Abbott Lake Restoration Project

Initial Study/
Proposed Mitigated Negative Declaration

June 12, 2013

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Project Information

1. Project Title:	Abbott Lake Restoration Project
2. Lead Agency Name and Address:	California Department of Fish and Wildlife North Central Region 1701 Nimbus Road Rancho Cordova, California 95670
3. Contact Person and Phone Number:	Tina Bartlett (916) 358-2898
4. Project Location:	The 265-acre project area is within the Abbott Lake Unit of the Feather River Wildlife Area on the waterside of the western levee of the Feather River; approximately seven miles south of Yuba City, Sutter County, California. The project area is approximately one mile north of Star Bend Road, between river miles 20 and 21.5, on the right bank of the Feather River. Township 14 North, Range 3 East, unsectioned area within the New Helvetia Land Grant; APNs 023-300-126 and 023-300-127.

5. Description of Project:

The California Department of Fish and Wildlife (CDFW) has partnered with River Partners, a 501(c)3 nonprofit corporation, to conduct riparian vegetation and enhancement activities on 265 acres of riverside floodplain that are part of the 439-acre Abbott Lake Unit of the Feather River Wildlife Area located in Sutter County, California. The Abbott Lake Restoration project (project) includes two phases in three areas. The project area consists of three distinct activity areas: the North Field, the South Field, and the Enhancement Area. The restoration planting will occur in two phases on 169 acres of the project area: the 150-acre South Field in Phase I, and the 19-acre North Field in Phase II. Currently, River Partners secured funding for Phase I of the project; however, Phase II funding has no funding identified. The remaining 96 acres of the project area constitute the Enhancement Area, in which the plan is to target eradication of invasive plants during both phases. There are four different plant communities designed in the project area: riparian shrubland, low shrubland, riparian woodland, and grassland. Shrub and tree planting densities and species compositions would vary within the North and South Fields, with an average density of 115 shrubs/trees per acre. Following implementation of both phases, the restoration planting would consist of approximately 19,411 native riparian shrubs and trees, 1,034 herbaceous plugs, and additional (seeded) native forbs and grasses.

The key objectives of the proposed project are to:

- Maintain general flood flow conveyance patterns;
- Establish self-sustaining native plant communities within a three-year period;
- Utilize a diversity of plant species, which create vegetative structural diversity and enhance habitat for a broad range of wildlife species;
- Provide valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) habitat while minimizing potential impacts to adjacent land uses;
- Minimize disturbance to wildlife; and
- Minimize future impacts to levee maintenance areas.

6. Phase I Funding: Wildlife Conservation Board

7. General Plan Designation: Open Space

8. Zoning: Floodplain/Ag

9. Surrounding Land Uses and Setting:

Public/Quasi-Public. The proposed project area is located on land owned by the State of California and managed by the CDFW. The project area is on the waterside of the levee and currently managed as a conservation area, with fishing and hunting being the primary uses. Adjacent land use is primarily agricultural.

10. Other Public Agencies Whose Approval May Be Required (e.g., permits, financing approval, or participation agreement):

The proposed project may require permits or approvals from the following:

- Central Valley Flood Protection Board (CVFPB)
- California Department of Water Resources (DWR)
- U.S. Army Corps of Engineers
- Regional Water Quality Control Board
- California Department of Fish and Wildlife (CDFW)
- U.S. Fish and Wildlife Service (USFWS)

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1 Introduction

1.1 Introduction and Regulatory Guidance

This document is an Initial Study (IS) that summarizes potential environmental impacts and provides justification for adoption of a Mitigated Negative Declaration (MND) for the proposed Abbott Lake Restoration Project (project). The project will be implemented in two phases, and the project activities related to both phases are evaluated in this document. This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., and the CEQA Guidelines.

1.2 Lead Agency

The Lead Agency is the public agency with primary responsibility for carrying out or approving a project. Accordingly, the California Department of Fish and Wildlife (CDFW) is the CEQA Lead Agency.

1.3 Supporting Environmental Studies

Project specific hydraulic analysis reports have been prepared for the Abbott Lake Restoration Project (MBK Engineers 2009, 2010) (**Appendix A-B**). In 2012, the restoration project was included as part of the comprehensive *Lower Feather River Corridor Management Plan Flood Hydraulic Analysis of Future Conditions* (MBK Engineers 2012) (**Appendix C**). The *Riparian Restoration Plan for the Abbott Lake Unit* (Restoration Plan) describes a comprehensive site assessment (soils, hydrology, vegetation, land-use history, and topography) and the project planting design in detail (River Partners 2013) (**Appendix D**).

1.4 Permits and Approvals Needed

Separate Central Valley Flood Protection Board encroachment permits will be required for the implementation of Phase I and Phase II. **Table 1** lists the permits and approvals that may be required for both phases of the proposed project.

Table 1. Required Permit Approvals

Approving Agency	Required Permit/Approval	Status
Federal Agencies		
U.S. Fish and Wildlife Service	Safe Harbor Agreement	A Safe Harbor Agreement is in process for the Feather River Wildlife Area, which includes the project.
State Agencies		
California Department of Fish and Wildlife/Department of Water Resources	Memorandum of Understanding (MOU) that describes the commitment for the maintenance of the flood control project as related to long-term site maintenance.	A previous MOU dated 2005 is being updated to include specifics regarding the proposed project (California Department of Fish and Game and California Department of Water Resources 2005).
California Department of Fish and Wildlife	Project Approval/CEQA Compliance Herbicide Permit(s) Lake and Streambed Alteration Agreement (FGC 1600)	The MND would be adopted prior to project implementation. Herbicides used during the project would be authorized by CDFW prior to application. An agreement will be signed prior to project implementation.
Central Valley Flood Protection Board	Two Encroachment Permits	Application for the Phase I permit would be submitted following completion of the CEQA process. Phase I implementation would begin following issuance of the Phase I permit. Application for Phase II permit would be initiated following the procurement of funding for Phase II.

1.5 Document Organization

The Initial Study is composed of the following chapters:

- Chapter 1.0 – Introduction: describes the purpose and content of this document, and required permit approvals.
- Chapter 2.0 – Project Description: provides a comprehensive description of the proposed project, and a tentative schedule.
- Chapter 3.0 – Environmental Setting, Project Impacts, and Mitigation Measures: describes the environmental impacts of the proposed project using the CEQA Environmental Checklist. Where appropriate, mitigation measures are provided to reduce potentially significant impacts to a less-than-significant level.
- Chapter 4.0 – Determination: provides the environmental determination for the proposed project.
- Chapter 5.0 – Summary of Mitigation Commitments.
- Chapter 6.0 – Report Preparation and References: identifies the individuals responsible for the preparation of this document and provides a list of references used to prepare this document.

2 Project Description

2.1 Location

The 265-acre project area is within the Abbott Lake Unit of the Feather River Wildlife Area, which is located on the waterside of the western levee of the Feather River approximately seven miles south of Yuba City in Sutter County, California. The project area is approximately one mile north of Star Bend Road, between river miles (RM) 20 and 21.5, and is located within an unsectioned area of the New Helvetia land grant, Township 14 North, Range 3 East of the *Olivehurst, California* U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (**Figure 1**). The project area includes portions of Assessor Parcel Numbers (APN) 023-300-126 and 023-300-127.

The 439-acre Abbott Lake Unit is part of the Feather River Wildlife Area, which is the largest publicly accessible CDFW riparian wildlife area in northern California. **Figure** 2 depicts the Abbott Lake Unit, Star Bend Unit, and O'Connor Lakes Unit.

The project area consists of three distinct activity areas: the North Field, the South Field, and the Enhancement Area. All restoration planting activity would occur in the 19-acre North Field and the 150-acre South Field, collectively termed the Restoration Fields. The planting of the Restoration Fields would occur in two phases: the South Field in Phase I, and the North Field in Phase II. The remaining 96-acre portion of the project area, covered principally with remnant riparian forest, is termed the Enhancement Area. During both phases, targeted eradication of invasive plants will occur (**Figure 3**). The proposed irrigation main connecting the Restoration Fields would also pass through the Enhancement Area.

2.2 Recent Land Use History and Existing Conditions

Early 20th century survey maps of the project area show it to be forested with cottonwood (*Populus* spp.), willows (*Salix* spp.), and other native riparian species (River Partners 2010). Prior to the mid-1970s, it was common practice to clear floodplain lands along the Feather River as a means of flood control and for agricultural use. The project area was no exception. Between the 1960s and 1978, a significant portion of the project area produced crops such as peaches, pears, and watermelons before being sold for use as a private duck-hunting club. In the early 1980s, the land was used again for agriculture before being sold in 1985 to the CDFW. Since then, the property has become a part of the larger Feather River Wildlife Area and has been managed and protected as a conservation area, with fishing and hunting being the primary uses (River Partners 2010).

The Restoration Fields laid fallow since agricultural use ceased in 1985. Natural regeneration of riparian habitat in the Restoration Fields has been slow, and is limited to patches of willows, coyote brush (*Baccharis pilularis*), and blue elderberry (*Sambucus mexicana*). Non-native forbs and grasses dominate the Restoration Fields. Invasive species including tree-of-heaven (*Ailanthus altissima*) and giant reed (*Arundo donax*) are scattered within the Enhancement Area. The remnants of riparian forest that have endured in areas that were not cleared for agricultural use are fragmented and do not provide contiguous riparian habitat along the Feather River.

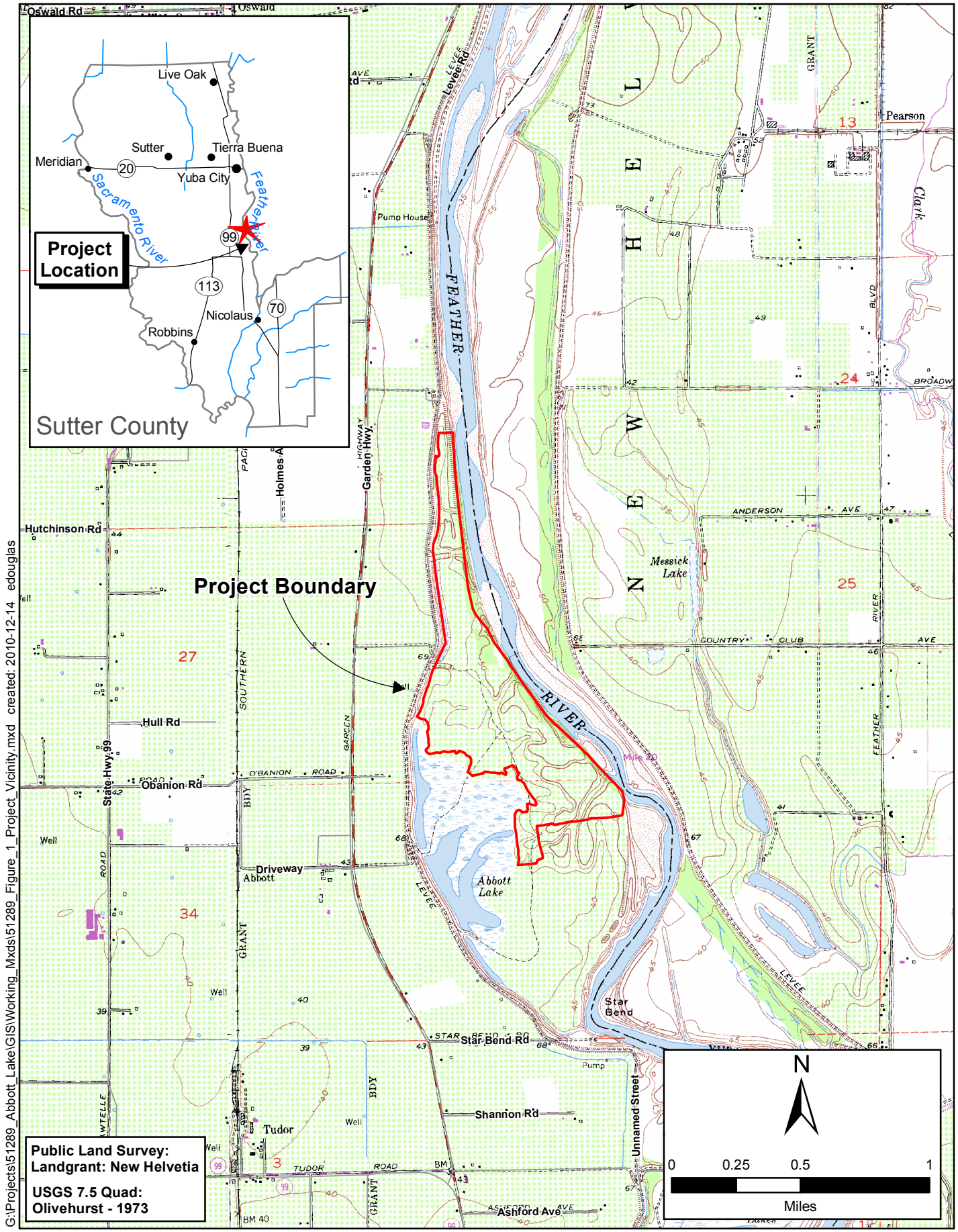

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Figure 1
Project Location and Vicinity

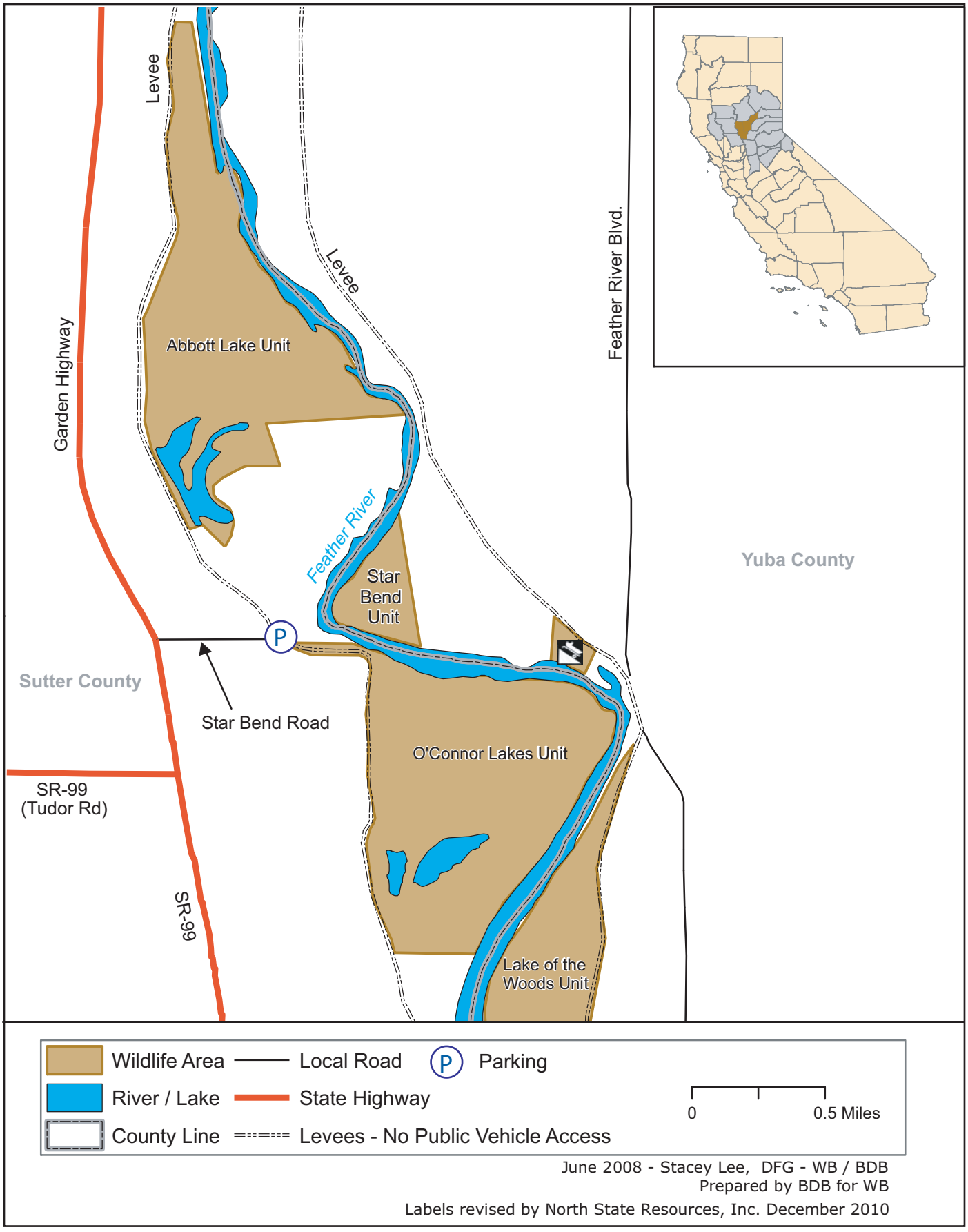

Figure 2
Abbott Lake, O'Connor Lakes, and Star Bend Units of the Feather River Wildlife Area

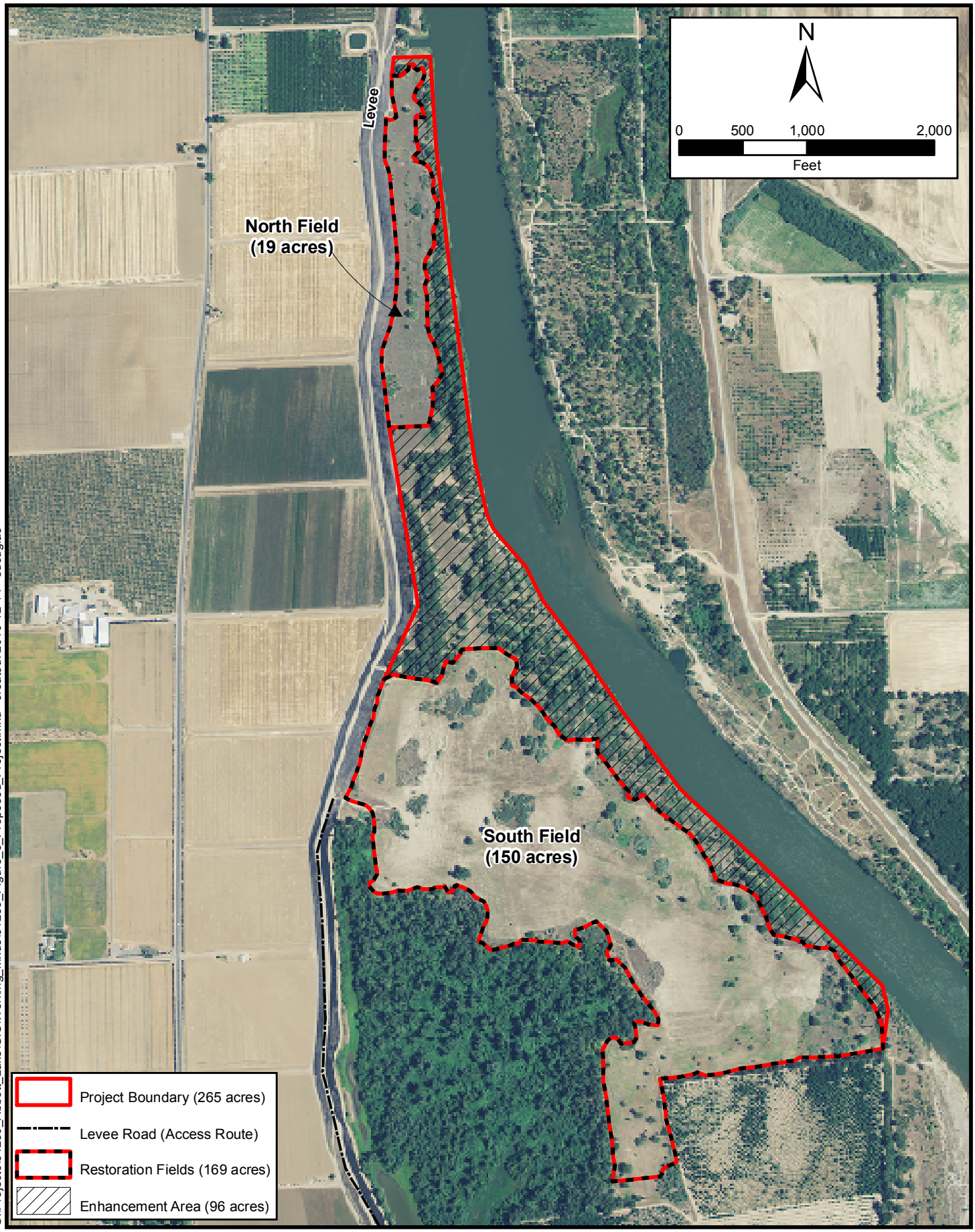

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Figure 3
Proposed Project Area

The levees adjacent to the project area are part of the Central Valley's state-federal flood control system (i.e., "Project Levees") and are maintained by the California Department of Water Resources (DWR). Levee District 1 is the local agent for DWR that maintains the western levee adjacent to the project.

North Field

The 19-acre North Field is located on a narrow section of floodplain at the north end of the project area. Herbaceous non-native plant species dominate much of the North Field, but there are also some occurrences of native woody species such as coyote brush and blue elderberry. Non-native woody species found throughout the North Field area include Himalayan blackberry (*Rubus discolor*), naturalized Northern California black walnut (*Juglans hindsii*), black locust (*Robinia pseudoacacia*), tree-of-heaven, and eucalyptus (*Eucalyptus caesia*). Giant reed occurs along the river in the eastern portion of this field.

Overbank deposition during periods of high water have created a small natural levee along the east side of the North Field. Although the field is nearly level, this natural levee rises up to five feet above the rest of the field.

South Field

The South Field consists of approximately 150 acres of primarily open grassland with patchy stands of sandbar willow (*Salix exigua*) in the northern portion of the field, and small Fremont's cottonwoods (*Populus fremontii*), coyote brush, and blue elderberry scattered throughout. Similar to the North Field, a natural levee has also formed along the eastern edge of the South Field, although at the South Field the levee is higher, ranging from approximately 5 to 10 feet above the rest of the field. The southeastern corner of the South Field shows signs of significant scour—the result of failure of the natural levee during a high water event (River Partners 2010). Several thousand square feet of this low spot in the South Field were scoured to a depth of about 4 feet at its deepest point (River Partners 2010).

2.3 Project Purpose and Objectives

The primary purpose of the project is to restore riparian habitat and reduce wildlife habitat fragmentation within the Feather River Wildlife Area. A broad range of sensitive animal and plant species would benefit from the establishment of self-sustaining native plant communities in the project area. Restored and enhanced riparian habitat within the project area would potentially benefit federal and state-listed species, including Swainson's hawk (*Buteo swainsoni*), valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*), Sacramento River Chinook salmon (*Oncorhynchus tshawytscha*) winter-run evolutionarily significant unit (ESU), and Central Valley Chinook salmon spring-run ESU, as well as non-listed species such as neo-tropical birds, waterfowl, and upland game birds.

Two primary objectives of the project are to establish a total of 169 acres of self-sustaining native plant communities within a three-year period following phased plantings, and to do so without significantly impairing floodway conveyance. Ongoing management of the Wildlife Area will include invasive species removal, etc. Strategies and activities to meet these objectives are explained below.

2.4 Planting Design

Design Considerations

The proposed planting design is based on site-specific analyses of physical factors within the project area, including soils, topography, and hydrology. Restoration biologists chose suitable riparian plant species by matching site-specific characteristics to the descriptions of terrestrial natural plant communities provided by CDFW's California Natural Diversity Database (CNDDB) and the Holland classification system (Holland 1986). The planting design also incorporates essential habitat elements to conserve, restore, and enhance riparian habitat for special-status plants, wildlife, and fish, and improve habitat quality for migratory bird species(River Partners 2013). The physical layout or planting pattern follows the recommendations of Point Reyes Bird Observatory (PRBO) Conservation Science (PRBO Conservation Science 2010).

The potential effects of the structural resistance (e.g., flexibility versus rigidity) of woody plants to floodwater conveyance were considered during the design process. Hydraulic engineers utilized a site-specific, two-dimensional hydraulic model of the Feather River between RM 8.0 and RM 28.7. The model simulated net changes to flood flow water surface elevations and velocities based on proposed plant designs. The model was simulated using peak flows for the 1-in-100 and 1-in-200 annual exceedance probability[1] (AEP) flood events. The model showed that the increase in water surface elevation would be localized near the north end of the project area, and would be approximately 0.12 feet for the 1-in-100 and AEP flood event and 0.15 feet for the 1-in-200 AEP flood event (MBK Engineers 2009). This increase is considered a less-than-significant impact on flood flow conveyance because the minimum freeboard (i.e., distance from top of levee to water surface) requirement in this reach of the Feather River is three feet based on the flood control project design flow. The freeboard calculations within this localized area for the 1-in-100 and 1-in-200 AEP flood events were greater than six feet and three feet, respectively (MBK Engineers 2009).

In consultation with Levee District 1 (local maintaining agency) and the Central Valley Flood Protection Board (CVFPB), several changes were made to the plant design due to potential hydraulic concerns in a few localized areas. The CVFPB recommended that MBK Engineers re-run the model in order to evaluate the design changes with a sensitivity analysis to assess how sensitive water surface elevations were due to estimates for roughness coefficient (MBK Engineers 2010). The model showed that the increase in water surface elevation would be localized near the north end of the project area, and would be approximately 0.06 feet for the 1-in-100 and AEP flood event and 0.07 feet for the 1-in-200 AEP flood event (MBK Engineers 2010).

In 2012, the project planting design was included as part of the comprehensive Lower Feather River Corridor Management Plan Flood Hydraulic Analysis of Future Conditions (MBK Engineers 2012). This model evaluated the cumulative hydraulic effect of a series of existing and yet-to-be-implemented projects within the Lower Feather River Corridor between RM 28.7 at Marysville to RM 2.1, adjacent to the Sutter Bypass. This model included approximately 5 miles of the Bear River beginning at the confluence with the Feather River at RM 12.1. This comprehensive model showed that the water

[1] The one percent (1-in-100) annual exceedance probability (AEP) flood is commonly known as the 100-year flood, however the common term can be misleading.

surface elevation would by approximately 0.7 feet lower than baseline flood flows along the reach of the Feather River where the Abbott Lake Unit is located during both the 1-in-100 and 1-in-200 AEP flood events. The results of this cumulative model further support the conclusion that the planting design will meet a key project objective of maintaining general flood flow conveyance patterns.

Plant Communities and Composition

There are four distinct plant communities proposed for the Restoration Area: riparian shrubland, low shrubland, riparian woodland, and grassland (**Figure 4**). The North Field would be planted with just one plant community – riparian shrubland. The South Field would contain a mosaic of all four plant communities. The row spacing, plant density, and unique design features within each proposed plant community are shown in **Table 2**. All proposed shrubland and woodland communities would also include an understory of native forbs and/or grasses.

The overall species composition, density, and estimated planting numbers within the Restoration Fields are shown in **Table 3**. No planting would occur in the Enhancement Area. Additional planting design details are included in the Restoration Plan (River Partners 2013) shown in Appendix B.

Table 2. Planting Densities and Design Features of the Four Proposed Plant Communities

Habitat Type	Acres	Row Spacing (feet)	Plant Spacing (feet)	Plant Density (plants/acre)	Tree Density (trees/acre)*	Design Features
Riparian Woodland	36	20	10	216	82	Planted with a mixture of fast and slow growing trees to connect and expand adjacent existing riparian forests. Plantings along western project boundary will be planted 60 feet from toe of levee.
Riparian Shrubland	19	20 and 40	10	161	0	Row spacing is 20 feet with 40 feet between every three rows. High proportion of flexible-stemmed species such as wild rose (*Rosa californica*) to enhance flood conveyance. Plantings along western project boundary will be planted 60 feet from toe of levee.
Low Shrubland	79	20 and 100	10	121	3	Row spacing is 20 feet with 100 feet between every five rows. High proportion of flexible-stemmed species such as California blackberry and wild rose to enhance flood conveyance.
Grassland	35	0	0	N/A	0	Would be planted with two species of perennial native grasses. Grass seed would be a 50/50 mix of blue wildrye (*Elymus glaucus*) and creeping wildrye (*Leymus triticoides*). The grasslands will help to reduce erosion and enhance flood conveyance.

** Tree density is a subset of plant density within each respective plant community.*

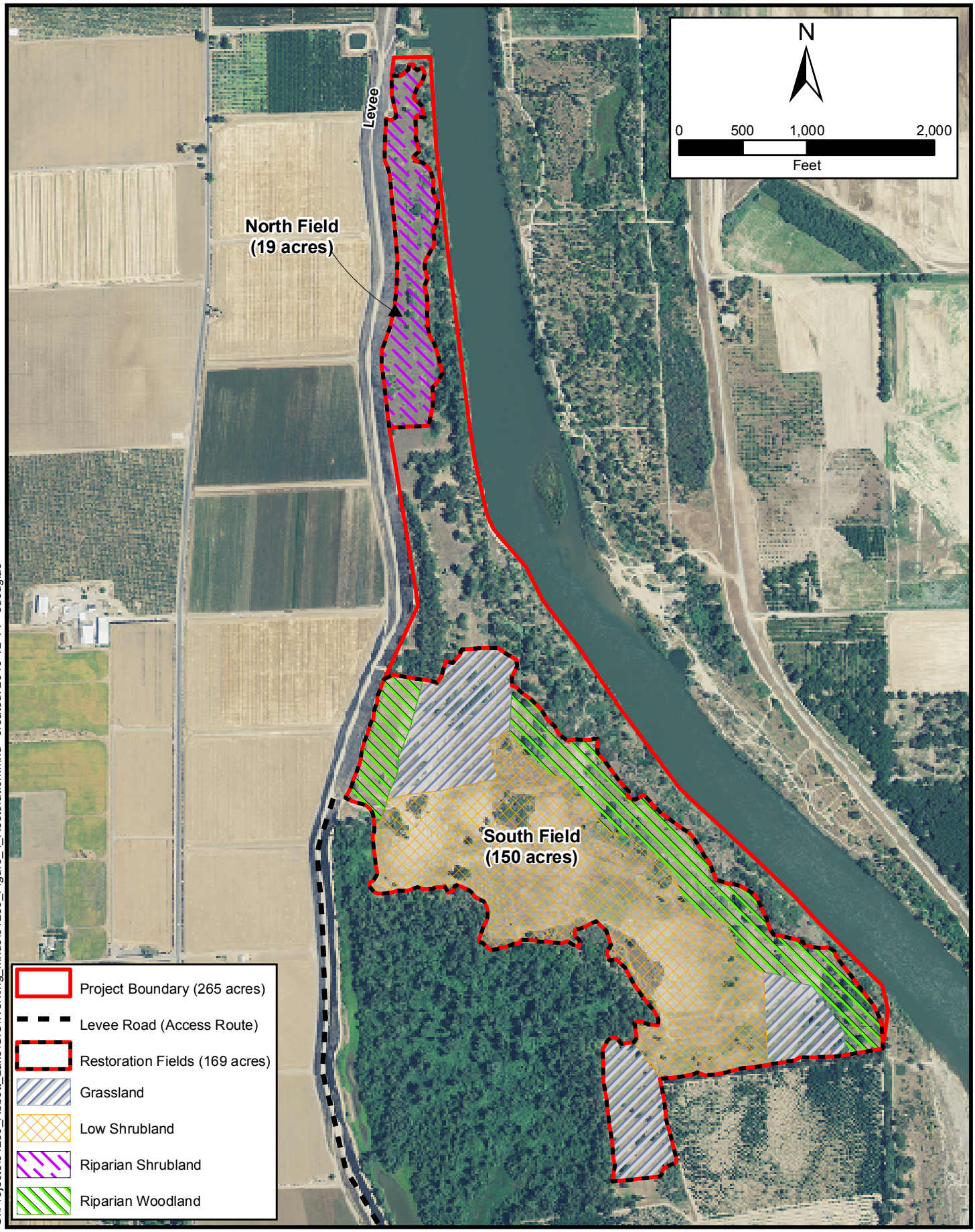

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Figure 4
Restoration Planting Communities Map

2.5 Site Preparation

To prepare the Restoration Fields, typical agricultural practices, such as disking and floating, will be conducted in order to reduce soil compaction and smooth the surface for irrigation and tractor operations (e.g., mowing and spraying). Subsequently, planting berms will be formed within the shrubland and woodland community planting areas. These planting berms would be approximately 18 inches high and the berms would be oriented to flood flows (generally a curve oriented from north to south) in order to maintain the flood conveyance patterns across the site. Spacing between planting berms (i.e., rows) varies from 20 to 100 feet as specified above in Table 2.

With the exception of installing the irrigation main and submain lines, no excavation or fill is planned as part of project implementation.

Table 3. Summary of Plant Species Proposed for the Restoration Fields

Common Name	Scientific Name	Species Composition (%)	Density (plants/ acre)	Estimated No. of Plants
Tree Species				
Box elder	*Acer negundo*	4	5	862
Fremont cottonwood	*Populus fremontii* ssp. *fremontii*	1	1	157
Gooding's black willow	*Salix gooddingii*	4	5	862
Oregon ash	*Fraxinus latifolia*	5	6	941
Valley oak	*Quercus lobata*	2	2	313
Western sycamore	*Platanus racemosa*	1	1	78
Total Trees		**17**	**19**	**3,213**
	Shrub Species			
Arroyo willow	*Salix lasiolepis*	6	7	1,132
Buttonbush	*Cephalanthus occidentalis*	5	6	1,041
California blackberry	*Rubus ursinus*	18	21	3,640
Clematis	*Clematis ligusticifolia*	1	1	207
Coyote bush	*Baccharis pilularis*	16	19	3,262
Dutchman's pipevine	*Aristolochia californica*	3	4	673
Elderberry	*Sambucus mexicana*	5	6	1,074
Mule fat	*Baccharis salicifolia*	5	7	1,108
Wild rose	*Rosa californica*	20	24	4,061
Total Shrubs		**79**	**96**	**16,198**
	Herbaceous Species			
Dogbane	*Apocynum cannabinum*	2	2	310
Evening primrose	*Oenothera hookeri*	1	1	103
Grass plugs	Various species	2	2	414
Mugwort plugs	*Artemisia douglasiana*	1	1	207
Total Herbaceous Plants		**5**	**6**	***1,034**
TOTAL PLANTS		**100**	**121**	**20,445**

Source: Plant composition and density based on the *Riparian Restoration Plan for the Abbott Lake Unit* (River Partners 2013) (Appendix B).

** This number represents plant locations for herbaceous species. Six plugs of each species would be planted at each location in the design.*

2.7 Irrigation System

Woody plant species would be drip irrigated. An existing well located on the Abbott Lake Unit in the northern portion of the South Field would be the source of irrigation water. A main line would extend from the well, through the center of the Enhancement Area, to the north end of the North Field. Trenching for the main line and sub-main lines would not exceed 24-inches in depth. A preliminary irrigation design map can be found in the Restoration Plan (Appendix B). It is anticipated that planted vegetation will become self-sufficient after about three growing seasons, and that all drip lines would be removed from the project area at that time. Main lines and sub-main lines would not be removed.

2.8 Plant Material Collection and Propagation

Plant propagation material, seeds and cuttings, would be collected from vegetation as near as possible to the project area, whenever possible. Cuttings of cottonwood and willows would be collected in January or February when the trees are dormant. Seeds for the herbaceous understory would be collected or purchased from sources near the project area.

2.9 Plant Installation

Planting would begin as soon as site preparation has been completed and the irrigation system has been installed. Woody species (potted stock and cuttings) and herbaceous plugs would be planted on the planting berms in spring 2013. Hand tools would be used to excavate planting holes. The remaining project understory (drilled native grasses and broadcasted forb species) would be planted during in fall/winter 2013 after seasonal rains have begun. Herbicide would be applied to the Restoration Fields prior to planting the understory in order to kill sprouting winter weeds.

2.10 Weed Control

Only CDFW-approved herbicides would be used for weed control, including Round-up® (glyphosate), Garlon® (triclopyr), and Telar® (chlorosulfuron), within the project area. Mechanical weed control would include mowing and cutting.

Restoration Fields

Various methods would be used to control invasive weed species during the proposed three-year project. Following the planting of woody species, berms would be sprayed with a non-selective herbicide targeting all weeds. Glyphosate is the primary herbicide that would be used to control weeds in the Restoration Fields. The berms would be subject to weed control during the growing season throughout the three-year plant establishment period. A combination of mowing and herbicide application would be used between the rows during the first season following planting to control fast-growing annual grasses and forbs, and favor the establishment of the perennial understory.

Enhancement Area

In the Enhancement Area, the primary non-native woody species targeted for eradication or control is tree-of-heaven. Tree-of-heaven is concentrated in the stringer of riparian vegetation along the Feather River along the eastern edge of the project area. Because the primary focus of the proposed project is

revegetation of the North and South Fields, weed eradication activities within the Enhancement Area would be dependent on adequate funding. If adequate funding is available, the cost-effective basal-bark method would be used. This method involves direct application of herbicides (imazapyr or triclopyr) to the base of the trees during the summer—when the trees would be more likely to draw the herbicides into their root systems.

2.11 Equipment

Project implementation would require the use of standard farm equipment such as pick-up trucks, all-terrain vehicles, tractors, disks, rollers, seed drills, sprayers, chain saws, and hand tools.

2.12 Project Criteria and Methods

Staging Areas/Access Routes

Access to the Abbott Lake Unit is from the parking lot on top of the levee at the eastern end of Star Bend Road off the Garden Highway (Figure 2). From the vehicle gate at the parking lot, the project area is accessed by traveling approximately one mile north on the levee road. Existing farm equipment access roads and staging areas would be used for travel within the project area.

Avoidance and Minimization Measures

The following measures may include, but are not limited to, the following:

1. Protection and maintenance of the riparian, wetland, stream or lake systems to ensure a "no-net-loss" of habitat value and acreage. Native vegetation removal should not exceed the minimum necessary to complete operations.

2. Provisions for the protection of fish and wildlife resources at risk that consider various life stages, maintain migration and dispersal corridors, and protect essential breeding (i.e. spawning, nesting) habitats. If project activities will occur between March 1st through August 31st, a qualified biologist will complete surveys for active nests.

3. Delineation of buffers along streams and wetlands to provide adequate protection to the aquatic resource. No grading activities should be allowed within these buffers

4. Prevention of downstream sedimentation and pollution. Provisions may include but not be limited to oil/grit separators, detention ponds, buffering filter strips, silt barriers, etc., to prevent downstream sedimentation and pollution.

Air Pollution

Project operations involving the use of combustible engine equipment such as tractors, pick-up trucks, and agricultural well pumps would emit air pollutants, including diesel particulate matter, volatile organic compounds, nitrous oxide, particulate matter – 10 micron, carbon dioxide, and sulfur oxide. Pesticide and herbicide spraying also can emit toxic air pollutants. Accordingly, applicable state and

federal mobile source standards and pesticide rules would be adhered to as appropriate (California Environmental Protection Agency and California Air Resources Board 2005).

Water Pollution Prevention

Water pollution control measures would be applied during and after implementation of the proposed project. Water pollution control measures relevant to the proposed project include the following:

- Fuel, oil and other petroleum products, as well as pesticides/herbicides shall be stored only at designated staging areas. The use of hazardous materials shall be avoided or minimized where possible. Material containment containers shall be clearly labeled with the identity of the materials, handling and safety instructions, and emergency contact information. Any soils contaminated by spills shall be contained and shall be removed to an approved disposal site.

- Equipment to minimize petroleum drippings shall be available on-site. Stationary power equipment such as engines, pumps, generators, welders, and air compressors located within or adjacent to aquatic habitats shall be positioned over drip pans.

- Fuel transfer vehicles shall have absorbent pads, pillows, socks, booms or other spill containment materials placed under the fueling operation (between the fuel truck and the equipment being serviced). A trained service attendant shall monitor the filling of equipment and shall stop fuel flow immediately if a spill occurs. Fuel transfer shall not resume until the problem is resolved.

2.13 Tentative Schedule

Current secured funding is for the South Field and this portion of the project will comprise Phase I of the project. Future funding is yet to be identified for the North Field, which will be restored in Phase II. Phase I project activities are anticipated to begin in fall 2013. Woody species (willow and cottonwood cuttings) and herbaceous plugs would be planted on the planting berms in spring 2014. The remaining herbaceous understory (drilled native grasses and broadcasted forbs) would be installed between planting berms in fall 2014. Phase I project maintenance activities (weed control, irrigation, and replanting if necessary) would occur for three years (through 2016) at which time plants will have become established and self-sufficient.

3 Environmental Setting, Impacts, and Mitigation Measures

3.1 Initial Study Checklist

This chapter incorporates the Environmental Checklist contained in Appendix G of the CEQA Guidelines, including the CEQA Mandatory Findings of Significance. Each resource section provides a brief description of the setting, a determination of impact potential, and a discussion of the impacts. Where appropriate, mitigation measures are required to reduce potential impacts to a less-than-significant level. A discussion of cumulative impacts is included at the end of this chapter (Section XVIII, Mandatory Findings of Significance).

Addressed in this section are the following 17 environmental categories:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gases
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities and Service Systems

Each of these issue areas was fully evaluated and one of the following four impact determinations was made:

- **No Impact:** No impact to the environment would occur as a result of implementing the proposed project

- **Less-than-Significant Impact:** Implementation of the proposed project would not result in a substantial and adverse change to the environment and no mitigation is required

- **Less than Significant with Mitigation Incorporated:** A "significant" impact that can be reduced to a less-than-significant level with the incorporation of project-specific mitigation measures.

- **Potentially Significant Impact:** Implementation of the proposed project could result in an impact that has a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (CEQA Guidelines Section 15382).

3.2 Environmental Setting

Regional Setting

The proposed project is located in the central Sacramento Valley on the eastern edge of Sutter County. Levees built in the early 20th century contain the Feather River allowing for agricultural and rural development of once frequently flooded areas. A large part of the region is used for agriculture, while many of the remnant riparian vegetation areas and fallow fields have become popular with recreators such as duck hunters and bird watchers. The 2,522-acre Feather River Wildlife Area is a prime example of the type of land conservation management areas, both public and private, that are found along the major rivers in the region.

Prior to construction of the levees in the early 20th century, the Feather River south of Yuba City was characterized by a meandering system of oxbow lakes and wide, sandy floodplains (River Partners 2010). Flooding was a natural phenomenon that occurred whenever spring floodwaters overtopped natural levees and flowed onto floodplains and low-lying basins. Hydraulic mining occurred on the Yuba and Feather Rivers from 1853 to 1884 and the resulting massive sediment deposits exacerbated the frequency of flooding on the Feather River. Over a billion cubic meters of hydraulic mining sediments were released into the Feather River and Yuba Rivers (James et al. 2009). The large quantities of sandy sediments that were discharged into the river system caused flow velocities to decrease, and allowed for sand to settle-out and accumulate on the river bottom and adjacent floodplain. Much of these sediments remain on floodplains within the project levees. Stratigraphic profiles of the right bank (west bank) at Shanghai Bend were taken in 2006 and showed the depth of hydraulic mining deposit to be over 10 feet deep (James et al. 2009).

Local Setting

Parts of the project area were used for crops during the mid-20th century before being sold in 1978 for use as a private duck hunting club. In the 1980s the remaining orchards were cleared in an unsuccessful attempt to grow beans, and in 1985, the property was sold to the CDFW. Since then, it has been managed and protected as a conservation area, with fishing and hunting being the primary uses. There is remnant riparian vegetation surrounding both the North and South Fields, and approximately 170 blue elderberry shrubs throughout the project area. Despite the presence of this remnant riparian vegetation, riparian habitat has been slow to reestablish within the North and South Fields (River Partners 2010). Non-native vegetation, including tree-of-heaven, black locust, yellow star thistle, giant reed, and Himalayan blackberry occur in scattered populations, and perennial pepperweed, which forms dense monocultures that quickly displace native vegetation, is rapidly establishing itself in large patches throughout the project area.

Climate

Climatic conditions in the project area region are characterized by a Mediterranean climate with cool, wet winters and hot, dry summers. Precipitation averages about 21 inches annually (River Partners

2010), most of which occurs as rain between October and March (Western Regional Climate Center 2007). Air temperatures range between an average January high of 55º F and an average high of 96º F during July (Western Regional Climate Center 2007). Daily high temperatures commonly exceed 100º F during the summer. The year-round average high is approximately 75º F (Western Regional Climate Center 2007). The soil temperature regime is thermic, and the growing season occurs between January 29 and December 19 (Western Regional Climate Center 2007).

Topography

Topography in the Abbott Lake Unit is directly influenced by the physical processes associated with high water flows. Both the North and South Fields are nearly level with a naturally occurring levee between the eastern side of the fields and the river. These levees, created by overbank deposition, are up to five feet above grade of the North Field at the north end of the project area, while the natural levee adjacent to the South Field is up to 10 feet high. Elevation of the project area ranges from 50 feet above mean sea level (MSL) in the northern portion of the North Field to 40 feet above MSL in the southwestern corner of the South Field (River Partners 2010). The top of the project levee (i.e., flood control project levee) west of the project area is approximately 70 feet above MSL.

Hydrological Setting

Flooding is common across the Abbott Lake Unit, occurring on average every five to seven years (River Partners 2010). The alluvial nature of the soils is evidenced by the soil pit profiles that show sand and silty sand to depths of 10 feet across much of the site. During periods of high water, the outlet channel that drains Abbott Lake to the Feather River backfills and the lake fills to capacity before the rest of the unit becomes inundated. Historic aerial photographs of flood events included in the Restoration Plan (River Partners 2010) show even higher floodwaters entering the unit from the north), eventually inundating the entire project area. Significant flood events in the Feather River (i.e., those that exceed the design capacity of the levee system) can be moderated by the Oroville Dam, upstream of the project area. The last high flow that approached the flood stage of the flood control project levee along this stretch of the Feather River occurred on January 1, 2006[2] (National Weather Service 2010).

Soils

The soils within the project area are mapped as Holillipah loamy sand, which is a deep soil on floodplains that is formed in alluvium derived from mixed resources. A series of over twenty soil pits/cores were dug within the project area. These soil pits generally show layers of loose sand and silty sand to a depth of 10 feet, that is underlain by silty clay (River Partners 2010). The stratigraphic sequences recorded at these pits/cores indicates that the depth of hydraulic mining sediments within the project area are similar to those measured at Shanghai Bend (See Regional Setting at beginning of this section).

[2] The crest of this flow was at 59.24 feet measured at the Boyd's Landing gauge, which is just north of the project area. The National Weather Service defines four categories of flooding: near flooding, minor flooding, moderate flooding, and major flooding. At Boyd's Landing these stages are at gauge heights of 57, 65, 69, and 70 feet, respectively.

3.3 Environmental Impacts and Mitigation Measures

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

Discussion of Impacts

(a) ***No Impact.*** The project does not involve any physical changes in the environment that would adversely affect a scenic vista.

(b, c) ***No Impact.*** The project does not involve the alteration of any scenic resources or degradation of the visual character of the project area. The project area is not located along a state scenic highway. The existing visual character and quality would remain unchanged as no development is planned as part of the restoration project.

(d) ***No Impact.*** Implementation of the project would not create any additional potential sources of light or glare beyond that which already exists.

Mitigation Measures

None required.

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
II.	**AGRICULTURAL AND FOREST RESOURCES** — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c)	Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☒	☐

Discussion of Impacts

(a, b) ***No Impact.*** The portion of the Abbott Lake Unit that would be restored to riparian woodland under the proposed project is not mapped as Prime, Unique, or Farmland of Statewide Importance (California Department of Conservation 2008a). Although the proposed planting areas are fallow agricultural lands, they are not a part of a Williamson Act contract (California Department of Conservation 2008b).

(c) ***Less-than-Significant Impact.*** The project would restore lands previously used for agriculture to native riparian vegetation. This would be a less-than-significant impact since both the North and South fields have been fallow for many years and were sold to the CDFW for use as wildlife habitat and unimproved recreational uses.

Mitigation Measures

None required.

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
III.	**AIR QUALITY** — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:				
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b)	Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☒	☐	☐
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e)	Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Discussion of Impacts

(a) ***No Impact.*** The project would not conflict with any applicable air quality plan.

(b,c) ***Less than Significant with Mitigation Incorporated.*** The project site is located within the Sacramento Valley Air Basin. The entire air basin is currently designated as being in nonattainment for ozone (state 1-hour and federal 8-hour) and annual particulate matter (PM10) (California Air Resources Board 2010; Feather River Air Quality Management District 2010). The Feather River Air Quality Management District (AQMD) has primary responsibility for attainment and maintenance of air quality standards in the vicinity of the project area.

While not contributing significantly to the ozone levels (ground or atmospheric), fugitive dust and equipment exhaust emissions generated during site preparation required for project implmentation would contribute to the region's PM10 levels. In addition, diesel particulate, which would be emitted from heavy equipment, is an identified Toxic Air Contaminant (TAC), and emissions of TACs should be minimized during planting and maintenance activities. The proposed project would be a Type 2 project (the project has

no operational phase) under the Feather River AQMD's project classification criteria (Feather River Air Quality Management District 2010). Implementation of Mitigation Measures #1 and #2 would reduce potential impacts to a less-than-significant level.

(d) ***Less-than-Significant Impact.*** No sensitive receptors such as schools, hospitals, or day care centers are located in the project vicinity. Although project site preparation (e.g., disking and plowing) would generate minor amounts of fugitive dust, the effect on any recreationists or wildlife in the project vicinity during such activities would be less than signficant.

(e) ***No Impact.*** Implementation of the project would not create objectionable odors.

Mitigation Measures

Mitigation Measure #1–Fugitive Dust

- All ground-disturbing operations shall be suspended when winds exceed 20 miles per hour or when winds carry dust beyond the property line despite implementation of all feasible dust control measures.
- All areas subject to ground disturbance shall be watered as necessary to prevent fugitive dust violations.
- Onsite dirt piles or other stockpiled particulate matter shall be covered, wind breaks installed, and water and/or soil stabilizers employed as necessary to reduce windblown dust emissions.
- All transfer processes involving a free-fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions.
- Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less and reduce unnecessary vehicle traffic by restricting access.

Mitigation Measure #2–Construction Equipment Exhaust

- All construction equipment shall be maintained in proper tune according to manufacturer's specifications.
- To the extent practicable, the use of diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines shall be maximized.
- Unnecessary vehicle idling shall be restricted to 5 minutes or less.
- Maximize use of gasoline-powered equipment in lieu of diesel-powered equipment where feasible.
- Visible emissions from stationary diesel-powered equipment shall not exceed 40 percent opacity for more than three minutes in any one-hour.

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

Discussion of Impacts

(a) ***Less than Significant with Mitigation Incorporated.*** The proposed project consists of riparian restoration and intends to improve the quality of wildlife habitat. Establishing self-sustaining native plant communities will reduce habitat fragmentation and benefit a broad range of sensitive animal and plant species. The short-term disturbance associated

with project implementation and maintenance is not anticipated to substantially adversely affect sensitive species. However, elderberry shrubs which are the obligate host plant for the federally listed as threatened valley elderberry longhorn beetle (VELB), occur at 170 locations within the project area (River Partners 2010) and mitigation measures are necessary to avoid the potential for significant impacts on the VELB. Implementation of Mitigation Measure #3 would reduce potential impacts to a less-than-significant level.

Impacts to nests. Proposed project activities are similar to agricultural practices occurring in the region and is not anticipated to substantially adversely affect special status species that nest or breed in the project area. If proposed activities are planned to occur during the nesting season for raptors and migratory birds (typically March 1st through August 31st), CDFW shall retain a qualified biologist to conduct a focused survey for active nests of raptors and migratory birds within and in the vicinity of (no less than 500 feet outside project boundaries, where possible) the disturbance area no more than 30 days prior to ground disturbance or tree removal. Implementation of Mitigation Measure #4 would reduce potential impact to a less-than-significant level.

(b) ***Less-than-Significant Impact.*** Sensitive habitats include those that are of special concern to resource agencies and those protected under CEQA, Section 1600 of the California Fish and Game Code, or Section 404 of the Clean Water Act. The proposed project is a riparian vegetation restoration project intended to enhance riparian habitat on land formerly used for agriculture that has been fallow for since 1985. The project area is located in an area surrounding by riparian vegetation and in some cases riparian vegetation has established in the area proposed for enhancement. Revegetation of the North and South fields with riparian plant species will enhance riparian habitat connectivity throughout the Abbott Lake Unit and the larger Feather River Wildlife Management Area. Existing riparian habitat that has naturally recruited in the restoration fields will not be disturbed during site preparation. Prior to site preparation, existing riparian habitat located within the restoration fields, specifically elderberry shrubs, will be fenced. With the implementation of the avoidance and minimization measures outlined in Section 2.12, impacts to remnant or existing riparian habitat within the project area during site preparation would be less than significant and short-term.

(c) ***Less-than-Significant Impact.*** The proposed project does not involve disturbance to federally protected wetlands. Restoration activities would occur in uplands formerly used for agriculture and have been fallow for nearly 27 years, and would not involve the fill of wetlands or other waters of the United States. As part of the restoration plan (River Partners 2013) development, River Partners completed a site assessment that evaluated soil properties such as texture, stratification and depth to water table, as well current site conditions, vegetation and hydrology. Both fields contain Holillipah loamy sand, which have high sand content and low water holding capacity. Despite exposure to flooding, the restoration fields do not support wetland hydrology, vegetation or soils conditions.

If wetlands are discovered on site and in order to comply with federal regulations regarding impacts to “waters of the United States” (as defined in the Clean Water Act Section 404), CDFW is required to obtain and comply with USACE Section 404 permit

conditions. If a Section 404 permit were required from the USACE, a Section 401 permit would also be required from the Regional Water Quality Control Board (RWQCB). If it is determined by USACE, and through consultation with RWQCB, that features qualified as Waters of the State would be affected, CDFW shall obtain authorization from RWQCB to fill/disturb these features prior to project implementation. A 1602 Streambed Alteration Agreement for removal of or disturbance to riparian habitat from CDFW would also be required for the project. Adherence to the federal and state permitting requirements identified above would ensure that impacts to wetlands and waters of the United States would be less than significant

Overall, the proposed project would result in a positive benefit to the riparian corridor along the Feather River by establishing self-sustaining native plant communities and reducing habitat fragmentation. The implementation of the avoidance and minimization measures outlined in Section 2.12 would reduce potential impacts to a less-than-significant level to wetlands and waters of the United States.

(d) ***Less-than-Significant Impact.*** The project area does not encompass any wildlife nursery sites or the active flow channel of the Feather River. However, project activities could result in the temporary disruption of movement for upland wildlife species. This temporary disruption would be limited to the active restoration areas (i.e., the North and South fields) during site preparation and planting activities. In the long-term, the proposed project would reduce riparian habitat fragmentation. Impacts are considered to be less than significant.

(e) ***No Impact.*** The project would not conflict with any local biological resource policies or ordinances.

(f) ***Less-than Significant Impact.*** Although the Yuba-Sutter Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) has not been adopted yet, the parties have signed the Planning Agreement, which requires a consistency review of interim projects in the Plan Area. As this restoration project does not conflict with the conservation goals of the HCP/NCCP and in fact will help contribute to the conservation strategy of the HCP/NCCP, the proposed project does not conflict with the provisions of a local, regional, or state habitat conservation plan.

Mitigation Measures

Mitigation Measure #3 – Valley Elderberry Longhorn Beetle

No activities that could result in the removal of the VELB habitat (i.e., the removal of elderberry shrubs) shall be implemented. Elderberry is a target species of conservation and enhancement at the Abbott Lake unit. DFW is working with USFWS to develop a Safe Harbor Agreement (SHA) related to elderberry retention at the site. The SHA identifies the existing baseline for elderberry already surveyed and predicts an elevated baseline of at least 5% growth per year after restoration (for a period of 20 years). The conditions of the Safe Harbor Agreement may include, but are not limited to, limitations of locations of elderberry plantings, training of maintenance staff, limitations on pesticide application, limitations on vegetation control procedures, and limitations on removal or transplanting

of elderberry shrubs. All conditions of the Safe Harbor Agreement applicable to the proposed project shall be implemented.

In conjunction with a proposed Safe Harbor Agreement related to elderberry plant conservation at Abbott Lake, CDFW has agreed with the USFWS to amend their 1988 Lower Feather River Complex Operation and Maintenance Plan (Management Plan). The amendment to the Management Plan will capture CDFW's intent to enhance this elderberry plant population, in perpetuity, at a level above current baseline.

Mitigation Measure #4 – Nests

- If proposed activities are planned to occur during the nesting season for raptors and migratory birds (typically March 1st through August 31st), CDFW shall retain a qualified biologist to conduct a focused survey for active nests of raptors and migratory birds within and in the vicinity of (no less than 500 feet outside project boundaries, where possible) the disturbance area no more than 30 days prior to ground disturbance or tree removal. If active nests are located during surveys, USFWS and/or CDFW shall be notified regarding the status of the nests. Furthermore, construction activities shall be restricted as necessary to avoid disturbance of the nest until it is abandoned or a qualified biologist deems disturbance potential to be minimal (in consultation with USFWS and/or CDFW). Restrictions may include establishment of exclusion zones (no ingress of personnel or equipment at a minimum radius of 500-feet around the nest for Swainson's hawk, 100-feet around the nest for other raptors and 50-feet around the nest for other migratory birds) or alteration of the construction schedule. No action is necessary if construction will occur during the non-breeding season (September 1st through February 28th).

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
V.	**CULTURAL RESOURCES** — Would the Project:				
a)	Cause a substantial adverse change in the significance of a historical resource as identified in Section 15064.5?	☐	☒	☐	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Discussion of Impacts

(a, b) ***Less than Significant with Mitigation Incorporated.*** A records search of the California Historical Resources Information System at the Northeast Information Center (NEIC) of the California Historical Resource Information Center found no recorded prehistoric or historic resources within the project area, and no record that the project area has been previously surveyed by a professional archaeologist. Prehistoric and historic sites have been recorded in the vicinity, and the general project area appears to be located in an area considered to be sensitive for prehistoric and historical resources (Roeder 2008). However, given the: 1) historic ground disturbance associated with agricultural activities within the last 30 years (e.g., orchards, beans); 2) the volume of recent soil deposition (e.g., the upper 5–10 feet of soil was likely deposited within the last 150 years as a result of hydraulic mining and frequent flooding); and 3) the limited ground disturbance associated with project activities (i.e., ground disturbance no greater than 36 inches deep), the proposed project is not anticipated to adversely affect sensitive cultural resources. Nevertheless, there is a low potential that sensitive cultural resources could be encountered during project implementation. Mitigation Measure #4 would reduce potential impacts to a less-than-significant level.

(c) ***No Impact.*** There are no unique paleontological resources or unique geologic features that would be impacted by the project.

(d) ***Less than Significant with Mitigation Incorporated.*** No human remains are known to be located within the project site or on adjacent lands; therefore, no impacts are expected. Nevertheless, construction activities could result in the discovery of human remains not

previously identified. This impact is therefore considered potentially significant. Implementation of Mitigation Measure #5 would reduce potential impacts to a less-than-significant level.

Mitigation Measures

Mitigation Measure #4 – Cultural Resources

- An archaeologist meeting the Secretary of Interior's Professional Qualifications Standards in prehistoric or historical archaeology, shall be present to monitor any ground-disturbing activities that would penetrate deeper than 36 inches into the soil surface. The monitoring archaeologist shall have "stop work" authority in the event that archaeological deposits are encountered, and work shall not resume until appropriate conservation measures have been implemented.

- In the event archaeological deposits are discovered during project activities, all work in the immediate vicinity of the discovery shall be stopped immediately and the CDFW shall be notified. An archaeologist meeting the Secretary of Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, shall be retained to evaluate the find and recommend appropriate conservation measures. The conservation measures shall be implemented prior to re-initiation of activities in the immediate vicinity of the discovery.

Mitigation Measure #5 – Human Remains

- If human remains are discovered during project activities, all activities in the vicinity of the find shall be suspended and the Sutter County Coroner's Office shall be notified. If the coroner determines that the remains may be those of a Native American, the coroner shall contact the NAHC. Treatment of the remains shall be conducted in accordance with the direction of the County Coroner and/or the NAHC, as appropriate.

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

Discussion of Impacts

(ai–aiii) ***No Impact.*** Sutter County is not included on the list of counties that may be affected by the Alquist–Priolo Earthquake Fault Zone (California Department of Conservation 1999). The nearest mapped Alquist–Priolo fault-rupture hazard zone is the Bangor Fault located approximately 30 miles to the northeast of the project area (California Department of Conservation 1999). Sutter County is not generally subject to strong seismic ground and

there are no other earthquake faults mapped in the project vicinity (Governor's Office of Emergency Services 2001). This suggests that the ground shaking hazard potential in the project area is low. Although the dominant soil type in the project area (*Holillipah*) is somewhat conducive to liquefaction or seismic-related ground failure, this potential would have no effect on the proposed project since it would not involve the construction of any structures or other facilities that could put people at risk.

(aiv) ***No Impact.*** There are no steep slopes at risk of landslide within the project area. Slopes within the project area range from 0 to 2 percent (River Partners 2010).

(b) ***Less-than-Significant Impact.*** Ground-disturbing activities occurring during site preparation would temporarily expose soils and make them susceptible to erosion. Sandy soils in the floodplain are also at risk of erosion, particularly during periods of high flow. Revegetation with herbaceous and woody riparian plant species would occur immediately following site preparation, thus reducing the erosion potential during the wet season. Retention of existing riparian vegetation and the planting of native riparian species within the project area would reduce potential impacts to a less-than-significant level.

(c,d) ***No Impact.*** The proposed project consists of riparian restoration on land formerly used for agriculture that has been fallow for nearly 27 years and is currently located within the Feather River Wildlife Area. The project would help to stabilize soils rather than increase the potential for on- or off-site soil failure. The project does not involve the construction of any structures or other facilities that could put people at risk.

(e) ***No Impact.*** The project does not involve the installation of a septic tank or alternative wastewater disposal system.

Mitigation Measures

None required.

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
VII.	**GREENHOUSE GAS EMISSIONS** — Would the Project:				
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b)	Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion of Impacts

(a,b) ***Less-than-Significant Impact.*** The CEQA Guidelines call for the evaluation of climate change and greenhouse emission increases. However, currently there are no federal or state adopted thresholds for the evaluation of project-generated greenhouse gas emissions and/or contribution to global climate change; and the Feather River AQMD has not established thresholds of significance for greenhouse gas emissions. For purposes of this analysis, an increase in greenhouse gas emissions would be considered significant if the project would result in a substantial increase in greenhouse gas emissions or would obstruct the implementation of any applicable plan, policy or regulation of an agency adopted for the purpose of reducing greenhouse gas emissions.

The proposed project would not result in a substantial increase in greenhouse gas emissions and would not obstruct efforts to reduce greenhouse gas emissions. The proposed project is a vegetation restoration project on land formerly used for agriculture that has been fallow for nearly 27 years. The proposed project would establish a self-sustaining riparian plant community, improve the quality of wildlife habitat, reduce habitat fragmentation, and benefit a broad range of sensitive animal and plant species. Although the proposed project would generate greenhouse gases during initial implementation (e.g., carbon dioxide from fuel combustion in vehicles and equipment), this impact is short-term and relatively minor. Additionally, the long-term impacts of the proposed project may include a reduction in greenhouse gases through the sequestration of carbon from the atmosphere. Tree and other vegetation biologically absorb carbon from the atmosphere and incorporate it into their biomass (i.e., the carbon becomes part of the growing tree or plant). Therefore, the impact is considered to be less than significant.

Mitigation Measures

None required.

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

	Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Discussion of Impacts

(a,b) ***Less than Significant with Mitigation Incorporated.*** Project construction would require the transport and use of potentially hazardous materials (e.g., fuels, oils, lubricants, herbicides). Accidental spill of these materials could pose a hazard to people or the environment. Release of hazardous materials is considered a significant impact. Implementation of Mitigation Measure #6 would reduce potential impacts to a less-than-significant level.

(c) ***No Impact.*** The project is not located within one-quarter mile of an existing or known proposed school.

(d) ***No Impact.*** The project area is not included on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (California Department of Toxic Substances Control 2007).

(e,f) ***No Impact.*** The project area is not located in the vicinity of any public or private airstrip.

(g) ***No Impact.*** The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

(h) ***Less-than-Significant Impact.*** The proposed project area is not recognized as having a high fire hazard potential (California Department of Forestry and Fire Protection 2007). The levees, roads, and the Feather River form effective barriers to the spread of wildfire in the project vicinity. Although the use of machinery in and around vegetated areas increases the potential for wildfire ignition, periodic mowing between rows and clusters, and along the perimeter of the North and South fields, during vegetation establishment would reduce potential fire hazards. Implementation of the project would not interfere with any emergency plans. The potential to expose people or structures to wildfire as a result of project implementation would be less than significant.

Mitigation Measures (Hazards and Hazardous Materials)

Mitigation Measure #6—Pollutants

- Fuel, oil and other petroleum products, as well as pesticides/herbicides shall be stored only at designated staging areas. Staging areas shall be located greater than 100 feet from aquatic habitat (e.g., the Feather River). The use of hazardous materials shall be avoided or minimized where possible. Material containment containers shall be clearly labeled with the identity of the materials, handling and safety instructions, and emergency contact. Any soils contaminated by spills shall be contained and shall be removed to an approved disposal site.

- On-site equipment shall be maintained to minimize petroleum drippings. Stationary power equipment (e.g., engines, pumps, generators) shall be positioned over drip pans.

- During fuel transfer and filling, absorbent pads, pillows, socks, booms or other spill containment materials shall be available. Trained personnel shall monitor the filling of equipment and shall stop fuel flow immediately if a spill occurs. Fuel transfer/filling shall not resume until the problem is resolved.

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

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j)	Inundation of seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion of Impacts

(a, f) ***Less than Significant with Mitigation Incorporated.*** The proposed project consist of riparian restoration on land formerly used for agriculture that has been fallow for nearly 27 years and is currently located within the Feather River Wildlife Area. The proposed project is intended to improve the quality of wildlife habitat, reduce habitat fragmentation, and benefit a broad range of sensitive animal and plant species. The project is anticipated to result in a long-term benefit to water quality by stabilizing soils and reducing erosion, and increasing the capacity of the riparian corridor to filter chemicals and excess nutrients. However, implementation of the proposed project would involve the use of equipment and hazardous materials (e.g., fuel, oil) that could adversely affect water quality as a result of spills of mishandling. Implementation of Mitigation Measure #6 (see Section VIII, Hazards and Hazardous Materials) would reduce the potential for significant impacts to a less-than-significant level.

(b) ***Less-than-Significant Impact.*** Implementation of the project would require short-term irrigation (approximately 3 years) until the plants have become established. Water would be supplied by an existing on-site agricultural well, previously used to irrigated agricultural crops that were grown in the North and South fields. The volume of water needed for the proposed project would have a less-than-significant effect on local groundwater supplies.

(c, d) ***Less-than-Significant Impact.*** Construction activities associated with the proposed project are not anticipated to alter the existing drainage pattern of the project area in a way that would result in erosion or sedimentation downstream. The site-specific hydraulic analysis prepared for the proposed project included models that simulated net changes to flood flow water surface elevations and velocities based on proposed plant designs. The model showed that the increase in water surface elevation would be localized near the north end of the project area, and would be approximately 0.12 feet for the 1-in-100 and AEP flood event and 0.15 feet for the 1-in-200 AEP flood event (MBK Engineers 2009). This increase is considered less-than-significant because the minimum freeboard (i.e., distance from top of levee to water surface) requirement in this reach of the Feather River is three feet based on the flood control project design flow. The freeboard calculations under the model were greater than six feet for the 1-in-100 AEP flood event, and greater than three feet for the 1-in-200 AEP event.

In consultation with Levee District 1 (local maintaining agency) and the Central Valley Flood Protection Board (CVFPB), several changes were made to the plant design due to potential hydraulic concerns in a few localized areas. The CVFPB recommended that MBK Engineers re-run the model in order to evaluate the design changes with a sensitivity analysis to assess how sensitive water surface elevations were due to estimates for roughness coefficient (MBK Engineers 2010). The model showed that the increase in water surface elevation would be localized near the north end of the project area, and would be approximately 0.06 feet for the 1-in-100 and AEP flood event and 0.07 feet for the 1-in-200 AEP flood event (MBK Engineers 2010).

In 2012, the project planting design was included as part of the comprehensive Lower Feather River Corridor Management Plan Flood Hydraulic Analysis of Future Conditions (MBK Engineers 2012). This comprehensive model showed that the water surface elevation would by approximately 0.7 feet lower than baseline flood flows along the reach of the Feather River where the Abbott Lake Unit is located during both the 1-in-100 and 1-in-200 AEP flood events. Based on both the site-specific and comprehensive hydraulic analyses (MBK Engineers 2009, 2012), the project will have a less-than-significant impact on drainage patterns, including flood flow conveyance.

(e) ***Less-than-Significant Impact.*** The project would not adversely affect the rate of storm water runoff from the Abbott Lake Unit; rather, revegetation of the North and South fields would increase the water holding capacity of the soils and reduce runoff rates. Herbicides, such as Round-Up®, are specifically formulated to decompose quickly and, thus would not be a significant pollutant carried by runoff.

(g) ***No Impact.*** The project does not involve construction of new housing within a flood hazard area.

(h) ***Less-than-Significant Impact.*** The proposed project does not involve the construction of any structures that would impede or redirect flood flows, or increase the exposure of people to hazards associated with dam failure. However, the project does involve the planting of shrubs and trees within the Feather River floodplain. Floodwater conveyance and the structural resistance (i.e., flexibility versus rigidity) of woody plants to flows were an integral part of the hydraulic analysis used in the development of the project design. The hydraulic analysis concluded that any impacts to flood flow water surface elevations and velocities associated with the proposed project would be less than significant within the modeled reach (RM 8.0 to RM 28.7) of the Feather River (MBK Engineers 2009, 2012).

(i) ***No Impact.*** The project is within the Feather River floodplain and as such, is subject to seasonal flooding. The project would not adversely impede or alter flows associated with flood events.

(j) ***No Impact.*** The project site is not at risk of seiche, tsunami, or mudflow.

Mitigation Measures

None required.

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

Discussion of Impacts

(a-c) ***No Impact.*** The proposed project consists of riparian restoration and would not divide an established community or conflict with existing land use plans, policies, and regulations. The project would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plans.

Mitigation Measures

None required.

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
XI.	**MINERAL RESOURCES** — Would the project:				
a)	Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b)	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Discussion of Impacts

(a, b) ***No Impact.*** The project area is located entirely within public lands managed for recreation and wildlife habitat by the CDFW. The project would have no effect on mineral resources or affect the potential availability of an important mineral resource.

Mitigation Measures

None required.

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

Discussion of Impacts

(a) ***No Impact.*** Implementation of the proposed project would not expose persons to elevated noise levels. Use of agricultural equipment (e.g., tractor, agricultural well pump) to complete the project would not generate noise in excess of local noise ordinances or general plan standards.

(b) ***No Impact.*** Implementation of the proposed project would not result in the generation of excessive groundborne vibration or groundborne noise.

(c) ***No Impact.*** Noise generated in excess of existing levels would be limited to the site-preparation phase of the proposed project. The proposed project would not result in a permanent increase in ambient noise levels in the project vicinity.

(d) ***Less-than-Significant Impact.*** Noise generated in excess of existing levels would be limited to the site-preparation phase of the proposed project. Such noise is analogous to that produced by agricultural land uses in and around the project area. This would be a less-than-significant temporary impact.

(e,f) ***No Impact.*** The project is not located in the vicinity of an airport or landing strip.

Mitigation Measures

None required.

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

Discussion of Impacts

(a-c) ***No Impact.*** The proposed project would not affect population growth or housing.

Mitigation Measures

None required.

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

Discussion of Impact

(a) ***No Impact.*** The project would have no effect on public services or facilities, or create an additional need for utilities.

Mitigation Measures

None required.

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
XV.	**RECREATION** — Would the project:				
a)	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b)	Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion of Impacts

(a, b) ***No Impact.*** The project consists of riparian restoration on land formerly used for agriculture that has been fallow for nearly 27 years and is currently located within the Abbott Lake Unit of the Feather River Wildlife Area. Implementation of the project would not result in a significant increase in recreational use of the Abbott Lake Unit.

Mitigation Measures

None required.

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

Discussion of Impacts

(a,b) ***No Impact.*** Transportation of materials, equipment, and personnel to the project site would be analogous to actions associated with agricultural land use in and around the project area. Project-related traffic would not conflict with any transportation plans, programs or circulation systems.

(c) ***No Impact.*** Implementation of the proposed project would not affect air traffic patterns.

(d) ***No Impact.*** The proposed project would not result in the creation of sharp curves, dangerous intersections, or incompatible uses.

(e) ***No Impact.*** The project would not require any changes to roads outside of the project area or result in a substantial increase in existing traffic operating on area roads; therefore, the proposed project would have no effect on the movement of emergency vehicles on roads adjacent to the project area.

(f) ***No Impact.*** The proposed project would not conflict with any adopted plans, policies, or programs that support alternative transportation.

Mitigation Measures

None required.

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

Discussion of Impacts

(a-g) ***No Impact.*** The proposed project would not require the use or expansion of water or wastewater facilities, nor would it generate solid waste requiring off-site disposal.

Mitigation Measures

None required.

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

Discussion

(a-b) ***Less than Significant with Mitigation Incorporated.*** As discussed in the preceding sections, the proposed project has a potential to result in adverse effects on air quality, biological resources, cultural resources, hazards and hazardous materials, and hydrology and water quality. These potential impacts and the required mitigation measures are discussed in detail in the corresponding sections above. With implementation of the required mitigation measures, potential impacts would be reduced to a less-than-significant level. The proposed project is a vegetation restoration project on land formerly used for agriculture that has been fallow for nearly 27 years and is currently located within the Feather River Wildlife Area. The proposed project is intended to improve the quality of wildlife habitat, reduce habitat fragmentation, and benefit a broad range of sensitive animal and plant species. The project is not anticipated to contribute to significant adverse cumulative impacts.

(c) ***Less-than-Significant Impact.*** The proposed project would not involve any actions that would have a substantial adverse direct or indirect effect on the human environment.

4 Determination

On the basis of this initial evaluation:

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

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

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

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

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

Tina Bartlett — 6/18/13

Tina Bartlett
California Department of Fish and Wildlife

Date

5 Summary of Mitigation Commitments

The following mitigation measures shall be implemented during implementation of the Abbott Lake Restoration Project:

5.1 Air Quality

Mitigation Measure #1—Fugitive Dust

- All ground-disturbing operations shall be suspended when winds exceed 20 miles per hour or when winds carry dust beyond the property line despite implementation of all feasible dust control measures.
- All areas subject to ground disturbance shall be watered as necessary to prevent fugitive dust violations.
- Onsite dirt piles or other stockpiled particulate matter shall be covered, wind breaks installed, and water and/or soil stabilizers employed as necessary to reduce windblown dust emissions.
- All transfer processes involving a free-fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions.
- Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less and reduce unnecessary vehicle traffic by restricting access.

Mitigation Measure #2–Construction Equipment Exhaust

- All construction equipment shall be maintained in proper tune according to manufacturer's specifications.
- To the extent practicable, the use of diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines shall be maximized.
- Unnecessary vehicle idling shall be restricted to 5 minutes or less.
- Maximize use of gasoline-powered equipment in lieu of diesel-powered equipment where feasible.
- Visible emissions from stationary diesel-powered equipment shall not exceed 40 percent opacity for more than three minutes in any one-hour.

5.2 Biological Resources

Mitigation Measure #3 – Valley Elderberry Longhorn Beetle

- No activities that could result in take of the valley elderberry long beetle (e.g., removal of elderberry shrubs) shall be implemented unless appropriate conservation measures (e.g., transplantation using proper techniques) are implemented and the required Endangered Species Act authorization has been obtained. The USFWS is preparing a Safe Harbor Agreement for the Feather River Wildlife Area, which includes the proposed project and addresses valley elderberry longhorn beetle and the planting of elderberry shrubs. The conditions of the Safe Harbor Agreement may include, but are not limited to, limitations of locations of elderberry plantings; training of maintenance staff, limitations on pesticide application, limitations on vegetation control procedures, and limitations on removal or transplanting of elderberry shrubs. All conditions of the Safe Harbor Agreement applicable to the proposed project shall be implemented.

  In conjunction with a proposed Safe Harbor Agreement related to elderberry plant conservation at Abbott Lake, CDFW has agreed with the USFWS to amend their 1988 Lower Feather River Complex Operation and Maintenance Plan (Management Plan). The amendment to the Management Plan will capture CDFW's intent to enhance this elderberry plant population, in perpetuity, at a level above current baseline.

5.3 Cultural Resources

Mitigation Measure #4 – Cultural Resources

- An archaeologist meeting the Secretary of Interior's Professional Qualifications Standards in prehistoric or historical archaeology, shall be present to monitor any ground-disturbing activities that would penetrate deeper than 36 inches into the soil surface. The monitoring archaeologist shall have "stop work" authority in the event that archaeological deposits are encountered, and work shall not resume until appropriate conservation measures have been implemented.

- In the event archaeological deposits are discovered during project activities, all work in the immediate vicinity of the discovery shall be stopped immediately and the CDFW shall be notified. An archaeologist meeting the Secretary of Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, shall be retained to evaluate the find and recommend appropriate conservation measures. The conservation measures shall be implemented prior to re-initiation of activities in the immediate vicinity of the discovery.

Mitigation Measure #5 – Human Remains

- If human remains are discovered during project activities, all activities in the vicinity of the find shall be suspended and the Sutter County Coroner's Office shall be notified. If the coroner determines that the remains may be those of a Native American, the coroner shall

contact the NAHC. Treatment of the remains shall be conducted in accordance with the direction of the County Coroner and/or the NAHC, as appropriate.

5.4 Hazards and Hazardous Materials / Hydrology and Water Quality

Mitigation Measure #6—Pollutants

- Fuel, oil and other petroleum products, as well as pesticides/herbicides shall be stored only at designated staging areas. Staging areas shall be located greater than 100 feet from aquatic habitat (e.g., the Feather River). The use of hazardous materials shall be avoided or minimized where possible. Material containment containers shall be clearly labeled with the identity of the materials, handling and safety instructions, and emergency contact. Any soils contaminated by spills shall be contained and shall be removed to an approved disposal site.

- On-site equipment shall be maintained to minimize petroleum drippings. Stationary power equipment (e.g., engines, pumps, generators) shall be positioned over drip pans.

- During fuel transfer and filling, absorbent pads, pillows, socks, booms or other spill containment materials shall be available. Trained personnel shall monitor the filling of equipment and shall stop fuel flow immediately if a spill occurs. Fuel transfer/filling shall not resume until the problem is resolved.

6 Report Preparation and References

6.1 Report Preparation

California Department of Fish and Wildlife—CEQA Lead Agency

Tina Bartlett	Regional Manager

North State Resources, Inc.—Environmental Consultant

Mark Wuestehube	Program Manager
Paul Kirk	Project Manager
Connie MacGregor Carpenter	Environmental Analyst
Edward Douglas	GIS Analyst

River Partners—Environmental Consultant

Helen Swagerty	Senior Restoration Biologist/Project Manager
Michael Rogner	Associate Restoration Biologist

6.2 References

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Abbott Lake Restoration Project

Final Mitigated Negative Declaration

December 16, 2013

Prepared for:
California Department of Fish and Wildlife
North Central Region
1701 Nimbus Road
Rancho Cordova, California 95670
(916) 358-2900
(916) 358-2912 (fax)

Project Information

1. Project Title: Abbott Lake Restoration Project

2. Lead Agency Name and Address: California Department of Fish and Wildlife
North Central Region
1701 Nimbus Road
Rancho Cordova, California 95670

3. Contact Person and Phone Number: Tina Bartlett
(916) 358-2898

4. Project Location: The 265-acre project area is within the Abbott Lake Unit of the Feather River Wildlife Area on the waterside of the western levee of the Feather River; approximately seven miles south of Yuba City, Sutter County, California. The project area is approximately one mile north of Star Bend Road, between river miles 20 and 21.5, on the right bank of the Feather River. Township 14 North, Range 3 East, unsectioned area within the New Helvetia Land Grant; APNs 023-300-126 and 023-300-127.

5. Description of Project:

The California Department of Fish and Wildlife (CDFW) has partnered with River Partners, a 501(c)3 nonprofit corporation, to conduct riparian vegetation and enhancement activities on 265 acres of riverside floodplain that are part of the 439-acre Abbott Lake Unit of the Feather River Wildlife Area located in Sutter County, California. The Abbott Lake Restoration project (project) includes two phases in three areas. The project area consists of three distinct activity areas: the North Field, the South Field, and the Enhancement Area. The restoration planting will occur in two phases on 169 acres of the project area: the 150-acre South Field in Phase I, and the 19-acre North Field in Phase II. Currently, River Partners secured funding for Phase I of the project; however, Phase II funding has no funding identified. The remaining 96 acres of the project area constitute the Enhancement Area, in which the plan is to target eradication of invasive plants during both phases. There are four different plant communities designed in the project area: riparian shrubland, low shrubland, riparian woodland, and grassland. Shrub and tree planting densities and species compositions would vary within the North and South Fields, with an average density of 115 shrubs/trees per acre. Following implementation of both phases, the restoration planting would consist of approximately 19,411 native riparian shrubs and trees, 1,034 herbaceous plugs, and additional (seeded) native forbs and grasses.

The key objectives of the proposed project are to:

- Maintain general flood flow conveyance patterns;
- Establish self-sustaining native plant communities within a three-year period;
- Utilize a diversity of plant species, which create vegetative structural diversity and enhance habitat for a broad range of wildlife species;
- Provide valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) habitat while minimizing potential impacts to adjacent land uses;
- Minimize disturbance to wildlife; and
- Minimize future impacts to levee maintenance areas.

6. **Phase I Funding:** Wildlife Conservation Board

7. **General Plan Designation: Open Space**

8. **Zoning: Floodplain/Ag**

9. **Surrounding Land Uses and Setting:**

Public/Quasi-Public. The proposed project area is located on land owned by the State of California and managed by the CDFW. The project area is on the waterside of the levee and currently managed as a conservation area, with fishing and hunting being the primary uses. Adjacent land use is primarily agricultural.

10. **Other Public Agencies Whose Approval May Be Required (e.g., permits, financing approval, or participation agreement):**

The proposed project may require permits or approvals from the following:

- Central Valley Flood Protection Board (CVFPB)
- California Department of Water Resources (DWR)
- U.S. Army Corps of Engineers
- Regional Water Quality Control Board
- California Department of Fish and Wildlife (CDFW)
- U.S. Fish and Wildlife Service (USFWS)

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1 Introduction

1.1 Introduction and Regulatory Guidance

This document is an Initial Study (IS) that summarizes potential environmental impacts and provides justification for adoption of a Mitigated Negative Declaration (MND) for the proposed Abbott Lake Restoration Project (project). The project will be implemented in two phases, and the project activities related to both phases are evaluated in this document. This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., and the CEQA Guidelines.

1.2 Lead Agency

The Lead Agency is the public agency with primary responsibility for carrying out or approving a project. Accordingly, the California Department of Fish and Wildlife (CDFW) is the CEQA Lead Agency.

1.3 Supporting Environmental Studies

A project specific hydraulic analysis report has been prepared for the Abbott Lake Restoration Project (MBK Engineers 2009) (**Appendix A**). In 2012, the restoration project was included as part of the comprehensive *Lower Feather River Corridor Management Plan Flood Hydraulic Analysis of Future Conditions* (MBK Engineers 2012). The *Riparian Restoration Plan for the Abbott Lake Unit* (Restoration Plan) describes a comprehensive site assessment (soils, hydrology, vegetation, land-use history, and topography) and the project planting design in detail (River Partners 2013) (**Appendix B**).

1.4 Permits and Approvals Needed

Separate Central Valley Flood Protection Board encroachment permits will be required for the implementation of Phase I and Phase II. **Table 1** lists the permits and approvals that may be required for both phases of the proposed project.

Table 1. Required Permit Approvals

Approving Agency	Required Permit/Approval	Status
Federal Agencies		
U.S. Fish and Wildlife Service	Safe Harbor Agreement	A Safe Harbor Agreement is in process for the Feather River Wildlife Area, which includes the project.
State Agencies		
California Department of Fish and Wildlife/Department of Water Resources	Memorandum of Understanding (MOU) that describes the commitment for the maintenance of the flood control project as related to long-term site maintenance.	A previous MOU dated 2005 is being updated to include specifics regarding the proposed project (California Department of Fish and Game and California Department of Water Resources 2005).
California Department of Fish and Wildlife	Project Approval/CEQA Compliance Herbicide Permit(s) Lake and Streambed Alteration Agreement (FGC 1600)	The MND would be adopted prior to project implementation. Herbicides used during the project would be authorized by CDFW prior to application. An agreement will be signed prior to project implementation.
Central Valley Flood Protection Board	Two Encroachment Permits	Application for the Phase I permit would be submitted following completion of the CEQA process. Phase I implementation would begin following issuance of the Phase I permit. Application for Phase II permit would be initiated following the procurement of funding for Phase II.

1.5 Document Organization

The Initial Study is composed of the following chapters:

- Chapter 1.0 – Introduction: describes the purpose and content of this document, and required permit approvals.
- Chapter 2.0 – Project Description: provides a comprehensive description of the proposed project, and a tentative schedule.
- Chapter 3.0 – Environmental Setting, Project Impacts, and Mitigation Measures: describes the environmental impacts of the proposed project using the CEQA Environmental Checklist. Where appropriate, mitigation measures are provided to reduce potentially significant impacts to a less-than-significant level.
- Chapter 4.0 – Determination: provides the environmental determination for the proposed project.
- Chapter 5.0 – Summary of Mitigation Commitments.
- Chapter 6.0 – Report Preparation and References: identifies the individuals responsible for the preparation of this document and provides a list of references used to prepare this document.

2 Project Description

2.1 Location

The 265-acre project area is within the Abbott Lake Unit of the Feather River Wildlife Area, which is located on the waterside of the western levee of the Feather River approximately seven miles south of Yuba City in Sutter County, California. The project area is approximately one mile north of Star Bend Road, between river miles (RM) 20 and 21.5, and is located within an unsectioned area of the New Helvetia land grant, Township 14 North, Range 3 East of the *Olivehurst, California* U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (**Figure 1**). The project area includes portions of Assessor Parcel Numbers (APN) 023-300-126 and 023-300-127.

The 439-acre Abbott Lake Unit is part of the Feather River Wildlife Area, which is the largest publicly accessible CDFW riparian wildlife area in northern California. **Figure** 2 depicts the Abbott Lake Unit, Star Bend Unit, and O'Connor Lakes Unit.

The project area consists of three distinct activity areas: the North Field, the South Field, and the Enhancement Area. All restoration planting activity would occur in the 19-acre North Field and the 150-acre South Field, collectively termed the Restoration Fields. The planting of the Restoration Fields would occur in two phases: the South Field in Phase I, and the North Field in Phase II. The remaining 96-acre portion of the project area, covered principally with remnant riparian forest, is termed the Enhancement Area. During both phases, targeted eradication of invasive plants will occur (**Figure 3**). The proposed irrigation main connecting the Restoration Fields would also pass through the Enhancement Area.

Comment [CA1]: The PD should also include amending the management plan so we won't need a separate document for that.

2.2 Recent Land Use History and Existing Conditions

Early 20th century survey maps of the project area show it to be forested with cottonwood (*Populus* spp.), willows (*Salix* spp.), and other native riparian species (River Partners 2010). Prior to the mid-1970s, it was common practice to clear floodplain lands along the Feather River as a means of flood control and for agricultural use. The project area was no exception. Between the 1960s and 1978, a significant portion of the project area produced crops such as peaches, pears, and watermelons before being sold for use as a private duck-hunting club. In the early 1980s, the land was used again for agriculture before being sold in 1985 to the CDFW. Since then, the property has become a part of the larger Feather River Wildlife Area and has been managed and protected as a conservation area, with fishing and hunting being the primary uses (River Partners 2010).

The Restoration Fields laid fallow since agricultural use ceased in 1985. Natural regeneration of riparian habitat in the Restoration Fields has been slow, and is limited to patches of willows, coyote brush (*Baccharis pilularis*), and blue elderberry (*Sambucus mexicana*). Non-native forbs and grasses dominate the Restoration Fields. Invasive species including tree-of-heaven (*Ailanthus altissima*) and giant reed (*Arundo donax*) are scattered within the Enhancement Area. The remnants of riparian forest that have endured in areas that were not cleared for agricultural use are fragmented and do not provide contiguous riparian habitat along the Feather River.

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Figure 1. Location and Vicinity Map

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Figure 2. Abbott Lake, O'Connor Lakes, and Star Bend Units of the Feather River Wildlife Area

Comment [CA2]: We need to make sure the figure/project area also includes whatever area is covered under the management plan amendment.

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Figure 3. Proposed Project Area

Comment [CA3]: Need to check management plan and project area boundaries

The levees adjacent to the project area are part of the Central Valley's state-federal flood control system (i.e., "Project Levees") and are maintained by the California Department of Water Resources (DWR). Levee District 1 is the local agent for DWR that maintains the western levee adjacent to the project.

North Field

The 19-acre North Field is located on a narrow section of floodplain at the north end of the project area. Herbaceous non-native plant species dominate much of the North Field, but there are also some occurrences of native woody species such as coyote brush and blue elderberry. Non-native woody species found throughout the North Field area include Himalayan blackberry (*Rubus discolor*), naturalized Northern California black walnut (*Juglans hindsii*), black locust (*Robinia pseudoacacia*), tree-of-heaven, and eucalyptus (*Eucalyptus caesia*). Giant reed occurs along the river in the eastern portion of this field.

Overbank deposition during periods of high water have created a small natural levee along the east side of the North Field. Although the field is nearly level, this natural levee rises up to five feet above the rest of the field.

South Field

The South Field consists of approximately 150 acres of primarily open grassland with patchy stands of sandbar willow (*Salix exigua*) in the northern portion of the field, and small Fremont's cottonwoods (*Populus fremontii*), coyote brush, and blue elderberry scattered throughout. Similar to the North Field, a natural levee has also formed along the eastern edge of the South Field, although at the South Field the levee is higher, ranging from approximately 5 to 10 feet above the rest of the field. The southeastern corner of the South Field shows signs of significant scour—the result of failure of the natural levee during a high water event (River Partners 2010). Several thousand square feet of this low spot in the South Field were scoured to a depth of about 4 feet at its deepest point (River Partners 2010).

2.3 Project Purpose and Objectives

The primary purpose of the project is to restore riparian habitat and reduce wildlife habitat fragmentation within the Feather River Wildlife Area. A broad range of sensitive animal and plant species would benefit from the establishment of self-sustaining native plant communities in the project area. Restored and enhanced riparian habitat within the project area would potentially benefit federal and state-listed species, including Swainson's hawk (*Buteo swainsoni*), valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*), Sacramento River Chinook salmon (*Oncorhynchus tshawytscha*) winter-run evolutionarily significant unit (ESU), and Central Valley Chinook salmon spring-run ESU, as well as non-listed species such as neo-tropical birds, waterfowl, and upland game birds.

Two primary objectives of the project are to establish a total of 169 acres of self-sustaining native plant communities within a three-year period following phased plantings, and to do so without significantly impairing floodway conveyance. ~~Additionally, the project includes an amendment to the Feather River Wildlife Area Management Plan.~~ Ongoing management of the Wildlife Area will

Comment [HS4]: I am struggling with these comments regarding an amendment to the management plan. My understanding is that the proposed project should be consistent with the revisions or amendment of the management plan. But does the project itself means that includes an amendment of the plan? The project itself is implementing the planting design for wildlife habitat. I see the management plan as a separate activity in which this proposed project would comply with.

include invasive species removal., ~~etc~~. Strategies and activities to meet these objectives are explained below.

Comment [CA5]: Need to make sure that project area includes all the areas that will apply to the amendment to the management plan.

Comment [HJ6]: The addendum to the management plan revolves around elderberry conservation related to our mission and the Safe Harbor process with the USFWS. It is separate from this CEQA process.

2.4 Planting Design

Design Considerations

The proposed planting design is based on site-specific analyses of physical factors within the project area, including soils, topography, and hydrology. Restoration biologists chose suitable riparian plant species by matching site-specific characteristics to the descriptions of terrestrial natural plant communities provided by CDFW's California Natural Diversity Database (CNDDB) and the Holland classification system (Holland 1986). The planting design also incorporates essential habitat elements to conserve, restore, and enhance riparian habitat for special-status plants, wildlife, and fish, and improve habitat quality for migratory bird species(River Partners 2013). The physical layout or planting pattern follows the recommendations of Point Reyes Bird Observatory (PRBO) Conservation Science (PRBO Conservation Science 2010).

The potential effects of the structural resistance (e.g., flexibility versus rigidity) of woody plants to floodwater conveyance were considered during the design process. Hydraulic engineers utilized a site-specific, two-dimensional hydraulic model of the Feather River between RM 8.0 and RM 28.7. The model simulated net changes to flood flow water surface elevations and velocities based on proposed plant designs. The model was simulated using peak flows for the 1-in-100 and 1-in-200 annual exceedance probability[1] (AEP) flood events. The model showed that the increase in water surface elevation would be localized near the north end of the project area, and would be approximately 0.12 feet for the 1-in-100 and AEP flood event and 0.15 feet for the 1-in-200 AEP flood event (MBK Engineers 2009). This increase is considered a less-than-significant impact on flood flow conveyance because the minimum freeboard (i.e., distance from top of levee to water surface) requirement in this reach of the Feather River is three feet based on the flood control project design flow. The freeboard calculations within this localized area for the 1-in-100 and 1-in-200 AEP flood events were greater than six feet and three feet, respectively (MBK Engineers 2009).

In 2012, the project planting design was included as part of the comprehensive Lower Feather River Corridor Management Plan Flood Hydraulic Analysis of Future Conditions (MBK Engineers 2012). This model evaluated the cumulative hydraulic effect of a series of existing and yet-to-be-implemented projects within the Lower Feather River Corridor between RM 28.7 at Marysville to RM 2.1 adjacent to the Sutter Bypass. This model included approximately 5 miles of the Bear River beginning at the confluence with the Feather River at RM 12.1. This comprehensive model showed that the water surface elevation would by approximately 0.7 feet lower than baseline flood flows along the reach of the Feather River where the Abbott Lake Unit is located during both the 1-in-100 and 1-in-200 AEP flood events. The results of this cumulative model further support the conclusion that the planting design will meet a key project objective of maintaining general flood flow conveyance patterns.

[1] The one percent (1-in-100) annual exceedance probability (AEP) flood is commonly known as the 100-year flood, however the common term can be misleading.

Plant Communities and Composition

There are four distinct plant communities proposed for the Restoration Area: riparian shrubland, low shrubland, riparian woodland, and grassland (**Figure 4**). The North Field would be planted with just one plant community – riparian shrubland. The South Field would contain a mosaic of all four plant communities. The row spacing, plant density, and unique design features within each proposed plant community are shown in **Table 2**. All proposed shrubland and woodland communities would also include an understory of native forbs and/or grasses.

The overall species composition, density, and estimated planting numbers within the Restoration Fields are shown in **Table 3**. No planting would occur in the Enhancement Area. Additional planting design details are included in the Restoration Plan (River Partners 2013) shown in Appendix B.

Table 2. Planting Densities and Design Features of the Four Proposed Plant Communities

Habitat Type	Acres	Row Spacing (feet)	Plant Spacing (feet)	Plant Density (plants/acre)	Tree Density (trees/acre)*	Design Features
Riparian Woodland	36	20	10	216	82	Planted with a mixture of fast and slow growing trees to connect and expand adjacent existing riparian forests. Plantings along western project boundary will be planted 60 feet from toe of levee.
Riparian Shrubland	19	20 and 40	10	161	0	Row spacing is 20 feet with 40 feet between every three rows. High proportion of flexible-stemmed species such as wild rose (*Rosa californica*) to enhance flood conveyance. Plantings along western project boundary will be planted 60 feet from toe of levee.
Low Shrubland	79	20 and 100	10	121	3	Row spacing is 20 feet with 100 feet between every five rows. High proportion of flexible-stemmed species such as California blackberry and wild rose to enhance flood conveyance.
Grassland	35	0	0	N/A	0	Would be planted with two species of perennial native grasses. Grass seed would be a 50/50 mix of blue wildrye (*Elymus glaucus*) and creeping wildrye (*Leymus triticoides*). The grasslands will help to reduce erosion and enhance flood conveyance.

** Tree density is a subset of plant density within each respective plant community.*

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Figure 4. Restoration Planting Communities Map

2.5 Site Preparation

To prepare the Restoration Fields, typical agricultural practices, such as disking and floating, will be conducted in order to reduce soil compaction and smooth the surface for irrigation and tractor operations (e.g., mowing and spraying). Subsequently, planting berms will be formed within the shrubland and woodland community planting areas. These planting berms would be approximately 18 inches high and the berms would be oriented to flood flows (generally a curve oriented from north to south) in order to maintain the flood conveyance patterns across the site. Spacing between planting berms (i.e., rows) varies from 20 to 100 feet as specified above in Table 2.

With the exception of installing the irrigation main and submain lines, no excavation or fill is planned as part of project implementation.

Table 3. Summary of Plant Species Proposed for the Restoration Fields

Common Name	Scientific Name	Species Composition (%)	Density (plants/ acre)	Estimated No. of Plants
Tree Species				
Box elder	*Acer negundo*	4	5	862
Fremont cottonwood	*Populus fremontii* ssp. *fremontii*	1	1	157
Gooding's black willow	*Salix gooddingii*	4	5	862
Oregon ash	*Fraxinus latifolia*	5	6	941
Valley oak	*Quercus lobata*	2	2	313
Western sycamore	*Platanus racemosa*	1	1	78
Total Trees		**17**	**19**	**3,213**
Shrub Species				
Arroyo willow	*Salix lasiolepis*	6	7	1,132
Buttonbush	*Cephalanthus occidentalis*	5	6	1,041
California blackberry	*Rubus ursinus*	18	21	3,640
Clematis	*Clematis ligusticifolia*	1	1	207
Coyote bush	*Baccharis pilularis*	16	19	3,262
Dutchman's pipevine	*Aristolochia californica*	3	4	673
Elderberry	*Sambucus mexicana*	5	6	1,074
Mule fat	*Baccharis salicifolia*	5	7	1,108
Wild rose	*Rosa californica*	20	24	4,061
Total Shrubs		**79**	**96**	**16,198**
Herbaceous Species				
Dogbane	*Apocynum cannabinum*	2	2	310
Evening primrose	*Oenothera hookeri*	1	1	103
Grass plugs	Various species	2	2	414
Mugwort plugs	*Artemisia douglasiana*	1	1	207
Total Herbaceous Plants		**5**	**6**	***1,034**
TOTAL PLANTS		**100**	**121**	**20,445**

Source: Plant composition and density based on the *Riparian Restoration Plan for the Abbott Lake Unit* (River Partners 2013) (Appendix B).

** This number represents plant locations for herbaceous species. Six plugs of each species would be planted at each location in the design.*

2.7 Irrigation System

Woody plant species would be drip irrigated. An existing well located on the Abbott Lake Unit in the northern portion of the South Field would be the source of irrigation water. A main line would extend from the well, through the center of the Enhancement Area, to the north end of the North Field. Trenching for the main line and sub-main lines would not exceed 24-inches in depth. A preliminary irrigation design map can be found in the Restoration Plan (Appendix B). It is anticipated that planted vegetation will become self-sufficient after about three growing seasons, and that all drip lines would be removed from the project area at that time. Main lines and sub-main lines would not be removed.

2.8 Plant Material Collection and Propagation

Plant propagation material, seeds and cuttings, would be collected from vegetation as near as possible to the project area, whenever possible. Cuttings of cottonwood and willows would be collected in January or February when the trees are dormant. Seeds for the herbaceous understory would be collected or purchased from sources near the project area.

2.9 Plant Installation

Planting would begin as soon as site preparation has been completed and the irrigation system has been installed. Woody species (potted stock and cuttings) and herbaceous plugs would be planted on the planting berms in spring 2013. Hand tools would be used to excavate planting holes. The remaining project understory (drilled native grasses and broadcasted forb species) would be planted during in fall/winter 2013 after seasonal rains have begun. Herbicide would be applied to the Restoration Fields prior to planting the understory in order to kill sprouting winter weeds.

2.10 Weed Control

Only CDFW-approved herbicides would be used for weed control, including Round-up® (glyphosate), Garlon® (triclopyr), and Telar® (chlorosulfuron), within the project area. Mechanical weed control would include mowing and cutting.

Restoration Fields

Various methods would be used to control invasive weed species during the proposed three-year project. Following the planting of woody species, berms would be sprayed with a non-selective herbicide targeting all weeds. Glyphosate is the primary herbicide that would be used to control weeds in the Restoration Fields. The berms would be subject to weed control during the growing season throughout the three-year plant establishment period. A combination of mowing and herbicide application would be used between the rows during the first season following planting to control fast-growing annual grasses and forbs, and favor the establishment of the perennial understory.

Enhancement Area

In the Enhancement Area, the primary non-native woody species targeted for eradication or control is tree-of-heaven. Tree-of-heaven is concentrated in the stringer of riparian vegetation along the Feather River along the eastern edge of the project area. Because the primary focus of the proposed project is

revegetation of the North and South Fields, weed eradication activities within the Enhancement Area would be dependent on adequate funding. If adequate funding is available, the cost-effective basal-bark method would be used. This method involves direct application of herbicides (imazapyr or triclopyr) to the base of the trees during the summer—when the trees would be more likely to draw the herbicides into their root systems.

2.11 Equipment

Project implementation would require the use of standard farm equipment such as pick-up trucks, all-terrain vehicles, tractors, disks, rollers, seed drills, sprayers, chain saws, and hand tools.

2.12 Project Criteria and Methods

Staging Areas/Access Routes

Access to the Abbott Lake Unit is from the parking lot on top of the levee at the eastern end of Star Bend Road off the Garden Highway (Figure 2). From the vehicle gate at the parking lot, the project area is accessed by traveling approximately one mile north on the levee road. Existing farm equipment access roads and staging areas would be used for travel within the project area.

Avoidance and Minimization Measures

The following measures may include, but are not limited to, the following:

1. Protection and maintenance of the riparian, wetland, stream or lake systems to ensure a "no-net-loss" of habitat value and acreage. Native vegetation removal should not exceed the minimum necessary to complete operations.

2. Provisions for the protection of fish and wildlife resources at risk that consider various life stages, maintain migration and dispersal corridors, and protect essential breeding (i.e. spawning, nesting) habitats. If project activities will occur between March 1st through August 31st, a qualified biologist will complete surveys for active nests.

3. Delineation of buffers along streams and wetlands to provide adequate protection to the aquatic resource. No grading activities should be allowed within these buffers

4. Prevention of downstream sedimentation and pollution. Provisions may include but not be limited to oil/grit separators, detention ponds, buffering filter strips, silt barriers, etc., to prevent downstream sedimentation and pollution.

Air Pollution

Project operations involving the use of combustible engine equipment such as tractors, pick-up trucks, and agricultural well pumps would emit air pollutants, including diesel particulate matter, volatile organic compounds, nitrous oxide, particulate matter – 10 micron, carbon dioxide, and sulfur oxide. Pesticide and herbicide spraying also can emit toxic air pollutants. Accordingly, applicable state and

federal mobile source standards and pesticide rules would be adhered to as appropriate (California Environmental Protection Agency and California Air Resources Board 2005).

Water Pollution Prevention

Water pollution control measures would be applied during and after implementation of the proposed project. Water pollution control measures relevant to the proposed project include the following:

- Fuel, oil and other petroleum products, as well as pesticides/herbicides shall be stored only at designated staging areas. The use of hazardous materials shall be avoided or minimized where possible. Material containment containers shall be clearly labeled with the identity of the materials, handling and safety instructions, and emergency contact information. Any soils contaminated by spills shall be contained and shall be removed to an approved disposal site.

- Equipment to minimize petroleum drippings shall be available on-site. Stationary power equipment such as engines, pumps, generators, welders, and air compressors located within or adjacent to aquatic habitats shall be positioned over drip pans.

- Fuel transfer vehicles shall have absorbent pads, pillows, socks, booms or other spill containment materials placed under the fueling operation (between the fuel truck and the equipment being serviced). A trained service attendant shall monitor the filling of equipment and shall stop fuel flow immediately if a spill occurs. Fuel transfer shall not resume until the problem is resolved.

2.13 Tentative Schedule

Current secured funding is for the South Field and this portion of the project will comprise Phase I of the project. Future funding is yet to be identified for the North Field, which will be restored in Phase II. Phase I project activities are anticipated to begin in fall 2013. Woody species (willow and cottonwood cuttings) and herbaceous plugs would be planted on the planting berms in spring 2014. The remaining herbaceous understory (drilled native grasses and broadcasted forbs) would be installed between planting berms in fall 2014. Phase I project maintenance activities (weed control, irrigation, and replanting if necessary) would occur for three years (through 2016) at which time plants will have become established and self-sufficient.

3 Environmental Setting, Impacts, and Mitigation Measures

3.1 Initial Study Checklist

This chapter incorporates the Environmental Checklist contained in Appendix G of the CEQA Guidelines, including the CEQA Mandatory Findings of Significance. Each resource section provides a brief description of the setting, a determination of impact potential, and a discussion of the impacts. Where appropriate, mitigation measures are required to reduce potential impacts to a less-than-significant level. A discussion of cumulative impacts is included at the end of this chapter (Section XVIII, Mandatory Findings of Significance).

Addressed in this section are the following 17 environmental categories:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gases
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities and Service Systems

Each of these issue areas was fully evaluated and one of the following four impact determinations was made:

- **No Impact:** No impact to the environment would occur as a result of implementing the proposed project

- **Less-than-Significant Impact:** Implementation of the proposed project would not result in a substantial and adverse change to the environment and no mitigation is required

- **Less than Significant with Mitigation Incorporated:** A "significant" impact that can be reduced to a less-than-significant level with the incorporation of project-specific mitigation measures.

- **Potentially Significant Impact:** Implementation of the proposed project could result in an impact that has a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (CEQA Guidelines Section 15382).

3.2 Environmental Setting

Regional Setting

The proposed project is located in the central Sacramento Valley on the eastern edge of Sutter County. Levees built in the early 20th century contain the Feather River allowing for agricultural and rural development of once frequently flooded areas. A large part of the region is used for agriculture, while many of the remnant riparian vegetation areas and fallow fields have become popular with recreators such as duck hunters and bird watchers. The 2,522-acre Feather River Wildlife Area is a prime example of the type of land conservation management areas, both public and private, that are found along the major rivers in the region.

Prior to construction of the levees in the early 20th century, the Feather River south of Yuba City was characterized by a meandering system of oxbow lakes and wide, sandy floodplains (River Partners 2010). Flooding was a natural phenomenon that occurred whenever spring floodwaters overtopped natural levees and flowed onto floodplains and low-lying basins. Hydraulic mining occurred on the Yuba and Feather Rivers from 1853 to 1884 and the resulting massive sediment deposits exacerbated the frequency of flooding on the Feather River. Over a billion cubic meters of hydraulic mining sediments were released into the Feather River and Yuba Rivers (James et al. 2009). The large quantities of sandy sediments that were discharged into the river system caused flow velocities to decrease, and allowed for sand to settle-out and accumulate on the river bottom and adjacent floodplain. Much of these sediments remain on floodplains within the project levees. Stratigraphic profiles of the right bank (west bank) at Shanghai Bend were taken in 2006 and showed the depth of hydraulic mining deposit to be over 10 feet deep (James et al. 2009).

Local Setting

Parts of the project area were used for crops during the mid 20th century before being sold in 1978 for use as a private duck hunting club. In the 1980s the remaining orchards were cleared in an unsuccessful attempt to grow beans, and in 1985, the property was sold to the CDFW. Since then, it has been managed and protected as a conservation area, with fishing and hunting being the primary uses. There is remnant riparian vegetation surrounding both the North and South Fields, and approximately 170 blue elderberry shrubs throughout the project area. Despite the presence of this remnant riparian vegetation, riparian habitat has been slow to reestablish within the North and South Fields (River Partners 2010). Non-native vegetation, including tree-of-heaven, black locust, yellow star thistle, giant reed, and Himalayan blackberry occur in scattered populations, and perennial pepperweed, which forms dense monocultures that quickly displace native vegetation, is rapidly establishing itself in large patches throughout the project area.

Climate

Climatic conditions in the project area region are characterized by a Mediterranean climate with cool, wet winters and hot, dry summers. Precipitation averages about 21 inches annually (River Partners

2010), most of which occurs as rain between October and March (Western Regional Climate Center 2007). Air temperatures range between an average January high of 55º F and an average high of 96º F during July (Western Regional Climate Center 2007). Daily high temperatures commonly exceed 100º F during the summer. The year-round average high is approximately 75º F (Western Regional Climate Center 2007). The soil temperature regime is thermic, and the growing season occurs between January 29 and December 19 (Western Regional Climate Center 2007).

Topography

Topography in the Abbott Lake Unit is directly influenced by the physical processes associated with high water flows. Both the North and South Fields are nearly level with a naturally occurring levee between the eastern side of the fields and the river. These levees, created by overbank deposition, are up to five feet above grade of the North Field at the north end of the project area, while the natural levee adjacent to the South Field is up to 10 feet high. Elevation of the project area ranges from 50 feet above mean sea level (MSL) in the northern portion of the North Field to 40 feet above MSL in the southwestern corner of the South Field (River Partners 2010). The top of the project levee (i.e., flood control project levee) west of the project area is approximately 70 feet above MSL.

Hydrological Setting

Flooding is common across the Abbott Lake Unit, occurring on average every five to seven years (River Partners 2010). The alluvial nature of the soils is evidenced by the soil pit profiles that show sand and silty sand to depths of 10 feet across much of the site. During periods of high water, the outlet channel that drains Abbott Lake to the Feather River backfills and the lake fills to capacity before the rest of the unit becomes inundated. Historic aerial photographs of flood events included in the Restoration Plan (River Partners 2010) show even higher floodwaters entering the unit from the north), eventually inundating the entire project area. Significant flood events in the Feather River (i.e., those that exceed the design capacity of the levee system) can be moderated by the Oroville Dam, upstream of the project area. The last high flow that approached the flood stage of the flood control project levee along this stretch of the Feather River occurred on January 1, 2006[2] (National Weather Service 2010).

Soils

The soils within the project area are mapped as Holillipah loamy sand, which is a deep soil on floodplains that is formed in alluvium derived from mixed resources. A series of over twenty soil pits/cores were dug within the project area. These soil pits generally show layers of loose sand and silty sand to a depth of 10 feet, that is underlain by silty clay (River Partners 2010). The stratigraphic sequences recorded at these pits/cores indicates that the depth of hydraulic mining sediments within the project area are similar to those measured at Shanghai Bend (See Regional Setting at beginning of this section).

[2] The crest of this flow was at 59.24 feet measured at the Boyd's Landing gauge, which is just north of the project area. The National Weather Service defines four categories of flooding: near flooding, minor flooding, moderate flooding, and major flooding. At Boyd's Landing these stages are at gauge heights of 57, 65, 69, and 70 feet, respectively.

3.3 Environmental Impacts and Mitigation Measures

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

Discussion of Impacts

(a) ***No Impact.*** The project does not involve any physical changes in the environment that would adversely affect a scenic vista.

(b, c) ***No Impact.*** The project does not involve the alteration of any scenic resources or degradation of the visual character of the project area. The project area is not located along a state scenic highway. The existing visual character and quality would remain unchanged as no development is planned as part of the restoration project.

(d) ***No Impact.*** Implementation of the project would not create any additional potential sources of light or glare beyond that which already exists.

Mitigation Measures

None required.

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
II.	**AGRICULTURAL AND FOREST RESOURCES** — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c)	Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☒	☐

Discussion of Impacts

(a, b) ***No Impact.*** The portion of the Abbott Lake Unit that would be restored to riparian woodland under the proposed project is not mapped as Prime, Unique, or Farmland of Statewide Importance (California Department of Conservation 2008a). Although the proposed planting areas are fallow agricultural lands, they are not a part of a Williamson Act contract (California Department of Conservation 2008b).

(c) ***Less-than-Significant Impact.*** The project would restore lands previously used for agriculture to native riparian vegetation. This would be a less-than-significant impact since both the North and South fields have been fallow for many years and were sold to the CDFW for use as wildlife habitat and unimproved recreational uses.

Mitigation Measures

None required.

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
III.	**AIR QUALITY** — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:				
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b)	Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☒	☐	☐
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e)	Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Discussion of Impacts

(a) ***No Impact.*** The project would not conflict with any applicable air quality plan.

(b,c) ***Less than Significant with Mitigation Incorporated.*** The project site is located within the Sacramento Valley Air Basin. The entire air basin is currently designated as being in nonattainment for ozone (state 1-hour and federal 8-hour) and annual particulate matter (PM10) (California Air Resources Board 2010; Feather River Air Quality Management District 2010). The Feather River Air Quality Management District (AQMD) has primary responsibility for attainment and maintenance of air quality standards in the vicinity of the project area.

While not contributing significantly to the ozone levels (ground or atmospheric), fugitive dust and equipment exhaust emissions generated during site preparation required for project implmentation would contribute to the region's PM10 levels. In addition, diesel particulate, which would be emitted from heavy equipment, is an identified Toxic Air Contaminant (TAC), and emissions of TACs should be minimized during planting and maintenance activities. The proposed project would be a Type 2 project (the project has

no operational phase) under the Feather River AQMD's project classification criteria (Feather River Air Quality Management District 2010). Implementation of Mitigation Measures #1 and #2 would reduce potential impacts to a less-than-significant level.

(d) ***Less-than-Significant Impact.*** No sensitive receptors such as schools, hospitals, or day care centers are located in the project vicinity. Although project site preparation (e.g., disking and plowing) would generate minor amounts of fugitive dust, the effect on any recreationists or wildlife in the project vicinity during such activities would be less than signficant.

(e) ***No Impact.*** Implementation of the project would not create objectionable odors.

Mitigation Measures

Mitigation Measure #1–Fugitive Dust

- All ground-disturbing operations shall be suspended when winds exceed 20 miles per hour or when winds carry dust beyond the property line despite implementation of all feasible dust control measures.
- All areas subject to ground disturbance shall be watered as necessary to prevent fugitive dust violations.
- Onsite dirt piles or other stockpiled particulate matter shall be covered, wind breaks installed, and water and/or soil stabilizers employed as necessary to reduce windblown dust emissions.
- All transfer processes involving a free-fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions.
- Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less and reduce unnecessary vehicle traffic by restricting access.

Mitigation Measure #2–Construction Equipment Exhaust

- All construction equipment shall be maintained in proper tune according to manufacturer's specifications.
- To the extent practicable, the use of diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines shall be maximized.
- Unnecessary vehicle idling shall be restricted to 5 minutes or less.
- Maximize use of gasoline-powered equipment in lieu of diesel-powered equipment where feasible.
- Visible emissions from stationary diesel-powered equipment shall not exceed 40 percent opacity for more than three minutes in any one-hour.

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

Discussion of Impacts

(a) ***Less than Significant with Mitigation Incorporated.*** The proposed project consists of riparian restoration and intends to improve the quality of wildlife habitat. Establishing self-sustaining native plant communities will reduce habitat fragmentation and benefit a broad range of sensitive animal and plant species. The short-term disturbance associated

with project implementation and maintenance is not anticipated to substantially adversely affect sensitive species. However, elderberry shrubs which are the obligate host plant for the federally listed as threatened valley elderberry longhorn beetle (VELB), occur at 170 locations within the project area (River Partners 2010) and mitigation measures are necessary to avoid the potential for significant impacts on the VELB. Implementation of Mitigation Measure #3 would reduce potential impacts to a less-than-significant level.

Impacts to nests. Proposed project activities are similar to agricultural practices occurring in the region and is not anticipated to substantially adversely affect special status species that nest or breed in the project area. If proposed activities are planned to occur during the nesting season for raptors and migratory birds (typically March 1st through August 31st), CDFW shall retain a qualified biologist to conduct a focused survey for active nests of raptors and migratory birds within and in the vicinity of (no less than 500 feet outside project boundaries, where possible) the disturbance area no more than 30 days prior to ground disturbance or tree removal. Implementation of Mitigation Measure #4 would reduce potential impact to a less-than-significant level.

(b) ***Less-than-Significant Impact.*** Sensitive habitats include those that are of special concern to resource agencies and those protected under CEQA, Section 1600 of the California Fish and Game Code, or Section 404 of the Clean Water Act. The proposed project is a riparian vegetation restoration project intended to enhance riparian habitat on land formerly used for agriculture that has been fallow for since 1985. The project area is located in an area surrounding by riparian vegetation and in some cases riparian vegetation has established in the area proposed for enhancement. Revegetation of the North and South fields with riparian plant species will enhance riparian habitat connectivity throughout the Abbott Lake Unit and the larger Feather River Wildlife Management Area. Existing riparian habitat that has naturally recruited in the restoration fields will not be disturbed during site preparation. Prior to site preparation, existing riparian habitat located within the restoration fields, specifically elderberry shrubs, will be fenced. With the implementation of the avoidance and minimization measures outlined in Section 2.12, impacts to remnant or existing riparian habitat within the project area during site preparation would be less than significant and short-term.

(c) ***Less-than-Significant Impact.*** The proposed project does not involve disturbance to federally protected wetlands. Restoration activities would occur in uplands formerly used for agriculture and have been fallow for nearly 27 years, and would not involve the fill of wetlands or other waters of the United States. As part of the restoration plan (River Partners 2013) development, River Partners completed a site assessment that evaluated soil properties such as texture, stratification and depth to water table, as well current site conditions, vegetation and hydrology. Both fields contain Holillipah loamy sand, which have high sand content and low water holding capacity. Despite exposure to flooding, the restoration fields do not support wetland hydrology, vegetation or soils conditions.

If wetlands are discovered on site and in order to comply with federal regulations regarding impacts to "waters of the United States" (as defined in the Clean Water Act Section 404), CDFW is required to obtain and comply with USACE Section 404 permit

conditions. If a Section 404 permit were required from the USACE, a Section 401 permit would also be required from the Regional Water Quality Control Board (RWQCB). If it is determined by USACE, and through consultation with RWQCB, that features qualified as Waters of the State would be affected, CDFW shall obtain authorization from RWQCB to fill/disturb these features prior to project implementation. A 1602 Streambed Alteration Agreement for removal of or disturbance to riparian habitat from CDFW would also be required for the project. Adherence to the federal and state permitting requirements identified above would ensure that impacts to wetlands and waters of the United States would be less than significant

Overall, the proposed project would result in a positive benefit to the riparian corridor along the Feather River by establishing self-sustaining native plant communities and reducing habitat fragmentation. The implementation of the avoidance and minimization measures outlined in Section 2.12 would reduce potential impacts to a less-than-significant level to wetlands and waters of the United States.

(d) ***Less-than-Significant Impact.*** The project area does not encompass any wildlife nursery sites or the active flow channel of the Feather River. However, project activities could result in the temporary disruption of movement for upland wildlife species. This temporary disruption would be limited to the active restoration areas (i.e., the North and South fields) during site preparation and planting activities. In the long-term, the proposed project would reduce riparian habitat fragmentation. Impacts are considered to be less than significant.

(e) ***No Impact.*** The project would not conflict with any local biological resource policies or ordinances.

(f) ***Less-than Significant Impact.*** Although the Yuba-Sutter Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) has not been adopted yet, the parties have signed the Planning Agreement, which requires a consistency review of interim projects in the Plan Area. As this restoration project does not conflict with the conservation goals of the HCP/NCCP and in fact will help contribute to the conservation strategy of the HCP/NCCP, the proposed project does not conflict with the provisions of a local, regional, or state habitat conservation plan.

Mitigation Measures

Mitigation Measure #3 – Valley Elderberry Longhorn Beetle

No activities that could result in the removal of the VELB habitat (i.e., the removal of elderberry shrubs) shall be implemented. Elderberry is a target species of conservation and enhancement at the Abbott Lake unit. DFW is working with USFWS to develop a Safe Harbor Agreement (SHA) related to elderberry retention at the site. The SHA identifies the existing baseline for elderberry already surveyed and predicts an elevated baseline of at least 5% growth per year after restoration (for a period of 20 years). The conditions of the Safe Harbor Agreement may include, but are not limited to, limitations of locations of elderberry plantings, training of maintenance staff, limitations on pesticide application, limitations on vegetation control procedures, and limitations on removal or transplanting

of elderberry shrubs. All conditions of the Safe Harbor Agreement applicable to the proposed project shall be implemented.

Comment [CA7]: If we have language from the draft Safe Harbor Agreement we should include.

Mitigation Measure #4 – Nests

- If proposed activities are planned to occur during the nesting season for raptors and migratory birds (typically March 1st through August 31st), CDFW shall retain a qualified biologist to conduct a focused survey for active nests of raptors and migratory birds within and in the vicinity of (no less than 500 feet outside project boundaries, where possible) the disturbance area no more than 30 days prior to ground disturbance or tree removal. If active nests are located during surveys, USFWS and/or CDFW shall be notified regarding the status of the nests. Furthermore, construction activities shall be restricted as necessary to avoid disturbance of the nest until it is abandoned or a qualified biologist deems disturbance potential to be minimal (in consultation with USFWS and/or CDFW). Restrictions may include establishment of exclusion zones (no ingress of personnel or equipment at a minimum radius of 500-feet around the nest for Swainson's hawk, 100-feet around the nest for other raptors and 50-feet around the nest for other migratory birds) or alteration of the construction schedule. No action is necessary if construction will occur during the non-breeding season (September 1st through February 28th).

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
V.	**CULTURAL RESOURCES** — Would the Project:				
a)	Cause a substantial adverse change in the significance of a historical resource as identified in Section 15064.5?	☐	☒	☐	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Discussion of Impacts

(a, b) ***Less than Significant with Mitigation Incorporated.*** A records search of the California Historical Resources Information System at the Northeast Information Center (NEIC) of the California Historical Resource Information Center found no recorded prehistoric or historic resources within the project area, and no record that the project area has been previously surveyed by a professional archaeologist. Prehistoric and historic sites have been recorded in the vicinity, and the general project area appears to be located in an area considered to be sensitive for prehistoric and historical resources (Roeder 2008). However, given the: 1) historic ground disturbance associated with agricultural activities within the last 30 years (e.g., orchards, beans); 2) the volume of recent soil deposition (e.g., the upper 5–10 feet of soil was likely deposited within the last 150 years as a result of hydraulic mining and frequent flooding); and 3) the limited ground disturbance associated with project activities (i.e., ground disturbance no greater than 36 inches deep), the proposed project is not anticipated to adversely affect sensitive cultural resources. Nevertheless, there is a low potential that sensitive cultural resources could be encountered during project implementation. Mitigation Measure #4 would reduce potential impacts to a less-than-significant level.

(c) ***No Impact.*** There are no unique paleontological resources or unique geologic features that would be impacted by the project.

(d) ***Less than Significant with Mitigation Incorporated.*** No human remains are known to be located within the project site or on adjacent lands; therefore, no impacts are expected. Nevertheless, construction activities could result in the discovery of human remains not

previously identified. This impact is therefore considered potentially significant. Implementation of Mitigation Measure #5 would reduce potential impacts to a less-than-significant level.

Mitigation Measures

Mitigation Measure #4 – Cultural Resources

- An archaeologist meeting the Secretary of Interior's Professional Qualifications Standards in prehistoric or historical archaeology, shall be present to monitor any ground-disturbing activities that would penetrate deeper than 36 inches into the soil surface. The monitoring archaeologist shall have "stop work" authority in the event that archaeological deposits are encountered, and work shall not resume until appropriate conservation measures have been implemented.

- In the event archaeological deposits are discovered during project activities, all work in the immediate vicinity of the discovery shall be stopped immediately and the CDFW shall be notified. An archaeologist meeting the Secretary of Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, shall be retained to evaluate the find and recommend appropriate conservation measures. The conservation measures shall be implemented prior to re-initiation of activities in the immediate vicinity of the discovery.

Mitigation Measure #5 – Human Remains

- If human remains are discovered during project activities, all activities in the vicinity of the find shall be suspended and the Sutter County Coroner's Office shall be notified. If the coroner determines that the remains may be those of a Native American, the coroner shall contact the NAHC. Treatment of the remains shall be conducted in accordance with the direction of the County Coroner and/or the NAHC, as appropriate.

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

Discussion of Impacts

(ai–aiii) ***No Impact.*** Sutter County is not included on the list of counties that may be affected by the Alquist–Priolo Earthquake Fault Zone (California Department of Conservation 1999). The nearest mapped Alquist–Priolo fault-rupture hazard zone is the Bangor Fault located approximately 30 miles to the northeast of the project area (California Department of Conservation 1999). Sutter County is not generally subject to strong seismic ground and

there are no other earthquake faults mapped in the project vicinity (Governor's Office of Emergency Services 2001). This suggests that the ground shaking hazard potential in the project area is low. Although the dominant soil type in the project area (*Holillipah*) is somewhat conducive to liquefaction or seismic-related ground failure, this potential would have no effect on the proposed project since it would not involve the construction of any structures or other facilities that could put people at risk.

(aiv) ***No Impact.*** There are no steep slopes at risk of landslide within the project area. Slopes within the project area range from 0 to 2 percent (River Partners 2010).

(b) ***Less-than-Significant Impact.*** Ground-disturbing activities occurring during site preparation would temporarily expose soils and make them susceptible to erosion. Sandy soils in the floodplain are also at risk of erosion, particularly during periods of high flow. Revegetation with herbaceous and woody riparian plant species would occur immediately following site preparation, thus reducing the erosion potential during the wet season. Retention of existing riparian vegetation and the planting of native riparian species within the project area would reduce potential impacts to a less-than-significant level.

(c,d) ***No Impact.*** The proposed project consists of riparian restoration on land formerly used for agriculture that has been fallow for nearly 27 years and is currently located within the Feather River Wildlife Area. The project would help to stabilize soils rather than increase the potential for on- or off-site soil failure. The project does not involve the construction of any structures or other facilities that could put people at risk.

(e) ***No Impact.*** The project does not involve the installation of a septic tank or alternative wastewater disposal system.

Mitigation Measures

None required.

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
VII.	**GREENHOUSE GAS EMISSIONS** — Would the Project:				
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b)	Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion of Impacts

(a,b) ***Less-than-Significant Impact.*** The CEQA Guidelines call for the evaluation of climate change and greenhouse emission increases. However, currently there are no federal or state adopted thresholds for the evaluation of project-generated greenhouse gas emissions and/or contribution to global climate change; and the Feather River AQMD has not established thresholds of significance for greenhouse gas emissions. For purposes of this analysis, an increase in greenhouse gas emissions would be considered significant if the project would result in a substantial increase in greenhouse gas emissions or would obstruct the implementation of any applicable plan, policy or regulation of an agency adopted for the purpose of reducing greenhouse gas emissions.

The proposed project would not result in a substantial increase in greenhouse gas emissions and would not obstruct efforts to reduce greenhouse gas emissions. The proposed project is a vegetation restoration project on land formerly used for agriculture that has been fallow for nearly 27 years. The proposed project would establish a self-sustaining riparian plant community, improve the quality of wildlife habitat, reduce habitat fragmentation, and benefit a broad range of sensitive animal and plant species. Although the proposed project would generate greenhouse gases during initial implementation (e.g., carbon dioxide from fuel combustion in vehicles and equipment), this impact is short-term and relatively minor. Additionally, the long-term impacts of the proposed project may include a reduction in greenhouse gases through the sequestration of carbon from the atmosphere. Tree and other vegetation biologically absorb carbon from the atmosphere and incorporate it into their biomass (i.e., the carbon becomes part of the growing tree or plant). Therefore, the impact is considered to be less than significant.

Mitigation Measures

None required.

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

	Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Discussion of Impacts

(a,b) ***Less than Significant with Mitigation Incorporated.*** Project construction would require the transport and use of potentially hazardous materials (e.g., fuels, oils, lubricants, herbicides). Accidental spill of these materials could pose a hazard to people or the environment. Release of hazardous materials is considered a significant impact. Implementation of Mitigation Measure #6 would reduce potential impacts to a less-than-significant level.

(c) ***No Impact.*** The project is not located within one-quarter mile of an existing or known proposed school.

(d) ***No Impact.*** The project area is not included on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (California Department of Toxic Substances Control 2007).

(e,f) ***No Impact.*** The project area is not located in the vicinity of any public or private airstrip.

(g) ***No Impact.*** The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

(h) ***Less-than-Significant Impact.*** The proposed project area is not recognized as having a high fire hazard potential (California Department of Forestry and Fire Protection 2007). The levees, roads, and the Feather River form effective barriers to the spread of wildfire in the project vicinity. Although the use of machinery in and around vegetated areas increases the potential for wildfire ignition, periodic mowing between rows and clusters, and along the perimeter of the North and South fields, during vegetation establishment would reduce potential fire hazards. Implementation of the project would not interfere with any emergency plans. The potential to expose people or structures to wildfire as a result of project implementation would be less than significant.

Mitigation Measures (Hazards and Hazardous Materials)

Mitigation Measure #6—Pollutants

- Fuel, oil and other petroleum products, as well as pesticides/herbicides shall be stored only at designated staging areas. Staging areas shall be located greater than 100 feet from aquatic habitat (e.g., the Feather River). The use of hazardous materials shall be avoided or minimized where possible. Material containment containers shall be clearly labeled with the identity of the materials, handling and safety instructions, and emergency contact. Any soils contaminated by spills shall be contained and shall be removed to an approved disposal site.

- On-site equipment shall be maintained to minimize petroleum drippings. Stationary power equipment (e.g., engines, pumps, generators) shall be positioned over drip pans.

- During fuel transfer and filling, absorbent pads, pillows, socks, booms or other spill containment materials shall be available. Trained personnel shall monitor the filling of equipment and shall stop fuel flow immediately if a spill occurs. Fuel transfer/filling shall not resume until the problem is resolved.

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

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j)	Inundation of seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion of Impacts

(a, f) ***Less than Significant with Mitigation Incorporated.*** The proposed project consist of riparian restoration on land formerly used for agriculture that has been fallow for nearly 27 years and is currently located within the Feather River Wildlife Area. The proposed project is intended to improve the quality of wildlife habitat, reduce habitat fragmentation, and benefit a broad range of sensitive animal and plant species. The project is anticipated to result in a long-term benefit to water quality by stabilizing soils and reducing erosion, and increasing the capacity of the riparian corridor to filter chemicals and excess nutrients. However, implementation of the proposed project would involve the use of equipment and hazardous materials (e.g., fuel, oil) that could adversely affect water quality as a result of spills of mishandling. Implementation of Mitigation Measure #6 (see Section VIII, Hazards and Hazardous Materials) would reduce the potential for significant impacts to a less-than-significant level.

(b) ***Less-than-Significant Impact.*** Implementation of the project would require short-term irrigation (approximately 3 years) until the plants have become established. Water would be supplied by an existing on-site agricultural well, previously used to irrigated agricultural crops that were grown in the North and South fields. The volume of water needed for the proposed project would have a less-than-significant effect on local groundwater supplies.

(c, d) ***Less-than-Significant Impact.*** Construction activities associated with the proposed project are not anticipated to alter the existing drainage pattern of the project area in a way that would result in erosion or sedimentation downstream. The site-specific hydraulic analysis prepared for the proposed project included models that simulated net changes to flood flow water surface elevations and velocities based on proposed plant designs. The model showed that the increase in water surface elevation would be localized near the north end of the project area, and would be approximately 0.12 feet for the 1-in-100 and AEP flood event and 0.15 feet for the 1-in-200 AEP flood event (MBK Engineers 2009). This increase is considered less-than-significant because the minimum freeboard (i.e., distance from top of levee to water surface) requirement in this reach of the Feather River is three feet based on the flood control project design flow. The freeboard calculations under the model were greater than six feet for the 1-in-100 AEP flood event, and greater than three feet for the 1-in-200 AEP event.

In 2012, the project planting design was included as part of the comprehensive Lower Feather River Corridor Management Plan Flood Hydraulic Analysis of Future Conditions (MBK Engineers 2012). This comprehensive model showed that the water surface elevation would by approximately 0.7 feet lower than baseline flood flows along the reach of the Feather River where the Abbott Lake Unit is located during both the 1-in-100 and 1-in-200 AEP flood events. Based on both the site-specific and comprehensive hydraulic analyses (MBK Engineers 2009, 2012), the project will have a less-than-significant impact on drainage patterns, including flood flow conveyance.

(e) ***Less-than-Significant Impact.*** The project would not adversely affect the rate of storm water runoff from the Abbott Lake Unit; rather, revegetation of the North and South fields would increase the water holding capacity of the soils and reduce runoff rates. Herbicides, such as Round-Up®, are specifically formulated to decompose quickly and, thus would not be a significant pollutant carried by runoff.

(g) ***No Impact.*** The project does not involve construction of new housing within a flood hazard area.

(h) ***Less-than-Significant Impact.*** The proposed project does not involve the construction of any structures that would impede or redirect flood flows, or increase the exposure of people to hazards associated with dam failure. However, the project does involve the planting of shrubs and trees within the Feather River floodplain. Floodwater conveyance and the structural resistance (i.e., flexibility versus rigidity) of woody plants to flows were an integral part of the hydraulic analysis used in the development of the project design. The hydraulic analysis concluded that any impacts to flood flow water surface elevations and velocities associated with the proposed project would be less than significant within the modeled reach (RM 8.0 to RM 28.7) of the Feather River (MBK Engineers 2009, 2012).

(i) ***No Impact.*** The project is within the Feather River floodplain and as such, is subject to seasonal flooding. The project would not adversely impede or alter flows associated with flood events.

(j) ***No Impact.*** The project site is not at risk of seiche, tsunami, or mudflow.

Mitigation Measures

None required.

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

Discussion of Impacts

(a-c) ***No Impact.*** The proposed project consists of riparian restoration and would not divide an established community or conflict with existing land use plans, policies, and regulations. The project would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plans.

Mitigation Measures

None required.

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
XI.	**MINERAL RESOURCES** — Would the project:				
a)	Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b)	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Discussion of Impacts

(a, b) ***No Impact.*** The project area is located entirely within public lands managed for recreation and wildlife habitat by the CDFW. The project would have no effect on mineral resources or affect the potential availability of an important mineral resource.

Mitigation Measures

None required.

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

Discussion of Impacts

(a) ***No Impact.*** Implementation of the proposed project would not expose persons to elevated noise levels. Use of agricultural equipment (e.g., tractor, agricultural well pump) to complete the project would not generate noise in excess of local noise ordinances or general plan standards.

(b) ***No Impact.*** Implementation of the proposed project would not result in the generation of excessive groundborne vibration or groundborne noise.

(c) ***No Impact.*** Noise generated in excess of existing levels would be limited to the site-preparation phase of the proposed project. The proposed project would not result in a permanent increase in ambient noise levels in the project vicinity.

(d) ***Less-than-Significant Impact.*** Noise generated in excess of existing levels would be limited to the site-preparation phase of the proposed project. Such noise is analogous to that produced by agricultural land uses in and around the project area. This would be a less-than-significant temporary impact.

(e,f) ***No Impact.*** The project is not located in the vicinity of an airport or landing strip.

Mitigation Measures

None required.

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

Discussion of Impacts

(a-c) ***No Impact.*** The proposed project would not affect population growth or housing.

Mitigation Measures

None required.

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

Discussion of Impact

(a) ***No Impact.*** The project would have no effect on public services or facilities, or create an additional need for utilities.

Mitigation Measures

None required.

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
XV.	**RECREATION** — Would the project:				
a)	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b)	Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion of Impacts

(a, b) ***No Impact.*** The project consists of riparian restoration on land formerly used for agriculture that has been fallow for nearly 27 years and is currently located within the Abbott Lake Unit of the Feather River Wildlife Area. Implementation of the project would not result in a significant increase in recreational use of the Abbott Lake Unit.

Mitigation Measures

None required.

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

Discussion of Impacts

(a,b) ***No Impact.*** Transportation of materials, equipment, and personnel to the project site would be analogous to actions associated with agricultural land use in and around the project area. Project-related traffic would not conflict with any transportation plans, programs or circulation systems.

(c) ***No Impact.*** Implementation of the proposed project would not affect air traffic patterns.

(d) ***No Impact.*** The proposed project would not result in the creation of sharp curves, dangerous intersections, or incompatible uses.

(e) ***No Impact.*** The project would not require any changes to roads outside of the project area or result in a substantial increase in existing traffic operating on area roads; therefore, the proposed project would have no effect on the movement of emergency vehicles on roads adjacent to the project area.

(f) ***No Impact.*** The proposed project would not conflict with any adopted plans, policies, or programs that support alternative transportation.

Mitigation Measures

None required.

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

Discussion of Impacts

(a-g) ***No Impact.*** The proposed project would not require the use or expansion of water or wastewater facilities, nor would it generate solid waste requiring off-site disposal.

Mitigation Measures

None required.

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

Discussion

(a-b) ***Less than Significant with Mitigation Incorporated.*** As discussed in the preceding sections, the proposed project has a potential to result in adverse effects on air quality, biological resources, cultural resources, hazards and hazardous materials, and hydrology and water quality. These potential impacts and the required mitigation measures are discussed in detail in the corresponding sections above. With implementation of the required mitigation measures, potential impacts would be reduced to a less-than-significant level. The proposed project is a vegetation restoration project on land formerly used for agriculture that has been fallow for nearly 27 years and is currently located within the Feather River Wildlife Area. The proposed project is intended to improve the quality of wildlife habitat, reduce habitat fragmentation, and benefit a broad range of sensitive animal and plant species. The project is not anticipated to contribute to significant adverse cumulative impacts.

(c) ***Less-than-Significant Impact.*** The proposed project would not involve any actions that would have a substantial adverse direct or indirect effect on the human environment.

4 Determination

On the basis of this initial evaluation:

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

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

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

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

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

Tina Bartlett
California Department of Fish and Wildlife

Date

5 Summary of Mitigation Commitments

The following mitigation measures shall be implemented during implementation of the Abbott Lake Restoration Project:

5.1 Air Quality

Mitigation Measure #1—Fugitive Dust

- All ground-disturbing operations shall be suspended when winds exceed 20 miles per hour or when winds carry dust beyond the property line despite implementation of all feasible dust control measures.
- All areas subject to ground disturbance shall be watered as necessary to prevent fugitive dust violations.
- Onsite dirt piles or other stockpiled particulate matter shall be covered, wind breaks installed, and water and/or soil stabilizers employed as necessary to reduce windblown dust emissions.
- All transfer processes involving a free-fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions.
- Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less and reduce unnecessary vehicle traffic by restricting access.

Mitigation Measure #2–Construction Equipment Exhaust

- All construction equipment shall be maintained in proper tune according to manufacturer's specifications.
- To the extent practicable, the use of diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines shall be maximized.
- Unnecessary vehicle idling shall be restricted to 5 minutes or less.
- Maximize use of gasoline-powered equipment in lieu of diesel-powered equipment where feasible.
- Visible emissions from stationary diesel-powered equipment shall not exceed 40 percent opacity for more than three minutes in any one-hour.

5.2 Biological Resources

Mitigation Measure #3 – Valley Elderberry Longhorn Beetle

- No activities that could result in take of the valley elderberry long beetle (e.g., removal of elderberry shrubs) shall be implemented unless appropriate conservation measures (e.g., transplantation using proper techniques) are implemented and the required Endangered Species Act authorization has been obtained. The USFWS is preparing a Safe Harbor Agreement for the Feather River Wildlife Area, which includes the proposed project and addresses valley elderberry longhorn beetle and the planting of elderberry shrubs. The conditions of the Safe Harbor Agreement may include, but are not limited to, limitations of locations of elderberry plantings; training of maintenance staff, limitations on pesticide application, limitations on vegetation control procedures, and limitations on removal or transplanting of elderberry shrubs. All conditions of the Safe Harbor Agreement applicable to the proposed project shall be implemented.

5.3 Cultural Resources

Mitigation Measure #4 – Cultural Resources

- An archaeologist meeting the Secretary of Interior's Professional Qualifications Standards in prehistoric or historical archaeology, shall be present to monitor any ground-disturbing activities that would penetrate deeper than 36 inches into the soil surface. The monitoring archaeologist shall have "stop work" authority in the event that archaeological deposits are encountered, and work shall not resume until appropriate conservation measures have been implemented.

- In the event archaeological deposits are discovered during project activities, all work in the immediate vicinity of the discovery shall be stopped immediately and the CDFW shall be notified. An archaeologist meeting the Secretary of Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, shall be retained to evaluate the find and recommend appropriate conservation measures. The conservation measures shall be implemented prior to re-initiation of activities in the immediate vicinity of the discovery.

Mitigation Measure #5 – Human Remains

- If human remains are discovered during project activities, all activities in the vicinity of the find shall be suspended and the Sutter County Coroner's Office shall be notified. If the coroner determines that the remains may be those of a Native American, the coroner shall contact the NAHC. Treatment of the remains shall be conducted in accordance with the direction of the County Coroner and/or the NAHC, as appropriate.

5.4 Hazards and Hazardous Materials / Hydrology and Water Quality

Mitigation Measure #6—Pollutants

- Fuel, oil and other petroleum products, as well as pesticides/herbicides shall be stored only at designated staging areas. Staging areas shall be located greater than 100 feet from aquatic habitat (e.g., the Feather River). The use of hazardous materials shall be avoided or minimized where possible. Material containment containers shall be clearly labeled with the identity of the materials, handling and safety instructions, and emergency contact. Any soils contaminated by spills shall be contained and shall be removed to an approved disposal site.

- On-site equipment shall be maintained to minimize petroleum drippings. Stationary power equipment (e.g., engines, pumps, generators) shall be positioned over drip pans.

- During fuel transfer and filling, absorbent pads, pillows, socks, booms or other spill containment materials shall be available. Trained personnel shall monitor the filling of equipment and shall stop fuel flow immediately if a spill occurs. Fuel transfer/filling shall not resume until the problem is resolved.

6 Report Preparation and References

6.1 Report Preparation

California Department of Fish and Wildlife—CEQA Lead Agency

Tina Bartlett	Regional Manager

North State Resources, Inc.—Environmental Consultant

Mark Wuestehube	Program Manager
Paul Kirk	Project Manager
Connie MacGregor Carpenter	Environmental Analyst
Edward Douglas	GIS Analyst

River Partners—Environmental Consultant

Helen Swagerty	Senior Restoration Biologist/Project Manager
Michael Rogner	Associate Restoration Biologist

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Appendix A

Hydraulic Analysis

Appendix B

Riparian Restoration Plan

Abbott Lake Restoration Project

Mitigation Monitoring and Reporting Program

CEQA Lead Agency:
California Department of Fish and Wildlife
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Prepared By:
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Mitigation Monitoring and Reporting Program

This document comprises the Mitigation Monitoring and Reporting Program (MMRP) for the Abbott Lake Restoration Project. It identifies the mitigation measures described in the Initial Study/Mitigated Negative Declaration (IS/MND) for the responsibilities of the lead agency, California Department of Fish and Wildlife (CDFW) for implementation of the measures. The mitigation measures listed herein are required by law or regulation and will be adopted by the CDFW.

A mitigation measure is defined by the California Environmental Quality Act (CEQA) as one that:

- avoids an impact by not taking a certain action or parts of an action;
- minimizes an impact by limiting the degree or magnitude of an action;
- rectifies an impact by repairing, rehabilitating, or restoring the affected environment;
- reduces or eliminates an impact over time using preservation and maintenance operations throughout the life of the project; or
- compensates for an impact by creating or preserving substitute resources or environments, usually in-kind.

This MMRP includes discussions of the following: legal requirements, intent of the MMRP, the authorities and responsibilities associated with implementation of the MMRP, a mitigation measure summary and verification table, and resolution of noncompliance complaints.

Legal Requirements

The legal basis for the development and implementation of the MMRP is found in CEQA. Under CEQA, California Public Resources Code (PRC) Sections 21002 and 21002.1 state the following:

- Public agencies are not to approve projects, as proposed, if there are feasible alternatives or feasible mitigation measures available that would substantially lessen the significant environmental effects of such projects.
- Each public agency shall mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so.

Also under CEQA, California PRC Section 21081.6 requires the following:

- The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation.
- The monitoring program must be adopted when a public agency makes its findings under CEQA so that the program can be made a condition of project approval in order to mitigate significant effects on the environment. The program must be designed to ensure compliance with mitigation measures during project implementation to mitigate or avoid significant environmental effects.

The National Environmental Policy Act does not explicitly require the mitigation of significant impacts or adoption of a monitoring program for mitigation measures that may be adopted by a federal agency, but it does require a discussion of measures that can be taken to reduce adverse effects if such measures are not already included in the proposed action or alternatives (40 CFR Section 1502.14f).

Intent of the Mitigation Monitoring and Reporting Program

The MMRP is intended to satisfy the requirements of CEQA and specify the responsibilities of the agencies for implementing mitigation measures to alleviate adverse effects of the preferred alternative. It is anticipated that the MMRP will be used by CDFW staff, other participating agencies, project contractors, and mitigation monitoring personnel during implementation of the Abbott Lake Restoration Project.

The primary objective of the MMRP is to ensure the effective implementation and enforcement of adopted mitigation measures. The MMRP will provide for monitoring of construction activities as needed, on-site identification and resolution of environmental problems, and proper reporting to lead agency staff. The MMRP is not only a working guide to be used to facilitate the implementation of mitigation and conservation measures by the project proponent, but also to ensure that monitoring and reporting requirements are met.

Responsibilities and Authority

As the lead agency, the CDFW is responsible for monitoring implementation of the Abbott Lake Restoration Project and ensuring that adopted mitigation and conservation measures are implemented. The purpose of the MMRP is to document that the required mitigation measures are implemented as described in the IS/MND and ensure project impacts are reduced to acceptable levels, to the extent feasible. The CDFW have the authority to halt any activity associated with the project if the activity is determined to be a deviation from the approved project or the adopted mitigation measures. The agencies may delegate duties and responsibilities for monitoring to other mitigation monitors or consultants as deemed necessary. They will ensure that the person(s) delegated any duties or responsibilities are qualified to monitor compliance.

The CDFW and/or delegated representatives will be responsible for implementation of the MMRP, which will include:

- ensuring that the MMRP is incorporated into the construction bid documents,
- coordinating monitoring activities,
- directing the preparation and filing of compliance reports, and
- maintaining records concerning the status of all mitigation measures.

Monitoring Requirements

Table 1 includes the following items to track completion of each mitigation measure:

- **Mitigation Measure:** presents the mitigation measures identified in the IS/MND, for each significant impact of the preferred alternative.
- **Timing:** identifies when the mitigation measures will be implemented.
- **Responsible Party:** references the specific agency or entity responsible for implementing and monitoring the mitigation measure.
- **Verification:** provides spaces to be initialed and dated by the individual responsible for verifying compliance with each specific mitigation measure.

Noncompliance Complaints

Complaints of noncompliance with adopted mitigation measures shall be directed to CDFW in written form, providing specific information on the alleged violation. If any complaints are received, CDFW shall conduct an investigation and determine the validity of the complaint. If noncompliance with a mitigation measure has occurred, CDFW shall take the appropriate action to remedy the violation. The person filing the complaint shall receive written confirmation indicating the results of the investigation or the final action corresponding to the particular noncompliance issue.

Complaints should reference the Abbott Lake Restoration Project and be directed to the following agency representative:

Tina Bartlett
California Department of Fish and Wildlife
North Central Region
1701 Nimbus Road
Rancho Cordova, CA 95670

Table 1. Mitigation Measures and Monitoring Requirements

Mitigation Measure	Timing	Responsible Parties	Verification (Date/Initials)
Air Quality			
Mitigation Measure #1—Fugitive Dust The following are identified measures to be implemented during restoration activities : • All ground-disturbing operations shall be suspended when winds exceed 20 miles per hour or when winds carry dust beyond the property line despite implementation of all feasible dust control measures. • All areas subject to ground disturbance shall be watered as necessary to prevent fugitive dust violations. • Onsite dirt piles or other stockpiled particulate matter shall be covered, wind breaks installed, and water and/or soil stabilizers employed as necessary to reduce windblown dust emissions. • All transfer processes involving a free-fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions. • Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less and reduce unnecessary vehicle traffic by restricting access.	During restoration activities	Implemented by River Partners, CDFW responsible for monitoring/oversight	
Mitigation Measure #2–Construction Equipment Exhaust The following are identified measures to be implemented during restoration activities: • All construction equipment shall be maintained in proper tune according to manufacturer's specifications. • To the extent practicable, the use of diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines shall be maximized. • Unnecessary vehicle idling shall be restricted to 5 minutes or less. • Maximize use of gasoline-powered equipment in lieu of diesel-powered equipment where feasible. • Visible emissions from stationary diesel-powered equipment shall not exceed 40 percent opacity for more than three minutes in any one-hour.	During restoration activities	Implemented by River Partners, CDFW responsible for monitoring/oversight	

Mitigation Measure	Timing	Responsible Parties	Verification (Date/Initials)
Biological Resources			
Mitigation Measure #3 – Valley Elderberry Longhorn Beetle • No activities that could result in take of the valley elderberry long beetle (e.g., removal of elderberry shrubs) shall be implemented unless appropriate conservation measures (e.g., transplantation using proper techniques) are implemented and the required Endangered Species Act authorization has been obtained. The USFWS is preparing a Safe Harbor Agreement for the Feather River Wildlife Area, which includes the proposed project and addresses valley elderberry longhorn beetle and the planting of elderberry shrubs. The conditions of the Safe Harbor Agreement may include, but are not limited to, limitations of locations of elderberry plantings; training of maintenance staff, limitations on pesticide application, limitations on vegetation control procedures, and limitations on removal or transplanting of elderberry shrubs. All conditions of the Safe Harbor Agreement applicable to the proposed project shall be implemented. In conjunction with a proposed Safe Harbor Agreement related to elderberry plant conservation at Abbott Lake, CDFW has agreed with the USFWS to amend their 1988 Lower Feather River Complex Operation and Maintenance Plan (Management Plan). The amendment to the Management Plan will capture CDFW's intent to enhance this elderberry plant population, in perpetuity, at a level above current baseline.	During restoration activities	Implemented by River Partners, CDFW responsible for monitoring/oversight	

Mitigation Measure	Timing	Responsible Parties	Verification (Date/Initials)
Cultural Resources			
Mitigation Measure #4 – Cultural Resources (Continued) • An archaeologist meeting the Secretary of Interior's Professional Qualifications Standards in prehistoric or historical archaeology, shall be present to monitor any ground-disturbing activities that would penetrate deeper than 36 inches into the soil surface. The monitoring archaeologist shall have "stop work" authority in the event that archaeological deposits are encountered, and work shall not resume until appropriate conservation measures have been implemented. • In the event archaeological deposits are discovered during project activities, all work in the immediate vicinity of the discovery shall be stopped immediately and the CDFW shall be notified. An archaeologist meeting the Secretary of Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, shall be retained to evaluate the find and recommend appropriate conservation measures. The conservation measures shall be implemented prior to re-initiation of activities in the immediate vicinity of the discovery.	During restoration activities	Implemented by River Partners, CDFW responsible for monitoring/oversight	
Mitigation Measure #5 – Human Remains • If human remains are discovered during project activities, all activities in the vicinity of the find shall be suspended and the Sutter County Coroner's Office shall be notified. If the coroner determines that the remains may be those of a Native American, the coroner shall contact the NAHC. Treatment of the remains shall be conducted in accordance with the direction of the County Coroner and/or the NAHC, as appropriate.	During restoration activities	Implemented by River Partners, CDFW responsible for monitoring/oversight	

Mitigation Measure	Timing	Responsible Parties	Verification (Date/Initials)
Hazards and Hazardous Materials / Hydrology and Water Quality			
Mitigation Measure #6—Pollutants • Fuel, oil and other petroleum products, as well as pesticides/herbicides shall be stored only at designated staging areas. Staging areas shall be located greater than 100 feet from aquatic habitat (e.g., the Feather River). The use of hazardous materials shall be avoided or minimized where possible. Material containment containers shall be clearly labeled with the identity of the materials, handling and safety instructions, and emergency contact. Any soils contaminated by spills shall be contained and shall be removed to an approved disposal site. • On-site equipment shall be maintained to minimize petroleum drippings. Stationary power equipment (e.g., engines, pumps, generators) shall be positioned over drip pans. • During fuel transfer and filling, absorbent pads, pillows, socks, booms or other spill containment materials shall be available. Trained personnel shall monitor the filling of equipment and shall stop fuel flow immediately if a spill occurs. Fuel transfer/filling shall not resume until the problem is resolved.	During restoration activities	Implemented by River Partners, CDFW responsible for monitoring/oversight	

Notice of Determination

Appendix D

To:

☒ Office of Planning and Research

U.S. Mail: P.O. Box 3044, Sacramento, CA 95812-3044

Street Address: 1400 Tenth St., Rm 113, Sacramento, CA 95814

☐ County Clerk
County of: _____
Address: _____

From:

Public Agency: Ca Dept of Fish and Wildlife
Address: 1701 Nimbus Rd. Rancho Cordova, CA

Contact: Jason Holley
Phone: 916-212-1663

Lead Agency (if different from above):

Address: _____

Contact: _____
Phone: _____

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): 2013082005

Project Title: Abbott Lake Restoration Project

Project Applicant: Dept. of Fish and Wildlife - North Central Region

Project Location (include county): Abbott Lake Unit of the Feather River Wildlife Area - Sutter County

Project Description:
Approximately 17,000 native trees and shrubs will be planted on the Abbott Lake Unit of the Feather River Wildlife Area (Ca Fish and Wildlife - owned) to provide for wildlife habitat restoration.

This is to advise that the California Department of Fish and Wildlife (☒ Lead Agency or ☐ Responsible Agency) has approved the above described project on 12/16/2013 (date) and has made the following determinations regarding the above described project.

1. The project [☐ will ☐ will not] have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☒ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☒ were ☐ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [☒ was ☐ was not] adopted for this project.
5. A statement of Overriding Considerations [☐ was ☒ was not] adopted for this project.
6. Findings [☒ were ☐ were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at:
Department of Fish and Wildlife - North Central Region - Rancho Cordova, CA

Signature (Public Agency): _____ Title: EPM I

Date: 12/17/13 Date Received for filing at OPR: _____

Authority cited: Sections 21083, Public Resources Code.
Reference Section 21000-21174, Public Resources Code.

Revised 2011

Abbott Lake Restoration Project

SCH Number: 2013082005

Document Type: NOD - Notice of Determination

Project Lead Agency: Fish & Wildlife #2

Project Description

Approximately 17,000 native tree and shrubs will be planted on the Abbott Lake Unit on the Feather River Wildlife Area (CA Fish and Wildlife - owned) to provide for wildlife habitat restoration.

Contact Information

Primary Contact:
Jason Holley
California Department of Fish and Wildlife, Region 2
916 212 1663
Northern Central Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

Project Location

County: Sutter
City: Yuba City
Region:
Cross Streets: Star Bend Road and Garden Highway
Latitude/Longitude:
Parcel No: 023-300-126 and 023-300-127
Township: 14N
Range: 3E
Section:
Base:
Other Location Info:

Determinations

This is to advise that the ☒ Lead Agency ☐ Responsible Agency California Department of Fish and Wildlife has approved the project described above on 12/16/2013 and has made the following determinations regarding the project described above.

1. The project ☐ will ☐ will not have a significant effect on the environment.

2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.

   ☒ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.

3. Mitigation measures ☒ were ☐ were not made a condition of the approval of the project.

4. A Statement of Overriding Considerations ☐ was ☒ was not adopted for this project.

5. Findings ☒ were ☐ were not made pursuant to the provisions of CEQA.

Final EIR Available at: Department of Fish and Wildlife - North Central Region - Rancho Cordova, CA

Date Received: 12/17/2013

PROJECT PLANS FOR CONSTRUCTION OF

ABBOTT LAKE RESTORATION PROJECT
FEATHER RIVER WILDLIFE AREA

PROJECT OVERVIEW

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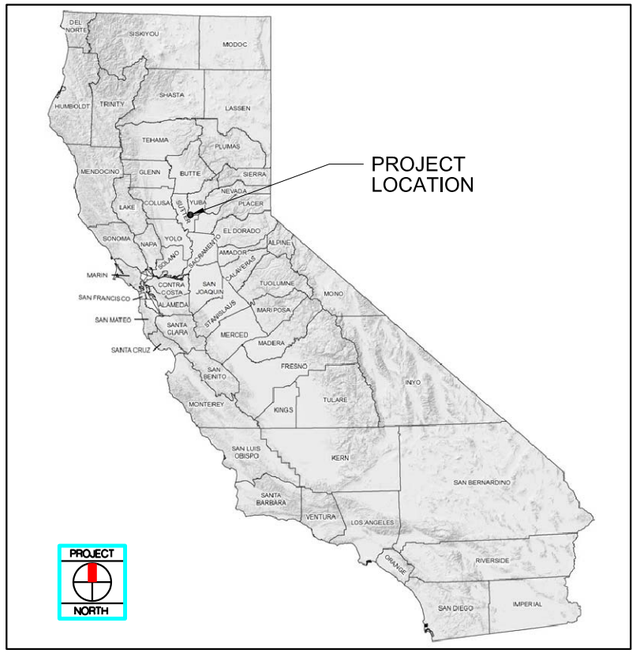
PREPARED FOR:

California Department of Fish and Wildlife
1701 Nimbus Road
Rancho Cordova, CA 95670
(916) 874-7606
Contact: Jason Holley,
North Central Region-Wildlife Program Supervisor

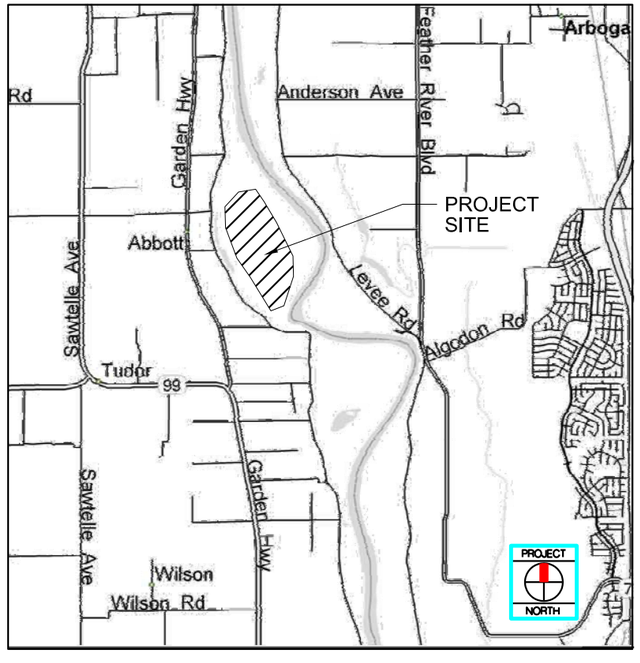
Levee District 1
250 Second Street
Yuba City, CA 95991

Central Valley Flood Protection Board
3310 El Camino Avenue
Room 151
Sacramento, CA 95821

VICINITY MAP



LOCATION MAP



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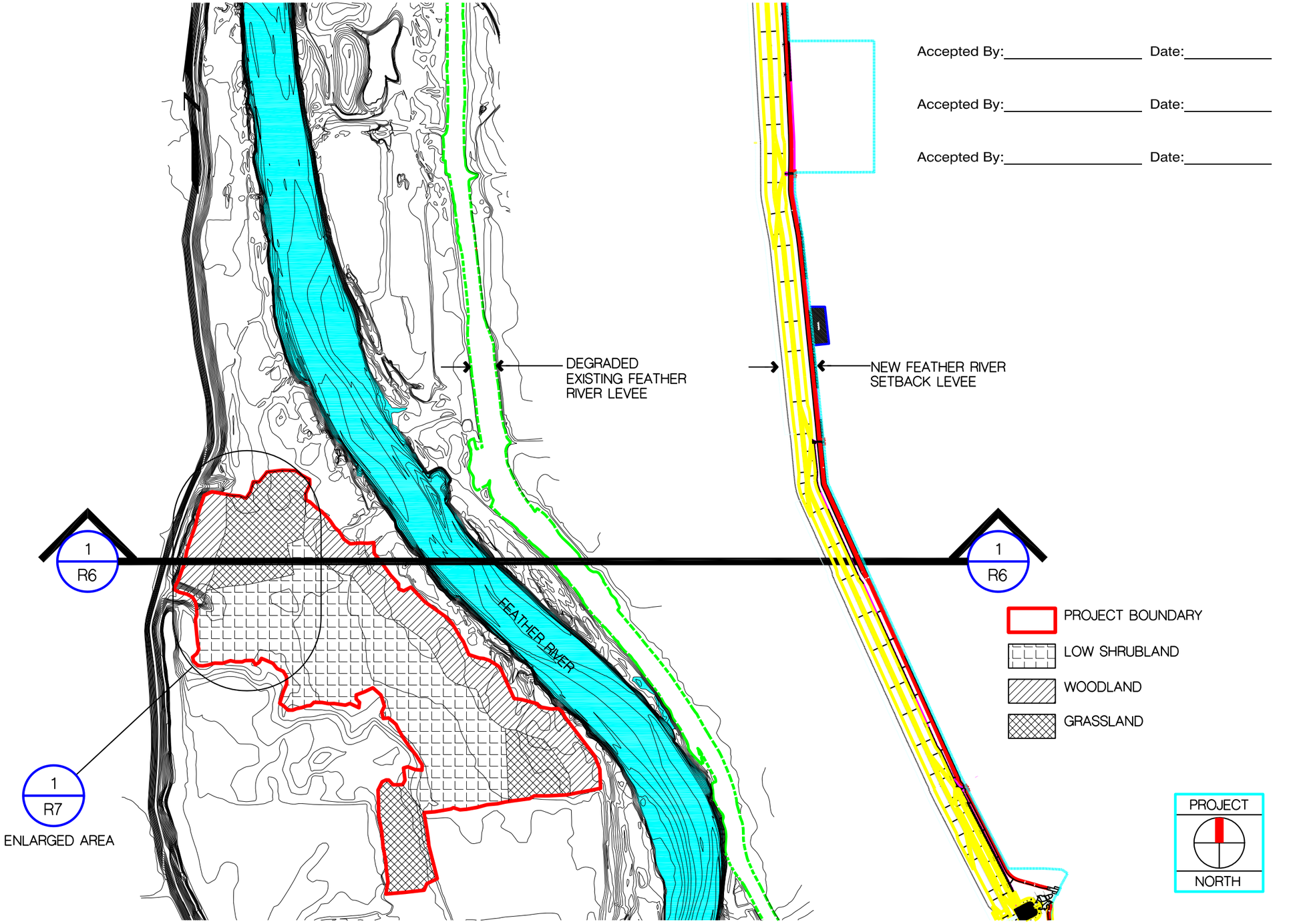
ABBOTT LAKE RESTORATION
Sutter County, California

COVER SHEET

FIGURE

L1

DATE: 07-03-14



ABBOTT LAKE PLANTING AREA 1

GRAPHIC SCALE: 1" = 1000'-0"

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PLANTING AREA PLAN

FIGURE
L2

DATE: 07-03-14

Plants

Symbol	Treatment	Details	Key	Botanical Name	Common Name	Plant Size	Quantity	Plant Spacing
	Low Shrubland [1]	SHEETS R9A-B	BU	*Cephalanthus occidentalis*	Buttonbush	Deepot	570	10' x 20' Hedgerows
			BB	*Rubus ursinus Chain. & Schldl.*	California blackberry	Deepot	2,542	10' x 20' Hedgerows
			CB	*Baccharis pilularis DC.*	Coyote bush	Deepot	1,593	10' x 20' Hedgerows
			PI	*Aristolochia californica*	Dutchman's pipevine	Deepot	570	10' x 20' Hedgerows
			EB	*Sambucus mexicanas*	Elderberry	Deepot	760	10' x 20' Hedgerows
			MF	*Baccharis salicifolia*	Mule fat	Cutting	380	10' x 20' Hedgerows
			OK	*Quercus lobata Nee*	Valley oak	Acorn	235	10' x 20' Hedgerows
			RO	*Rosa californica Cham. & Schldl.*	Wild rose	Deepot	2,185	10' x 20' Hedgerows
			AW	*Salix lasiolepis Benth.*	Arroyo willow	Cutting	665	10' x 20' Hedgerows
	Woodland [1]	SHEETS R8A-E	BB	*Acer negundo L.*	Box elder	Deepot	788	10' x 20'
			BU	*Cephalanthus occidentalis*	Buttonbush	Deepot	473	10' x 20'
			BB	*Rubus ursinus Chain. & Schldl.*	California blackberry	Deepot	1,103	10' x 20'
			CB	*Baccharis pilularis DC.*	Coyote bush	Deepot	1,260	10' x 20'
			EB	*Sambucus mexicanas*	Elderberry	Deepot	473	10' x 20'
			CO	*Populus fremontii S.Watson ssp. fremontii*	Fremont cottonwood	Cutting	36	10' x 20'
			MF	*Baccharis salicifolia*	Mule fat	Cutting	315	10' x 20'
			AS	*Fraxinus latifolia Benth*	Oregon ash	Deepot	945	10' x 20'
			OK	*Quercus lobata Nee*	Valley oak	Acorn	36	10' x 20'
			SY	*Platanus racemosa Nutt.*	Western sycamore	Deepot	36	10' x 20'
			RO	*Rosa californica Cham. & Schldl.*	Wild rose	Deepot	1,260	10' x 20'
			AW	*Salix lasiolepis Benth.*	Arroyo willow	Cutting	236	10' x 20'
			BW	*Salix goodingii C.R. Ball*	Gooding's black willow	Cutting	945	10' x 20'
	Grassland			*Elymus triticoides*	Creeping wildrye	Seed	5 lbs/acre	NA
				Elymus glaucus	Blue wildrye	Seed	5 lbs/acre	NA

[1]Ground cover in the Low Shrubland and Woodland will consists of the following herbaceous species:

Botanical Name	Common Name	Plant Size	Quantity
Artemisia douglasiana	Mugwort	Seed	2 lbs/acre
Grindelia camporum	Gumplant	Seed	2 lbs/acre
Heterotheca grandiflora	Telegraph weed	Seed	2 lbs/acre
Carex barbarae	Santa Barbara sedge	Plug	1878*

*6 plugs planted at each Valley oak

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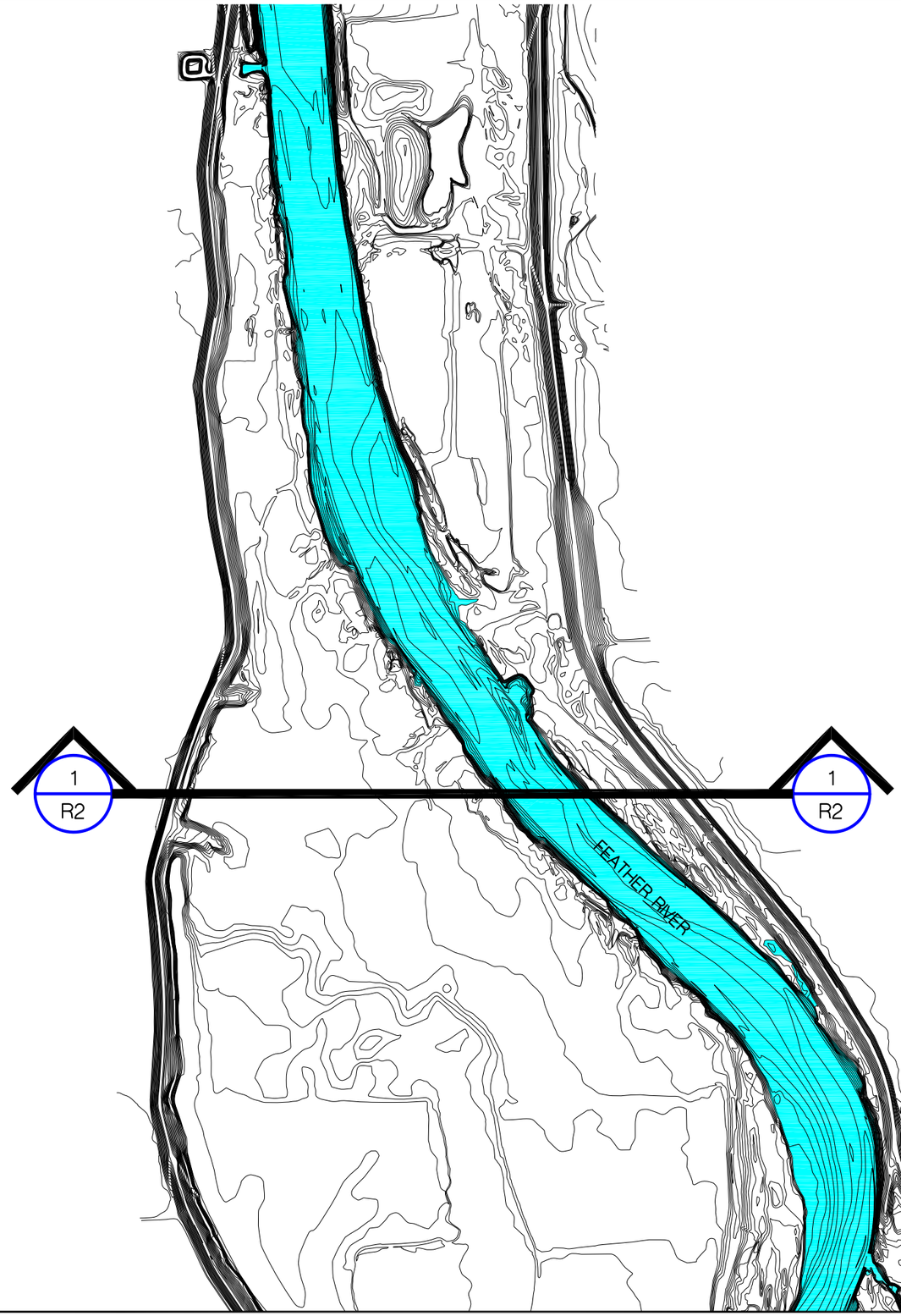
ABBOTT LAKE RESTORATION
Sutter County, California

PLANTING LEGEND

FIGURE
L3
DATE: 07-03-14



PROJECT
NORTH

PRE-EXISTING ABBOTT LAKE AREA 1

0' 1000' 2000' 4000'

GRAPHIC SCALE: 1" = 1000'-0"

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PRE-EXISTING
ABBOTT LAKE
AREA PLAN

FIGURE

R1

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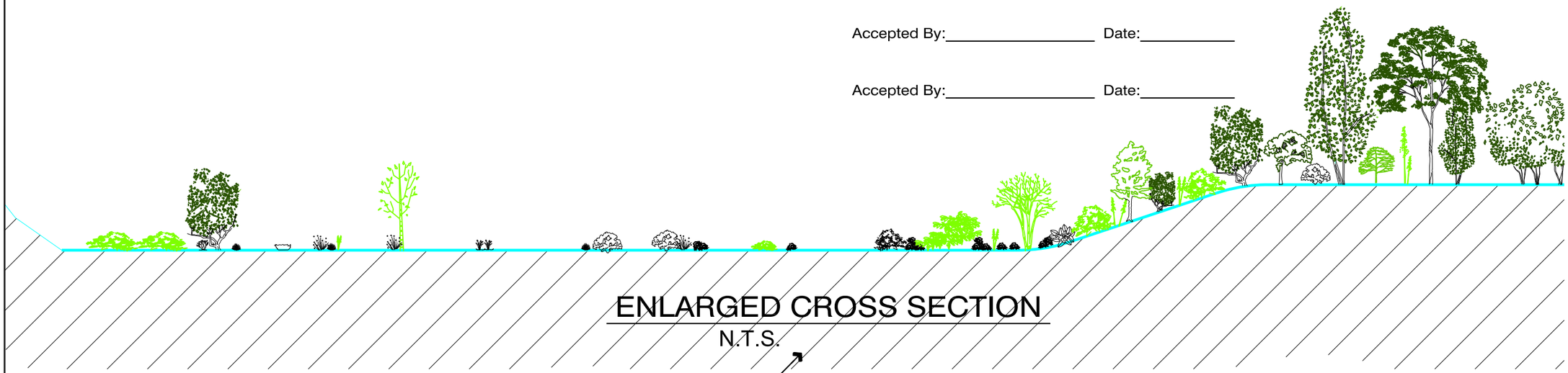
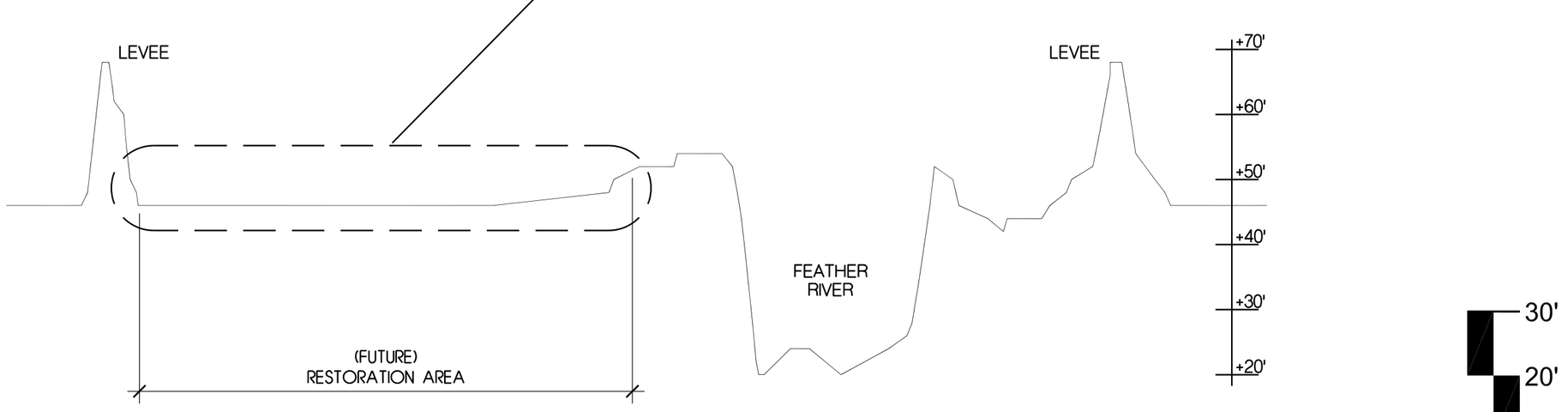


ENLARGED CROSS SECTION

N.T.S.



PRE-EXISTING CROSS SECTION @ ABBOTT LAKE AREA 1

GRAPHIC SCALE: 1" = 500' (HORIZ.) - 1" = 20' (VERT.)

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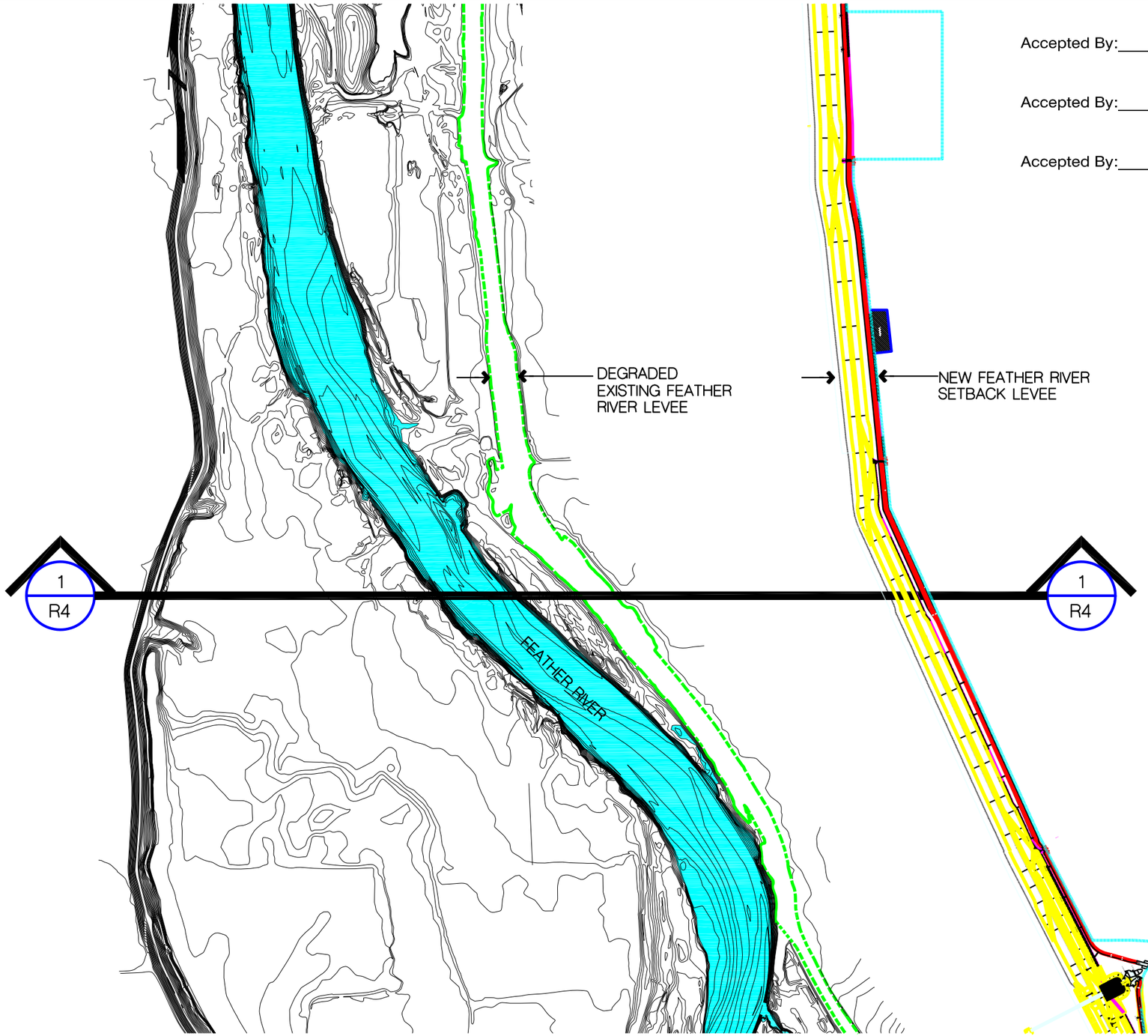
Sutter County, California

PRE-EXISTING
ABBOTT LAKE
CROSS SECTION

FIGURE

R2

DATE: 07-03-14



EXISTING ABBOTT LAKE w/ SETBACK LEVEE AREA 1

GRAPHIC SCALE: 1" = 1000'-0"

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EXISTING
ABBOTT LAKE w/ SETBACK
LEVEE AREA PLAN

FIGURE

R3

DATE: 07-03-14

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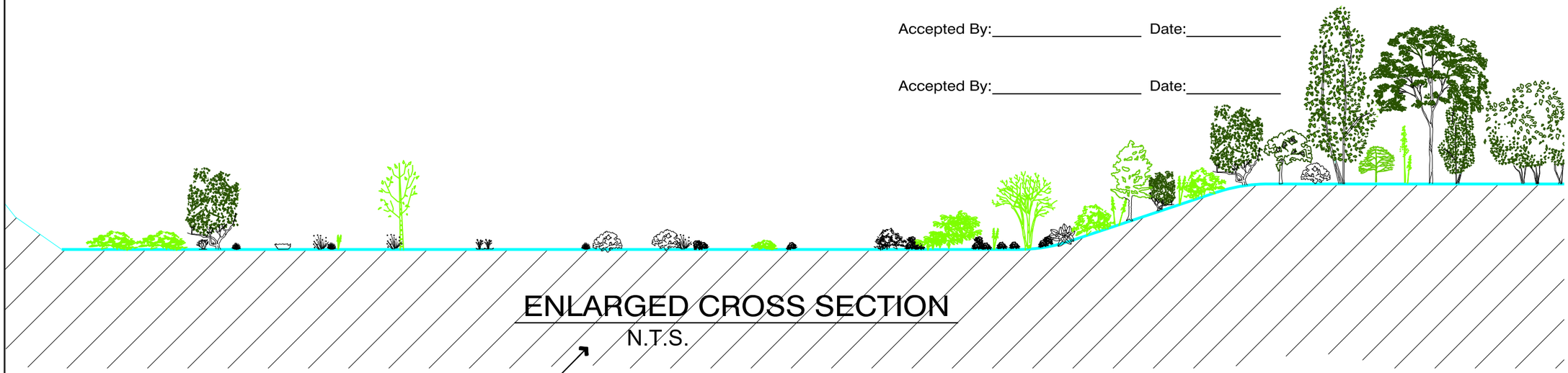

ENLARGED CROSS SECTION

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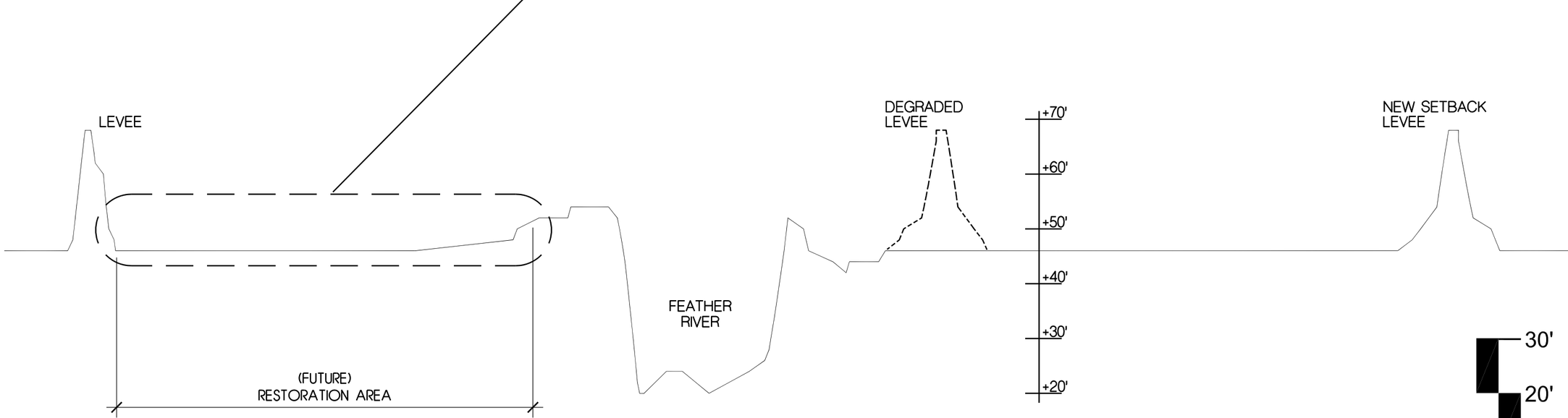

EXISTING

CROSS SECTION @ ABBOTT LAKE w/ SETBACK LEVEE AREA

1

GRAPHIC SCALE: 1" = 500' (HORIZ.) - 1" = 20' (VERT.)

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FEATHER RIVER RESTORATION

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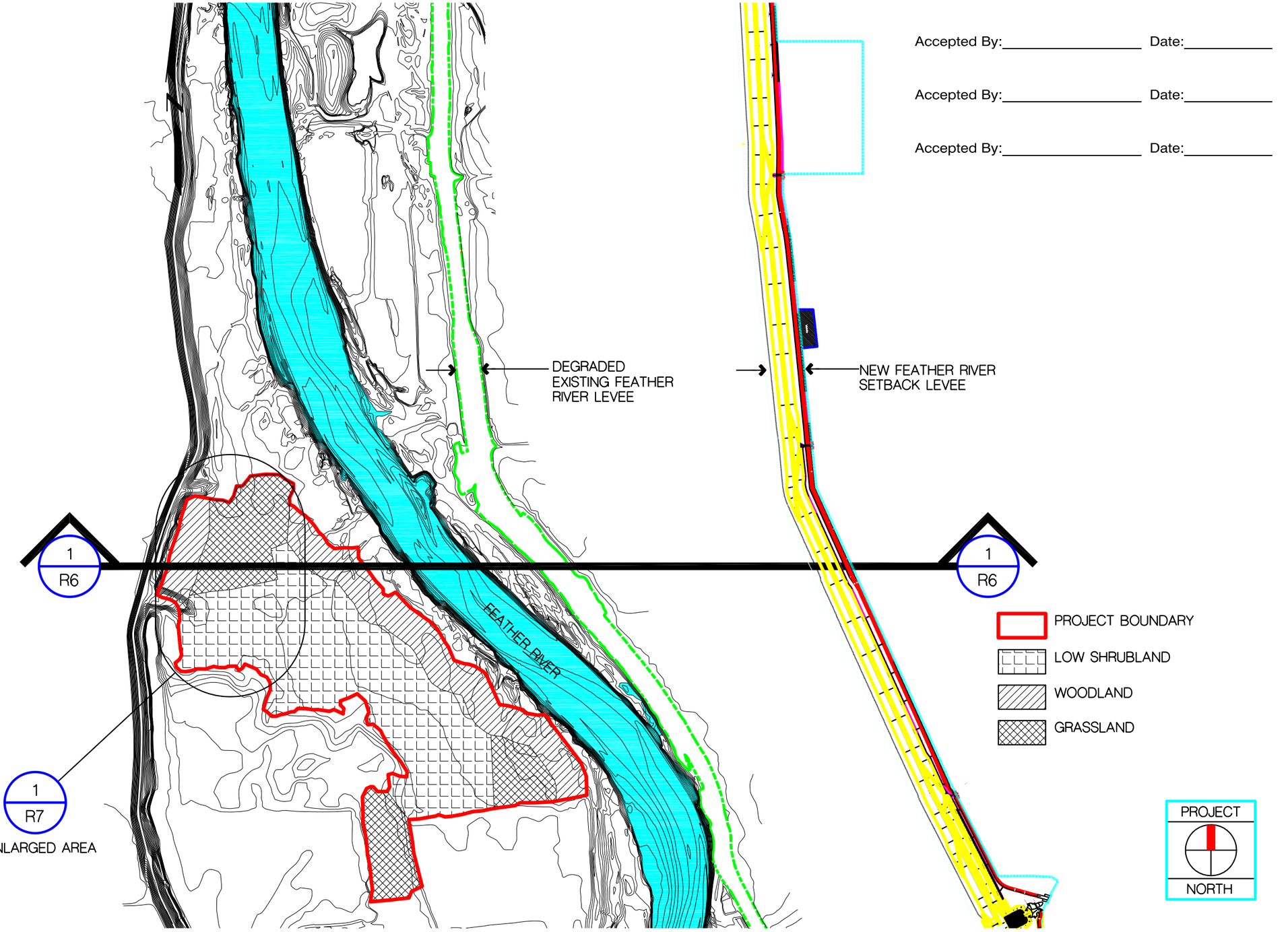
ABBOTT LAKE w/ SETBACK LEVEE CROSS SECTION

FIGURE

R4

DATE: 07-03-14



GRAPHIC SCALE: 1" = 1000'-0"

PROJECT CONDITIONS AT ABBOTT LAKE RESTORATION AREA 1

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FEATHER RIVER RESTORATION
Sutter County, California

ABBOTT LAKE RESTORATION AREA PLAN

FIGURE

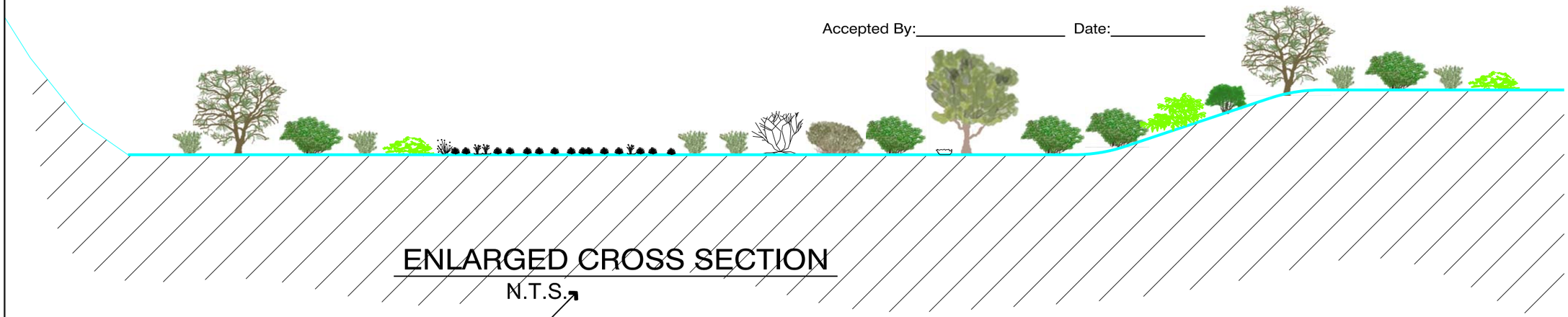
R5

DATE: 07-03-14

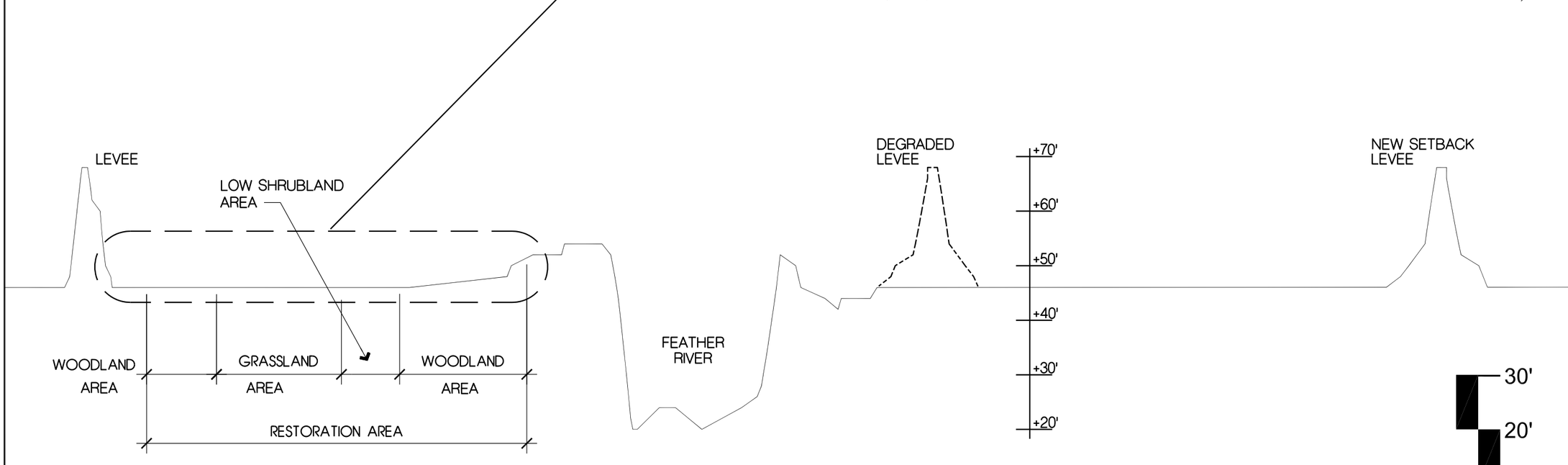
Accepted By:_____ Date:_____

Accepted By:_____ Date:_____

Accepted By:_____ Date:_____



ENLARGED CROSS SECTION
N.T.S.



PROJECT CONDITIONS
CROSS SECTION @ ABBOTT LAKE RESTORATION AREA

1

GRAPHIC SCALE: 1" = 500' (HORIZ.) - 1" = 20' (VERT.)

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CALIFORNIA DEPARTMENT OF FISH & WILDLIFE

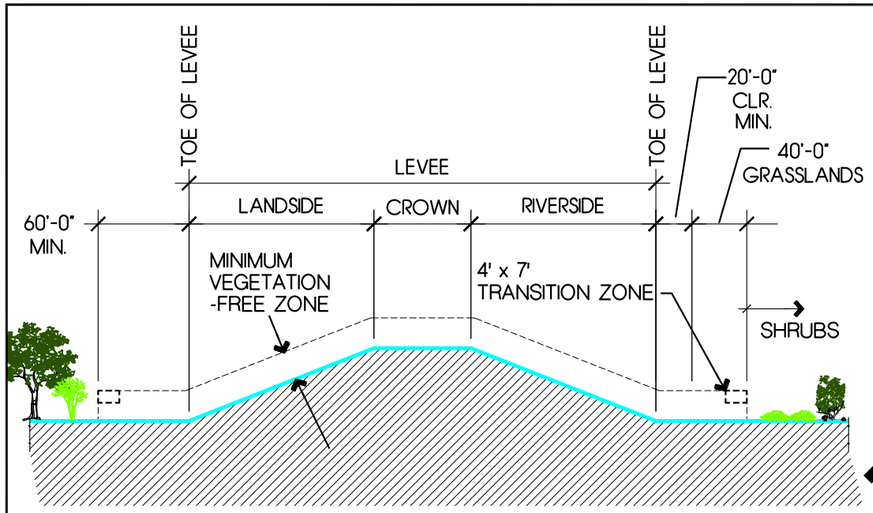
FEATHER RIVER RESTORATION
Sutter County, California

ABBOTT LAKE
RESTORATION AREA
CROSS SECTION

FIGURE

R6

DATE: 07-03-14



LEVEE CROSS SECTION 2

N.T.S.

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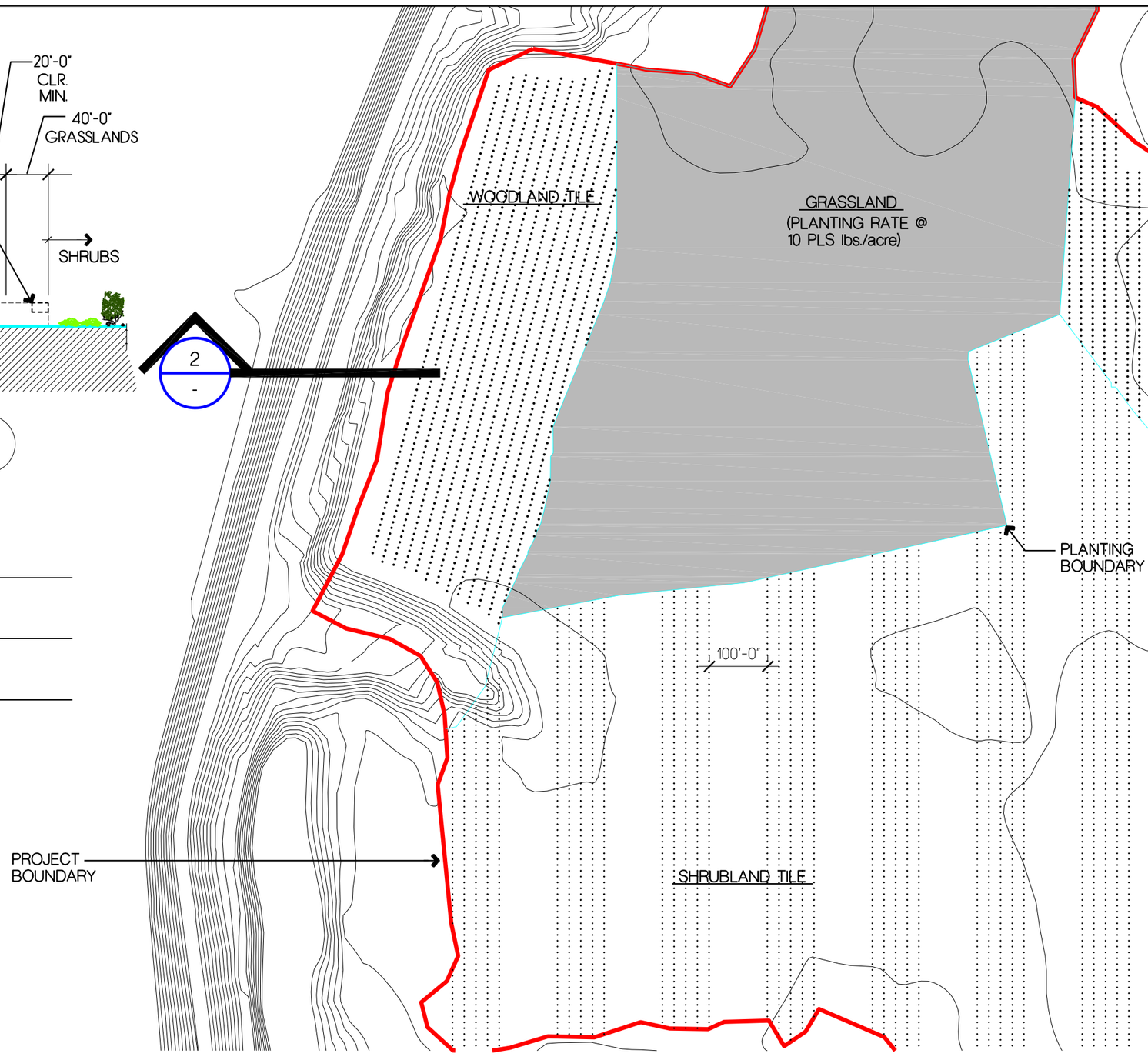
Accepted By:_____ Date:_____

Accepted By:_____ Date:_____



PROJECT
NORTH

ENLARGED AREA PLAN 1

0' 200' 400' 800'

GRAPHIC SCALE: 1" = 200'-0"

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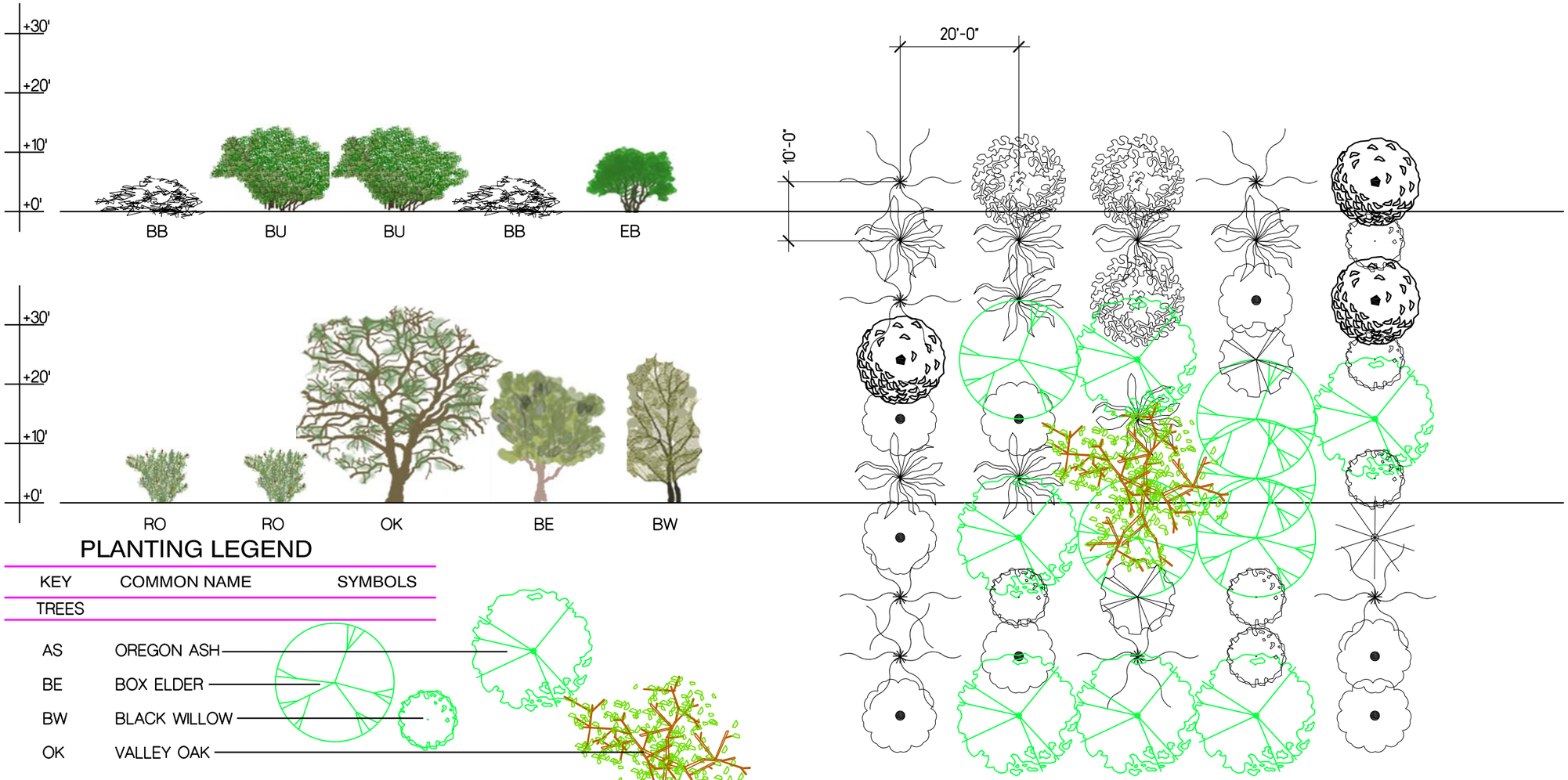
Sutter County, California

ABBOTT LAKE
ENLARGED AREA PLAN

FIGURE

R7

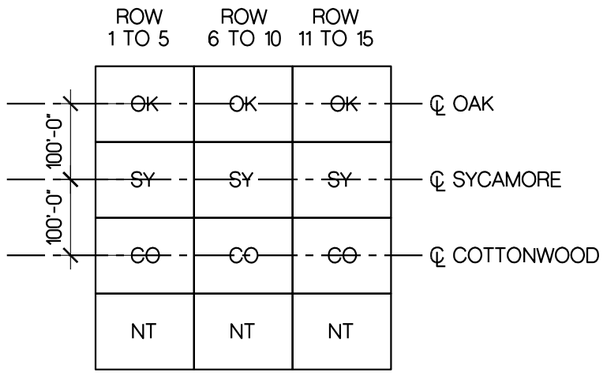
DATE: 07-03-14



PLANTING LEGEND

KEY	COMMON NAME	SYMBOLS
TREES		
AS	OREGON ASH	
BE	BOX ELDER	
BW	BLACK WILLOW	
OK	VALLEY OAK	
SHRUBS		
AW	ARROYO WILLOW	
BB	CALIFORNIA BLACKBERRY	
BU	BUTTONBUSH	
CB	COYOTE BRUSH	
EB	BLUE ELDERBERRY	
MF	MULE FAT	
RO	CALIFORNIA ROSE	

WOODLAND TILE - OAK



WOODLAND TILE LAYOUTS
OK = OAK TILE, SY = SYCAMORE TILE
CO = COTTONWOOD TILE, NT = NO LARGE TREE TILE

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Accepted By:_____ Date:_____

Accepted By:_____ Date:_____

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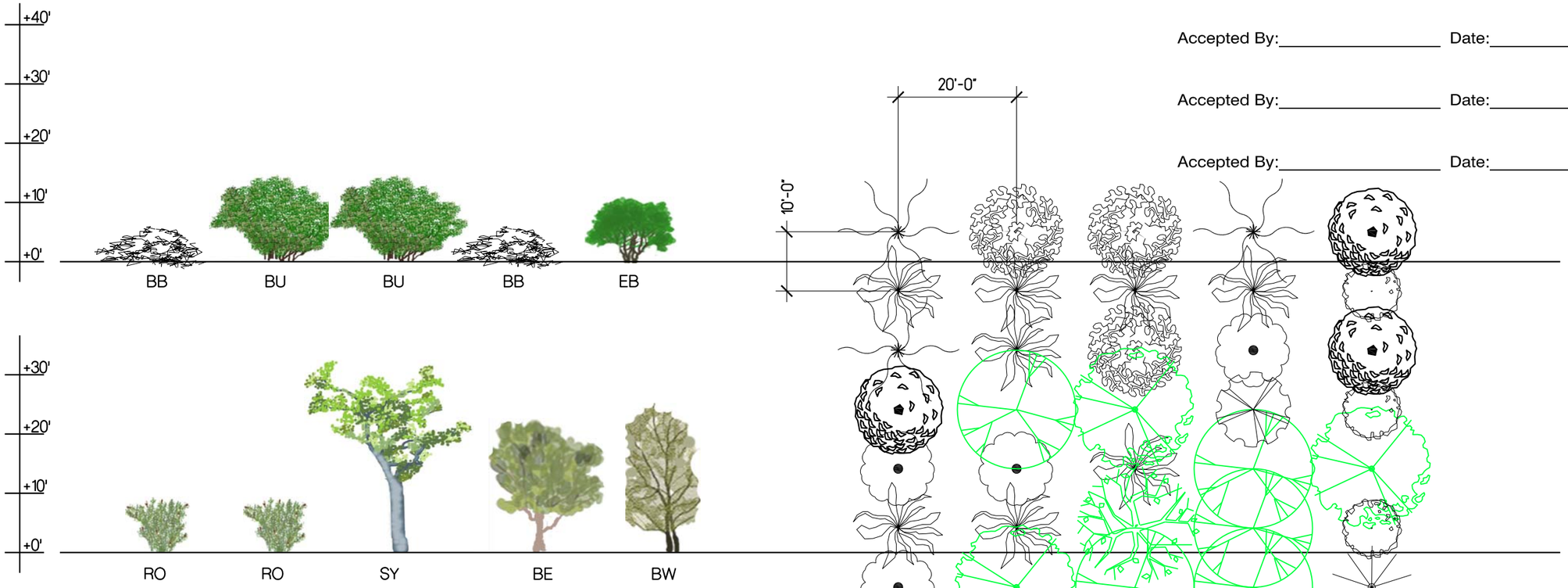
Sutter County, California

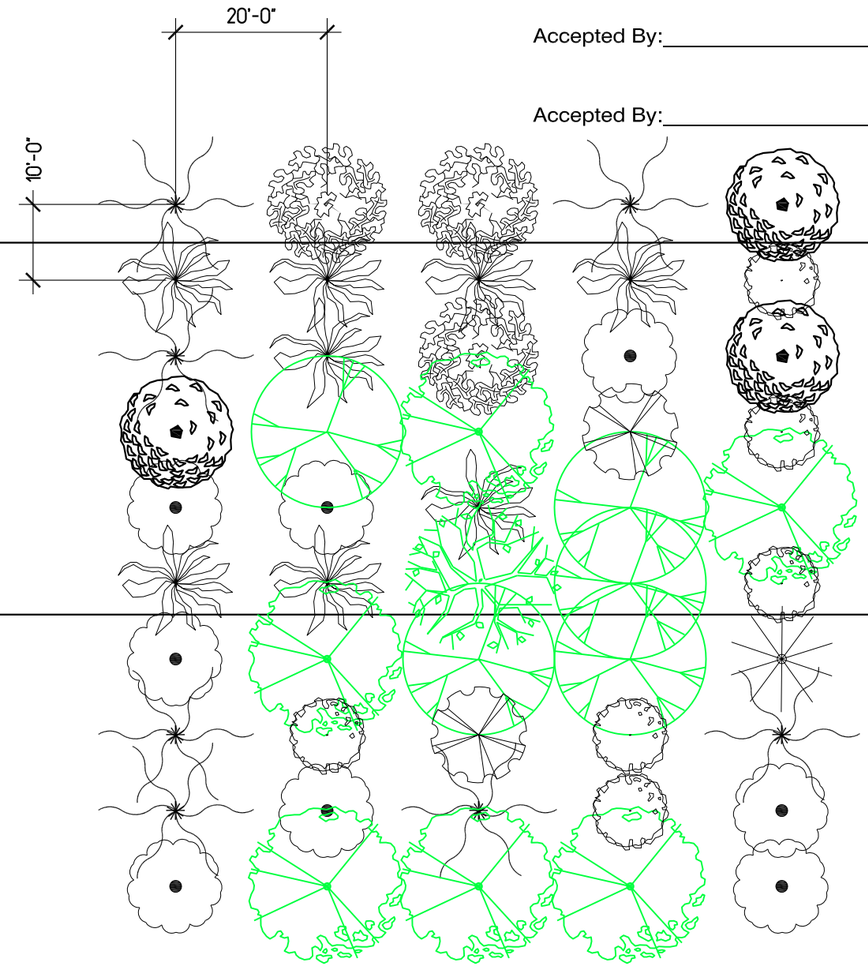
ABBOTT LAKE
WOODLAND PLANTING
TILE LAYOUT -OAK

FIGURE

R8A

DATE: 07-03-14

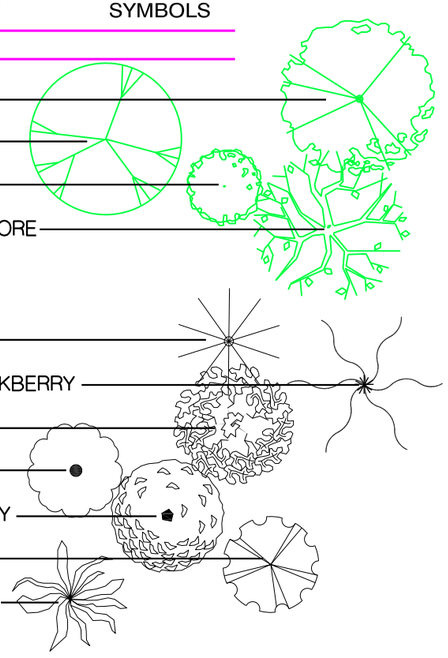




WOODLAND TILE - SYCAMORE

PLANTING LEGEND

KEY	COMMON NAME	SYMBOLS
TREES		
AS	OREGON ASH	
BE	BOX ELDER	
BW	BLACK WILLOW	
SY	WESTERN SYCAMORE	
SHRUBS		
AW	ARROYO WILLOW	
BB	CALIFORNIA BLACKBERRY	
BU	BUTTONBUSH	
CB	COYOTE BRUSH	
EB	BLUE ELDERBERRY	
MF	MULE FAT	
RO	CALIFORNIA ROSE	



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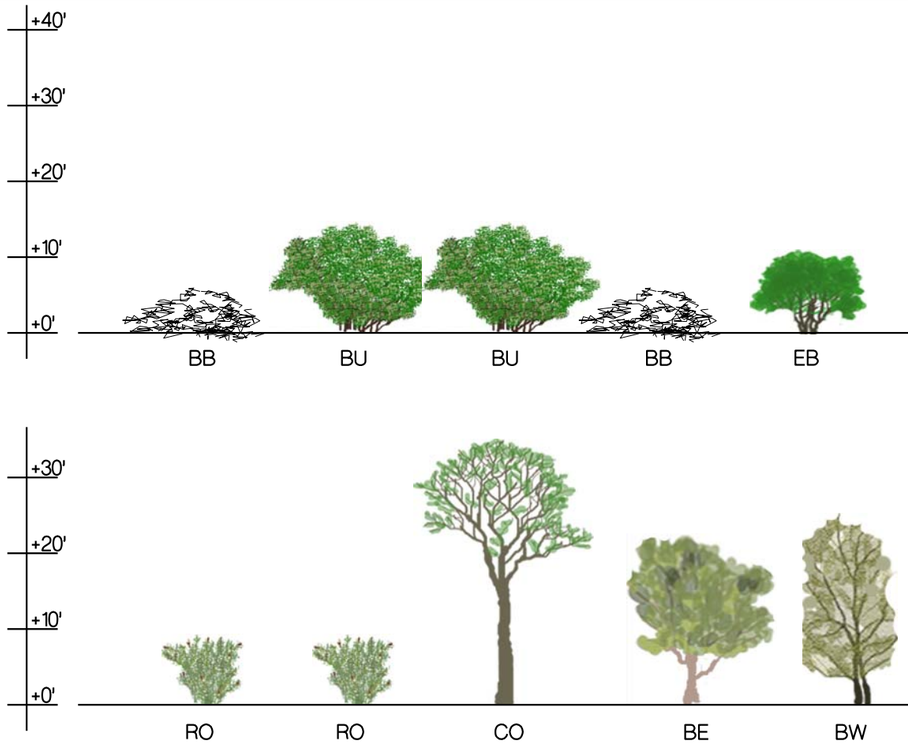
Sutter County, California

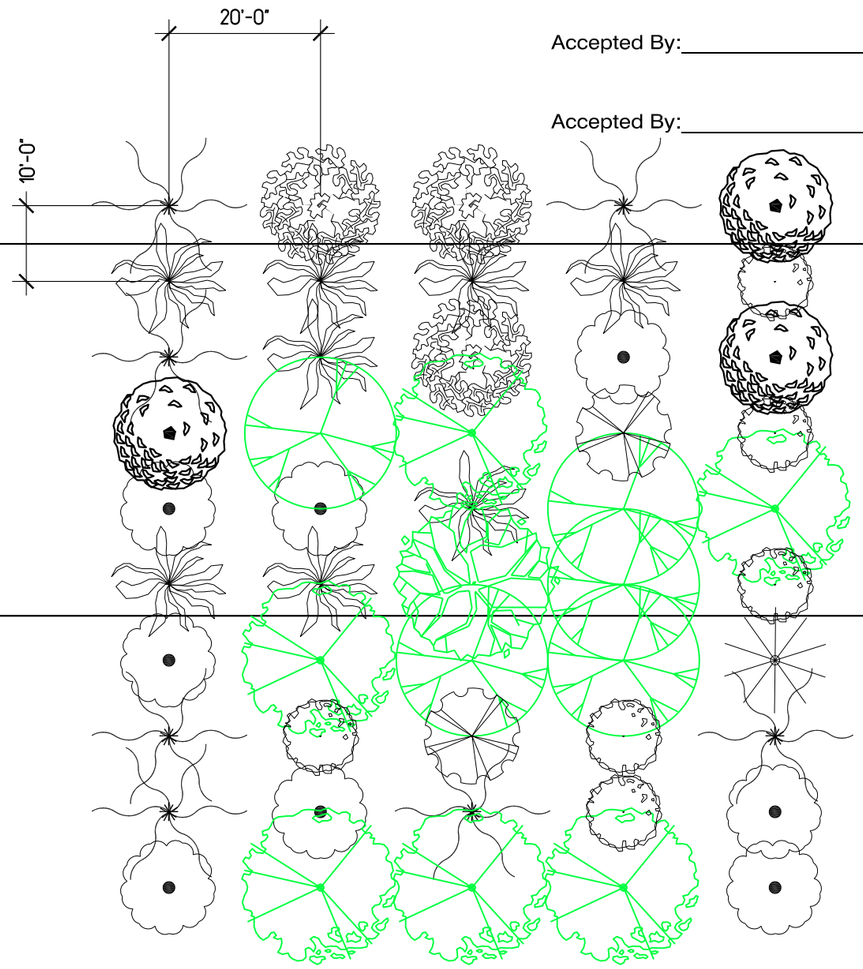
ABBOTT LAKE
WOODLAND PLANTING
TILE LAYOUT-SYCAMORE

FIGURE

R8B

DATE: 07-03-14





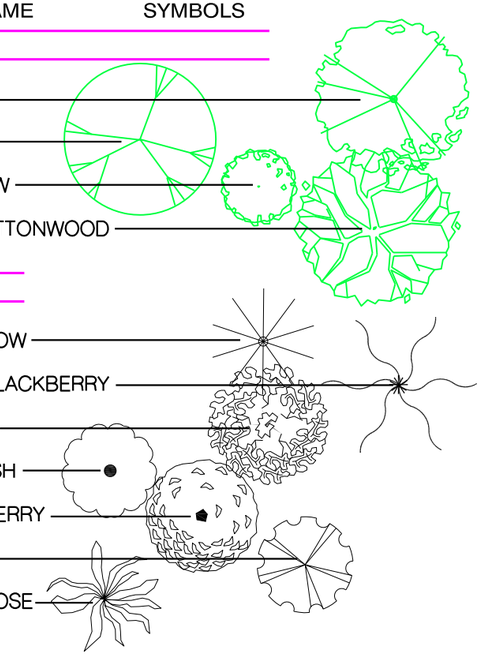
Accepted By:_____ Date:_____

Accepted By:_____ Date:_____

Accepted By:_____ Date:_____

PLANTING LEGEND

KEY	COMMON NAME	SYMBOLS
TREES		
AS	OREGON ASH	
BE	BOX ELDER	
BW	BLACK WILLOW	
CO	FREMONT COTTONWOOD	
SHRUBS		
AW	ARROYO WILLOW	
BB	CALIFORNIA BLACKBERRY	
BU	BUTTONBUSH	
CB	COYOTE BRUSH	
EB	BLUE ELDERBERRY	
MF	MULE FAT	
RO	CALIFORNIA ROSE	



WOODLAND TILE - COTTONWOOD

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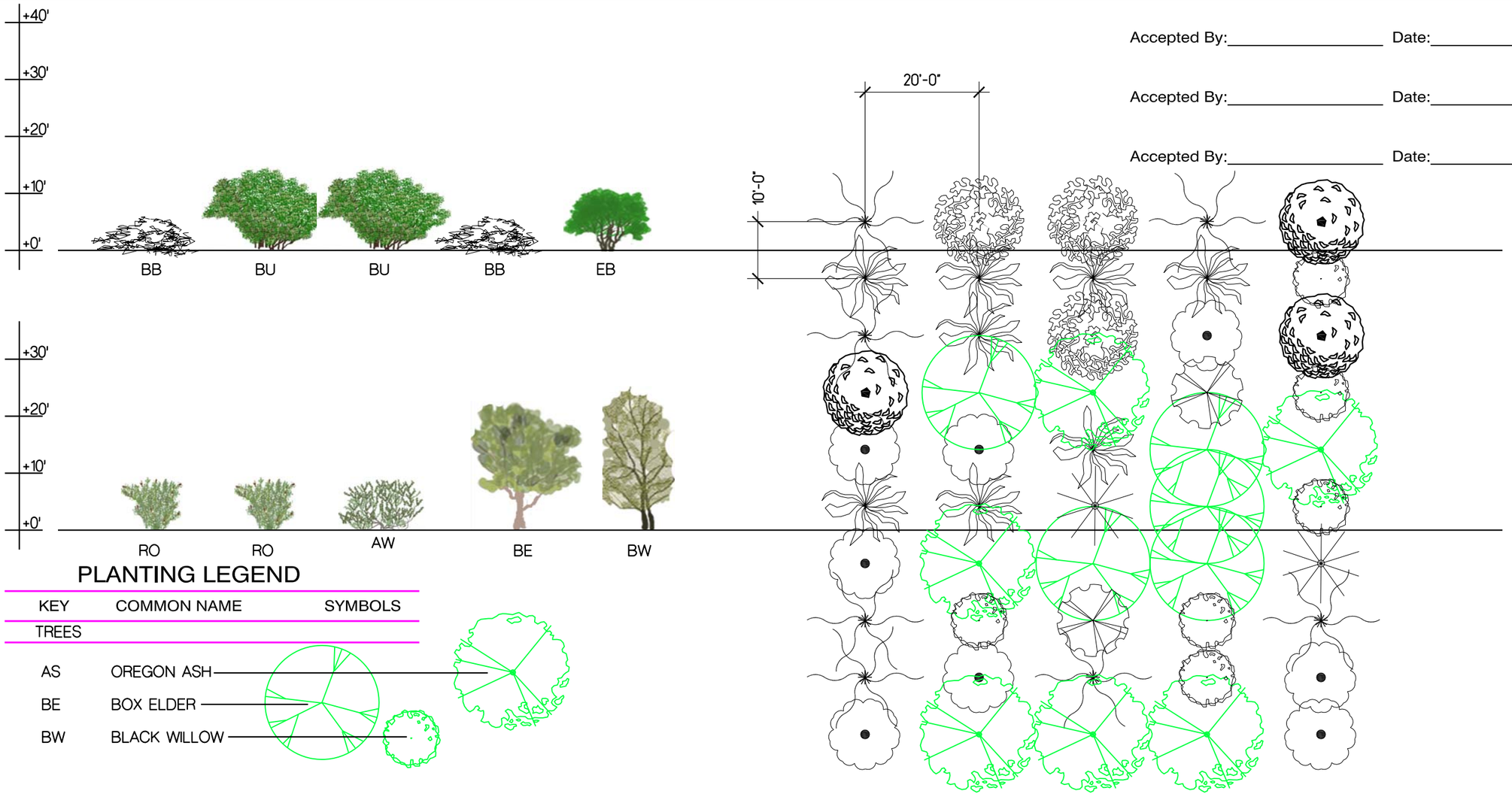
ABBOTT LAKE
WOODLAND PLANTING
TILE LAYOUT-COTTONWOOD

FIGURE

R8C

DATE: 07-03-14



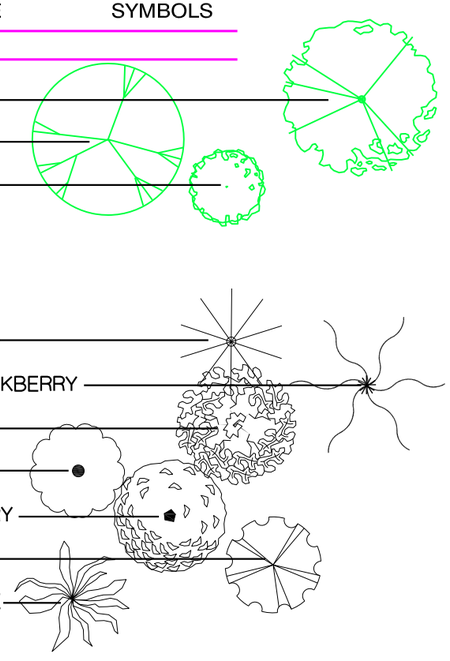
Accepted By:_____ Date:_____

Accepted By:_____ Date:_____

Accepted By:_____ Date:_____

PLANTING LEGEND

KEY	COMMON NAME	SYMBOLS
TREES		
AS	OREGON ASH	
BE	BOX ELDER	
BW	BLACK WILLOW	
SHRUBS		
AW	ARROYO WILLOW	
BB	CALIFORNIA BLACKBERRY	
BU	BUTTONBUSH	
CB	COYOTE BRUSH	
EB	BLUE ELDERBERRY	
MF	MULE FAT	
RO	CALIFORNIA ROSE	



WOODLAND TILE - NO LARGE TREES

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Sutter County, California

ABBOTT LAKE
WOODLAND PLANTING
TILE LAYOUT
NO LARGE TREES

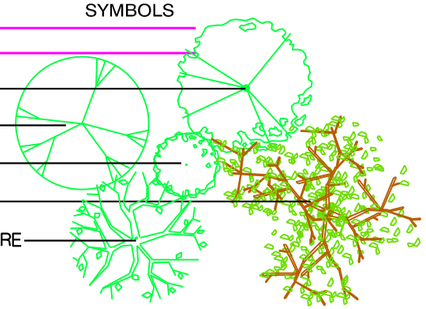
FIGURE

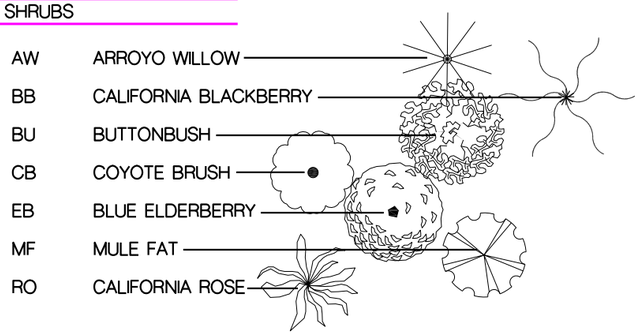
R8D

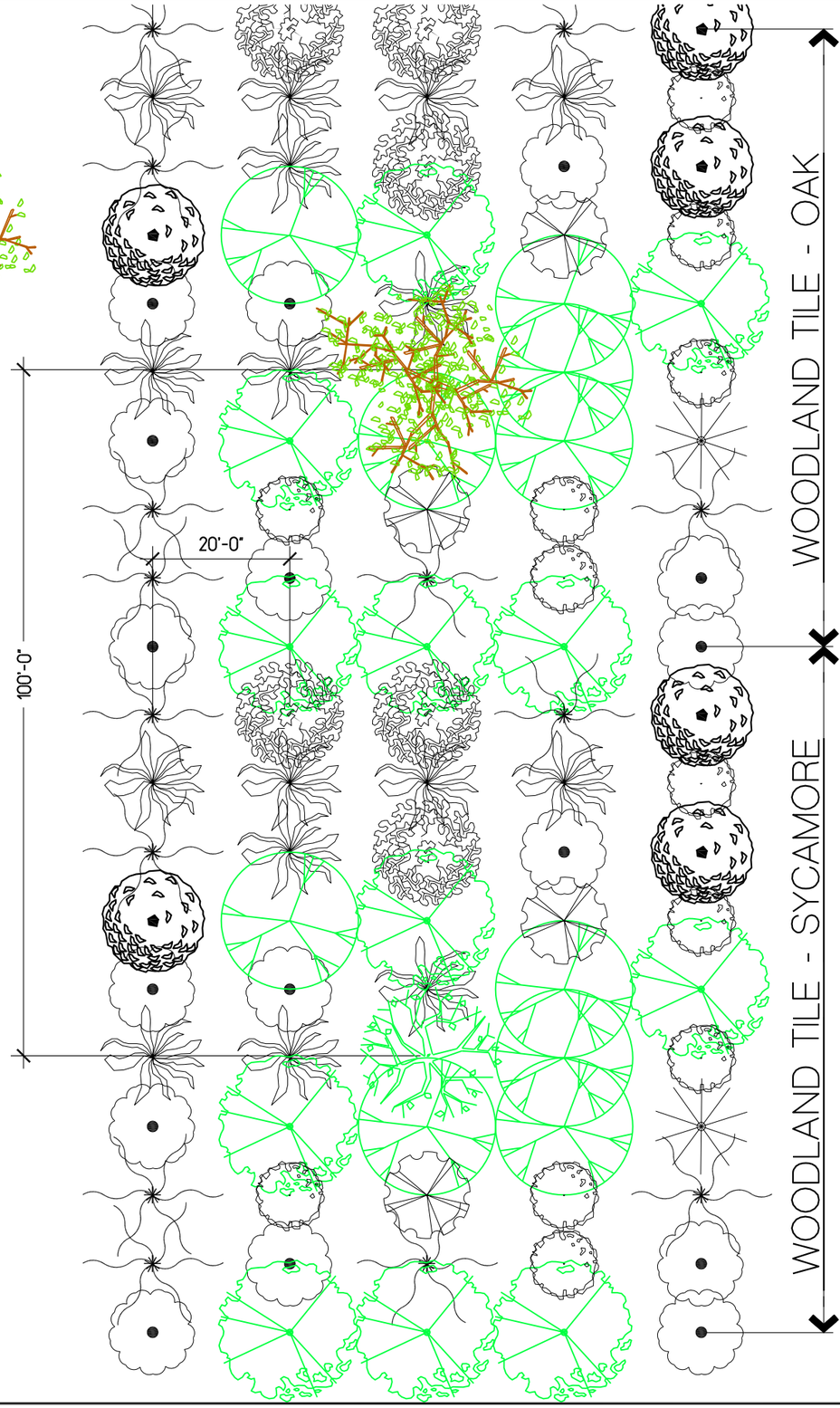
DATE: 07-03-14

PLANTING LEGEND

KEY	COMMON NAME
TREES	
AS	OREGON ASH
BE	BOX ELDER
BW	BLACK WILLOW
OK	VALLEY OAK
SY	WESTERN SYCAMORE
SHRUBS	
AW	ARROYO WILLOW
BB	CALIFORNIA BLACKBERRY
BU	BUTTONBUSH
CB	COYOTE BRUSH
EB	BLUE ELDERBERRY
MF	MULE FAT
RO	CALIFORNIA ROSE







ROW 1 TO 5	ROW 6 TO 10	ROW 11 TO 15	
OK	OK	OK	℄ OAK
SY	SY	SY	℄ SYCAMORE
CO	CO	CO	℄ COTTONWOOD
NT	NT	NT	

100'-0" / 100'-0"

WOODLAND TILE LAYOUTS

OK = OAK TILE, SY = SYCAMORE TILE
CO = COTTONWOOD TILE, NT = NO LARGE TREE TILE

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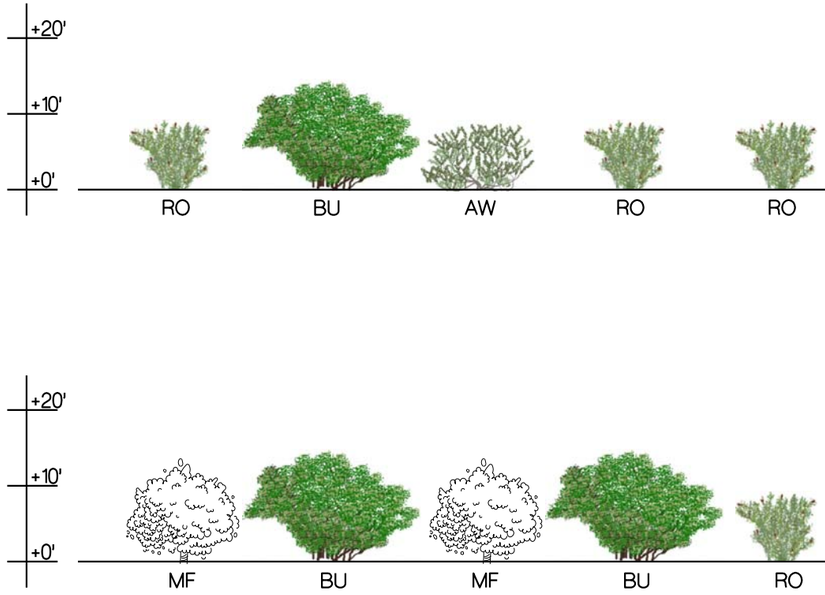
ABBOTT LAKE
WOODLAND PLANTING
TILE LAYOUTS

FIGURE

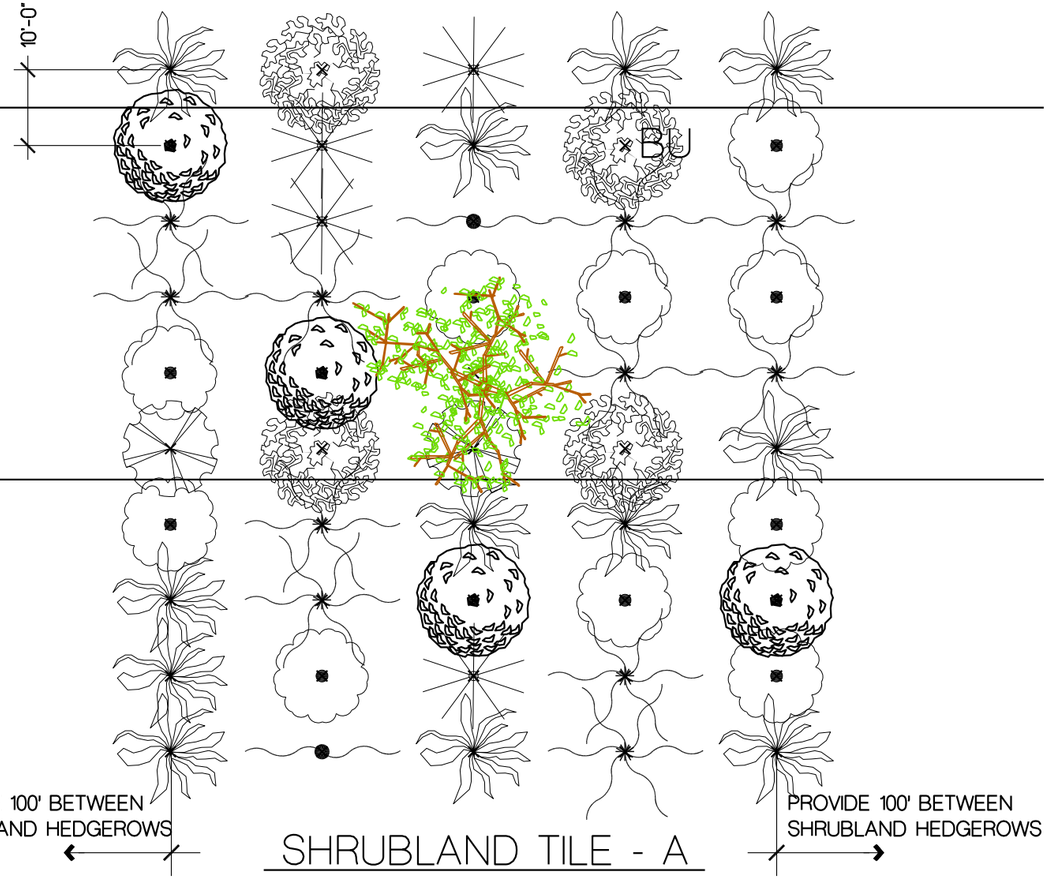
R8E

DATE: 07-03-14

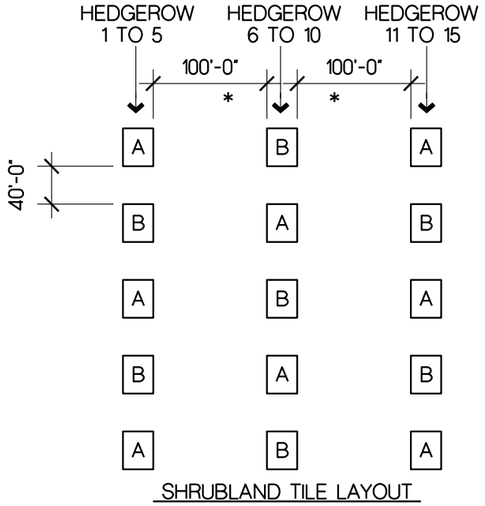


PLANTING LEGEND

KEY	COMMON NAME	SYMBOLS
TREES		
OK	VALLEY OAK	
SHRUBS		
AW	ARROYO WILLOW	
BB	CALIFORNIA BLACKBERRY	
BU	BUTTONBUSH	
CB	COYOTE BRUSH	
EB	BLUE ELDERBERRY	
MF	MULE FAT	
RO	CALIFORNIA ROSE	
VINES		
PI	DUTCHMAN'S PIPEVINE	



SHRUBLAND TILE - A



SHRUBLAND TILE LAYOUT

* 50/50 MIX MW & GP - BTWN. TILES (@ 4 PLS lbs./acre)

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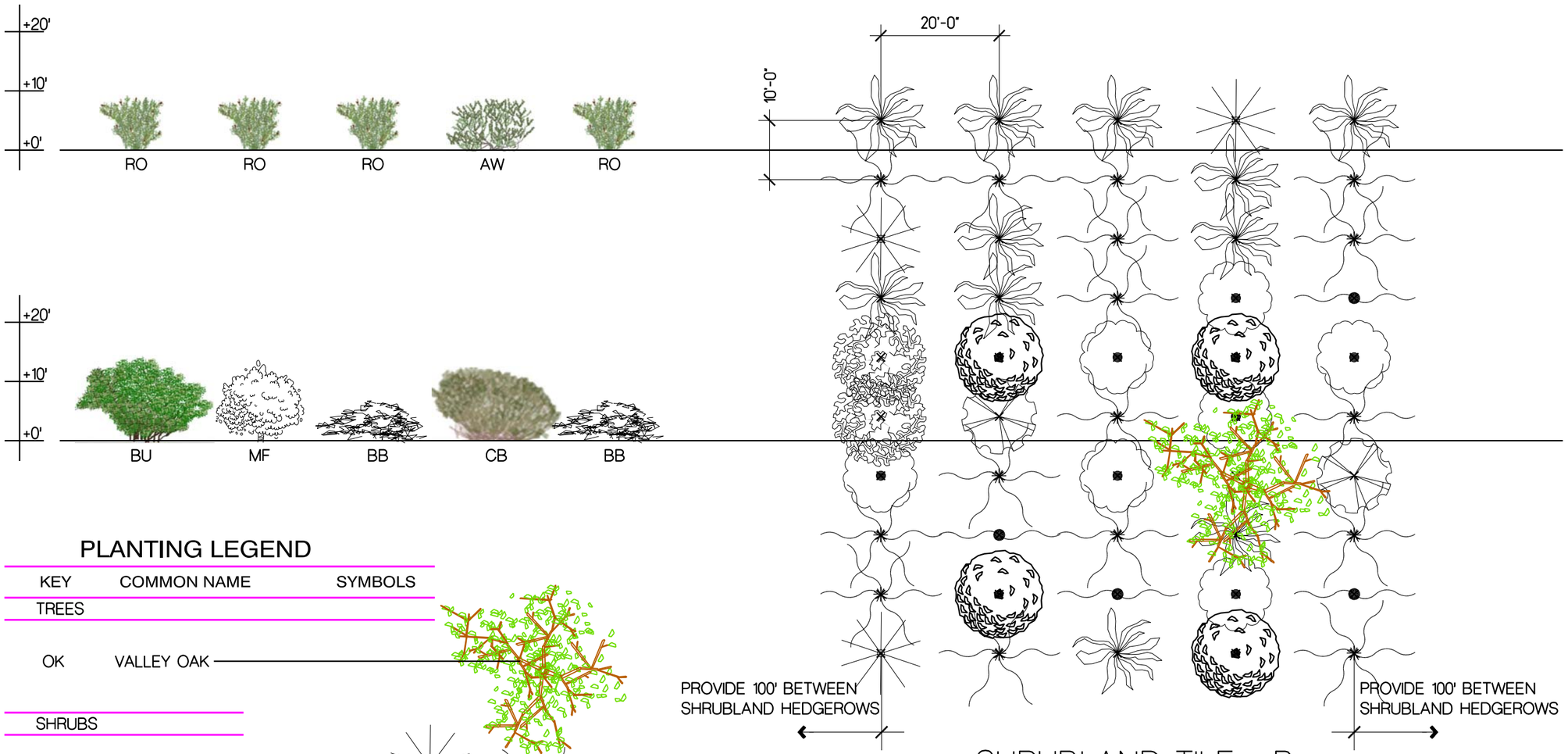
Sutter County, California

ABBOTT LAKE
SHRUBLAND PLANTING
TILE LAYOUT

FIGURE

R9A

DATE: 07-03-14



SHRUBLAND TILE - B

PLANTING LEGEND

KEY	COMMON NAME	SYMBOLS
TREES		
OK	VALLEY OAK	
SHRUBS		
AW	ARROYO WILLOW	
BB	CALIFORNIA BLACKBERRY	
BU	BUTTONBUSH	
CB	COYOTE BRUSH	
EB	BLUE ELDERBERRY	
MF	MULE FAT	
RO	CALIFORNIA ROSE	
VINES		
PI	DUTCHMAN'S PIPEVINE	

Accepted By:_____ Date:_____

Accepted By:_____ Date:_____

Accepted By:_____ Date:_____

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ABBOTT LAKE
SHRUBLAND PLANTING
TILE LAYOUT

FIGURE

R9B

DATE: 07-03-14