures is presented below. A map of temporary and permanent project impacts within the BSA is presented as Figure 5.

4.1. Potential Impacts on Special-Status Plant Species

The BSA does not contain suitable habitat for regionally occurring special-status plants. Implementation of the proposed project is not expected to adversely affect any special-status plant species. No mitigation is required.

4.2. Potential Impacts on Special-Status Animal Species

As discussed in Chapter 3, nine special-status animal species were determined to have the potential to be impacted by the project. These species include hardhead, western pond turtle, Swainson's hawk, white-tailed kite, burrowing owl, loggerhead shrike, California yellow warbler, yellow-breasted chat, and tricolored blackbird.

A discussion of the regulatory status, habitat requirements, potential for occurrence, potential project-related impacts, avoidance and minimization measures, and cumulative effects for each of these species is provided below.

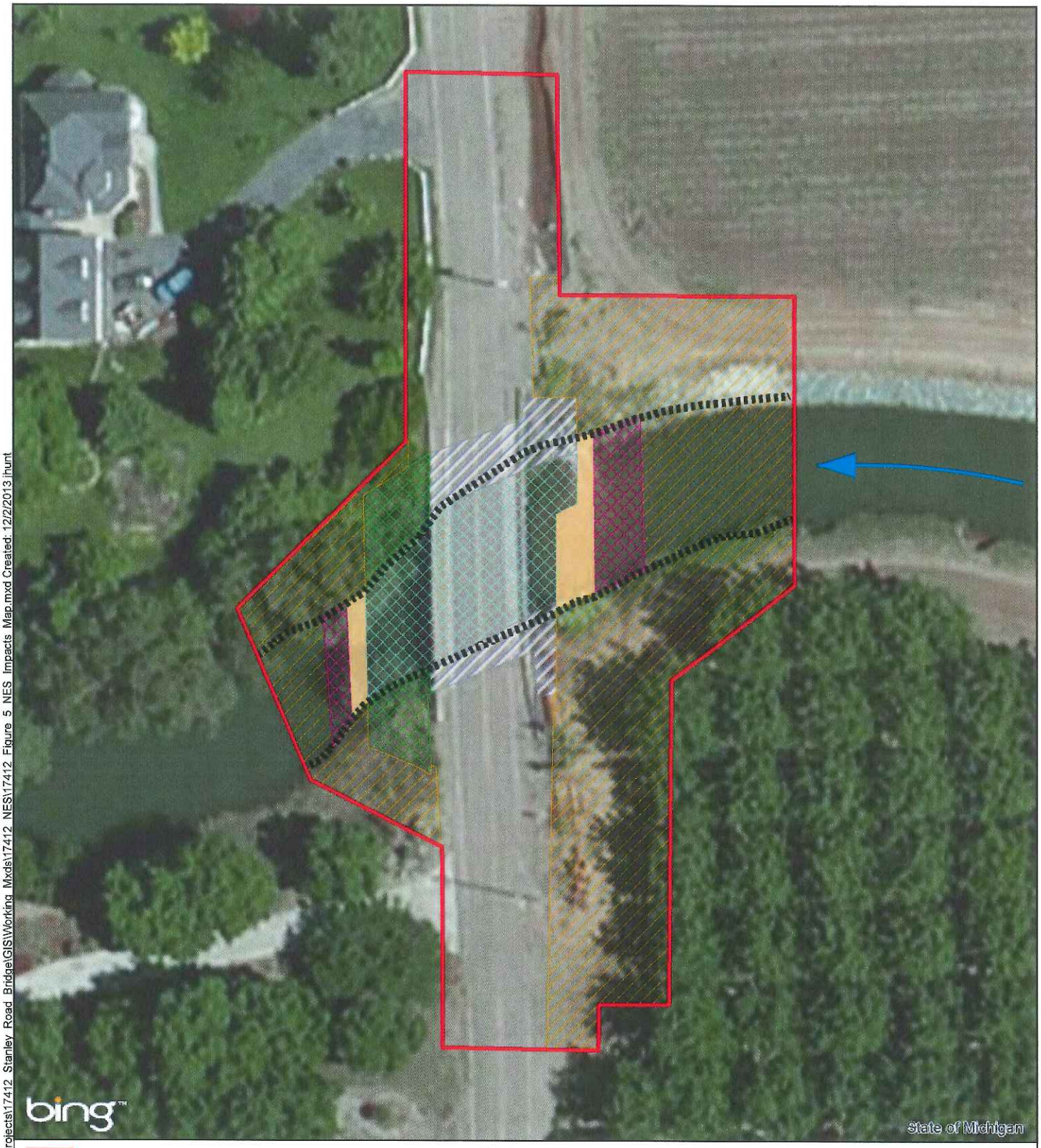
With the implementation of the avoidance and minimization measures presented in Section 5.3 (below), the proposed project is not expected to adversely affect any special-status animal species.

4.2.1. Hardhead and Other Fish Species

Hardhead is listed as a state species of special concern. Hardheads are typically found in well-oxygenated low- to mid-elevation streams, with deep gravel-bottom pools (McGinnis 2006).

4.2.1.1. Survey Results

Hardhead prefer clear, relatively deep, well-oxygenated low-flow streams. Littlejohn's Creek provides very low habitat potential. Hardhead may occur in very low numbers within the BSA; however, persistent populations are not expected due to poor habitat conditions and competition from non-native warm-water fishes. No



Area of potential effect (0.96 acre)

Construction easement (0.44 acre)

Temporary Impacts:

Cofferdam (0.03 acre; 30 feet)

Dewatered channel access (0.02 acre; 22 feet)

Existing revetment (0.03 acre)

Ordinary high water mark

Permanent Impacts:

New RSP: In-stream (0.08 acre; 79 feet)

New RSP: Riparian areas (0.03 acre)

N

0 50

Feet

T:\Projects\17412 Stanley Road Bridge\GIS\Working Mxds\17412 NES\17412 Figure 5 NES Impacts Map.mxd Created: 12/2/2013 jhunt

Stanley Road Bridge Scour Mitigation Project

Figure 5

Project Impact Areas

suitable spawning habitat for this species (i.e., well-oxygenated rocky or gravel substrate) is found within the BSA.

4.2.1.2. PROJECT IMPACTS

Because project implementation would involve modification or alteration of the streambed, as well as the stream bank, project implementation has the potential for limited short-term impacts on hardhead, as well as other native and non-native fish within and adjacent to the BSA.

It is anticipated that temporary cofferdams (about 0.03 acre; Figure 5) would be constructed both upstream and downstream of the work area, with flexible bypass pipes that could be moved within the channel as necessary. A pumping system would dewater the work area between the cofferdams (about 0.10 acre). Excavation of the existing earthen channel bottom and banks would occur to a maximum depth of 4.5 feet. Because of the depth of the existing channel bottom and steep banks, it is expected that a temporary ramp would be constructed in order to provide equipment access to the work area.

Potential adverse impacts on hardhead include stress, injury or mortality resulting from: dewatering of the work area; exclusion from and prevention of passage through the work area; sedimentation and turbidity; spills of fuel, oil, or other hazardous materials, and other pro-related disturbance.

4.2.1.3. AVOIDANCE AND MINIMIZATION

In addition to Conservation Measures provided in Chapter 1, the following measures shall be implemented to avoid or minimize the potential for significant impacts on hardhead and other fish species.

Measure 1	The dewatered work area and disturbance to in-stream and riparian habitat shall be kept to the minimum area necessary to perform work.
Measure 2	Erosion control measures, such as installation of filter fabric, temporary rocking, and/or installation of a t-pipe shall be installed at the bypass outflow to minimize potential for erosion of the streambed downstream of the work area.
Measure 3	Prior to in-channel work and during the dewatering activities, a qualified biologist shall monitor the area and

remove any fishes from within the work area and safely relocate them into Littlejohns Creek. All fish removed from the work area shall be documented and released into Littlejohns Creek outside of the work area. Erosion control measures that employ monofilament netting shall be prohibited within the work area.

Measure 4 A maximum 0.2-inch (5-millimeter) diameter mesh screen will be used to cover the intake pipe on all pumps used for dewatering the work area within the cofferdams.

4.2.1.4. COMPENSATORY MITIGATION

None required.

4.2.1.5. CUMULATIVE EFFECTS

Implementation of the avoidance and minimization measures outlined above will avoid significant impacts on hardhead and other native fishes. No permanent impacts on fish passage through the BSA would result from project implementation. The project would not result in cumulatively considerable adverse impacts on hardhead and other native fishes.

4.2.2. Western Pond Turtle

Western pond turtle is listed as a species of special concern by the CDFW. This species is found in a wide range of aquatic habitats with emergent structure for basking and feeding. Western pond turtles also utilize adjacent upland sites for nesting, often travelling great distances over land to suitable nesting sites.

4.2.2.1. POTENTIAL FOR OCCURRENCE

Habitat for western pond turtles within the BSA is marginal, with no emergent structure (e.g., emergent snags or rock structures) and potential basking sites limited to the banks of Littlejohns Creek. Western pond turtle was not observed during the site visit. Low quality nesting habitat is found along the south bank of Littlejohns Creek downstream of Stanley Road.

4.2.2.2. PROJECT IMPACTS

Because project implementation would involve modification or alteration of the streambed, as well as the stream bank, project implementation has the potential for limited short-term impacts on western pond turtle. Potential adverse impacts on

western pond turtle include stress, injury or mortality to individuals or their nests resulting from: site access by project vehicles and equipment, heavy equipment operation, installation of cofferdams and RSP, and excavation activities; temporary loss of habitat and movement corridors during installation of bypass and cofferdams, work area dewatering and installation of RSP; sedimentation and turbidity resulting from work within the channel of Littlejohns Creek; and fuel and oil spills within the banks of Littlejohns Creek.

4.2.2.3. AVOIDANCE AND MINIMIZATION

In addition to Conservation Measures provided in Chapter 1 and Avoidance and Minimization Measures 1–2 above, the following measure shall be implemented to avoid or minimize the potential for significant impacts on western pond turtle.

Measure 5 If western pond turtles are encountered within the BSA during construction, work activity in the immediate vicinity will cease until any individuals have left the work area.

Measure 6 Prior to initiation of construction activities, workers shall participate in environmental awareness training provided by a qualified biologist. The training shall instruct workers regarding: 1) how to identify the turtle; 2) the habitats used by the turtle; 3) the potential for turtle egg clutches (i.e., nest sites) to be discovered during vegetation clearing; and 4) what to do if a turtle or suspected egg clutch is encountered during construction activities.

4.2.2.4. COMPENSATORY MITIGATION

None required.

4.2.2.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on western pond turtle.

4.2.3. Swainson's Hawk

Swainson's hawks are a state-listed threatened species. In the Central Valley, this species generally nests in isolated stands of trees and along forested edges near open habitats, such as annual grasslands and row crops that provide foraging habitat. The

nesting season (nesting building to post-fledging) for this species generally occurs between April 1st and July 30th (Swainson's Hawk Technical Advisory Committee 2000), but some active nesting activity may occur into August.

4.2.3.1. SURVEY RESULTS

Although the April 22, 2012 reconnaissance-level biological survey was not intended to follow Swainson's hawk survey protocol, a pair of Swainson's hawks was observed approximately 0.6 mile northeast of the BSA above a cluster of farmhouse trees on private property. Additionally, there are 16 CNDDB records of Swainson's hawks nesting within 10 miles of the BSA. Row crops to the northeast of the BSA provide potential foraging habitat for Swainson's hawk. Bands of riparian habitat and isolated stands of trees within 0.5 mile of the BSA provide potential nesting habitat for this species.

4.2.3.2. PROJECT IMPACTS

If Swainson's hawks are nesting within 0.25 mile of the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment (Swainson's Hawk Technical Advisory Committee 2000). No significant impacts on Swainson's hawk foraging habitat are anticipated to result from project implementation.

4.2.3.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for significant impacts on Swainson's hawk.

Measure 7 To the extent practicable, construction activities shall be conducted outside of the nesting season or towards the end of the nesting season (e.g., conduct activities from August through September). If construction activities are conducted completely outside of the nesting season (i.e., after August 31), no further measures are necessary. If construction activities are to occur during the nesting season, the following measure shall be implemented.

Measure 8 A minimum of one pre-construction survey for active Swainson's hawk nests within 0.25 mile (where accessible) of the project area shall be conducted by a qualified biologist within 15 days prior to the initiation

of construction activities. If any Swainson's hawk nests are identified, appropriate conservation measures (as determined by a qualified biologist) shall be implemented. These measures may include, but are not limited to establishing a construction-free buffer zone around the active nest site (600 feet), biological monitoring of the active nest site, and delaying construction activities in the vicinity of the active nest site until the young have fledged.

4.2.3.4. COMPENSATORY MITIGATION

None required.

4.2.3.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on Swainson's hawk.

4.2.4. Burrowing Owl

Burrowing owl is listed as a species of special concern by the CDFW. This species is found in grasslands and open ruderal or agricultural lands in the Central Valley. Burrowing owls require burrows and similar ground-level cavities (e.g., abandoned culverts, rock cavities, and man-made nest structures) for nesting and roosting. In the Central Valley, the nesting season for this species occurs between February 1 and August 31 (California Burrowing Owl Consortium 1993; California Department Fish Game 2012).

4.2.4.1. SURVEY RESULTS

Marginal potential habitat for burrowing owl is found on the levees and untilled areas fringing row crops and Littlejohns Creek immediately northeast of the BSA. Although these areas contain few ground squirrel burrows, burrowing owls have been recorded from similar ruderal row crop margins within the San Joaquin Valley. During the April 22, 2012 site visit, no evidence (e.g., whitewash, feathers pellets) of burrowing owl occupancy was observed. There are three CNDDB records of burrowing owls nesting within 10 miles of the BSA.

4.2.4.2. PROJECT IMPACTS

If burrowing owls are nesting near the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to

nest abandonment. No direct impacts on potential burrowing owl nesting habitat is anticipated to result from project implementation.

4.2.4.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for significant impacts on burrowing owl.

Measure 9 Pre-construction surveys for active burrows within 500 feet (where accessible) of the project activities shall be conducted by a qualified biologist within 15 days prior to the initiation of construction activities. If any active burrows are identified, appropriate conservation measures (as determined by a qualified biologist) shall be implemented. These measures may include, but are not limited to establishing a construction-free buffer zone around active burrows, biological monitoring of the burrows, delaying construction activities in the vicinity of active burrows during the nesting season, and relocating owls during the non-nesting season (passive relocation) from burrows that will be disturbed.

4.2.4.4. COMPENSATORY MITIGATION

None required.

4.2.4.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on burrowing owls.

4.2.5. White-Tailed Kite

White-tailed kites are a California fully protected species. This species generally nests in tall shrubs or trees and is found in a variety of relatively open to open habitats such as ruderal agricultural settings, open scrub lands, and grasslands throughout the Central Valley of California. In the Central Valley, the nesting season for this species occurs between March and August (California Department of Fish and Game 2008).

4.2.5.1. SURVEY RESULTS

Though there are no CNDDB recorded occurrences for white-tailed kite within 10 miles of the BSA, habitat within and adjacent to the BSA provides potential foraging and nesting habitat for white-tailed kite.

4.2.5.2. PROJECT IMPACTS

If white-tailed kites are nesting within or near the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.2.5.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for significant impacts on white-tailed kite.

Measure 10 Implement Avoidance and Minimization Measure 7. If construction activities during the nesting season cannot be avoided, pre-construction surveys for nesting white-tailed kites and other raptors within 500 feet (where accessible) of the project area shall be conducted by a qualified biologist within 15 days prior to the initiation of construction activities. Areas to be surveyed shall be limited to those areas subject to increased disturbance as a result of construction activities. Areas where existing traffic, human activity, etc. is greater or equal to construction-related disturbance need not be surveyed. If any active white-tailed kite nests are identified, appropriate conservation measures (as determined by a qualified biologist) shall be implemented. These measures may include, but are not limited to establishing a construction-free buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities in the vicinity of the active nest site until the young have fledged.

4.2.5.4. COMPENSATORY MITIGATION

None required.

4.2.5.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on white-tailed kite.

4.2.6. Loggerhead Shrike

Loggerhead shrike is listed as a species of special concern by the CDFW. This species is generally found in open grasslands, relatively open scrubs and ruderal agricultural

settings throughout the Central Valley of California. Loggerhead shrikes are tree or shrub nesters which generally require barbed-wire fences, thorn bushes or similar barbed structures for impaling and storing prey items. In the Central Valley, the nesting season for this species occurs between March and August (California Department of Fish and Game 2008).

4.2.6.1. SURVEY RESULTS

Potential low quality nesting and foraging habitat is found within and adjacent the BSA.

4.2.6.2. PROJECT IMPACTS

If loggerhead shrikes are nesting within the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.2.6.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for significant impacts on loggerhead shrike.

Measure 11 Implement Avoidance and Minimization Measure 7. If construction activities during the nesting season cannot be avoided, pre-construction surveys for nesting loggerhead shrikes and other migratory birds shall be conducted by a qualified biologist within 15 days prior to the initiation of construction activities. The survey shall be conducted in accessible areas within 250 feet of the project area. If active nests are observed, appropriate conservation measures (as determined by a qualified biologist) shall be implemented. These measures may include, but are not limited to establishing a construction-free buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities in the vicinity of the active nest site until the young have fledged. In general, the avoidance buffer shall be a minimum of 50 feet. However, the size of the avoidance buffer may be increased or decreased as determined by the monitoring biologist based on the planned construction activities, the sensitivity of the species to disturbance, the setting

of the nest site, the concealment of the nest from project activities, and other ecological factors.

4.2.6.4. COMPENSATORY MITIGATION

None required.

4.2.6.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on loggerhead shrike.

4.2.7. Yellow Warbler and Yellow-Breasted Chat

Yellow warbler and yellow-breasted chat are listed as species of special concern by the CDFW. Yellow warbler and yellow-breasted chat nest in similar habitat and are generally found nesting in association with dense riparian vegetation. In the Central Valley, the nesting season for these species occurs between mid-April and mid-August (California Department of Fish Game 2008).

4.2.7.1. SURVEY RESULTS

Though there are no CNDDB recorded occurrences for yellow warbler or yellow-breasted chat within 10 miles of the BSA. Marginal potential nesting habitat is found within and adjacent to the BSA in riparian habitat along the north bank of Littlejohns Creek downstream from the Stanley Road Bridge.

4.2.7.2. PROJECT IMPACTS

If yellow warblers or yellow-breasted chats are nesting within the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.2.7.3. AVOIDANCE AND MINIMIZATION

Avoidance and Minimization Measure 11 shall be implemented to avoid or minimize the potential for significant impacts on yellow warbler and yellow-breasted chat.

4.2.7.4. COMPENSATORY MITIGATION

None required.

4.2.7.5. CUMULATIVE EFFECTS

With implementation of the above measure, the proposed project would not result in cumulatively considerable adverse impacts on yellow warbler and yellow-breasted chat.

4.2.8. Tricolored Blackbird

Tricolored blackbird is listed as a species of special concern by the CDFW. Tricolored blackbirds are colonial nesters that typically breed near fresh water, primarily in dense emergent vegetation, but may also nest in blackberry, rose, willow thickets and small trees in open country, rangeland, cropland, and near marshes or wetlands. In the Central Valley, the nesting season for this species occurs between mid-April and late July (California Department of Fish and Game 2008).

4.2.8.1. Survey Results

Though there are no CNDDB recorded occurrences for tricolored blackbird within 10 miles of the BSA. Marginal potential nesting habitat is found within and adjacent to the BSA in riparian habitat along the north bank of Littlejohns Creek downstream from the Stanley Road Bridge and marginal foraging habitat is found in row crops to the northeast of the BSA.

4.2.8.2. Project Impacts

If tricolored blackbirds are nesting within the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.2.8.3. Avoidance and Minimization

Mitigation Measure 11 shall be implemented to avoid or minimize the potential for significant impacts on tricolored blackbird.

4.2.8.4. Compensatory Mitigation

None required.

4.2.8.5. Cumulative Effects

With implementation of the above measure, the proposed project would not result in cumulatively considerable adverse impacts on tricolored blackbirds.

4.3. Other Sensitive Biological Resources

4.3.1. Nesting Raptors and Migratory Birds

All raptor species, including relatively common species and their nests, are protected from take according to California Fish and Game Code. All migratory birds and their nests are protected from take under the federal MBTA.

4.3.1.1. SURVEY RESULTS

Raptor species (birds of prey) and migratory birds, other than those listed as special-status species, could nest in the vicinity of the BSA. Inactive cliff swallow nests observed on April 22, 2012 indicate previous nesting by this species on the Stanley Road Bridge.

4.3.1.2. PROJECT IMPACTS

If migratory birds or raptor species are nesting within the BSA, construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

4.3.1.3. AVOIDANCE AND MINIMIZATION

In addition to Avoidance and Minimization Measures 10 and 11, the following measure shall be implemented to avoid or minimize the potential for significant impacts on nesting raptors and migratory birds.

Measure 12 If construction activities during the nesting season cannot be avoided, existing cliff swallow nests on the Stanley Road Bridge shall be removed prior to the nesting season (i.e., between September 1 and February 1) to discourage continued nesting on this structure prior to construction. An effective deterrent to cliff swallow nesting should be installed on the Stanley Road Bridge prior to the nesting season. If a nesting deterrent is used, the deterrent shall be monitoring for integrity and effectiveness until the project is completed. If nesting activities cannot be effectively deterred, continuous removal of cliff swallow nest starts prior to egg-laying may be necessary before construction activities are initiated. Disturbance or removal of active nests (i.e., nests containing eggs) shall not be conducted without the appropriate authorization(s) from the USFWS and/or the CDFW.

4.3.1.4. COMPENSATORY MITIGATION

None required.

4.3.1.5. CUMULATIVE EFFECTS

With implementation of the above measures, the proposed project would not result in cumulatively considerable adverse impacts on nesting raptors and migratory birds.

4.3.2. Riparian Habitat

Riparian habitat is generally considered be a sensitive natural community. Additionally, consideration of project effects on riparian habitat may be evaluated by the CDFW for projects requiring a Streambed Alteration Agreement or where work will be undertaken within the floodplain of a stream or river containing fish or wildlife resources.

4.3.2.1. POTENTIAL FOR OCCURRENCE

Because of the existing Stanley Road Bridge and extensive revetment of Littlejohns Creek, existing riparian habitat within the BSA is limited to narrow bands downstream of the Stanley Road Bridge. Riparian habitat along the south bank of Littlejohns Creek is dominated by ruderal herbaceous upland vegetation and scattered patches of Himalayan blackberry. Riparian habitat along the north bank of Littlejohns Creek is dominated by valley oak with an understory of Himalayan blackberry.

4.3.2.2. PROJECT IMPACTS

The anticipated area of riparian vegetation removal is limited to approximately 0.03 acre of vegetation located downstream and adjacent to the Stanley Road Bridge. Removal of riparian vegetation along the south side of Littlejohns Creek (approximately 0.015 acre) will include a small valley oak (5–6 inches dbh), scattered patches of Himalayan blackberry and ruderal herbaceous upland vegetation. Removal of riparian vegetation along the north side of Littlejohns Creek (approximately 0.015 acre) will be limited to an area dominated by Himalayan blackberry.

4.3.2.3. AVOIDANCE AND MINIMIZATION

The following measures shall be implemented to avoid or minimize the potential for adverse effects on riparian habitat.

Measure 13	The dewatered work area and disturbance to in-stream and riparian habitat shall be kept to the minimum area necessary to perform work.
Measure 14	Aquatic and upland habitats to be avoided shall be flagged and/or signed. No construction activities or personnel shall be allowed to enter the avoidance areas.

Flagging and signage shall remain in place until construction activities are complete and shall be removed upon completion of construction.

4.3.2.4. COMPENSATORY MITIGATION

None required.

4.3.2.5. CUMULATIVE EFFECTS

With implementation of the above avoidance and minimization measure, the proposed project would not result in cumulatively considerable adverse impacts on riparian habitat.

4.4. Waters of the United States, Including Wetlands

4.4.1. Survey Results

A delineation of waters of the United States within the BSA was conducted on April 22, 2012. Waters of the United States within the BSA occupy a total of 0.23 acre (209 linear feet), and include only Littlejohns Creek, which is classified as a perennial stream.

4.4.2. Potential Impacts

Construction of the proposed project would involve installation of RSP across the channel of Littlejohns Creek, a water of the United States. Based on existing project detail, implementation of the proposed project would result in permanent impacts on approximately 0.08 acre (79 linear feet) of Littlejohns Creek. The permanent impacts would result from the placement of approximately 0.08 acre (79 linear feet) of RSP within Littlejohns Creek from approximately 10 feet upstream to approximately 25 feet downstream of the Stanley Road Bridge.

In addition to the permanent impacts, the proposed project would result in temporary impacts on approximately 0.05 acre (52 linear feet) of Littlejohns Creek. These impacts include construction of the temporary upstream and downstream cofferdams (approximately 0.03 acre; 30 linear feet), temporary dewatering of additional channel work area (approximately 0.02 acre; 22 linear feet) to provide access for installation of permanent RSP, and personnel and equipment working in the channel during excavation and placement of materials (Figure 5).

4.4.3. Avoidance And Minimization Measures

In addition to the Conservation Measures provided in Chapter 1 and Avoidance and Minimization Measures 10, 13, and 14, the following measures shall be implemented

to avoid or minimize the potential for significant impacts on waters of the United States.

Measure 15	Vegetation clearing shall be limited to the minimum area necessary within 200 feet of the banks of Littlejohns Creek.
Measure 16	Prior to any discharge of dredged or fill material into Littlejohns Creek, the required permits/authorizations shall be obtained from the Corps and the RWQCB. All terms and conditions of the required permits/authorizations shall be implemented.
Measure 17	Prior to any activities that would obstruct the flow of, or alter the bed, channel, or bank of Littlejohns Creek, notification of streambed alteration shall be submitted to the CDFW. If required, a streambed alteration agreement shall be obtained from CDFW and all conditions of the agreement shall be implemented.
Measure 18	Construction activities that will affect Littlejohns Creek shall be conducted during the dry season (i.e., late summer through early fall) to minimize erosion.
Measure 19	All waters of the United States that are temporarily affected by project construction shall be restored as close as practicable to their original contour and conditions within 10 days of the completion of construction activities.

4.4.4. Compensatory Mitigation

None required.

4.4.5. Cumulative Effects

With implementation of the avoidance and minimization measures, the proposed project would not result in cumulatively considerable adverse effects on waters of the United States.

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

5.1. Federal Endangered Species Act

No federally listed species would be affected by the project. No Endangered Species Act consultation with the USFWS or the National Marine Fisheries Service (NMFS) is required.

5.2. Magnuson-Stevens Fishery Conservation and Management Act

No Essential Fish Habitat (EFH) would be affected by the proposed project. No Magnuson-Stevens Fishery Conservation and Management Act consultation with the National Marine Fisheries Service (NMFS) is anticipated to be required.

5.3. Clean Water Act

To ensure compliance with terms and conditions of Section 404 of the 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 (NWP) program (likely NWP 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 of the CWA requires that a Water Quality Certification be obtained from the Regional Water Quality Control Board 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.

5.4. Migratory Bird Treaty Act

Avoidance and minimization measures would be implemented to avoid adverse effects on migratory birds and their nests.

5.5. Executive Order 13112 (Invasive Species)

Implementation of Conservation Measure #4 – Prevention of Spread of Invasive Species will avoid or minimize the potential for the spread of invasive species, as required by Executive Order 13112.

5.6. California Endangered Species Act

Avoidance and minimization measures would be implemented to avoid the take of state-listed species. Consultation with the CDFW under the California Endangered Species Act is not expected to be required.

5.7. California Fish and Game Code

The proposed project would involve work within Littlejohns Creek, a perennial 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.

Chapter 6. References

6.1. Literature Cited

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Western Regional Climate Center. 2012. Stockton Metropolitan Airport, Stockton, California (048558) climate summary: Monthly climate summary 10/1/1948 to 9/30/2012. Accessed March 8, 2013.

6.2. Personal Communications

Kleinfelter, R., Associate Environmental Planner/Biologist, Caltrans. January 10, 2014. Email to Jen Schofield of USFWS.

Schofield, J., Contract Biologist-Caltrans Liaison, USFWS. January 13, 2014. Email to Rachel Kleinfelter of Caltrans.

Appendix A USFWS List

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 131125110116

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

Branchinecta conservatio
- Conservancy fairy shrimp (E)

Branchinecta lynchi
- Critical habitat, vernal pool fairy shrimp (X)
- vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
- valley elderberry longhorn beetle (T)

Lepidurus packardi
- vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus
- delta smelt (T)

Oncorhynchus mykiss
- Central Valley steelhead (T) (NMFS)
- Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
- Central Valley spring-run chinook salmon (T) (NMFS)
- winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
- California tiger salamander, central population (T)

Rana draytonii
- California red-legged frog (T)

Reptiles

Thamnophis gigas
- giant garter snake (T)

Plants

Tuctoria greenei
- Greene's tuctoria (=Orcutt grass) (E)

Quads Containing Listed, Proposed or Candidate Species:

PETERS (461A)

County Lists

Listed Species

Invertebrates

Branchinecta conservatio
Conservancy fairy shrimp (E)
Critical habitat, Conservancy fairy shrimp (X)
S

Branchinecta longiantenna
longhorn fairy shrimp (E)
S

Branchinecta lynchi
Critical habitat, vernal pool fairy shrimp (X)
vernal pool fairy shrimp (T)
S

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)
S

Elaphrus viridis
delta green ground beetle (T)
S

Lepidurus packardi
Critical habitat, vernal pool tadpole shrimp (X)
vernal pool tadpole shrimp (E)
S

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)
S

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)
S

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)
S

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)

Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)
S

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)
Critical habitat, CA tiger salamander, central population (X)
S

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)
S

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)
S

Thamnophis gigas
giant garter snake (T)
S

Birds

Rallus longirostris obsoletus
California clapper rail (E)
S

Vireo bellii pusillus
Least Bell's vireo (E)
S

Mammals

Neotoma fuscipes riparia
riparian (San Joaquin Valley) woodrat (E)
S

Sylvilagus bachmani riparius
riparian brush rabbit (E)
S

Vulpes macrotis mutica
San Joaquin kit fox (E)
S

Plants

Amsinckia grandiflora
Critical habitat, large-flowered fiddleneck (X)
large-flowered fiddleneck (E)
S

Arctostaphylos myrtifolia
Ione manzanita (T)
S

Castilleja campestris ssp. succulenta
Critical habitat, succulent (=fleshy) owl's-clover (X)
succulent (=fleshy) owl's-clover (T)
S

Cordylanthus palmatus
palmate-bracted bird's-beak (E)
S

Lasthenia conjugens
Critical habitat, Contra Costa goldfields (X)
S

Orcuttia viscida
Critical habitat, Sacramento Orcutt grass (X)
Sacramento Orcutt grass (E)
S

Tuctoria greenei
Greene's tuctoria (=Orcutt grass) (E)
S

Candidate Species

Birds

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (C)
S

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may

result in take, then that agency must engage in a formal consultation with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be February 23, 2014.

Appendix B CNDDB and CNPS Records

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Peters (3712181) or Waterloo (3812112) or Linden (3812111) or Valley Springs SW (3812018) or Stockton East (3712182) or Farmington (3712088) or Manteca (3712172) or Avena (3712171) or Escalon (3712078))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAAAA01180	***Ambystoma californiense*** California tiger salamander	Threatened	Threatened	G2G3	S2S3	SSC
AAABF02020	***Spea hammondii*** western spadefoot	None	None	G3	S3	SSC
ABNKC19070	***Buteo swainsoni*** Swainson's hawk	None	Threatened	G5	S2	
ABNSB10010	***Athene cunicularia*** burrowing owl	None	None	G4	S2	SSC
ABPBXB0020	***Agelaius tricolor*** tricolored blackbird	None	None	G2G3	S2	SSC
AFCJB25010	***Mylopharodon conocephalus*** hardhead	None	None	G3	S3	SSC
AMACC10010	***Antrozous pallidus*** pallid bat	None	None	G5	S3	SSC
AMACD02011	***Eumops perotis californicus*** western mastiff bat	None	None	G5T4	S3?	SSC
ARADB36150	***Thamnophis gigas*** giant garter snake	Threatened	Threatened	G2G3	S2S3	
CTT44110CA	***Northern Hardpan Vernal Pool*** Northern Hardpan Vernal Pool	None	None	G3	S3.1	
ICBRA03030	***Branchinecta lynchi*** vernal pool fairy shrimp	Threatened	None	G3	S2S3	
ICBRA03150	***Branchinecta mesovallensis*** midvalley fairy shrimp	None	None	G2	S2	
ICBRA06010	***Linderiella occidentalis*** California linderiella	None	None	G3	S2S3	
ICBRA10010	***Lepidurus packardi*** vernal pool tadpole shrimp	Endangered	None	G3	S2S3	
IICOL48011	***Desmocerus californicus dimorphus*** valley elderberry longhorn beetle	Threatened	None	G3T2	S2	
IICOL4C020	***Lytta moesta*** moestan blister beetle	None	None	G2	S2	
IIHYM35030	***Andrena blennospermatis*** Blennosperma vernal pool andrenid bee	None	None	G2	S2	
IIHYM35210	***Andrena subapasta*** vernal pool andrenid bee	None	None	G1G3	S1S3	
PDAPI0Z0S0	***Eryngium racemosum*** Delta button-celery	None	Endangered	G1Q	S1	1B.1

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDCAM0C010	***Legenere limosa*** legenere	None	None	G2	S2.2	1B.1
PDPLM0C0X1	***Navarretia myersii ssp. myersii*** pincushion navarretia	None	None	G1T1	S1	1B.1
PDRAN0B1J0	***Delphinium recurvatum*** recurved larkspur	None	None	G3	S3	1B.2
PMALI040Q0	***Sagittaria sanfordii*** Sanford's arrowhead	None	None	G3	S3	1B.2
PMJUN011L1	***Juncus leiospermus var. ahartii*** Ahart's dwarf rush	None	None	G2T1	S1	1B.2
PMPOA6N010	***Tuctoria greenei*** Greene's tuctoria	Endangered	Rare	G1	S1	1B.1

Record Count: 25

CNPS Inventory of Rare and Endangered Plants

Status: Plant Press Manager window with 8 items - Mon, Nov. 25, 2013 13:06 ET c

Reformat list as: Standard List - with Plant Press controls

ECOLOGICAL REPORT

scientific	family	life form	blooming	communities	elevation	CNPS
Delphinium recurvatum	Ranunculaceae	perennial herb	Mar-Jun	•Chenopod scrub (ChScr) •Cismontane woodland (CmWld) •Valley and foothill grassland (VFGrs)/alkaline	3 - 790 meters	List 1B.2
Eryngium racemosum	Apiaceae	annual/perennial herb	Jun-Oct	•Riparian scrub (RpScr)(vernally mesic clay depressions)	3 - 30 meters	List 1B.1
Juncus leiospermus var. ahartii	Juncaceae	annual herb	Mar-May	•Valley and foothill grassland (VFGrs)(mesic)	30 - 229 meters	List 1B.2
Legenere limosa	Campanulaceae	annual herb	Apr-Jun	•Vernal pools (VnPls)	1 - 880 meters	List 1B.1
Navarretia myersii ssp. myersii	Polemoniaceae	annual herb	Apr-May	•Vernal pools (VnPls)/often acidic	20 - 330 meters	List 1B.1
Sagittaria sanfordii	Alismataceae	perennial rhizomatous herb emergent	May-Oct	•Marshes and swamps (MshSw) (assorted shallow freshwater)	0 - 650 meters	List 1B.2
Symphyotrichum lentum	Asteraceae	perennial rhizomatous herb	May-Nov	•Marshes and swamps (MshSw) (brackish and freshwater)	0 - 3 meters	List 1B.2
Tuctoria greenei	Poaceae	annual herb	May-Jul (Sep), Months in parentheses are uncommon.	•Vernal pools (VnPls)	30 - 1070 meters	List 1B.1

Appendix C Delineation of Waters of the United States

Stanley Road Bridge Scour Mitigation Project
Bridge No. 29C-112

Delineation of Waters of the United States

Stanley Road Bridge (29C-112) Scour Mitigation Project
San Joaquin County, California
Township 1 North, Range 9 East, Section 19
7.5′ USGS Quadrangle: Peters, California (1981)
District 10-SJ-Stanley Road-PM
Federal Project No. 5929(224)

January 2014

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Stanley Road Bridge Scour Mitigation Project

Delineation of Waters of the United States

Section 1 Summary **1**

Section 2 Project Location **1**
- 2.1 Proximity to Major Highways and Streets 1
- 2.2 USGS Hydrologic Unit 1

Section 3 Environmental Setting **3**
- 3.1 Current/Recent Land Use 3
- 3.2 Site Topography and Elevation 3
- 3.3 Climate 3
- 3.4 Hydrology/Hydrologic Features 4
- 3.5 Soil Map Units 4
- 3.6 Habitat Types 4

Section 4 Methods **6**
- 4.1 Field Delineation 6

Section 5 Results **7**
- 5.1 Characterization of Delineated Features 7
- 5.2 Conclusion 9

Section 6 References **9**

Figures

Figure 1. Project Location and Study Area 2
Figure 2. Soil Map Units 5
Figure 3. Waters of the United States 8

Appendices

Appendix A Routine Wetland Delineation Data Forms
Appendix B Representative Photographs

Section 1 Summary

The San Joaquin County Department of Public Works (County) conducted a delineation of waters of the United States occurring within the approximately 0.96-acres Stanley Road Bridge Scour Mitigation Project study area (study area). The study area is located on and adjacent to Stanley Road at Littlejohns Creek approximately 1.6 miles west-southwest of the community of Farmington in San Joaquin County, California. The County is proposing to install measures to reduce scour at the Stanley Road Bridge over Littlejohns Creek.

The field delineation was conducted on April 22, 2012, mapping total of 0.23 acres of waters of the United States in the study area. Waters of the United States within the study area are limited to a section of perennial stream (0.23 acres, 209 linear feet) along Littlejohns Creek. No wetlands occur within the study area.

This delineation of waters of the United States is subject to verification by the United States Army Corps of Engineers (USACE). All parties shall treat the information contained herein as preliminary until USACE provides written verification of the boundaries of its jurisdiction.

Section 2 Project Location

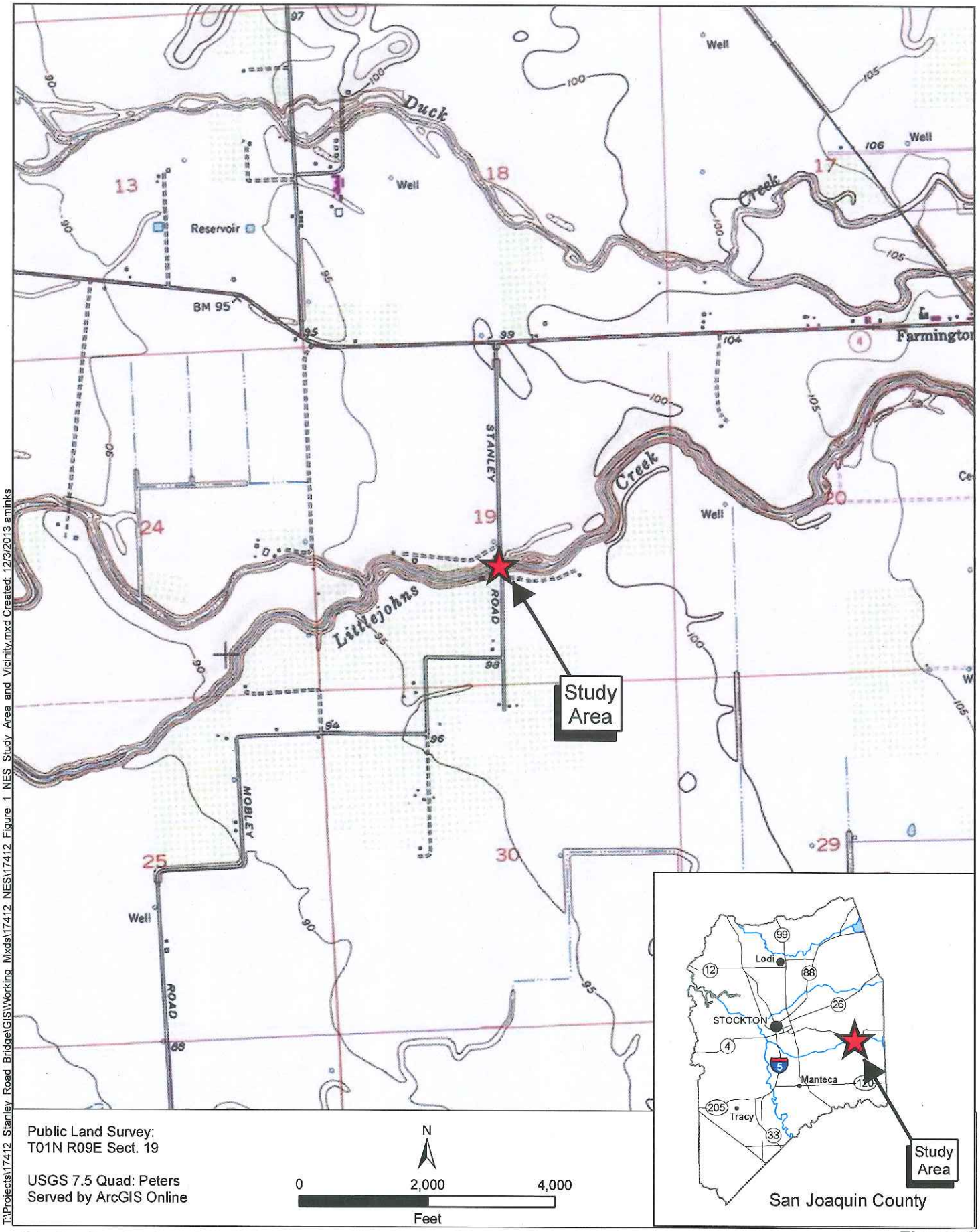
The 0.96-acres study area is located on and adjacent to Stanley Road at Littlejohns Creek approximately 0.7 mile south of Highway 4 (Farmington Road) and 1.6 miles west-southwest of the community of Farmington in San Joaquin County, California. The study area is located in the *Peters, California* 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle: Section 19, Township 01N, Range 09E, MDBM. The center of the study area is near UTM Zone 10 0673349E, 4198774 N (NAD 83 datum). The location of the study area is shown in Figure 1.

2.1 Proximity to Major Highways and Streets

Driving directions to the study area are as follows: from Stockton, California, take State Highway 99 to Exit 252B and merge to State Highway 4/Farmington Road heading east. Follow State Highway 4/Farmington Road approximately 12 miles east to Stanley Road. Follow Stanley Road approximately 0.7 mile south to Stanley Road Bridge. From Farmington, California, take State Highway 4/Farmington Road west approximately 1.5 miles. Follow Stanley Road approximately 0.7 mile south to Stanley Road Bridge.

2.2 USGS Hydrologic Unit

The study area is within the *Middle San Joaquin-Lower Merced-Lower Stanislaus* USGS Hydrologic Map Unit (Cataloging Unit Number 18040004).



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Stanley Road Bridge Scour Mitigation Project

Figure 1
Study Area and Vicinity

Section 3 Environmental Setting

3.1 Current/Recent Land Use

The study area lies along Stanley Road which terminates within a rural residential area approximately 0.2 mile south of the study area. Agriculture is the primary land use within this region, with crops consisting largely of orchards, vineyards, and row crops. Land uses in the immediate vicinity of the study area include walnut orchards, row crops, farm-related structures, and low-density rural residences. Two residences are located immediately adjacent to the study area on the west side of Stanley Road; one residence is on the north side of Littlejohns Creek and the other is on the south side of the creek. Agricultural access roads are located near the northeast and southeast corners of the bridge, and residential driveways are located near the northwest and southwest corners of the bridge. Walnut orchards are located to the south and northwest of the study area and row crops are located to the northeast of the study area. Littlejohns Creek has been largely modified and incised as a result of landscape modification and vegetation clearing.

3.2 Site Topography and Elevation

The primary topographic feature in the study area is the channel of Littlejohns Creek, which bisects the study area from east to west. The elevation of the agricultural lands and residences above the banks of Littlejohns Creek are approximately 90 to 95 feet above mean sea level. The channelized banks of Littlejohns Creek slope at approximately 45 degrees to the Ordinary High Water Mark (OHWM) at approximately 80 to 85 feet above mean sea level.

3.3 Climate

Based on historical data collected at the Stockton Metropolitan Airport, Stockton, California (Western Regional Climate Center 2012), the climate within the study area is as follows:

> ***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 precipitation is approximately 14 inches.
>
> ***Air Temperature:*** Air temperatures in the study area range from an average January high of 54 °F to an average July high of 94 °F. The year-round average high temperature is approximately 75°F.
>
> ***Growing Season:*** The growing season (i.e., 50 percent probability of air temperature 28 °F or higher) in the study area is year round. The soil temperature regime is thermic.

3.4 Hydrology/Hydrologic Features

Littlejohns Creek and adjacent agricultural and urban runoff are the hydrologic features within the study area. Littlejohns Creek is a perennial stream whose headwaters are located approximately 20 miles east in the Sierra Nevada foothills. From its headwaters, Littlejohns Creek flows approximately 27 river-miles to the Farmington Flood Control Basin dam, approximately 5 miles east of the study area, which controls flows within Littlejohns Creek. Downstream from the study area, Littlejohns Creek flows into French Camp Slough, approximately 12 miles west of the study area and 3 miles south of the city of Stockton. French Camp Slough flows generally northwest for approximately 7 miles before it empties into Walker Slough which in turn empties into the San Joaquin River immediately southwest of the city of Stockton.

Runoff from surrounding agricultural lands and adjacent residences appears to provide a negligible contribution to hydrology within the study area. A constructed, unvegetated ditch drains south into a 24-inch culvert paralleling the east side of Stanley Road in the northeast corner of the study area. This ditch drains agricultural runoff from flood-irrigated row crops northeast of the study area through the culvert into Littlejohns Creek. Runoff from this culvert flows into Littlejohns Creek over existing rock revetment (Photograph 3-4, Appendix B). The drainage below the culvert outlet is over a constructed feature (i.e., rock revetment) and is not likely to qualify as waters of the United States because it: 1) is not a natural stream that has been altered; 2) was not excavated in waters of the United States; 3) does not have relatively permanent flowing or standing water; 4) does not connect two or more jurisdictional waters of the United States; and 5) does not drain natural water bodies (including wetlands) into the tributary system of a traditional navigable or interstate water (*Draft Guidance on Identifying Waters Protected by the Clean Water Act*, U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, April 2011).

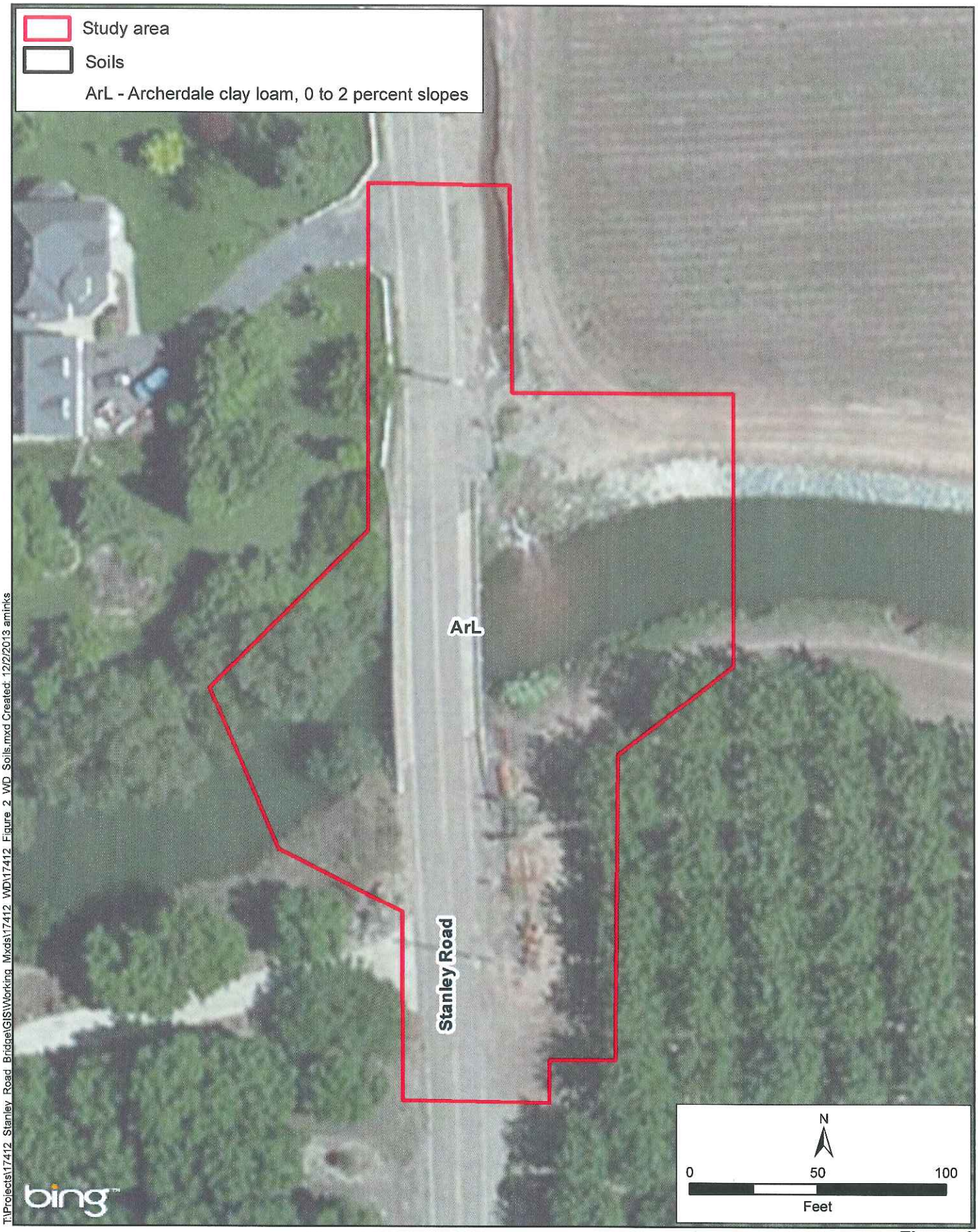
3.5 Soil Map Units

A description of soil map units was obtained from the U.S. Department of Agriculture's Web Soil Survey and described in the *Custom Soil Resource Report for San Joaquin County, California* (Soil Survey Staff NRCS 2012). Figure 2 shows the soil map units within the study area. Only one soil map unit occurs within the study area and is described as follows:

- **Archerdale clay loam, 0 to 2 percent slopes** –This is a non-hydric, well-drained alluvium derived from mixed parent material with a depth to restrictive layer and water table more than 80 inches.

3.6 Habitat Types

Habitat types were classified based on adaptations of vegetation descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988). Habitat types occurring within the study area include perennial stream, riparian, orchards, urban, and barren.



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Stanley Road Bridge Scour Mitigation Project

Figure 2
Soils Map Units

Perennial Stream

Littlejohns Creek, a perennial stream, bisects the study area. This stream and its banks appear to be highly managed for water control. Upstream of the Stanley Road Bridge, the banks of Littlejohns Creek have been rocked and contoured to a uniform slope of approximately 45 degrees. The banks of Littlejohns Creek downstream of the Stanley Road Bridge do not contain rock revetment, but are contoured to a relatively uniform slope. The aquatic habitat within Littlejohns Creek consists entirely of slow-moving, open water with scattered patches of water-meal (*Wolffia globosa*) (OBL[1]) and duckweed (*Lemna* sp.) (OBL). No emergent vegetation or wetlands are found in association with Littlejohns Creek within the study area. Common carp (*Cyprinus carpio*) and mosquito fish (*Gambusia affinis*) were observed feeding just below the surface of Littlejohns Creek.

Riparian

A narrow, fragmented band of riparian vegetation occurs downstream (i.e., west) of Stanley Road within the study area. Trees within this riparian area are limited to several small to mid-sized valley oaks (*Quercus lobata*) (FACU). Scattered patches of Himalayan blackberry (*Rubus armeniacus*) (FACU) are mixed with an herbaceous layer dominated by tall annual willow herb (*Epilobium brachycarpum*) (NI), short-pod mustard (*Hirschfeldia incana*) (NI), rip gut brome (*Bromus diandrus*) (NI), and other ruderal species.

Orchards

Orchards within the study area consisted entirely of walnut orchards with a ground cover largely dominated by nonnative annual grasses.

Barren

Barren areas within and adjacent to the study area consist of agricultural margins, access roads, and portions of rocked banks along Littlejohns Creek upstream (i.e., east) of Stanley Road. These areas are actively cleared of vegetation by mechanical and/or chemical means.

Urban

Urban habitat within the study area consists of Stanley Road, residences on the north and south side of Littlejohns Creek west of Stanley Road and associated driveways accessing residences within the study area. Vegetation within these areas consists largely of ornamental trees, shrubs, and lawns.

Section 4 Methods

4.1 Field Delineation

The delineation of waters of the United States within the study area was based on field observations of indicators for hydrophytic vegetation, hydrology, and hydric soils for wetlands, and on indicators of an OHWM for other waters of the United States. This method is consistent with the approach

[1] Wetland indicator status for plant species is based on *North American Digital flora: national Wetland Plant List, version 2.4.0 (Region 0)* (Lichvar and Kartesz 2009) and includes the following categories:
Facultative Upland (FACU) – Plants that usually occur in uplands, but also occur in wetlands
Obligate Upland (UPL) – Plants that occur almost always in uplands
Not an Indicator (NI) – Plants not included in Lichvar and Kartesz 2009

outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2008), and USACE regulations. Taxonomic nomenclature for plant species is in accordance with *The Jepson Manual* (Baldwin et. al. 2012). Wetland indicator status for plant species was confirmed using the National Wetland Plant List, version 2.4.0 (Lichvar and Kartesz 2009).

Soils were examined in order to assess field indicators of hydric soils in accordance with the criteria outlined in *Field Indicators of Hydric Soils in the United States* (US Department of Agriculture, Natural Resources Conservation Service 2010). Soil colors were determined using a Munsell® soil color chart. The hydric status of each soil map unit occurring within the study area was reviewed using the *Web Soil Survey* (Soil Survey Staff, Natural Resources Conservation Service 2012).

Delineation of "other waters" was based on presence of an OHWM as defined in USACE regulations (33 CFR 328.3 and 33 CFR 328.4) and whether the feature qualified as tributary to navigable 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.

The field delineation was conducted on April 22, 2012. Routine wetland determination data forms are presented in Appendix A.

The boundaries of Littlejohns Creek and the associated data point location 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 OHWM was delineated by hand onto an orthorectified color aerial photograph (Microsoft 2012). After the field delineation, GPS data and the field mapping were overlain on an aerial photograph of the study area to generate the delineation map. The boundaries and acreages of waters of the United States within the study area are illustrated in Figure 3.

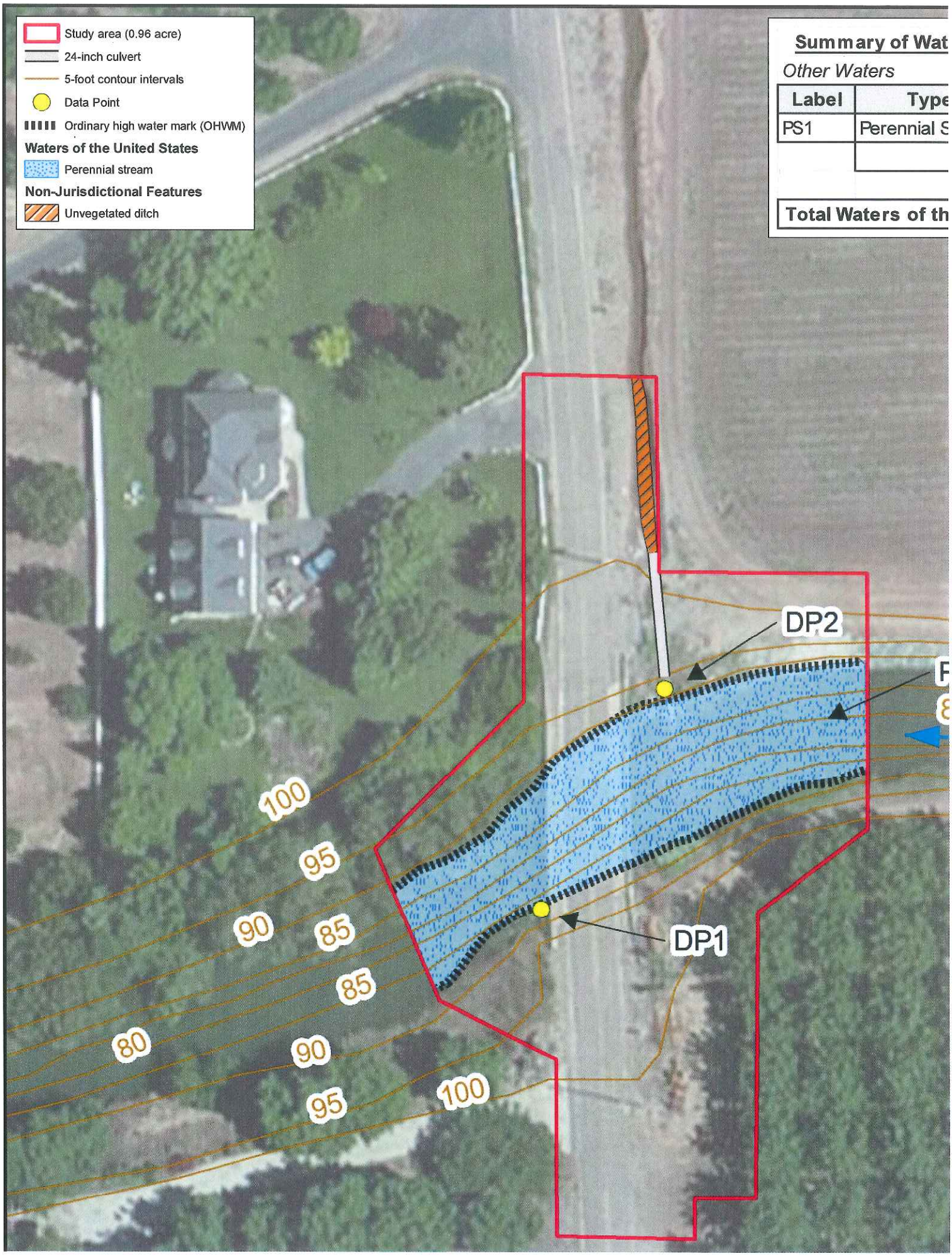
Section 5 Results

Waters of the United States within the study area occupy a total of 0.23 acres (209 linear feet), and are represented by one feature type: perennial stream (Figure 3). Appendix B contains representative photographs of waters of the United States.

5.1 Characterization of Delineated Features

Perennial Stream (PS1)

Perennial streams consist of natural drainages that usually convey waters throughout the year. These features exhibit indicators of being frequently flooded for a very long duration during the growing season. These indicators typically include watermarks, drift lines, sediment deposits, and drainage patterns. Also present is evidence of scour and deposition, a well-defined bed and bank, and a well-defined OHWM.



Summary of Wat

Other Waters

Label	Type
PS1	Perennial S

Total Waters of th

Littlejohns Creek is a perennial stream (PS1) within the study area that is shown as a blue line on the *Peters, California* 7.5-minute USGS topographic quadrangle. Within the study area, the active channel of Littlejohns Creek has been contoured to accommodate predictable regulated flows as a result of the upstream Farmington Flood Control Basin dam. Within the study area, the OHWM of Littlejohns Creek was evidenced by bed and bank, drift deposits, and water marks. Downstream of Stanley Road, where the banks of the stream are not covered by rock bank protection, shelving was evident. No wetland features were observed within the OHWM of Littlejohns Creek. Within the study area, Littlejohns Creek is approximately 55 feet wide and 209 feet long.

5.2 Conclusion

A total of 0.23 acres (209 linear feet) of waters of the United States was delineated within the study area. No wetlands were observed within the study area. Waters of the United States identified within this report are subject to verification by USACE. All interested parties shall treat the information contained herein as preliminary pending written verification of jurisdictional boundaries by the USACE.

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Appendix A

Routine Wetland Delineation Data Forms

North State Resources

Habitat Type Perennial Stream
Wetland Type NOT APPLICABLE

Wetland Determination Data Form - Arid West Region

Project/Site: Smyley Road Bridge City/County: San Joaquin Co. Sampling Date: 04/22/2012
Applicant/Owner: San Joaquin County State: CA Sampling Point: 1
Investigator(s): John W. Hunt
Landform (hillslope, terrace, etc.) Perrenial Stream Local relief (concave, convex, none) Concave Slope % 0-3
Subregion (LRR) C Soil Map Unit Name: Archerdale clay loam
Are climatic/hydrologic conditions on the site typical for this time of year? Yes *(If no, explain in remarks.)*
Are vegetation N, soil N, or hydrology N significantly disturbed? Are normal circumstances present? Yes
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? ____ Other waters? X

USACE Jurisdiction

Adjacent to Waters ____ Tributary to Waters X 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 ____

Remarks Perennial stream - Littlejohn's Creek: OHWM mapped as evidenced by defined bed & bank, scour, drift deposits and water marks.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			

Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
50%= ____ 20%= ____ Total Cover:			

Herb Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
50%= ____ 20%= ____ Total Cover:			

Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
50%= ____ 20%= ____ Total Cover:			

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

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators
____ Dominance Text is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1]*Indicators of hydric soil and wetland hydrology must be present.*

Hydrophytic Vegetation? ____

* OHWM of Perennial Stream.

Sampling Point 1

Soils

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

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

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

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

Remarks Perennial Stream - Littlejohns Creek.

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

Field Observations

Surface Water Present? Yes X No ____ Depth (inches) > 30 Wetland Hydrology? Yes X No ____

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

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

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

Remarks Perennial Stream - Littlejohn's Creek - OHWM evidenced by Bed & Bank, Watermarks, and Drift & Sediment Deposits

*Water Depth in Channel > 30" deep and 25-30 feet across.

North State Resources

Wetland Determination Data Form - Arid West Region

Habitat Type Rock Revetment Skirt
Wetland Type NA

Project/Site: Stanley Road Bridge City/County: San Joaquin Co. Sampling Date: 04/22/2012
Applicant/Owner: San Joaquin County State: CA Sampling Point: 2
Investigator(s): John W. Hunt
Landform (hillslope, terrace, etc.) Levee/Stream Bank Local relief (concave, convex, none) Sloped Slope % 30-40%
Subregion (LRR) C Soil Map Unit Name:
Are climatic/hydrologic conditions on the site typical for this time of year? Y *(If no, explain in remarks.)*
Are vegetation N, soil Y, or hydrology Y significantly disturbed? Are normal circumstances present? N - Rocked levee
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 Other waters? N

USACE Jurisdiction

Adjacent to Waters X Tributary to Waters ____ Isolated (with interstate commerce) ____ Isolated (non jurisdictional) ____
Explain: Nonjurisdictional upland drainage for irrigated row crops.

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 X Navigable Water ____

→ Rock revetment on levee below culvert.

Remarks

Rock revetment below culvert draining irrigated row crops through levee along Littlejohns Creek.

Vegetation

Tree Stratum (use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50%= ____ 20%= ____	Total Cover:		

Sapling/Shrub Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
50%= ____ 20%= ____	Total Cover:		

Herb Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
50%= ____ 20%= ____	Total Cover:		

Woody/Vine Stratum (use scientific names)	% Cover	Species?	Status
1.			
2.			
50%= ____ 20%= ____	Total Cover:		

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

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

Prevalence Index Worksheet

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

Prevalance Index = B/A = ____

Hydrophytic Vegetation Indicators
____ Dominance Text is >50%
____ Prevalence Index is ≤ 3.0[1]
____ Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation? ____

No vegetation
Rock.

Sampling Point 2

Soils

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

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

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

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

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

Indicators for Problematic Hydric Soils[3]

- ____ 1 cm Muck (A9) (LRR C)
- ____ 2 cm Muck (A10) (LRR B)
- ____ Reduced Vetric (F18)
- ____ Red Parent Materials (TF2)
- ____ Vegetated Sand/Gravel Bars
- ____ Other (Explain in Remarks)

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

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

Remarks No evidence of frequent flooding or long-duration ponding. - No soils rock revetment

Hydrology

Wetland Indicators

Primary Indicators (Any one indicator is sufficient)

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

Secondary Indicators (2 or more required)

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

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 No evidence of frequent flooding or long-duration ponding.

Appendix B

Representative Photographs

Photograph 1. View upstream (east) along Littlejohns Creek from Stanley Road. The banks have been contoured and armored with rock. Within the study area, streamside vegetation upstream of Stanley Road is regularly removed either chemically or mechanically. A row crop field is shown on the north bank (left side of photograph) and walnut orchards are shown on the south bank (right side of photograph).

Photograph 2. View downstream (west) along Littlejohns Creek from Stanley Road. The banks have been contoured but are not armored with rock. Within the study area, streamside vegetation downstream of Stanley Road is dominated by ruderal upland herbaceous vegetation and also includes scattered Himalayan blackberry and valley oaks.

Photograph 3. View north toward a constructed, unvegetated ditch that drains south into a 24-inch culvert (Photograph 4, below) paralleling the east side of Stanley Road in the northeast corner of the study area. This ditch drains agricultural runoff from flood-irrigated row crops northeast of the study area through the culvert into Littlejohns Creek. This culvert empties onto existing rock revetment along the banks of Littlejohns Creek. Runoff from this culvert flows into Littlejohns Creek over existing rock revetment. This drainage is not likely to qualify as waters of the United States because it: 1) is not a natural stream that has been altered; 2) was not excavated in waters of the United States; 3) does not have relatively permanent flowing or standing water; 4) does not connect two or more jurisdictional waters of the United States; and 5) does not drain natural water bodies (including wetlands) into the tributary system of a traditional navigable or interstate water (*Draft Guidance on Identifying Waters Protected by the Clean Water Act*, U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, April 2011).

Photograph 4. View of 24-inch culvert outlet that drains irrigation water from a constructed unvegetated ditch (Photograph 3, above) into Littlejohns Creek. This culvert empties onto existing rock revetment along the banks of Littlejohns Creek. Runoff from this culvert flows into Littlejohns Creek over existing rock revetment (. The drainage below the culvert outlet is over a constructed feature (i.e., rock revetment) and is not likely to qualify as waters of the United States because it: 1) is not a natural stream that has been altered; 2) was not excavated in waters of the United States; 3) does not have relatively permanent flowing or standing water; 4) does not connect two or more jurisdictional waters of the United States; and 5) does not drain natural water bodies (including wetlands) into the tributary system of a traditional navigable or interstate water (*Draft Guidance on Identifying Waters Protected by the Clean Water Act*, U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, April 2011).

Appendix D Representative Photographs

Photograph 1. View of the BSA upstream (east) along Littlejohns Creek from Stanley Road. The banks have been contoured and cleared of vegetation. The north bank (left side of photograph) has been armored with rock. Within the BSA, streamside vegetation upstream of Stanley Road is regularly removed either chemically or mechanically. A row crop field is present along the north bank and walnut orchards are present along the south bank (right side of photograph).

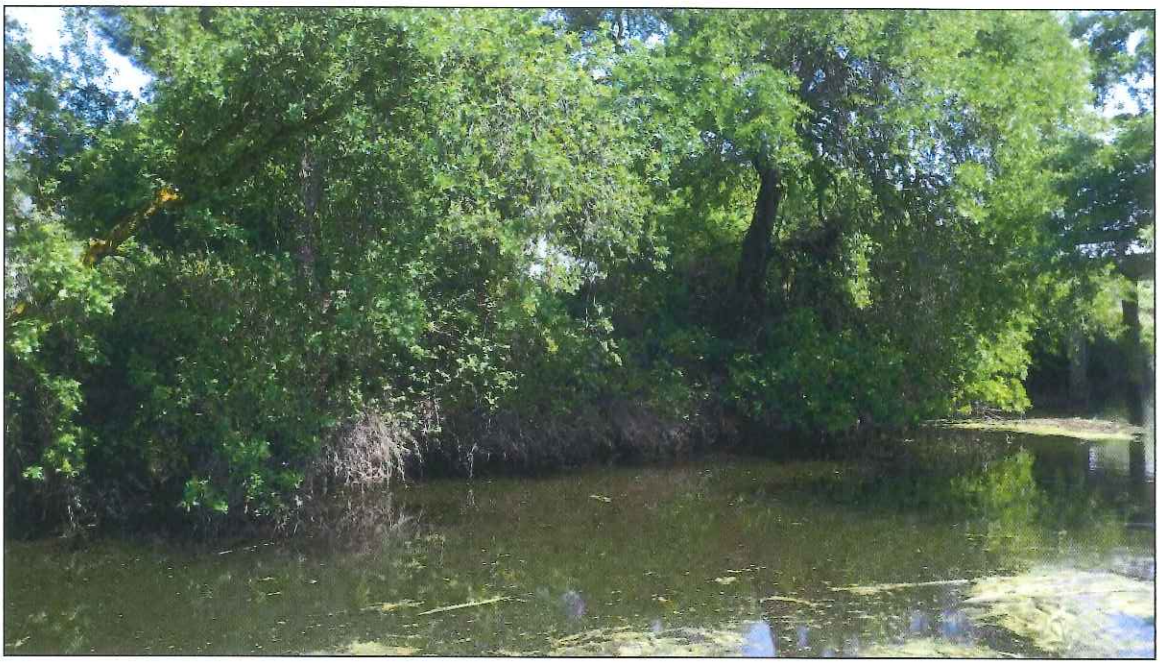
Photograph 2. View of the south bank of Littlejohns Creek upstream from Stanley Road. The bank at this location is primarily earthen with evidence of partial revetment (i.e., scattered pieces of broke concrete and rock). The vegetation along this bank appears to be regularly cleared. Himalayan blackberry is growing at along the banks at the toe of the levee. Walnut orchards can be seen in the background with spring growth of understory dominated by nonnative annual grasses.

Photograph 3. View of the north bank of Littlejohns Creek upstream from Stanley Road. The bank at this location has been revetted with rock. The vegetation along this bank is regularly cleared. Sparse patches Himalayan blackberry, wild radish (*Raphanus sativa*), and water hemlock (*Conium maculatum*) were observed growing up through crevices in the revetment. A disked field being prepared for row crops can be seen in the background.

Photograph 4. View of constructed, unvegetated agricultural drainage ditch north of Littlejohns Creek along the east side of Stanley Road. This ditch carries drainage from flood irrigated row crops to the north and east of the BSA and drains south into Littlejohns Creek.

Photograph 5. View of the BSA downstream (west) along Littlejohns Creek from Stanley Road. The banks have been contoured but are not armored with rock. Within the BSA, streamside vegetation downstream of Stanley Road is dominated by ruderal upland herbaceous vegetation and also includes scattered Himalayan blackberry and valley oaks. In-stream vegetation is limited to duckweed (*Lemna* sp.) and water-meal (*Wolffia globosa*) forming a thin floating vegetative film. No emergent vegetation or wetlands were observed within the BSA.

Photograph 6. View upstream toward the BSA and Stanley Road. The banks have been contoured and cleared of vegetation. The south bank (right side of photograph) is dominated by herbaceous ruderal upland species and sparse patches of Himalayan blackberry along the banks. Riparian trees can be observed hanging over the north bank (left side of photograph) of Littlejohns Creek. A thin film of duckweed and water-meal missed with small-size floating woody debris can be observed on the surface of Littlejohns Creek in the foreground.



Photograph 7. View of the north bank downstream of the Stanley Road Bridge. A narrow band of riparian trees can be observed hanging over the north bank (left side of photograph) of Littlejohns Creek. Vegetation here is dominated by a valley oak with and understory of Himalayan blackberry.

Photograph 8. View of the north bank of Littlejohns Creek below the Stanley Road Bridge. Both banks of Littlejohns Creek below the bridge are revetted. Vegetation underneath the bridge is dominated by Himalayan blackberry.

Photograph 9. View of proposed staging area immediately south of Littlejohns Creek on the east side of Stanley Road. This area is largely unvegetated and is regularly used as a staging and access area for agricultural operations adjacent the BSA.

Appendix E Review of Regionally Occurring Special-Status Species

Appendix E-1. Review of Regionally Occurring Special-Status Plant Species

Common Name *Scientific Name*	Status[1] (Fed/State/RPR)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Recurved larkspur *Delphinium recurvatum*	—/—/1B.2	Chenopod scrub, cismontane woodland, valley and foothill grassland/alkaline. Elevation: 9–2,460 feet. Blooming period: March–June.	No. Habitat for species is not present within BSA.
Large-flowered fiddleneck *Amsinckia grandiflora*	E/E/1B.1	Cismontane woodland, valley foothill grassland. Elevation: 700–1,600 feet. Blooming period: April–May.	No. Habitat for species is not present within BSA.
Ione mananita *Arctostaphylos myrtifolia*	T/—/1B.2	Chaparral , cismontane woodland/acidic, Ione soil, clay or sandy. Elevation: 100–1,600 feet. Blooming period: November–March.	No. Habitat for species is not present within BSA.
Succulent owl's clover *Castilleja campestris* ssp. *succulenta*	T/E/1B.2	Vernal pools (often acidic). Elevation: 150–2,300 feet. Blooming period: April-May.	No. Habitat for species is not present within BSA.
Palmate-bracted bird's-beak *Chloropyron palmatus*	E/E/1B.1	Chenopod scrub, valley and foothill grassland (alkaline). Elevation: 0-500 feet. Blooming period: May–October.	No. Habitat for species is not present within BSA.
Contra Costa goldfields *Lasthenia conjugens*	E/—/1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland , vernal pools /mesic. Elevation: 0–1,600 feet. Blooming period: March–June.	No. Habitat for species is not present within BSA.
Sacramento Orcutt grass *Orcuttia viscida*	E/E/1B.1	Vernal pools. Elevation: 90–310 feet. Blooming period: April–July.	No. Habitat for species is not present within BSA.
Delta button-celery *Eryngium racemosum*	—/E/1B.1	Riparian scrub in vernally mesic clay depressions. Elevation: 9–98 feet. Blooming period: June–October.	No. No appropriate microsites (i.e. clay soils) not present within BSA.
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	—/—/1B.2	Valley and foothill grassland (mesic). Elevation: 98–751 feet. Blooming period: March–May.	No. Habitat for species is not present within BSA.
Legenere *Legenere limosa*	—/—/1B.1	Vernal pools. Elevation: 3–2,886 feet. Blooming period: April–June.	No. Habitat for species is not present within BSA.

Common Name *Scientific Name*	Status[1] (Fed/State/RPR)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Pincushion navarretia *Navarretia myersii* ssp. *myersii*	—/—/1B.1	Vernal pools/often acidic. Elevation: 65–1,082 feet. Blooming period: April–May.	No. Habitat for species is not present within BSA.
Sanford's arrowhead *Sagittaria sanfordii*	—/—/1B.2	Marshes and swamps (assorted shallow freshwater). Elevation: 0–2,132 feet. Blooming period: May–October.	No. Habitat for species is not present within BSA.
Suisun Marsh aster *Symphyotrichum lentum*	—/—/1B.2	Marshes and swamps (brackish and freshwater). Elevation: 0–9 feet. Blooming period: May–November.	No. Habitat for species is not present within BSA.
Greene's tuctoria *Tuctoria greenei*	E/R/1B.1	Vernal pools. Elevation: 98–3,509 feet. Blooming period: May–July (September).	No. Habitat for species is not present within BSA.

[1]Federal and State Codes: E = Endangered; T = Threatened; R = Rare.

RPR Codes and Extensions:

1B. Plants rare, threatened, or endangered in California and elsewhere.
- xx.1 Seriously endangered in California
- xx.2 Fairly endangered in California

[2]No = The BSA and immediate vicinity do not support habitat for the species. The species was not observed within the BSA.

Appendix F-2. Review of Regionally Occurring Special-Status Animal Species

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Invertebrates			
Conservancy fairy shrimp *Branchinecta conservatio*	E/—	Highly turbid, large vernal pools.	No. Habitat for species is not present within BSA.
Vernal pool fairy shrimp *Branchinecta lynchi*	T/—	Grass or mud-bottomed swales, earth slump or basalt-flow depression pools in grasslands.	No. Habitat for species is not present within BSA.
Vernal pool tadpole shrimp *Lepidurus packardi*	E/—	Grass or mud-bottomed swales in grasslands on old alluvial soils underlain by hardpan.	No. Habitat for species is not present within BSA.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/—	Elderberry shrubs associated with riparian forests that occur along rivers and streams.	No. No elderberry shrubs present within BSA.
Fishes			
Central Valley fall/late fall-run Chinook salmon ESU *Oncorhynchus tshawytscha*	—/SC	Spawn and rear in Sacramento and San Joaquin rivers and suitable perennial tributaries. Requires cool water temperatures for spawning, egg-incubation and juvenile rearing. Spawn in riffles with gravel and cobble. Spawn in riffles with gravel and cobble.	No. Habitat for species is not present within BSA.
Chinook salmon - Central Valley spring-run ESU *Oncorhynchus tshawytscha*	T/T	Enter the Sacramento River from late March through September, holding in cool water habitats through the summer, then spawning from mid-August through early October. Remnant runs remain in Butte, Mill, Deer, Antelope, and Beegum Creeks, tributaries to the Sacramento River.	No. Habitat for species is not present within BSA.

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Steelhead - Central Valley DPS *Oncorhynchus mykiss irideus*	T/—	Spawn and rear in Sacramento and San Joaquin rivers and their tributaries. Tends primarily to use tributaries of the Sacramento, Feather, Yuba, and lower American river drainages. Populations in the San Joaquin drainage have been reduced to a few small, isolated wild runs and some hatchery stock. Require cool, swift shallow water; clean, loose gravel for spawning; and runs and suitable large pools in which to rear and over-summer.	No. Habitat for species is not present within BSA.
Delta smelt *Hypomesus transpacificus*	T/E	Estuarine systems in the Sacramento-San Joaquin Delta. During low outflow years, in reaches with slow flow.	No. Habitat for species is not present within BSA.
Hardhead ***Mylopharodon conocephalus***	**—/SC**	**Prefers deep, rock and sand-bottomed pools of small to large rivers. Generally found in clear, deep, well-oxygenated streams with low flow.**	**Yes, low potential. Low quality habitat for species is present within BSA. Species may occur in very small numbers. Species presence and persistence is questionable as a result of poor quality habitat in conjunction with competition with non-native warm-water species.**
Amphibians			
California tiger salamander *Ambystoma californiense*	T/T;SC	Vernal or temporary pools in annual grasslands, or open stages of woodlands.	No. Habitat for species is not present within 1.5 miles of the BSA.
Western spadefoot *Spea hammondii*	—/SC	Grasslands with temporary pools.	No. Habitat for species is not present within 1.5 miles of the BSA.
California red-legged frog *Rana draytonii*	T/SC	Require aquatic habitat for breeding, also uses a variety of other habitat types including riparian and upland areas. Adults utilize dense, shrubby or emergent vegetation associated with deep-water pools with fringes of cattails & dense stands of overhanging vegetation.	No. BSA occurs outside of species range.
Foothill yellow-legged frog *Rana boylii*	—/SC	Cool, fast moving rocky streams in a variety of habitats.	No. Habitat for species is not present within 1.5 miles of the BSA.

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
		Reptiles	
Western pond turtle ***Emys marmorata***	**—/SC**	**Slow water aquatic habitat with available basking sites. Hatchlings require shallow water with dense submergent or short emergent vegetation. Requires an upland oviposition site in the vicinity of the aquatic site.**	**Yes, low potential. Low quality habitat for species is present within BSA. Emergent structure is not present within the BSA and basking sites are limited to the relatively steep and narrow banks of Littlejohns Creek.**
Giant garter snake *Thamnophis gigas*	T/T	Freshwater marshes and low gradient streams with emergent vegetation, upland basking sites and adequate active-season (May-October) water; adapted to drainage canals and irrigation ditches with mud substrate.	NO. The BSA is within the known range of this species. The nearest CNDDB record is a historic account located approximately 6 miles northeast along Duck Creek. No observations of this population have been recorded in the last 20 years, and the population was presumed extirpated after extensive surveys in the 1980s and 1990s.
		Birds	
White-tailed kite ***Elanus leucurus***	**—/FP**	**Nests in tall shrubs and trees, forages in grasslands, agricultural fields and marshes.**	**Yes, medium potential. Trees and shrubs within the BSA provide nesting habitat.**
Northern harrier *Circus cyaneus*	—/SC	Forages in marshes, grasslands and ruderal habitats; nests in extensive marshes and wet fields.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Swainson's hawk ***Buteo swainsoni***	**—/T**	**Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; forages in adjacent livestock pasture, grassland, or grain fields.**	**Yes, high potential. Trees and shrubs within 0.5 mile of the BSA provide nesting habitat. A pair of Swainson's hawks was observed approximately 0.6 mile northeast of the BSA.**
Bald eagle *Haliaeetus leucocephalus*	—/E;FP	Uncommon to common in riverine and open wetland habitats. Perches high in large, stoutly limbed trees, on snags or broken-topped trees, or on rocks near water. Roosts communally in winter in dense, sheltered, remote conifer stands.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Golden eagle *Aquila chrysaetos*	—/FP	Breeds on cliffs or in large trees or electrical towers, forages in open areas.	No. Nesting habitat for species is not present within 500 feet of the BSA.

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
California black rail *Laterallus jamaicensis coturniculus*	—/T;FP	Coastal and inland marsh habitat.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	C/E	Valley foothill and desert riparian habitats in scattered locations in California; requires densely foliaged, deciduous trees and shrubs, especially willows, for roosting and nesting.	No. Nesting habitat for species is not present within 0.5 mile of the BSA.
Burrowing owl *Athene cunicularia*	**—/SC**	**Open grasslands and ruderal habitats. Requires burrows and similar habitat for roosting and nesting cover. May dig burrows in soft soil, but generally occupies existing burrows created by other species or manmade burrow structures.**	**Yes, low potential. Although no potential burrowing owl habitat is found within the BSA, low quality potential habitat is found along the boundary of the row crop field immediately northeast of the BSA.**
Long-eared owl *Asio otus*	—/SC	Dense riparian and live oak thickets near meadow edges, and nearby woodland and forest habitats; also found in dense conifer stands at higher elevations.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Short-eared owl *Asio flammeus*	—/SC	Breeds in dense vegetation in open grassland and marshes.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Purple martin *Progne subis*	—/SC	Breeding habitat includes old-growth, multi-layered, open forest and woodland with snags; forages over riparian areas, forest, and woodlands.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Loggerhead shrike *Lanius ludovicianus*	**—/SC**	**Forages in open grassland habitats throughout the Central Valley of California. Nests in shrubs and trees.**	**Yes, medium potential. Trees and shrubs within the BSA provide nesting habitat and the irrigated row crops to the northwest provide foraging habitat.**
California yellow warbler *Dendroica petechia brewsteri*	**—/SC**	**Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.**	**Yes, low potential. Low quality nesting habitat is present as valley oak and a thicket of Himalayan blackberry undergrowth in the northwestern corner of the BSA. Himalayan blackberry in this area will be partly removed during project implementation.**

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Yellow-breasted chat ***Icteria virens***	**—/SC**	**Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.**	**Yes, low potential. Low quality nesting habitat is present as valley oak and a thicket of Himalayan blackberry undergrowth in the northwestern corner of the BSA. Himalayan blackberry in this area will be partly removed during project implementation.**
Tricolored blackbird ***Agelaius tricolor***	**—/SC**	**Breeds near fresh water, primarily in dense emergent vegetation, but may also nest in blackberry, rose, willow thickets and small trees in open country, rangeland, cropland and near marshes or wetlands.**	**Yes, low potential. Low quality nesting habitat is present as riparian thickets of Himalayan blackberry undergrowth in the western portion of the BSA. Vegetation in this area will be partly removed during project implementation.**
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	—/SC	Nests in emergent vegetation of swamps, marshes and wetlands.	No. Nesting habitat for species is not present within 500 feet of the BSA.
Mammals			
Riparian (=San Joaquin Valley) woodrat *Neotoma fuscipes riparia*	E/SC	Riparian habitat and other areas supporting mixtures of trees and brush along the mainstem of the San Joaquin River.	No. BSA is outside of the known range of this species.
Western red bat *Lasiurus blossevillii*	—/SC	Generally roosts in trees along edge habitats. Prefers roost sites over dark ground cover with good cover above and open below.	No. Low quality roosting habitat is present as medium-sized trees along the northwestern boundary of the BSA, but this habitat will not be disturbed by project activity.
Townsend's big-eared bat *Corynorhinus townsendii*	—/SC	Roosts in colonies in caves, mines, tunnels, or buildings in mesic habitats. The species forages along habitat edges, gleaning insects from bushes and trees. Habitat must include appropriate roosting, maternity and hibernacula sites free from disturbance by humans.	No. Roosting habitat for this species is not present within BSA.
Pallid bat *Antrozous pallidus*	—/SC	Forages over many habitats; roosts in buildings, large oaks or redwoods, rocky outcrops and rocky crevices in mines and caves.	No. Roosting habitat for this species is not present within BSA.

Common Name *Scientific Name*	Status [1] (Fed/State)	General Habitat Description	Potential for Adverse Effects (Yes/No?)[2]
Western mastiff bat *Eumops perotis californicus*	—/SC	Forages over many habitats, requires tall cliffs or buildings for roosting.	No. Roosting habitat for this species is not present within BSA.
Riparian brush rabbit *Sylvilagus bachmani riparius*	E/E	Riparian areas with dense shrub layer, low-growing vines, some tall shrubs, and scrubby trees throughout San Joaquin Valley.	No. BSA is outside of the known range of this species.
Ringtail *Bassariscus astutus*	—/FP	Riparian habitats and in brush stands of most forest and shrub habitats. Dens in rock recesses, hollow trees, logs, snags, abandoned burrows or woodrat nests.	No. Denning habitat for species is not present within BSA.
San Joaquin kit fox *Vulpes macrotis mutica*	E/T	Open habitats in deserts, and grasslands.	No. Habitat for species is not present within BSA.
American badger *Taxidea taxus*	—/SC	Herbaceous, shrub, and open stages of most habitats with dry, friable soils.	No. Habitat for species is not present within BSA.

[1]Federal and State Codes: E = Endangered; T = Threatened; C = Candidate; SC = Species of Special Concern; FP = Fully Protected Species.

[2] No = The BSA and immediate vicinity do not support suitable habitat for the species.

Low = The BSA and immediate vicinity provide only limited or marginal habitat, or may be outside the characteristic range and/or very rare in project region. The species was not observed within the BSA.

Medium = The BSA and/or immediate vicinity provides suitable, but not ideal habitat conditions. The species was not observed within the BSA.

High = The BSA and/or immediate vicinity provides ideal habitat conditions. The species was observed in BSA or is known to occur in the BSA.

Bold font = The project has the potential to adversely affect this species.

CATEGORICAL EXEMPTION/CATEGORICAL EXCLUSION DETERMINATION FORM

10-SJ- San Joaquin County Dist.-Co.-Rte. (or Local Agency)	**BPMP 5929(224)** Federal-Aid Project No. (Local Project)/Project No.

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

San Joaquin County (County) proposes to install scour protection and revetment at Stanley Road bridge (29C-112) over Littlejohns Creek near Farmington in San Joaquin County, California. Scope of work includes excavation, fill, rock slope protection (RSP), and temporary cofferdams. No additional right of way will be acquired for this project. The purpose of this project is to prevent bridge failure and provide a uniform channel along Littlejohns Creek. This project is needed due to scour and degradation beneath the bridge.

CEQA COMPLIANCE *(for State Projects only)*

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

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

CALTRANS CEQA DETERMINATION (Check one)

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

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

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

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

Not Applicable

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

NEPA COMPLIANCE

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

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

CALTRANS NEPA DETERMINATION (Check one)

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

- ☐ **23 CFR 771.117(c): activity (c)(___)**
- ☐ **23 CFR 771.117(d): activity (d)(___)**
- ☒ **Activity 1 listed in Appendix A of the MOU between FHWA and the State**

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

Julie Myrah	**Parminder Singh**
Print Name: Environmental Branch Chief	Print Name: DLA Engineer
Julie Myrah 6/13/14	6/16/14
Signature Date	Signature Date
Date of Categorical Exclusion Checklist completion: 5/30/14	Date of ECR or equivalent : 6/6/14

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

CATEGORICAL EXEMPTION/CATEGORICAL EXCLUSION DETERMINATION FORM
Continuation Sheet

10-SJ- San Joaquin County Dist.-Co.-Rte. (or Local Agency)	BPMP 5929(224) Federal-Aid Project No. (Local Project)/Project No.

Continued from page 1:

Environmental Provisions:

- Biological Resources:
  - All aquatic and upland riparian habitats shall be clearly delineated with Environmentally Sensitive Area (ESA) flagging and/or signage within the Biological Study Area (BSA). Flagging and signage shall remain in place until construction activities are complete and shall be removed upon completion of construction. No construction activities or personnel shall be allowed to enter the avoidance areas.
  - Erosion control measures shall be installed at the bypass outflow to minimize potential for erosion of the streambed downstream of the work area. Erosion control measures that employ monofilament netting shall be prohibited within the work area.
  - Prior to in-channel work and during the dewatering activities, a qualified biologist shall monitor the area and remove any fish or aquatic species from within the work area. All fish or aquatic species removed from the work area shall be documented and safely relocated into Littlejohns Creek outside the work area.
  - A maximum 0.2 inch (5 millimeter) diameter mesh screen will be used to cover the intake pipe on all pumps used for dewatering the work area within the cofferdams.
  - Vegetation clearing shall be limited to the minimum area necessary within 200 ft of the banks of Littlejohns Creek.
  - Prior to construction, a qualified biologist will conduct environmental awareness training for all construction personnel concerning biological issues including how to avoid impacts to sensitive species.
  - Pre-construction surveys for western pond turtles (WPT) and nest sites shall be conducted within 15 days to construction. If any active nest sites or overwintering WPT are identified, appropriate conservation measures shall be implemented per the NES April 2014. If WPT are encountered during construction, cease activity in immediate vicinity until individuals have left the work area.
  - If construction occurs during nesting season (February 1 – August 31), then pre-construction surveys for migratory birds and raptors shall be conducted within 15 days prior. Surveys for Swainson's hawk will follow the recommended timing and methodology outlined by the Swainson's hawk Technical Advisory Committee. During the nesting period, active raptor nests shall be avoided by 600 feet and other migratory bird nests shall be avoided by 100-250 feet, as determined appropriate in guidelines regarding raptors, passerines, or other specific avian species. These distances shall be clearly delineated with ESA fencing per the NES(MI) April 2014.
- Cultural Resources:
  - If cultural materials are discovered during construction, including human remains, do not disturb the resources and immediately stop all work within a 60-foot radius of the discovery and within any nearby area suspected to overlie the discovery. Immediately notify all appropriate parties including the Caltrans District 10 Local Assistance archaeologist, the Local Assistance Engineer (DLAE), and the County Coroner if human remains are found. Do not move cultural materials or take them from the job site. Do not resume work within the discovery area until authorized. Additional protocols for human remains are given in the State Health and Safety Code Section §7050.5 and §5097.98.
- Hazardous Waste:
  - If excess soils will be disposed of, use Caltrans Standard Special Provision (SSP) 7-1.02K(6)(j)(iii) Earth Material Containing Lead.
- Water Quality:
  - Erosion control measures shall conform to Caltrans Standard Specifications and SSP 20-2 and 20-3. Measures shall include a Storm Water Pollution Prevention Plan (SWPPP).
  - All waters of the U.S. that are temporarily affected by project construction shall be restored as close as practicable to their original contour and conditions within 10 days of the completion of construction activities. This includes applying weed-free mulch to disturbed areas to reduce potential for short-term erosion.
  - Construction specifications shall include measures to minimize the potential for adverse affects resulting from accidental spills of pollutants (e.g. fuel, oil, grease).
  - Equipment and hazardous materials shall be stored and fueled a minimum of 50 feet away from surface water features.
- If scope of work changes, environmental reevaluation will be needed

Permits:
Section 404 Nationwide permit from Corps
Section 401 Water Quality Certification from RWQCB
Section 1602 Streambed Alteration Agreement

Local Assistance NEPA Environmental Commitment Record

Project Name Stanley Road Bridge Scour Repair

Local Agency and Contact Name San Joaquin County – Mark Hopkins

Federal Aid Number BPMP 5929(224)

Local Agency Phone and E-mail (209) 468-3085, [mhopkins@sjgov.org]

Project Description San Joaquin County (County) proposes to install scour protection and revetment at Stanley Road bridge (29C-112) over Littlejohns Creek near Farmington in San Joaquin County, California. Scope of work includes excavation and fill, rock slope protection (RSP), and temporary cofferdams. No additional right of way will be acquired for this project. The purpose and need of this project is to improve the existing channel scour and prevent further degradation within Littlejohns Creek.

Approx. Start Date of Construction Summer 2015

Task and Brief Description	Page of CE	Responsible Party	Timing/ Phase	Specific Action(s) Taken to Comply with Task	Local Agency Certification of Task Completion		Remarks
					Initial	Date	
Biological Commitments							
All aquatic and upland riparian habitats shall be clearly delineated with Environmentally Sensitive Area (ESA) flagging and/or signage within the Biological Study Area (BSA). Flagging and signage shall remain in place until construction activities are complete and shall be removed upon completion of construction. No construction activities or personnel shall be allowed to enter the avoidance areas.	2	Local Agency / Contractor	Before and during construction				
Erosion control measures shall be installed at the bypass outflow to minimize potential for erosion of the streambed downstream of the work area. Erosion control measures that employ monofilament netting shall be prohibited within the work area.	2	Local Agency / Contractor	Before and during construction				
Prior to in-channel work and during the dewatering activities, a qualified biologist shall monitor the area and remove any fish or aquatic species from within the work area. All fish or aquatic species removed from the work area shall be documented and safely relocated into Littlejohns Creek outside the work area.	2	Local Agency / Contractor	Before and during construction				
A maximum 0.2 inch (5 millimeter) diameter mesh screen will be used to cover the intake pipe on all pumps used for dewatering the work area within the cofferdams.	2	Local Agency / Contractor	During construction				

Task and Brief Description	Page of CE	Responsible Party	Timing/ Phase	Specific Action(s) Taken to Comply with Task	Local Agency Certification of Task Completion		Remarks
					Initial	Date	
Vegetation clearing shall be limited to the minimum area necessary within 200 ft of the banks of Littlejohns Creek.	2	Local Agency / Contractor	During construction				
Prior to construction, a qualified biologist will conduct environmental awareness training for all construction personnel concerning biological issues including how to avoid impacts to sensitive species.	2	Local Agency / Contractor	Before construction				
Pre-construction surveys for western pond turtles (WPT) and nest sites shall be conducted within 15 days to construction. If any active nest sites or overwintering WPT are identified, appropriate conservation measures shall be implemented per the NES April 2014. If WPT are encountered during construction, cease activity in immediate vicinity until individuals have left the work area.	2	Local Agency / Contractor	Before and during construction				
If construction occurs during nesting season (February 1 – August 31), then pre-construction surveys for migratory birds and raptors shall be conducted within 15 days prior. Surveys for Swainson's hawk will follow the recommended timing and methodology outlined by the Swainson's hawk Technical Advisory Committee. During the nesting period, active raptor nests shall be avoided by 600 feet and other migratory bird nests shall be avoided by 100-250 feet, as determined appropriate in guidelines regarding raptors, passerines, or other specific avian species. These distances shall be clearly delineated with ESA fencing per the NES(MI) April 2014.	2	Local Agency / Contractor	Before and during construction				
Cultural Resource Commitments							
If cultural materials are discovered during construction, including human remains, do not disturb the resources and immediately stop all work within a 60-foot radius of the discovery and within any nearby area suspected to overlie the discovery. Immediately notify all appropriate parties including the Caltrans District 10 Local Assistance archaeologist, the Local Assistance Engineer (DLAE), and the County Coroner if human remains are found. Do not move cultural materials or take them from the job site. Do not resume work within the discovery area until authorized. Additional protocols for human remains are given in the State Health and Safety Code Section §7050.5 and §5097.98.	2	Local Agency / Contractor	During construction				

Task and Brief Description	Page of CE	Responsible Party	Timing/ Phase	Specific Action(s) Taken to Comply with Task	Local Agency Certification of Task Completion		Remarks
					Initial	Date	
Hazardous Waste Commitments							
If excess soil will be disposed, use Caltrans Standard Special Provision (SSP) 7-1.02K(6)(j)(iii) Earth Material Containing Lead.	2	Local Agency / Contractor	During and after construction				
Water Quality Commitments							
Erosion control measures shall conform to Caltrans Standard Specifications and SSP 20-2 and 20-3. Measures shall include a Storm Water Pollution Prevention Plan (SWPPP).	2	Local Agency / Contractor	Before and during construction				
All waters of the U.S. that are temporarily affected by project construction shall be restored as close as practicable to their original contour and conditions within 10 days of the completion of construction activities. This includes applying weed-free mulch to disturbed areas to reduce potential for short-term erosion.	2	Local Agency / Contractor	During and after construction				
Construction specifications shall include measures to minimize the potential for adverse affects resulting from accidental spills of pollutants (e.g. fuel, oil, grease):	2	Local Agency / Contractor	During construction				
Equipment and hazardous materials shall be stored and fueled a minimum of 50 feet away from surface water features.	2	Local Agency / Contractor	During construction				
Other Commitments							
If scope of work changes, environmental reevaluation will be needed	2	Local Agency	Before and during construction	Contact Caltrans if scope of work changes.			
Permits							
Section 404 Nationwide permit from Corps	2	Local Agency	Before construction	Provide Caltrans copy of permit within 2 weeks of approval.			
Section 401 Water Quality Certification from RWQCB	2	Local Agency	Before construction	Provide Caltrans with copy of certification within 2 weeks of approval.			
Section 1602 Streambed Alteration Agreement	2	Local Agency	Before construction	Provide Caltrans copy of agreement within 2 weeks of approval.			

Replace section 7-1.02K(6)(j)(iii) with:

7-1.02K(6)(j)(iii) Earth Material Containing Lead

Section 7-1.02K(6)(j)(iii) includes specifications for handling, removing, and disposing of earth material containing lead.

Submit a lead compliance plan.

Lead is present in earth material on the job site. The average lead concentrations are below 1,000 mg/kg total lead and below 5 mg/L soluble lead. The material on the job site:

1. Is not a hazardous waste
2. Does not require disposal at a permitted landfill or solid waste disposal facility

Lead is typically found within the top 2 feet of material in unpaved areas of the highway. Reuse all of the excavated material on the right-of-way. Haul and place the surplus excavated material on the right-of-way at _____.

Lead has been detected in material to a depth of _____ in unpaved areas of the highway. Levels of lead found on the job site range from less than ____ to ____ mg/kg total lead with an average concentration of _____ mg/kg total lead as analyzed by EPA test method 6010 or EPA test method 7000 series and based upon a 95 percent upper confidence limit. Levels of lead found within the project limits have a predicted average soluble concentration of ____ mg/L as analyzed by the California Waste Extraction Test and based upon a 95 percent upper confidence limit.

Handle the material under all applicable laws, rules, and regulations, including those of the following agencies:

1. Cal/OSHA
2. CA RWQCB, Region__—_____
3. CA Department of Toxic Substances Control
4. _____

Manage the material as shown in the following table.

Earth Material Management

Location	Depth	Management requirements

If the material is disposed of:

1. Disclose the lead concentration of the material to the receiving property owner when obtaining authorization for disposal on the property
2. Obtain the receiving property owner's acknowledgment of lead concentration disclosure in the written authorization for disposal
3. You are responsible for any additional sampling and analysis required by the receiving property owner

If you choose to dispose of the material at a commercial landfill:

1. Transport it to a Class III or Class II landfill appropriately permitted to receive the material
2. You are responsible for identifying the appropriately permitted landfill to receive the material and for all associated trucking and disposal costs, including any additional sampling and analysis required by the receiving landfill

FILED
ASSESSOR RECORDER
COUNTY CLERK
KENNETH W. BLAKEMORE
2014 OCT 13 AM 10:51
SAN JOAQUIN COUNTY
BY amy M. Rivera

NOTICE OF DETERMINATION

TO: ☒ Office of Planning and Research
P.O. Box 3044
1400 Tenth Street (95814)
Sacramento, California 95812-3044

☒ County Clerk
San Joaquin County
44 N. San Joaquin Street Suite 260,
Stockton, California 95202

FROM: San Joaquin County Department of Public Works (Lead Agency)
1810 E. Hazelton Avenue
Stockton, California 95205
Contact: Amy Spitzer, Assistant Planner
Phone: (209) 468-9494

SUBJECT: Filing of Notice of Determination in Compliance with Section 21152 of the Public Resources Code

Project Title: Stanley Road Bridge Scour Mitigation Project

State Clearinghouse Number: 2014072064

Project Location: Stanley Road Bridge (29C-112) south of State Route 4 over South Littlejohns Creek

Project Description: Please view attached project description.

This is to advise that the Lead Agency has approved the above-described project on October 7, 2014 and has made the following determinations regarding the above-described project.

1. The project ☐ will ☒ will not have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☒ A Mitigated Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures ☐ were ☒ were not made a condition of the approval of this project.
4. A mitigation reporting or monitoring plan ☐ was ☒ was not adopted for this project.
5. A Statement of Overriding Considerations ☐ was, ☒ was not, adopted for this project.
6. Findings ☒ were ☐ were not made pursuant to the provisions of CEQA.

This is to certify that the Mitigated Negative Declaration is available to the general public at: San Joaquin County Department of Public Works, 1810 E. Hazelton Avenue, Stockton, California.

Signature (Public Agency)	Date	Title
	10/10/14	Assistant Planner

Date received for filing and posting at OPR: OCT 13 2014

Before the Board of Supervisors

County of San Joaquin, State of California

B-14-572

MOTION: **Ruhstaller/Bestolarides/5**

BOARD ORDER ADOPTING AN INITIAL STUDY/MITIGATED NEGATIVE DECLARATION FOR THE STANLEY ROAD BRIDGE SCOUR MITIGATION PROJECT

THIS BOARD OF SUPERVISORS hereby adopts the Initial Study/Mitigation Negative Declaration for the Stanley Road Bridge Scour Mitigation Project.

I HEREBY CERTIFY that the above order was passed and adopted on 10/07/2014 by the following vote of the Board of Supervisors, to wit:

AYES: **Villapudua, Bestolarides, Ruhstaller, Vogel, Elliott**

NOES: **None**

ABSENT: **None**

ABSTAIN: **None**

MIMI DUZENSKI
Clerk of the Board of Supervisors
County of San Joaquin,
State of California

TE-14H053-ME3

Project Description
Stanley Road Bridge No. 29C-112
Scour Mitigation Project

PROJECT LOCATION

Stanley Road Bridge (29C-112) across the Littlejohns Creek

EXISTING SETTING

Stanley Road Bridge is a three span structure with a continuous reinforced concrete (RC) flat slab on RC wall piers and RC wall abutments with "U" wing-walls. The bridge is 32 feet wide and 86 feet in length. The bridge has a history of scour and has been noted in past State Bridge Inspection Reports.

BACKGROUND

Stanley Road Bridge was constructed in 1974. The State Department of Transportation (Caltrans) has determined that the banks have eroded over the years and exposed 3 feet of the steel pile cans at Bent No. 2 and 1.3 feet of the steel cans of piles 3 and 4 and at Bent No. 3. Countermeasures such as the installation of rock rip rap and gabions were implemented by the County in 1982 and 1988, respectively. The installed scour countermeasures are continuously deteriorating, compromising the ability to protect the embankments and increasing scour susceptibility. The gabion slope protection at Abutment No. 1 had deteriorated along the base near Bent No. 2 and was first reported in a routine Bridge Inspection Report (BIR) dated 2/28/2001. Caltrans recommended the replacement of the damaged gabion slope protection and the need to properly protect the exposed pile cans at Bent Nos. 2 and 3.

PROPOSED PROJECT DESCRIPTION

The County is proposing to improve existing scour protection within the project area. The existing earthen channel of Littlejohns Creek at the Stanley Road Bridge will be cut to a maximum depth of 1.5-4.5 feet, and then filled with a layer of Caltrans Light Class Rock Slope Protection (RSP), matching both upstream and downstream conditions and channel grade. RSP will be installed on approximately 0.14 acre (78 linear feet) of the existing earthen channel of Littlejohns Creek at the bridge. An approximately 0.44-acre Temporary Construction Easement would be used for construction access, temporary cofferdams, in-stream access ramp, and staging. The existing Stanley Road right-of-way (approximately 0.33 acre) would be used for project access. Between 4 and 10 Construction is expected to be completed within 28 days. In-stream construction work is not expected to exceed 18 days.

ALTERNATIVES CONSIDERED

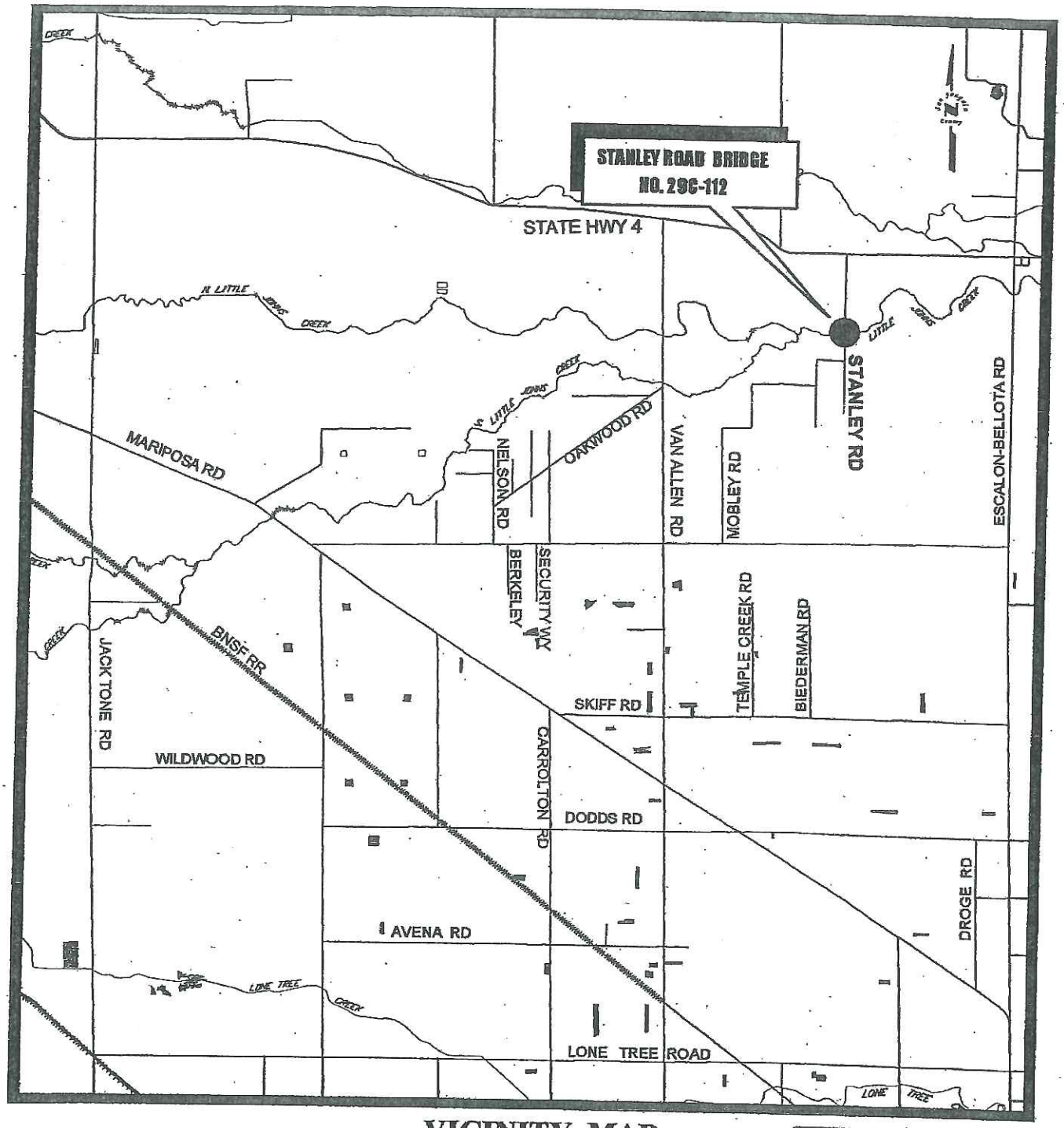
Alternatives considered: "no build".

NATURE

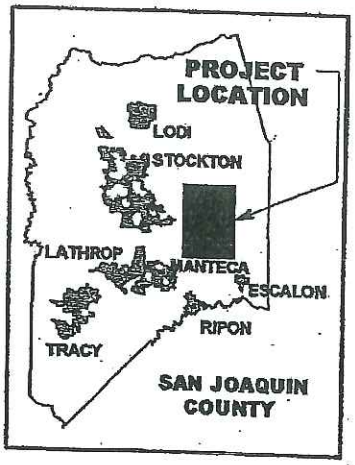
The 0.96-acre Biological Study Area (BSA) is located on and adjacent to Stanley Road at its intersection with Littlejohns Creek. Land uses within and in the vicinity of the BSA include County right-of-way, orchard, row crops, and rural residences. Habitat types occurring within the BSA include perennial stream, riparian, orchards, urban and barren. No emergent vegetation or wetlands are found in association with Littlejohns Creek within the BSA.

BENEFICIARIES

The purpose of the project is to prevent bridge failure and provide a uniform cannel along Littlejohns Creek for residents and visitors.



— VICINITY MAP —



STANLEY ROAD BRIDGE NO. 29C-112 across LITTLEJOHNS CREEK

NO SCALE
DATE: May 3, 2010
SAN JOAQUIN COUNTY, Dept. of Public Works

The County of San Joaquin does not warrant the accuracy, completeness, or suitability for any particular purpose.
The information on this map is not intended to replace engineering, financial or primary records research.

Exh 12_Vicinity Map.dwg