CITY OF PETALUMA

POST OFFICE BOX 61
PETALUMA, CA 94953-0061

ADDENDUM NO. 2
Washington Street Bridge Seismic Rehabilitation Project
City Project No. C16101201

June 29, 2021

This Addendum No. 2 modifies the Request for Proposal (RFP) for Permitting, Final Design and Construction Services Document(s) for the Washington Street Bridge (WSB) Seismic Rehabilitation Project, City Project No. C16101201.

QUESTIONS AND ANSWERS

1. Q: What is the maximum size for the email attachments for the proposal submittal? Would it be acceptable to upload proposals to an FTP site and provide a download link?
A: I believe the maximum receivable email size is 20 MB, for City servers. Therefore, if your email with attachments is anticipated to be greater than 20 MB, please provide a download link. Alternatively, if size permits, multiple emails (up to **three (3)**) can be sent and should be properly numbered with matching subjects. If multiple emails are sent, the first email should outline the number of emails planned and contents. The City will confirm receipt of any emails at or before the specified due date/time.

2. Q: Can 11x17 sheets be used for schedule and tables/graphics? Will they count as one (1) or two (2) pages?
A: In regard to page counts, 11x17 sheets are permitted to be used for proposed schedules and will only be counted as one (1) page.

3. Q: Can proposals include front and back covers that won't count towards the 15-page maximum?
A: Front and back proposal covers can be included and will **not** count as part of the 15-page maximum. However, please note that proposal front and back covers will not be used as part of the RFP scoring.

4. Q: Is the cost proposal included in the fifteen-page limit, or is it to be submitted entirely as a separate document?
A: The cost proposal is **not** part of the fifteen-page limit and should be submitted as a separate document as discussed in the "Response to RFP" section of the RFP document. Please note that the cost proposal will not be opened until after all the proposal scoring is completed and a consultant is selected.

5. Q: Can dividers be used to break-up the proposal sections and will they count towards the fifteen-page limit?
A: Dividers can be used in the proposal and will **not** be counted as part of the fifteen-page limit. However, please note that any content on the divider pages will not be used as part of the RFP scoring.

Public Works & Utilities

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Petaluma, CA 94952
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Ellis Creek Water Recycling Facility
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Petaluma, CA 94954
Phone (707) 778-4546
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E-Mail: publicworks@cityofpetaluma.org

6. Q: Can you please clarify the minimum required scope of insurance (Section A of Attachment B)?
A: Please see Attachment #1. Boxes checked on this attachment will be required for insurance purposes.

7. Q: Did the environmental document include a hazardous materials study?
A: No

8. Q: Can a copy of the letters and memorandums listed in the CEQA Exemption/NEPA Categorical Exclusion Determination Form be provided?
A: Please see Attachment #2 and #3.

9. Q: Is a United States Army Corps of Engineers (USACE) 408 Permit anticipated?
A: The proposer will be responsible for determining what permits are required for the project as the RFP includes "Permitting" as part of the scope of work.

Summary of Changes: Questions received from consultants, to date, have been addressed above. All other items of the documents shall remain unchanged.

City of Petaluma,

Jonathan Sanglerat, P.E.
Associate Civil Engineer
Public Works & Utilities Department

EXHIBIT B
INSURANCE REQUIREMENTS
FOR ALL AGREEMENTS

Contractor's performance of the Services under this Agreement shall not commence until Contractor shall have obtained all insurance required under this paragraph and such insurance shall have been approved by the City Attorney as to form and the Risk Manager as to carrier and sufficiency. All requirements herein provided shall appear either in the body of the insurance policies or as endorsements and shall specifically bind the insurance carrier.

Contractor shall procure and maintain for the duration of the contract all necessary insurance against claims now and in the future for injuries to persons or damages to property which may arise from or in connection with the performance of the Services by the Contractor, the Contractor's agents, representatives, employees and subcontractors.

A. Required Minimum Scope of Insurance

☒ Coverage shall be at least as broad as:
Insurance Services Office Commercial General Liability coverage:
  a. Personal injury;
  b. Contractual liability.

☒ Insurance Services Office form covering Automobile Liability (any auto), if no company owned autos, non-owned and hired auto applies.

☒ Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance.

☒ Professional Liability/Errors and Omissions

☐ Crime/Employee Blanket Fidelity Bond

☐ Property Insurance against all risks of loss to any tenant improvements or betterments.

☐ Pollution Liability Insurance

☐ Garage Liability

☐ Garagekeepers Insurance

☐ Technology Professional Liability Errors and Omissions Insurance (IT Consultant)/Cyber Liability

☐ Abuse or Molestation Liability Coverage

A.1 Required for All Contracts

☒ Policy Endorsements or Excerpts from the Policy Pursuant to Section D

☒ Copy of the Declarations and Policy Endorsements Page for the CGL Policy

B. Minimum Limits of Insurance

Consultant shall maintain limits no less than:

☒ General Liability: $1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate liability is used, either the general aggregate limit shall apply separately to this Agreement or the general aggregate limit shall be twice the required occurrence limit.

☒ Products/Completed Operations: $1,000,000 per occurrence/aggregate.

☒ Automobile Liability: $1,000,000 per accident for bodily injury and property damage.

☒ Employer's Liability: Bodily Injury by Accident - $1,000,000 each accident.

Bodily Injury by Disease - $1,000,000 policy limit.
Bodily Injury by Disease - $1,000,000 each employee.

☒ Professional Liability/Errors and Omissions: $1,000,000 per occurrence or claim. If the policy provides coverage on a claims-made basis, the retroactive date must be shown and must be before the date of the Agreement or the beginning of the contract work.

☐ Crime/Employee Blanket Fidelity Bond - $1,000,000: Contractor, at its own cost and expense, must maintain a Crime/Employee Blanket Fidelity Bond in the amount of $1,000,000 per employee covering dishonesty, forgery, alteration, theft, disappearance, destruction (inside or outside).

☐ All Risk Property Insurance: Full replacement cost.

☐ Pollution legal liability with limits no less than $1,000,000 per occurrence or claim and $2,000,000 policy aggregate. If the policy provides coverage on a claims-made basis, the retroactive date must be shown and must be before the date of the Agreement or the beginning of the contract work.

☐ Garage Liability: $1,000,000 per occurrence.

☐ Garagekeepers Insurance: $1,000,000 per occurrence.

☐ Technology Professional Liability Errors and Omissions Insurance appropriate to the Consultant's profession and work hereunder, with limits not less than $1,000,000 per occurrence. Coverage shall be sufficiently broad to respond to the duties and obligations as is undertaken by the Vendor in this agreement and shall include, but not be limited to, claims involving infringement of intellectual property, copyright, trademark, invasion of privacy violations, information theft, release of private information, extortion and network security. The policy shall provide coverage for breach response costs as well as regulatory fines and penalties as well as credit monitoring expenses with limits sufficient to respond to these obligations.

1. The Policy shall include, or be endorsed to include, **property damage liability coverage** for damage to, alteration of, loss of, or destruction of electronic data and/or information "property" of the City in the care, custody, or control of the Consultant. If not covered under the Consultant's liability policy, such "property" coverage of the City may be endorsed onto the Consultant's Cyber Liability as covered property as follows:

2. **Cyber Liability coverage** in an amount sufficient to cover the full replacement value of damage to, alteration of, loss of, or destruction of electronic data and/or information "property" of the City that will be in the care, custody, or control of the Consultant.

3. The Insurance obligations under this agreement shall be the greater of 1) all the Insurance coverage and limits carried by or available to the Consultant; or 2) the minimum Insurance requirements shown in this Agreement. Any insurance proceeds in excess of the specified limits and coverage required, which are applicable to a given loss, shall be available to the City. No representation is made that the minimum Insurance requirements of this Agreement are sufficient to cover the indemnity or other obligations of the Consultant under this agreement.

☐ Abuse or Molestation Liability Coverage: $1,000,000 per occurrence; $2,000,000 aggregate.

C. Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by the City. At the option of the City, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City, its officers, officials, employees, and volunteers; or the Consultant shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses. Policies containing any self-insured retention (SIR) provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured (Contractor) or the City.

City reserves the right to review any and all of the required insurance policies, declaration pages, and/or endorsements, but has no obligation to do so. City's failure to demand evidence of full compliance with the insurance requirements set forth in this Agreement or City's failure to identify any insurance deficiency shall not relieve Contractor from, nor be construed or deemed a waiver of, its obligation to maintain the required insurance at all times during the performance of this Agreement.

D. Other Insurance Provisions

The required general liability and automobile policies are to contain, or be endorsed to contain the following provisions:

1. Additional Insured: The City, its officers, officials, employees, agents and volunteers are to be covered as Additional Insureds as respects: liability arising out of activities performed by or on behalf of the Consultant; products and completed operations of the Consultant; premises owned, occupied or used by the Consultant; or automobiles owned, leased, hired or borrowed by the Consultant. The coverage shall contain no special limitations on the scope of protection afforded to the City, its officers, officials, employees, agents or volunteers.
2. Primary and Non-Contributory: For any claims related to this project, the Consultant's insurance coverage shall be primary insurance as respects the City, its officers, officials, employees, agents and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees, agents or volunteers shall be excess of the Consultant's insurance and shall not contribute with it.
3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the City, its officers, officials, employees, agents or volunteers.
4. The Consultant's insurance shall apply separately to each insured against whom claim is made or suit is brought except, with respect to the limits of the insurer's liability.
5. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the City.
6. Waiver of Subrogation: Consultant agrees to waive subrogation rights for commercial general liability, automobile liability and worker's compensation against City regardless of the applicability of any insurance proceeds, and to require all contractors, subcontractors or others involved in any way with the Services to do likewise.
7. It shall be a requirement under this Agreement that any available insurance proceeds broader than or in excess of the specified minimum insurance coverage requirement and/or limits shall be available to the additional insured. Furthermore, the requirement for coverage and limits shall be (1) the minimum coverage and limits specified in this

Agreement, or (2) the broader coverage and maximum limits of coverage of any insurance policy or proceeds available to the named insured; whichever is greater.

8. The limits of insurance required in this Agreement may be satisfied by a combination of primary and umbrella or excess insurance. Any umbrella or excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and non-contributory basis for the benefit of the City of Petaluma before the City of Petaluma's own insurance or self-insurance shall be called upon to protect it as a named insured.

E. Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII.

F. Verification of Coverage

NOTE: The City of Petaluma is now using an online insurance program, PINS Advantage. Once you have been awarded a contract with the City of Petaluma, you will receive an e-mail from PINS Advantage/City of Petaluma requesting that you forward the e-mail to your insurance agent(s). Consultant shall furnish the City with Certificate of Insurance along with Declarations and Endorsements effecting coverage required by this clause. The endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. All endorsements are to be received and approved by the City before the Services commence.

Washington Street Bridge Seismic Rehabilitation Project

Natural Environment Study (Minimal Impacts)

City of Petaluma
BHLS-5022 (050)

February 2021

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Natural Environment Study (Minimal Impacts)

Washington Street Bridge Seismic Rehabilitation Project

BHLS-5022 (050)

City of Petaluma

Prepared By: _____ Date: 2/9/2021

Cuyler Stapelmann, Senior Environmental Scientist
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Prepared By: _____ Date: 2/16/2021

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Approved By: _____ Date: 17 Feb 2021

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Summary

The City of Petaluma (City) proposes the Washington Street Bridge Seismic Rehabilitation Project (Project). The Project is located where Washington Street crosses over Petaluma River in downtown Petaluma, Sonoma County, California. The City is the lead agency for the California Environmental Quality Act (CEQA), and the California Department of Transportation District 4 (Caltrans) is the federal lead agency for the National Environmental Policy Act (NEPA).

The Project would implement structural retrofits to the existing Washington Street bridge over Petaluma River to improve its ability to withstand seismic events. The purpose of the Project is to implement these seismic retrofits on the existing Washington Street bridge. The Project is needed to reduce the risk of the existing Washington Street bridge from collapse during the maximum credible earthquake.

The purpose of the Natural Environment Study-Minimal Impacts is to provide technical information and to determine the extent to which the project may affect special-status species, their habitats, and other natural areas in accordance with NEPA and CEQA.

A biological study area (BSA) was established that encompassed the Project limits and surrounding areas potentially inhabited by regional special-status species that could be affected directly or indirectly by the Project. The BSA is defined as the area (land and water) that may be directly, indirectly, temporarily, or permanently impacted by construction and construction-related activities. Biological resources surveys were conducted on March 5, June 25, and July 8, 2020.

The following habitats, natural communities of concern, and jurisdictional areas are present within the BSA:

- California Department of Fish and Wildlife (CDFW) designated sensitive natural community (*Bolboschoenus maritimus* association [California Community Code 52.112.03])
- Waters of the U.S. regulated under Sections 404 and 401 of the Clean Water Act as well as Section 10 of the Rivers and Harbors Act
- Essential Fish Habitat (EFH) regulated under the Magnuson-Stevens Fishery Conservation and Management Act
- Invasive plants that must be controlled pursuant to Executive Order 13112 Invasive Species

A review of species lists from CDFW, California Native Plant Society, U.S. Fish and Wildlife Service, and National Oceanic and Atmospheric Administration (NOAA) Fisheries indicate that 43 special-status plant species and 38 special-status wildlife species, protected habitats, and regulated taxa have potential to occur in the BSA (Appendix A).

No special-status plants were observed during surveys, and none are expected to occur within the BSA.

Based on habitat requirements for the 38 special-status wildlife species, protected habitats, and regulated taxa have potential to occur in the BSA, biologists determined that at least seven species have potential to occur in the BSA:

- Green sturgeon (*Acipenser medirostris*) southern distinct population segment (DPS)
- Critical habitat for green sturgeon southern DPS
- Steelhead (*Oncorhynchus mykiss irideus*) central California coast DPS
- Critical habitat for steelhead central California coast DPS
- Longfin smelt (*Spirinchus thaleichthys*)
- Sacramento splittail (*Pogonichthys macrolepidotus*)
- Western pond turtle (*Emys marmorata*)
- San Pablo song sparrow (*Melospiza melodia samuelis*)
- Nesting birds protected by the Migratory Bird Treaty Act

Avoidance and minimization measures have been incorporated into the Project to avoid substantial impacts on biological resources. With incorporation of avoidance and minimization measures:

- There would be no impacts on CDFW-designated sensitive natural communities.
- There would be no dredge/fill activities within potentially jurisdictional aquatic features.
- The Project would not promote the spread of invasive plants.
- There will be no adverse effects on EFH.
- The Project **may affect, but is not likely to adversely affect**, green sturgeon southern DPS, steelhead central California coast DPS, and their critical habitats within Petaluma River. The Project would have **no effect** on all other federally-listed species.
- The take of state-listed wildlife species, California Species of Special Concern, Fully Protected species, and migratory birds would not occur.

Permits or approvals from resources agencies are not required for biological resources. However, a dewatering permit from the Regional Water Quality Control Board may be necessary. Compensatory mitigation is not required.

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List of Abbreviated Terms

AMM	avoidance and minimization measure
BMP	best management practice
BSA	biological study area
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CIDH	Cast-in-Drilled-Hole
City	City of Petaluma
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EO	Executive Order
ESA	environmentally sensitive area
FESA	Federal Endangered Species Act
ft	feet/foot
in.	inch(es)
MBTA	Migratory Bird Treaty Act
MLRA	Major Land Resource Area
NGVD 29	National Geodetic Vertical Datum 1929
NEPA	National Environmental Policy Act
NES-MI	Natural Environment Study – Minimal Impacts
NOAA	National Oceanic and Atmospheric Administration
OHWM	ordinary high water mark
PAH	polycyclic aromatic hydrocarbons
PCE	Primary Constituent Elements
Project	Washington Street Bridge Seismic Rehabilitation Project
RWQCB	Regional Water Quality Control Board
SMART	Sonoma Marina Arial Rail Transit
SSC	Species of Special Concern
SWPPP	Storm Water Pollution Prevention Plan

THVF	temporary high-visibility fence
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WDR	Waste Discharge Requirements

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Chapter 1 Introduction

The Washington Street Bridge Seismic Rehabilitation Project (Project) is located in the city of Petaluma, Sonoma County, California. The Project would implement structural retrofits to the existing Washington Street bridge over Petaluma River to improve its ability to withstand seismic events. The City of Petaluma (City) is the lead agency under the California Environmental Quality Act (CEQA), and the California Department of Transportation District 4 (Caltrans) is the federal lead agency under the National Environmental Policy Act (NEPA).

The purpose of the Natural Environment Study – Minimal Impacts (NES-MI) is to provide technical information and to determine the extent to which the Project may affect special-status species, their habitats, and other natural areas in accordance with CEQA and NEPA. Figure 1 provides a map showing the Project location, and Figure 2 provides a map showing the Project vicinity.

1.1 Project History

The existing Washington Street bridge (Bridge No. 20C-0045) is a two-span, precast concrete I-girder structure that carries Washington Street over Petaluma River. The original Washington Street bridge was removed and replaced by the current bridge in 1970. Portions of the original bridge abutments and wingwalls remain, and they are located behind the abutments of the current structure. The current bridge was constructed in two stages, and it has a longitudinal joint underneath the center median. The current bridge has a length of 105 feet. The total width of the current bridge is 89 feet, comprised of two 6-foot-wide sidewalks with semi-circular overlooks, 40-foot-wide westbound and 30-foot eastbound traveled ways, and a 5-foot-wide raised median. The bridge has a straight alignment and the supports are skewed approximately 4 degrees to the alignment (Biggs Cardosa Associates 2010).

The diaphragm abutments are supported on 60-ton steel H piles that vary from 9 to 28 feet in length with a typical length of approximately 12 feet at Abutment 1 (western abutment) and 26.5 feet at Abutment 3 (eastern abutment). The bent is supported on 60-ton steel H piles approximately 33-feet long with a minimum embedment of 11 feet. The bent pile extensions are encased in concrete from the mud line to the bent cap. In 2008, the concrete casings on the bent pile extensions were encased in an additional marine protection system consisting of a fiberglass reinforced plastic (FRP) jackets filled with marine epoxy grout. The superstructure girders are encased in end diaphragms at the bent and abutments, and lateral loads are transferred to the substructure elements via dowels through the girders and reinforcing in the end diaphragms (Biggs Cardosa Associates, 2010).

A structural engineering consultant performed a seismic vulnerability analysis in May 2010 (Biggs Cardosa Associates, 2010). The analysis found the existing Washington Street bridge is susceptible to collapse during a maximum credible earthquake based on the following structural vulnerabilities: 1) seismic displacement demands on the piles exceed the capacities at the bent and abutments, particularly Abutment 1, and 2) second order effects (P-Δ or P-delta effects) on the piles due to seismic displacement demands are significant at the abutments and bent.

1.1.1 Purpose and Need

The goal of the Project is to construct a bridge retrofit that would prevent the structure from collapsing during the maximum credible earthquake. However, significant damage to the proposed bridge may be incurred during the maximum credible earthquake, potentially requiring repairs or subsequent replacement (Biggs Cardosa Associates, 2010).

The purpose of the Project is to implement seismic retrofits on the existing Washington Street bridge. The Project is needed to reduce the risk of the existing Washington Street bridge from collapse during the maximum credible earthquake.

1.2 Project Description

This section describes the proposed action that will occur within the Project to meet the purpose and need of the Project, while avoiding or minimizing environmental impacts. The Project would implement seismic retrofits on the existing Washington Street bridge over Petaluma River. The proposed retrofit strategy includes the construction of concrete frames with Cast-in-Drilled-Hole (CIDH) piles and a concrete pile cap placed behind each of the abutments. The concrete frames would each consist of three 4-foot diameter CIDH piles and a stiff concrete pile cap connected to each abutment with drill and bond dowels. Strategic placement and proper connection of these CIDH pile frames would increase the lateral stiffness of the system as well as reduce lateral movements. This increase in stiffness would result in lower displacement demands on the existing piles and protect the existing bridge from collapse during seismic events. Additionally, the pile cap would bolster the Abutment 1 wall in the bottom of the girder region allowing it to resist longitudinal passive and lateral spreading forces. A reduced section of the pile cap beam would be extended past the ends of the frame to bolster the remaining length of the abutment wall (Biggs Cardosa Associates, 2010).

As discussed above, portions of the original abutments and wingwalls are still present at the site. In order to construct the proposed CIDH piles and pile caps, some portions of these old abutments and wingwalls will need to be removed. The precise locations and extents of these old abutments and wingwalls are currently unknown and would need to be located via potholing or direct exposure (Biggs Cardosa Associates, 2010).

The Project was developed to minimize effects on Petaluma River, avoid interference with operations of the adjacent Sonoma Marina Area Rail Transit (SMART) railroad tracks, reduce the quantity of utility relocations, and allow one lane of traffic to remain open at all times during construction, as described below (Biggs Cardosa Associates, 2010).

- The Project would not require any work to occur within Petaluma River, because all seismic retrofits would take place within developed/paved areas behind the existing abutments. However, dewatering may be required for installation of the proposed CIDH piles and other excavations during construction, because groundwater levels are expected to be fairly shallow. Additionally, groundwater levels are expected to be similar to surface water levels in Petaluma River and fluctuate with changes in tides.
- A railroad spur owned by SMART is located several feet behind Abutment 1. The proposed retrofit frames behind the abutments would not interfere with the railroad tracks or their function. Train or light rail loading would be considered during final design of the proposed retrofit strategy, as necessary. Excavations to construct the retrofit frames may require shoring to protect the tracks and construction of the pile cap beam.
- While the proposed retrofit strategy would minimize the quantity of utility relocations, several utilities carried by the existing bridge would need to be relocated or otherwise improved. A gas line east of Abutment 3 would be relocated in order to provide the necessary clearance for frame construction. Existing traffic signal conduit that runs the length of Abutment 1 and other utilities that penetrate the abutment would be accommodated with oversized holes in the retrofit cap, as needed. Further investigation of existing utilities would be conducted during the design phase.
- Because the existing bridge is located in the busy downtown district of Petaluma, the proposed retrofit frames and CIDH piles were positioned to allow at least one lane of traffic to remain open at all times during construction. Thus, the Project would allow continued operation of the existing bridge and allow the high traffic demands during morning and afternoon commutes to continue through the Project site during construction.
- A staging area will be identified during the detailed design phase.

Refer to Figure 3 for the proposed bridge general plan and Figure 4 for the proposed retrofit frame section.

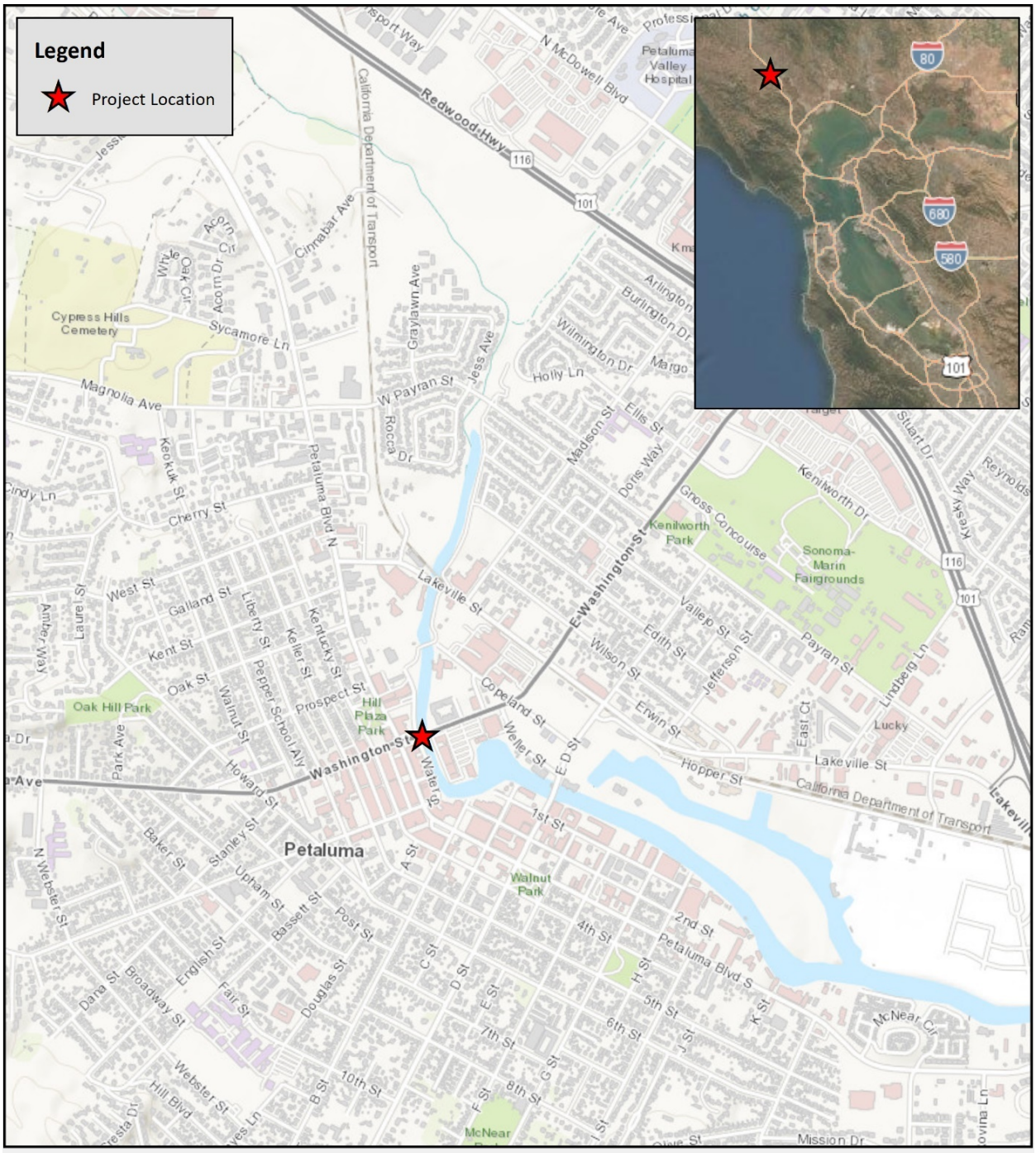

Figure 1. Project Location Map

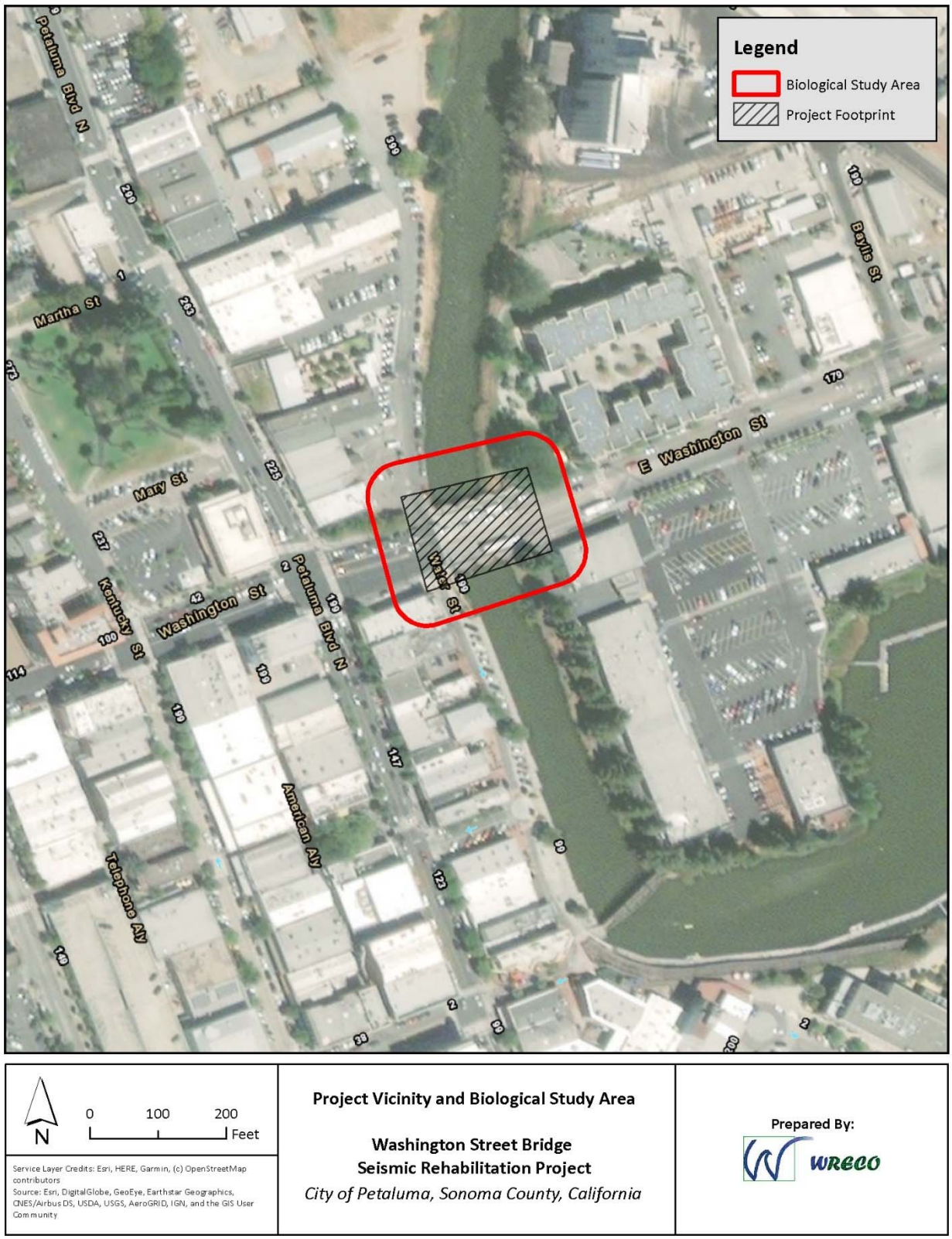

Figure 2. Project Vicinity and Biological Study Area Map

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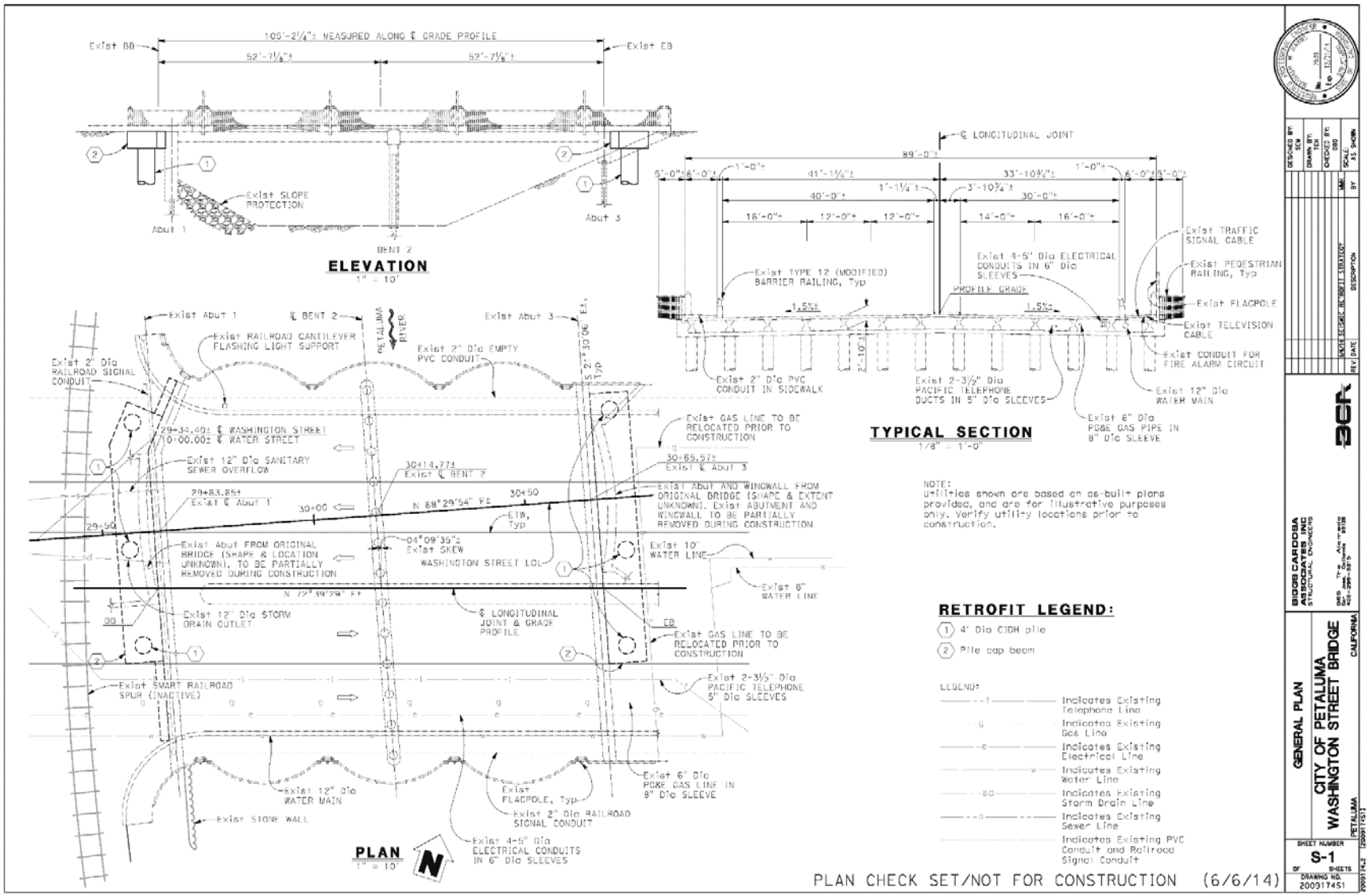

Figure 3. Proposed Bridge General Plan

Source: Biggs Cardosa Associates, 2010

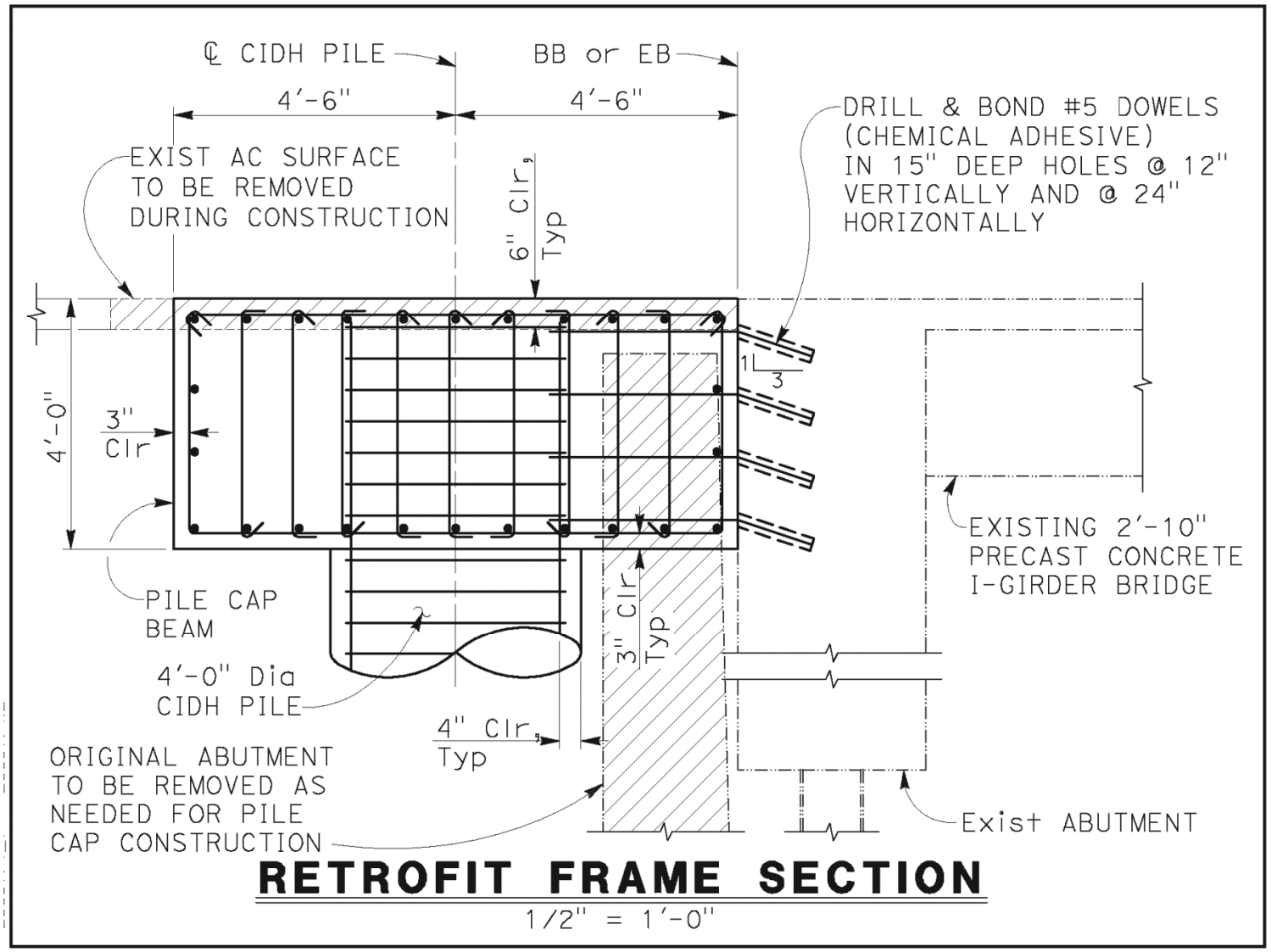

Figure 4. Proposed Retrofit Frame Section

Source: Biggs Cardosa Associates, 2010

Chapter 2 Study Methods

This section presents the relevant regulations and the methods used to evaluate the effect of the project on special-status species, their habitats, and other natural areas.

2.1 Regulatory Requirements

2.1.1 Federal Regulations

2.1.1.1 FEDERAL ENDANGERED SPECIES ACT

The U.S. Fish and Wildlife Service (USFWS), which has jurisdiction over federally threatened and endangered plants, wildlife, and resident fish, and the National Oceanic and Atmospheric Administration (NOAA) Fisheries, which has jurisdiction over anadromous fish and marine fish and mammals, implement the Federal Endangered Species Act (FESA). Section 7 of the FESA mandates that all federal agencies consult with the USFWS and NOAA Fisheries to ensure that federal agency actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. Federal agencies are required to consult with the USFWS and NOAA Fisheries if they determine that a project "may affect" a listed species. The FESA prohibits the "take" of any fish or wildlife species listed as threatened or endangered, including the destruction of habitat that could hinder species recovery.

2.1.1.2 CLEAN WATER ACT

Provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Section 404

United States Army Corps of Engineers (USACE) regulates fill materials in essentially all waterbodies, including wetlands. All federal agencies are to avoid impacts to wetlands whenever there is a practicable alternative. Section 404 established a permit program administered by USACE regulating the discharge of dredged or fill material into waters of the U. S. (including wetlands).

Section 401

Requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. (including a Clean Water Act [CWA] Section 404 permit), must obtain a state certification that the discharge complies with other provisions of the CWA. The

State Water Resources Control Board and Regional Water Quality Boards (RWQCB) administer the certification program in California.

2.1.1.3 RIVERS AND HARBORS ACT

Under Section 10 of the Rivers and Harbors Act, the limit of USACE jurisdiction is defined as either mean high water along tidal watercourses or the ordinary high water mark (OHWM) along non-tidal watercourses designated as navigable Waters of the U.S. All proposed work and structures within mean high water or the OHWM must be authorized by the USACE pursuant to Section 10 of the Rivers and Harbors Act (33 USC § 403). Additionally, all proposed work and structures proposed within unfilled portions of interior diked areas below former mean high water must also be authorized under Section 10 of the Rivers and Harbors Act. Mean high water is defined as the average level of all the high water heights observed over several years.

2.1.1.4 MIGRATORY BIRD TREATY ACT

This treaty with Canada, Mexico and Japan makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season.

2.1.1.5 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

The Magnuson-Stevens Fishery Conservation and Management Act of 1976 was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States. The Magnuson-Stevens Act establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans to achieve the optimum yield from U.S. fisheries in their regions. These councils, with assistance from NOAA Fisheries, establish Essential Fish Habitat (EFH) in fishery management plans for all managed species. Federal agencies that fund, permit, or implement activities that may adversely affect EFH are required to consult with NOAA Fisheries regarding potential adverse effects of their actions on EFH, and respond in writing to NOAA Fisheries' recommendations.

2.1.1.6 EXECUTIVE ORDER 13112 – INVASIVE SPECIES

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration guidance issued August 10, 1999 directs the use of the

State's invasive species list, maintained by the Invasive Species Council of California to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

Under the EO, federal agencies cannot 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 all reasonable measures to minimize risk of harm have been analyzed and considered.

2.1.2 State Regulations

2.1.2.1 California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. The CESA prohibits the "take" of state endangered and threatened species; however, habitat destruction is not included in the state's definition of take. Section 2090 of the CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. The California Department of Fish and Wildlife (CDFW) administers the CESA and, with the exception of "Fully Protected Species," authorizes take through Section 2080.1 agreements (also known as a Consistency Determination) for take of species that are both federal- and State-listed, and Section 2081 for take of a State-only listed species.

2.1.2.2 California Species of Special Concern

The CDFW maintains an administrative list of Species of Special Concern (SSC), which are defined as a "species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following criteria:

- is extirpated from the state, or, in the case of birds, in its primary seasonal or breeding role;
- is listed under FESA but not CESA;
- meets the CESA definition of threatened or endangered but has not formally been listed;
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for CESA listing;
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for CESA listing.

Section 15380 of the CEQA guidelines, Endangered, Rare or Threatened Species, clearly requires that a species listed as SSC should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outline therein.

2.1.2.3 CALIFORNIA RARE PLANT RANKS

Special-status plants in California are assigned to one of six California Rare Plant Ranks under a collaborative process that is overseen by the CDFW and California Native Plant Society (CNPS). The six California Rare Plant Ranks currently recognized by the CNDDB include the following:

- Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere.
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere.
- Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere.
- Rare Plant Rank 2B – rare, threatened, or endangered in California, but more common elsewhere.
- Rare Plant Rank 3 – a review list of plants about which more information is needed.
- Rare Plant Rank 4 – a watch list of plants of limited distribution.

Substantial impacts to plants ranked 1A, 1B, 2A, and 2B are typically considered significant under CEQA based on Section 15380 of the CEQA Guidelines. Plants ranked 3 and 4 may be evaluated by the lead agency on a case-by-case basis to determine significance thresholds under CEQA.

2.1.2.4 SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities are those of limited distribution statewide or within a county or region and are often vulnerable to environmental impacts. CDFW evaluates the rarity of natural communities. This evaluation is performed at both the global scale (full natural range within and outside of California) and state level (within California), resulting in a single global (G) and state (S) rank ranging from 1 (very rare and threatened) to 5 (demonstrably secure). Natural communities with state ranks of 1, 2, or 3 (S1, S2, and S3) are considered to be sensitive, and impacts on these communicates must be addressed in the environmental review processes of CEQA and its equivalents.

2.1.2.5 PORTER-COLOGNE WATER QUALITY CONTROL ACT

This regulatory law is becoming more prominent on projects involving impacts to isolated waters of the state (non-federal waters of the state). The RWQCB is increasingly requiring Waste Discharge Requirements permits for impacts to waters of the State.

2.1.2.6 CALIFORNIA FISH AND GAME CODE

The CDFW is authorized under the California Fish and Game Code, Sections 1600-1603, to enter into a Streambed Alteration Agreement with applicants and develop mitigation measures when a proposed project will obstruct the flow or alter the bed, channel, or bank of a river or stream in which there is a fish or wildlife resource, including intermittent and ephemeral streams.

Fish and Game Code Sections 3503 and 3503.5 (protection of birds' nests) and 3513 (taking Migratory Bird Treaty Act birds) prohibit the destruction of any nest, egg, or nestling. Fish and Game Code Sections 20000, 2002, 2014 and 4150 protect bats and their occupied roosts from harassment and destruction. Fish and Game Code Sections 3511 birds, 4700 mammals, 5050 reptiles and amphibians, and 5515 fish allow the designation of a species as fully protected. This designation means the species cannot be killed, harmed, or otherwise taken at any time, and it offers a higher level of protection than the CESA.

2.2 Studies Required

Biological surveys and studies were performed to satisfy the requirements of NEPA and CEQA, to document all special-status species that potentially occur in the BSA, and to identify all potential project impacts on protected resources or critical habitat. Special-status species include those listed as endangered, threatened, or rare under the FESA or CESA; plants listed as rare by CNPS; marine species, critical habitat, and EFH listed by NOAA Fisheries; migratory birds protected under the Migratory Bird Treaty Act (MBTA); and species considered to be SSC.

2.2.1 Literature Search

Information about habitat types and special-status species that can occur in the BSA was obtained from existing databases and literature. Databases were queried for information pertaining to the following U.S. Geological Survey (USGS) quadrangles: Cotati, Glen Ellen, Petaluma, and Petaluma River. The following databases were reviewed:

- USFWS Information for Planning and Consultation
- NOAA Fisheries West Coast Region California Species List Tools
- CDFW California Natural Diversity Database (CNDDB)
- CNPS Online Inventory of Rare and Endangered Plants
- Existing literature as cited in the text

If a sensitive natural community, special-status species, suitable habitat for special-status species, or other biological resources are not present within the biological study area (BSA), the community or species is not given further consideration beyond its mention in Section 3.2. All sensitive natural communities and special-status species that are present or have potential to occur within the BSA are discussed in Chapter 4. The results from all database queries are presented in Appendix A.

2.2.2 Field Reviews

Biological surveys were conducted to determine whether there is potential for sensitive natural communities, special-status species, suitable habitat for special-status species, aquatic resources,

and other biological resources have potential to be present at the Project site. Reconnaissance-level surveys for biological resources were performed on March 5, June 25, and July 8, 2020. Additionally, a field survey of the BSA was conducted on July 8, 2020, for the purpose of delineating aquatic resources, including Waters of the U.S., non-federal Waters of the State, and other jurisdictional areas along Petaluma River.

2.2.3 Survey Methods

During these surveys, biologists conducted the surveys by walking the entire BSA, photo-documenting existing habitat conditions as well as potential habitat for special-status species and using high-powered binoculars to identify species observed within the BSA. Aquatic resources delineations following USACE standard protocols and jurisdictional determinations were conducted to identify jurisdictional aquatic resources within the BSA. Refer to the Aquatic Resources Delineation Report for more information about survey methods for aquatic resources (WRECO, 2020).

2.3 Personnel and Survey Dates

Survey personnel and their credentials are listed below:

- Sandra Etchell, B.A., Biology; M.S. Environmental Management; 21 years' experience
- Cuyler Stapelmann, B.S., Conservation and Resources Studies; 9 years of experience
- Gregory Wattley, B.S., Biology; M.S., Environmental Biology; Professional Wetland Scientist; 13 years of experience

2.4 Agency Coordination and Professional Contacts

No agency coordination has occurred to date.

2.5 Limitations That May Influence Results

The portion of Petaluma River located within the BSA flows through an urban area. As a result, the banks of the river predominantly consist of vertical sheet piles or concrete walls, and there is limited access to the channel and areas below the existing bridge. Additionally, the substrate of the river consists of extremely soft silty clay locally referred to as Bay Mud. All of these conditions heavily constrain access to the channel banks. These accessibility issues were particularly constraining along the western bank of the river, and biologists were not able to gain access to the western bank of Petaluma River within the BSA. However, biologists were able to visually search this area with the use of binoculars. Although this limitation was encountered during the field survey, biologists do not believe this limitation influenced the results.

In addition, certain wildlife species may be cryptic and generally difficult to detect, such as burrowing reptiles and amphibians, or nocturnal, like bats, and not visible to biologists during surveys performed during daylight hours. Additionally, certain species of birds and anadromous fish may be transient or migratory, only occurring within the BSA for short or fleeting durations before moving on to more-optimal habitat. Lastly, wildlife species may only be detectable during particular times of the year, such as the breeding season. For these reasons, special-status plant and wildlife species may be present within the BSA but not observed. These limitations may influence the study results.

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Chapter 3 Results: Environmental Setting

3.1 Description of the Existing Biological and Physical Conditions

This section provides a description of the existing physical and biological conditions within the BSA.

3.1.1 Study Area

A BSA was established that encompassed the Project limits and surrounding areas potentially inhabited by regional special-status species that could be affected directly or indirectly by the project. The BSA is defined as the area (land and water) that may be directly, indirectly, temporarily, or permanently impacted by construction and construction-related activities. For this Project, the BSA includes the Project footprint, which is defined as all areas of potential direct impacts from construction and operation of the Project, including the existing bridge structure, seismic retrofits, and utility relocations. The BSA is approximately 1.5 acres. The BSA limits are depicted in Figure 2.

3.1.2 Physical Conditions

3.1.2.1 TOPOGRAPHY

The BSA is located within the Petaluma California USGS 7.5-minute topographic quadrangle. The BSA is relatively flat, consisting primarily of paved surfaces adjacent to Petaluma River as well as the channel of Petaluma River. Terrain within the BSA gently slopes toward Petaluma River. Elevations within the BSA range from approximately sea level to 10 feet along the banks of Petaluma River.

3.1.2.2 CLIMATE AND HYDROLOGY

The Study Area has a Mediterranean climate, characterized by hot, dry summers and mild moist winters (George, 2020). Most precipitation falls as rain between October 15 and April 15. A climate summary for the NOAA weather station at Petaluma Airport (Station No. 046826) between the years 1893 and 2016 reports the annual average precipitation is 24.89 inches and average temperatures range from 44.9 to 70.4 degrees Fahrenheit (Western Regional Climate Center, 2020).

The BSA is located in the San Francisco Bay Hydrologic Region, where all surface waters eventually flow into San Francisco Bay. Within the San Francisco Bay Hydrologic Region, the BSA is within the San Pablo Hydrologic Unit, Petaluma River Hydrologic Area, and an undefined Hydrologic Sub-Area (#206.30). Within the BSA, Petaluma River flows from the

northwest to the southeast. Petaluma River discharges into San Pablo Bay approximately 12 miles southeast of the BSA.

According to the National Wetlands Inventory (USFWS, 2020), Petaluma River is the only aquatic resource within the BSA. Within the National Wetlands Inventory, Petaluma River is classified as an estuarine and marine deepwater wetland.

3.1.2.3 SOILS

According to Web Soil Survey (U.S. Department of Agriculture, 2020), there is one soil type within the BSA: Yolo clay loam, 0 to 5% slopes, Major Land Resource Area (MLRA) 14. The soils map is shown in Figure 6.

Yolo clay loam, 0 to 5% slopes, MLRA 14

The Yolo series consists of very deep, well drained soils that was formed in alluvium from mixed sedimentary and volcanic rocks on alluvial fans and floodplains. Elevations range from 0 to 360 feet. Slopes range from 0 to 5% but are typically between 0 and 2%. Average annual precipitation is 28 to 41 inches. Runoff potential is low. This soil type is not hydric.

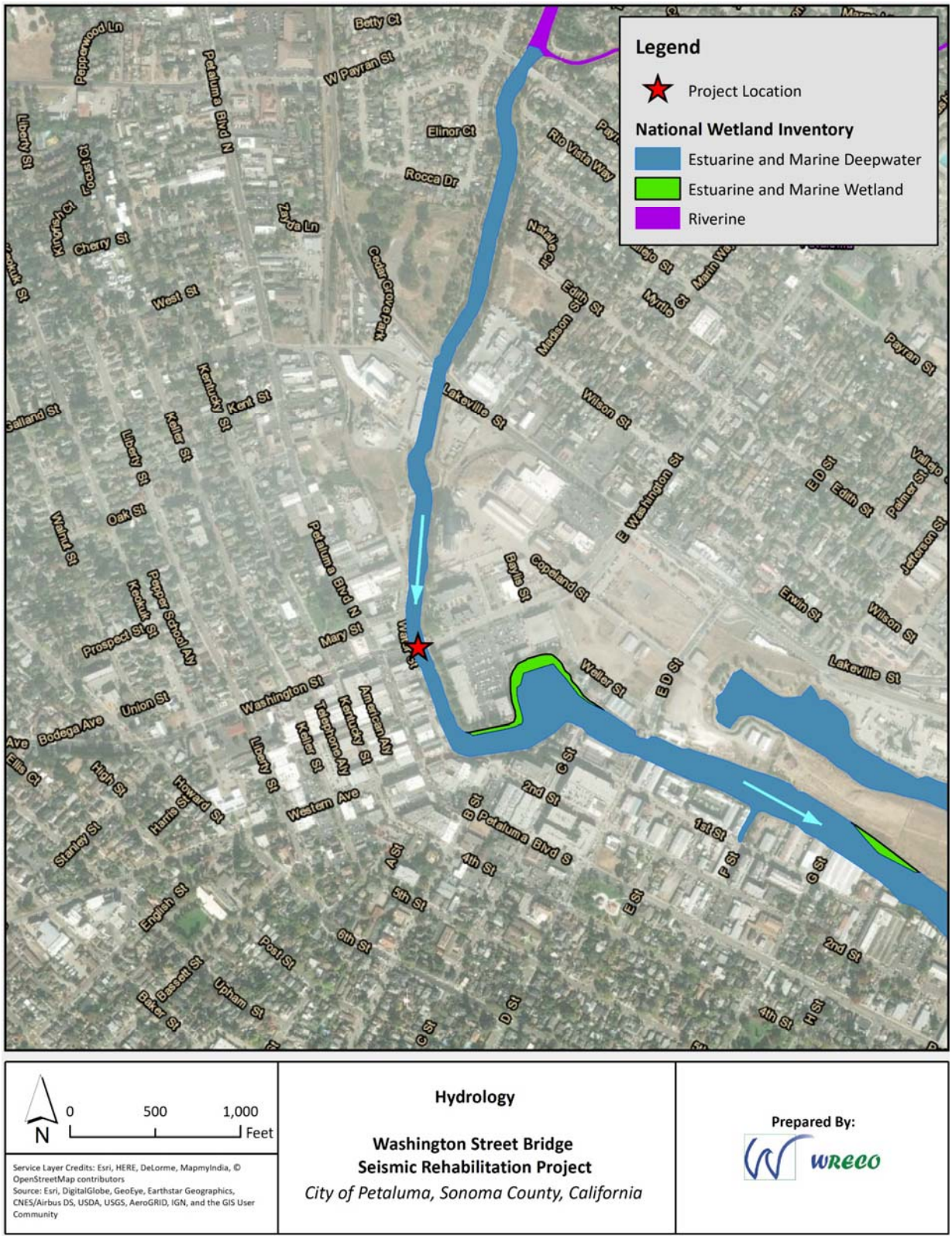

Figure 5. Hydrology Map

Source: USFWS, 2020

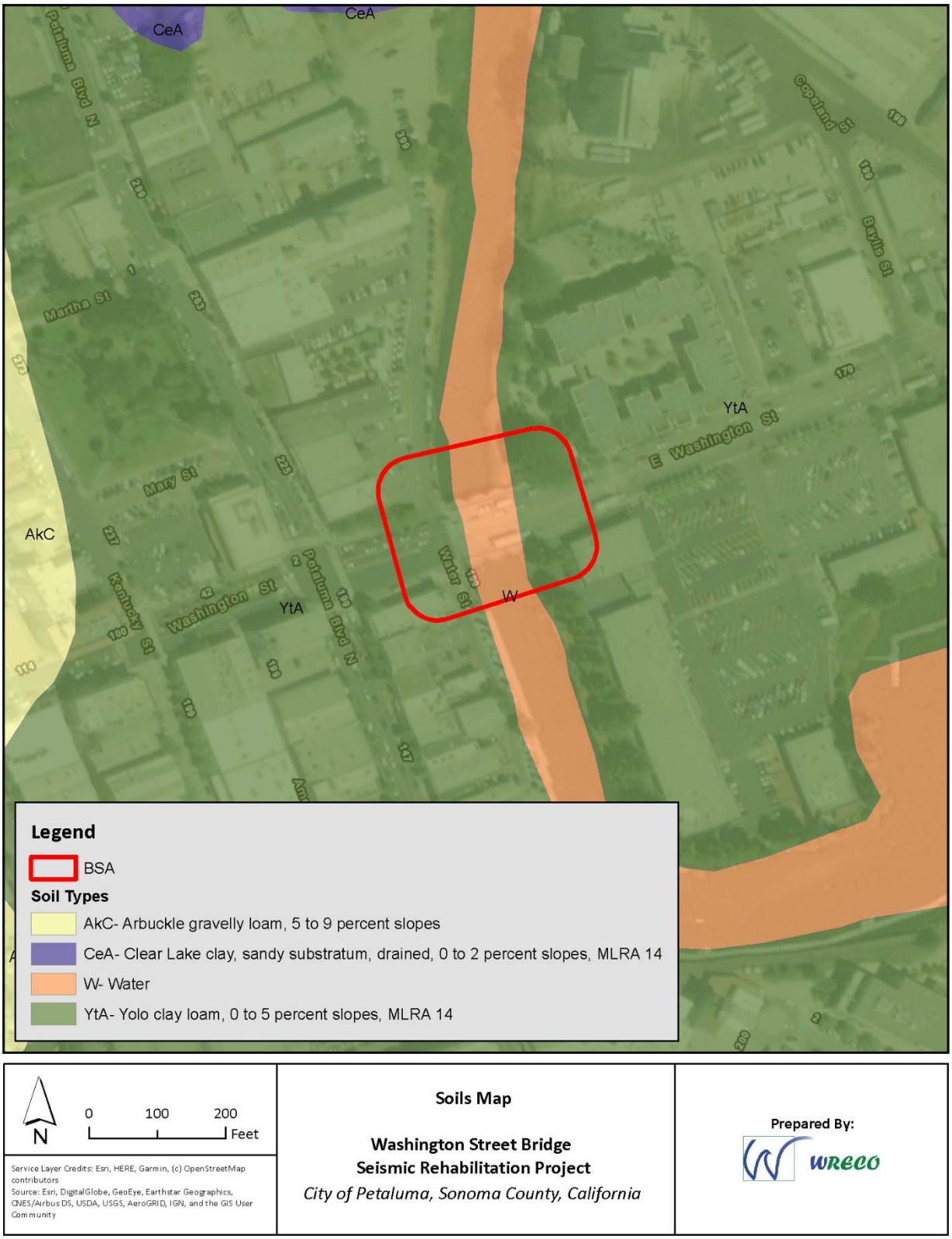

Figure 6. Soils Map

Source: USDA, 2020

3.1.3 Biological Conditions

This section discusses vegetation and wildlife observed or expected to occur within the BSA. Appendix B provides a complete list of species observed during field surveys.

3.1.3.1 NATURAL COMMUNITIES

The plant community descriptions and nomenclature conventions within this analysis use the CDFW's California Wildlife Habitat Relationships System. This classification system is based on the 59 wildlife habitats described in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer, 1988) and may be used as a model to predict which wildlife species may inhabit specific plant communities. Supplemental information was obtained from *California Vegetation* (Holland and Keil, 1995).

There are four natural communities within the Study Area: estuarine, saline emergent wetland, annual grassland, and urban (Figure 7). Plants observed during the field surveys in the BSA are included in Appendix B.

Estuarine

Estuarine vegetation occurs in open water, periodically and/or permanently flooded aquatic features influenced by a mixture of seawater and freshwater. Estuaries may have continuous influxes of water from both marine and landward sources, such as tidal flats, eel-grass meadows, tidal marshes, and rivers. Alternatively, estuaries may be enclosed, rarely receiving salt water, such as coastal lagoons. In California, coastal lagoons are a common form of estuarine habitat, and contain more uniform salinity levels than true estuaries. The San Francisco Bay region has the largest estuarine system along the Pacific Coast of North and South America, with a vast area of salt marsh. This habitat is extremely sensitive to sea-level rise. Estuarine wetlands are highly productive ecosystems, supporting large numbers of invertebrates, fish, and birds (Barbour et al., 2007).

Within the BSA, Petaluma River may be classified as an estuarine watercourse because it is a tidally influenced river containing primarily brackish conditions. The substrate in the estuarine portion of the river consisted of tidal mudflats, and no estuarine vegetation was observed. However, during tidal influx, saline emergent vegetation near the high-tide line becomes completely or partially submerged.

Saline Emergent Wetland

Saline emergent wetland consists of salt or brackish marsh vegetation growing on intertidal flats from mean sea level to extreme high tide. Cordgrass (*Spartina alterniflora*) grows in the areas of highest salinity, transitioning to pickleweed (*Salicornia pacifica*) and then to saltgrass (*Distichlis spicata*) in the least frequently inundated parts of the habitat (Springer, 1988). Saline emergent

wetland has been subject to submergence from sea-level rise for several thousand years (Springer, 1988). The San Francisco Bay area contains the majority of this habitat in the state (Holland and Keil, 1995). Saline emergent wetland vegetation was found along the banks of Petaluma River near the high-tide line. Saline emergent wetland vegetation consisted of saltgrass, chairmaker's bulrush (*Schoenoplectus americanus*), alkali bulrush (*Bolboschoenus maritimus*), pickleweed, and gumplant (*Grindelia stricta* var. *platyphylla*).

Annual Grassland

Non-native or naturalized annual grasses and forbs have largely replaced pre-colonial grasslands on rolling hills and flat plains in California. Although a rich variety of native species may be present, annual grasslands are usually dominated by wild oats, barley, brome species, and soft chess dominate (Kie, 2005). The species composition varies widely depending on weather and grazing patterns, but the habitat generally has a water deficit for four to eight months annually (Barbour et al., 2007). This community was present along the upper banks of Petaluma River, and species in this natural community included wild oat (*Avena* sp.), ripgut brome (*Bromus diandrus*), fennel (*Foeniculum vulgare*), harding grass (*Phalaris aquatica*), and perennial pepperweed (*Lepidium latifolium*).

Urban

Urban vegetation may fall into five general categories: tree grove, street strip, shade tree/lawn, lawn, and shrub cover. Urban areas typically have a small diversity of trees, shrubs, and grasses, but greater productivity than natural grasslands due to abundant water and fertilizer (McBride and Reid, 2008). Examples include residential landscapes, golf courses, parks, and school grounds. Non-native landscape species and invasive weeds are common. For the purposes of this NES-MI, this land cover type also includes paved surfaces.

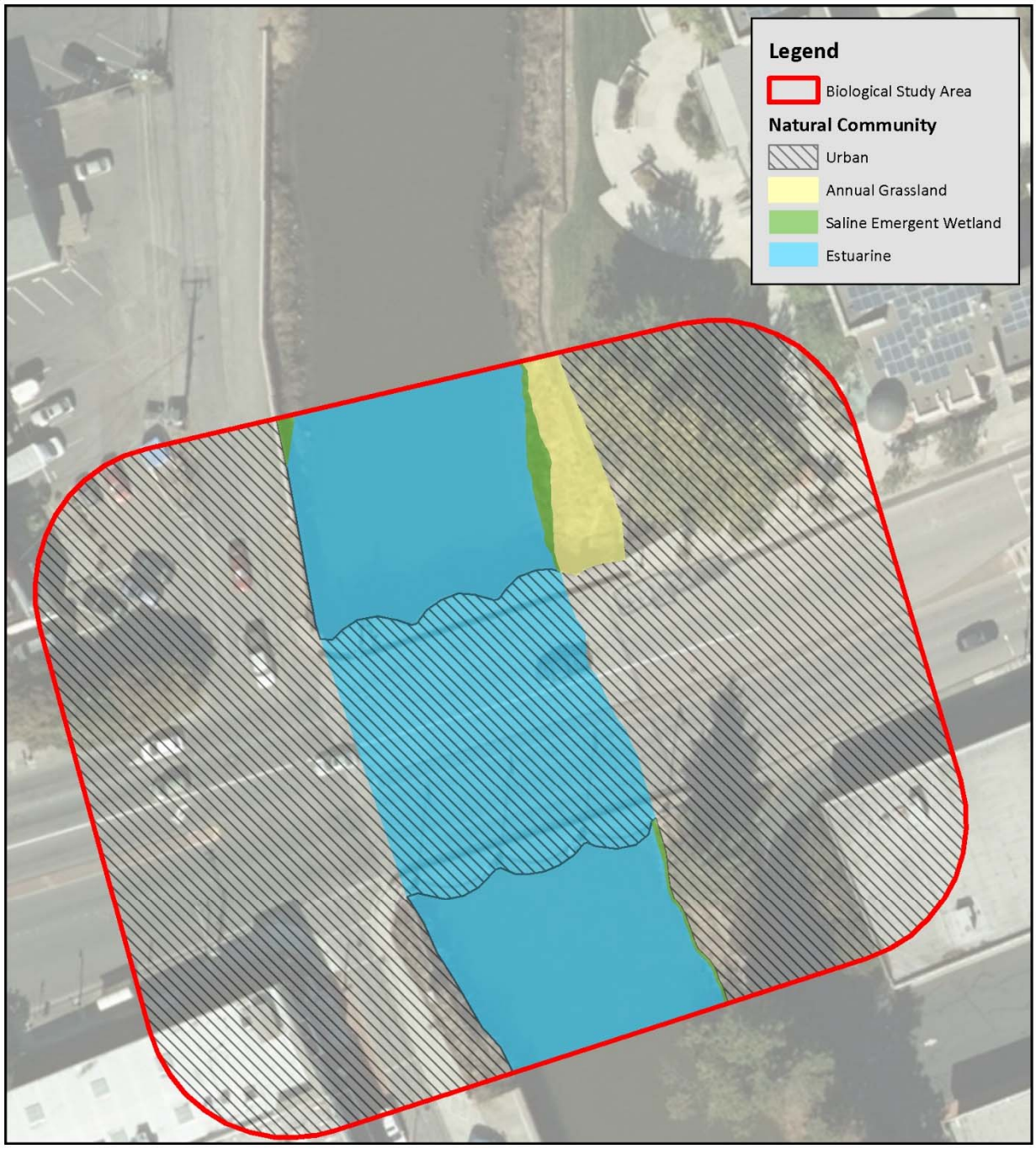

Figure 7. Natural Communities Map

3.1.4 Habitat Connectivity

There are no upland terrestrial wildlife corridors in the BSA vicinity. The banks of Petaluma River may allow for the limited movement of small mammals; however, limited vegetation for cover and frequent inundation of the river banks during high tides limits this potential. Within the BSA, Petaluma River also provides aquatic habitat suitable for the movement and dispersal of aquatic species. Although Petaluma River and its tributaries San Antonio Creek, Adobe Creek, Lynch Creek, and Lichau Creek historically supported steelhead (*Oncorhynchus mykiss*) runs, the watershed contains low habitat value for salmonids with some tributaries considered to have no value for fisheries (Leidy et al., 2005). Therefore, the BSA has minimal habitat connectivity into the upper watershed for salmonids. However, the portion of Petaluma River within the BSA has high connectivity with San Francisco Bay and may provide suitable habitat for some anadromous aquatic species, such as green sturgeon (*Acipenser medirostris*), as well as other estuarine fish species (National Marine Fisheries Service, 2009).

3.2 Regional Species and Habitats and Natural Communities of Concern

3.2.1 Habitats and Natural Communities of Concern

The CNDDB identifies the following sensitive natural communities of concern as occurring in the BSA region: coastal brackish marsh (i.e., saline emergent wetland), Northern coastal saltmarsh (i.e., saline emergent wetland), and Northern vernal pool. Within the BSA, an area of saline emergent wetland on the eastern bank of Petaluma River to the north of the existing bridge meets the definition of a sensitive natural community. Sensitive natural communities are discussed in more detail in Section 4.1.1.

Waters of the U.S. are considered sensitive by both federal and State agencies, and they are protected by the CWA. Petaluma River meets the definition of a waters of the U.S. Waters of the U.S. are discussed in Section 4.1.2 of this NES-MI, as well as within the Aquatic Resources Delineation Report (WRECO, 2020).

EFH for species managed under the Pacific Coast Salmon Fishery Management Plan (coho and chinook salmon) is present within the BSA. EFH is protected by the Magnuson-Stevens Fishery Conservation and Management Act, which is administered by NOAA Fisheries. Refer to Section 4.1.3 for more information on EFH within the BSA.

Critical habitat for green sturgeon (*Acipenser medirostris*) and steelhead (*Oncorhynchus mykiss*) is present within the BSA. Critical habitat for these two species is discussed in more detail in Sections 4.3.2 and 4.3.4, respectively.

3.2.2 Special-Status Plants

The USFWS, CNDDB, and CNPS databases list a total of 43 special-status plant species with potential to occur in the BSA. The names and legal status of each of these species are identified in Table 1, as well as a general description of the habitat requirements, whether or not suitable habitat is present in the BSA, and the potential that each species would occur in the BSA. Plant species with no potential to occur in the BSA are not discussed further in this NES-MI, while plant species that occur within the BSA or cannot be ruled out as absent are discussed in Section 4.2. The database results are provided in Appendix A.

3.2.3 Special-Status Wildlife

The CNDDB, USFWS, and NOAA Fisheries databases list a total of 38 special-status wildlife species with a potential to occur within the BSA. The names and legal status of each of these species are identified in Table 2, as well as a general description of the habitat requirements, whether or not suitable habitat is present in the BSA, and the potential that each species would occur in the BSA. Wildlife species with no potential to occur in the BSA are not discussed further in this NES-MI, while plant species that occur within the BSA or cannot be ruled out as absent are discussed in Section 4.3. The database results are provided in Appendix A.

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Table 1. Potential for Special-Status Plant Species to Occur within the Biological Study Area

Scientific Name **Common Name**	***Status***			**Blooming Period**	**Habitat Requirements (bold if present in study area)**	**Habitat Present/ Absent**	**Potential to Occur/ Rationale**
	Fed	**State**	**CNPS**				
Allium peninsulare var. *franciscanum* Franciscan onion	--	--	1B.2	Apr-Jun	Cismontane woodland, valley and foothill grassland in clay, volcanic, and often serpentinite soil. Elev. 170-1000 ft.	Absent	**None.** Appropriate woodland and grassland habitat are absent from the BSA.
Amorpha californica var. napensis Napa false indigo	--	--	1B.2	Apr-Jul	Broadleafed upland forest in openings, chaparral, cismontane woodland. Elev. 390-6600 ft.	Absent	**None.** Appropriate upland forest, chaparral, and cismontane habitat are absent from the BSA.
Astragalus tener var. *tener* Alkali milk-vetch	--	--	1B.2	Mar-Jun	Valley and foothill grassland in adobe clay soil; playas and vernal pools with alkaline soil. Elev. 0-200 ft.	Absent	**None.** Appropriate grassland, playa, and vernal pool habitat are absent from the BSA.
Blennosperma bakeri Sonoma sunshine	E	E	1B.1	Mar-May	Vernal pools, mesic valley and foothill grassland. Elev. 325-365 ft.	Absent	**None.** Appropriate vernal pool, valley, and grassland habitat are absent from the BSA.
Ceanothus masonii Mason's Ceanothus	--	SR	1B.2	May-Apr	Chaparral and rocky slopes Elev. 492 -1476 ft.	Absent	**None.** Appropriate chaparral and rocky slope habitat are absent from the BSA.
Ceanothus sonomensis Sonoma ceanothus	--	--	1B.2	Feb-Apr	Chaparral in sandy, serpentinite, or volcanic soil. Elev. 705-2625 ft.	Absent	**None.** Appropriate chaparral habitat is absent from the BSA.
Centromadia parryi ssp. parryi Pappose tarplant	--	--	1B.2	May-Nov	Chaparral, coastal prairie, meadows and seeps, **coastal salt marshes** and swamps, vernally mesic valley and foothill grassland often in alkaline soil. Elev. 0-1380 ft.	Present	**None.** No *Centromadia* species were observed during the June and July 2020 surveys.
Chloropyron maritimum ssp. *palustre* Point Reyes salty bird's-beak	--	--	1B.2	Jun-Oct	**Coastal salt marshes** and swamps. Elev. 0-35 ft.	Present	**None.** No *Chloropyron* species were observed during the June and July 2020 surveys.

Scientific Name **Common Name**	***Status***			**Blooming Period**	**Habitat Requirements (bold if present in study area)**	**Habitat Present/ Absent**	**Potential to Occur/ Rationale**
	Fed	**State**	**CNPS**				
Chloropyron molle ssp. molle Soft salty bird's beak	E	SR	1B.2	Jun-Nov	Marshes and swamps, **salt marsh**, and wetland Elev. 0-20 ft.	Present	**None.** No *Chloropyron* species were observed during the June and July 2020 surveys.
Chorizanthe valida Sonoma spineflower	E	E	1B.1	Jun-Aug	Coastal prairie in sandy soil. Elev. 30-1000 ft.	Absent	**None.** Appropriate prairie habitat is absent from the BSA.
Delphinium bakeri Baker's larkspur	E	E	1B.1	Mar-May	Broadleafed upland forest, coastal scrub, valley and foothill grassland. Only site occurs on NW-facing slope, on decomposed shale. Historically known from grassy areas along fencelines too. Elev. 344-672 ft.	Absent	**None.** Appropriate forest, coastal scrub, and grassland habitat are absent from the BSA.
Delphinium luteum Golden larkspur	E	SR	1B.1	Mar-May	Chaparral, coastal prairie, coastal scrub. North-facing rocky slopes Elev. 52-1076 ft.	Absent	**None.** Appropriate chaparral, prairie, and scrub habitat are absent from the BSA.
Downingia pusilla Dwarf downingia	--	--	2B.2	Mar-May	Mesic valley and foothill grassland, vernal pools. Elev. 0-1460 ft.	Absent	**None.** Appropriate valley and grassland habitat are absent from the BSA.
Eleocharis parvula Small spikerush	--	--	4.3	(Apr)Jun-Aug(Sep)	**Coastal saltmarshes** and riparian wetlands. Wet, sandy, loamy, or clay soils. Elev. 3-6787 ft.	Present	**None.** No *Eleocharis* species were observed during the June and July 2020 surveys.
Erigeron biolettii Streamside daisy	--	--	3	Jun-Oct	It is endemic to California, where it is known only from the North Coast Ranges from Marin and Solano Counties north to Humboldt County. Elev. 98-3609 ft.	Absent	**None.** Appropriate mountainous habitat is absent from the BSA.
Eriogonum luteolum var. *caninum* Tiburon buckwheat	--	--	1B.2	May-Sep	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland in sandy to gravelly serpentinite soil. Elev. 0-3000 ft.	Absent	**None.** Appropriate chaparral, woodland, and prairie habitat are absent from the BSA.

Scientific Name **Common Name**	***Status***			**Blooming Period**	**Habitat Requirements (bold if present in study area)**	**Habitat Present/ Absent**	**Potential to Occur/ Rationale**
	Fed	**State**	**CNPS**				
Fritillaria liliacea Fragrant fritillary	--	--	1B.2	Feb-Apr	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland often in serpentinite soil. Elev. 10-1345 ft.	Absent	**None.** Appropriate woodland, prairie, scrub, and grassland habitat are absent from the BSA.
Hemizonia congesta ssp. *congesta* Congested-headed hayfield tarplant	--	--	1B.2	Apr-Nov	Valley and foothill grassland, sometimes roadsides. Elev. 65-1840 ft.	Absent	**None.** Appropriate grassland habitat is absent from the BSA.
Hesperolinon congestum Marin western flax	T	T	1B.1	Apr-Jul	Chaparral, valley and foothill grassland in serpentinite soil. Elev. 15-1215 ft.	Absent	**None.** Appropriate chaparral and grassland habitat are absent from the BSA.
Iris longipetala Coast iris	--	--	4.2	Mar-May	Coastal prairie, lower montane coniferous forest, meadows and seeps in mesic soil. Elev. 0- 1970 ft.	Absent	**None.** Appropriate prairie, forest, meadow, and seep habitat are absent from the BSA.
Lasthenia burkei Burke's goldfields	E	E	1B.1	Apr-Jun	Mesic meadows and seeps, vernal pools. Elev. 45-1970 ft.	Absent	**None.** Appropriate meadow, seep, and vernal pool habitat are absent from the BSA.
Lasthenia conjugens Contra Costa goldfields	E	--	1B.1	Mar-Jun	Cismontane woodland, playas in alkaline soil, mesic valley and foothill grassland, vernal pools in mesic areas. Elev. 0-1545 ft.	Absent	**None.** Appropriate woodland, playa, grassland, and vernal pool habitat are absent from the BSA.
Legenere limosa Legenere	--	--	1B.1	Apr-Jun	Vernal pools, and wetlands. Elev. 0-2890 ft.	Absent	**None.** Appropriate vernal pool and wetland habitat are absent from the BSA.
Leptosiphon acicularis Bristly leptosiphon	--	--	4.2	Apr-Jul	Chaparral, oak woodland, coastal prairie, valley and foothill grassland habitats. Elev. 0-2300 ft	Absent	**None.** Appropriate chaparral, woodland, prairie, and grassland habitat are absent from the BSA.
Leptosiphon jepsonii Jepson's leptosiphon	--	--	1B.2	Mar-May	Chaparral, cismontane woodland, Valley and foothill grassland usually in volcanic soil. Elev. 325-1640 ft.	Absent	**None.** Appropriate chaparral, woodland, and grassland habitat are absent from the BSA.

Scientific Name **Common Name**	***Status***			**Blooming Period**	**Habitat Requirements (bold if present in study area)**	**Habitat Present/ Absent**	**Potential to Occur/ Rationale**
	Fed	**State**	**CNPS**				
Lessingia hololeuca Woolly-headed lessingia	--	--	3	Jun-Oct	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland in clay and serpentinite soils. Elev. 45-1000 ft.	Absent	**None.** Appropriate forest, scrub, and grassland habitat are absent from the BSA.
Lillium pardalinum ssp. pitkinense Pitkin Marsh lily	E	E	1B.1	Jun-Jul	Cismontane woodland, meadows and seeps, freshwater marshes and swamps in mesic, sandy soil. Elev. 115-215 ft.	Absent	**None.** Appropriate woodland, meadow, seep, freshwater marsh, and swamp habitat are absent from the BSA.
Limnanthes vinculans Sebastopol meadowfoam	E	E	1B.1	Apr-May	Meadows and seeps, valley and foothill grassland, vernally mesic vernal pools. Elev. 45-1000 ft.	Absent	**None.** Appropriate meadow, seep, grassland, and vernal pool habitat are absent from the BSA.
Micropus amphibolus Mount Diablo cottonweed	--	--	3.2	Mar-May	Valley and foothill grassland, cismontane woodland, broadleafed upland forest. Bare, grassy or rocky slopes. Elev. 160-2625 ft.	Absent	**None.** Appropriate grassland, woodland, and forest habitat are absent from the BSA.
Microseris paludosa Marsh microseris	--	--	1B.2	Apr-Jul	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elev. 15-1165 ft.	Absent	**None.** Appropriate forest, woodland, scrub, and grassland habitat are absent from the BSA.
Navarretia cotulifolia Cotula navarretia	--	--	4.2	May-Jun	Moist areas in chaparral and grassland habitat, such as vernal pools, in heavy soils such as adobe clay. Elev. 2-5830 ft.	Absent	**None.** Appropriate chaparral, grassland, and vernal pool habitat are absent from the BSA.
Navarretia leucocephala ssp. bakeri Baker's navarretia	--	--	1B.1	Apr-Jul	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, mesic vernal pools Elev. 15-5710 ft.	Absent	**None.** Appropriate woodland, forest, meadow, seep, grassland, and vernal pool habitat are absent from the BSA.
Plagiobothrys mollis var vestitus Petaluma popcornflower	--	--	1A	Jun-Jul	Occurs usually in **salt-marsh** or coastal wetlands, occasionally in non-wetlands. Elev. 33-164 ft.	Present	**None.** No *Plagiobothrys* species were observed during the June and July 2020 surveys.

Scientific Name **Common Name**	***Status***			**Blooming Period**	**Habitat Requirements (bold if present in study area)**	**Habitat Present/ Absent**	**Potential to Occur/ Rationale**
	Fed	**State**	**CNPS**				
Pleuropogon hooverianus North Coast semaphore grass	--	T	1B.1	Apr-Jun	Broadleaf upland forest, meadows and seeps, open areas in mesic North Coast coniferous forest. Elev. 30-3775 ft.	Absent	**None.** Appropriate forest, meadow, and seep habitat are absent from the BSA.
Pleuropogon refractus Nodding semaphore grass	--	--	4.2	(Mar)Apr-Aug	Lower montane coniferous forest, meadows and seeps, North Coast coniferous forest, and riparian forest in mesic soil. Elev. 0-5250 ft.	Absent	**None.** Appropriate forest, meadow, and seep habitat are absent from the BSA.
Polygonum marinense Marin knotweed	--	--	3.1	(Mar)Apr-Aug(Oct)	**Coastal salt or brackish marshes** and swamps. Elev. 0-35 ft.	Present	**None.** No *Polygonum* species were observed during the June and July 2020 surveys.
Ranunculus lobbii Lobb's aquatic buttercup	--	--	4.2	Feb-May	Cismontane woodland, valley and foothill grassland, vernal pools, north coast coniferous forest. Elev. 50-1545 ft.	Absent	**None.** Appropriate woodland, grassland, vernal pool, and forest habitat are absent from the BSA.
Rhynchospora globularis Round-headed beaked-rush	--	--	2B.1	Jul-Aug	Freshwater wetlands and occasionally in non-wetlands. 148-197 ft.	Absent	**None.** Appropriate freshwater wetland habitat is absent from the BSA.
Sidalcea calycosa ssp. rhizomata Point Reyes checkerbloom	--	--	1B.2	Apr-Sep	Marshes and swamps. Freshwater marshes near the coast. Elev. 15-250 ft.	Absent	**None.** Appropriate freshwater marsh and swamp habitat are absent from the BSA.
Streptanthus anomalus Mount Burdell jewelflower	--	--	1B.1	May-Jun	Grassy openings with serpentinite soil in cismontane woodland. Elev. 164-492 ft.	Absent	**None.** Appropriate woodland habitat is absent from the BSA.
Trifolium amoenum Two-fork clover	E	--	1B.1	Apr-Jun	Coastal bluff scrub, valley and foothill grassland (sometimes serpentine). Elev. 15-1365 ft.	Absent	**None.** Appropriate scrub and grassland habitat are absent from the BSA.
Trifolium hydrophilum Saline clover	--	--	1B.2	Apr-Jun	Marshes and swamps, valley and foothill grassland in mesic areas with alkaline soil, vernal pools. Elev. 0-985 ft.	Absent	**None.** Appropriate freshwater marsh, swamp, grassland, and vernal pool habitat are absent from the BSA.

Scientific Name Common Name	*Status*			Blooming Period	Habitat Requirements (bold if present in study area)	Habitat Present/ Absent	Potential to Occur/ Rationale
	Fed	State	CNPS				
Trifolium polyodon Pacific Grove clover	--	SR	1B.1	Apr-Jul	Closed-cone coniferous forest, coastal prairie, meadows and seeps, valley and foothill grassland in mesic areas. Elev. 15-855 ft.	Absent	**None.** Appropriate forest, prairie, meadow, seep, and grassland habitat are absent from the BSA.

Notes:
BSA = Biological Study Area
CNPS = California Native Plant Society

Status Legend
-- = No status, or not applicable
E = Listed as endangered under FESA or CESA
T = Listed as threatened under FESA or CESA
SR = Listed as rare

CNPS Ranking
1A = Presumed extinct in California and either rare or extinct elsewhere.
1B = Rare, threatened, or endangered in California and elsewhere.
2A = Presumed extinct in California but common elsewhere.
2B = Rare, threatened, or endangered in California but more common elsewhere.
3 = More information needed about this plant (Review List).
4 = Limited distribution (Watch List).

Threat Ranks
0.1 = Seriously threatened in California (more than 80% of occurrences threatened/high degree and immediacy of threat).
0.2 = Moderately threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat).
0.3 = Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known).

Potential to Occur Definitions
None = No possibility for occurrence.
Not likely = Habitat may be present but this species has not been documented in the study area other than historical museum specimen records; however, potential for its presence cannot be ruled out entirely.
Low = Suitable habitat present; not likely to occur due to environmental constraints, but cannot be ruled as absent.
Moderate = Potential to occur based on habitat suitability and documented records in the study area region.
High = Species has been document within the study area.

Table 2. Potential for Special-Status Animal Species to Occur within the Biological Study Area

Scientific Name Common Name	Status Federal/State		Habitat Description	Potential to Occur in Project Area	Federal Effects Determination
Invertebrates					
Syncaris pacifica California freshwater shrimp	E	E	Endemic to Marin, Napa, and Sonoma counties. Found in low-elevation, low-gradient streams where riparian cover is moderate to heavy; in shallow pools away from main streamflow.	**None**. Suitable freshwater habitats are absent because Petaluma River is tidally-influenced and brackish within the BSA.	**No effect. Not present.**
Bombus crotchii Crotch bumble bee	--	C	Coastal California east to the Sierra-Cascade crest and south into Mexico. Inhabits open grassland and scrub habitats. Nests are primarily in underground cavities. Food plant genera include but are not limited to *Asclepias*, *Chaenactis*, *Lupinus, Medicago, Phacelia*, and *Salvia.*[1]	**None**. Suitable nesting and foraging habitat are absent from the BSA.	**No effect. Not present.**
Bombus occidentalis Western bumble bee	--	C	Meadows and grasslands with abundant floral resources. Nests are primarily in underground cavities, such squirrel burrows, located on open west-southwest slopes bordered by trees. Food plant genera include but are not limited to *Cirsium*, *Eriogonum, Solidago, Aster, Ceanothus, Centaurea, and Penstemon.*[1]	**None**. Suitable nesting and foraging habitat are absent from the BSA.	**No effect. Not present.**
Callophrys mossii bayensis San Bruno elfin butterfly	E	--	Found in coastal, mountainous areas with grassy ground cover, mainly in the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on steep, north-facing slopes. Larval host plant is *Sedum spathulifolium*.	**None**. The BSA is not within the range of this species and larval host plants are absent.	**No effect. Not present.**
Speyeria zerene myrtleae Myrtle's silverspot butterfly	E	--	Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula; extirpated from coastal San Mateo County. Larval host plants are violets, typically *Viola pedunculata*.	**None**. The BSA is not within the range of this species and larval host plants are absent.	**No effect. Not present.**
Fish					

[1] Xerces Society for Invertebrate Conservation, Defenders of Wildlife, Center for Food Safety. 2018. A Petition to the State of California Fish and Game Commission to List the Crotch bumble bee (Bombus crotchii), Franklin's bumble bee (Bombus franklini), Suckley cuckoo bumble bee (Bombus suckleyi), and western bumble bee (Bombus occidentalis occidentalis) as Endangered under the California Endangered Species Act.

Scientific Name **Common Name**	**Status Federal/State**		**Habitat Description**	**Potential to Occur in Project Area**	**Federal Effects Determination**
Acipenser medirostris Green sturgeon –southern DPS	T	SSC	These are the most marine species of sturgeon. Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, and Trinity Rivers at temperatures between 8 and 14 degrees Celsius. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	**Low**. Green sturgeon are known to occur in San Pablo Bay and they likely forage within the lower reaches of Petaluma River[2]. Although unlikely to occur within the BSA, presence cannot be ruled out entirely.	**May effect, not likely to adversely affect.**
Acipenser medirostris Critical Habitat for Green sturgeon –southern DPS	--	--	Estuarine, salt marsh, and freshwater streams.	**Present**. Critical habitat for green sturgeon is present within the BSA.	**May effect, not likely to adversely affect.**
Oncorhynchus kisutch Coho salmon – central California coast ESU	E	E	Occurs between Punta Gorda and San Lorenzo River (federal listing) and south of Punta Gorda (state listing). Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	**None**. Appropriate habitat is absent from the BSA.	**No effect. Not present.**
Oncorhynchus kisutch Critical Habitat for Coho salmon – central California coast ESU	--	--	Creeks with dense riparian cover.	**None**. Critical habitat for coho salmon is absent from the BSA.	**No effect. Not present.**
Oncorhynchus kisutch Essential Fish Habitat for Coho salmon – central California coast ESU	MSA	--	Creeks with dense riparian cover.	**Present**. Essential fish habitat for coho salmon is present within the BSA.	**There will be no adverse effects.**

[2] National Marine Fisheries Service. 2009. Biological Opinion, Marin Sonoma Narrows Highway 101 High Occupancy Vehicle Lane Widening Project, Novato to Petaluma, 2007/08320. https://books.google.com/books?id=deg0AQAAMAAJ&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false (last accessed: March 10, 2020)

Scientific Name **Common Name**	**Status Federal/State**		**Habitat Description**	**Potential to Occur in Project Area**	**Federal Effects Determination**
Onchorynchus mykiss irideus Steelhead – Central California Coast	T	--	Occurs from Russian River south to Soquel Creek (Santa Cruz County) and to, but not including the Pajaro River (Santa Clara County). Also occur in San Francisco and San Pablo Bay basins.	**Moderate**. Steelhead have been reported to use the Petaluma River to access upstream spawning habitat[3].	**May effect, not likely to adversely affect.**
Onchorynchus mykiss irideus Critical Habitat for Steelhead – Central California Coast	--	--	Creeks with dense riparian cover.	**Present**. Critical habitat for steelhead salmon is present within the BSA.	**May effect, not likely to adversely affect.**
Onchorynchus tshawytscha Chinook salmon – California coastal	T	--	Includes naturally spawned Chinook salmon originating from rivers and streams south of the Klamath River to and including the Russian River.	**None**. Appropriate habitat is absent from the BSA.	**No effect. Not present.**
Onchorynchus tshawytscha Essential Habitat for Chinook salmon	MSA	--	Large freshwater rivers.	**Present**. Essential fish habitat for chinook salmon is present within the BSA.	**There will be no adverse effects.**
Hypomesus transpacificus Delta smelt	T	E	Occur in Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay in aquatic estuaries with salinity ranging from 2 to 10 parts per trillion.	**None**. The BSA is not within the range of this species.	**No effect. Not present.**

[3] National Marine Fisheries Service. 2009. Biological Opinion, Marin Sonoma Narrows Highway 101 High Occupancy Vehicle Lane Widening Project, Novato to Petaluma, 2007/08320. https://books.google.com/books?id=deg0AQAAMAAJ&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false (last accessed: March 10, 2020)

Scientific Name **Common Name**	**Status Federal/State**		**Habitat Description**	**Potential to Occur in Project Area**	**Federal Effects Determination**
Spirinchus thaleichthys Longfin smelt	C	T	Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. During summer, found in mid- to low-water column in deep cool water in the central San Francisco Bay. During fall, migrates into low salinity or freshwater reaches of coastal rivers and tributary streams to spawn[4].	**Moderate**. Between 2015 and 2017, juvenile longfin smelt were documented within Petaluma River in the BSA region[5].	**No effect. No potential for take with avoidance and minimization measures.**
Pogonichthys macrolepidotus Sacramento splittail	--	SSC	Endemic to the lakes, slow moving river sections, and dead-end sloughs of the Central Valley, but now confined to the Delta, Suisun Bay, and associated marshes. Requires flooded vegetation for spawning and foraging for young.	**Moderate**. Petaluma River provides suitable habitat for this species. Hundreds of individuals been documented just upstream of the BSA in the channelized portion of the river in downtown Petaluma (CNDDB #8).	**No effect. Not present.**
Eucyclogobius newberryi Tidewater goby	E	--	Found in shallow lagoons and lower stream reaches in brackish-water habitats along the coast from Agua Hedionda Lagoon (San Diego County) to the mouth of the Smith River; rarely moves into marine or freshwater habitat. Needs fairly still but not stagnant water and high oxygen levels.	**None**. Tidewater goby historically occupied Petaluma River, but is considered to be extirpated[6].	**No effect. Not present.**
Essential Fish Habitat for Groundfish	--	--	130,000 square miles of marine water off the West Coast. Deep ocean habitats including sea floors and deep-sea corals.	**None**. Essential fish habitat for groundfish is absent from the BSA.	**No effect. Not present.**
Essential Fish Habitat for Pelagics	--	--	130,000 square miles of marine water off the West Coast. Pelagic fish habitat is found in the pelagic zone of the ocean, near the surface or in the open water column.	**None**. Essential fish habitat for pelagics is absent from the BSA.	**No effect. Not present.**

[4] The Bay Institute, Center for Biological Diversity, Natural Resources Defense Council. 2007. Petition to the State of California Fish and Game Commission and Supporting Information for Listing the Longfin Smelt (*Spirinchus Thaleichthys*) As an Endangered Species Under the California Endangered Species Act. https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/exhibits/sfwc/spprt_docs/sfwc_exh3_bayinstitute_2007.pdf

[5] Parker, C., L. Lewis, A. Barros, M. Willmes, M. Bisson, J. Hobbs. 2017. Longfin Smelt Distribution: Abundance and Evidence of Spawning in San Francisco Bay Tributaries. http://hobbslab.com/wp-content/uploads/2017/10/Parker_SoE_2017_Final.pdf

[6] USFWS. 2007. Tidewater goby (Eucyclogobius nerberryi) 5-Year Review: Summary and Evaluation. https://www.fws.gov/cno/es/images/Graphics/TWG%205-year%20review%20FINAL%20092707.pdf

Scientific Name Common Name	Status Federal/State		Habitat Description	Potential to Occur in Project Area	Federal Effects Determination
Amphibians					
Ambystoma californiense California tiger salamander	E/T	T	Central Valley DPS federally listed as threatened. Santa Barbara County and Sonoma County DPS federally listed as endangered. Needs underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	**None**. Suitable freshwater aquatic habitats are absent from the BSA. The nearest CNDDB occurrence (#1135) overlaps the Project site but it is from 1856 and listed as possibly extirpated.	**No effect. Not present.**
Dicamptodon ensatus California giant salamander	--	SSC	Known from wet coastal forests near streams and seeps from Mendocino County, south to Monterey County and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	**None**. Suitable freshwater habitat is absent because Petaluma River is tidally-influenced and brackish within the BSA.	**No effect. Not present.**
Taricha rivularis Red-bellied newt	--	SSC	Found in the streams and rivers of coastal woodlands and redwood forests along coastal northern California. Larvae use the cover of vegetation and stones during the day.	**None**. Suitable freshwater habitat is absent because Petaluma River is tidally-influenced and brackish within the BSA.	**No effect. Not present.**
Rana draytonii California red-legged frog	T	SSC	Found in lowlands and foothills in or near-permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Needs access to rodent burrows, cracks, and crevices in the ground for refugia.	**None**. Suitable freshwater habitat is absent because Petaluma River is tidally-influenced and brackish within the BSA.	**No effect. Not present.**
Rana boylii Foothill yellow-legged frog	--	C	Inhabits partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs cobble-sized substrate for egg-laying and at least 15 weeks of water to attain metamorphosis.	**None**. Suitable freshwater habitat is absent because Petaluma River is tidally-influenced and brackish within the BSA.	**No effect. Not present.**
Reptiles					

Scientific Name Common Name	Status Federal/State		Habitat Description	Potential to Occur in Project Area	Federal Effects Determination
Emys marmorata Western pond turtle	--	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation, below 6000 feet elevation. Needs basking sites and sandy banks or grassy open fields for egg-laying.	**Low**. Potentially suitable brackish aquatic habitat is present within the BSA, but nesting habitat is absent. There are no CNDDB occurrences within Petaluma River, but there are numerous occurrences within the watershed.	**No effect. No potential for take with avoidance and minimization measures.**
Chelonia mydas East Pacific green sea turtle	T	--	Marine. Completely herbivorous; needs adequate supply of seagrasses and algae.	**None**. Suitable marine habitat is absent from the BSA.	**No effect. Not present.**
Birds					
Rallus obsoletus California Ridgway's rail	E	E, FP	Found in salt and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	**None**. Salt and brackish marsh habitat with suitable cover is absent from the BSA.	**No effect. Not present.**
Laterallus jamaicensis coturniculus California black rail	--	T, FP	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays.	**None**. Salt and brackish marsh habitat with suitable cover is absent from the BSA.	**No effect. Not present.**
Sternula antillarum browni California least tern	E	E, FP	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	**None**. Suitable nesting habitat is absent from the BSA.	**No effect. Not present.**
Elanus leucurus White-tailed kite	--	FP	Found in rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Forages in open grasslands, meadows, or marshes close to isolated, dense-topped trees for nesting and perching.	**None**. Suitable nesting and foraging habitat are absent from the BSA.	**No effect. Not present.**
Athene cunicularia Burrowing owl	--	SSC	Occurs in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**None**. Suitable nesting and foraging habitat are absent from the BSA.	**No effect. Not present.**

Scientific Name **Common Name**	**Status Federal/State**		**Habitat Description**	**Potential to Occur in Project Area**	**Federal Effects Determination**
Strix occidentalis caurina Northern spotted owl	T	T	North Coast coniferous and redwood old-growth forests. Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests with patches of big trees. High, multistory canopy dominated by big trees, many trees with cavities or broken tops, woody debris, and space under canopy.	**None**. Suitable forest habitats are absent from the BSA.	**No effect. Not present.**
Buteo swainsoni Swainson's hawk	--	T	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranchlands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**None**. This species may occur as a rare migrant, but the BSA is not within the nesting range of this species.	**No effect. Not present.**
Aquila chrysaetos Golden eagle	--	FP	Found in rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	**None**. Suitable nesting and foraging habitat are absent from the BSA.	**No effect. Not present.**
Coccyzus americanus occidentalis Western yellow-billed cuckoo	T	E	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**None**. The BSA is not within the current range of this species and suitable riparian habitats are absent.	**No effect. Not present.**
Riparia Bank swallow	--	T	Nests in colonies, excavating tunnels into vertical sandbanks. Forages over any habitat but especially marshes, meadows, and water.	**None**. Appropriate sandy banks for nesting are absent from the BSA.	**No effect. Not present.**
Geothlypis trichas sinuosa San Francisco (saltmarsh) common yellowthroat	--	SSC	Resides in fresh and saltwater marshes and creeks of the San Francisco Bay region. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**None**. Appropriate foraging and nesting habitat are absent from the BSA.	**No effect. Not present.**
Ammodramus savannarum Grasshopper sparrow	--	SSC	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs and scattered shrubs. Loosely colonial when nesting.	**None**. Appropriate grassland habitat is absent from the BSA.	**No effect. Not present.**

Scientific Name **Common Name**	**Status Federal/State**		**Habitat Description**	**Potential to Occur in Project Area**	**Federal Effects Determination**
Melospiza melodia samuelis San Pablo song sparrow	--	SSC	Resides in salt marshes along the north side of San Francisco and San Pablo bays. Inhabits tidal sloughs in *Salicornia* marshes; nests in *Grindelia* bordering slough channels.	**Present.** A nest was observed within saline emergent wetland vegetation within the BSA during the June 25, 2020 survey.	**No effect. Not present.**
Agelaius tricolor Tricolored blackbird	--	SSC, T	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey near the colony.	**None**. Appropriate nesting habitat is absent from the BSA.	**No effect. Not present.**
Mammals					
Corynorhinus townsendii Townsend's big-eared bat	--	SSC	Roosts in man-made structures such as old buildings and bridge crevices.	**None**. Neither roosting bats nor indications of roosting bats were observed within the BSA.	**No effect. Not present.**
Antrozous pallidus Pallid bat	--	SSC	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting.	**None**. Neither roosting bats nor indications of roosting bats were observed within the BSA.	**No effect. Not present.**
Taxidea taxus American badger	--	SSC	Most abundant in drier, open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**None**. Appropriate shrub, forest, and grassland habitats are absent from the BSA.	**No effect. Not present.**
Reithrodontomys raviventris Salt-marsh harvest mouse	E	E, FP	Occurs only in the saline emergent wetlands of San Francisco Bay and its tributaries. Primary habitat is pickleweed.	**None**. Suitable pickleweed habitat is absent from the BSA.	**No effect. Not present.**

Notes:
DPS = Distinct Population Segment

Status Legend
E = Listed as endangered under FESA or CESA
T = Listed as threatened under FESA or CESA
C = Listed as candidate under FESA or CESA
SSC = Species of special concern
FP = Fully Protected
MSA = Magnuson-Stevens Fishery Management Act

Rationale Definitions

None = No possibility for occurrence.
Not likely = Habitat may be present, but this wildlife species has not been documented in the BSA other than historical museum specimen records; however, potential for its presence cannot be ruled out entirely.
Low = Suitable habitat present; not likely to occur due to environmental constraints, but cannot be ruled as absent.
Moderate = Potential to occur based on habitat suitability and documented records in the BSA region.
High = Species has been documented within the BSA.

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

This chapter describes the habitats and natural communities of concern as well as the special-status plant and animal species that were observed or were determined to have the potential to occur in the BSA. In general, the proposed Project will have few impacts on the natural environment because the Project would predominantly occur within a developed footprint. Construction-related disturbances within sensitive areas would either be avoided or limited in size and scope, and any impacts in these areas resulting from the Project would be minimized.

4.1 Habitats and Natural Communities of Special Concern

4.1.1 Discussion of Sensitive Natural Communities

Sensitive natural communities are those of limited distribution statewide or within a county or region and are often vulnerable to environmental impacts. Natural communities with state ranks of 1, 2, or 3 (S1, S2, and S3) are considered to be sensitive, and impacts on these communicates must be addressed in the environmental review processes of CEQA and its equivalents.

4.1.1.1 SURVEY RESULTS

Based on the vegetation classification and keys in *A Manual of California Vegetation*, 2nd edition (Sawyer et al. 2009), saline emergent wetland vegetation within the BSA is within the alkali bulrush (*Bolboschoenus maritimus*) herbaceous alliance. Within this alliance, this natural community is within the alkali bulrush association (California Community Code 52.112.03). This natural community is considered to be sensitive based on CDFW's California Natural Communities List, dated November 8, 2019. This sensitive natural community is located on the eastern bank of Petaluma River to the north of the bridge structure where there is an area of emergent wetland below the high tide line of Petaluma River (Figure 7).

4.1.1.2 PROJECT IMPACTS

The proposed structural work and associated excavations required to provide seismic upgrades to the existing bridge would occur behind the existing bridge abutments within existing developed areas rather than in vegetated areas along the banks of Petaluma River. Therefore, permanent impacts on this sensitive natural community would not occur. However, dewatering may be required for the proposed excavations behind the bridge abutments. If this water is discharged into Petaluma River, the dewatering/discharge pipe could be placed within this vegetation community, resulting in temporary impacts to a sensitive natural community. These temporary impacts would likely consist of trimming or mowing a path for the dewatering/discharge pipe through the existing vegetation.

4.1.1.3 AVOIDANCE AND MINIMIZATION MEASURES EFFORTS/COMPENSATORY MITIGATION

The following measures would be incorporated into the Project as necessary to avoid impacts on CDFW-designated natural communities:

- Staging areas will be located in an upland area on existing paved, graveled, or other previously compacted surfaces that lack vegetation. The staging area will be located at least 100 feet from Petaluma River.
- Work in areas containing vegetation would be minimized to the maximum extent practicable. Existing vegetation, including trees, shrubs, and herbs, would be preserved in place to the maximum extent practicable.
- Alkali bulrush vegetation would be designated as an Environmentally Sensitive Area during construction. Temporary high-visibility fence (THVF) would be installed along the boundary of the work area to prevent entry of construction personnel into this sensitive natural community.
- If required during construction, dewatering/discharge pipes would not be placed within alkali bulrush (i.e., saline emergent wetland) vegetation on the eastern bank of Petaluma River to the north of the existing bridge.

4.1.2 Waters of the U.S.

Waters of the U.S. include tidal waters, lakes, ponds, rivers, streams, and wetlands. These features receive protection under Section 404 of the CWA and Section 10 of the Rivers and Harbors Act, and they are regulated by the USACE. Wetlands are defined as "include swamps, marshes, bogs, and similar areas" (33 Code of Federal Regulations [CFR] 328.3[b]). Other waters of the U.S. consist of non-tidal watercourses that may either contain water year-round or intermittently, and they also include tributaries to such watercourses (33 CFR 328.3[a]). The limit of USACE jurisdiction in tidal watercourses under Section 404 of the CWA is defined as the high tide line. Under Section 10 of the Rivers and Harbors Act, the limit of USACE jurisdiction is defined as either mean high water along tidal watercourses or the OHWM along non-tidal watercourses designated as navigable Waters of the U.S.

4.1.2.1 SURVEY RESULTS

According to the *Aquatic Resources Delineation Report* (WRECO, 2020), the only water of the U.S. within the BSA is Petaluma River, a tidal watercourse.

Along the eastern bank of Petaluma River, there is a change in vegetation composition, soil conditions, and grade at the high tide line. Plants considered to be halophytes (as well as tidal mudflats) were found below the high tide line whereas annual grasses and weedy species characteristic of upland areas were present above the high tide line. Halophytic vegetation below the high tide line within the BSA includes saltgrass, gumplant, pickleweed, chairmaker's

bulrush, and alkali bulrush. Hydric soils were present below the high tide line, but not above the high tide line. Additionally, there is a change in grade at the high tide line, where sloping channel banks were present below the high tide line and relatively flat areas were present above the high tide line. Along the western bank of Petaluma River, water staining was observed on the sheet piles, concrete wingwalls, and concrete abutments that comprise the river bank. The elevation of this staining on the western bank was consistent with the elevation where vegetation composition and topographic changes occur on the eastern bank.

The nearest NOAA tidal gaging station to the BSA is station 9414863 located in San Francisco Bay near Richmond, Contra Costa County. At this NOAA gaging station, the mean high water elevation is 2.84 feet National Geodetic Vertical Datum 1929 (NGVD 29). According to *San Francisco Bay Tidal Datums and Extreme Tides Study* (AECOM, 2016), the mean high water elevation of San Pablo Bay at the mouth of Petaluma River is 2.99 feet NGVD 29. The mean high water elevation of 2.99 feet NGVD 29 was selected as the jurisdictional limit under Section 10 of the Rivers and Harbors Act, because it is located closer to the BSA and is based on newer tidal data, statistical analysis, and modeling than the NOAA data.

Table 3 summarizes the area and length of Petaluma River that is subject to regulation under Section 404 of the CWA and Section 10 of the Rivers and Harbors Act within the BSA.

Table 3. Waters of the U.S. within the BSA

Feature	Area (square feet)	Area (acres)	Length (linear feet)
Petaluma River			
CWA Section 404/401 Jurisdiction	20,297	0.466	236
Rivers and Harbors Act Section 10 Jurisdiction	19,939	0.458	236

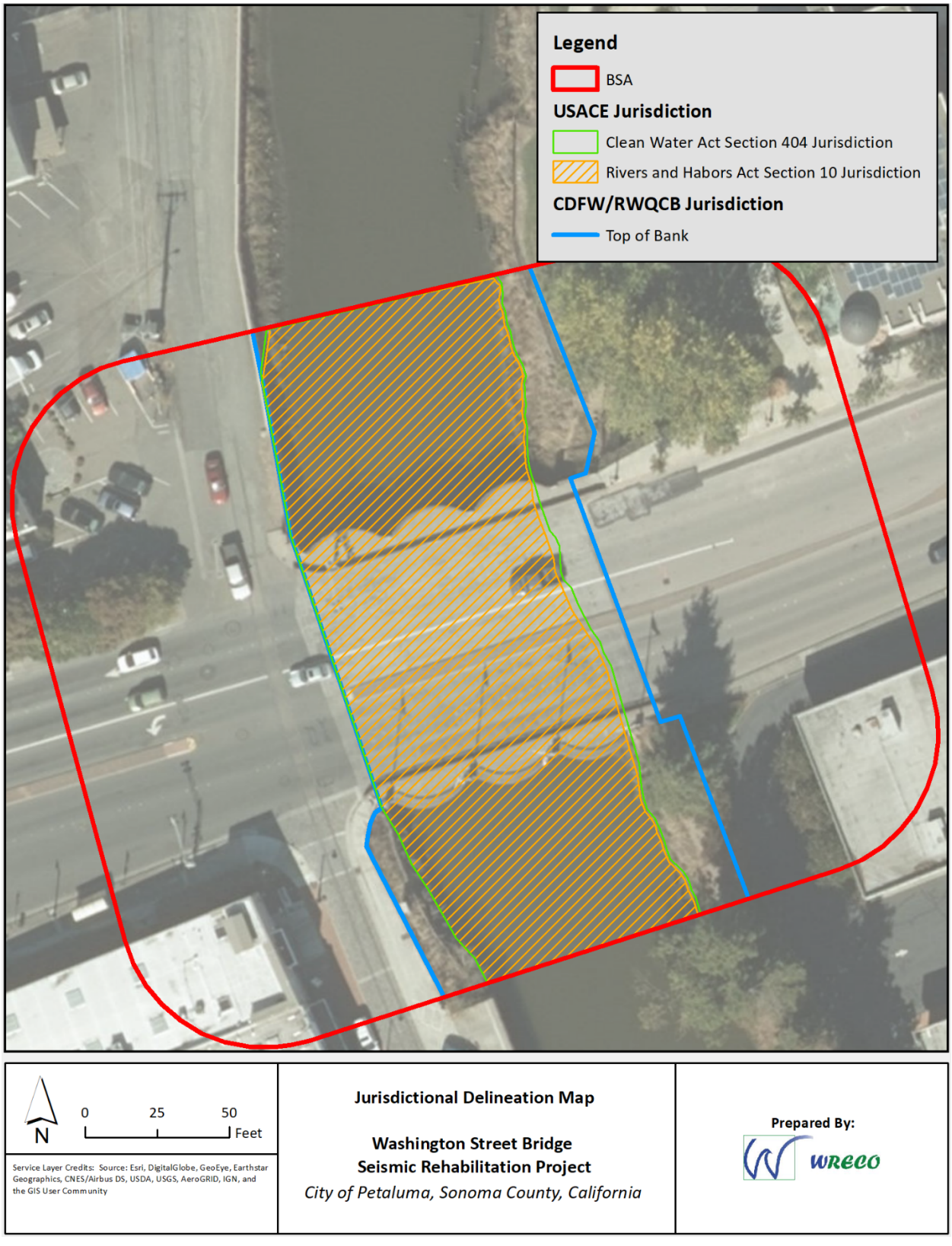

Figure 8. Jurisdictional Delineation Map

4.1.2.2 PROJECT IMPACTS

The proposed structural work and associated excavations required to provide seismic upgrades to the existing bridge would occur behind the existing bridge abutments within existing developed areas rather than in jurisdictional areas below the top of bank along Petaluma River. The Project does not include the placement of rock slope protection within Petaluma River. Therefore, direct permanent impacts on waters of the U.S. from Project construction activities would not occur.

However, dewatering may be required for the proposed excavations behind the bridge abutments. If this water is discharged into Petaluma River, these dewatering and discharge activities have the potential to affect the water quality of Petaluma River. Additionally, Project construction activities in the proposed work area and staging area could potentially result in discharges of pollutants into Petaluma River, either by runoff or through discharges into storm drain inlets. These water quality effects could include discharges of water with elevated pH due to exposure to uncured concrete, recently cured concrete, concrete washwater, and/or concrete rubble, elevated sediment concentrations that causes elevated turbidity in the river and sedimentation along the riverbed, drilling mud from constructing the CIDH piles, and petroleum hydrocarbons due to accidental leaks and spills of fuels and lubricants associated with mechanical construction equipment as well as direct deposition of dust into the river.

4.1.2.3 AVOIDANCE AND MINIMIZATION MEASURES EFFORTS/COMPENSATORY MITIGATION

The following avoidance and minimization measures would be implemented to avoid substantial temporary impacts on water quality within waters of the U.S.:

- A copy of all relevant permits will be included within the construction bid package of the proposed Project. The Resident Engineer or designee will be responsible for implementing the conditions of all permits.
- The City would evaluate the feasibility of using vertical cut-off walls or other means of limiting groundwater inflows into the proposed excavations to avoid dewatering or minimize the volume of dewatering needed during construction. If feasible, the City would implement structural measures to reduce the potential for groundwater inflows and associated dewatering/discharge activities during construction.
- Dewatering would be performed to avoid or minimize the potential for discharging pollutants into Petaluma River. This could include but is not limited to dewatering the excavations into temporary holding tanks and off-hauling the accumulated water to a publicly-owned treatment works, obtaining a wastewater discharge permit to discharge water in the excavations into the City's sanitary sewer system, and using a temporary Active Treatment System to treat accumulated water in the excavations prior to discharge into the river. If dewatering into Petaluma River is required, a Report of Waste Discharge

would be filed with the RWQCB. Dewatering into Petaluma River would not occur without express written permission from the RWQCB, and all dewatering activities would be performed in compliance with the RWQCB's conditions.

- To control potential water quality effects during construction, a Storm Water Pollution Prevention Plan (SWPPP) or similar plan would be prepared and implemented by the contractor. The SWPPP would prescribe the use of good housekeeping practices and best management practices (BMP) to avoid or minimize changes in the water quality of Petaluma River.
- Access routes and the number and size of staging, access and work areas will be limited to existing paved, graveled, or other previously compacted surfaces as identified in the Project plans. Movement of heavy equipment to and from the site will be restricted to established roadways.
- Routes and boundaries will be clearly marked prior to initiating ground disturbance.
- All food and food-related trash items such as wrappers, cans, bottles, and food scraps must be disposed of in securely closed containers and removed once a week from a construction or Project site.
- All equipment will be maintained such that there will be no leaks of automotive fluids such as gasoline, oils, or solvents, and a Spill Response Plan will be prepared and implemented by the contractor.
- Hazardous materials such as fuels, oils, and solvents will be stored in sealable containers in a designated location that is at least 100 ft from aquatic habitats and storm drain inlets.
- No discharge of pollutants from vehicles and equipment cleaning will be allowed into the storm drain or water courses.
- Vehicle and equipment fueling and maintenance operations must be at least 50 ft away from the top of bank along the river and storm drain inlets.
- Dust control will be implemented as needed to prevent deposition of dust onto local roadways and in the river. Dust control could include the use of water trucks and tackifiers to control dust in excavation and fill areas, applying drain rock to temporary access road entrances and exits, and covering temporary stockpiles when weather conditions require.
- Silt fence, fiber rolls, and/or other comparable BMPs would be placed along the top of bank along Petaluma River adjacent to the work area to reduce the potential for discharges of sediment and other materials into the river.
- All disturbed slopes and recently graded areas will be protected from erosion using a combination of silt fences, biodegradable fiber rolls along the toe of slopes or along edges of designated staging areas, and erosion-control biodegradable netting such as jute or coir, as appropriate. Except within jurisdictional aquatic features, biodegradable fiber

rolls will be installed along or at the base of slopes during construction to capture sediment, and temporary organic hydromulching will be applied to all unfinished disturbed and graded areas.

4.1.3 Essential Fish Habitat for the Pacific Coast Salmon Fishery Management Plan

The Magnuson-Stevens Fishery Conservation and Management Act was passed in 1976 for the conservation and management of the fishery resources of the U.S. to prevent overfishing, to rebuild overfished stocks, to ensure conservation, and to facilitate long-term protection of EFHs. This Act is implemented by regional Fishery Management Councils that work with NOAA to develop and implement fishery management plans. The plans must identify the EFH for each fishery within their NOAA jurisdiction. When a project is proposed that could adversely affect EFH, federal agencies must consult with NOAA in order to obtain avoidance and minimization consultation as well as conservation and enhancement recommendations.

4.1.3.1 Survey Results

The BSA contains EFH for species managed under the Pacific Coast Salmon Fishery Management Plan (coho and chinook salmon).

4.1.3.2 Project Impacts

Project impacts on EFH would be the same as those described in Section 4.1.2.2 for waters of the U.S., because Petaluma River provides the only aquatic habitat suitable for fish within the BSA. There will be no adverse effects on EFH. However, there is potential for temporary impacts on EFH due to changes in water quality associated with dewatering/discharge activities as well as construction activities conducted near the river.

4.1.3.3 Avoidance and Minimization Measures Efforts/Compensatory Mitigation

The avoidance and minimization measures described in Section 4.1.2.3 for waters of the U.S. would also be effective at reducing water quality impacts on EFH. These avoidance and minimization measures include measures to minimize and control dewatering, implement good housekeeping practices, and use construction site BMPs to reduce the potential for changes in water quality in Petaluma River. Additionally, the following avoidance and minimization measures would be implemented to further reduce impacts on EFH:

- If required, dewatering accumulated groundwater in Project excavations into Petaluma River would be restricted to low-flow periods between June 15 and October 31 to avoid water quality effects during adult and juvenile fish migratory seasons.
- Construction methods that require the use of pile driving would not be used.

With incorporation of these avoidance and minimization measures into Project construction, temporary impacts on water quality would be discountable. Accordingly, there would be no effect on EFH.

4.2 Special-Status Plant Species

Based on literature and database searches and botanical surveys, 43 plant species were initially evaluated (Table 1), and none were determined to have potential to occur within the BSA. No trees would need to be trimmed or removed during Project construction.

4.2.1 Discussion of Special-Status Plants

Special-status plant species are regulated under numerous federal and state regulations, including the FESA, CESA, and CEQA. Refer to Section 2.1 for more information on these regulations.

4.2.1.1 Survey Results

The BSA is within a developed urban area that is highly disturbed. However, portions of the banks of Petaluma River contain brackish or salt marsh vegetation that may provide suitable habitat for special-status plant species that occur in these habitat types. Reconnaissance-level biological resources surveys were conducted within the BSA in June and July 2020. During these surveys, all species of plants encountered were identified to the taxonomic level needed to determine if they had a special-status. Furthermore, these surveys were conducted within the blooming season for all special-status plants in Table 1 that occur in brackish marshes or salt marshes. Other habitat types within the BSA, including estuarine, annual grassland, and urban, are highly disturbed from historical development and do not have potential to contain special-status plant species. No special-status plants were observed during surveys, and none are expected to occur within the BSA.

4.2.1.2 Project Impacts

There would be no impacts on special-status plants because none occur within the BSA. Furthermore, the avoidance and minimization measure (AMM) for sensitive natural communities described in Section 4.1.1 would prevent impacts on potentially suitable habitat for special-status species that occur in brackish or salt marshes.

4.2.1.3 Avoidance and Minimization Measures Efforts/Compensatory Mitigation

No AMMs for special-status plants are proposed.

4.2.2 Invasive Weeds

Executive Order 13112 was designed to prevent the introduction of invasive species and provide for their control to minimize economic, ecological, and human health impacts. Noxious weeds

are defined and prioritized by the California Department of Food and Agriculture or the California Invasive Plant Council (Cal-IPC).

4.2.2.1 SURVEY RESULTS

Eight non-native invasive plant species were identified within the BSA that have moderate- or high-risk impacts on native plant populations (Cal-IPC 2017). Six are listed as having moderate (substantial and apparent) impacts, and two are ranked as having high (severe) impacts. Those listed as high-risk include Himalayan blackberry (*Rubus armeniacus*) and broadleaved pepperweed (*Lepidium latifolium*). Himalayan blackberry was observed in the annual grassland on the eastern bank of Petaluma River to the north of the existing bridge, while broadleaved pepperweed was growing within saline emergent wetland vegetation throughout the BSA as well as within annual grassland vegetation.

4.2.2.2 PROJECT IMPACTS

The proposed structural work and associated excavations required to provide seismic upgrades to the existing bridge would occur behind the existing bridge abutments within existing developed areas rather than in vegetated areas along the banks of Petaluma River. Therefore, Project construction is not expected to require clearing, grubbing, or other soil disturbing activities that would promote the spread of invasive plants, including their propagules such as seeds and rhizomes.

4.2.2.3 AVOIDANCE AND MINIMIZATION MEASURES EFFORTS/COMPENSATORY MITIGATION

No AMMs for invasive plants are proposed.

4.3 Special-Status Animal Species

Based on literature and database searches, and wildlife surveys, a total of 38 wildlife species were initially considered (Table 2). Species with no suitable habitat in the BSA were dropped from consideration and are not discussed further. The following species were determined to have potential to occur within the BSA, and the following sections include a discussion of each species, the survey results, project impacts, and avoidance and minimization measures proposed to protect each species.

- Green sturgeon – southern DPS
- Critical habitat for green sturgeon – southern DPS
- Steelhead – central California coast DPS
- Critical habitat for steelhead – central California coast DPS
- Longfin smelt
- Sacramento splittail
- Western pond turtle

- San Pablo song sparrow
- Nesting birds

4.3.1 Discussion of Green Sturgeon – Southern DPS

NOAA Fisheries has divided the range of the green sturgeon within California into two populations known as distinct population segments (DPS - defined as a vertebrate population or group of populations that is discrete from other populations of the species and significant in relation to the entire species). The southern DPS consists of coastal and Central Valley populations south of the Eel River (Humboldt County), and the only known spawning populations in the Sacramento River. The southern DPS green sturgeon is listed as a federally threatened species and a California SSC. San Francisco Bay lies within critical habitat for the green sturgeon (NOAA, 2009). Declines in green sturgeon populations is attributed to over harvesting, habitat loss or degradation, and entrainment (Adams et al., 2002).

Very little is known about the historical abundance, diversity, and population status of the green sturgeon. They spend more time in the ocean than any other sturgeon species and migrate into rivers to spawn from March to July. The green sturgeon is a slow growing, long-lived species. Females begin spawning at 17 years of age and they are thought to spawn every three to five years depositing 60,000 to 140,000 eggs. Spawning occurs on rocky bottom substrates and juveniles spend one to four years in freshwater (Adams et al 2002). Green sturgeons concentrate in coastal estuaries during the late summer and early fall. Their primary food source consists of shrimp, mollusks, amphipods, and small fish. Sedimentation is a threat to this species.

4.3.1.1 SURVEY RESULTS

No focused fish surveys were conducted. However, San Francisco Bay and its tributaries are known to contain the southern-most reproductive green sturgeon population (Adams et al 2002). Although spawning is only known within Sacramento River and its tributaries, juveniles have been found throughout San Francisco Bay (Heublin at al., 2017). Additionally, green sturgeon are known to occur in San Pablo Bay and they likely forage within the lower reaches of Petaluma River (National Marine Fisheries Service, 2009). Thus, there is potential for juveniles and non-spawning subadults and adults to occur within estuarine habitats of Petaluma River within the BSA.

4.3.1.2 PROJECT IMPACTS

The proposed structural work and associated excavations required to provide seismic upgrades to the existing bridge would occur behind the existing bridge abutments within existing developed areas rather than in vegetated areas along the banks of Petaluma River. Therefore, these construction activities would not take green sturgeon.

However, there is potential for take of green sturgeon due to the potential need for dewatering excavations into Petaluma River, as described in Section 4.1.2.2. If accumulated groundwater within Project excavations is discharged directly into Petaluma River, it could result in substantial changes to the quality of green sturgeon habitat. These changes in water quality could result from the discharge of water with high pH, elevated sediment concentrations, drilling mud, and petroleum hydrocarbons. Additionally, fugitive dust from Project excavations could be deposited directly into Petaluma River.

4.3.1.3 AVOIDANCE AND MINIMIZATION MEASURES EFFORTS/COMPENSATORY MITIGATION

The AMMs described in Sections 4.1.2.3 and 4.1.3.3 for waters of the U.S. and EFH, respectively, would also be effective at avoiding the potential for take of green sturgeon. These AMMs include measures to control dewatering, restrict dewatering into Petaluma River to avoid fish migratory seasons, avoid the use of pile driving construction methods, implement good housekeeping practices, and use construction site BMPs.

4.3.2 Discussion of Critical Habitat for Green Sturgeon – Southern DPS

Critical habitat is designated by the USFWS and NOAA Fisheries to protect areas that are essential to the survival of federally listed species of plants and wildlife. NOAA Fisheries designated Critical Habitat for the southern DPS of green sturgeon on October 9, 2009, in 74 FR 52299. Critical Habitat for green sturgeon includes freshwater riverine systems, estuarine areas, and coastal marine areas. The six Primary Constituent Elements (PCE) of estuarine Critical Habitat for green sturgeon are summarized below.

1) Abundant prey items within estuarine habitats and substrates for juvenile, subadult, and adult life stages.
2) Within bays and estuaries adjacent to the Sacramento River (i.e., the Sacramento-San Joaquin Delta and the Suisun, San Pablo, and San Francisco bays), sufficient flow into the bay and estuary to allow adults to successfully orient to the incoming flow and migrate upstream to spawning grounds.
3) Water quality, including temperature, salinity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages.
4) A migratory pathway necessary for the safe and timely passage of Southern DPS fish within estuarine habitats and between estuarine and riverine or marine habitats.
5) A diversity of depths necessary for shelter, foraging, and migration of juvenile, subadult, and adult life stages. Subadult and adult green sturgeon occupy a diversity of depths within bays and estuaries for feeding and migration.
6) Sediment quality (i.e., chemical characteristics) necessary for normal behavior, growth, and viability of all life stages. This includes sediments free of elevated levels of

contaminants (e.g., selenium, polycyclic aromatic hydrocarbons [PAH], and pesticides) that can cause adverse effects on all life stages of green sturgeon.

4.3.2.1 SURVEY RESULTS

NOAA Fisheries designated the following specific areas as green sturgeon Critical Habitat: Coastal U.S. marine waters within 60 fathoms depth from Monterey Bay, California (including Monterey Bay), north to Cape Flattery, Washington, including the Sacramento-San Joaquin Delta and Suisun, San Pablo, and San Francisco bays in California. The Critical Habitat designation for San Pablo Bay extends into Petaluma River upstream of the BSA to near Jess Avenue and US 101. Therefore, Critical Habitat for the southern DPS of green sturgeon is present within the BSA.

4.3.2.2 PROJECT IMPACTS

Of the six PCEs associated with estuarine Critical Habitat for green sturgeon, only two have potential to be impacted by Project construction: water quality and sediment quality. Project construction would neither temporarily nor permanently alter the availability of prey items available for green sturgeon. The Project would not introduce either temporary or permanent obstructions into Petaluma River or substantially alter freshwater inflows from the upper portion of the Petaluma River watershed. The Project would neither temporarily nor permanently alter the vegetation, substrate, or geometry of the Petaluma River channel.

As stated above, the only PCEs that have potential to be affected is changes in water quality and sediment quality from dewatering/discharge activities and construction activities conducted near the river. Water quality impacts on Critical Habitat for green sturgeon would be the same as those described in Section 4.1.2.2 for waters of the U.S. Changes in sediment quality associated with Project construction would be similar to the potential water quality effects, and they could include the deposition of concrete particulates with high pH and various metals, including hexavalent chromium (Caltrans, 2005). Project construction is not expected to require the use of pesticides and selenium-containing materials. The use of heavy equipment fueled by petroleum hydrocarbons would result in incremental releases of PAHs into the environment, but this increase would not be substantial compared to the sources of PAHs in the Petaluma River watershed, such as US 101 and local roadways.

4.3.2.3 AVOIDANCE AND MINIMIZATION MEASURES EFFORTS/COMPENSATORY MITIGATION

The AMMs described in Sections 4.1.2.3 and 4.1.3.3 for waters of the U.S. and EFH, respectively, would also be effective at reducing water quality impacts on Critical Habitat for green sturgeon. These AMMs include measures to control dewatering, restrict dewatering into Petaluma River to avoid fish migratory seasons, avoid the use of pile driving construction methods, implement good housekeeping practices, and use construction site BMPs to reduce the

potential for changes in water quality in Petaluma River. These AMMs would avoid the potential for changes in water quality and sediment quality resulting from Project construction.

4.3.3 Discussion of Steelhead – Central California Coast DPS

Steelhead are anadromous salmonids, which means that the adults return to their natal streams to spawn after one to three years at sea. Adults are silver with pinkish cheeks, darkening during their time in fresh water, and have black spots on their tail, fins, and back. They can reach more than 25 inches and up to 12 pounds. Juveniles spend from one to three or more years rearing in their natal stream before migrating to sea as smolts. Successful spawning and juvenile rearing require certain types of habitat, including coarse, clean, well-oxygenated gravel for spawning and incubation. Excessive accumulations of fine sediment directly affect the viability of eggs, embryos, and juveniles (Barnhart, 1986). After emerging from the gravel, juveniles require cool, clean water that persists through the dry season, a supply of invertebrate food, and shelter for resting and protection from predators. Spawning and juvenile rearing usually takes place in the upper reaches of smaller tributaries where suitable spawning gravel is present and cooler water persists throughout the summer months.

Threats to steelhead include drought, high water temperatures (both freshwater and marine), loss and degradation of spawning habitat by agriculture and urbanization, use of antiquated fish screens and ladders, and levee construction and maintenance projects. Predation by non-native fish and marine mammals can also contribute to population declines.

The central California coast steelhead includes all naturally spawned populations from the Russian River in Sonoma County south to Aptos Creek in Santa Cruz County as well as the drainages of the San Francisco and San Pablo bays and their tributaries eastward to Chipps Island at the confluence of the Sacramento and San Joaquin rivers.

4.3.3.1 Survey Results

No focused fish surveys were conducted. Petaluma River and its tributaries San Antonio Creek, Adobe Creek, Lynch Creek, and Lichau Creek historically supported steelhead runs (Leidy et al. 2005). However, the watershed contains low habitat value for salmonids with some tributaries considered to have no value for fisheries (Leidy et al. 2005). Because the Petaluma River watershed historically supported steelhead runs, it is assumed that steelhead are present within Petaluma River.

4.3.3.2 Project Impacts

Project impacts on steelhead would be the same as those described in Section 4.3.1.2 for green sturgeon. There is no potential for direct mortality of steelhead because no work would occur within the wetted portion of Petaluma River. However, there is potential for take of steelhead

due to the potential need for dewatering into Petaluma River, as described in Section 4.1.2.2. If accumulated groundwater within Project excavations is discharged directly into Petaluma River, it could result in substantial changes to the quality of steelhead habitat.

4.3.3.3 AVOIDANCE AND MINIMIZATION MEASURES EFFORTS/COMPENSATORY MITIGATION

The AMMs described in Sections 4.1.2.3 and 4.1.3.3 for waters of the U.S. and EFH, respectively, would also be effective at reducing the potential for take of steelhead. These AMMs include measures to control dewatering, restrict dewatering into Petaluma River to avoid fish migratory seasons, avoid the use of pile driving construction methods, implement good housekeeping practices, and use construction site BMPs to reduce the potential for changes in water quality in Petaluma River.

4.3.4 Discussion of Critical Habitat for steelhead – Central California Coast DPS

Critical habitat is designated by the USFWS and NOAA Fisheries to protect areas that are essential to the survival of federally listed species of plants and wildlife. NOAA Fisheries designated Critical Habitat for the central California coast DPS of steelhead on September 2, 2005, in 70 FR 52487. Critical Habitat for steelhead contains the following six PCEs:

1) Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development.
2) Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
3) Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.
4) Estuarine areas free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.
5) Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.

6) Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.

4.3.4.1 SURVEY RESULTS

NOAA Fisheries designated approximately 8,935 miles of riverine habitat and 470 square miles of estuarine habitat as Critical Habitat for salmonids, most of which is in the San Francisco-San Pablo-Suisun Bays in California. For the central California coast steelhead, all of Petaluma River and several tributaries have been designated as Critical Habitat. Therefore, Critical Habitat for central California coast steelhead is present within the BSA.

4.3.4.2 PROJECT IMPACTS

Of the six PCEs associated with Critical Habitat for steelhead, only one is present within the BSA and has potential to be impacted by Project construction: estuarine areas that support juvenile and adult physiological transitions between fresh- and saltwater. The Project would not introduce either temporary or permanent physical obstructions into Petaluma River that would impede fish migration or substantially alter water quantity. The Project would neither temporarily nor permanently alter the vegetation, substrate, or geometry of the Petaluma River channel, because no construction work activities would occur within the river. Additionally, Project construction would not permanently alter the availability of aquatic invertebrates and other forage for steelhead. The only part of the estuarine PCE that has potential to be affected is changes in water quality from dewatering/discharge activities and construction activities conducted near the river. These water quality impacts on Critical Habitat for steelhead would be the same as those described in Section 4.1.2.2 for waters of the U.S.

4.3.4.3 AVOIDANCE AND MINIMIZATION MEASURES EFFORTS/COMPENSATORY MITIGATION

The AMMs described in Sections 4.1.2.3 and 4.1.3.3 for waters of the U.S. and EFH, respectively, would also be effective at reducing water quality impacts on Critical Habitat for steelhead. These AMMs include measures to control dewatering, restrict dewatering into Petaluma River to avoid fish migratory seasons, avoid the use of pile driving construction methods, implement good housekeeping practices, and use construction site BMPs to reduce the potential for changes in water quality in Petaluma River.

4.3.5 Discussion of Longfin Smelt

The longfin smelt (*Spirinchus thaleichthys*) is a small species of fish that inhabits bays, estuaries, and nearshore coastal environments in California. The longfin smelt is classified as a threatened species under the CESA and is also a candidate species under the FESA. The range of longfin smelt stretches from San Francisco to Alaska's Cook Inlet. This species was once the most populous species of pelagic fish in the San Francisco Bay-Delta, but now their populations have greatly decreased within the last decade. Longfin smelt spend their adult life living in bays,

estuaries, and nearshore coastal areas. During the spawning season (January through March), adult longfin smelt migrate into low salinity or freshwater reaches of coastal rivers and tributary streams to spawn. During summer, longfin smelt are typically found in mid- to low-water column in deep cool water in the central San Francisco Bay.

4.3.5.1 SURVEY RESULTS

No focused fish surveys were conducted. The use and distribution of longfin smelt in tributaries of San Francisco Bay, such as Petaluma River (Sonoma County), Napa River (Napa County), and Coyote Creek (Santa Clara County), is limited. Trawling data suggest that longfin smelt are present at the mouth of Petaluma River in San Pablo Bay (Swedberg and Zentner, 2009). Recent sampling data from 2015 and 2016 detected larval and juvenile longfin smelt in Petaluma River, including the portions between the urban areas of the City near the BSA and San Pablo Bay, although more smelt were found east of Carquinez Strait (Parker et al., 2017). While the current understanding of how longfin smelt use San Francisco Bay tributaries is limited, there is a growing body of evidence that longfin smelt may occasionally use Petaluma River as habitat during years with substantial rainfall and high freshwater outflows. Therefore, longfin smelt are assumed to be present within the BSA during late fall through spring when water temperatures are cool.

4.3.5.2 PROJECT IMPACTS

Project impacts on longfin smelt would be the same as those described in Section 4.3.1.2 for green sturgeon. There is potential for take of longfin smelt due to the potential need for dewatering into Petaluma River, as described in Section 4.1.2.2. If accumulated groundwater within Project excavations is discharged directly into Petaluma River, it would result in substantial changes to the quality of longfin smelt habitat.

4.3.5.3 AVOIDANCE AND MINIMIZATION MEASURES EFFORTS/COMPENSATORY MITIGATION

The AMMs described in Sections 4.1.2.3 and 4.1.3.3 for waters of the U.S. and EFH, respectively, would also be effective at avoiding the potential for take of longfin smelt. These AMMs include measures to control dewatering, restrict dewatering into Petaluma River to avoid fish migratory seasons, avoid the use of pile driving construction methods, implement good housekeeping practices, and use construction site BMPs to reduce the potential for changes in water quality in Petaluma River. Additionally, these AMMs include seasonal avoidance of when longfin smelt are most likely to occur within Petaluma River. With AMMs, Project construction would not substantially impact longfin smelt habitat in a manner that would result in mortality of individual smelt.

4.3.6 Discussion of Sacramento Splittail

The Sacramento splittail is a fish, and it is designated as a SSC. This fish is endemic to the lakes, slow moving river sections, and dead-end sloughs of the Central Valley, but now confined to the Delta, Suisun Bay, and associated marshes. It was once widespread in the San Joaquin River but populations have been greatly reduced over time. They are able to tolerate saline waters as high as 10 to 18 parts per thousand but migrate upstream to spawn in freshwater habitats. They require flooded vegetation in freshwater marshes, sloughs, and shallow reaches of large rivers with depths of at least 3.3 feet for spawning and rearing. Peak spawning occurs from February through May. Eggs hatch within 3 to 5 days. Splittails take one to two years to mature. They feed on a variety of zooplankton, clams, and crustaceans (USFWS, 2010).

4.3.6.1 Survey Results

No focused fish surveys were conducted. However, Petaluma River provides suitable estuarine habitat for this species within the BSA. Additionally, approximately 143 individual Sacramento splittails were discovered within a portion of Petaluma River just upstream of the BSA between Lakeville Street and Jess Avenue near downtown Petaluma during a dredging project (CNDDB #8). Therefore, it is assumed that Sacramento splittail is present within the BSA.

4.3.6.2 Project Impacts

Project impacts on Sacramento splittail would be the same as those described in Section 4.3.1.2 for green sturgeon. There is no potential for mortality of Sacramento splittail because no work would occur within the wetted portion of Petaluma River. However, there is potential for take of Sacramento splittail due to the potential need for dewatering into Petaluma River, as described in Section 4.1.2.2. If accumulated groundwater within Project excavations is discharged directly into Petaluma River, it could result in substantial changes to the quality of steelhead habitat.

4.3.6.3 Avoidance and Minimization Measures Efforts/Compensatory Mitigation

The AMMs described in Sections 4.1.2.3 and 4.1.3.3 for waters of the U.S. and EFH, respectively, would also be effective at avoiding the potential for take of Sacramento splittail. These AMMs include measures to control dewatering, restrict dewatering into Petaluma River to avoid fish migratory seasons, avoid the use of pile driving construction methods, implement good housekeeping practices, and use construction site BMPs to reduce the potential for changes in water quality in Petaluma River. With AMMs, Project construction would not substantially impact longfin smelt habitat in a manner that would result in mortality of individual smelt.

4.3.7 Discussion of Western Pond Turtle

The western pond turtle is a California listed SSC. These turtles reside throughout California, from southern coastal California and the Central Valley, north to the Cascade and eastern Sierra Nevada mountain ranges. Western pond turtles occur in a variety of permanent and intermittent

aquatic habitats, such as ponds, lakes, marshes, rivers, streams, irrigation ditches and ephemeral pools. They have even been known in brackish and slightly saline waters. They dig their nests in dry soils upland of streams in areas with sparse vegetation and southern exposure. Nesting occurs during the months between April and August (Stebbins, 2003).

4.3.7.1 SURVEY RESULTS

No western pond turtles were observed during biological resources surveys performed within the BSA. Within the BSA, Petaluma River is a tidally-influenced watercourse with primarily brackish conditions. Even though these turtles are primarily associated with freshwater habitats, there is limited potential for them to utilize the brackish habitats of Petaluma River within the BSA. According to the CNDDB, the nearest occurrence of western pond turtle to the BSA is located approximately 2.1 miles west near Magnolia Avenue northwest of Petaluma (#183). This occurrence is from 2001 and is presumed extant.

4.3.7.2 PROJECT IMPACTS

The proposed structural work and associated excavations required to provide seismic upgrades to the existing bridge would occur behind the existing bridge abutments within existing developed areas rather than in vegetated areas along the banks of Petaluma River. However, dewatering/discharge activities could require the placement of a temporary pipe that discharges accumulated water into Petaluma River. If any western pond turtles or their nests are present in the alignment of the proposed discharge pipe, there is potential for construction activities to result in the take of individual western pond turtles and their nests. As a California SSC, the take of these turtles and their nests is prohibited.

4.3.7.3 AVOIDANCE AND MINIMIZATION MEASURES EFFORTS/COMPENSATORY MITIGATION

The following AMMs would be implemented to avoid the take of western pond turtles and their nests during construction:

- A qualified Caltrans-approved biologist shall conduct a preconstruction clearance survey for western pond turtle within 48 hours of the commencement of construction activities in areas with natural vegetation. The survey area shall include all aquatic habitats in Petaluma River as well as upland areas adjacent to the banks of Petaluma River that potentially contain pond turtle nests.
- If any western pond turtles are observed within the river during pre-construction surveys, exclusionary fencing would be installed to demarcate the boundary of the active construction area closest to Petaluma River. Exclusionary fencing shall be installed in such a manner to prevent any turtles from entering the work area.
- Active western pond turtle nest sites shall be designated as environmentally sensitive area (ESA) and avoided during construction.

4.3.8 Discussion of San Pablo Song Sparrow and Nesting Birds

The federal MBTA (16 USC 703 et seq.), Title 50 CFR part 10, and California Fish and Game Code Sections 3503, 3513, and 3800, protect the occupied nests and eggs of all migratory and nongame bird species, including saltmarsh common yellowthroat. Birds nest in a variety of places, including trees, shrubs, man-made structures, and the ground. Work buffers around migratory birds and their nests are typically needed to minimize impacts to these species. Incidental take permits are not issued under the MBTA.

The San Pablo song sparrow, sometimes known as Samuels song sparrow (*Melospiza melodia samuelis*) is an SSC and is protected under the MBTA. Song sparrows (*M. melodia*) are found across North America from southern Alaska and central and eastern Canada to northern Florida and Mexico (Goals Project 2000). Of the 24 recognized subspecies of song sparrow, the San Pablo song sparrow was recognized as one of three distinct subspecies inhabiting San Francisco Bay area year-round. Its range is confined to tidal and remnant tidal salt marshes fringing San Pablo Bay in the northern reaches of the San Francisco Bay (Shuford and Gardali 2008). Recent studies indicate that these song sparrows are presently ubiquitous residents of even the smallest marsh fragments where sufficient high marsh vegetation exists (Shuford and Gardali 2008).

These sparrows use both natural and artificial channels where pickleweed, cordgrass, gumplant, and patches of exposed ground for foraging are present. They require low, dense shrubs and vegetation, usually near water, for cover and nesting. The nesting season of populations in Marin County begins in mid-March and extends through early July (Humple and Geupel 2004). An average of 3 eggs are laid and incubated by the female for 12 to 14 days. The young fledge in about two weeks.

4.3.8.1 Survey Results

Numerous nesting birds were observed within the BSA during the June and July, 2020, biological resources surveys. A San Pablo song sparrow nest was observed within the BSA during the June 25, 2020 biological resources survey. The nest was located in the alkali bulrush (i.e., saline emergent wetland) vegetation located to the north of the existing bridge on the eastern bank of Petaluma River; a record of this observation was submitted to the CNDDB. Additionally, the existing bridge contains a nesting colony of migratory cliff swallows (*Petrochelidon pyrrhonota*), and approximately 20 active nests were observed on the soffit of the existing bridge. Additionally, a black phoebe (*Sayornis nigricans*) had a nest on the western abutment of the existing bridge.

4.3.8.2 Project Impacts

Construction of the Project would be staged to occur over the course of two bird nesting seasons. Because the existing bridge is approximately 100 feet in length, Project construction activities

behind the exiting abutments is expected to occur within 50 feet of migratory and/or special-status bird nests on the soffit or abutments of the existing bridge as well as within saline emergent wetland vegetation along the banks of Petaluma River. If Project construction activities result in the take of individual migratory or special-status birds or nest abandonment, it would be considered a substantial impact.

4.3.8.3 AVOIDANCE AND MINIMIZATION MEASURES EFFORTS/COMPENSATORY MITIGATION

The following AMM will be implemented to prevent impacts to nesting San Pablo song sparrow and other migratory birds and their nests:

- If construction activities commence outside of the bird nesting season (September 30 to February 1), the following measures would be implemented to avoid impacts on nesting birds. Nesting bird surveys would be performed by a qualified biologist beginning on February 1 or the next construction work day after February 1. Surveys would be performed to monitor bird behavior as birds begin to construct and occupy nests on the existing bridge structure during Project construction. The frequency of surveys would be determined by the qualified biologist based on the observed conditions. If, as determined by the qualified biologist, construction activities that are already occurring within the BSA are not deterring the construction of bird nests or disturbing the behavior of both adult and young birds, then no further action is required. If the qualified biologist determines that construction activities are disturbing the behavior of either adult or young birds, the qualified biologist would prepare and implement a CDFW-approved nesting bird management plan.
- If construction activities commence during the bird nesting season (February 1 to September 30), one of the following measures would be followed to avoid impacts on nesting birds.
    - Preconstruction surveys for nesting migratory birds will be conducted by a qualified biologist no more than 72 hours prior to commencing construction activities. Surveys will cover all potential nesting substrates within 100 feet of construction activity. Active nest sites shall be designated as ESAs and protected while occupied during Project construction. THVF or other markers shall be used to identify the exclusion buffers around each nest site. The qualified biologist shall develop buffer recommendations that are site specific and at an appropriate distance that protects normal bird behavior to prevent nesting failure or abandonment. The buffer distance recommendation shall be developed after field investigations that evaluate the bird(s) apparent distress in the presence of people or equipment at various distances.

- To prevent potential migratory bird nesting activity on the existing bridge, a qualified biologist would survey the bridge and identify potential breeding locations for cliff swallows, black phoebes, and other migratory birds that may nest on the existing bridge. The biologist will begin surveying for potential nesting behavior by March 1. Once nest precursors appear (i.e., nest formation mud, nest location mud, etc.), they would be manually scraped from the structure. The frequency of nest scraping would be determined by the qualified biologist based on the observed conditions. Nest scraping would be minimized to the extent feasible, and it will only occur within 50 feet of the Project work area and only as needed to allow construction work to proceed. If nest scraping is not performed consistently and fully-formed nests become active, active nests would be designated as ESAs and protected during Project construction until the young have fully fledged, or completely left the nest site and are no longer being fed by the parents, as determined by the qualified biologist.

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Chapter 5 Conclusions and Regulatory Determinations

This chapter contains a summary of the federal, State, and local regulations, agreements, and agency policies that are relevant to the proposed project and the related required permits.

5.1 Federal Endangered Species Act Consultation Summary

Project construction has the potential to cause temporary changes in water quality that could reduce habitat quality for federally listed fish species. With incorporation of avoidance and minimization measures into Project construction these temporary water quality effects would be insubstantial and discountable. Thus, the Project **may affect, but is not likely to advserly affect**, green sturgeon southern DPS, steelhead central California coast DPS, and their critical habitats within Petaluma River. The Project would have **no effect** on all other federally-listed plant and wildlife species. For these reasons, informal consultation with NOAA Fisheries is required. Effects determinations for special-status wildlife are included in Table 2.

5.2 Essential Fish Habitat Consultation Summary

Project construction has the potential to cause temporary changes in the water quality of EFH. With incorporation of avoidance and minimization measures into Project construction these temporary water quality effects would be insubstantial and discountable. On this basis, the Project would have no adverse effect on EFH.

5.3 California Endangered Species Act Consultation Summary

Project construction has the potential to cause temporary changes in water quality that could reduce habitat quality for longfin smelt. With incorporation of avoidance and minimization measures into Project construction, the Project would not result in the take of longfin smelt. No other State-listed species have the potential to be impacted by Project construction. Therefore, an Incidental Take Permit from CDFW for the take of State-listed species is not required.

5.4 Wetlands and Other Waters Coordination Summary

5.4.1 Section 404 of the Clean Water Act

Petaluma River is a tidal watercourse that is subject to regulation under Section 404 of the CWA. Project construction would not occur within areas subject to regulation and permitting under Section 404 of the CWA. Therefore, a permit from the USACE for dredge/fill activities within Petaluma River is not required.

5.4.2 Section 401 of the Clean Water Act

A Section 401 permit is necessary when a Project requires a 404 permit from the USACE. As stated in Section 5.4.1, a CWA Section 404 permit is not required for the Project. Therefore, a CWA Section 401 permit from the San Francisco Bay RWQCB is also not required for the Project.

Project construction is expected to require dewatering. If this water is discharged into a storm drain system or directly into Petaluma River, a Report of Waste Discharge would need to be prepared and submitted to the San Francisco Bay RWQCB in order to obtain a National Pollutant Discharge Elimination System permit.

5.4.3 Section 1602 of the California Fish and Game Code

Construction activities within CDFW jurisdictional areas along Petaluma River is not required. Therefore, a Section 1602 permit from CDFW is not required.

5.5 Invasive Species

Eight non-native invasive plant species were identified within the BSA that have moderate- or high-risk impacts on native plant populations (Cal-IPC 2017). Six are listed as having moderate (substantial and apparent) impacts, and two are ranked as having high (severe) impacts. Those listed as high-risk include Himalayan blackberry and broadleaved pepperweed. However, Project construction is not expected to require clearing, grubbing, or other soil disturbing activities that would promote the spread of invasive plants, including their propagules such as seeds and rhizomes.

5.6 Other

5.6.1 California Fish and Game Code

The majority of birds and mammals found in the BSA are protected under California Fish and Game Codes 3503-3505, 3513, and 3800. Section 4150 states that all non-game mammals or parts thereof may not be taken or possessed, except as provided otherwise in the code or in accordance with guidelines adopted by the CDFW. Activities resulting in mortality of non-game mammals may be considered “take” by the CDFW. The avoidance and minimization measures to protect sensitive natural communities in Section 4.1.1.3 would also protect non-game animals.

5.6.2 Migratory Brid Treaty Act

All migratory and non-game bird species are protected under the MBTA. The City would comply with the MBTA through the proposed avoidance and minimization measures in Section 4.3.8.3, which include pre-construction surveys and either scraping swallow and phoebe nest starts or monitoring active nests for disturbances. Through implementation of the proposed

avoidance and minimization measures, the take of nests, eggs, young or individuals of bird species is not anticipated.

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Appendix A USFWS, CNPS, CNDDB, and NOAA Species Lists and Maps

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: February 08, 2021
Consultation Code: 08ESMF00-2020-SLI-1300
Event Code: 08ESMF00-2021-E-02699
Project Name: Washington Street Bridge Seismic Rehabilitation

Subject: Updated list of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

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

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

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

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

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2020-SLI-1300
Event Code: 08ESMF00-2021-E-02699
Project Name: Washington Street Bridge Seismic Rehabilitation
Project Type: BRIDGE CONSTRUCTION / MAINTENANCE
Project Description: The project would improve the ability of the existing bridge structure to withstand seismic events

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.23598487693988,-122.64036137220383,14z

Counties: Sonoma County, California

Endangered Species Act Species

There is a total of 13 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

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

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

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

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse *Reithrodontomys raviventris* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/613	Endangered

Birds

NAME	STATUS
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Myrtle's Silverspot Butterfly *Speyeria zerene myrtleae* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6929	Endangered
San Bruno Elfin Butterfly *Callophrys mossii bayensis* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3394	Endangered

Crustaceans

NAME	STATUS
California Freshwater Shrimp *Syncaris pacifica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7903	Endangered

Flowering Plants

NAME	STATUS
Showy Indian Clover *Trifolium amoenum*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6459	
Sonoma Spineflower *Chorizanthe valida*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7698	
Yellow Larkspur *Delphinium luteum*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3578	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

CNPS California Native Plant Society

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

Plant List

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

Search Criteria

Found in Quads 3812236, 3812235 3812226 and 3812225;

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

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Allium peninsulare var. franciscanum	Franciscan onion	Alliaceae	perennial bulbiferous herb	(Apr)May-Jun	1B.2	S2	G5T2
Amorpha californica var. napensis	Napa false indigo	Fabaceae	perennial deciduous shrub	Apr-Jul	1B.2	S2	G4T2
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S1	G2T1
Blennosperma bakeri	Sonoma sunshine	Asteraceae	annual herb	Mar-May	1B.1	S1	G1
Ceanothus masonii	Mason's ceanothus	Rhamnaceae	perennial evergreen shrub	Mar-Apr	1B.2	S1	G1
Ceanothus sonomensis	Sonoma ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Apr	1B.2	S2	G2
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	May-Nov	1B.2	S2	G3T2
Chloropyron maritimum ssp. palustre	Point Reyes bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Oct	1B.2	S2	G4?T2
Chloropyron molle ssp. molle	soft bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Nov	1B.2	S1	G2T1
Chorizanthe valida	Sonoma spineflower	Polygonaceae	annual herb	Jun-Aug	1B.1	S1	G1
Delphinium bakeri	Baker's larkspur	Ranunculaceae	perennial herb	Mar-May	1B.1	S1	G1
Delphinium luteum	golden larkspur	Ranunculaceae	perennial herb	Mar-May	1B.1	S1	G1
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Eleocharis parvula	small spikerush	Cyperaceae	perennial herb	(Apr)Jun-Aug(Sep)	4.3	S3	G5
Erigeron biolettii	streamside daisy	Asteraceae	perennial herb	Jun-Oct	3	S3?	G3?
Eriogonum luteolum var. caninum	Tiburon buckwheat	Polygonaceae	annual herb	May-Sep	1B.2	S2	G5T2
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2	G2

Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Asteraceae	annual herb	Apr-Nov	1B.2	S2	G5T2
Hesperolinon congestum	Marin western flax	Linaceae	annual herb	Apr-Jul	1B.1	S1	G1
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	Mar-May	4.2	S3	G3
Lasthenia burkei	Burke's goldfields	Asteraceae	annual herb	Apr-Jun	1B.1	S1	G1
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	1B.1	S1	G1
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Leptosiphon acicularis	bristly leptosiphon	Polemoniaceae	annual herb	Apr-Jul	4.2	S4?	G4?
Leptosiphon jepsonii	Jepson's leptosiphon	Polemoniaceae	annual herb	Mar-May	1B.2	S2S3	G2G3
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	3	S2S3	G3?
Lilium pardalinum ssp. pitkinense	Pitkin Marsh lily	Liliaceae	perennial bulbiferous herb	Jun-Jul	1B.1	S1	G5T1
Limnanthes vinculans	Sebastopol meadowfoam	Limnanthaceae	annual herb	Apr-May	1B.1	S1	G1
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	Mar-May	3.2	S3S4	G3G4
Microseris paludosa	marsh microseris	Asteraceae	perennial herb	Apr-Jun(Jul)	1B.2	S2	G2
Navarretia cotulifolia	cotula navarretia	Polemoniaceae	annual herb	May-Jun	4.2	S4	G4
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G4T2
Plagiobothrys mollis var. vestitus	Petaluma popcornflower	Boraginaceae	perennial herb	Jun-Jul	1A	SX	G4?TX
Pleuropogon hooverianus	North Coast semaphore grass	Poaceae	perennial rhizomatous herb	Apr-Jun	1B.1	S2	G2
Pleuropogon refractus	nodding semaphore grass	Poaceae	perennial rhizomatous herb	(Mar)Apr-Aug	4.2	S4	G4
Polygonum marinense	Marin knotweed	Polygonaceae	annual herb	(Apr)May-Aug(Oct)	3.1	S2	G2Q
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	4.2	S3	G4
Rhynchospora globularis	round-headed beaked-rush	Cyperaceae	perennial rhizomatous herb	Jul-Aug	2B.1	S1	G4
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	Malvaceae	perennial rhizomatous herb	Apr-Sep	1B.2	S2	G5T2
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	Apr-Jun	1B.1	S1	G1
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2
Trifolium polyodon	Pacific Grove clover	Fabaceae	annual herb	Apr-Jun(Jul)	1B.1	S1	G1

Suggested Citation

California Native Plant Society, Rare Plant Program. 2021. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 08 February 2021].

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Questions and Comments

rareplants@cnps.org

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Cotati (3812236) OR Glen Ellen (3812235) OR Petaluma (3812226) OR Petaluma River (3812225))
 AND Taxonomic Group IS (Dune OR Scrub OR Herbaceous OR Marsh OR Riparian OR Woodland OR Forest OR Alpine OR Inland Waters OR Marine OR Estuarine OR Riverine OR Palustrine)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
Coastal Brackish Marsh						
Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
Northern Coastal Salt Marsh						
Northern Vernal Pool	CTT44100CA	None	None	G2	S2.1	
Northern Vernal Pool						

Record Count: 3

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Cotati (3812236) OR Glen Ellen (3812235) OR Petaluma (3812226) OR Petaluma River (3812225))
 AND Taxonomic Group IS (Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Allium peninsulare var. franciscanum Franciscan onion	PMLIL021R1	None	None	G5T2	S2	1B.2
Amorpha californica var. napensis Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
Blennosperma bakeri Sonoma sunshine	PDAST1A010	Endangered	Endangered	G1	S1	1B.1
Ceanothus masonii Mason's ceanothus	PDRHA04200	None	Rare	G1	S1	1B.2
Ceanothus sonomensis Sonoma ceanothus	PDRHA04420	None	None	G2	S2	1B.2
Centromadia parryi ssp. parryi pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2
Chloropyron molle ssp. molle soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
Chorizanthe valida Sonoma spineflower	PDPGN040V0	Endangered	Endangered	G1	S1	1B.1
Delphinium bakeri Baker's larkspur	PDRAN0B050	Endangered	Endangered	G1	S1	1B.1
Delphinium luteum golden larkspur	PDRAN0B0Z0	Endangered	Rare	G1	S1	1B.1
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Eriogonum luteolum var. caninum Tiburon buckwheat	PDPGN083S1	None	None	G5T2	S2	1B.2
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
Hesperolinon congestum Marin western flax	PDLIN01060	Threatened	Threatened	G1	S1	1B.1
Lasthenia burkei Burke's goldfields	PDAST5L010	Endangered	Endangered	G1	S1	1B.1

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Leptosiphon jepsonii Jepson's leptosiphon	PDPLM09140	None	None	G2G3	S2S3	1B.2
Lilium pardalinum ssp. pitkinense Pitkin Marsh lily	PMLIL1A0H3	Endangered	Endangered	G5T1	S1	1B.1
Limnanthes vinculans Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	G1	S1	1B.1
Microseris paludosa marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
Plagiobothrys mollis var. vestitus Petaluma popcornflower	PDBOR0V0Q2	None	None	G4?TX	SX	1A
Pleuropogon hooverianus North Coast semaphore grass	PMPOA4Y070	None	Threatened	G2	S2	1B.1
Polygonum marinense Marin knotweed	PDPGN0L1C0	None	None	G2Q	S2	3.1
Sidalcea calycosa ssp. rhizomata Point Reyes checkerbloom	PDMAL11012	None	None	G5T2	S2	1B.2
Streptanthus anomalus Mount Burdell jewelflower	PDBRA2G520	None	None	G1	S1	1B.1
Trifolium amoenum two-fork clover	PDFAB40040	Endangered	None	G1	S1	1B.1
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Trifolium polyodon Pacific Grove clover	PDFAB402H0	None	Rare	G1	S1	1B.1

Record Count: 33

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Cotati (3812236) OR Glen Ellen (3812235) OR Petaluma (3812226) OR Petaluma River (3812225))
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Ammodramus savannarum grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Caecidotea tomalensis Tomales isopod	ICMAL01220	None	None	G2	S2S3	
Calicina diminua Marin blind harvestman	ILARAU8040	None	None	G1	S1	
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Dicamptodon ensatus California giant salamander	AAAAH01020	None	None	G3	S2S3	SSC
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Geothlypis trichas sinuosa saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
Hydrochara rickseckeri Ricksecker's water scavenger beetle	IICOL5V010	None	None	G2?	S2?	
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Melospiza melodia samuelis San Pablo song sparrow	ABPBXA301W	None	None	G5T2	S2	SSC
Myotis thysanodes fringed myotis	AMACC01090	None	None	G4	S3	
Myotis volans long-legged myotis	AMACC01110	None	None	G4G5	S3	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
Pogonichthys macrolepidotus Sacramento splittail	AFCJB34020	None	None	GNR	S3	SSC
Rallus obsoletus obsoletus California Ridgway's rail	ABNME05011	Endangered	Endangered	G3T1	S1	FP
Rana boylii foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Reithrodontomys raviventris salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Syncaris pacifica California freshwater shrimp	ICMAL27010	Endangered	Endangered	G2	S2	
Talanites ubicki Ubick's gnaphosid spider	ILARA98030	None	None	G1	S1	
Taricha rivularis red-bellied newt	AAAAF02020	None	None	G2	S2	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	

Record Count: 38

Cuyler Stapelmann

From: NMFSWCRCA Specieslist - NOAA Service Account <nmfswcrca.specieslist+canned.response@noaa.gov>
Sent: Wednesday, October 28, 2020 1:44 PM
To: Cuyler Stapelmann
Subject: Re: Caltrans and City of Petaluma -- Washington Street Bridge Project

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

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

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

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

Southern California (Long Beach) 562-980-4000

California Central Valley (Sacramento) 916-930-3600

Quad Name **Glen Ellen**
Quad Number **38122-C5**

ESA Anadromous Fish

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

ESA Anadromous Fish Critical Habitat

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

ESA Marine Invertebrates

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

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

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

ESA Whales

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

ESA Pinnipeds

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

Essential Fish Habitat

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

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

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

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Cotati**
Quad Number **38122-C6**

ESA Anadromous Fish

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

ESA Anadromous Fish Critical Habitat

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

ESA Marine Invertebrates

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

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

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

ESA Whales

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

ESA Pinnipeds

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

Essential Fish Habitat

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

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

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

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Petaluma**
Quad Number **38122-B6**

ESA Anadromous Fish

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

ESA Anadromous Fish Critical Habitat

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

sDPS Green Sturgeon Critical Habitat - X

ESA Marine Invertebrates

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

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

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

ESA Whales

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

ESA Pinnipeds

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

Essential Fish Habitat

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

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Petaluma River**
Quad Number **38122-B5**

ESA Anadromous Fish

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

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat - **X**
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -

CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat - X

ESA Marine Invertebrates

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

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

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

ESA Whales

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

ESA Pinnipeds

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

Essential Fish Habitat

Coho EFH - X
Chinook Salmon EFH - X
Groundfish EFH - X

Coastal Pelagics EFH - **X**
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Appendix B Observed Species

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Observed Plant Species

Scientific Name	Common Name	Native Status	Cal-IPC Rating
Asclepias curassavica	Blood flower	Non-native	
Avena fatua	Wild oat	Non-native	Moderate
Baccharis pilularis	Coyote brush	Native	
Bolboschoenus maritimus	Alkali bulrush	Native	
Brassica nigra	Black mustard	Non-native	Moderate
Bromus diandrus	Ripgut brome	Non-native	Moderate
Bromus hordeaceus	Soft chest brome	Non-native	Limited
Carduus pycnocephalus	Italian thistle	Non-native	Moderate
Distichlis spicata	Inland saltgrass	Native	
Elymus triticoides	Beardless wild rye	Native	
Epilobium brachycarpum	Panicled willow herb	Native	
Foeniculum vulgare	Sweet fennel	Non-native	Moderate
Grindelia stricta var. *platyphylla*	Gumplant	Native	
Hypochaeris glabra	Smooth cat's ear	Non-native	Limited
Jasminum multiflorum	Star jasmine	Non-native	
Juglans sp.	Walnut	Native	
Lactuca serriola	Prickly lettuce	Non-native	
Lepidium latifolium	Broadleaved pepperweed	Non-native	High
Lotus corniculatus	Bird's foot trefoil	Non-native	
Malva neglecta	Common mallow	Non-native	
Malva parviflora	Cheeseweed mallow	Non-native	
Populus sp.	Cottonwood	Native	Moderate
Phalaris aquatica	Harding grass	Non-Native	
Raphanus sativus	Wild radish	Non-native	Limited
Rubus armeniacus	Himalayan blackberry	Non-native	High
Rumex crispus	Curly dock	Non-native	Limited
Salicornia pacifica	Pickleweed	Native	
Schoenoplectus americanus	Chairmaker's bulrush	Native	
Sonchus asper	Spiny sowthistle	Non-Native	
Sonchus oleraceus	Common sowthistle	Non-native	
Taraxacum officinale	Common dandelion	Non-native	
Verbascum blattaria	Moth mullein	Non-native	
Verbena bonariensis	Purpletop vervain	Non-native	Watch

Observed Wildlife Species

Scientific Name	Common Name	Native Status
Anas platyrhynchos	mallard	native
Cathartes aura	turkey vulture	native
Poecile rufescens	chestnut-backed chickadee	native
Columba livia	rock pigeon	non-native
Sayornis nigricans	black phoebe	native
Petrochelidon pyrrhonata	cliff swallow	native
Butorides virescens	green heron	native
Passer domesticus	house sparrow	non-native
Spinus psaltria	lesser goldfinch	native
Melospiza melodia samuelis	San Pablo song sparrow	native
Baeolophus inornatus	oak titmouse	native

CITY OF PETALUMA

POST OFFICE BOX 61
PETALUMA, CA 94953-0061

March 23, 2020

Caltrans
Office of Local Assistance
Attention: Ken Nguyen
PO Box 23660
Oakland, CA 94623-0660

Subject: Construction Equipment Staging Technical Memorandum
Project: Washington Street Bridge Seismic Rehabilitation
Federal Project BHLS-5022(050)

Public Works & Utilities

City Engineer
11 English Street
Petaluma, CA 94952
Phone (707) 778-4303

Environmental Services
Ellis Creek Water Recycling Facility
3890 Cypress Drive
Petaluma, CA 94954
Phone (707) 776-3777
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Parks & Facility Maintenance
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Transit Division
555 N. McDowell Blvd.
Petaluma, CA 94954
Phone (707) 778-4421

Utilities & Field Operations
202 N. McDowell Blvd.
Petaluma, CA 94954
Phone (707) 778-4546
Fax (707) 206-6034

E-Mail: publicworks@cityofpetaluma.org

Project Limits

The Washington Street Bridge Seismic Rehabilitation Project (Project) is located in the City of Petaluma (City), Sonoma County, California. The Washington Street Bridge Carries Washington Street traffic over the Petaluma River and located between Copeland Street to the North and Petaluma Boulevard North to the South.

Project Description

The proposed Project would implement seismic retrofits on the existing Washington Street bridge over Petaluma River. The proposed retrofit strategy includes the construction of concrete frames with Cast-in-Drilled-Hole (CIDH) piles and a concrete pile cap placed behind each of the abutments. The concrete frames would each consist of three 4-foot diameter CIDH piles and a stiff concrete pile cap connected to each abutment with drill and bond dowels. Placement of these CIDH pile frames behind the abutments with proper connection of these frames to the existing abutments would increase the stiffness of the lateral system and reduce lateral movements. This increase in stiffness would result in lower displacement demands on the existing piles and protect the existing bridge from collapse during seismic events. Additionally, the pile cap would bolster the Abutment 1 wall in the bottom of the girder region allowing it to resist longitudinal passive and lateral spreading forces. A reduced section of the pile cap beam would be extended past the ends of the frame to bolster the remaining length of the abutment wall.

Portions of the abutments and wingwalls from the original Washington Street bridge are present behind the abutment walls of the current bridge. Portions of these old abutments and wingwalls would need to be removed in order to construct the proposed CIDH piles and pile caps. The precise locations and extents of these old abutments and wingwalls are currently unknown and would need to be located via potholing or direct exposure.

Equipment Staging

The City of Petaluma's specifications will contractually require the contractor to locate a construction staging area. The specifications will include, at the minimum, the following requirements for locating the staging area:

- The staging area will be located on an existing asphalt or concrete surface area. No staging area will be allowed on undeveloped lots.
- The staging area will be included in the Contractor's SWPPP.
- The staging area will not be located in an environmentally sensitive area and/or impact water resources (rivers, streams, bays, inlets, lakes, drainage sloughs).
- The staging area will not be located in a regulatory floodway or within the base floodplain (100-year).
- The staging area will not affect access to properties or roadways.

If you need further information, please call me at (707) 776-3673 or e-mail at Jstutsman@cityofpetaluma.org.

Sincerely,

Jeff Stutsman, P.E., T.E.
Traffic Engineer

c: Project file

CITY OF PETALUMA

POST OFFICE BOX 61
PETALUMA, CA 94953-0061

March 23, 2020

Caltrans
Office of Local Assistance
Attention: Ken Nguyen
PO Box 23660
Oakland, CA 94623-0660

Subject: Construction Equipment Staging Technical Memorandum
Project: Washington Street Bridge Seismic Rehabilitation
Federal Project BHLS-5022(050)

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Traffic Handling During Construction

To construct the improvement for the Washington Street Bridge, it is anticipated that one of the two northbound lanes and one of the two southbound lanes would require a temporary lane closure. Lane closure will happen during off peak hours between 9am and 3pm. Lane closure would be per the latest edition of the Manual of Uniform Traffic Control devices (MUTCD-Ca). In addition, temporary parking removal would be required on the side streets adjacent to the Washington Street Bridge. Temporary parking removal would require 72hr advance signing and notice to the Petaluma Police Department and be temporary in nature.

During construction it may be necessary to close the sidewalk for a temporary amount of time. The Contractor will be required to route pedestrian traffic around the construction utilizing the uncontrolled crosswalk to the north which includes median refuge island and rectangular rapid flashing beacons and the controlled intersection at Washington Street and Petaluma Boulevard North to the South.

Washington Street is currently designated a Class III bike route. During construction bicyclist would continue to share the road with motorist and additional signage per the MUTCD would be required to remind motorist to share the road.

Advanced notice of lane closures will be given to the transit operators and emergency vehicles 72 hrs. advance of any lane closure. Access will always be provided for both transit and emergency vehicles thru the construction zone.

It is not anticipated that a full road closure would be required. If in the event a full road closure is required, the work would be required to be done at night. The detour would utilize Lakeville street to D Street and up to Petaluma Boulevard South. The Detour would be approximately 0.8 miles. In the event of a full road closure emergency services and transit operators would be notified 72 hours in advanced. Road closure would be signed per the MUTCD.

If you need further information, please call me at (707) 776-3673 or e-mail at Jstutsman@cityofpetaluma.org.

Sincerely,

Jeff Stutsman, P.E., T.E.
Traffic Engineer

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CITY OF PETALUMA

POST OFFICE BOX 61
PETALUMA, CA 94953-0061

March 23, 2020

Caltrans
Office of Local Assistance
Attention: Ken Nguyen
PO Box 23660
Oakland, CA 94623-0660

Subject: Noise Technical Memorandum
Project: Washington Street Bridge Seismic Rehabilitation
Federal Project BHLS-5022(050)

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Noise During Construction

Construction noise will be required to follow the City of Petaluma ordinance 2049 for noise regulations (attached). Work shall only be performed Monday thru Friday from 7am to 5pm and be with in the limit of the noise exposure identified in table 1 of the noise regulation ordinance 2049.

If you need further information, please call me at (707) 776-3673 or e-mail at Jstutsman@cityofpetaluma.org.

Sincerely,

Jeff Stutsman, P.E., T.E.
Traffic Engineer

c: Project file

EFFECTIVE DATE OF ORDINANCE
JUL 2 1997

ORDINANCE NO. 2049 N.C.S.

Introduced by Councilmember Pamela Torliatt

Seconded by Councilmember Matt Maguire

AN ORDINANCE OF THE CITY OR PETALUMA AMENDING ZONING ORDINANCE NO. 1072 N.C.S. AS AMENDED, BY REMOVING CURRENT SECTION 22-301 NOISE REGULATIONS AND REPLACING WITH NEW SECTION 22-301 - NOISE -

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF PETALUMA AS FOLLOWS:

Section 1: On march 11, 1997 The Planning Commission held a duly noticed public hearings on the proposed amendment to replace the existing Noise Regulations with new Noise Regulations and recommended approval of the new regulations.

Section 2: The City Council finds that the amendments to the text of the zoning ordinance are exempt from the requirements of the California Environmental Quality Act under the General Rule, Section 15061(b)(3) of the CEQA Guidelines which exempts projects that clearly have no potentially significant adverse environmental impacts.

Section 3: The City Council further finds that the proposed noise regulations are in general conformance with the intent, goals, policies and programs of the Petaluma General Plan and any applicable plans.

Section 4: The City Council further finds that the public necessity, convenience and general welfare require or clearly permit the adoption of the proposed amendment.

NOW, THEREFORE, BE IT ORDAINED that the City Council of the City of Petaluma hereby amends Ordinance 1072 N.C.S. to replace Section 22-301 with the following:

SECTION 22-301: NOISE REGULATIONS

22-301.1 **Purpose**

It is declared to be the policy of the City, in the exercise of its police power, to protect properties and the general health, safety and welfare of persons from unnecessary, excessive and annoying noise disturbances. In accordance with this policy, the City of Petaluma is hereby designated a quiet city. At certain levels, noises are detrimental to the health and welfare of the citizenry and, in the public interest, shall be prohibited. It is the purpose of this chapter to implement the goals of the Health and Safety Element of the General Plan by prescribing standards prohibiting detrimental levels of noise and by providing an effective and readily available remedy for violations. The

provisions of this chapter and the remedies contained herein shall be cumulative and are not intended to replace any otherwise available remedies for public, private or mixed nuisances, nor any other civil or criminal remedies otherwise available. In addition, the regulations contained herein are not intended to substitute for any noise analysis conducted as a part of the City's environmental review process for discretionary permit approvals, nor is it intended to limit more strict noise control requirements for discretionary permit approvals should more strict measures be found to be necessary in order to maintain noise levels that are not detrimental to the health and welfare of the citizenry.

22-301.2 **Definitions**

A. **"ambient noise"** is the composite of noise from all sources within a given area. Ambient noise constitutes the existing level of environmental noise at a given location.

B. **"noise disturbance"** shall mean any sound which, because of its loudness (amplitude), duration, or character, disturbs, injures or endangers the public comfort, health, peace or safety within the limits of the City of Petaluma.

C. **"Decibel"** the measurement unit used for loudness of sound/noise.

D. **"A-Weighted Sound Level (dBA)"** is a decibel scale that approximates the way the human ear responds to frequency levels.

E. **"Equivalent Sound Level (L_{eq})"** is a term used to assign a single value A-weighted decibel level to the measured average sound exposure over a period of time.

F. **"Noise Control Officer"** is the City of Petaluma Planning Director and the City of Petaluma Police Chief or his/her designee.

G. **"Quiet City"** is defined as a City that strives to minimize the amount of noise to which the community, particularly a residential area, is exposed through the implementation of enforceable noise standards.

22-301.3 **Noise Regulations Generally**.

A. The following specific acts, subject to the exemptions provided in Section 22-301.4, are declared to be public nuisances and are prohibited:

1. The operation or use of any of the following before 7:00 a.m. or after 10:00 p.m. daily (except Saturday, Sunday and State, Federal or Local Holidays, when the prohibited time shall be before 9:00 a.m. and after 10:00 p.m.):

a) A hammer or any other device or implement used to repeatedly pound or strike an object.

b) An impact wrench, or other tool or equipment powered by compressed air.

c) Any tool or piece of equipment powered by an internal-combustion engine such as, but not limited to, chain saw, backpack blower, and lawn mower. Except as specifically

included in this Ordinance, motor vehicles, powered by an internal-combustion engine and subject to the State of California vehicle code, are excluded from this prohibition.

d) Any electrically or battery powered tool or piece of equipment used for cutting, drilling, or shaping wood, plastic, metal, or other materials or objects, such as but not limited to a saw, drill, lathe or router.

e) Any of the following: the operation and/or loading or unloading of heavy equipment (such as but not limited to bulldozer, road grader, back hoe), ground drilling and boring equipment, hydraulic crane and boom equipment, portable power generator or pump, pavement equipment (such as but not limited to pneumatic hammer, pavement breaker, tamper, compacting equipment), pile-driving equipment, vibrating roller, sand blaster, gunite machine, trencher, concrete truck, and hot kettle pump and the like.

f) Construction, demolition, excavation, erection, alteration or repair activity.

h) Operating or permitting the operation of powered model vehicles including but not limited to cars, aircraft and boats.

i) Using or operating for any purpose any loudspeaker, loudspeaker system or similar device in such a manner as to create a noise disturbance. Any permit issued pursuant to PMC Section 13.28.050 (amplified sound permit within a public park) is exempt from this section.

j) The use of truck/tractor trailer "Jake Brakes" on any public street under the jurisdiction of the City of Petaluma Police Department.

2. In the case of urgent necessity and in the interest of public health and safety, the Noise Control Officer may issue a permit for exemption from the requirements with subsection 22-301.3. Such period shall not exceed ten (10) working days in length but may be renewed for successive periods of thirty (30) days or less, not to exceed a total of 90 days while the emergency continues. Requests for exemptions beyond 90 days shall require public hearing approval. The Noise Control Officer may limit such permit as to time of use and/or permitted action, depending upon the nature of the emergency and the type of action requested.

3. The operation of any licensed motor vehicle in violation of the State Vehicle Code or the operation of stereo, public address or other such amplified equipment on or within a motor vehicle in violation of the State Vehicle Code.

4. Continued or repeated operation of a Public Address System between the hours of 10:00 a.m. and 7:00 p.m. daily shall not exceed a decibel level of 5 dbA above the measured ambient of the area in which this activity is occurring. Unless specifically approved by the City of Petaluma (i.e. Use Permit, Parks Director, Exception or Exemption from this Code Sec.) no Public Address System shall be permitted during the hours of 7:00 p.m. to 10:00 a.m.

B. **Noise Measurement:** Utilizing the "A" weighting scale of a sound level meter and the "slow" meter response (use "fast" response for impulsive type sounds), the ambient noise level shall first be measured at a position or positions at any point on the receiver's property which can include private and public property. In general, the microphone shall be located four to five feet above the ground; ten feet or more from the nearest reflective surface where possible. If possible, the ambient noise shall be measured with the alleged offending noise source

inoperative. If for any reason the alleged offending noise source cannot be shut down, the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance such that the noise from the source is at least 10db below the ambient in order that only the ambient level be measured.

1. If the measured ambient level is greater than 60db, the Maximum Noise Exposure standard shall be adjusted in 5db increments for each time period as appropriate to encompass or reflect the measured ambient noise level. In no case shall the maximum allowed threshold exceed 75db after adjustments are made.
2. In the event the measured ambient noise level is 70db or greater, the maximum allowable noise level shall be increased to reflect the maximum ambient noise level. In this case, adjustments for loudness and time as contained in TABLE I shall not be permitted.
3. No person shall cause or allow to cause, any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which when measured on the property where the noise disturbance is being experienced within public or private open/outdoor spaces, exceeds the noise level of TABLE I.

TABLE I: Maximum Exterior Noise Exposure (L_{eq}, dbA)

	Time: 10 p.m. to 7 a.m. M-F 10 p.m. to 8 a.m. S, S and Holidays	Time:. 7 a.m. to 10 p.m. M-F 8 a.m. to 10 p.m. S, S and Holidays
General Plan Ambient	60	60
cumulative period of 15 minutes or more in one hour	65	70
cumulative period of 5 minutes or more in one hour	70	75
cumulative period of 1 minute or more in one hour	75	80

22-301.4 **EXEMPTIONS.**

A. Aerial warning devices which are required by law to protect the health, safety and welfare of the community shall be exempt from the provisions of this chapter.

B. Emergency vehicle responses and all necessary equipment utilized for the purpose of responding to a declared state of emergency are exempt from this chapter.

C. Airport, river operations that significantly contribute to commercial and industrial tonnage figures on the Petaluma River, and railroad operations.

D. The operation of garbage collection and other municipal or utility vehicles.

E. Uses established through the discretionary review process containing specific noise conditions of approval and/or mitigation measures.

22-301.5 **EXCEPTIONS.**

A. **Authorities.** The Noise Control Officer is authorized to grant exceptions from any provision of this chapter, subject to limitations of proximity to noise sensitive uses, noise levels, time limits and other terms and conditions as the Noise Control Officer determines are appropriate to protect the public health, safety and welfare from the noise emanating therefrom. This section shall in no way affect the duty to obtain any permit or license required by law for such activities.

B. **Application.** Any person seeking an exception pursuant to this section shall file an application with the Noise Control Officer consistent with the provisions and requirements of Section 26-512 (Minor Conditional Permits). The application shall contain information which demonstrates that bringing the source of sound or activity for which the exception is sought into compliance with this chapter would constitute an unreasonable hardship on the applicant, on the community, or on other persons. The application shall be accompanied by a fee as established by Council Resolution. A separate application shall be filed for each noise source; provided, however, that several mobile sources under common ownership, or several fixed sources on a single property may be combined into one application. Any individual who claims to be adversely affected by allowance of the exception may file a statement with the Noise Control Officer containing any information to support his/her claim. If at any time the Noise Control Officer finds that a sufficient controversy exists regarding an application, a public hearing before the Planning Commission may be held.

C. **Decision Criteria.** In determining whether to grant or deny the exception application, the Noise Control Officer shall balance denial as a hardship on the applicant against:

1. the adverse impact on the health, safety and welfare of other persons affected;
2. the reasonableness of compliance with this code given the existing conditions and scope of the necessary improvements to comply;
3. the adverse impact on property affected;
4. any other adverse impacts of granting the exception; and,
5. consistency with the General Plan.

Applicants for exceptions and persons contesting exceptions shall be required to submit such information as the Noise Control Officer may reasonably require to adequately address the above five areas of consideration.

D. **Approval/Findings.** Exceptions shall be granted by notice to the applicant containing all necessary conditions. The exception shall not become effective until all conditions (if any) are agreed to in writing by the applicant. Noncompliance with any condition of the exception shall terminate the exception and subject the person holding it to those provisions of this chapter for which the exception was granted.

E. **Term of Exception.** The term of the exception shall run continuously with the associated use and shall terminate upon cessation of the use for a period of six (6) months or more. An exception shall only be transferred to a similar use at the same location upon the Noise Control Officer receiving sufficient information to find that: the new use is of the same or lesser intensity; and, the new use will not substantially alter the pattern of noise generation established by the previous use (i.e. increase evening or morning noise over the previous use).

22-301.6 **NOISE CONTROL OFFICER.**

The Planning Director and the Chief of Police are hereby appointed the Noise Control Officers of the City. It shall be the responsibility of the Noise Control Officers or his/her designated representative to enforce the provisions of this section and to perform all other functions required of the Noise Control Officer by this section. Such duties shall include, but not be limited to, investigating potential violations of this section and referring evidence of such violations either to the Police Department or City Attorney for initiation of legal action.

22-301.7 **INTERRELATIONSHIP OF PROVISIONS.**

It is the purpose of this chapter to provide maximum noise level limitations for otherwise lawful activities. Nothing contained in this section shall be deemed to authorize any otherwise prohibited activity nor to supersede existing land use/zoning limitations. In the event of a conflict between the standards contained in this chapter and any other provision of law, the more restrictive shall govern.

IF ANY SECTION, subsection, sentence, clause or phrase or word of this ordinance is for any reason held to be unconstitutional by a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this ordinance. The City Council of the City of Petaluma hereby declares that it would have passed and adopted this ordinance and each and all provisions thereof irrespective of the fact that any one or more of said provisions be declared unconstitutional.

INTRODUCED and ordered Posted/Published this 19th day of May, 1997.

ADOPTED this 2nd day of June, 1997 by the following vote:

AYES: Read, Keller, Torliatt, Maguire, Vice Mayor Hamilton, Mayor Hilligoss

NOES: None

ABSENT: Stompe

ABSTAIN: None

M. Teresa Hilligoss
Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

a:\vcs\noise\ordnoiz

CITY OF PETALUMA

POST OFFICE BOX 61
PETALUMA, CA 94953-0061

March 23, 2020

Caltrans
Office of Local Assistance
Attention: Ken Nguyen
PO Box 23660
Oakland, CA 94623-0660

Subject: Noise Technical Memorandum
Project: Washington Street Bridge Seismic Rehabilitation
Federal Project BHLS-5022(050)

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Project Description

The proposed Project would implement seismic retrofits on the existing Washington Street bridge over Petaluma River. The proposed retrofit strategy includes the construction of concrete frames with Cast-in-Drilled-Hole (CIDH) piles and a concrete pile cap placed behind each of the abutments. The concrete frames would each consist of three 4-foot diameter CIDH piles and a stiff concrete pile cap connected to each abutment with drill and bond dowels. Placement of these CIDH pile frames behind the abutments with proper connection of these frames to the existing abutments would increase the stiffness of the lateral system and reduce lateral movements. This increase in stiffness would result in lower displacement demands on the existing piles and protect the existing bridge from collapse during seismic events. Additionally, the pile cap would bolster the Abutment 1 wall in the bottom of the girder region allowing it to resist longitudinal passive and lateral spreading forces. A reduced section of the pile cap beam would be extended past the ends of the frame to bolster the remaining length of the abutment wall.

Portions of the abutments and wingwalls from the original Washington Street bridge are present behind the abutment walls of the current bridge. Portions of these old abutments and wingwalls would need to be removed in order to construct the proposed CIDH piles and pile caps. The precise locations and extents of these old abutments and wingwalls are currently unknown and would need to be located via potholing or direct exposure.

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Petaluma, CA 94952
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555 N. McDowell Blvd.
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Utilities & Field Operations
202 N. McDowell Blvd.
Petaluma, CA 94954
Phone (707) 778-4546
Fax (707) 206-6034

E-Mail: publicworks@cityofpetaluma.org

Floodplain

The project location is specified on the attached FEMA flood map. The Washington Street bridge traverses the Petaluma River and all work will be located outside designated flood hazard areas.

If you need further information, please call me at (707) 776-3673 or e-mail at Jstutsman@cityofpetaluma.org.

Sincerely,

Jeff Stutsman, P.E., T.E.
Traffic Engineer

c: Project file

CITY OF PETALUMA

POST OFFICE BOX 61
PETALUMA, CA 94953-0061

April 13, 2020

Caltrans
Office of Local Assistance
Attention: Ken Nguyen
PO Box 23660
Oakland, CA 94623-0660

Subject: Land Use and Community Impact Technical Memorandum
Project: Washington Street Bridge Seismic Rehabilitation
Federal Project BHLS-5022(050)

Public Works & Utilities

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Project Limits

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Land Use and Community Impacts

To date no public outreach has been completed. Public outreach for this project would include notification to all the residents and businesses within the general vicinity of the Washington Street Bridge prior to construction. At this time it is anticipated that night work is not required for this project and the work can be completed during the day utilizing the side streets and partial lane closures on either side of the bridge At this time it is not anticipated that the bridge will need to be closed. If it is necessary to close the bridge to perform certain work activities it will be required to be completed at night. The detour is approximately 0.8 miles and would have minimal impacts for motorist at night. The detour route is a typical route used by motorist on a normal day to avoid traffic from the Sonoma Marin Area Rail Transit (SMART). If night work is necessary, a public notice will go out to all residents within 1000' of the projects with dates and times of proposed work and duration of work.

Construction activities shall be required to meet the City's noise ordinance. During final design; alternative construction techniques will be investigated to complete the project while limiting noise levels.

There is no need for any right of way needs for this project. The bridge foundations fall within the City of Petaluma right of way. The Washington Street bridge traverses the Petaluma River and the City has a State Lands Lease as it cross's the Petaluma River.

The current land use is a combination of commercial and residential use.

If you need further information, please call me at (707) 776-3673 or e-mail at Jstutsman@cityofpetaluma.org.

Sincerely,

Jeff Stutsman, P.E., T.E.
Traffic Engineer

c: Project file

CITY OF PETALUMA

POST OFFICE BOX 61
PETALUMA, CA 94953-0061

March 23, 2020

Caltrans
Office of Local Assistance
Attention: Ken Nguyen
PO Box 23660
Oakland, CA 94623-0660

Subject: Noise Technical Memorandum
Project: Washington Street Bridge Seismic Rehabilitation
Federal Project BHLS-5022(050)

Project Limits

The Washington Street Bridge Seismic Rehabilitation Project (Project) is located in the City of Petaluma (City), Sonoma County, California. The Washington Street Bridge Carries Washington Street traffic over the Petaluma River and located between Copeland Street to the North and Petaluma Boulevard North to the South.

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Storm Water Management

In summary, the contract specifications require the contractor to prepare storm water management, sediment and erosion control measures for implementation and shall maintain these measures during the construction period as required by the Regional Water Quality Control Board (RWQCB).

Storm water management and sediment and erosion control shall include, but not be limited to, fiber rolls (sediment logs or wattles), drain rock, check dams, silt fencing and siltation basins as required for construction conditions. The contractor shall be responsible for providing the measures that would comply with the RWQCB.

The contractor shall also place drain rock bags around storm drain inlets/catch basins and install drain rock check dams at 50-foot intervals within 100 feet upstream from the inlets/catch basins.

The contractor shall comply with all Federal, State and local regulations and ordinances governing storm water pollution prevention.

A Storm Water Pollution Plan shall include the "California Storm Water Best Management Practice Handbook for Construction Activity" and the San Francisco Bay Regional Water Quality Control Board's "Information on Erosion and Sediment Controls for Construction Projects." The SWPPP shall, at a minimum, include Best Management Practices (BMPs), acceptable to the City, to address the following:

1. Housekeeping
2. Waste Containment and Control
3. Minimizing Disturbed Areas
4. Stabilize Disturbed Areas
5. Protect Slopes and Channels
6. Control Site Perimeter
7. Control of Internal Erosion
8. Disposal of Storm Water and Ground Water
9. Sediment Control
10. Liquid Waste Management
11. Concrete Waste Management
12. Hazardous Waste Management
13. Employee and SUBCONTRACTOR Training
14. Vehicle and Equipment Fueling and Maintenance
15. Spill Prevention and Control
16. Contaminated Soil Management
17. Sawcutting
18. Paving and Asphalt Work
19. Street Cleaning

If you need further information, please call me at (707) 776-3673 or e-mail at Jstutsman@cityofpetaluma.org.

Sincerely,

Jeff Stutsman, P.E., T.E.
Traffic Engineer

c: Project file

Draft Aquatic Resources Delineation Report

Washington Street Bridge Seismic Rehabilitation Project
BHLS-5022(060)

City of Petaluma
September 2020

Draft Aquatic Resources Delineation Report

Washington Street Bridge Seismic Rehabilitation Project BHLS-5022(060)

City of Petaluma

Prepared By: _____ Date: _____
Cuyler Stapelmann, Senior Environmental Scientist
WRECO
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(925) 941-0017 ext. 229

Recommended for
Approval By: _____ Date: _____
Keevan Harding, Environmental Planner – Natural Sciences
Office of Local Assistance District 4
Caltrans, District 4
Oakland, California
(510) 622-5912

Approved By: _____ Date: _____
Thomas Holstein, Environmental Branch Chief
Office of Local Assistance
Caltrans, District 4
Oakland, California
(510) 286-6371

EXECUTIVE SUMMARY

The City of Petaluma (City) proposes the Washington Street Bridge Seismic Rehabilitation Project (Project). The Project is located where Washington Street crosses over Petaluma River in downtown Petaluma, Sonoma County, California. The City is the lead agency for the California Environmental Quality Act (CEQA), and the California Department of Transportation District 4 (Caltrans) is the federal lead agency for the National Environmental Policy Act (NEPA).

The Project would implement structural retrofits to the existing Washington Street bridge over Petaluma River to improve its ability to withstand seismic events. The purpose of the Project is to implement these seismic retrofits on the existing Washington Street bridge. The Project is needed to reduce the risk of the existing Washington Street bridge from collapse during the maximum credible earthquake.

A Study Area was established to encompass areas of direct and indirect impacts associated with the Project construction and operation. This *Aquatic Resources Delineation Report* was prepared to document Waters of the United States (U.S.) regulated under Sections 404/401 of the Clean Water Act and Section 10 of the Rivers and Harbors Act as well as non-federal Waters of the State regulated under the Porter-Cologne Water Quality Control Act in the Study Area. On July 8, 2020, biologists conducted an aquatic resource delineation in the Study Area.

Within the Study Area, the Petaluma River is tidally influenced, and as a tidal watercourse, the jurisdictional delineation within the Petaluma River channel focused on identification of the high-tide line (Section 404/401 of the Clean Water Act) and mean high water (Section 10 of the Rivers and Harbors Act). The total area of potential jurisdictional features subject to regulation by the U.S. Army Corps of Engineers (USACE) are summarized in Table ES-1.

Table ES-1. Waters of the U.S. in the Study Area

Feature	Area (square feet)	Area (acres)	Length (linear feet)
Petaluma River			
Clean Water Act Sections 404/401 Jurisdiction	20,297	0.466	236
Rivers and Harbors Act Section 10 Jurisdiction	19,939	0.458	236

There are no non-federal Waters of the State within the Study Area that may be subject to regulation under the Porter-Cologne Water Quality Control Act.

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Tables

Figures

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Appendices

Acronyms

ARDR	Aquatic Resources Delineation Report
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CIDH	Cast-in-Drilled-Hole
CFR	Code of Federal Regulations
Ft	feet
MLRA	Major Land Resource Area
NEPA	National Environmental Policy Act
NGVD 29	National Geodetic Vertical Datum of 1929
NOAA	National Oceanic and Atmospheric Administration
OHWM	ordinary high water mark
Project	Washington Street Bridge Seismic Rehabilitation Project
RWQCB	Regional Water Quality Control Board
SMART	Sonoma Marina Area Rail Transit
SWRCB	State Water Resources Control Board
U.S.	United States
USACE	U.S. Army Corps of Engineers

1.0 INTRODUCTION AND PROJECT BACKGROUND

The Washington Street Bridge Seismic Rehabilitation Project (Project) is located in the City of Petaluma, Sonoma County, California. The Project would implement structural retrofits to the existing Washington Street bridge over Petaluma River to improve its ability to withstand seismic events. The City of Petaluma (City) is the lead agency under the California Environmental Quality Act (CEQA), and the California Department of Transportation District 4 (Caltrans) is the federal lead agency under the National Environmental Policy Act (NEPA).

This *Aquatic Resources Delineation Report* (ARDR) was prepared for delineating Waters of the United States (U.S.) in the Study Area. The purpose of this ARDR is to identify and delineate Waters of the U.S. regulated by the U.S. Army of Corps of Engineers (USACE) under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act as well as non-federal Waters of the State regulated by the Regional Water Quality Control Board (RWQCB) under the Porter-Cologne Water Quality Control Act.

1.1 Project Background

The existing Washington Street bridge (Bridge No. 20C-0045) is a two-span precast concrete I-girder structure that carries Washington Street over Petaluma River. The original Washington Street bridge was removed and replaced by the current bridge in 1970. Portions of the original bridge abutments and wingwalls remain, and are located behind the abutments of the current structure. The current bridge was constructed in two stages, and it has a longitudinal joint underneath the center median. The current bridge has a length of 105 feet. The total width of the current bridge is 89 feet, comprised of two, 6-foot-wide sidewalks with semi-circular overlooks, 40-foot-wide westbound and 30-foot eastbound traveled ways, and a 5-foot-wide raised median. The bridge has a straight alignment and the supports are skewed approximately 4 degrees to the alignment (Biggs Cardosa Associates 2010).

The diaphragm abutments are supported on 60-ton steel H piles that vary from 9 to 28 feet in length with a typical length of approximately 12 feet at Abutment 1 (western abutment) and 26.5 feet at Abutment 3 (eastern abutment). The bent is supported on 60-ton steel H piles approximately 33-feet long with a minimum embedment of 11 feet. The bent pile extensions are encased in concrete from the mud line to the bent cap. In 2008, the concrete casings on the bent pile extensions were encased in an additional marine protection system consisting of a fiberglass reinforced plastic (FRP) jackets filled with marine epoxy grout. The superstructure girders are encased in end diaphragms at the bent and abutments, and lateral loads are transferred to the substructure elements via dowels through the girders and reinforcing in the end diaphragms (Biggs Cardosa Associates 2010).

A structural engineering consultant performed a seismic vulnerability analysis in May 2010 (Biggs Cardosa Associates 2010). The analysis found the existing Washington Street bridge is susceptible to collapse during a maximum credible earthquake based on the following structural vulnerabilities: 1) seismic displacement demands on the piles exceed the capacities at the bent and abutments, particularly Abutment 1, and 2) second order effects (P-Δ or P-delta effects) on the piles due to seismic displacement demands are significant at the abutments and bent.

1.2 Purpose and Need

The goal of the Project, also referred to as the Build Alternative, is to construct a bridge retrofit that would prevent the structure from collapsing during the maximum credible earthquake. However, significant damage to the proposed bridge may be incurred during the maximum credible earthquake, potentially requiring repairs or subsequent replacement (Biggs Cardosa Associates 2010).

The purpose of the Project is to implement seismic retrofits on the existing Washington Street bridge. The Project is needed to reduce the risk of the existing Washington Street bridge from collapse during the maximum credible earthquake.

1.3 Project Description

The proposed Project would implement seismic retrofits on the existing Washington Street bridge over Petaluma River. The proposed retrofit strategy includes the construction of concrete frames with Cast-in-Drilled-Hole (CIDH) piles and a concrete pile cap placed behind each of the abutments. The concrete frames would each consist of three, 4-foot diameter CIDH piles and a stiff concrete pile cap connected to each abutment with drill and bond dowels. Strategic placement and proper connection of these CIDH pile frames would increase the lateral stiffness of the system as well as reduce lateral movements. This increase in stiffness would result in lower displacement demands on the existing piles and protect the existing bridge from collapse during seismic events. Additionally, the pile cap would bolster the Abutment 1 wall in the bottom of the girder region allowing it to resist longitudinal passive and lateral spreading forces. A reduced section of the pile cap beam would be extended past the ends of the frame to bolster the remaining length of the abutment wall (Biggs Cardosa Associates 2010).

As discussed above, portions of the original abutments and wingwalls are still present at the site. In order to construct the proposed CIDH piles and pile caps, some portions of these old abutments and wingwalls will need to be removed. The precise locations and extents of these old abutments and wingwalls are currently unknown and would need to be located via potholing or direct exposure (Biggs Cardosa Associates 2010).

The Build Alternative was developed to minimize effects on Petaluma River, avoid interference with operations of the adjacent Sonoma Marina Area Rail Transit (SMART) railroad tracks, reduce the quantity of utility relocations, and allow one lane of traffic to remain open at all times during construction, as described below (Biggs Cardosa Associates 2010).

- The Project would not require any work to occur within Petaluma River, because all seismic retrofits would take place within developed/paved areas behind the existing abutments. However, dewatering may be required for installation of the proposed CIDH piles and other excavations during construction, because groundwater levels are expected to be fairly shallow. Additionally, groundwater levels are expected to be similar to surface water levels in Petaluma River and fluctuate with changes in tides.
- A railroad spur owned by SMART is located several feet behind Abutment 1. The proposed retrofit frames behind the abutments would not interfere with the railroad tracks or their function. Train or light rail loading would be considered during final design of the proposed

retrofit strategy, as necessary. Excavations to construct the retrofit frames may require shoring to protect the tracks and construction of the pile cap beam.

- While the proposed retrofit strategy would minimize the quantity of utility relocations, several utilities carried by the existing bridge would need to be relocated or otherwise improved. A gas line east of Abutment 3 would be relocated in order to provide the necessary clearance for frame construction. Existing traffic signal conduit that runs the length of Abutment 1 and other utilities that penetrate the abutment would be accommodated with oversized holes in the retrofit cap, as needed. Further investigation of existing utilities would be conducted during the design phase.
- Because the existing bridge is located in the busy downtown district of Petaluma, the proposed retrofit frames and CIDH piles were positioned to allow at least one lane of traffic to remain open at all times during construction. Thus, the Project would allow continued operation of the existing bridge and allow the high traffic demands during morning and afternoon commutes to continue through the Project site during construction.
- A staging area will be identified during the detailed design phase.

Figure 1 depicts the Project location and Figure 2 shows the Project vicinity. Figure 3 depicts the proposed bridge general plan and Figure 4 shows the proposed retrofit frame section.

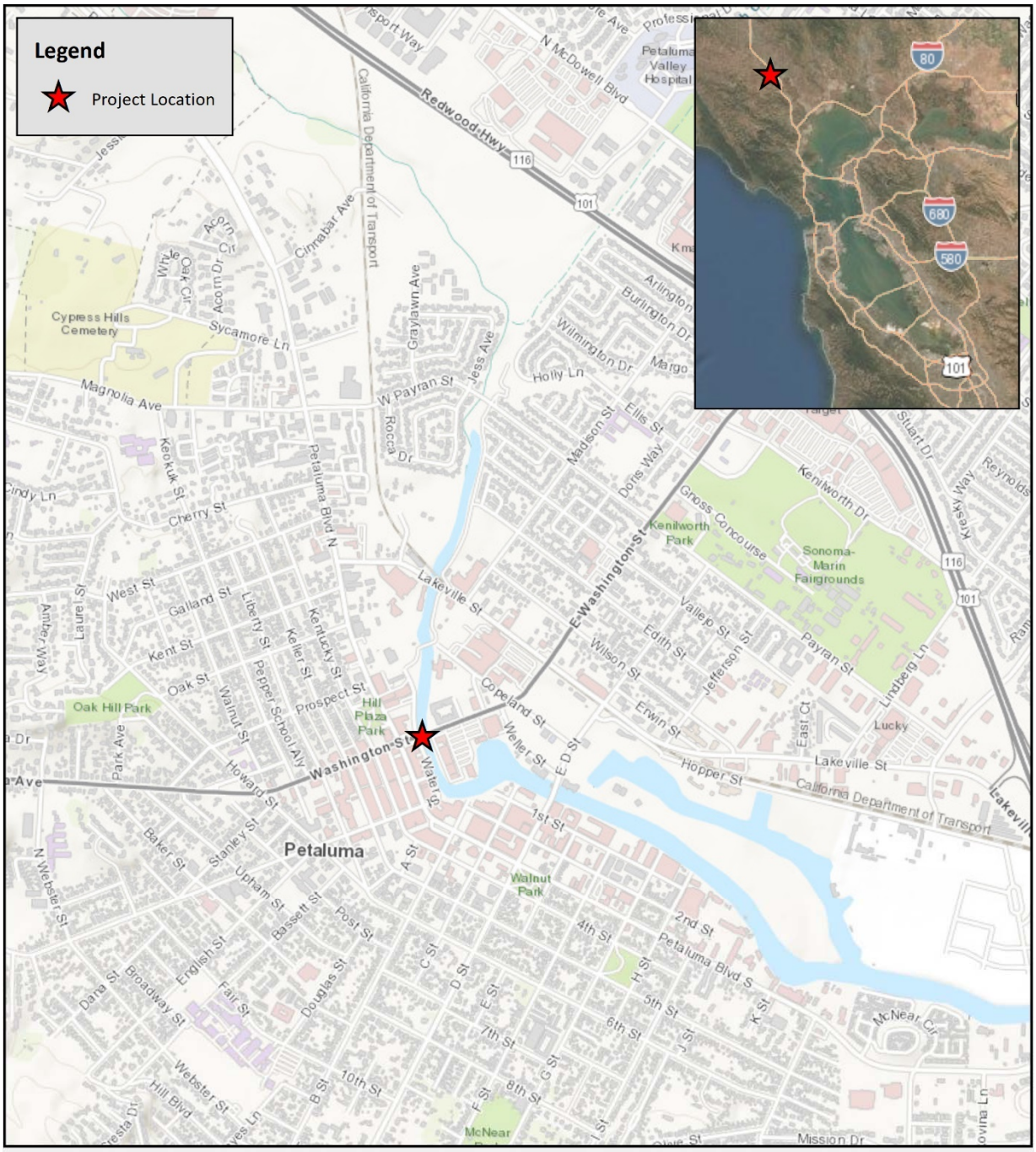

Figure 1. Project Location Map

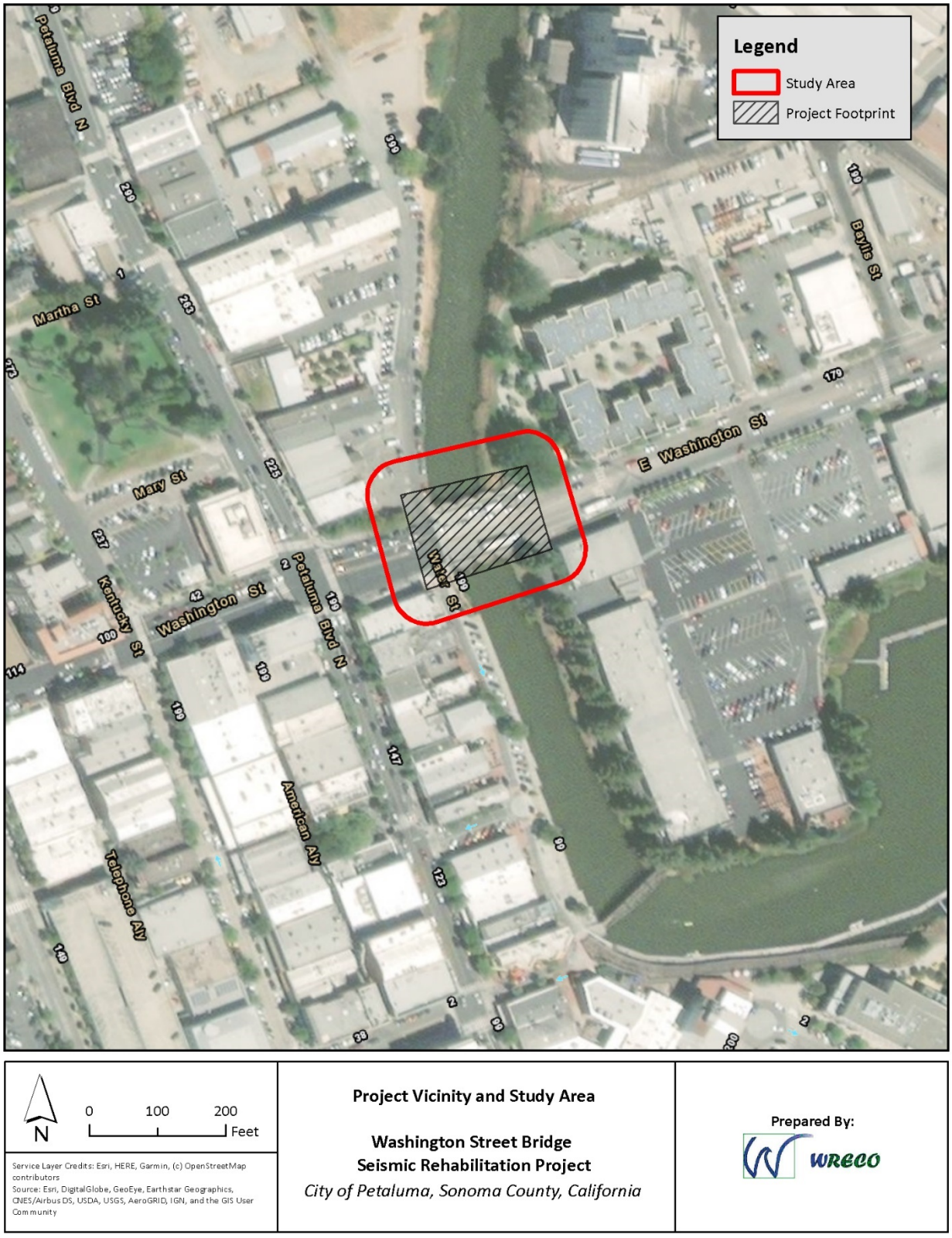

Figure 2. Project Vicinity and Study Area Map

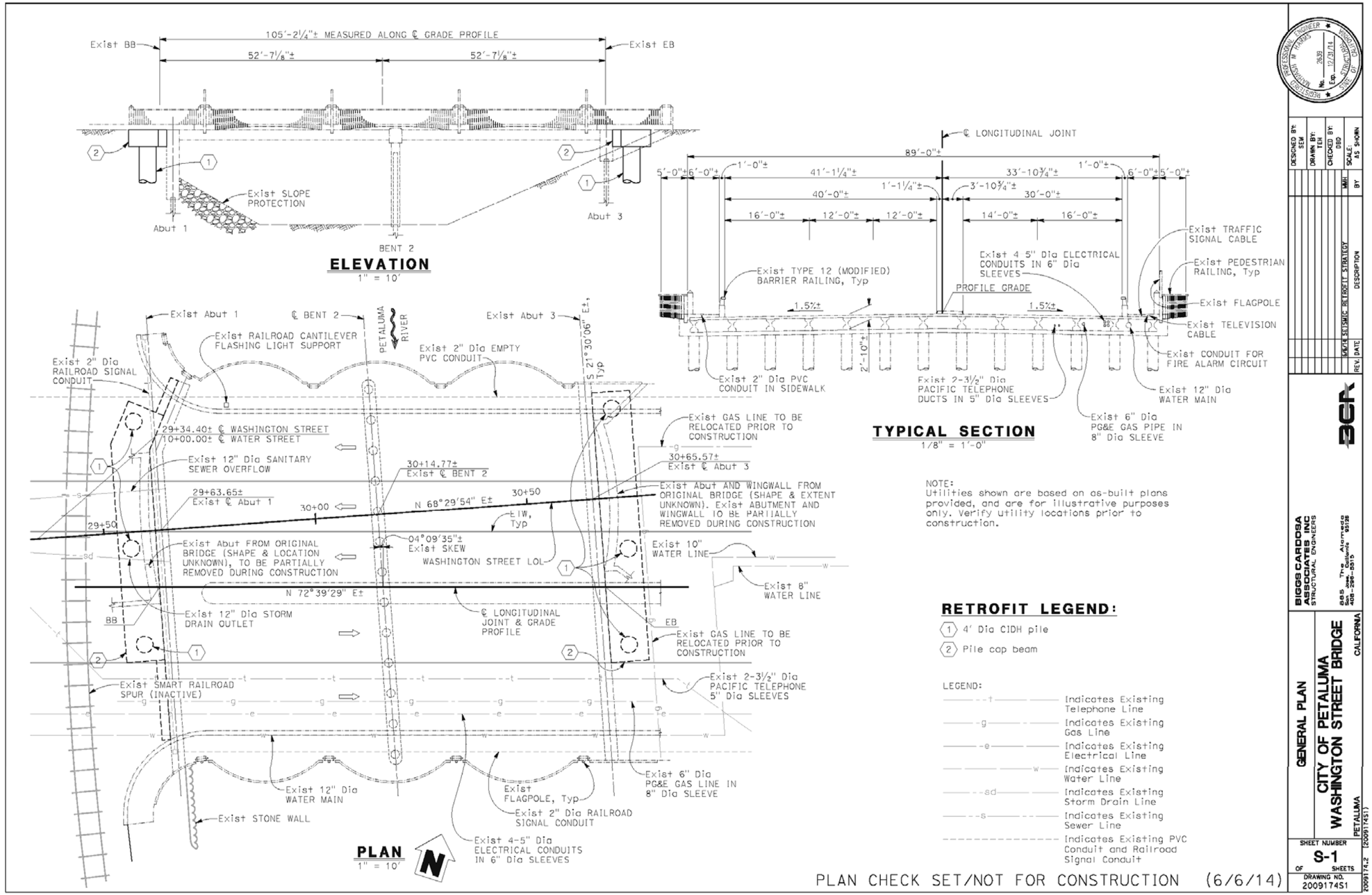

Figure 3. Proposed Bridge General Plan

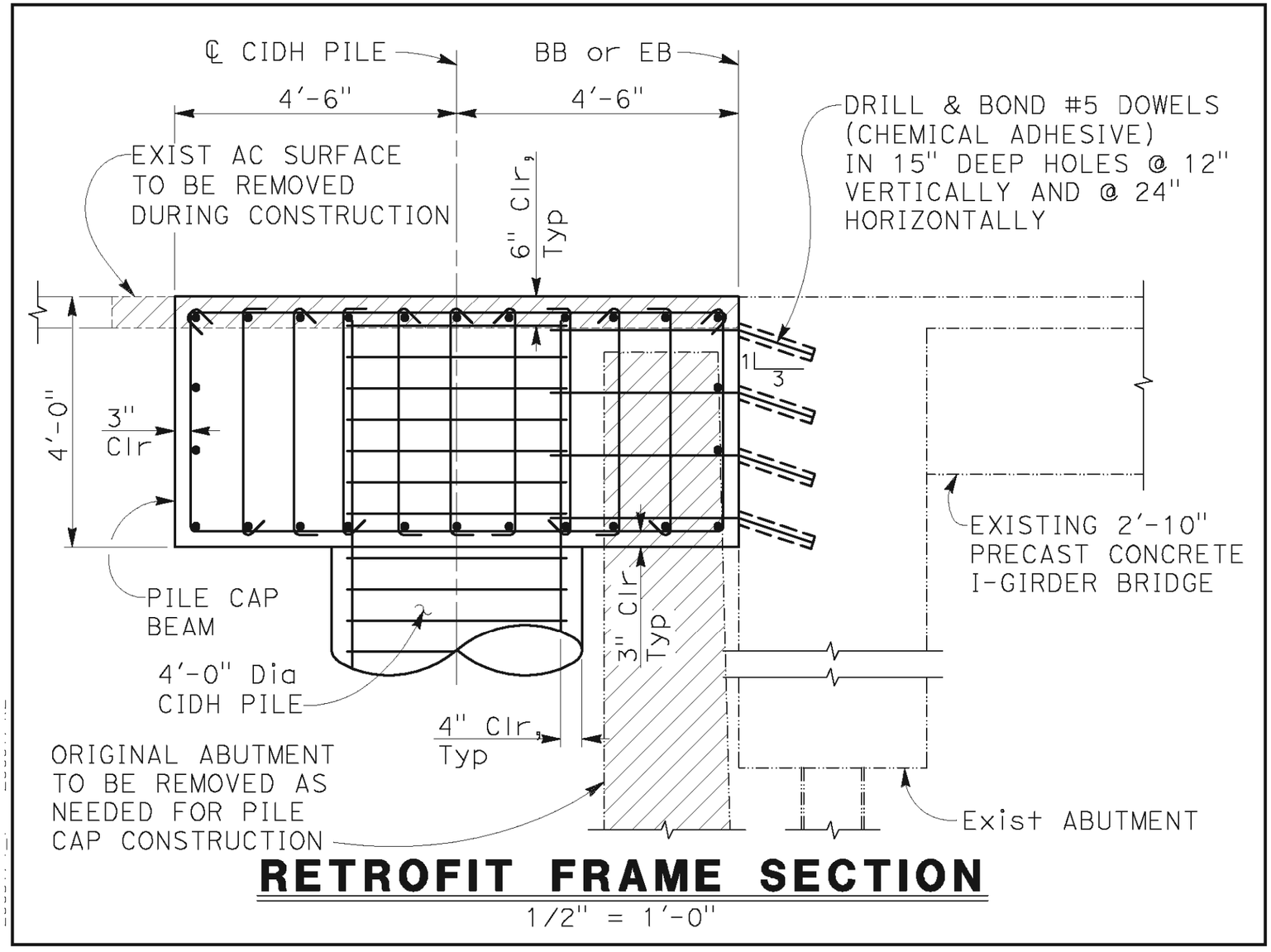

Figure 4. Proposed Retrofit Frame Section

1.4 Study Area

The Study Area includes the Project footprint, which is defined as all areas of potential direct impacts from construction and operation of the Project, including the existing bridge structure, seismic retrofits, and utility relocations. Additionally, the Study Area includes a 50-foot buffer around the Project construction area to account for potential indirect impacts associated with Project construction and operation. The Study Area is approximately 1.5 acres. The Study Area limits are shown in Figure 2, and the physical and biological characteristics of the Study Area are described in Section 4.

1.5 Limitations

The portion of Petaluma River located within the Study Area flows through an urban area. As a result, the banks of the river predominantly consist of vertical sheet pile or concrete walls and there is limited access to the channel and areas below the existing bridge. Additionally, the substrate of the river consists of extremely soft silty clay locally referred to as Bay Mud. All of these conditions heavily constrain access to the channel banks. These accessibility issues were particularly constraining along the western bank of the river, and biologists were not able to gain access to the western bank of Petaluma River within the Study Area. However, biologists were able to determine the location of jurisdictional boundaries along the western bank by viewing the area from the eastern bank as well as the deck of the existing bridge and adjacent roadway. Although this limitation was encountered during the field survey, biologists do not believe this limitation influenced the results.

2.0 REGULATORY SETTING

This chapter describes the federal and state laws that regulate aquatic features within the Study Area.

2.1 Wetlands and Other Waters of the U.S.

Waters of the U.S. include tidal waters, lakes, ponds, rivers, streams, and wetlands. These features receive protection under Section 404 of the Clean Water Act, and are regulated by the USACE. Wetlands are defined as "areas that are saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for the life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33 Code of Federal Regulations [CFR] 328.3[b]). Wetlands may contain water year-round or seasonal, and they may be isolated or adjacent to Other Waters of the U.S.

Other Waters of the U.S. consist of non-tidal watercourses that may either contain water year-round or intermittently, and they also include tributaries to such watercourses (33 CFR 328.3[a]). The limit of USACE jurisdiction along non-tidal Other Waters of the U.S. is the ordinary high water mark (OHWM). The OHWM is identified as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR 328.3[e]). The upstream limit of USACE jurisdiction along Other Waters of the U.S. is the point at which the OHWM is no longer perceptible along the shore.

Under Section 404 of the Clean Water Act, the limit of USACE jurisdiction in tidal watercourses is defined as the high tide line. The high tide line is defined as "the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm." (33 CFR 328.3).

Under Section 10 of the Rivers and Harbors Act, the limit of USACE jurisdiction is defined as either mean high water along tidal watercourses or the OHWM along non-tidal watercourses designated as navigable Waters of the U.S. All proposed work and structures within mean high water or the OHWM must be authorized by the USACE pursuant to Section 10 of the Rivers and Harbors Act (33 USC § 403). Additionally, all proposed work and structures proposed within unfilled portions of interior diked areas below former mean high water must also be authorized under Section 10 of the Rivers and Harbors Act. Mean high water is defined as the average level of all the high water heights observed over several years.

2.2 Waters of the State

The California Water Code defines "waters of the State" as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Section 13050[e]). According to the State Water Resources Control Board (SWRCB), this includes all Waters of the U.S. and is "broadly construed to include all waters within the state's boundaries, whether private or public, including waters in both natural and artificial channels" (SWRCB 2015).

The SWRCB protects the beneficial uses of surface water and groundwater in California under the Porter-Cologne Act, with a focus on water quality. The RWQCBs regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. The San Francisco Bay RWQCB may exercise jurisdiction over discharges into waters of the state pursuant to the Porter-Cologne Act, in cases where the waters are excluded from regulation under the federal Clean Water Act.

The SWRCB jointly with the nine RWQCBs, issued the state wetland definitions in 2019 to clarify what they consider as jurisdictional Waters of the State (California Water Boards 2019). The RWQCBs define an area as wetland if, under normal circumstances:

1. The area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;
2. The duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and
3. The area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The SWRCB determined all Waters of the U.S. are also Waters of the State. For non-U.S. waters, an aquatic resource delineation shall be performed using the methods described in the following three federal documents: *U.S. Army Corps of Engineers Wetlands Delineation Manual* (1987); *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (2008); and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) (2010).

3.0 METHODOLOGY

This section describes the methods used to delineate Waters of the U.S. in accordance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, as well as Waters of the State under the Porter-Cologne Water Quality Control Act.

3.1 Literature Review

Prior to conducting the field surveys, reference materials were reviewed, including the following: *Web Soil Survey* (U.S. Department of Agriculture, 2020), *National Wetlands Inventory* (United States Fish and Wildlife Service, 2020), *San Francisco Bay Tidal Datums and Extreme Tides Study* (AECOM 2016), and aerial images.

3.2 Delineation of Aquatic Resources

A field survey of the Study Area was conducted on July 8, 2020, for the purpose of delineating aquatic resources, including Waters of the U.S. and non-federal Waters of the State. The boundaries of aquatic resources were delineated with a Trimble Model Geo7X sub-meter Global Positioning System unit.

Wetlands were identified and delineated according to standard field methods established by the USACE's *Wetland Delineation Manual* (USACE, 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE, 2008a). Vegetation identification and nomenclature was based on the *Jepson Manual, Vascular Plants of California* (Baldwin et al., 2012). The *Arid West 2016 Regional Wetland Plant List* (Lichvar et al., 2016) was used to obtain plant wetland indicator status. *Munsell Soil Color Charts* (Gretag MacBeth, 2009) were used to facilitate the identification of hydric soils. Where potential wetlands were identified, paired sample points were used and data were recorded on Arid West Routine Wetland Determination Forms.

Along non-tidal watercourses, the OHWM was identified based on *A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States* (USACE, 2008b) and *Regulatory Guidance Letter No. 05-05, Ordinary High Water Mark Identification* (USACE, 2005). Following these established guidance documents, potential OHWMs were identified by examining watercourses for recent physical evidence of surface flow, including but not limited to: a clear natural line impressed on the bank (or coloration), evidence of scour, recent bank erosion, destruction of vegetation, sediment deposition, and the presence of litter and debris. Where an OHWM was identified, data were recorded on a datasheet (USACE, 2008b).

For tidal watercourses, the high tide line was identified in the field by searching for a line of oil or scum along shore objects, deposits of debris, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. A survey monument on the northeastern wingwall of the existing bridge with an elevation of 14.78 feet National Geodetic Vertical Datum of 1929 (NGVD 29), was utilized to determine the elevation of the high tide line and locate the mean high water line.

For non-federal Waters of the State, the aquatic resource delineation was performed using the methods described in the following three federal documents: USACE's *Wetland Delineation Manual* (1987); *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE, 2008a); and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE, 2010).

Table 1 summarizes the date of the aquatic resource delineations, and a list of the biologists involved with the field survey and their credentials.

Table 1. Summary of Aquatic Resource Delineation Field Surveys

Date	Surveyors and Credentials
July 8, 2020	• Cuyler Stapelmann, B.S., Conservation and Resources Studies; 10 years of experience • Gregory Wattley, B.S., Biology; M.S., Environmental Biology; Professional Wetland Scientist; 13 years of experience

4.0 STUDY AREA SETTING

This section provides more information regarding the physical and environmental factors that influence aquatic resource formation and continuity including surrounding land use, topography, climate, soils, hydrology, and vegetation.

4.1.1 Topography

The Study Area is located within the Petaluma California U.S. Geological Survey 7.5-minute topographic quadrangle. The Study Area is relatively flat, consisting primarily of paved surfaces adjacent to Petaluma River as well as the channel of Petaluma River. Terrain within the Study Area gently slopes toward Petaluma River. Elevations within the Study Area range from approximately sea level to 10 feet along the banks of Petaluma River.

4.1.2 Climate and Precipitation

The Study Area has a Mediterranean climate, characterized by hot, dry summers and mild moist winters (George, 2018). Most precipitation falls as rain between October 15 and April 15. A climate summary for the National Oceanic and Atmospheric Administration (NOAA) weather station at Petaluma Airport (Station No. 046826) between the years 1893 and 2016 reports the annual average precipitation is 24.89 inches and average temperatures range from 44.9 to 70.4 degrees Fahrenheit (Western Regional Climate Center, 2020).

4.1.3 Hydrology

The Study Area is located in the San Francisco Bay Hydrologic Region, where all surface waters eventually flow into San Francisco Bay. Within the San Francisco Bay Hydrologic Region, the Study Area is within the San Pablo Hydrologic Unit, Petaluma River Hydrologic Area, and an undefined Hydrologic Sub-Area (#206.30). Within the Study Area, Petaluma River flows from the northwest to the southeast. Petaluma River discharges into San Pablo Bay approximately 12 miles southeast of the Study Area.

According to the National Wetlands Inventory (United States Fish and Wildlife Service, 2020) (see Figure 5), Petaluma River is the only aquatic resource within the Study Area. Within the National Wetlands Inventory, Petaluma River is classified as an estuarine and marine deepwater wetland.

4.1.4 Soils

According to Web Soil Survey (U.S. Department of Agriculture, 2020), there is one soil type within the Study Area: Yolo clay loam, 0 to 5% slopes, Major Land Resource Area (MLRA) 14 (Figure 6).

Yolo clay loam, 0 to 5% slopes, MLRA 14

The Yolo series consists of very deep, well-drained soils formed in alluvium from mixed sedimentary and volcanic rocks on alluvial fans and floodplains. Elevations range from 0 to 360 feet. Slopes range from 0 to 5%, but are typically between 0 and 2%. Average annual precipitation is 28 to 41 inches. Runoff potential is low. This soil type is not hydric.

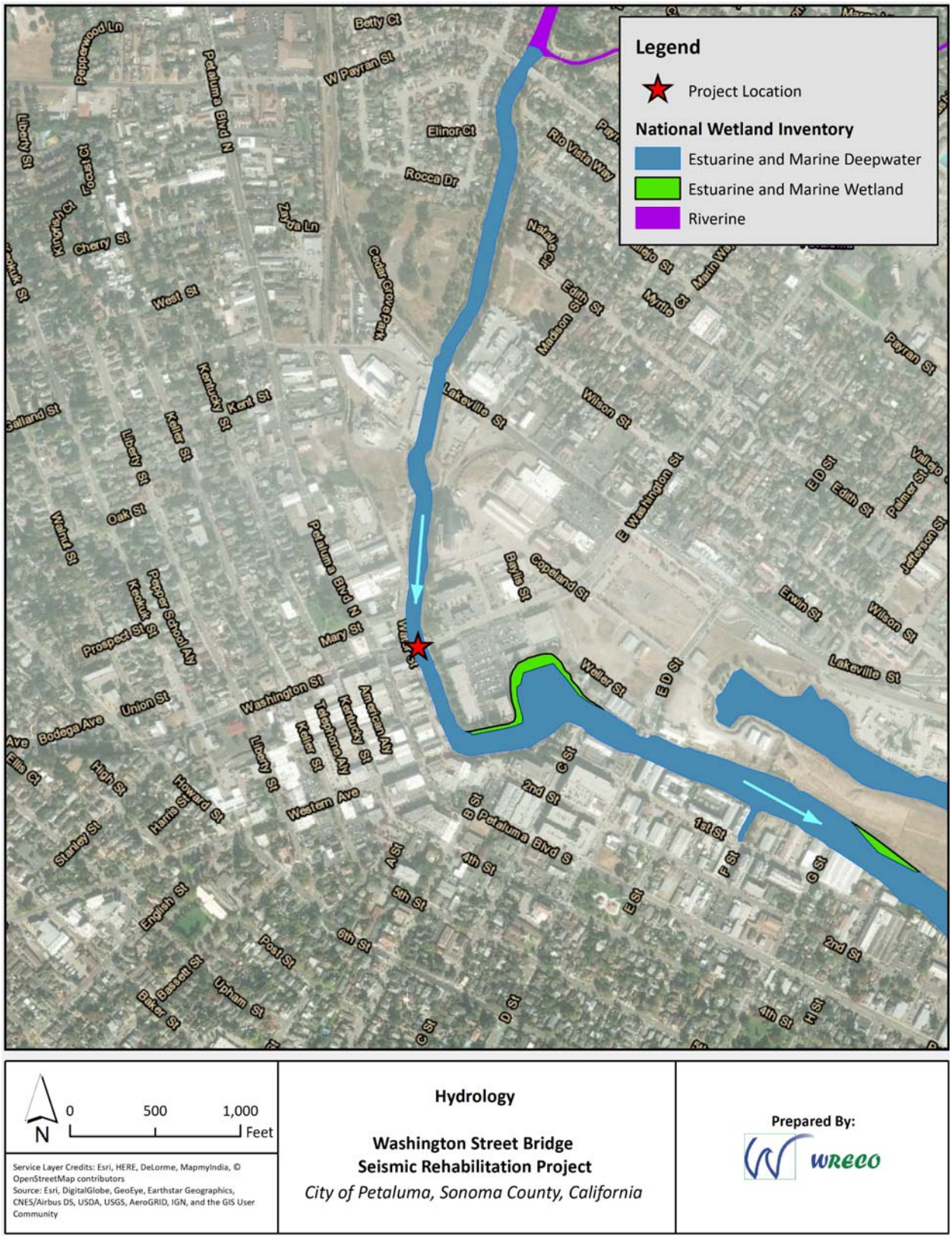

Figure 5. Hydrology Map

Source: United States Fish and Wildlife Service, 2020

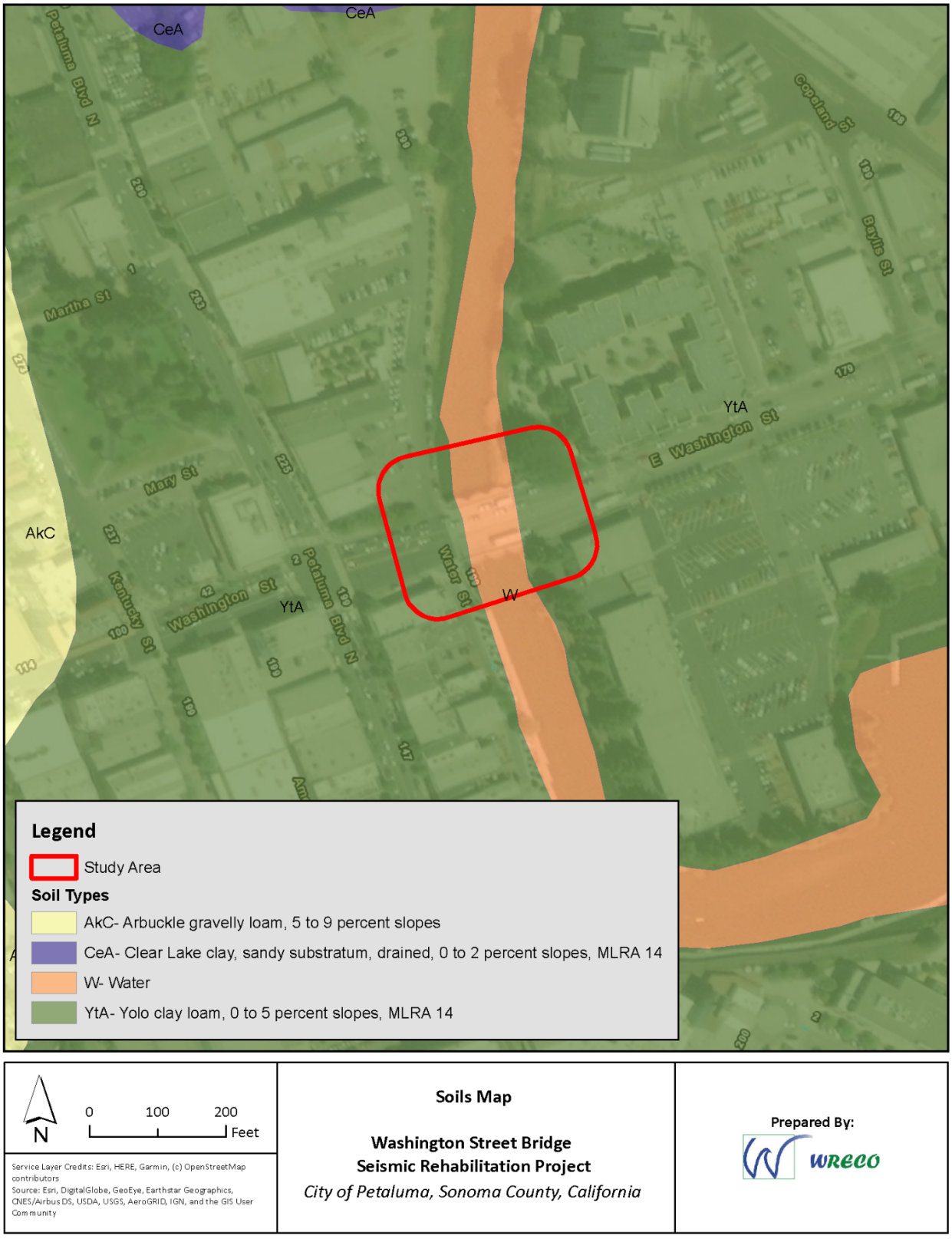

Figure 6. Soils Map

Source: U.S. Department of Agriculture, 2020

4.1.5 Natural Communities

There are four natural communities within the Study Area: estuarine, saline emergent wetland, annual grassland, and urban (Figure 7). Plants observed during the July 8, 2020 field survey in the Study Area are included in Appendix A.

Estuarine

Estuarine vegetation occurs in open water, periodically and/or permanently flooded aquatic features influenced by a mixture of seawater and freshwater. Estuaries may have continuous influxes of water from both marine and landward sources, such as tidal flats, eel-grass meadows, tidal marshes, and rivers. Alternatively, estuaries may be enclosed, rarely receiving salt water, such as coastal lagoons. In California, coastal lagoons are a common form of estuarine habitat, and contain more uniform salinity levels than true estuaries. The San Francisco Bay region has the largest estuarine system along the Pacific Coast of North and South America, with a vast area of salt marsh. This habitat is extremely sensitive to sea-level rise. Estuarine wetlands are highly productive ecosystems, supporting large numbers of invertebrates, fish, and birds (Barbour et al., 2007).

Within the Study Area, Petaluma River may be classified as an estuarine watercourse because it is a tidally influenced river containing primarily brackish conditions. The substrate in the estuarine portion of the river consisted of tidal mudflats, and no estuarine vegetation was observed. However, during tidal influx, saline emergent vegetation near the high tide line becomes completely or partially submerged.

Saline Emergent Wetland

Saline emergent wetland consists of salt or brackish marsh vegetation growing on intertidal flats from mean sea level to extreme high tide. Cordgrass (*Spartina alterniflora*) grows in the areas of highest salinity, transitioning to pickleweed (*Salicornia pacifica*) and then to saltgrass (*Distichlis spicata*) in the least frequently inundated parts of the habitat (Springer, 1988). Saline emergent wetland has been subject to submergence from sea-level rise for several thousand years (Springer 1988). The San Francisco Bay area contains the majority of this habitat in the state (Holland and Keil 1995). Saline emergent wetland vegetation was found along the banks of Petaluma River near the high tide line. Saline emergent wetland vegetation consisted of saltgrass, chairmaker's bulrush (*Schoenoplectus americanus*), alkali bulrush (*Bolboschoenus maritimus*), pickleweed, and gumplant (*Grindelia stricta* var. *platyphylla*).

Annual Grassland

Non-native or naturalized annual grasses and forbs have largely replaced pre-colonial grasslands on rolling hills and flat plains in California. Although a rich variety of native species may be present, annual grasslands are usually dominated by wild oats, barley, brome species, and soft chess dominate (Kie, 2005). The species composition varies widely depending on weather and grazing patterns, but the habitat generally has a water deficit for four to eight months annually (Barbour et al., 2007). This community was present along the upper banks of Petaluma River, and species in this natural community included wild oat (*Avena* sp.), ripgut brome (*Bromus diandrus*), fennel (*Foeniculum vulgare*), harding grass (*Phalaris aquatica*), and perennial pepperweed (*Lepidium latifolium*).

Urban

Urban vegetation may fall into five general categories: tree grove, street strip, shade tree/lawn, lawn, and shrub cover. Urban areas typically have a small diversity of trees, shrubs, and grasses, but greater productivity than natural grasslands due to abundant water and fertilizer (McBride and Reid, 2008). Examples include residential landscapes, golf courses, parks, and school grounds. Non-native landscape species and invasive weeds are common. In this ARDR, this land cover type also includes paved surfaces.

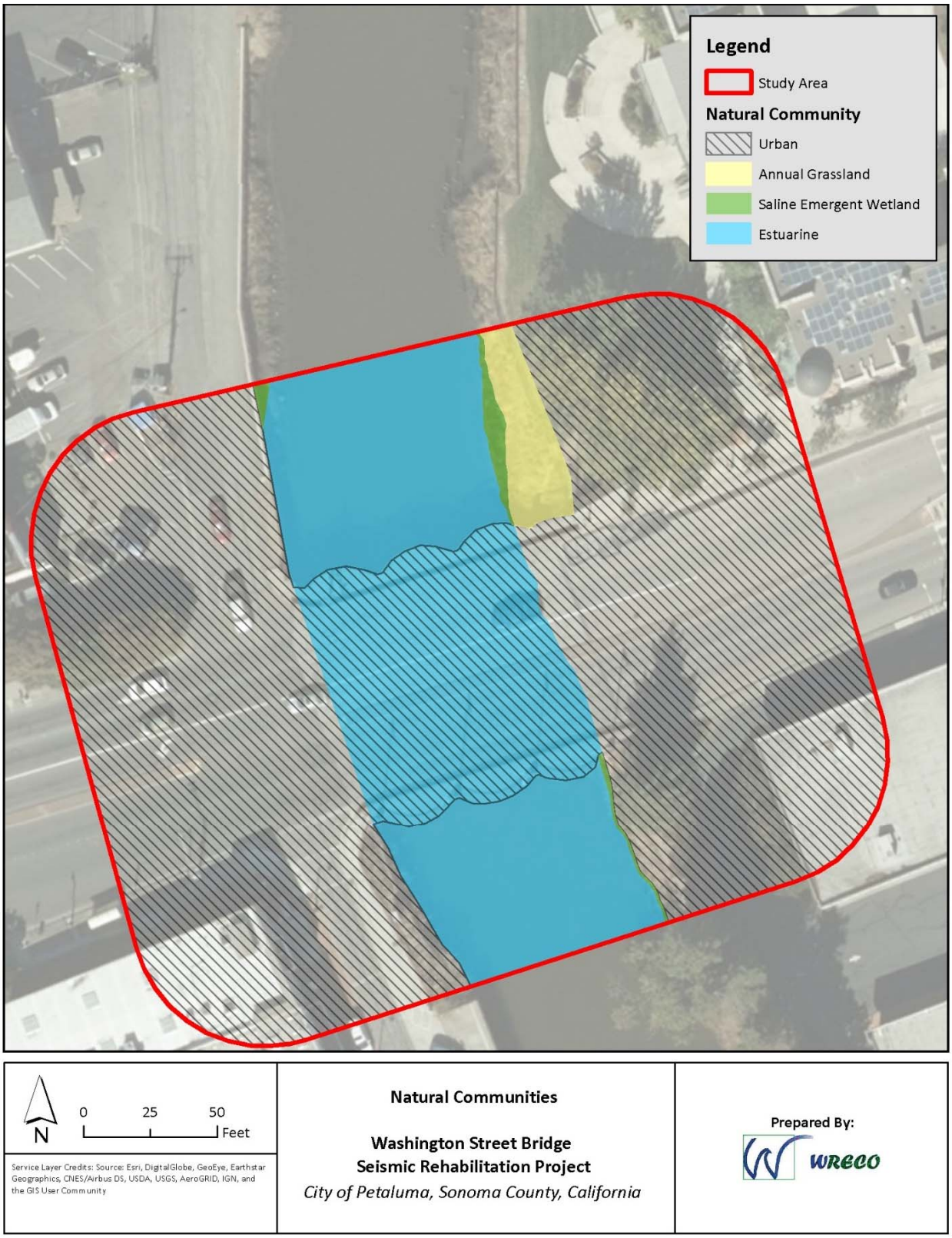

Figure 7. Natural Communities

5.0 RESULTS

The results of the aquatic resource delineation are detailed in this section. All estimates of Waters of the U.S. are subject to change, pending USACE's official review. Appendix A contains a list of the plant species observed during the site visit. Appendix B contains representative photographs of the Study Area.

5.1 Clean Water Act Section 404 Jurisdiction

5.1.1 Wetlands

No potential wetlands were observed or delineated within the Study Area during the site visit on July 8, 2020. All areas containing hydrophytic vegetation and hydric soils were located below the high tide line.

5.1.2 Other Waters

No Other Waters of the U.S. were delineated, because Petaluma River is tidally influenced within the Study Area.

5.1.3 Tidal Waters

One aquatic feature within the Study Area met the definition of a tidal watercourse: Petaluma River. The high tide line is located at approximately 4.3 feet NGVD 29. Refer to Figure 8 for the delineated of the high tide line along Petaluma River.

Along the eastern bank of Petaluma River, there is a change in vegetation composition, soil conditions, and grade at the high tide line (Photo 2). Plants considered to be halophytes (as well as tidal mudflats) were found below the high tide line whereas annual grasses and weedy species characteristic of upland areas were present above the high tide line. Halophytic vegetation below the high tide line within the Study Area includes saltgrass, gumplant, pickleweed, chairmaker's bulrush, and sturdy bulrush. Hydric soils were present below the high tide line, but not above the high tide line. Additionally, there is a change in grade at the high tide line, where sloping channel banks were present below the high tide line and relatively flat areas were present above the high tide line.

Along the western bank of Petaluma River, water staining was observed on the sheet piles, concrete wingwalls, and concrete abutments that comprise the river bank. The elevation of this staining on the western bank was consistent with the elevation where vegetation composition and topographic changes occur on the eastern bank.

5.2 Rivers and Harbors Act Section 10 Jurisdiction

The nearest NOAA tidal gaging station to the Project site is station 9414863 located in San Francisco Bay near Richmond, Contra Costa County. At this NOAA gaging station, the mean high water elevation is 2.84 feet NGVD 29. According to *San Francisco Bay Tidal Datums and Extreme Tides Study* (AECOM 2016), the mean high water elevation of San Pablo Bay at the mouth of Petaluma River is 2.99 feet NGVD 29. The mean high water elevation of 2.99 feet NGVD 29 was selected as the jurisdictional limit under Section 10 of the Rivers and Harbors Act, because it is located closer to the Project site and is based on newer tidal data, statistical analysis, and modeling

than the NOAA data. Refer to Photo 1, Photo 2, and Figure 9 for depictions of the mean high water line in relation to the high tide line. Refer to Figure 8 for a delineation of areas below the mean high water line along Petaluma River.

5.3 Non-Federal Waters of the State

No non-federal Waters of the State were observed or delineated within the Study Area during the site visit on July 8, 2020.

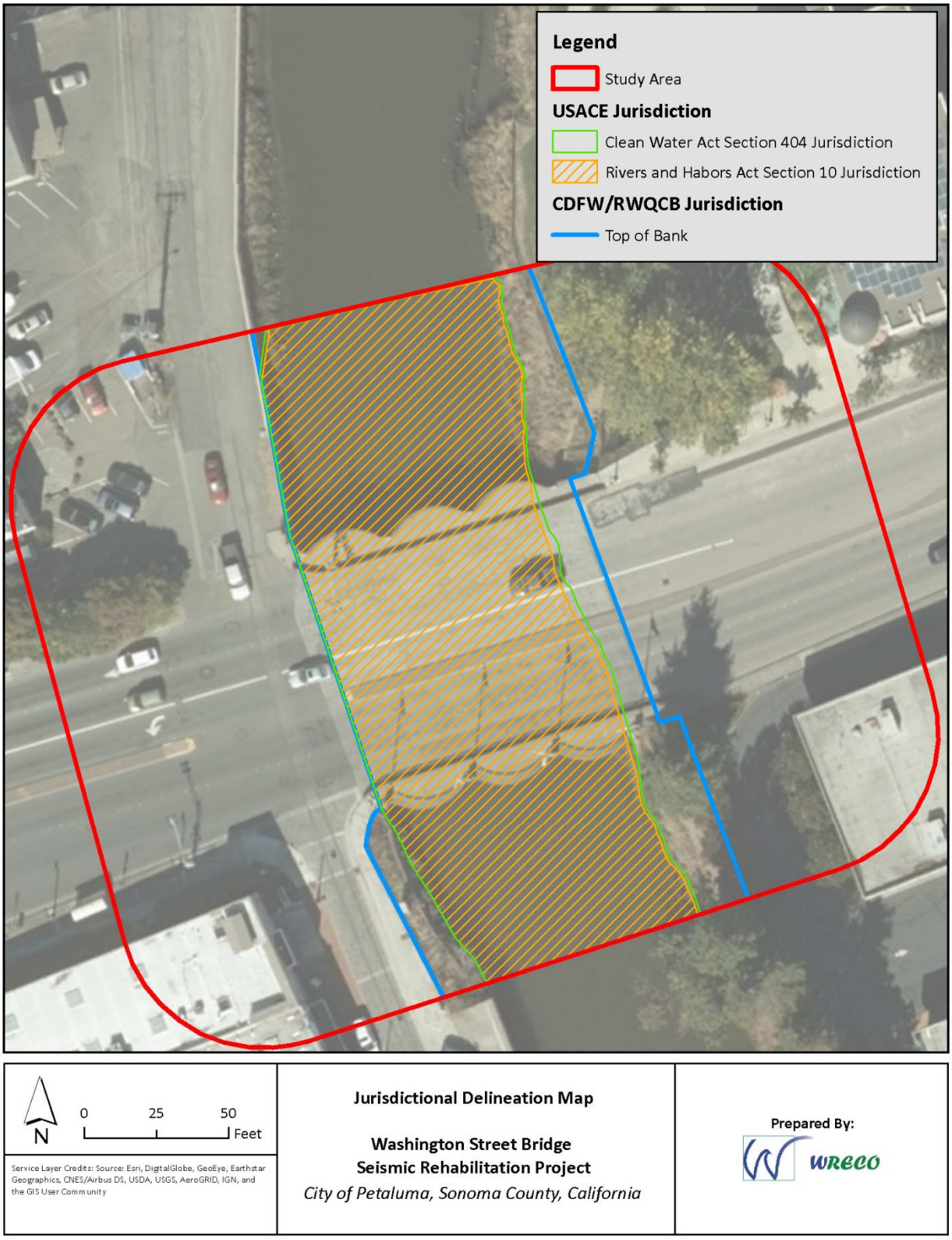

Figure 8. Waters of the U.S. Delineation Map

Photo 1. Approximate Location of High Tide Line (Green) along Eastern Bank of Petaluma River

Photo 2. Location of High Tide Line (Green) and Mean High Water (Orange) along Western Bank of Petaluma River

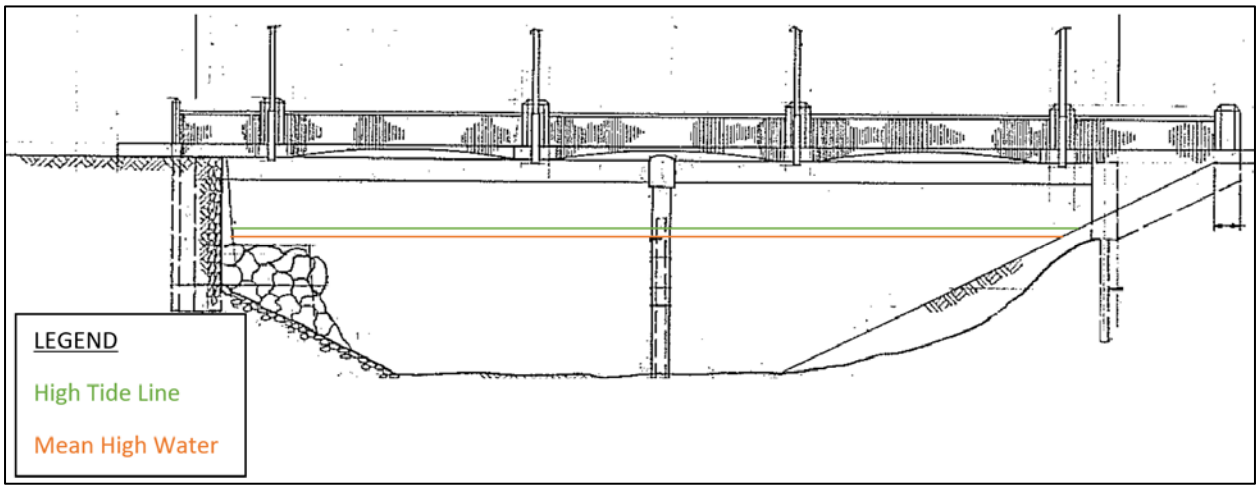

Figure 9. Cross Section of Petaluma River Showing Approximate Locations of High Tide Line and Mean High Water, Looking Upstream

6.0 SUMMARY OF DELINEATED FEATURES

This ARDR identifies Waters of the U.S. jurisdictional under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act as well as non-federal Waters of the State regulated under the Porter-Cologne Water Quality Control Act. The total area of potential jurisdictional features subject to regulation by the USACE under Section 404 and the RWQCB under Section 401 of the Clean Water Act is 0.466 acres (20,297 square feet) along 236 linear feet. The total area of potential jurisdictional features that are subject to regulation by the USACE under Section 10 of the Rivers and Harbors Act is 0.458 acres (19,939 square feet) along 236 linear feet.

All of the area jurisdictional under Section 10 of the Rivers and Harbors Act is also jurisdictional under Sections 404/401 of the Clean Water Act. However, approximately 0.008 acres (358 sq. ft) of area along Petaluma River is only within the jurisdiction of Sections 404/401 of the Clean Water Act. These metrics are summarized in Table 2.

If required for the Project, a Clean Water Act Section 404/401 permit would also include permitting for Section 10 of the Rivers and Harbors Act; two separate permits would not be required.

The conclusions of this ARDR are based on conditions observed at the time of the field survey conducted on July 8, 2020. The findings of this document are considered preliminary until verified by the USACE and/or until any permits are issued by these agencies authorizing or exempting activities within or near these areas.

Table 2. Summary of Potential Jurisdictional Aquatic Resources

Feature	Area (square feet)	Area (acres)	Length (linear feet)
Petaluma River			
Clean Water Act Section 404/401 Jurisdiction	20,297	0.466	236
Rivers and Harbors Act Section 10 Jurisdiction	19,939	0.458	236

7.0 REFERENCES

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Appendix A Observed Plant Species List

Scientific Name	Common Name	Native Status	Indicator Status
Asclepias curassavica	Blood flower	Non-native	FAC
Avena fatua	Wild oat	Non-native	UPL
Baccharis pilularis	Coyote brush	Native	UPL
Bolboschoenus maritimus	Alkali bulrush	Native	OBL
Brassica nigra	Black mustard	Non-native	UPL
Bromus diandrus	Ripgut brome	Non-native	UPL
Bromus hordeaceus	Soft chest brome	Non-native	FACU
Carduus pycnocephalus	Italian thistle	Non-native	UPL
Distichlis spicata	Inland saltgrass	Native	FACW
Elymus triticoides	Beardless wild rye	Native	FAC
Epilobium brachycarpum	Panicled willow herb	Native	FAC
Foeniculum vulgare	Sweet fennel	Non-native	UPL
Grindelia stricta var. *platyphylla*	Gumplant	Native	FACW
Hypochaeris glabra	Smooth cat's ear	Non-native	UPL
Jasminum multiflorum	Star jasmine	Non-native	NL
Juglans sp.	Walnut	Native	FACU
Lactuca serriola	Prickly lettuce	Non-native	FACU
Lepidium latifolium	Broadleaved pepperweed	Non-native	FAC
Lotus corniculatus	Bird's foot trefoil	Non-native	FAC
Malva neglecta	Common mallow	Non-native	UPL
Malva parviflora	Cheeseweed mallow	Non-native	UPL
Populus sp.	Cottonwood	Native	FACW
Phalaris aquatica	Harding grass	Non-Native	FACU
Raphanus sativus	Wild radish	Non-native	UPL
Rubus armeniacus	Himalayan blackberry	Non-native	FAC
Rumex crispus	Curly dock	Non-native	FAC
Salicornia pacifica	Pickleweed	Native	OBL
Schoenoplectus americanus	Chairmaker's bulrush	Native	OBL
Sonchus asper	Spiny sowthistle	Non-Native	FACU
Sonchus oleraceus	Common sowthistle	Non-native	UPL
Taraxacum officinale	Common dandelion	Non-native	FACU
Verbascum blattaria	Moth mullein	Non-native	UPL
Verbena bonariensis	Purpletop vervain	Non-native	FAC

Appendix B Site Photographs

Looking at Area of High Tide Line along West Bank of Petaluma River

Looking at Area of High Tide Line along East Bank of Petaluma River

Test Pit Dug in Wetland Just Above High Tide Line of Petaluma River

Test Pit Dug in Upland Well Above High Tide Line of Petaluma River

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404-4731

April 21, 2021 **Refer to NMFS No:** WCR-2021-00338

Tom Holstein
Environmental Branch Chief
California Department of Transportation, District 4
Office of Local Assistance
P.O. Box 23660, MS-1A
Oakland, California 94623-0660

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Washington Street Bridge Seismic Rehabilitation Project (BHLS-5022 (050))

Dear Mr. Holstein:

On February 18, 2021, NOAA's National Marine Fisheries Service (NMFS) received your request for a written concurrence that the City of Petaluma's (City) Washington Street Bridge Seismic Rehabilitation Project (Project) is not likely to adversely affect species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). The California Department of Transportation (Caltrans) is the federal lead agency under section 7 of the ESA for this project.[1] This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA and implementing regulations at 50 CFR 402.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The document will be available within two weeks at the Environmental Consultation Organizer [https://eco.fisheries.noaa.gov]. A complete record of this consultation is on file at the NMFS North-Central Coast Office in Santa Rosa, California.

Consultation History

Caltrans initiated informal consultation for the Project with NMFS via letter dated February 17, 2021. With this letter requesting consultation, Caltrans provided the February 2021 Biological

[1] Effective October 1, 2012, Caltrans serves as the lead agency as per the Memorandum of Understanding (MOU) between the Federal Highway Administration (FHWA) and Caltrans pursuant to the Moving Ahead for Progress in the 21st Century Act (MAP-21). This law allows the Secretary of Transportation to assign, and Caltrans to assume, responsibility for the environmental review, consultation, or other actions required under any environmental law with respect to one or more highway projects within the state of California. The MOU is an extension of previous agreements between FHWA and Caltrans in 2007 and 2010, under a similar law. Therefore, Caltrans is considered the federal action agency for ESA consultations with NMFS for federally funded projects involving FHWA.

Assessment for the Washington Street Bridge Seismic Rehabilitation Project (BA). Following NMFS' review of the BA and project description, NMFS asked for information regarding equipment, construction operations, number of Cast-in-Drilled-Hole (CIDH) piles, and dewatering methods via embedded comments in the BA on March 1, 2021. Caltrans responded via email on March 25, 2021, with responses to NMFS' comments and questions. On April 20, 2021, Caltrans notified NMFS by email that the project description has been modified with respect to groundwater collected from excavation areas. The Project's modified proposal will collect groundwater pumped from excavation areas and it will be hauled off-site to eliminate any discharge to the Petaluma River. Sufficient information was provided to NMFS on April 20, 2021, to initiate consultation for the Project.

Proposed Action

The City of Petaluma proposes to implement structural retrofits to the existing Washington Street Bridge over the Petaluma River to improve its seismic stability in the City of Petaluma, Sonoma County, California. The seismic retrofits are proposed to reduce the risk of the existing bridge from collapsing during a maximum credible earthquake. The current bridge is 105 feet long with a total width of 89 feet. The diaphragm abutments are supported on 60-ton steel H piles that vary from 9 feet to 28 feet in length with a typical length of approximately 12 feet at Abutment 1 (western abutment) and 26.5 feet at Abutment 3 (eastern abutment). The bent is supported on 60-ton steel H piles approximately 33 feet long with a minimum embedment of 11 feet. The bent pile extensions are encased in concrete from the mud line to the bent cap. The superstructure girders are encased in end diaphragms at the bent and abutments, and lateral loads are transferred to the substructure elements via dowels through the girders and reinforced in the end diaphragms. A seismic vulnerability analysis found the bridge is vulnerable to collapse due to seismic displacement demands on the piles that exceed the capacities at the bend and abutments.

The proposed Project includes constructing concrete frames with CIDH piles and placing a concrete pile cap behind each of the abutments. The concrete frames would each consist of three 4-foot diameter CIDH piles and a stiff concrete pile cap connected to each abutment with drill and bond dowels. The placement and connection of these CIDH pile frames intends to increase the lateral stiffness of the system and reduce lateral movements, thereby reducing the displacement demands on the existing piles and protecting the bridge from collapsing during a seismic event. The pile would bolster the Abutment 1 wall in the bottom girder region to resist longitudinal passive and lateral spreading forces. A reduced section of the pile cap beam would be extended past the ends of the frame to bolster the remaining length of the abutment wall.

All Project construction will occur outside of the Petaluma River. The work will take place within developed areas behind the existing abutments. However, there may be a need to remove groundwater (i.e., dewatering) for installation of the proposed CIDH piles due to shallow groundwater levels. Additional excavations adjacent to the river for other project elements may also require removal of groundwater. Dewatering of groundwater would be performed without discharging to the Petaluma River by collecting water in temporary holding tanks (or similar containment structures) and off-hauling to a treatment facility.

Additional avoidance and minimization measures include:

- Work will occur during the dry season work window June 15 through October 31.
- Development of a Storm Water Pollution Prevention Plan (SWPPP) to minimize changes to the water quality in the Petaluma River.

- Maintain all equipment to avoid leaks of gasoline, oils, or solvents and prepare a Spill Response Plan.
- Store hazardous materials at least 100 feet from aquatic habitats and storm drain outlets.
- Silt fence, fiber rolls, and/or other comparable best management practices would be placed along the top of bank along Petaluma River adjacent to the work area to reduce the potential for discharges of sediment and other materials into the river.
- All disturbed slopes and recently graded areas will be protected from erosion using a combination of silt fences, biodegradable fiber rolls along the toe of slopes or along edges of designated staging areas, and erosion-control biodegradable netting such as jute or coir, as appropriate. Biodegradable fiber rolls will be installed along or at the base of slopes during construction to capture sediment, and temporary organic hydromulching will be applied to all unfinished disturbed and graded areas.

We considered, under the ESA whether or not the proposed action would cause any other activities and determined that it would not.

The action area of the Project consists of the Washington Street Bridge that crosses the Petaluma River in downtown Petaluma, California. This includes the bridge, the Petaluma River under the bridge and its banks adjacent to the bridge abutments. The action area also includes adjacent upland areas where construction equipment and materials will be staged. No work will be performed within the wetted channel of the Petaluma River. The Petaluma River in the action area is tidally-influenced from San Pablo Bay. The banks and channel of the river in the action are are highly modified for flood control and upland areas urbanized. The substrate under the bridge is primarily sandy mud.

Background and Action Agency's Effects Determination

Caltrans has determined the proposed action may affect, but is not likely to adversely (NLAA) listed species and their critical habitat. Caltrans's finding of NLAA is based upon timing of the work during the dry season and the work occurring outside of the wetted channel of the Petaluma River.

Available information indicates the following listed species (distinct population segment [DPS]) and designated critical habitat under the jurisdiction of NMFS may be affected by the proposed Project:

Central California Coast steelhead DPS (*Oncorhynchus mykiss*)
threatened (71 FR 834; January 5, 2006);
critical habitat (70 FR 52488; September 2, 2005);

North American green sturgeon southern DPS (*Acipenser medirostris*)
threatened (71 FR 17757; April 7, 2006);
critical habitat (74 FR 52300; October 9, 2009).

The life history of steelhead in California is summarized in Busby *et al.* (1996). Central California Coast (CCC) steelhead are anadromous fish, spending time in both fresh and marine waters. The older juveniles and adult life stages occur in the ocean until adults ascend freshwater streams to spawn. Steelhead migrate to the ocean as smolts from January through May and

migrate from the ocean upstream to spawn from December through April (Fukushima and Lesh 1998).

The life history of green sturgeon in California is summarized by Heublein et al. (2017) and NMFS (2015). The Southern DPS (sDPS) of North American green sturgeon spawn in the deep turbulent sections of the upper reaches of the Sacramento River. As juvenile green sturgeon age, they migrate downstream and live in the lower delta and bays, spending from three to four years there before entering the ocean. Within San Francisco Bay, information provided by Kelly *et al.* (2007) suggests depths less than 10 meters (33 feet) may be preferred during foraging and migration. Adult green sturgeon return from the ocean every few years to spawn, and generally show fidelity to their upper Sacramento River spawning sites. Adult sDPS green sturgeon enter San Francisco Bay in late winter through early spring, and juvenile and sub-adult sDPS green sturgeon may be present in San Francisco Bay and the lower Petaluma River year-round.

Effects of the Action

Under the ESA, "effects of the action" are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR 402.02). In our analysis, which describes the effects of the proposed action, we considered 50 CFR 402.17(a) and (b). When evaluating whether the proposed action is not likely to adversely affect listed species or critical habitat, NMFS considers whether the effects are expected to be completely beneficial, insignificant, or discountable. Completely beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Effects are considered discountable if they are extremely unlikely to occur.

The effects of the proposed action on the Petaluma River are expected to be minimal because all construction activities will occur outside the channel in existing developed areas. No riparian vegetation occurs in the action area and existing saline emergent vegetation (i.e., pickleweed, bulrush and gumplant) is expected to remain undisturbed. Measures to prevent the discharge of sediment, construction debris, and contaminants are expected to effectively prevent these materials from entering the flowing waters of the Petaluma River. Additionally, by restricting in-channel construction activities to the period between June 15 and October 31, the Project's construction schedule would avoid the migration seasons of adult and juvenile CCC steelhead in the Petaluma River. Thus, NMFS anticipates no CCC steelhead will be present in the action area during construction activities. Threatened green sturgeon are unlikely to occur in the action area during Project construction due to the distance from San Pablo Bay (i.e., approximately 13 miles) and shallow water conditions during the summer months. However, if present, green sturgeon are unlikely to be affected because all construction activities are outside the active stream channel and no changes to water quality in the action area are anticipated.

The action area is located within designated critical habitat for CCC steelhead and the sDPS of green sturgeon. The designations of critical habitat for CCC steelhead and green sturgeon use the term primary constituent element (PCE) or essential features. The new critical habitat regulations (81 FR 7414) replace this term with physical or biological features (PBFs). This shift in

terminology does not change the approach used in conducting our analysis, whether the original designation identified primary constituent elements, physical or biological features, or essential features. In this letter of concurrence, we use the term PBF to mean PCE or essential feature, as appropriate for the specific critical habitat.

PBFs of designated critical habitat for CCC steelhead include estuarine areas free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and juvenile and adult forage, including aquatic invertebrates and fishes supporting growth and maturation. The PBFs of designated critical habitat for the sDPS of green sturgeon in estuarine areas include food resources, water flow, water quality, migratory corridor, water depth, and sediment quality.

During project activities, PBFs of critical habitat are unlikely to be affected because work activities will occur outside the Petaluma River channel within existing developed areas. With no work proposed below the top of bank, the effects of the proposed Project on critical habitat are considered insignificant and are not expected to degrade PBFs in the action area.

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

Reinitiation of Consultation
Reinitiation of consultation is required and shall be requested by Caltrans or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) the proposed action causes take; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the written concurrence; or (4) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16).

Please direct questions regarding this letter to Andrew Trent at the North-Central Coast Office in Santa Rosa California at (707) 578-8553, or via email at andrew.trent@noaa.gov.

Sincerely,

Gary Stern
San Francisco Bay Branch Chief
North Central Coastal Office

cc: Keevan Harding, Caltrans, keevan.harding@dot.ca.gov
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