Final Maintenance Plan for the Napa River Rutherford Reach Restoration Project

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Introduction

The maintenance program for the Rutherford Reach of the Napa River has been developed by the Rutherford Reach Landowner Advisory Committee (LAC) and Napa County Flood Control and Water Conservation District (District) to support the Napa River Rutherford Reach Restoration Project (Rutherford Restoration Project) and to guide implementation of routine maintenance activities within the Rutherford Reach of the Napa River. The maintenance program has been developed to carefully balance the needs of local landowners with protecting and enhancing the natural resources of the Napa River.

As described below, the maintenance program is intended to maintain bank protection and river enhancement features constructed as part of the Rutherford Restoration Project and to prevent new streambank erosion problems from forming in order to protect environmental resources and properties within the Rutherford Reach of the Napa River. The maintenance program is not intended to address catastrophic streambank failure, emergency repairs, or significant streambank erosion in areas not treated by the Rutherford Restoration Project. Such repairs would be implemented by individual landowners in coordination with appropriate agencies. Other non-emergency treatments that fall outside the scope of the maintenance program, because of scale or cost, may be incorporated into the design of future phases of the Rutherford Restoration Project. Additionally, the maintenance program includes activities to control targeted invasive non-native vegetation and Pierce's Disease (PD) host plants within the riparian corridor reachwide.

The purpose of this document is to define the overall maintenance program for the Rutherford Reach and describe key program elements including: maintenance activities; oversight and implementation responsibilities; and measures to avoid or minimize impacts to environmental resources. This document is intended for use by local landowners and vineyard managers, District maintenance staff, and environmental and regulatory agency staff.

Maintenance Program Overview

Program Area

The program area is located along a 4.5-mile reach of the Napa River south of the City of Saint Helena, extending from Zinfandel Lane in the north to Oakville Cross Road, in the south (Figure 1). Historic changes in land use and management in the Napa River Watershed have resulted in confinement of the river into a narrow channel, loss of riparian and wetland habitats, accelerated channel incision and bank erosion, and reduction in the quality and quantity of instream habitat for salmonids and other native fish. Additionally, because of this ongoing degradation, properties along the Rutherford Reach have been

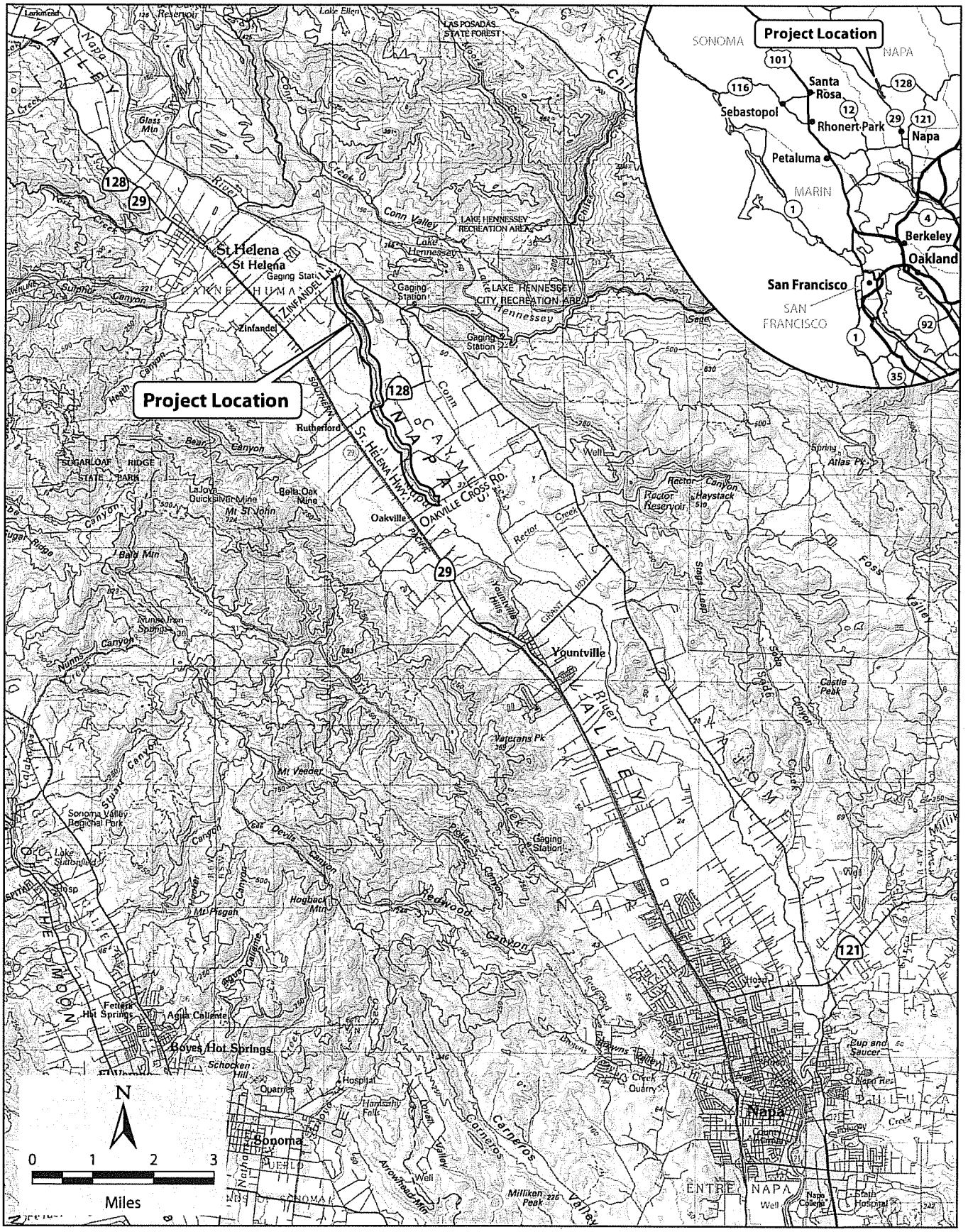

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Figure 1
Regional Location

subject to bank instability and failure leading to the loss of valuable vineyard land, threat to structures, and costly repairs.

Program Objectives

The objectives of the Maintenance Program are to:

- Minimize bank erosion through vegetation management, large woody debris (LWD) realignment and/or relocation, debris/large trash removal, and biotechnical stabilization.
- Maintain the function of constructed instream habitat enhancement structures.
- Control target non-native invasive and PD host plants, to the extent practicable, within the riparian corridor of the Rutherford Reach.

Oversight and Coordination

An LAC has been established to oversee implementation of the program and to coordinate maintenance activities with local landowners and vineyard managers. The LAC requested that the District Board adopt a Special Benefit Zone Project, funded through a property tax assessment program under procedures established in the District Act, to conduct maintenance in the Rutherford reach of the Napa River.

The LAC is comprised of landowners and their representatives and is supported by District staff. Participation in the LAC is open to any landowner, or their representative, who have river frontage within the Rutherford Reach. The LAC will select three (3) representatives from the LAC to represent the recommendations of the LAC to the District Board. The three representatives will be designated as the Chair, Co-Chair, and Secretary of the LAC, and will serve for a 2-year period. It is anticipated that the LAC will meet biannually to review, evaluate, and prioritize annual maintenance activities based on the maintenance surveys, landowner maintenance requests, and available funding, and to review and approve the annual maintenance report.

All maintenance activities will be conducted pursuant to regulatory permits issued in conjunction with the Rutherford Restoration Project, with oversight by the District.

Maintenance Surveys

District staff in coordination with the LAC will conduct routine annual surveys to identify and assess issues of concern relative to the program objectives. Surveys will focus on identifying, mapping, and assessing:

- Actively eroding streambanks, including effectiveness of prior stabilization measures.

- Areas of excessive vegetation growth, and/or accumulations of LWD or trash that are contributing to streambank erosion.
- Storm-related damages to streambank stabilization and aquatic habitat enhancement structures
- Weed, PD host plant, and invasives eradication and revegetation sites.

The District will work with the LAC to develop standard data sheets for the maintenance survey. Data sheets, aerial photographs, and GPS units will be used to document the nature and extent of the problem, and to identify recommended treatments or remedial actions. Photos will also be taken to document each problem site. The results of the survey will be compiled into a report and presented to the LAC for review. It may also be necessary to conduct interim river surveys shortly after large storm events (< 10-year flood event) to identify areas that may require immediate treatment to prevent additional streambank failure, and protect existing infrastructure and environmental resources.

Landowner Maintenance Requests

In addition to maintenance needs identified through the annual river survey, landowners may submit individual maintenance requests to the LAC for review and evaluation. Maintenance requests should be submitted to the LAC by April 1 each year to be considered for inclusion in that years' work plan. Maintenance requests eligible for funding with assessment funds will be limited to the following problem-types: 1) actively eroding streambanks; 2) debris accumulations; 3) downed trees/LWD; 4) vegetation removal; and 5) storm-related damages to streambank stabilization, aquatic habitat enhancement structures, and revegetation sites. Landowners may also submit requests to the LAC for maintenance work that they would like to fund and execute themselves under District oversight and pursuant to regulatory Project permits. We anticipate that the majority of such requests will be focused on accomplishing additional PD host plant control beyond what is budgeted for using strictly assessment funds. The District and LAC will review landowner work requests and provide field supervision as needed to ensure landowner-sponsored actions are compliant with applicable permit conditions. While maintenance of earthen berms, access roads, and other infrastructure remain exclusively the responsibility of individual landowners and are largely exempt from regulation (located outside of most agencies' jurisdictions but for the County), the LAC and District will track the condition of these project elements and any maintenance required to maintain the original project design.

Evaluation and Prioritization of Maintenance Activities

As described above, the annual river survey report and any individual landowner maintenance requests will be submitted to the LAC for review. The committee

will evaluate and prioritize annual work activities based on the following considerations:

- Condition of existing bank stabilization and instream habitat enhancement structures.
- Potential for future significant streambank failure/erosion beyond the riparian corridor and vegetated buffer.
- Risk to adjacent infrastructure and agriculture (i.e., structures, earthen berms, roads, pumps, utilities, crops).
- Potential for future significant streambank failure/erosion.
- Potential for increased flood damage.
- Available budget.

Based on an evaluation and prioritization of problems identified through the annual river survey and landowner requests, the LAC will prepare a work plan describing the location and scope of maintenance activities proposed to be conducted that year. Following completion of annual maintenance activities, the committee will prepare a supplemental report documenting work completed that year, associated costs, remaining budget, and adequacy of funding to complete required maintenance.

Funding and Implementation

Routine maintenance activities will be funded through property tax assessments collected from local landowners through a Special Benefit Zone Project adopted by the District for the Rutherford Reach. The District has retained an assessment engineer to develop a basis for assessing individual landowners to fund the program based on the benefits derived from the program. This will be presented this fall in an Engineer's Report for landowners to review the method of allocation and total proposed assessment for their individual property. The assessment will be subject to a Proposition 218 vote of the landowners throughout the reach scheduled for late 2008. Table 1 provides an estimate of cost in 2008 dollars to perform the expected annual maintenance activities. In years where maintenance expenditures are less than the total assessment collected by the District, any remaining funds will be retained in an interest-bearing (reserve) account to supplement the budget for maintenance activities conducted in future years. A cap will be placed on reserve funds.

Match funding to supplement property tax assessments may be provided by landowners and/or organizational partners (such as the County, resource agencies, the local RCD, and the California Conservation Corps). Work supported by match funding must be: limited to activities defined in this plan; compliant with any applicable permit restrictions; and, integrated into the annual work plan and year-end report.

Activities identified in the annual work plan prepared by District staff in coordination with the LAC, will be implemented by District staff, and/or

Table 1 Estimated Costs for Typical Annual Maintenance Activities

Tasks	Estimated Costs	Annual Cost
1 Debris Removal and Relocation of LWD	3days@$1,700 per crew day = $5,100; misc supplies and equ	$6,600
2 Vegetation Management	3 days@$1,700 per crew day = $5,100: misc supplies and equipment $2,500	$7,600
3 Streambank Erosion Control	**Planting:** 5 days @ $1,700 per crew day = $8,500; **Plant and other materials:** $5,000, **Irrigation:** 5 days (2 persons) @ $570/day = $2,850	$16,350
4 Repair and Maintenance of Floodplain Benches	**Planting:** 5 days @ $1,700 per crew day = $8,500; **Plant and other materials:** $5,000, **Irrigation:** 5 days (2 persons) @ $570/day = $2,850	$16,350
5 Maintenance of Created Vegetation Buffers	**Planting:** 2 days @ $1,700 per crew day = $3,400; **Plant materials:** $1,500, **Irrigation:** 5 days (2 persons) @ $570/day = $2,850	$7,750
6 Repair and Maintenance of Aquatic Habitat Enhancement Structures	**Planning:** 2 days @ $50 per hour = $800. **Work:** 2 days @ $1,700 per crew day = $2,600; **Equipment:** $2,000	$5,400
7 Repair and Maintenance of Streambank Stability Structures	**Planning:** 2 days @ $50 per hour = $800. **Work:** 2 days @ $1,700 per crew day = $3,400; Plant and other materials: $5,000: **Equipment:** $2,000	$11,200
8 Invasive Plants Removal and Revegetation	**Herbicide:** 2 days@ $400 per day (1person) =$800; **Planting:** 3 days @ $1,700 per crew day = $6,800; **Irrigation:** 3 days (2 persons) @ $570 per day = $1,710	$9,310
9 Annual surveys, and development of work plans, assessment management.	**Surveys:** 5 days (2 persons) @ $1000 per day = $5000; **Reports:** 2 days @ $400 per day = $800; **Develop Priorities:** 2 days @ $400 per day = $800; **Admin:** 50 hrs @ $70 per hour = $3,500	$10,100
10 Monitoring		$7,500
	Total	**$98,160**

landowner-supplied work crews overseen by District staff, and/or crews supplied by organizational partners including California Conservation Corps or Napa County RCD overseen by District staff. Specific maintenance activities that will be implemented under this program are described in detail below. Depending upon the type and scope of the maintenance activities, work crews may also be required to implement measures to avoid and/or minimize impacts to environmental resources as described below under *Best Management Practices*.

Maintenance Activities

Certain activities may be implemented proactively within the Rutherford Reach to prevent streambank erosion and failure, and associated impacts to adjacent properties and environmental resources. Preventative maintenance activities identified as part of the maintenance program for the Rutherford Reach are described in detail below.

Debris Removal

Debris consists of material deposited within the river channel by receding flood flows and includes small (<12 inches in diameter and/or <6 feet long) downed trees and limbs, tires, shopping carts, barrels, trash, and other materials. Debris removal would be required in cases where accumulations of debris within the river channel are blocking or shifting flood flows resulting in localized flooding or streambank erosion.

Methods used to remove debris will vary depending upon the size of material and available access. Whenever feasible, debris removal activities will be conducted by work crews using hand tools. However, removal of larger materials may require use of heavy equipment. Native vegetative debris may be cut-up or chipped on-site, removed and transported to a suitable disposal site, or burned in accordance with state and local permits. Non-native vegetative debris (i.e., giant reed) and non-vegetative debris will be removed and transported to a suitable disposal site, mulched (for materials that do not contain viable seed) in place, or burned in accordance with state and local permits.

Downed Tree Relocation/Stabilization

Existing mature trees that are toppled during storm events can block or shift flood flows resulting in localized flooding and streambank erosion. This is especially critical when downed logs lodge in bridge openings, near bridge abutments, or at pump intake structures. However, downed trees also provide valuable habitat for native fish. Downed trees determined to pose a flooding or erosion risk may be stabilized in place or relocated to reduce risk and improve local habitat conditions. Downed trees may be cut on-site by work crews using hand tools to facilitate stabilization or relocation. Relocation and/or repositioning of downed trees will likely require heavy equipment working from the top of the adjacent streambank. Relocated/repositioned trees should be

anchored in place using standard methods for anchoring large woody debris structures (e.g., cables and utility pole anchors, cable and boulder anchors) to prevent structures from dislodging in large storm events.

Vegetation Management

In-Channel Vegetation

Within the Rutherford Reach, native vegetation such as willows, generally occur on low floodplain benches and at the toe of the streambank. While these plants provide habitat for native species, they are also effective at trapping sediment leading to the development of substantial in-channel gravel bars that can shift stream flows and cause streambank erosion and failure. Willows and other species (<4 inches in diameter) will be removed in areas where they significantly impede stream flows.

In-channel vegetation will be removed by hand crews using loppers, hand saws, and chain saws. In cases where herbicide use is considered advantageous and is consistent with the landowner's property management regime, trees will be cut off at the base of the trunk and the stump painted with an approved herbicide. Herbicide will be applied according to manufacturer's specifications by licensed applicators in a manner that minimizes drip and drift into the stream channel. Only U.S. Environmental Protection Agency-approved aquatic formulations of glyphosate (e.g., Rodeo, AquaMaster, AquaNeat/Roundup) and imazapyr (e.g., Habitat/Stalker) will be used. Following herbicide applications, dead biomass will be left on site to decompose. In cases where herbicide use is not consistent with the landowner's property management regime, physical removal techniques alone may be employed. If necessary, cuttings may be removed from the channel and stockpiled at top of bank. Debris may be transported to a suitable disposal site, mulched in place, or burned in accordance with state and local permits.

Invasive Non-Native and Pierce's Disease Host Vegetation

A number of invasive non-native and PD host plants occur within the Rutherford Reach. These species reduce the value of habitat for native wildlife by preventing the establishment and growth of desirable native species, and decrease overall plant diversity. Additionally, some of these species act as host plants for the bacterium that causes PD resulting in significant damage to streamside vineyards. Although existing patches of target invasive non-native plants will be treated as part of the Rutherford Restoration Project, success of the restoration effort will rely on ongoing maintenance to control spread of these undesirable species throughout the reach. Key invasive non-native and PD host plants that may be targeted for removal include, but are not limited to:

- Himalayan blackberry
- Periwinkle
- Giant reed

- Tree-of- heaven
- Tamarisk
- Mulefat
- Mugwort
- Wild grape (hybrid)
- Sesbania

Target invasive non-native and PD host plants will be removed by hand crews using weed wrenches, bladed weedeaters, loppers, hand saws, and chain saws. In cases where herbicide use is considered advantageous and is consistent with the landowner's property management regime, control of some species such as Himalayan blackberry may require repeated herbicide applications. Herbicide application will be limited to cutting and painting stumps, or foliar or spot spray using backpack or ATV-mounted sprayers. Herbicide will be applied according to manufacturer's specifications by licensed applicators in a manner that minimizes drip and drift into the stream channel. Only U.S. Environmental Protection Agency-approved aquatic formulations of glyphosate (e.g., Rodeo, AquaMaster, AquaNeat/Roundup) and imazapyr (e.g., Habitat/Stalker) will be used. Following herbicide applications, dead biomass will be left on site to decompose. Where herbicide use is not consistent with the landowner's property management regime, physical eradication and removal techniques (tarping and mechanical removal) and/or non-toxic weed control alternatives may be employed. Where necessary, cuttings may be removed from the channel and stockpiled at top of bank. Plant materials containing viable seed will be immediately bagged to prevent re-establishment. Debris may be transported to a suitable disposal site, mulched (for materials that do not contain viable seed) in place, or burned in accordance with state and local permits.

Erosion Control

In areas where minor erosion has been identified, biotechnical methods may be used in areas outside of the riparian corridor and vegetated buffer to proactively stabilize eroding banks and prevent streambank failure and large-scale deposition of sediment in the river channel, and protect adjacent property and infrastructure. Typically these treatments will be implemented in combination for effective treatment.

Planting

Areas subject to minor erosion may be hydroseeded with an appropriate native or sterile seed mix, and/or planted with native riparian species to stabilize eroding banks, and reduce localized flow velocities and erosion potential. A list of native tree and shrub species suitable for streambank revegetation are provided in Table 2. Plants material will be selected based on location-specific (i.e., top-of-bank, lower channel slope) recommendations (Table 2). Plantings may require irrigation for up to 3 years following installation depending upon planting

location. Because of the potential for storm-related damages to a fixed irrigation system, plants installed below top of bank will be hand watered using nearby water sources provided by the landowners.

Other Erosion Control Treatments

Implementation of the treatments described above or treatment of other minor streambank erosion sites may require installation of erosion control blankets and/or coir logs. Erosion control blankets will consist of coconut fiber or other 100% biodegradable materials. Blankets will be installed in vertical strips and anchored with wooden stakes or starch staples. Blankets will be overlapped to facilitate anchoring. Coir logs will be 100% coconut fiber and will be installed using wooden stakes.

Maintenance of Constructed Features

Several streambank and channel improvements will be constructed by the Rutherford Reach Restoration Project to provide ecological benefits within this reach of the Napa River. Following the County's notice of completion of post construction maintenance and acceptance of the project-constructed features, maintenance of the features constructed as part of the Rutherford Reach Restoration Project will be incorporated into the Rutherford Reach maintenance program under LAC oversight. Maintenance activities for these features are described in detail below.

Floodplain Benches

As part of the Rutherford Restoration Project, streambanks in selected areas will be graded to create inset floodplain benches at approximately the 1.5-year flood elevation (typically about 10 - 15 feet above the existing low-flow channel invert) to widen the floodway and reduce localized flow velocities, and provide opportunities for planting riparian vegetation. Bench width and slope angle vary depending on overall channel width, adjacent land uses, and other factors. However, in general, benches are expected to range from 10 to 30 feet wide and will slope very gently away from the river, with an approximate difference of 1 foot in elevation between the outer and inner terrace edges. Floodplain slopes will be graded to a stable angle (3:1 or 2:1).

Maintenance of these areas will be conducted by work crews using hand tools and will typically include: controlling weeds and other non-native invasive plants; replanting native species; irrigation and/or hand watering; and installation of erosion control fabric and coir logs (if necessary). In some cases minor grading using hand tools or heavy equipment may be required to repair damage caused by large storm events.

Vegetated Buffers

In selected areas of the Rutherford Reach, vegetated buffers will be created between the edges of the existing riparian corridor and newly constructed earthen berms or access roads. The primary purpose of the vegetated buffer is to provide space between the river and adjacent land uses to allow the channel to widen naturally and to avoid the need for landowners to implement measures to protect adjacent property/land uses. These buffers will be planted with suitable native tree and shrub species as identified in Table 2.

Maintenance of these areas will be conducted by work crews using hand tools and will include: controlling weeds and other non-native invasive plants; replanting native species; irrigation system maintenance; and irrigation/hand watering.

Aquatic Habitat Enhancement Structures

Several types of large woody debris and rock structures are proposed to be installed in the river channel to enhance existing aquatic habitat for native fish. These structures include: rock weirs, grade-control riffles, off-bench branch cover, branch bundles, and spider log structures. Maintenance of these structures will be accomplished by work crews using hand tools and heavy equipment and may include: replacing logs and boulders; installing new utility or boulder and cable anchors; and installing native plants. Equipment such as excavators, front-end loaders, power augers, and dump trucks will be used to transport and place logs and boulders.

Streambank Stabilization Structures

Several types of wood and rock structures are proposed to be installed in the river channel to stabilize the toes of actively eroding banks. Maintenance of these structures will be accomplished by work crews using hand tools and heavy equipment and may include: replacing logs and boulders; installing new utility or boulder and cable anchors; and installing native plants. Equipment such as excavators, front-end loaders, power augers, and dump trucks will be used to transport and place logs and boulders.

Best Management Practices

The following section describes best management practices (BMPs) that will be implemented in conjunction with maintenance activities to avoid and/or minimize effects on environmental resources.

Table 2. Proposed Restoration Planting Palette, by Planting Zone

Planting Zone	Inundation Frequency	Groundwater Depth	Substrate	Planting Palette
Bank toe/bar	<1.5 year	<5 feet	Rock, gravel, sand	*Alnus rhombifolia* White alder *Salix laevigata* Red willow *Salix lasiolepis* Arroyo willow *Salix lutea* Yellow willow
Floodplain bench	1.5 year	10–15 feet	Silty clay loam	*Alnus rhombifolia* White alder *Carex barbarae* Santa Barbara sedge *Cornus glabrata* Brown dogwood *Fraxinus latifolia* Oregon ash *Leymus triticoides* Creeping wildrye *Populus fremontii* Fremont cottonwood *Salix laevigata* Red willow *Salix lasiolepis* Arroyo willow
Lower floodplain slope	1.5–5 years	15–22 feet	Silty clay loam	*Aesculus californica* California buckeye *Aristolochia californica* Pipevine *Calycanthus occidentalis* Western spicebush *Carex barbarae* Santa Barbara sedge *Heteromeles arbutifolia* Toyon *Leymus triticoides* Creeping wildrye *Populus fremontii* Fremont cottonwood *Rosa californica* California wild rose *Salix laevigata* Red willow *Symphoricarpos albus* Snowberry

Planting Zone	Inundation Frequency	Groundwater Depth	Substrate	Planting Palette
Upper floodplain slope	5–10 years	22–24 feet	Silty clay loam	*Aesculus californica* California buckeye *Aristolochia californica* Pipevine *Calycanthus occidentalis* Western spicebush *Carex barbarae* Santa Barbara sedge *Heteromeles arbutifolia* Toyon *Leymus triticoides* Creeping wildrye *Lonicerna hispidula* Honeysuckle *Quercus agrifolia* Coast live oak *Umbellularia californica* California bay
Floodplain terrace	>10 years	>24 feet	Consolidated silty clay loam, artificial fill	*Aesculus californica* California buckeye *Aristolochia californica* Pipevine *Bromus carinatus* California brome *Calycanthus occidentalis* Western spicebush *Carex barbarae* Santa Barbara sedge *Heteromeles arbutifolia* Toyon *Hordeum brachyantherum* Meadow barley *Leymus triticoides* Creeping wildrye *Lonicerna hispidula* Honeysuckle *Melica californica* California melic *Quercus agrifolia* Coast live oak *Quercus lobata* Valley oak *Rosa californica* California wild rose *Symphoricarpos albus* Snowberry *Umbellularia californica* California bay *Vulpia microstachys* Small fescue

Access and Staging

Whenever feasible, equipment staging and access will occur on the access road adjacent to the work site. If it is not possible to access the work site from an existing road, site access and staging will be accomplished in a way that minimizes damages to surrounding native vegetation. Staging, storage of equipment, materials, fuels lubricants, and other possible contaminants will be located at least 100 feet away from the top of the streambank. Additionally, vehicles and power equipment will be refueled at least 100 feet away from the top of the streambank.

Site Housekeeping

To minimize the effects of maintenance activities on neighboring homes and businesses, the following site "housekeeping" measures will be implemented.

- Maintenance sites will be maintained in a neat and orderly condition, and the site will be left free of any garbage or debris.
- For activities that last more than one day, materials, equipment, or stockpiled debris left on the site overnight will be stored in a manner that does not block access roads.
- Landowners will be notified at least 48 hours prior to any maintenance activities occurring on their property.

Noise Control

To minimize the effects of maintenance activities on neighboring homes and businesses, the following noise control measures will be implemented.

- Work will be limited to normal business hours (8:00 a.m.–5:00 p.m.), Monday through Friday. No activities will occur on Saturdays, Sundays, or recognized holidays.
- All power equipment will be equipped with sound-control devices no less effective than those provided as original equipment. All equipment will be operated and maintained to meet the applicable District standards for construction noise generation. No equipment will be operated with an unmuffled exhaust.

Erosion and Sediment Control

Any maintenance work involving modifications to the stream channel and banks will be restricted to the minimum necessary to address the problem. Inchannel work will be limited to the dry season (April 15–October 15). Work requiring stream dewatering, stream crossings, or work within the live stream will not begin before June 1.

To the extent feasible all inchannel work will be conducted by equipment operating from dry areas outside the low-flow channel. To the extent feasible, erosion control measures such as installing silt fencing, fiber rolls, or erosion control blankets will be implemented to minimize sediment input to the active channel.

Biological Resources Protection

Migratory Birds

In order to avoid adverse effects related to disturbance of migratory birds (protected under the federal Migratory Bird Treaty Act, the California Fish and Game Code, and CEQA), a qualified biologist will conduct preconstruction surveys for migratory birds and their nests at each work site no more than 1 week prior to the initiation of any construction activity planned to occur during the migratory bird nesting season (February 15–August 1). If preconstruction surveys identify active nests belonging to common migratory bird species, an exclusion zone will be established around each nest to minimize disturbance-related impacts on nesting birds. If active nests belonging to special-status migratory birds are identified, a no-activity buffer zone will be established around each nest. The radius of the exclusion zone/no-activity zone and the duration of exclusion will be determined in consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Game.

Fish

To reduce the likelihood of adverse impacts on salmonids that use the Napa River corridor, any work activities below the top-of-streambank will be limited to the dry season (April 15–October 15), with the condition that construction requiring stream dewatering, stream crossings, or work in the live stream may not commence before June 1.

Prior to activities disturbing the bed or banks of the active low-flow channel, coffer dams or culverts will be installed to divert flow around the work area. Stream flow downstream of the work area will be maintained. Any native fish present in the work area will be relocated to a suitable location by a qualified biologist. If it is necessary to pump the work area to remove seepage and maintain a dry condition, pumps will be placed in flat areas well away from the channel and secured by anchoring to a tree or stake. Pumps will be refueled at least 100 feet away from the top of the streambank. Wastewater will be discharged to an upland location where it will not drain back into the channel.

California Freshwater Shrimp

Prior to activities disturbing the bed or banks of the active low-flow channel, the District will retain a qualified biologist to conduct preconstruction dipnet surveys for California freshwater shrimp at each inchannel work site. If the species are

determined to be present, the biologist will capture and relocate them to a suitable site downstream of the work area.

Northwestern Pond Turtle

Prior to activities disturbing the bed or banks of the active low-flow channel, the District will retain a qualified biologist to conduct preconstruction surveys for northwestern pond turtle at each inchannel work site. Surveys will take place no more than 72 hours prior to the onset of maintenance activities (including site preparation) with the potential to disturb turtles or their habitat. If the species is determined to be present, the biologist will capture and relocate them to a suitable site downstream of the construction area. If preconstruction surveys identify active nests, the biologist will establish no-disturbance buffer zones around each nest using temporary orange construction fencing. The radius of the buffer zone and the duration of exclusion will be determined in consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Game. The buffer zones and fencing will remain in place until the young have left the nest, as determined by a qualified biologist.

Cultural Resources

Several known cultural resources sites have been identified within the program area, and it is possible that other unknown sites may be disturbed or damaged by some maintenance activities (e.g., minor grading). If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or human bone are discovered inadvertently during ground-disturbing activities, work will stop in that area and within 100 feet of the find until a qualified professional archaeologist can assess the significance of the find and develop appropriate treatment measures in consultation with the District, and other appropriate authority.

Additionally, if human remains are discovered, there is to be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the Napa County Coroner has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, ground-disturbing activities may not resume until the descendents of the deceased Native American(s) have made a recommendation regarding means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in California Public Resources Code Section 5097.98. If NAHC is unable to identify a descendent or the descendent fails to make a recommendation within 24 hours after being notified by the NAHC, work may then resume.

Maintenance Responsibilities

As described above, it will be the responsibility of the District and local landowners to oversee and implement the Rutherford Reach maintenance program. Both District staff and local landowner representatives will serve on the LAC and will review, evaluate, and prioritize annual maintenance activities. Additionally, District staff will be responsible for supervising maintenance work crews. Work crews may be comprised of California Conservation Corps members, local RCD or NRCS staff, vineyard employees, and/or contract labor.

Regulatory Compliance

Implementation of the maintenance program will require compliance with federal and state environmental regulations including Section 1600 of the California Department of Fish and Game Code, Sections 401 and 404 of the Clean Water Act, state and federal endangered species acts, and the California Environmental Quality Act. All maintenance of constructed features will be limited to maintaining the original design approved by relevant regulatory agencies. Ongoing compliance with these regulations will be addressed through environmental and regulatory compliance documentation in process for the Rutherford Reach Restoration Project. As part of the compliance process additional BMPs and permit conditions relevant to the maintenance activities described above may be identified. Additionally, following completion of annual maintenance activities, District staff will submit a report to the LAC, regulatory agencies, the Flood District Board, and all project landowners documenting activities completed that year.