APPENDIX E:
NOTICE OF EXEMPTION

Notice of Exemption **Appendix E**

To: Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044

County Clerk
County of: _____

From: (Public Agency): Calistoga Joint USD
1520 Lake Street
Calistoga, CA 94515
(Address)

Project Title: Calistoga Elementary School Napa River Bank Restoration Project

Project Applicant: Calistoga JUSD

Project Location - Specific: Calistoga Elemetary School 1327 Berry Street

Project Location - City: Calistoga Project Location - County: Napa

Description of Nature, Purpose and Beneficiaries of Project:

Name of Public Agency Approving Project: CDFW and Ssn Francisco Regional Water Quality Control Board

Name of Person or Agency Carrying Out Project: Environmental Science Associates

Exempt Status: **(check one):**

- ☐ Ministerial (Sec. 21080(b)(1); 15268);
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- ☒ Categorical Exemption. State type and section number: Class 33 Section 15333
- ☐ Statutory Exemptions. State code number: _____

Reasons why project is exempt:

Lead Agency
Contact Person: Chris Ochs Area Code/Telephone/Extension: 707-291-7205

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? Yes No

Signature: Chris Ochs Date: 2/12/24 Title: Director of Facilities

Signed by Lead Agency Signed by Applicant

Authority cited: Sections 21083 and 21110, Public Resources Code.
Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

Date Received for filing at OPR: _____

Revised 2011

RESOLUTION 23-24-06
RESOLUTION OF THE BOARD OF TRUSTEES
OF THE CALISTOGA JOINT UNIFIED SCHOOL DISTRICT
REGARDING PERMIT SUBMITTALS AND THE CES NAPA RIVER BANK PROJECT

Resolution on permit submittals and the CES River Bank Project

The Board approves the permit submittals to the San Francisco Regional Water Quality Control Board and the California Department of Fish and Wildlife for the Calistoga Elementary School Napa River Bank Restoration Project. The Board has also reviewed and confirmed that the project qualifies for a CEQA Categorical Exemption under Section 15333 of the CEQA Guidelines, as discussed in the CEQA Categorical Exemption Report.

AYES: President Rothberg-Allan, Clerk Reid, Trustee Lopez-Jones, Trustee Rios, Trustee Gonzalez
NOES:
ABSENT:
ABSTAIN:

ATTESTED BY:

Clerk of the Board

CALISTOGA ELEMENTARY SCHOOL NAPA RIVER BANK RESTORATION PROJECT

CEQA Categorical Exemption Report

Prepared for
Calistoga Joint Unified School District

January 2024

CALISTOGA ELEMENTARY SCHOOL NAPA RIVER BANK RESTORATION PROJECT

CEQA Categorical Exemption Report

Prepared for
Calistoga Joint Unified School District

January 2024

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CALISTOGA ELEMENTARY SCHOOL NAPA RIVER BANK RESTORATION

CEQA Categorical Exemption Report

1. Introduction and Project Background

The Calistoga Joint Unified School District (CJUSD) proposes to stabilize and restore a 0.23-acre portion of the south bank of the Napa River that falls within their Calistoga Elementary School property limits (**Figure 1**). CJUSD previously completed a separate bank stabilization project adjacent to the project area in 2017. A spring 2023 geomorphic assessment characterized the project area bank conditions and recommended stabilization measures that would reduce the risk of continued bank erosion and protect school facilities near the top of the bank. The assessment concluded that stabilization and riparian habitat restoration could be achieved through removing existing concrete debris and large rock armoring, grading the steep slope areas to a gentler slope, and establishing native vegetation. The primary project objectives are to stabilize the bank to ensure long-term protection for school facilities near the top of the bank and to restore native riparian forest habitat. The secondary goal is to improve water quality within the Napa River by stabilizing the bank. As discussed in this report, the project qualifies for an exemption from the provisions of the California Environmental Quality Act (CEQA) under Article 19, Section 15330 (Categorical Exemption or CatEx). Specifically, the project qualifies for the exemptions afforded to small habitat restoration projects, as provided under CEQA Guidelines Sections 15330(d) (Small Habitat Restoration Projects).

1.1 Project Location and Vicinity

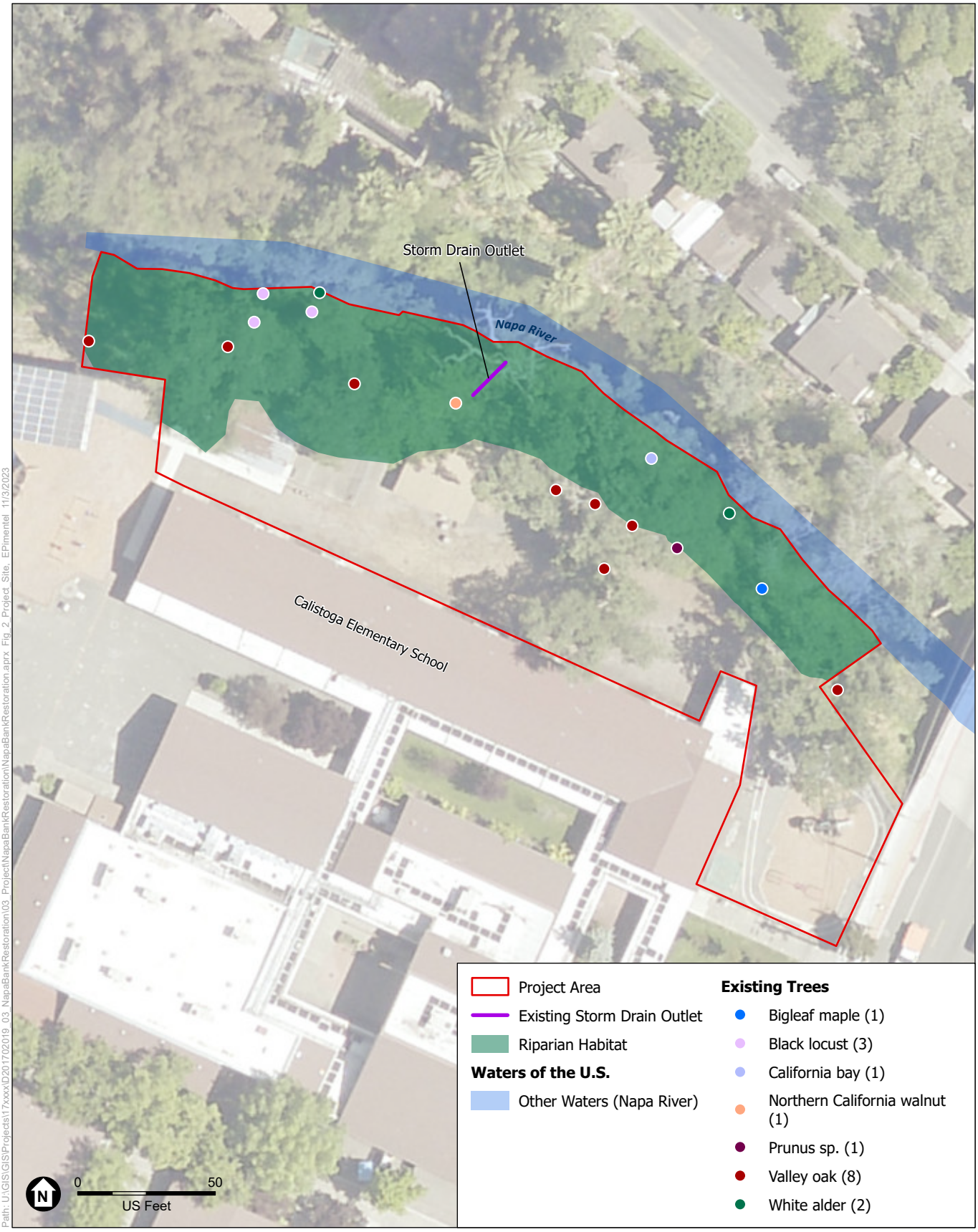
The project area is located on the right (south) bank of the Napa River within the northeast portion of the Calistoga Elementary School property (1327 Berry Street, Calistoga CA; Assessor's Parcel 011-173-001-000) where the Napa River traverses the parcel (**Figure 2**). The project area is accessed from the southern side of the Berry Street Bridge over the Napa River (**Figure 3**). The parcel is zoned for Public/Quasi-Public and operates as a public elementary school as part of the CJUSD. In 2017, the Berry Street Bridge, located downstream (east) of the project area, was replaced and naturalized bank stabilization measures were implemented. In 2020, a severely eroded portion of the riverbank directly upstream (west) of the project area was also repaired. The landscape on the opposite bank of the Napa River is riparian forest abutted by the rear yards of the adjacent residential properties. Land uses surrounding the project area consist of the Calistoga Elementary School directly to the south, residential/professional office to the east and west, and multiple residential to the north.

SOURCE: Esri, 2022; ESA, 2023;

Napa River Bank Restoration Project

Figure 1
Regional Location

ESA



SOURCE: Esri, 2022; ESA, 2023;

Napa River Bank Restoration Project

Figure 2
Project Area

ESA

The eroded area to be repaired consists of a steep bank with sections that are nearly vertical and actively eroding. Concrete debris and large rock armor portions of the bank preventing establishment of high functioning, diverse riparian habitat. Most vegetation along the bank consists of non-native and invasive species including black locust (*Robinia pseudoacacia*) trees with English ivy (*Hedera helix*), Himalayan blackberry (*Rubus armeniacus*), and periwinkle (*Vinca major*) as herbaceous groundcover. Few native trees are present within the project area; these include California bay (*Umbellularia californica*), black walnut (*Juglans hindsii*), and valley oak (*Quercus lobata*).

2. Project Description

2.1 Project Components

The project area encompasses approximately 0.62 acre, including developed areas to be used for equipment staging and site access and the restoration area itself (**Figure 3**). Within the restoration area, shown on **Figure 4**, the project would regrade approximately 0.17 acre (7,200 square feet) of bank, removing approximately 150 cubic yards of debris and rock and approximately 650 cubic yards of soil. All material removed from the bank would be disposed of offsite. Beyond the extent of grading, the project would improve habitat conditions within an additional 0.06 acre (2,500 square feet) of the bank through removal of non-native and invasive vegetation. An existing outfall that remains functional as part of the school's stormwater system would be repaired or replaced in-kind following grading of the bank slope. In total, the project would temporarily disturb 0.23 acre of riparian habitat including the removal of 12 trees (eight native trees and four non-native trees; see **Table 1** below). The project would restore and enhance a total of 0.24 acre of native riparian forest by replanting the bank with 21 native trees, container plants of native shrubs, and seeding native grasses and herbaceous species that are typical of native riparian forest and would enhance the habitat for native plants and wildlife. The project would also improve water quality within the Napa River by stabilizing the bank.

The project planting palette would consist of a variety of native riparian species such as valley oak, buckeye (*Aesculus californica*), bigleaf maple (*Acer macrophyllum*), California mugwort (*Artemisia douglasiana*), California blackberry (*Rubus ursinus*), California wild rose (*Rosa californica*), wild grape (*Vitis californica*), Santa Barbara sedge (*Carex barbarae*), torrent sedge (*Carex nudata*), California brome (*Bromus carinatus*) and blue wildrye (*Elymus glaucus*). The planting palette reflects native species richness and vertical complexity supportive of a healthy and vigorous riparian forest. **Figure 3** depicts the project grading plan. **Figure 4** depicts the project planting and seeding plan.

Grading and replanting would be confined to the riverbank and no work is proposed below the ordinary high water mark[1] (OHWM).

[1] The ordinary high water mark is defined in 33 CFR 328.3 as the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, or the presence of litter and debris

TABLE 1
TREES TO BE REMOVED AND REPLACED

Tree Species Common Name (*Scientific Name*)	ID Number	DBH (inches)	Multi-stem DBH (inches)	Condition*
Native Species				
Bigleaf maple (*Acer macrophyllum*)	15	9	5,4	Poor
California bay (*Umbellularia californica*)	8	15	-	Good
Northern California walnut *(Juglans hindsii*)	7	17	-	Good
Valley oak (*Quercus lobata*)	1	28	-	Good
Valley oak (*Quercus lobata*)	6	14	-	Good
Valley oak (*Quercus lobata*)	17	4	-	Good
White alder (*Alnus rhombifolia*)	5	7	-	Fair
White alder (*Alnus rhombifolia*)	9	10	7, 3	Fair
Nonnative Species				
Prunus sp.	13	34	3, 3, 3, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 1, 1, 1	Fair
Black locust (*Robinia pseudoacacia*)	2	6	-	Fair
Black locust (*Robinia pseudoacacia*)	4	14	6,8	Fair
Black locust (*Robinia pseudoacacia*)	3	18	10,8	Poor

Notes. "-" indicates the value is null.
* **Good** = A healthy, vigorous tree, reasonably free of signs and symptoms of diseases, with good structure and form typical of the species.

Fair = Tree with slight to moderate vigor, small to moderate twig and small branch dieback, potential thinning of crown, potential poor leaf color, and minor to moderate structural defects that might be mitigated with regular care.

Poor = Tree in decline, epicormic growth, extensive dieback of medium to large branches, and significant structural defects that cannot be abated.

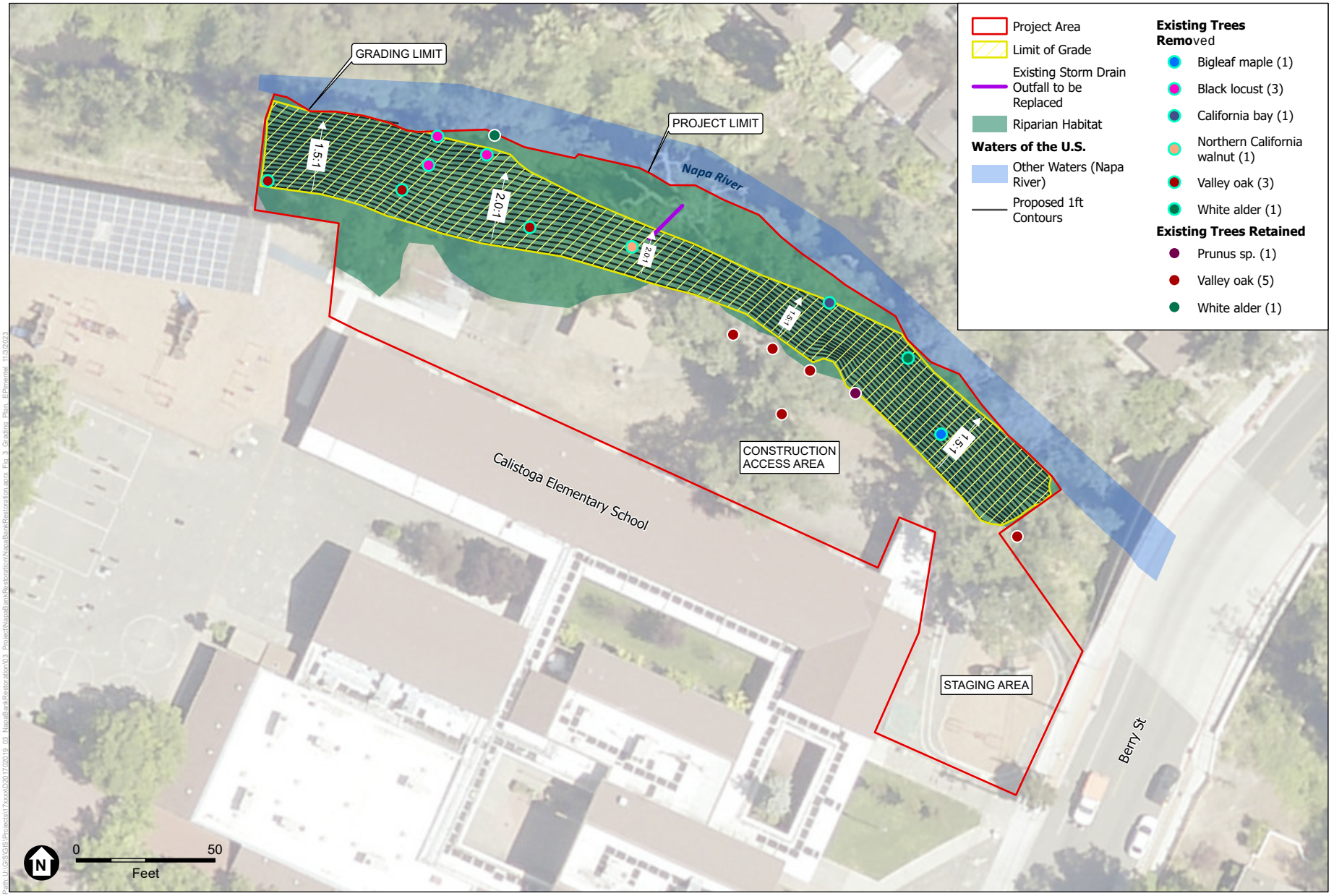
Once grading is complete and the ground surface is prepared for planting, a native grass seed mix would be hydroseeded throughout the 0.24-acre restoration planting and seeding area (see Figure 4). Following seeding, erosion control best management practices (BMPs) including erosion control fabric and fiber rolls would be installed. Then, containerized native trees, shrubs, herbaceous plants, and salvaged sedges would be planted. Planting would be accompanied by the installation of a temporary above-ground irrigation system and browser fencing. New container plantings, salvaged sedges, irrigation, fencing, and erosion control BMPs would be installed using hand tools such as shovels, rakes, and handheld mechanical augers. All access to the planting areas would be from the top of the bank and by foot. **Table 3** lists the project container plantings, including 21 native trees that would replace the native and non-native trees removed under the project.

TABLE 2
NATIVE SPECIES CONTAINER PLANTINGS

Planting Type and Species	Size	Quantity
Trees		**21**
White alder (*Alnus rhombifolia*)	5 gal	3
Oregon ash (*Fraxinus latifolia*)	5 gal	5
Northern California walnut (*Juglans californica* var. *hindsii*)	5 gal	3
Canyon live oak (*Quercus chrysolepis*)	5 gal	4
Valley oak (*Quercus lobata*)	5 gal	6
Shrubs		**268**
Mugwort (*Artemesia douglasiana*)	4” pot	157
California coffeeberry (*Frangula californica*)	D40	44
Wild rose (*Rosa californica*)	D40	50
Red willow (*Salix laevigata*)	Live stakes	17
Forbs, Herbs, Vines		**355**
Santa Barbara sedge (*Carex barbarae*)	4” pot	35
Torrent sedge (*Carex nudata*)	4” pot	232
California blackberry (*Rubus ursinus*)	D40	69
Wild grape (*Vitis californica*)	D40	19
Note: Quantities of *Carex barbarae* and *Carex nudata* subject to change based on amount salvaged during vegetation clearing		

TABLE 3
NATIVE SEED MIX

Species	Percent of Seed Mix	Approximate Number of Pure Live Seeds (pounds per acre)
California brome (*Bromus carinatus*)	25%	8
Blue wildrye (*Elymus glaucus*)	19%	12
Idaho fescue (*Festuca idahoensis*)	19%	6
Red fescue (*Festuca rubra*)	37%	6

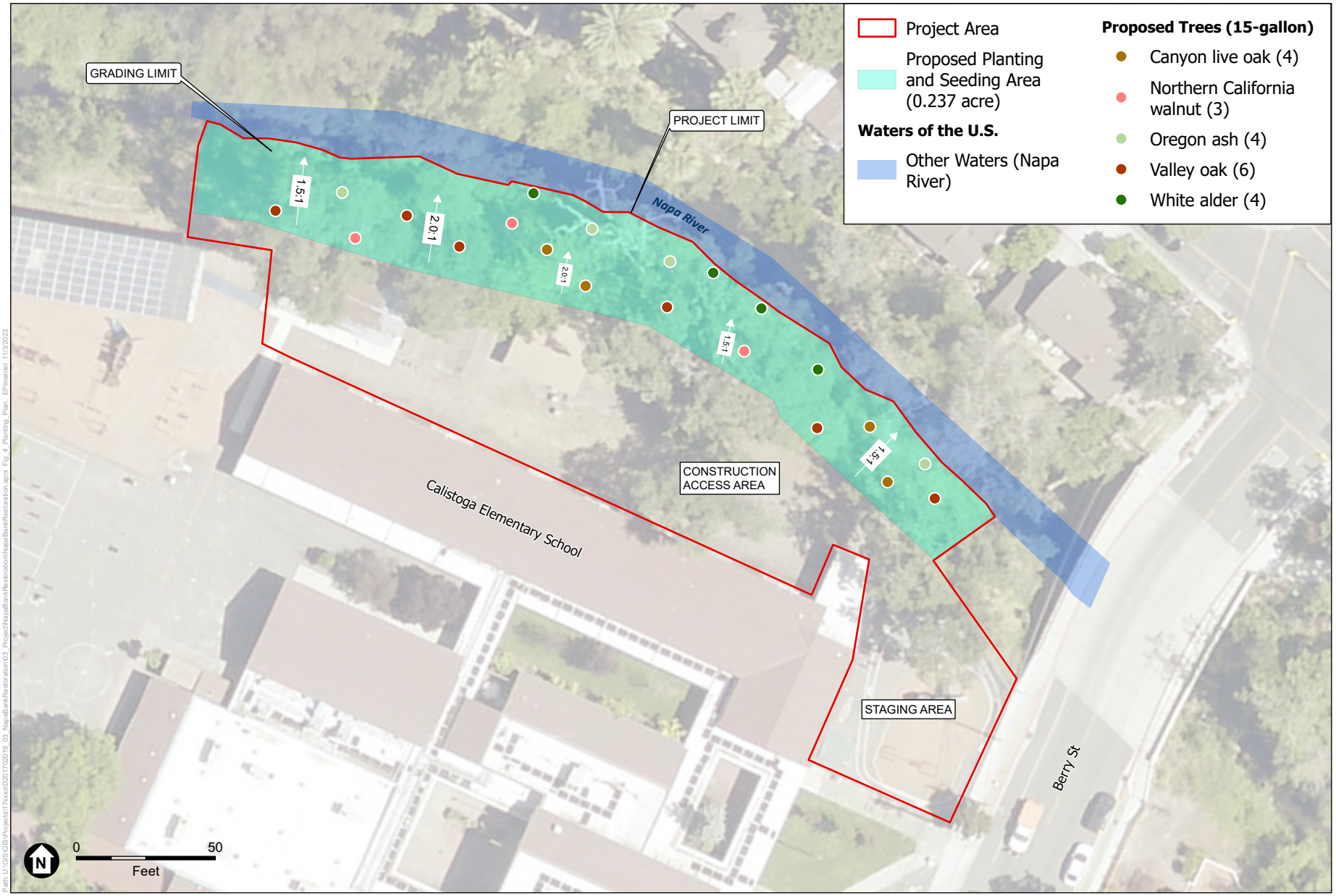


SOURCE: Esri, 2022; ESA, 2023

Napa River Bank Restoration Project

Figure 3
Grading Plan

ESA



SOURCE: Esri, 2022; ESA, 2023

Calistoga Elementary School Napa River Bank Restoration Project

Figure 4
Planting Plan

ESA

2.2 Project Construction

The overall project duration would be approximately 10 weeks, beginning in June 2024. This schedule includes mobilization, vegetation and debris removal, grading, and planting.

- A staging area would be established within the existing developed areas above the top of the bank. The existing chain-link fence at the top of the bank would also be removed.
- Erosion control measures (such as jute, straw, coconut fiber erosion control fabric, coir logs, and silt fencing) would be installed throughout the staging area and project area.
- Silt fencing would be installed within the project limits at the toe of the bank above the ordinary high water (OHWM) boundary.
- All vegetation within the grading limit would be cleared for salvage or disposed of offsite, including 12 native and non-native trees. Existing native sedges, Santa Barbara sedge and torrent sedge, would be salvaged from within the grading limits and stored for replanting following grading. Within the project area boundary but beyond the grading limit, non-native and invasive shrub and herbaceous groundcover species would be cleared and disposed of offsite. Existing trees and shrubs of native species within this portion of the project area would be retained. Tree protection measures would be installed around trees to be retained within the project area. Most of these trees to be retained are located near or above the top of bank and outside of the project grading limit.
- Following vegetation removal, existing rock and concrete debris on the bank would be removed. This includes non-functioning (abandoned) outfalls, failing concrete retaining walls, and large rocks and concrete rubble.
- Steep portions of the bank would be pulled back and graded to achieve a gentler slope (see **Figure 3**). Heavy equipment would be restricted to the top of the bank throughout construction and there would be no access or work within the wetted portion of the Napa River channel below the project grading limit and silt fence boundary. Grading would be accomplished through use of excavators positioned at the top of the bank.
- An existing outfall that remains functional as part of the school's stormwater system would be repaired or replaced in-kind following grading of the bank slope
- Dump trucks staged at the top of the bank would off-haul all cut bank material to an offsite facility.
- Once grading is complete and the ground surface is prepared for planting, a native grass seed mix would be hand broadcast. Following seeding, erosion control best management practices (BMPs) including erosion control fabric and fiber rolls would be installed.
- Containerized native trees, shrubs, herbaceous plants, and salvaged sedges would be planted. Planting would be accompanied by the installation of a temporary above-ground irrigation system and browse fencing.

- New container plantings, salvaged sedges, irrigation, fencing, and erosion control BMPs would be installed using hand tools such as shovels, rakes, and handheld mechanical augers. All access to the planting areas would be from the top of the bank and by foot with no work occurring below the OHWM.

- Following completion of the bank restoration activities, the staging area would be returned to pre-construction conditions. A new 6-foot-tall chain-link fence approximately 300 feet long would be installed at the top of bank and would connect to the existing fence at each end of the project area.

2.3 Project Operation and Maintenance

A temporary irrigation system would be installed and maintained over a period of three to five years to support successful establishment of the native riparian plantings. The irrigation system would consist of valves and hoses connected to an existing irrigation main line. Water for irrigation would be sourced from an existing active groundwater well and groundwater pumping rates would not increase. Following the establishment of new plantings, all irrigation equipment from the point of the main water line connection would be removed.

2.4 Applicant Proposed Measures

The proposed project has been designed to improve riparian habitat while also reducing erosion risk. Because the project is specifically designed to improve riparian habitat, the District has developed avoidance measures as a key component of the project. These measures, listed in **Attachment 1**, are activities or actions that would be taken during project construction and operation, as applicable, to reduce or prevent disturbance to wildlife and their habitat. The applicant proposed measures would be implemented by the District and the contractor or contractors selected to construct and maintain the proposed project. The measures in **Attachment 1** are subject to minor modifications based on resource agency permit requirements, and permit requirements may include additional avoidance measures.

3. Class 33 Consistency Analysis

The State CEQA Guidelines Section 15333 states that a Class 33 categorical exemption is applicable for small habitat restoration projects of five or less acres in size and include culvert replacement and stream or riverbank stabilization with native vegetation or other bioengineering techniques, the primary purpose of which is to reduce or eliminate erosion and sedimentation, provided that:

a. The project would have no significant adverse impact on endangered, rare, or threatened species or their habitat.

b. There are no hazardous materials at or around the site that may be disturbed or removed.

c. The project will not result in impacts that are significant when viewed in connection with the effects of other past, current, and reasonably foreseeable future projects.

d. Examples of small restoration projects may include, but are not limited to:

(1) revegetation of disturbed areas with native plant species;

(2) wetland restoration, the primary purpose of which is to improve conditions for waterfowl or other species that rely on wetland habitat;

(3) stream or river bank revegetation, the primary purpose of which is to improve habitat for amphibians or native fish;

(4) projects to restore or enhance habitat that are carried out principally with hand labor and not mechanized equipment.

(5) stream or river bank stabilization with native vegetation or other bioengineering techniques, the primary purpose of which is to reduce or eliminate erosion and sedimentation; and

(6) culvert replacement conducted in accordance with published guidelines of the Department of Fish and Game or NOAA Fisheries, the primary purpose of which is to improve habitat or reduce sedimentation.

As described above in Section 2, Project Description, the project area including staging and access areas is approximately 0.62 acre in size and is a small habitat restoration project. This is below the five-acre maximum threshold specified in State CEQA Guidelines Section 15333 for a Class 33 categorical exemption and clearly satisfies criterion ‘d.’ Therefore, the proposed project meets this requirement, and the remainder of this section evaluates consistency with criterion ‘a.’ through ‘c.’ listed above.

3.1 Environmental Resources Within the Project Area

Habitats Within the Project Area

A Habitat Assessment (HA), aquatic resources delineation, botanical survey, and tree survey were conducted to characterize vegetation communities and habitats, and to determine whether special-status plants and animals are present in the project area (ESA2023a-2023d). An ESA biologist surveyed the proposed project area and a 200-foot buffer on August 9, 2023. The site assessments concluded that approximately 0.12 acre and 384 linear feet (0.12 acre) of the Napa River, a perennial stream, runs east-west immediately adjacent to the proposed project area and qualifies as a water of the U.S. pursuant to U.S. Army Corps of Engineers criteria and a water of the state as defined by the Regional Water Quality Control Board (RWQCB). No wetlands were found in or adjacent to the project area (Figure 2).

The project area supports mixed riparian woodland and developed/ruderal areas and is adjacent to a perennial stream, none of which are identified as sensitive natural communities by CDFW. As discussed in the HA, the riparian woodland and adjacent developed/urban habitat can provide cover, foraging, and nesting habitat for a variety of bird species as well as common reptiles and small mammals including roosting and foraging bats.

The U.S. Fish and Wildlife Services (USFWS) can designate critical habitat for species that have been listed as threatened or endangered under the Federal Endangered Species Act (FESA). There is no designated critical habitat within the project area or vicinity.

Special-Status Species Within the Project Area

No special-status plant or animal species were observed in the project area during the site visits. Two special-status plants were determined to have a moderate to high potential to occur within the project area based on nearby observations and the presence of suitable habitat: Napa false indigo (*Amorpha californica* var. *napensis,* CRPR 1B.2[2]) and Marsh checkerbloom (*Sidalcea oregana* ssp. *hydrophila,* CRPR 1B.2).

As discussed in the HA, eight special-status animals were determined to have moderate or high potential to occur in the Napa River and/or riparian woodland within the project area. Of these, steelhead (*Oncorhynchus mykiss irideus)*, California freshwater shrimp (*Syncaris pacifica*), would be expected to occur only within the Napa River, which is immediately adjacent to the project area where no work is proposed. Foothill yellow-legged frog (*Rana boylii*), California giant salamander (*Dicamptodon ensatus*), red-bellied newt (*Taricha rivularis*), and western pond turtle (*Emys marmorata*) were determined to have moderate to high potential to occur within the Napa River and/or the riparian habitat within the project area.

Finally, the mixed riparian woodland and adjacent developed/disturbed areas containing landscaping trees in the project area provide nesting and foraging habitat for a variety of resident and migratory birds and roosting bats. One CDFW Species of Special Concern (SSC) bird species, purple martin (*Progne subis*), has a high potential to occur. Two species included on the CDFW watch list, Cooper's hawk (*Accipiter cooperii*) and sharp-shinned hawk (*Accipiter striatus*), also have high potential to occur. Mature trees in the riparian woodland and structures adjacent to the project area provide suitable habitat for roosting bats. Two special-status bat species have potential to occur in the project area: pallid bat (*Antrozous pallidus,* CDFW SSC) and Townsend's big-eared bat (*Corynorhinus townsendii,* CDFW SSC*)*.

3.2 Environmental Effects

The project would not affect aquatic resources because it would occur on the bank above channel waters. In total, vegetation removal and grading would temporarily disturb 0.23 acre (9,976 square feet and 340 linear feet) of riparian habitat. The project would restore 0.24 acre of native riparian forest by planting 21 native trees, additional shrubs, and seeding native grasses and herbaceous species. The planting palette reflects native species richness and vertical complexity supportive of a healthy and vigorous riparian forest. With the implementation of project avoidance measures (**Attachment 1**), there would be no significant adverse impact on endangered, rare, or threatened species or their habitat and the project is consistent with State CEQA Guidelines Section 15333(a).

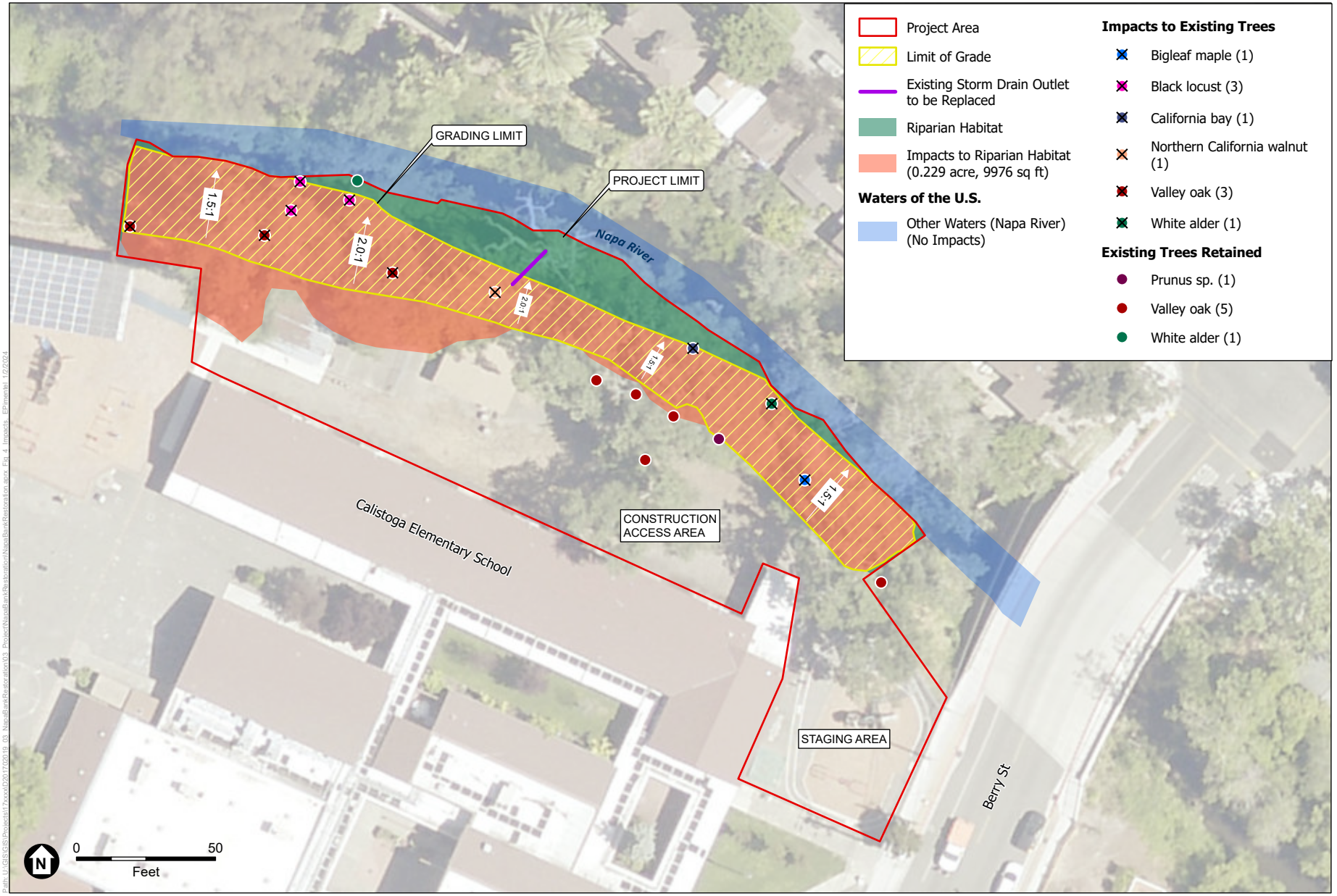
[2] CRPR: California Rare Plant Rank 1B.2: Plants rare, threatened, or endangered in California and elsewhere, moderately threatened in California. California Native Plant Society (CNPS) 2023.

The Department of Toxic Substances Control (DTSC) EnviroStor database and the State Water Resources Control Board (SWRCB) Geotracker database do not list any existing hazardous materials sites at or in the near vicinity of the project area (DTSC, 2023; SWRCB, 2023). The project would involve temporary disturbance to approximately 0.23 acre of land with minimal grading, and would not disturb or remove hazardous materials at or around the site, and accordingly is consistent with State CEQA Guidelines Section 15333(b).

The project is not adjacent to a scenic route. The project would not be expected to obstruct views, alter vistas, or otherwise affect visual or scenic resources.

A cultural resources report for the proposed project (ESA 2023e) found no known cultural resources or tribal cultural resources within the project area or vicinity. Nevertheless, standard avoidance and minimization measures have been incorporated into the project in the event that previously unidentified cultural resources are discovered during ground-disturbing activities. The report identified one cultural resource, the Calistoga Elementary School, adjacent to the project. The study evaluated the National Register-eligibility of the Calistoga Elementary School, recommending it not eligible for the National Register. Additionally, the project will not affect the Calistoga Elementary School itself. Therefore, the project would not cause a substantial adverse change in the significance of a historical resource.

The 2020 bank stabilization project was considered in the geomorphic assessment, and the project has been designed such that the combined effect of the project and 2020 bank stabilization project is reduced erosion and overall increased habitat area along the Napa River. Accordingly, the project would not result in impacts that are significant when viewed in connection with the effects of other past, current, and reasonably foreseeable future projects and is consistent with CEQA Guidelines Section 15333(c).



SOURCE: Esri, 2022; ESA, 2023

Napa River Riverbank Restoration Project

Figure 5
Temporary Disturbance to Riparian Habitat and Trees to be Removed and Replaced

3.3 Summary

As described above in Section 2.1, *Project Components*, the project is a small habitat restoration project that would restore 0.24 acre of riparian forest habitat, improving the habitat quality and slightly increasing the quantity from existing conditions. Pursuant to *CEQA Guidelines* Section 15333(a) and as discussed in Section 3.2, *Environmental Effects*, with the incorporation of project avoidance measures the proposed project qualifies for an exemption pursuant to CEQA *Guidelines* Section 15333.

7. References

California Department of Toxic Substances Control (DTSC). 2023. EnviroStor, www.envirostor.dtsc.ca.gov/public/. Site accessed November 1, 2023.

California Native Plant Society (CNPS). 2023. California Rare Plant Rank Glossary, https://rareplants.cnps.org/Home/Glossary#_Toc72398837. Site accessed November 2, 2023.

City of Calistoga. Municipal Code. Section 19.01.040(A). Available: https://www.codepublishing.com/CA/Calistoga/. Accessed January 11, 2024.

Environmental Science Associates (ESA). 2023a. Calistoga Elementary School Napa River Bank Restoration Project Habitat Assessment. Prepared for Calistoga Joint Unified School District. October 2023.

Environmental Science Associates (ESA). 2023b. Calistoga Elementary School Napa River Bank Restoration Project Aquatic Resources Delineation Project. Prepared for Calistoga Joint Unified School District. November 2023.

Environmental Science Associates (ESA). 2023c. Calistoga Elementary School Napa River Bank Restoration Project Tree Survey Memorandum. Prepared for Calistoga Joint Unified School District. November 2023.

Environmental Science Associates (ESA). 2023d. Calistoga Elementary School Napa River Bank Restoration Project Botanical Survey Memorandum. Prepared for Calistoga Joint Unified School District. November 2023.

Environmental Science Associates (ESA). 2023e. Calistoga Elementary School Napa River Bank Restoration Project Archaeological and Architectural Resources Inventory Report. Prepared for Calistoga Joint Unified School District. November 2023.

Attachment 1. Applicant Proposed Measures

A habitat assessment for the project area was performed in August 2023 in which vegetation communities and habitat types were characterized and evaluated for their potential to support special-status species[i] documented in the regional vicinity.[ii] The project contains or is immediately adjacent to suitable habitat for animal species listed or proposed for listing under the federal Endangered Species Act (FESA) and/or California Endangered Species Act (CESA), identified as a species of special concern (CSC) by the California Department of Fish and Wildlife, or protected under the federal Migratory Bird Treaty Act or by the California Fish and Game Code. Suitable habitat is also present within the project site for two plant species with California Rare Plant Ranks (CRPR), including Napa false indigo (*Amorpha californica* var. *napensis*; CRPR 1B.2) and marsh checkerbloom (*Sidalcea oregana* ssp. *hydrophila*; CRPR 1B.2).[iii] Botanical surveys performed of the project site in August 2023, during an appropriate period of identification for these species, determined neither species is present onsite. As such, avoidance and minimization measures for special-status plants are not incorporated into the project.

The special-status animal species listed below were determined to be present or to have either a moderate[iv] or high[v] potential to occur in the project site.[vi] The project site may also support protected breeding and migratory birds as well as bat maternity roosts.

- Western pond turtle (*Emys marmorata*), proposed FESA listing as threatened, CSC
- foothill yellow-legged frog (*Rana boylii*), CSC
- California giant salamander (*Dicamptodon ensatus*), CSC
- Red-bellied newt (*Taricha rivularis*), CSC
- special-status migratory birds
- special-status bats

The applicant proposed avoidance and minimization measures incorporated into the project and discussed herein were developed in accordance with the State Water Resources Control Board

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i The term "special-status" species includes those species that are listed and receive specific protection defined in federal or state endangered species legislation, as well as species not formally listed as Threatened or Endangered, but designated as "Rare" or "Sensitive" on the basis of adopted policies and expertise of state resource agencies or organizations, or local agencies such as counties, cities, and special districts.

ii ESA, 2023. Calistoga Elementary School Napa River Bank Restoration Project Habitat Assessment, prepared for the Calistoga Joint Unified School District. November 2023.

iii California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1B.2: 1B = Rare, threatened, or endangered throughout range; Most species in this rank are endemic to California; .2 = Fairly endangered in California.

iv Moderate Potential = The study area and/or immediate vicinity provide low to moderate quality suitable habitat and the study area is within the known species' range.

v High Potential = The study area and/or immediate vicinity provide ideal (high quality) habitat conditions and the study area is within the known species' range.

vi California Central Coast steelhead (*Oncorhynchus mykiss irideus*) Distinct Population Segment (FESA listed as threatened) and California freshwater shrimp (*Syncaris pacifica*) were also identified as species with potential to occur within the Napa River channel in the project Habitat Assessment (ESA, 2023). Because the project area is restricted to the bank above the ordinary high water mark, outside of and above the channel waters, species-specific protection measures related to in-water work are not necessary to avoid species "take" and therefore are not included herein. General water quality and erosion control measures described below will also help to avoid impacts to steelhead and California freshwater shrimp and associated aquatic habitat.

Water Quality Order No. 2004-0004-DWQ, Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction (General WDRs). Protection measures developed under that order have been modified to align with specific elements of the project, as have relevant measures from the Programmatic Biological and Conference Opinion, California Statewide Programmatic Restoration Effort (FWS Reference: 2002-0005149-S7) and the Napa County Stream Maintenance Program Manual.[vii, viii]

The project incorporates the measures listed below to ensure compliance with federal and State laws and that potential impacts on these sensitive biological resources from the project are avoided or minimized to the maximum extent feasible.

General Measures

GPM-1, Construction Season and Hours

- The project will be conducted during the dry season (June 15 to October 31), unless otherwise authorized by regulatory agencies.
- Construction activities will be limited to daylight hours, starting no earlier than 30 minutes after sunrise and concluding no later than 30 minutes prior to sunset.
- If precipitation sufficient to produce runoff is forecast to occur while construction is underway, work will cease, and erosion control measures will be put in place sufficient to prevent significant sediment runoff into the Napa River.

GPM-2, Environmental Awareness Training

Prior to beginning work on the project, all project construction personnel will participate in environmental awareness training conducted by a qualified biologist with at least a four-year degree and professional experience in biological sciences and related resource management activities. Construction personnel will be informed regarding the identification, potential presence, habitat requirements, legal protections, avoidance and minimization measures, and applicable protection measures for special-status species with the potential to occur in or immediately adjacent to the project site. Construction personnel will be informed of the procedures to follow should a special-status species be encountered during construction activities.

GPM-3, Environmental Monitoring

A qualified biologist(s) will perform site clearance and monitoring at key points during project construction, including pre-construction clearance, site preparation, vegetation clearing tree removal, initial ground disturbance, and species exclusion fence removal.

- Prior to work beginning on days when qualifying activities requiring biological monitoring are planned, a qualified biologist will perform site clearance and monitor construction

[vii] Because the project would occur outside of the Napa River ordinary high water mark and jurisdictional boundary of waters of the United States and therefore project authorization from the U.S. Army Corps of Engineers is not needed, the project lacks a federal nexus for FESA compliance through Section 7 consultation with U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration-National Marine Fisheries Service. Thus, project FESA compliance will be achieved through Section 10, avoidance of impacts to FESA-listed species.

[viii] Horizon Water and Environment, 2019. Napa County Stream Maintenance Manual, prepared for the Napa County Flood Control and Water Conservation District. January 2019. Available at: https://www.countyofnapa.org/1168/Stream-Maintenance-Manual

activities throughout the day in, or immediately adjacent to, sensitive resources and/or special-status species' habitat.

- The qualified biologist will confirm that all applicable protection measures are implemented during project construction.
- The qualified biologist will have the authority to stop work for the protection of special-status species or if they determine any applicant proposed protection measure or permit requirement is not fully implemented.
- The qualified biologist will prepare and maintain a daily biological monitoring log of construction site conditions and observations when onsite, which will be kept on file.

GPM-4, Work Area

Construction work and materials staging will be restricted to the smallest area practicable in designated work areas, routes, staging areas, or the limits of existing roadways. Prior to initiating construction activities, brightly colored fencing or flagging or other practical means will be erected to demarcate the limits of the project activities, including the boundaries of designated staging areas; ingress and egress corridors; stockpile areas for spoils disposal, soil, and materials; and equipment exclusion zones. Flagging or fencing will be maintained in good repair for the duration of project activities.

GPM-5, Environmentally Sensitive Areas and/or Wildlife Exclusion

Where appropriate, fencing, flagging, or biological monitoring will be used to minimize disturbance to environmentally sensitive areas and special-status species habitat. Prior to the start of construction, environmentally sensitive area fencing or wildlife exclusion fencing (WEF) will be installed at the boundary of the active work area on the project site bank.

- The qualified biologist will determine the location of the WEF prior to the start of construction.
- WEF specifications (e.g., height, installation requirement, or materials) will be determined based on the species the fencing is intended to exclude.
- The WEF will remain in place throughout the duration of the construction activities and will be inspected by the qualified biologist and maintained regularly by the contractor until completion of the project.
- Repairs to the WEF will be made within 24 hours of discovery. The fencing will be removed only when all construction equipment is removed from the site, the area is cleared of debris and trash, and the restoration activities are complete. The qualified biologist will monitor removal of any fencing installed in the project area.

GPM-6, Practices to Prevent Pathogen Contamination

The CJUSD will review and implement restoration design considerations and best management practices (BMPs) to help prevent pathogen contamination, as published by the "Working Group for Phytophthoras in Native Habitats" (www.calphytos.org), when there is a risk of introduction and spread of plant pathogens in site plantings.

GPM-7, Material Disposal

All refuse, debris, unused materials, and supplies that cannot reasonably be secured in covered (wildlife-proof) containers will be removed daily from the project work area and deposited at an appropriate disposal or storage site. All construction debris will be removed from the work area immediately on project completion. The Water Quality Protection Measures will be implemented to ensure proper handling and disposal of hazardous materials.

Water Quality Protection Measures

WQPM-1, Equipment Maintenance and Materials Storage

1. Vehicle traffic will be confined to existing roads and access route(s). Staging will occur in upland areas, on access roads or other previously disturbed, developed, or paved areas, parking lots, areas with bare ground or gravel, and areas clear of vegetation, to avoid sensitive habitats and limit disturbance to surrounding habitats.

2. Maintain machinery in good working condition, showing no signs of fuel or oil leaks. All questionable motor oil, coolant, transmission fluid, and hydraulic fluid hoses, fitting, and seals shall be replaced. Oil, grease, or other fluids will be washed off at designated wash stations prior to entering the construction site. Locate wash sites in upland locations, away from drains, so wash water does not flow into the Napa River channel. Inspection and evaluation for the potential for fluid leakage will be performed daily during construction.

3. The use or storage of petroleum-powered equipment shall be accomplished in a manner to prevent the potential release of petroleum materials into waters of the State (Fish and Game Code 5650). All fuel and chemical storage, servicing, and refueling will be done in an upland staging area with secondary containment to prevent spills from traveling to surface water or drains. Staging areas for equipment storage and maintenance, construction materials, fuels, lubricants, solvents, and other possible contaminants will be at least 100 feet from waterbodies, unless site-specific circumstances do not provide such a setback; in such cases, the maximum setback possible from the Napa River and bank slope will be used.

4. Fluids will be stored in appropriate containers with covers and will be properly recycled or disposed of off-site. Machinery stored on site will have pans or absorbent mats placed underneath potential leak areas.

5. Stationary equipment, such as motors, generators, and compressors, located on the streambank will be positioned within secondary containment and upslope of the silt fence installed between the work area and Napa River channel. Oil absorbent and spill containment materials shall be located on site when mechanical equipment is in operation within 100 feet of the channel.

6. If a spill occurs, no additional work shall occur on the bank until (1) the mechanical equipment is inspected by the contractor, and the leak has been repaired, (2) the spill has been contained. If contaminants penetrate the silt fence at the toe of the slope and enter the Napa River channel impacting water quality, RWQCB, CDFW, U.S. Fish and Wildlife Service, and National Marine Fisheries Service shall be contacted, and the impacts of the spill will be evaluated.

WQPM-2, Erosion Control Measures

1. Effective erosion control measures shall be always in place during construction. Vegetation removal, debris removal and grading activities shall not commence until all temporary control devices (e.g., straw wattles, silt fences, etc.) are in place downstream and downslope of the project site within the riparian area. The devices shall be properly installed at all locations where the likelihood of sediment input to the channel exists. These devices shall be in place during and after construction activities for the purposes of minimizing fine sediment input to flowing water.

2. Erosion control devices such as coir rolls or erosion control blankets shall not contain synthetic or plastic monofilament or cross-joints in the netting that are bound/stitched and could trap snakes, amphibians, and other wildlife. Products that use photodegradable or biodegradable synthetic netting, which can take several months to decompose, are also prohibited. Acceptable materials include natural fibers such as jute, coconut, twine, or other similar fibers.

3. The contractor/project applicant is required to inspect and repair/maintain all BMPs prior to and after any storm event, at 24-hour intervals during extended storm events, and a minimum of every two weeks until all erosion control measures have been completed.

4. Sediment shall be removed from sediment controls once it has reached one-third of the exposed height of the control. Whenever straw bales are used, they shall be staked and dug into the ground to a minimum depth of 12 cm, and only sterile, weed-free straw shall be utilized.

5. Sediment-laden water created by construction activity shall be filtered before it leaves the right-of-way or enters the stream network or an aquatic resource area.

6. The temporary stockpiling of material adjacent to the bank construction area shall be minimized. Excavated material shall be stockpiled in upland areas where it cannot enter the Napa River channel.

7. All exposed soil present in and around the project site shall be stabilized within 7 days.

   a. All bare and/or disturbed slopes (larger than 10’ x 10’ of bare mineral soil) will be treated with erosion control methods such as straw mulching, netting, fiber rolls, and hydro-seed as permanent erosion control measures.

   b. Where straw, mulch, or slash is used as erosion control on bare mineral soil, the minimum coverage shall be 95% with a minimum depth of two inches.

   c. When seeding is used as an erosion control measure, only natives will be used. Sterile (without seeds), weed-free straw, free of exotic weeds, is required when hay bales are used as an erosion control measure.

8. Immediately after project completion and before close of seasonal work window (October 31), all exposed soil shall be stabilized with seeding, and/or placement of erosion control blankets. All artificial erosion control devices (e.g., silt fence/WEF) shall be removed after the project area has fully stabilized. Following site restoration, erosion control materials such as straw wattles will not block the movement of amphibians and/or reptiles.

Riparian Area Protection Measures

RPM-1, Invasive Species Removal

The spread or introduction of nonnative, invasive plant species (e.g., those rated as limited, moderately, or highly invasive by the Cal-IPC) will be avoided. Invasive plants in the project area will be removed using locally and routinely accepted management practices and properly disposed of in a manner that will not promote their spread. When practicable, invasive plants will be removed when flowers or seeds are not present. If flowers or seeds are present and have the potential for seed to be widely dispersed during removal, the flowering head will be removed and placed in a container for disposal prior to removal. Invasive plant material will be destroyed using approved protocols and disposed of at an appropriate upland disposal or compost area.

Equipment will be cleaned of any sediment or vegetation at designated wash stations before entering or leaving the project area, to avoid spreading pathogens or invasive species. Construction supervisors and managers will be educated on invasive species identification and the importance of controlling and preventing their spread.

RPM-2, Revegetation Materials and Methods

1. The project will retain as many native trees and shrubs as feasible, emphasizing shade-producing and bank stabilizing trees and brush.

2. Topsoil will be conserved for reuse during restoration, to the extent practicable.

3. The contractor will minimize soil compaction by using equipment with a greater reach or that exerts less pressure per square inch on the ground, resulting in less overall area disturbed or less compaction of disturbed areas. Soils that have been compacted by heavy equipment will be de-compacted to facilitate plant establishment by shallow or deep ripping, if necessary, as heavy equipment exits the construction area.

4. On completion of work, project site contours will be designed and constructed to provide increased biological and hydrological functions.

5. Only native plant species, comprising a diverse community structure (plantings of both woody and herbaceous species), will be used for revegetation.

6. Following regrading, any area barren of project vegetation on the project bank will be revegetated by seeding, planting, or other means, with native trees, shrubs, willow stakes, erosion control native grass seed mixes, or herbaceous plant species.

7. If erosion control fabrics are used in revegetated areas, they will be slit in appropriate locations to allow for plant root growth. Only non-monofilament, wildlife-safe fabrics will be used. All exclusion netting/caging placed around plantings will be removed after 2 years or sooner.

8. Restoration planning for these areas should include steps to prevent colonization by nonnative species, including recolonization by any nonnative plant species that occupied the site prior to project implementation.

9. Irrigation may also be required to ensure survival of containerized shrubs or trees or other vegetation, depending on rainfall. If irrigation is used, all irrigation materials will be removed once plants are established (e.g., after 2 years).

Measures to Protect Amphibians and Reptiles

AR-1, Preconstruction Surveys

1. A qualified biologist will conduct visual preconstruction surveys and implement additional protection measures within 5 days prior to beginning work to protect the species and habitat from avoidable construction-related disturbance. The intent of the survey is to assess current species habitat and species use locations in the project area immediately prior to construction.

2. No more than 24 hours prior to the date of initial ground disturbance and vegetation clearing, or prior to work beginning after any onsite precipitation, a qualified biologist will walk in the project site to investigate all potential areas that could be used by special-status amphibians and/or reptiles for feeding, breeding, sheltering, movement, and other essential behaviors.

    a. If a special-status amphibian or reptile is encountered during the survey, the qualified biologist will facilitate the species' movement out of the work area by clearing a pathway.

    b. The biologist shall not relocate special-status amphibians or reptiles without prior authorization from the appropriate regulatory agencies.

3. If construction activities cease for more than 5 consecutive days, and there is potential for special-status species to reoccupy habitat onsite, the qualified biologist will resurvey the project area prior to resuming construction and implement applicable protection measures.

AR-2, Species Entrapment Prevention

To prevent the accidental entrapment of special-status species during construction, all pipes stored onsite or in associated staging areas will be capped when not in use or stored above ground level at an appropriate height to minimize species entrapment and will be inspected before being moved. Any animals discovered will be allowed to escape voluntarily.

AR-3, Clearing and Grubbing Vegetation

- A qualified biologist will be present during all vegetation clearing and grubbing activities. Before vegetation removal, the qualified biologist will thoroughly survey the area for special-status amphibians and reptiles.
- Vegetation will be cleared with handheld motorized tools (e.g., weed eaters or chainsaws) or by hand pulling, where feasible. Where dense brush occurs (e.g., blackberry or periwinkle), the qualified biologist may direct the contractor or equipment operator to lift and shake dense vegetation with an excavator or backhoe so that the qualified biologist can look underneath and search for amphibians or reptiles.
- Where feasible, tree stumps and roots from native species will be left in place to avoid any unnecessary ground disturbance and preserve refugia habitat, with the exception of nonnative invasive plants that could propagate from remaining vegetative material. Native branches, leaf litter, mulch, woody debris, and other vegetative trimmings may be retained and spread on site to enhance habitat, as appropriate.

AR-4, Encounters with Species

Each encounter with a special-status amphibian or reptile will be treated on a case-by-case basis. If any life stage is found (e.g., egg masses) and these individuals may potentially be killed or injured by work activities, the following will apply:

- If a special-status amphibian or reptile is detected in the project area, work activities within 50 feet of the individual that may potentially be harmed, injured, or killed will cease immediately, and the qualified biologist will be notified.
- Based on the professional judgment of the qualified biologist, if project activities can be conducted without harming or injuring the species, it may be left at the location of discovery and monitored by the qualified biologist. All project personnel will be notified of the finding and at no time will work occur within 50 feet of a species without a qualified biologist present.
- Contact with the special-status amphibian or reptile will be avoided, and the individual will be allowed to move out of the potentially hazardous situation of its own volition.

Measures to Protect Nesting Birds

The project schedule would require construction during the nesting bird season (February 1 through August 31). The project site contains suitable habitat for breeding birds to nest, including the following special-status birds: purple martin (*Progne subis*; CDFW CSC), Cooper's hawk (*Accipiter cooperii*), and sharp shinned hawk (*Accipiter striatus*), both included on CDFW's Watch List. Nesting birds and their nests shall be protected during construction by use of the following measures:

BIRD-1, Avoidance and Minimization Measures for Nesting Birds

1. A qualified wildlife biologist shall conduct pre-construction nesting surveys within 7 days prior to the start of vegetation and tree trimming and removal and after any construction breaks of 14 days or more. Surveys shall be performed for the project site and suitable habitat within 1) 250 feet of the project site to locate any active passerine (perching bird) nests and 2) 500 feet of the project site to locate any active raptor (birds of prey) nests.

2. If active nests are located during the pre-construction bird nesting surveys, the wildlife biologist shall evaluate whether the schedule of construction activities could affect the active nests and the following measures shall be implemented based on their determination:

    a. If construction is not likely to affect the active nest, it may proceed without restriction; however, a wildlife biologist shall regularly monitor the nest to confirm there is no adverse effect and may revise their determination at any time during the nesting season. In this case, measure (b) would apply.

    b. If construction may affect the active nest, the qualified wildlife biologist shall establish a no-disturbance buffer. Typically, these buffer distances are between 25 feet and 250 feet for passerines and between 300 feet and 500 feet for raptors. In the case of Swainson's hawk buffers of ¼ mile are established and consultation with CDFW is required. These distances may be adjusted depending on the level of surrounding ambient activity (i.e., if the project site is adjacent to a road or community development) and if an obstruction, such as a building structure, is within line-of-sight between the nest and construction.

c. For bird species that are federally- and/or State-listed or otherwise sensitive species (i.e., fully protected, endangered, threatened, or species of special concern), a CJUSD representative, supported by the wildlife biologist, shall consult with the USFWS and/or CDFW (as appropriate for the subject species) regarding modifying nest buffers, prohibiting construction within the buffer, modifying construction, and removing or relocating active nests that are found on the site.

Measures to Protect Roosting Bats

The Napa River riparian corridor contains suitable habitat for bats, including the special-status bat species pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*), each identified as a CDFW CSC. The project schedule would require construction during the period when bats occupy maternity roosts (approximately April 15 to August 15) which are protected under the California Fish and Game Code. Bat maternity roosts shall be protected during construction by use of the following measures:

BAT-1, Avoidance and Minimization Measures for Special-Status Bats and Maternity Roosts

A qualified biologist shall conduct a pre-construction survey of the project site and contiguous suitable habitat within 500 feet of the project site to identify signs of potential bat habitat, including maternity colonies and any active roost sites, in advance of tree trimming and removal activities. Identified bat maternity colonies shall be avoided, if possible. Should potential maternity colonies or active bat roosts be found in trees but cannot be avoided, the CJUSD shall ensure the following measures are implemented:

1. Remove trees (or install bat exclusion devices) when bats are active, approximately between the periods of March 1 to April 15 and August 15 to October 15; outside of the bat maternity roosting season (approximately April 15 to August 15) if a maternity roost is present, and outside the months of winter torpor (approximately October 15 to February 28, or as determined by a qualified biologist experienced in the identification of special-status bats).

2. If removing trees is not feasible during the periods when bats are active, and bat roosts being used for maternity (or hibernation) purposes are found on or in the immediate vicinity of the tree trimming/removal area, a qualified biologist shall delineate a no-disturbance buffer around these roost sites until they are no longer in use as maternity (or hibernation) roosts or the young are capable of flight. If pallid bat or any other State-sensitive species is detected, a CJUSD representative, supported by the wildlife biologist, shall consult with CDFW regarding modifying roosts buffers, prohibiting construction within the buffer, and modifying construction around maternity or hibernation roosts.

3. Based on the professional opinion of a qualified biologist, buffer distances may be adjusted around roosts depending on the level of surrounding ambient activity (e.g., if the subject tree is adjacent to a busy road) or if an obstruction, such as the river bank or school building or facility, is within the line-of-sight between the roost and construction.

4. A biologist experienced in the identification of special-status bats shall be present during tree removal if bat roosts are present. Project activities shall disturb trees with roosts only when no rain is occurring or is not forecast to occur for three days and when daytime temperatures are at least 50 degrees Fahrenheit.

5. Under the supervision of the qualified biologist, trim trees containing or suspected to contain roost sites over two days. On the first day, branches and limbs not containing cavities or fissures in which bats could roost shall be cut using chainsaws. The following day, branches or limbs containing roost sites shall be trimmed with chainsaws, under the supervision of the biologist, and the tree may be felled for removal.

Post Construction Monitoring

To assess and verify that the project is performing as intended, the CJUSD or it's designated qualified professional will conduct post-construction assessments of plant establishment and signs of erosion at the restored bank. Please refer to the project Monitoring Plan attachment for full details on the project's success criteria, monitoring methods, and reporting plan.

Herbicide Use

Isolated infestations of invasive species identified in the project area post-construction and throughout the performance period will be treated with weed management methods at an appropriate time, to prevent further formation of seed and destroy viable plant parts and seed. Best Management Practices for Wildland Stewardship: Protecting Wildlife When Using Herbicides for Invasive Plant Management (Cal-IPC 2015 or the most recent version) will be followed. Additionally, the following protection measures will be implemented if herbicide is used to control invasive plants within the project site.

HERB-1, General Herbicide Application Measures

1. Chemical control of invasive plants and animals will only be used when other methods are determined to be ineffective or would create greater environmental impacts than chemical control**.** Herbicide use will be evaluated with consideration of (and preference given toward) IPM strategies wherever possible. See University of California statewide IPM Program for guidance documents (http://ipm.ucanr.edu/index.html).

2. Any chemical considered for control of invasive species must be approved for use in California; its application must adhere to all regulations, in accordance with the California Environmental Protection Agency (CEPA 2011 or most recent version); and it must be applied by a licensed applicator under all necessary state and local permits.

3. Herbicides will be used only in a context where all treatments are considered, and various methods are used individually or in concert to maximize the benefits while reducing undesirable effects and applying the lowest legal effective application rate, unless site-specific analysis determines that a lower rate is needed to reduce nontarget impacts. Only the minimum area necessary for effective control will be treated.

4. Whenever feasible, reduce undesirable vegetation biomass by mowing, cutting, or grubbing it before applying herbicide to reduce the amount of herbicide needed. Within 25 feet of the Napa River channel, only formulations approved by the United States Environmental Protection Agency (USEPA) for aquatic use will be used. Soil-activated herbicides can be applied as long as directions on the label are followed.

5. To limit the opportunity for surface water contamination with herbicide use, the project shall apply herbicide as needed using a backpack sprayer. The minimum buffer with a backpack sprayer is 15 feet.

6. The licensed Applicator will follow recommendations for all California restrictions, including wind speed, rainfall, temperature inversion, and ground moisture for each herbicide used. In addition, herbicides will not be applied when rain is forecast to occur within 24 hours, or during a rain event or other adverse weather conditions (e.g., snow, fog).

7. Herbicide adjuvants are limited to water or nontoxic or practically nontoxic vegetable oils and agriculturally registered, food grade colorants (e.g., Dynamark U.V. [red or blue], Aquamark blue, or Hi-Light blue) to be used to detect drift or other unintended exposure to waterways.

8. Any herbicides will be transported to and from the worksite in tightly sealed waterproof carrying containers. The licensed Applicator will carry a spill cleanup kit. Should a spill occur, people will be kept away from affected areas until clean-up is complete. Herbicides will be mixed more than 150 feet, as practicable, from any water of the State to minimize the risk of an accidental discharge. Impervious material will be placed beneath mixing areas in such a manner as to contain any spills associated with mixing/refilling.

HERB-2, Herbicide Application Planning and Reporting

1. Written chemical application, monitoring, and reporting prescriptions will be provided to the CJUSD from a certified Pest Control Advisor (PCA) (CEPA 2011). The PCA will ensure that legal, appropriate, and effective chemicals are used, with appropriate methodologies. Field scouting must be done before application; the licensed Applicator (CEPA 2011) must be on site to lead all applications and will adhere to the PCA prescription and standard protection measures for application.

2. Prior to field scouting or application, the PCA will receive Environmental Awareness Training (see GPM-2, Environmental Awareness Training) for the project so that they are aware of special-status species and habitats present at the project site. The PCA monitoring prescription should address timing necessary to evaluate and report target species efficacy as well as any nontarget plant and animal effects. As applicable, Best Management Practices for Wildland Stewardship: Protecting Wildlife When Using Herbicides for Invasive Plant Management (Cal-IPC 2015 or the most recent version) will be followed.

3. The licensed applicator will keep a record of all plants/areas treated; amounts and types of herbicides used; and dates of application as well as other monitoring elements prescribed by the PCA in HERB-1; pesticide application reports must be completed within 24 hours of application and submitted to the applicable agencies for review. Wind and other weather data will be monitored and reported for all application reports.

Approved Herbicide Product List

Because the project site's location on the Napa River bank and potential to host special-status amphibian and reptile species, only select herbicides (listed below) may be used to control invasive plant species. Below is a description of the known toxicity of herbicides that could be used on the project site. Identified buffer distances are from the Napa River ordinary high water mark boundary unless otherwise stated.

- **2,4-D amine.** 2,4-D amine acts as a growth-regulating hormone on broad-leaf plants, being absorbed by leaves, stems and roots, and accumulating in a plant’s growing tips. If CJUSD uses 2,4 D amine, this action requires a 15-foot buffer when hand applied, and a 50-foot buffer when it is applied using a backpack sprayer.

- **Aminopyralid.** This is a relatively new selective herbicide first registered for use in 2005. It is used to control broadleaf weeds and is from the same family of herbicides as clopyralid, picloram and triclpyr. Aminopyralid is proposed to be used for the selective control of broadleaf weeds. Acute toxicity tests show aminopyralid to be practically nontoxic, with aquatic invertebrates showing more sensitivity. Thus, if aminopyralid does end up in surface waters, the most likely pathway of effect for fish is through loss of prey.
- **Chlorsulfuron.** This herbicide is used to control broadleaf weeds and some annual grasses. Chlorsulfuron is readily absorbed from the soil by plants. This herbicide does not bioaccumulate in fish. The buffers and application methods greatly minimize the risk of exposure to listed fish and their prey species.
- **Clethodim.** Clethodim is a post emergence herbicide for control of annual and perennial grasses. It is allowed using localized, hand application and/or backpack sprayer, with a 50-foot buffer.
- **Clopyralid.** Clopyralid is a relatively new and very selective herbicide. It is toxic to some members of only three plant families. It is very effective against knapweeds, hawkweeds, and Canada thistle. Clopyralid does not bind tightly to soil, and thus would seem to have a high potential for leaching. That potential is functionally reduced by the relatively rapid degradation of clopyralid in soil. It is one of the few herbicides that can be applied up to the waterline (for hand application). Application of this herbicide is limited to one treatment per year.
- **Dicamba.** Dicamba controls broadleaf weeds, brush, and vines through localized application with hand injection methods or a backpack sprayer. Leaves and roots absorb dicamba and it moves through the plant. It should be applied during active plant growth periods, with spot and basal bark periodic application during dormancy. It does not bind to soil particles and microbes appear to be the primary source of chemical breakdown in soil.
- **Glyphosate 1 (aquatic).** Glyphosate is a nonselective herbicide used to control grasses and herbaceous plants; it is the most commonly used herbicide in the world. It is moderately persistent in soil, with an estimated average half-life of 47 days (range of 1 to 174 days). Glyphosate is relatively nontoxic for fish. There is a low potential for the compound to build up in the tissues of aquatic invertebrates. The buffers and application methods greatly minimize the risk of exposure to fish and their prey species.
- **Imazapic.** Imazapic is used to control grasses, broadleaves, vines, and for turf height suppression in noncropland areas. Imazapic can be used for noxious weed control up to the waterline with hand injection methods and 15-foot buffers for backpack sprayer application.
- **Imazapyr.** Imazapyr is used to control a variety of grasses, broadleaf weeds, vines and brush species. The buffers and application methods greatly minimize the risk of exposure to fish and their prey species.
- **Metsulfuron-methyl (Escort formulation).** It is used to control brush and certain woody plants, broadleaf weeds, and annual grasses. It is active in soil and is absorbed from the soil by plants.
- **Picloram.** This is a restricted-use pesticide labeled for noncropland forestry, rangeland, right-of-way, and roadside weed control. It is a growth inhibitor and is used to control a variety of broadleaf weed species. It is absorbed through the leaves and roots and accumulates in new growth. The use of this herbicide is restricted to hand applications only at least a 25-foot buffer and no use on sandy or riverwash soils. The buffers and application methods greatly minimize the risk of exposure to fish and their prey species.

- **Sethoxydim.** This herbicide is a selective post-emergence pesticide for control of annual and perennial grasses. Its mode of action is lipid biosynthesis inhibition. Project design criteria and conservation measures sharply reduce the risk of exposure. Maintain a 50-foot no-application buffer for both spot spraying and hand application. Other factors such as wind speed and weather also reduce the risk of exposure. Thus, the risk of acute or chronic exposure to sethoxydim is low.
- **Sulfometuron-methyl.** At proposed application rates, sulfometuron-methyl is highly toxic to seedlings of several broadleaves and grasses. No chronic exposure is anticipated to occur because the herbicide degrades relatively rapidly. Based on the above conservation measures, the risk of exposure to concentrations that result in acute lethal effects or chronic effects is low.
- **Triclopyr (TEA).** The environmental fate of triclopyr has been studied extensively. This formulation of triclopyr is not highly mobile, although soil adsorption decreases with decreasing organic matter and increasing pH. With the exception of aquatic plants, substantial risks to nontarget species (including humans) associated with the contamination of surface water are low relative to risks associated with contaminated vegetation. The buffers and application methods greatly minimize the risk of exposure to fish and their prey species.

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