

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF JULY 28-29, 2016

Prepared on July 1, 2016

ITEM NUMBER: 15

SUBJECT: Clean Water Act Section 401 Water Quality Certification for the Salinas River 2016-2025 Stream Maintenance Program, Monterey County, File No. 32716WQ02

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SUMMARY

This is an information item regarding the Monterey County Water Resources Agency (MCWRA) Clean Water Act Section 401 Water Quality Certification for the Salinas River 2016-2025 Stream Maintenance Program (Project). The purpose of the Project is flood control. This Project is the most comprehensive riparian management program ever conducted in our Region. The following are some key elements of the Project:

- The Project covers 92 miles of the Salinas River.
- The total vegetated area along the 92 miles of River reach is 12,400 acres. The potential area of disturbance for flood control purposes is limited to about 864 acres. This is a significant improvement over previous flood control management efforts, which removed up to 2,349 acres of vegetation (without controls or mitigation).
- The Project design uses a science-based approach that provides flood reduction benefits while ensuring environmental protection. This design approach is a significant improvement for water quality and beneficial use protection compared to previous flood control efforts. The Project design optimizes impact avoidance and provides compensatory mitigation. Developed in partnership between MCWRA, The Nature Conservancy, the RCD, regulatory agencies, growers, and other stakeholders, the design mimics the historic braided channel form of the Salinas River.
- Unlike previous flood control efforts, this Project limits vegetation removal and mitigates vegetation removal by planting replacement vegetation of equal or better value or by removing arundo. Arundo is an invasive species that overwhelms riparian areas, reducing habitat function and diversity.
- Arundo also takes up vast amounts of water. The Project has the potential to result in a water savings of approximately 7,320 acre-feet per year (even if all arundo removal areas are allowed to regrow with native riparian species).
- The Project includes comprehensive monitoring and reporting to evaluate performance, protection of beneficial uses, and adaptive management.
- Project development has included extensive public outreach and stakeholder input.
- The Project is on schedule to be approved by the Executive Officer and implemented in time for the coming rainy season.

This Project is a major improvement over previous flood control efforts in the Salinas River and will provide scientifically based flood protection and environmental benefits. Unless otherwise directed by the Water Board, the Executive Officer will approve MCWRA's 401 Certification application so that MCWRA and its partners can implement the Certification on schedule for the coming rainy season.

DISCUSSION

A. Introduction

Monterey County Water Resources Agency (MCWRA) is seeking Clean Water Act (CWA) Section 401 Water Quality Certification (Certification) for the Salinas River 2016-2025 Stream Maintenance Program (Project). Pursuant to CWA Section 401, the Central Coast Regional Water Quality Control Board (Central Coast Water Board) must certify that the Project protects beneficial uses and meets water quality objectives. In so doing, the Central Coast Water Board establishes conditions to protect beneficial uses and mitigate unavoidable impacts of the Project. The proposed Certification is included as Attachment 1.

The objective of the Project is to increase the flow capacity of the Salinas River to reduce flood risk to surrounding lands. The Project involves targeted vegetation and sediment management activities performed annually over a ten-year period within the Salinas River and several tributaries, between the Highway 1 bridge (river mile 2.0) and river mile 94 (south of San Ardo). A map of the Salinas River and Project boundaries is included as Attachment 2. The Project may disturb a maximum of 863.7 acres of the Salinas River and tributaries. The permit term will be ten years, and Staff will reassess the Project's implementation and effectiveness after five years, and consider modifications to the Certification.

The Project is the latest in a series of programs and proposals for channel maintenance in the Salinas River. (For more information on past maintenance programs, see Section B.1.) The Project is a significant improvement for water quality and beneficial use protection compared with these previous programs and proposals. The following are examples of significant improvements:

- The Project incorporates a system-wide and science-based approach that coordinates maintenance activities along the length of the river to achieve consistent flood reduction benefits in a manner that protects environmental value and function. (For more information about the Project design, see Section C.1. For more information about the management of the Project, see Section C.3.)
- The Project design and program management approach incorporate elements to avoid and/or reduce environmental impacts. Maintenance areas were specifically located and designed to provide flood risk reduction while minimizing impacts to high value habitat and water quality (see Sections C.1 and F.1).
- The Project includes mitigation for impacts to high-value habitat, including extensive removal of invasive arundo (see Section D.2).
- The Project will include a comprehensive monitoring program that includes assessment of long-term impacts and benefits (see Section D.3).

This Staff Report provides information about the Project and discusses conditions Staff has incorporated into the Certification to address specific issues and protect water quality and beneficial uses. It includes the following sections:

- Project background;
- Project description;
- Certification considerations and conditions;
- Public comments;
- Water quality issues;
- Conclusion; and
- Next steps.

The following terms are defined to provide clarity for readers.

Low-flow channel: The lowest channel within the riverbed, in which the lowest flows are conveyed.

Main channel: The river channel defined by the outermost banks or levees, including the low-flow channel and riparian vegetation. The main channel may sometimes be referred to as the primary floodplain.

B. Project Background

1. PAST MAINTENANCE PROGRAMS

The Salinas River valley south of the Monterey-San Luis Obispo County line supports numerous cities and towns, as well as an agriculture industry that generates \$5.7 billion in direct economic output annually and directly provides more than 55,000 jobs.¹ Flooding of the Salinas River damages agricultural productivity along the river corridor and can threaten human life and property. MCWRA is charged with providing flood protection in Monterey County. Following severe flooding in 1995, the Agency began working with State and federal regulators to obtain permits for vegetation and sediment removal in the Salinas River to increase flow capacity and reduce flood risk.

2003 – 2008 Salinas River Channel Maintenance Program

MCWRA received permits in 2003 for the 2003-2008 Salinas River Channel Maintenance Program. Under the permits, MCWRA coordinated voluntary maintenance efforts proposed and implemented by individual property owners, growers, and municipalities. The objective of the program was to create an unrestricted flow path that maximized the river channel capacity to convey high volume storm flows. Maintenance activities included vegetation clearing and sandbar removal within the main channel of the Salinas River, outside of the low-flow channel and a 10-foot wide buffer strip along both sides of the low-flow channel, with the following limits:

- a) Within the constrained reaches (river miles 2 to 21), vegetation and sandbar removal was prohibited where the main channel was already capable of passing 30,000 cubic feet per second (cfs). In addition, vegetation and sandbar removal could not exceed the minimum necessary to allow the main channel to pass 30,000 cfs. According to the hydraulic model used at the time, this flow rate was considered equal to the 8-year flood event.
- b) Within the unconstrained reaches (river miles 21 to 94), vegetation and sandbar removal was prohibited where the main channel was already capable of passing 77,000 cfs. In

¹ Economic Contributions of Monterey County Agriculture. Report by the Monterey County Agricultural Commissioner. June 2015.

addition, vegetation and sandbar removal could not exceed the minimum necessary to allow the main channel to pass 77,000 cfs. This flow rate was considered equal to the 25-year flow event.

The program did not include compensatory mitigation for impacts associated with vegetation and sandbar removal activities. Permits for the program expired at the end of 2008.

2009 Permitting Efforts

In June 2009, MCWRA applied for recertification of the Salinas River Channel Maintenance Program for 2009 through 2013. The proposed activities, area, and methods were essentially unchanged from the 2003–2008 program. Again, the proposed program did not include compensatory mitigation for impacts associated with vegetation and sandbar removal activities. MCWRA also prepared a new draft Mitigated Negative Declaration (MND). Central Coast Water Board staff (Staff) reviewed the application and draft MND, looking more closely at the potential environmental and fluvial impacts of the extensive vegetation and sediment removal activities proposed. Staff found that:

- The proposed program did not adequately address impacts associated with loss of riparian habitat;
- The proposed program did not adequately address the potential fluvial geomorphological impacts of in-stream channel modifications;
- The proposed program did not include mitigation measures adequate to reduce potentially significant impacts to less than significant levels; and
- The proposed program was not consistent with the Central Coast Water Board's stated vision of healthy, functioning watersheds, and would not protect the beneficial uses of the Salinas River.

Consequently, Staff denied the 2009 application without prejudice on September 30, 2009.

Development of the Current Project

Following denial of the 2009 application, Staff began working with MCWRA and other stakeholders to develop an acceptable channel maintenance program. Between 2011 and 2014, Staff participated in numerous teleconference and in-person meetings with MCWRA staff and in regular interagency permit coordination meetings, and provided written comments on the 2013 Draft Environmental Impact Report (EIR). Staff also met with the Salinas River Channel Coalition and other stakeholders. MCWRA also began working with The Nature Conservancy and other stakeholders and interested parties in 2013 to develop a science-based approach to channel maintenance in the Salinas River. MCWRA developed a new program, which was described and analyzed in a March 2013 Draft Environmental Impact Report (EIR) and September 2013 Final EIR. In addition, the Central Coast Water Board conducted a public Salinas River Management Workshop with stakeholders and technical experts, as part of its March 6, 2014 meeting in Salinas, to share information and perspectives on how to manage the river to provide flood reduction benefits while ensuring environmental protection.

2. 2014 DEMONSTRATION PROJECT

MCWRA obtained permits for the first phase of the Project in 2014, and maintenance activities began on October 1 of that year. Known as the Demonstration Project, this first phase implemented the Project in 11.5 miles of the Salinas River near Gonzales and Chualar.

MCWRA developed the Demonstration Project as part of the larger Project and implemented it as a pilot project to test and refine program management and permitting approaches for the larger Project. As part of the larger Project, the Demonstration Project used a science-based approach that provides flood reduction benefits while ensuring environmental protection, through a design approach that mimics the historic braided channel form of the Salinas River. (For more information on Project design, see Section C.1. Since the Demonstration Project is similar to the current Project, the project description of the Demonstration Project is not provided separately here. See Section C for the description of the current Project.) MCWRA conducted maintenance activities in 2014 and 2015, and has initiated compensatory mitigation for Demonstration Project impacts.

As a pilot for the larger Project, the Demonstration Project has provided valuable insights into the Project's protection of water quality and beneficial uses. These insights are reflected in the discussion of Water Quality Issues in Section F. In particular, the Demonstration Project allowed Staff to observe proposed maintenance activities and their impact upon the river. The Demonstration Project has also provided an opportunity to test and refine the project management approach and its effectiveness at reducing environmental impacts (see Sections C.3 and F.2). As a result of lessons learned from the Demonstration Project and Staff recommendations, MCWRA has incorporated additions and modifications into the larger Project.

3. RESOURCE CONSERVATION DISTRICT OF MONTEREY COUNTY PROJECT

The Resource Conservation District of Monterey County (RCD) began watershed-scale arundo removal activities in the Salinas River in 2008 at the Monterey/San Luis Obispo County line. The RCD project is based on recommendations of the March 2010 Arundo Donax Distribution and Impact Report developed by the California Invasive Plant Council,² and includes the following features:

- Arundo removal activities started at the upstream end of Monterey County and will move downstream.
- The project objective is to remove all arundo along the Salinas River in Monterey County.
- The project includes follow-up and subsequent re-treatment of regrowth areas.

The goal of the RCD project is to eradicate arundo from the Salinas River downstream of the Monterey-San Luis Obispo County line (approximately 1,500 acres of arundo over approximately 111 river miles). Work began with Phase 1 in 2008 with the removal of 50 acres of arundo near the Monterey-San Luis Obispo County line. The RCD conducted Phase 2 in 2014 and 2015. Phase 2 included inspection of areas treated during Phase 1 and re-treatment where needed, as well as treatment of an additional 160 acres downstream of Phase 1. Phase 3 of the RCD project will begin in Fall 2016 and will remove a further 300 acres of arundo. By the end of Phase 3, the RCD project will have treated approximately 550 acres of arundo and effectively removed arundo from the Salinas River upstream of the Arroyo Seco River confluence. (For more information on the effectiveness of the RCD project, see Section F.6.) The project is primarily funded by the California Wildlife Conservation Board, and ongoing re-treatment of regrowth areas is funded through the office of the Monterey County Agricultural Commissioner.

² Jason Giessow, Jason Casanova, Rene Leclerc, Robert MacArthur, Genie Fleming, and Jesse Giessow. *Arundo Distribution and Impact Report*. California Invasive Plant Council. March 2011.

C. Project Description

The Project includes targeted vegetation management and sediment removal activities conducted annually over a ten-year period. MCWRA will conduct maintenance activities within designated and mapped maintenance areas in the Salinas River between river miles 2 and 94, and within three tributaries: Gonzales Slough, Bryant Canyon Channel, and San Lorenzo Creek. Actual maintenance activities in the Salinas River will be conducted voluntarily by landowners, growers, and municipalities under MCWRA's supervision, and maintenance activities in the tributaries will be conducted by MCWRA directly. Maintenance activities include vegetation removal, tree pruning and limbing, sediment movement, and sediment removal to achieve limited flood reduction benefits for surrounding properties. Repeat maintenance activities could occur in all maintenance areas on an annual basis when vegetation regrows or sediment accumulation recurs.

The Project incorporates the Demonstration Project; ongoing maintenance activities in the Demonstration Project reaches are covered by the 2016 Certification, and compensatory mitigation implementation, maintenance, monitoring, and reporting activities for impacts under the Demonstration Project are regulated under the 2016 Certification.

This section includes discussions of the following Project elements:

- Project design;
- Proposed maintenance activities; and
- Program management.

1. PROJECT DESIGN

The Project (including the Demonstration Project) design uses a science-based approach that provides flood reduction benefits while ensuring environmental protection. This design approach is a significant improvement for water quality and beneficial use protection compared to the 2003-2008 program and the 2009 proposed program, in that the design seeks to optimize impact avoidance and compensatory mitigation. Developed in partnership between MCWRA, The Nature Conservancy, the RCD, regulatory agencies, growers, and other stakeholders, the design mimics the historic braided channel form of the Salinas River. In braided riverine systems, flow moves downstream through multiple channels. These channels are typically situated at different elevations relative to the low-flow channel, and are therefore activated (i.e., begin flowing) under different flow events. Both the low-flow and the secondary channels tend to shift location during large flow events as high flows scour vegetation and sediment from the riverbed, opening some channels and closing others.

The Project design mimics this natural fluvial process by identifying secondary channels for maintenance. These secondary channels are within the main channel, but are outside the low-flow channel and connected to the low-flow channel at their upstream and downstream ends. They are designed to begin flowing during 2-year to 5-year flow events. Maintenance activities will be limited to the secondary channel areas, preserving the majority of the riparian habitat within the main channel and almost entirely avoiding the low-flow channel itself. In addition, secondary channels are designed to reduce impacts to high value habitat in the following ways:

- Aerial photographs, topographical data, and vegetation surveys were used to locate secondary channels where they already exist, or are most likely to form during high flow events.

- Secondary channels are sited wherever feasible in areas of low value habitat (i.e., sparse herbaceous, arundo-dominated, or unvegetated/bare ground areas).
- Secondary channels avoid the outer riverbanks and/or levees to protect them from erosion that could occur during high flow events.

The design identifies 123 secondary channels in seven river management units (RMUs), including the Demonstration Project reaches. Secondary channels are typically between 100 and 200 feet wide. Attachment 3 shows an example of designated secondary channels.

The objective of the Project design is to achieve a measurable reduction of flood risk during 5-year and 10-year flood events. The design is not intended to keep either of these events within the main channel, but to reduce the number of acres flooded and the depth of flooding when these events occur. (See Section D.1 for a discussion of the projected flood reduction benefits.) MCWRA developed a new 2-dimensional hydraulic model for the Salinas River, and used it to determine the number and location of secondary channels needed to achieve these limited flood reduction benefits. According to the new model, the 5-year event corresponds to a flowrate of 25,450 cubic feet per second (cfs), and the 10-year event corresponds to a flowrate of 42,800 cfs, as measured at the U.S. Geological Survey gauge near the town of Spreckels.

Constrained Reaches

The Project differs from the Demonstration Project in that the design is modified slightly within the constrained reaches (between river miles 2 and 21). In these reaches, the river channel is more narrowly constrained by levees and less room is available for secondary channels outside the low-flow channel. Therefore, in addition to 18 designated secondary channels (described above) in the constrained reaches, the Project identifies two "selective treatment areas" where secondary channels are not appropriate, and where MCWRA applied a different design approach. These selective treatment areas are generally 50 feet wide. In these two areas, MCWRA proposes some maintenance within the low-flow channel and within the 10-foot buffer preserved during the 2003 Salinas River Channel Maintenance Program. However, vegetation management will not occur throughout the entire maintenance area as in the secondary channels, but only in a patchwork fashion, in order to preserve as much of this more sensitive habitat as possible. (Section C.2 provides more detail about proposed maintenance activities in the selective treatment areas.) The two selective treatment areas are maintenance area 6.12 (from the Davis Road Bridge to the Highway 68 Bridge, approximate river miles 10.9 to 13.1) and maintenance area 7.01 (downstream of the Blanco Road Bridge, approximate river miles 6.8 to 7.5). These locations are indicated in Attachment 2. A portion of maintenance area 6.12 is shown in Attachment 4.

Tributaries

The Project differs further from the Demonstration Project in that it includes maintenance activities in portions of three tributaries to the Salinas River: Gonzales Slough, Bryant Canyon Channel, and San Lorenzo Creek.

- a) Gonzales Slough is a buried stormwater pipe draining to the Salinas River west of Gonzales. The Project will remove vegetation and accumulated sediment as necessary to maintain the discharge flap gate and the constructed channel between the flap gate and the Salinas River.
- b) Bryant Canyon Channel is a constructed channel carrying runoff from the Gabilan Mountains to the Salinas River south of Soledad. The last 800 feet of the channel are within

the main channel of the Salinas River. The Project will remove sediment as needed to maintain this portion of the channel to its as-built dimensions, and will remove vegetation from the channel bed and banks.

- c) San Lorenzo Creek flows through a modified channel to the Salinas River south of King City. The Project will maintain the portion of the channel south of First Street to the Salinas River low-flow channel, a length of approximately 1.6 miles. The Project will remove accumulated sediment as needed to maintain the dimensions and slope recorded during a Federal Emergency Management Agency (FEMA) Flood Insurance Survey conducted in 2009. Maintenance of the modified channel will also involve removing vegetation below the top-of-bank, but will preserve or limb native trees where doing so will not reduce the flow capacity of the channel.

2. PROPOSED MAINTENANCE ACTIVITIES

Vegetation Management

Vegetation management activities include removing native vegetation by mowing, disking, or use of heavy equipment; pruning and limbing trees; and removing non-native vegetation through cutting and herbicide stump treatment, excavation and removal of plant stocks and roots, or herbicide treatment in place with subsequent reduction of the dead plant material. Herbicide application will comply with Water Quality Order No. 2013-0002-DWQ Statewide General NPDES Permit for Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications. Vegetation management activities will be confined to the designated maintenance areas.

- a) In the 123 secondary channels, Gonzales Slough, and Bryant Canyon Channel, vegetation management will consist of removing all vegetation within the designated maintenance areas, except for wetland vegetation (see Section C.2 for more information). Mature trees will be preserved or limbed where possible without reducing flood reduction benefits.
- b) In the two selective treatment areas, vegetation management will consist of removing vegetation in a patchwork of selected areas, including limited vegetation removal within the low-flow channel and historically-preserved 10-foot buffer adjacent to the low-flow channel. Mowing and disking may occur within the low-flow channel and buffer, but will be limited to low-value habitat areas (see Section D.1) and to less than 50% of the low-flow channel and buffer areas. All non-native trees, all willows less than 6 inches in diameter, and up to 62 willows larger than six inches in diameter may be removed from the selective treatment areas, though only one-third of the 62 willows larger than six inches in diameter could be removed from the low-flow channel or 10-foot buffer adjacent to the low-flow channel. Cottonwoods and other non-willow native riparian trees less than 2 inches in diameter would be avoided to the greatest extent practicable, and removal will be limited absolutely to no more than 37 trees greater than 4 inches in diameter between the two selective treatment areas. No work will occur in standing or flowing water. The selective treatment areas constitute a very small portion of the Project Area. Attachment 5 provides a conceptual example of how maintenance will occur in the selective treatment areas.
- c) In San Lorenzo Creek, vegetation management will consist of mowing or treating vegetation with herbicide on the channel bed and banks up to the top-of-bank. In the upstream 2,000 feet of the channel, this vegetation is primarily non-native weeds or upland species. Native riparian species become increasingly dominant in the downstream portion of the channel,

and mature trees (primarily willow and cottonwood) are common. Mature native trees will be preserved, limbed, or pruned where possible without reducing flood reduction benefits.

Mitigation for vegetation management impacts is discussed in Section D.2.

Sediment Management

Sediment management activities include disking, spreading sandbars, sandbar ripping (using heavy equipment to “rip” ossified or rooted sediment bars to allow natural fluvial processes to function), grading connections between secondary channel areas and the low-flow channel to facilitate flow, and sediment removal. Up to 554,420 cubic yards of sediment could be removed annually from designated maintenance areas, which is roughly one-third of the estimated annual sediment budget of the Salinas River.³ Based on conversations with MCWRA staff, Staff expects the total volume of sediment removed to be much less due to the cost of sediment removal. In fact, an average of only 231,000 cubic yards of sediment was removed per year during the six years of the 2003-2008 program. No more than two feet (depth) of sediment may be removed at any location. All removed sediment will be transported outside of the main channel.

- a) Sediment management (grading, smoothing, and sediment removal) could occur in all of the designated 123 secondary channels, except that sediment removal will not be conducted in any secondary channel where the main channel is already capable of conveying the 10-year flow. In addition, sediment management activities will not be conducted within the low-flow channel.
- b) Sediment management in the two selective treatment areas also includes limited sandbar ripping within the low-flow channel and historically preserved 10-foot buffer adjacent to the low-flow channel. Sandbar ripping would loosen sediment bars that have formed parallel to the direction of flow and become ossified due to clay deposits or vegetation growth. The objective of the activity is to allow natural processes to then mobilize the sediment and move it downstream. The Project includes sandbar ripping of up to ten sediment bars in maintenance area 6.12 and up to eight bars in maintenance area 7.01. Sandbar ripping will not be conducted in areas with low-stature herbaceous, early- and mid-successional cottonwood, or mid-successional willow habitats (see Section D.1 for descriptions of these habitat types).
- c) The objective of sediment management in the three tributaries is to maintain the slope and dimensions of the constructed and/or modified channels.

Access Routes

To the extent feasible, equipment and vehicles will use existing roads, trails, and access ramps to enter the main channel. Where access roads do not already exist or are not adequate, MCWRA will construct temporary access ramps along sections of existing farm levees as needed. Wherever possible, access routes will be on the same side of the river as the maintenance area to minimize crossings of the low-flow channel.

Mitigation for access route impacts is based on the actual habitat impacted, as discussed in Section D.2.

³ Salinas River Stream Maintenance Program Draft EIR. March, 2013 (p. 3-131).

3. PROGRAM MANAGEMENT

River Management Units

MCWRA has coordinated landowners, growers, and municipalities interested in conducting voluntary maintenance activities into seven river management units (RMUs) for program management purposes.⁴ This coordination is part of the Project's system-wide approach to channel maintenance, and greatly increases the likelihood that all designated maintenance will occur, and therefore the Project's flood reduction benefits are achieved along the entire river. RMUs 4 and 5 correspond to the Demonstration Project. RMUs 6 and 7 are the constrained reaches.

- RMU 1: San Ardo to north of King City (river miles 94.0 to 61.0)
- RMU 2: Greenfield (river miles 61.0 to 53.0)
- RMU 3: Soledad (river miles 53.0 to 37.7)
- RMU 4: Gonzales (river miles 37.7 to 29.2)
- RMU 5: Chualar (river miles 29.2 to 22.7)
- RMU 6: Chualar to Blanco Road (river miles 22.7 to 7.5)
- RMU 7: Blanco Road to Highway 1 (river miles 7.5 to 2.0)

Annual Program Management

Prior to each maintenance season, MCWRA will submit a Work Plan for review and approval by Staff. The annual Work Plan will identify the maintenance areas where maintenance activities are proposed that year and the maintenance activities proposed in each maintenance area. Staff will review the proposed maintenance activities for compliance with the Certification, and maintenance activities may not commence until Staff has provided written approval of the Work Plan.

Prior to commencement of maintenance activities, a trained biologist will perform a pre-maintenance field survey of each maintenance area identified in that year's Work Plan. The pre-maintenance survey will: (a) evaluate the proposed alignment of the maintenance area compared to field conditions, and adjust the alignment of the maintenance area where maintenance impacts could be reduced without reducing flood reduction benefits; (b) identify and flag the boundaries of the maintenance area and points of connection to the low-flow channel; (c) identify and flag high-value habitat to be preserved; and (d) designate an access route to the maintenance area. MCWRA will provide for the training of all biological personnel. The RCD has been working with MCWRA to coordinate biological personnel and oversee their training during the Demonstration Project, and intends to continue doing so during the Project.

Also prior to commencement of maintenance activities, MCWRA will provide training to all parties or their representatives who will perform maintenance activities. Maintenance activities may not begin until the individuals performing the maintenance have participated in this training.

During active maintenance, MCWRA will conduct daily monitoring of all active maintenance sites during business days, and will inspect on the following Monday any maintenance site where maintenance activities were conducted over the weekend, to ensure maintenance

⁴ River mileage is reckoned from the mouth of the river, so that river mileage decreases as one moves downstream. River management units, however, are counted from the upstream end of the Project area: RMU 1 begins at the upstream end of the Project, and RMU 7 ends at the downstream end.

activities are being conducted in accordance with the approved program, the pre-maintenance survey, and the Certification, and to make any additional adjustments to maintenance area boundaries where indicated by field conditions.

Adaptive Management

Due to the naturally braided channel form of much of the Salinas River, some of the designated secondary channels could shift during high flow events due to natural fluvial processes. When this occurs, MCWRA staff will evaluate field conditions to determine whether maintenance activities should continue in the originally-designed secondary channel or should be conducted instead in the naturally-created secondary channel. MCWRA's recommendation, and rationale for the recommendation, will be included in the annual Work Plan and will be subject to approval by Staff.

D. Certification Considerations and Conditions

1. PROJECTED IMPACTS AND BENEFITS

Impacts

Project impacts are assessed based on habitat types identified during preparation of the 2013 Draft EIR, and in some cases have been adjusted through field reconnaissance. Impacts in all maintenance areas will be verified during pre-maintenance surveys. Project impacts will occur within the following seven distinct habitat types:

- Low-stature herbaceous wetland (LSHW): Habitat dominated by narrow bands of herbaceous wetland species, generally adjacent to the low-flow channel.
- Early- to mid-successional cottonwood forest (E/MSC): Riparian forest consisting of cottonwood and other riparian tree species generally smaller than six inches in diameter, interspersed with herbaceous cover and early-successional perennial riparian habitat.
- Mid-successional willow (MSW): Generally between two and six inches in diameter, including herbaceous plant species and minimal bare ground.
- Early-successional perennial riparian (ESPR): Habitat dominated by mulefat and willow plants up to 6 feet tall and 1 inch in diameter, intermixed with upland and wetland herbaceous species.
- Sparse herbaceous (with or without arundo) (SH): Similar to arundo-dominated habitat, but with smaller patches of arundo interspersed with mostly herbaceous species, and 25% to 75% bare ground.
- Arundo-dominated with sparse vegetation (AD): Habitat dominated by large stands of arundo, with a mix of mulefat and sparse and largely non-native herbaceous groundcover, and 50% or more bare ground between arundo clumps.
- Unvegetated or bare ground (BARE): Sandy riverbed devoid of vegetation.

MCWRA used aerial habitat mapping prepared for the 2013 Draft EIR Project to quantify anticipated Project impacts to each of these habitats in the designated maintenance areas. Impact calculations assume that vegetation will be removed entirely from secondary channels, and from selective treatment areas and the tributaries in accordance with the design parameters and project activities summarized above. Project impacts to the high-value habitats (LSHW, E/MSC, MSW, and ESPR) are summarized by River Management Unit in Attachment 6. Impacts within the three tributary areas are included in the quantities for the RMU in which the tributary connects to the river. The impact quantities for RMUs 4 and 5 are relative to conditions

before commencement of the Demonstration Project (i.e., most of these impacts have already occurred under the Demonstration Project), but also reflect impact reductions resulting from adjustments to secondary channel alignments and other impact reduction measures implemented during the Demonstration Project.

The Project may remove up to 476 acres of high-value habitat within the Salinas River main channel, though this number could change if secondary channels shift location and maintenance activities are continued in the new locations. The Project may also remove up to 161.9 acres of sparse herbaceous, 66 acres of arundo dominated, and 159.7 acres of unvegetated/bare ground habitats within designated maintenance areas, for a total disturbance of approximately 863.7 acres; plus additional arundo removed for mitigation purposes. This is compared to approximately 12,400 acres of native vegetation mapped along the river during preparation of the 2013 Draft EIR, and to 2,349 acres of vegetation removal reported under the 2003-2008 program. The actual area of vegetation removal may be lower than the maximum allowed, due to the voluntary nature of the maintenance program: MCWRA's experience with past programs suggests that some landowners may not complete the permitted activities.

Mitigation for vegetation management impacts is discussed in Section D.2. Mitigation was not required for impacts from the 2003-2008 program.

Flood Reduction Benefits

MCWRA's objective for the project is to provide measurable flood reduction benefits during 5-year and 10-year flood events. The Project does not attempt to keep the Salinas River from flooding during such events, but to reduce the damage and duration of flooding. The new hydraulic model developed for the Project was used to calculate flooding extent under baseline (i.e., prior to maintenance) and post-Project conditions for the 5-year and 10-year flood events. The Project's flood reduction benefits are calculated in two ways, as summarized below and tabulated in Attachment 6.

- a) Flood stage reduction benefits: Flood stage reduction is the decrease in flood depth due to Project implementation. It is a comparison of floodwater depth between the baseline and post-Project conditions. The results are summarized by calculating maximum, minimum, and average flood stage reductions for each River Management Unit (RMU).
- b) Reduction in the number of acres flooded: Reduction in the number of acres flooded is a comparison of the number of acres flooded under baseline conditions with the number of acres flooded following Project implementation. The number of acres flooded under baseline conditions and the number of acres saved from flooding are compiled for each RMU.

Attachment 6 indicates that the Project's flood reduction benefits are measurable and significant, and reasonable relative to the Project's impacts. For the 10-year event, benefits range between 0.1-foot average flood stage reduction and 115 out of 7,150 acres saved from flooding in RMU 1, to 0.4-average flood stage reduction and 420 out of 6,200 acres saved from flooding in RMU 3. The total for all RMUs is 1,085 acres out of 40,500 acres saved from flooding during a 10-year event.

Water Supply Benefits

The primary compensatory mitigation required for Project impacts is removal of arundo (see Section D.2). If all projected Project impacts are realized, the Project will remove approximately 66 acres of arundo within designated maintenance areas in addition to approximately 300 acres of arundo removed for mitigation. Arundo is a thirsty plant that consumes a large amount of water. The California Invasive Plant Council estimates arundo water usage at 24 acre-feet per acre per year, compared with four acre-feet per acre per year for willows.⁵ Therefore removing arundo could result in significant water savings, even when arundo is replaced by native vegetation. The California Invasive Plant Council estimates a net water savings from removing arundo of 20 acre-feet per acre per year. Therefore, the Project has the potential to result in a water savings of approximately 7,320 acre-feet per year even if all arundo removal areas are allowed to regrow with native riparian species. Assuming that the RCD project successfully removes all of the 1,500 acres of arundo mapped along the Salinas River according to the 2013 Draft EIR, the total water savings for both projects could approach 30,000 acre-feet per year.

2. COMPENSATORY MITIGATION

Tree Replacement

MCWRA will mitigate for individual non-willow native riparian trees (e.g., cottonwood, alder, box elder, sycamore) larger than two inches in diameter removed by the Project at a 3:1 ratio (trees planted to trees removed) through planting replacement trees of like species. Tree replacement will generally occur on the same property where trees were removed. Replacement planting sites will be selected through collaboration between the biologist and the landowner, with a preference for sites where tree planting will provide bank stabilization. MCWRA will mitigate for individual willow trees larger than six inches in diameter removed by the Project at a 2:1 ratio (trees planted to trees removed). Where possible, tree plantings will consist of cottonwoods, alders, or sycamores in order to increase the population of these species.

The Certification requires MCWRA to irrigate and maintain tree plantings as needed to achieve at least 85% survival five years after planting.

Arundo Removal

MCWRA will mitigate impacts to mid-successional willow (MSW) and early-successional perennial riparian (ESPR) habitats, including removal of willows less than six inches in diameter and removal of other native riparian trees less than two inches in diameter, through removal of arundo from the main channel of the Salinas River. MSW and ESPR habitat growing as secondary vegetation within early- to mid-successional cottonwood forest (E/MSW) will also be counted as MSW and ESPR habitat for mitigation purposes. Arundo removal must take place within the main channel but outside designated maintenance areas to be counted as mitigation for impacts to MSW or ESPR habitat. The Certification requires mitigation for impacts only once in a ten-year period. In other words, repeat maintenance in an area that has already been maintained under the Certification, and for which compensatory mitigation has already provided, would not need additional mitigation during this permit term. In addition, maintenance activities conducted under the Demonstration Project during 2014 and 2015 will not need additional

⁵ Giessow, et. al. *Arundo Distribution and Impact Report*. California Invasive Plant Council. March 2011 (p. 48).

mitigation for repeat maintenance during the term of this Certification (i.e., a twelve-year period for these areas).

- MCWRA will mitigate impacts to mid-successional willow (MSW) habitat on an acreage basis by removing arundo at a 3:1 ratio (acres of arundo removed to acres of MSW habitat removed).
- MCWRA will mitigate impacts to early-successional perennial riparian (ESPR) habitat on an acreage basis by removing arundo at a 0.5:1 ratio (acres of arundo removed to acres of ESPR habitat removed). The lower mitigation ratio reflects the lower value of ESPR habitat and the speed with which it typically regrows.

The Project will treat arundo primarily through mechanical (i.e., mowing) removal of plant mass and herbicide application to regrowth in order to kill the root mass, consistent with treatment recommendations developed by the California Invasive Plant Council.⁶ MCWRA will apply herbicide in compliance with Water Quality Order No. 2013-0002-DWQ Statewide General NPDES Permit for Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications. The Certification requires MCWRA to re-treat arundo removal areas, including arundo removed within designated maintenance areas and not intended as mitigation for impacts, in subsequent years as needed to achieve 1% or less cover by arundo five years after initial removal.

Arundo removal offsets Project impacts and enhances habitat functions of the Salinas River. The Salinas River has the second largest arundo infestation in central and southern California.⁷ Arundo stands do not support beneficial uses, and harm beneficial uses by crowding out native habitat and consuming large amounts of water. Therefore arundo removal is an essential part of restoring the river to a more natural condition. Natural recruitment of native riparian species is expected in arundo removal areas, particularly in arundo removal areas outside of designated maintenance areas. It should also be noted that Project impacts are not permanent, and that even areas kept clear of vegetation during this permit term provide some habitat benefit by restoring some of the river's braided channel form and facilitating wildlife movement.

Wetland Restoration

The Project does not include removal of wetland vegetation because low-stature herbaceous vegetation does not pose a significant hindrance to flow in large rivers. However, minor incidental impacts could occur, in which case the Certification requires restoration of the damaged wetland habitat to pre-impact conditions. If restoration of the damaged wetland is not possible, MCWRA will propose alternative mitigation in the subsequent Annual Report. The alternative mitigation proposal will be subject to Staff approval.

3. MONITORING

- a) Standard Monitoring. In addition to program oversight activities described in Section C.3, MCWRA will perform the following monitoring:

⁶ Arundo donax FAQs. Invasive Plants of California's Wildlands. California Invasive Plant Council website (<http://www.cal-ipc.org/ip/management/ipcw/pages/detailreport.cfm@usernumber=8&surveynumber=182.php>). Viewed June 15, 2016.

⁷ Giessow, et. al. *Arundo Distribution and Impact Report*. California Invasive Plant Council. March 2011 (p. 48).

- Visual inspection of all maintenance sites following completion of maintenance activities and for one subsequent rainy season;
- Assessment of compensatory mitigation planting sites for five years following completion of planting, or continued assessment until success criteria are achieved; and
- Assessment of arundo removal areas, including arundo removed within designated maintenance areas and not intended as mitigation for impacts, for five years following completion of initial *arundo* removal, or continued assessment until success criteria are achieved.

b) Long-Term Effectiveness Assessment Plan. The Certification also requires MCWRA to develop a long-term effectiveness assessment plan, to be submitted for Staff review and approval within twelve months of the date of certification. The plan will be designed to evaluate the Project's overall effectiveness at achieving anticipated flood reduction benefits while also protecting beneficial uses and habitat function. The long-term effectiveness assessment plan will include at least the following information and analysis:

- Effectiveness monitoring—Topographic surveys of 10% of all secondary channels in all River Management Units, and use of the survey data to calibrate the hydraulic model, determine how the maintenance areas are functioning, and assess the sediment transport characteristics and impacts of the maintenance areas;
- Design verification monitoring—Analysis of flow events to determine whether secondary channels are activated under the flow conditions anticipated by the design, and are functioning as designed;
- Flood risk reduction monitoring—Analysis of any flood events that occur to determine whether the Project achieves the anticipated flood reduction benefits; and
- Biological function monitoring—Collection and analysis of information indicating the Project's overall effect on beneficial uses and habitat function.

The Certification requires these assessments and analyses to be completed and reported five years after the date of certification (covering the first five years of Project implementation), and again in ten years from date of certification (covering the 10-year term of the Certification).

4. REPORTING

a) Annual Reporting. MCWRA will submit an Annual Report following each maintenance season. Staff will review the Annual Report to determine the Project's compliance with the approved program and the Certification, and to review the steps taken during pre-maintenance surveys and flagging activities to reduce habitat impacts as much as possible. MCWRA will summarize all maintenance activities, including training activities, steps taken before and during maintenance activities to reduce habitat impacts; actual impacts; compensatory mitigation implementation and monitoring; and any problems encountered and how they were addressed.

b) Mid-Term Program Reassessment Reporting. The Certification requires a reassessment of Project implementation after five years, to allow Staff to identify any problems or modifications needed and to amend the Certification before the end of the 10-year term of the Certification. Therefore the Certification requires MCWRA to submit additional information following the fifth year of maintenance activities to inform Staff's reassessment of the Project. Submitted information will include:

- A summary of maintenance activities, impacts, and mitigation activities to date;

- A summary and analysis of all standard monitoring information collected; and
- All information and analyses required for the Long-Term Effectiveness Assessment Plan (see Section D.3.b).

c) Reporting on Progress of Development of Long-Term Management Strategy. MCWRA has plans to develop a long-term strategy for management of the Salinas River. Arundo control will be an essential ingredient of this strategy. The Certification requires MCWRA to submit periodic progress updates on the development of this strategy.

E. Public Process and Comments

1. OPPORTUNITIES FOR PUBLIC COMMENT

The Project has undergone a long process of public engagement, beginning with distribution of the Draft EIR for public review and comment in March 2013. MCWRA also conducted stakeholder and informational workshops between October 2013 and June 2015.

The Central Coast Water Board conducted a public Salinas River Management Workshop as part of its March 6, 2014 meeting in Salinas for the purpose of sharing information among multiple stakeholders and technical experts. The Demonstration Project proposal was discussed at that time. The Central Coast Water Board heard brief comments from Assemblyman Luis Alejo; presentations from multiple organizations and agencies, including growers' groups, regulatory agencies, and environmental groups; and comments from the members of the public.

Interested parties and stakeholders have had the following additional opportunities to provide comments on the Project:

- a) 2014 Application for Water Quality Certification of the Demonstration Project. MCWRA's application for the Demonstration Project was posted on the Central Coast Water Board website on May 21, 2014 for a 21-day public review and comment period. Staff also distributed notice of the application to parties indicating interest in Central Coast Water Board actions related to the Salinas River. Staff reviewed and considered all comments during development of the water quality certification for the Demonstration Project.
- b) May 22, 2014 Central Coast Water Board Meeting Update. On May 22, 2014, in the Executive Officer's Report to the Central Coast Water Board, Staff provided an update on Salinas River management. The update included discussion of long-term management strategies, including flood risk reduction activities.
- c) July 31-August 1, 2014 Central Coast Water Board Meeting Update. On August 1, 2014, in the Executive Officer's Report to the Central Coast Water Board, Staff updated the Central Coast Water Board on the status of the Water Quality Certification for the Demonstration Project.
- d) November 13-14, 2014 Central Coast Water Board Meeting Update. On November 14, 2014, in the Executive Officer's Report to the Central Coast Water Board, Staff updated the Central Coast Water Board on the status of the Water Quality Certification for the Demonstration Project.

- e) September 24, 2015 Central Coast Water Board Meeting Informational Item. MCWRA staff presented to the Central Coast Water Board an update on the progress of the Demonstration Project at the September 24, 2015 Central Coast Water Board Meeting in Watsonville.
- f) 2016 Application for Water Quality Certification of the Current Project. MCWRA's application for the current Project was posted on February 1, 2016, for a 21-day public review and comment period. Staff posted notice of the application on the Central Coast Water Board website and distributed the notice to the interested parties list.
- g) March 17, 2016 Central Coast Water Board Meeting Update. On March 17, 2016, in the Executive Officer's Report to the Central Coast Water Board, Staff provided a status update on the Salinas River Stream Maintenance Program. The update included the status of MCWRA's Water Quality Certification application and Staff's plans for issuing the Water Quality Certification.
- h) May 12, 2016 Central Coast Water Board Meeting Update. On May 12, 2016, in the Executive Officer's Report to the Central Coast Water Board, Staff provided a status update on the process for issuing the Water Quality Certification for the Project.
- i) Public release of the draft Certification. Staff posted the draft Certification for the current Project on the Central Coast Water Board website on July 6 for a 23-day public review and comment period. Staff also distributed notice of the draft Certification to the interested parties list.
- j) Public release of the Central Coast Water Board Meeting packet. This Staff Report was posted to the Central Coast Water Board website as part of the Central Coast Water Board Meeting agenda package on about July 18, 2016. Staff also distributed to the interested parties list specific notice of the Central Coast Water Board's intent to hear public comments on the Project.

2. SUMMARY OF PUBLIC COMMENTS

This section provides a brief summary of public comments received on the Project. Copies of the actual comment documents received are included in Attachment 7. Staff responses to comments are incorporated into the discussion of water quality issues contained in Section F below.

Comments on 2016 Application for Water Quality Certification of the Current Project

- a) Steve Shimek, The Otter Project and Monterey Bay Coastkeeper
- *A written design framework and criteria should be created, publicly reviewed, and incorporated into the permit, or the Regional Board should require that The Nature Conservancy stay intimately involved with the Project throughout the permit term. (See Section F.2 below.)*
 - *The permit should require a vegetated buffer at least 30 feet wide between channel maintenance work areas and developed lands, including agricultural lands. (See Section F.4 below.)*

F. Water Quality and Beneficial Use Protection Issues

This Section identifies potential water quality and beneficial use protection issues associated with the Project and describes how the Certification addresses them.

1. AVOIDANCE OF HIGH QUALITY HABITAT

The Project will have extensive impacts on riparian habitat. Prior to receiving Water Quality Certification, the Project must demonstrate that it is protective of water quality and beneficial uses by avoiding and reducing impacts to State waters to the greatest extent practicable, prior to mitigating unavoidable impacts. Staff's review of the Project objectives, design, and project management activities indicate significant impact avoidance and reduction measures. In addition, the Project achieves its flood risk reduction objective with greatly reduced impacts to riparian vegetation compared to previous proposals.

- a) Project objective. First, the Project reduces impacts to high-value habitat relative to previous proposals by setting a more reasonable flood benefit objective. The design objective of the Project is merely to reduce flood depth and the number of acres inundated during 5-year and 10-year events (corresponding to flow rates of 25,450 cfs and 42,800 cfs, respectively). In contrast, the 2003-2008 program allowed vegetation removal as needed for the main channel to pass 33,000 cfs in the constrained reaches (RMUs 1 and 2) and 77,000 cfs in the remainder of the river without flooding. (See Sections B.1 and C.1.)
- b) Design. As described above, the design confines impacts to designated maintenance areas and access routes. The total area of all designated maintenance areas is 863 acres, compared with approximately 12,400 acres of native vegetation within the main channel and along the river. Previous programs and proposals could potentially have removed nearly all of the riparian vegetation within the main channel over time. In addition, only 476 of the 863 acres should be considered high-value habitat (see Section D.1). The design also reduces impacts to high-value habitat by siting designated maintenance areas in low-value habitat (sparse herbaceous, arundo dominated, and bare ground) as much as practicable, including siting secondary channels and access routes where they already exist and vegetation is already immature or thin.
- c) Pre-maintenance surveys. Maintenance area alignments will be refined through field reconnaissance. A trained biologist will walk each mapped maintenance area and adjust the proposed alignment to further avoid high-value habitat, where doing so would not reduce flood reduction benefits. In addition, the biologist will flag sensitive habitat (e.g., individual trees) to be preserved within the final alignment, further reducing the Project's impacts to high-value habitat.
- d) Maintenance activities. One of the findings from the Demonstration Project is that many landowners were willing to preserve individual trees or small stands of cottonwoods or willows within designated maintenance areas that had not been flagged for preservation during the pre-maintenance survey. While this activity cannot easily be mandated as a permit requirement, it is evidence of a mindset geared toward reducing Project impacts, and suggests that such actions will continue.

Staff reviewed the mapped proposed maintenance areas and identified several secondary channel alignments for focused review. The purpose of Staff's review was to evaluate the effectiveness of the Project's impact avoidance efforts during the design and pre-maintenance

survey stages. Staff selected secondary channels for review where anticipated impacts to high-value habitat seemed high compared to the flood reduction benefit achieved. Staff discussed the selected alignments with MCWRA staff, and visited several of the secondary channel locations in the field. In many cases, discussions and field visits confirmed that the proposed alignments appeared to be in the best locations. During some field visits, however, MCWRA and Staff discussed alignment modifications that could be made during pre-maintenance surveys to reduce the impact of several secondary channels. Staff will look for these modifications in the first year's Work Plan.

Staff will continue to monitor the Project's effectiveness at reducing impacts to high-value habitat through review of annual Work Plans and Annual Reports, pre-maintenance inspections of flagged maintenance areas, and post-maintenance site inspections.

2. ADAPTIVE MANAGEMENT

MCWRA has developed an improved channel maintenance program through cooperation with The Nature Conservancy, the RCD, and other resources. Public comment received by Staff expresses a concern that these improvements may be lost if The Nature Conservancy does not remain involved in annual program management activities, particularly in adaptive management decisions if secondary channels need to be relocated due to fluvial processes associated with high flow events.

The program improvements that make the Project superior to previous proposals are well-incorporated into the Project design and program management measures (see Sections C.1 and C.3, respectively), and will be reviewed regularly by Staff to ensure they are implemented as specified in the application and the Certification. The secondary channel alignments are determined through a scientific approach that relies on an improved hydraulic model and mimics the natural fluvial processes and channel form of the river, and this approach will be applied to proposed realignments. MCWRA will consider secondary channel realignments only when the river itself begins to create a new low-flow or secondary channel, and Staff will review any adaptive management proposals as part of the annual Work Plan prior to any changes to the Project design. Due to the high flow conditions typically required to shift the riverbed to this extent, this is unlikely to be a frequent occurrence. Therefore Staff expects to be able to review many of proposed realignments in the field as well. (Note: This section responds to a comment cited in Section E.2.a.)

3. PROTECTION OF ANADROMOUS FISH HABITAT AND BENEFICIAL USES

The Salinas River supports threatened South-Central California Coast steelhead and is a migratory corridor between the Pacific Ocean and the Arroyo Seco, San Antonio, Nacimiento, and upper Salinas Rivers. The Project has the potential to affect fish passage and habitat conditions that support anadromous fish. The Project could also reduce shading of the low-flow channel due to vegetation removal at the connection points with secondary channels.

The Project will not create any fish passage barriers. Project activities will be limited to the period between June 1 and November 15, and will therefore not be conducted during the migration seasons of either steelhead adults or smolts. In addition, connection points between secondary channels and the low-flow channel will be graded to slope toward the low-flow channel to avoid trapping fish within secondary channels. According to the National Oceanic and Atmospheric Administration (NOAA) Concurrence Letter for the Demonstration Project (dated August 29, 2014), Project activities consistent with the Demonstration Project will not

increase water temperatures, decrease cover for fish, result in significant delay or interruption of steelhead migration, significantly increase sediment load in the low-flow channel, or otherwise adversely affect steelhead or their designated critical habitat.

Sandbar ripping activities conducted within the two selective treatment areas (maintenance areas 6.12 and 7.01; see Section C.2) have greater potential to increase sediment load in the low-flow channel in RMUs 6 and 7, which could potentially be harmful to migrating steelhead. NOAA staff has not yet completed its analysis of the effects of sandbar ripping on migrating steelhead and their critical habitat. Staff will remain in communication with NOAA staff, review NOAA staff's analysis when it is complete, and condition the Certification accordingly.

4. PROVISION OF A BUFFER BETWEEN MAINTENANCE ACTIVITIES AND UPLAND LAND USES

The Project will create secondary channels that will convey river flows nearer to agricultural fields. Public comment received by Staff expresses a concern that this poses a threat to water quality, and that the Certification should require a vegetated buffer at least 30 feet wide between secondary channels and developed areas, including agricultural fields and roads.

The Project design avoids siting designated maintenance areas near outer banks and levees in order to protect them from erosion. No designated maintenance areas are within 30 feet of the outer edge of the riparian corridor, except for the three tributaries (which penetrate the outer edge of the riparian corridor by their nature). In addition, all adaptive management decisions regarding realignment of secondary channels will be subject to Staff approval. To further protect water quality, the Certification requires preservation of a 30-foot buffer between developed areas, including agricultural fields and roads, and secondary channels and selective treatment areas. (Note: This section responds to a comment cited in Section E.2.a.)

5. PROTECTION OF WATER QUALITY

Project activities will involve operation of heavy equipment and herbicide application within the main channel of the Salinas River. These activities have the potential to impact water quality in the river.

The Project incorporates effective measures to protect water quality. Equipment crossings of the low-flow channel will be kept to a minimum, and will not be allowed when water is present. All crossing locations will be selected by the biologist, identified in the annual Work Plan, and subject to approval by Staff. No activity will be allowed in standing or flowing water. The Certification requires work to cease and all equipment to be removed from the main channel before rainfall events or when there is a risk of rising water levels that could affect work areas. Herbicides will be limited to products approved by the U.S. Environmental Protection Agency for aquatic use, and will be applied in compliance with the Statewide General Pesticide Order for Algae and Aquatic Weed Control Applications.

6. EFFECTIVENESS OF THE ARUNDO REMOVAL PROGRAM

Arundo is an invasive non-native species that is very difficult to eradicate. Vegetation mapping for the 2013 Draft Environmental Impact Report recorded approximately 1,500 acres of arundo along the Salinas River. Eradication will require repeated treatments over several seasons to prevent regrowth, and funding sources need to be in place to ensure that repeated treatments will occur.

After initial arundo removal through use of mechanical equipment or herbicide, MCWRA will evaluate arundo removal areas annually and provide re-treatment as needed to achieve less than 1% regrowth after five years. This performance criterion applies to arundo removed within secondary channels as well as for mitigation purposes. Funding for re-treatment will come from landowners through formal agreements between landowners and MCWRA. The amount of arundo to be removed by the Project accords with the amount of arundo removal that is necessary to mitigate for Project impacts. The Certification does not include requirements for arundo removal beyond what is necessary for mitigation, since such removal is not related to the Project. However, the Project will remove approximately 66 acres of arundo within designated maintenance areas in addition to approximately 300 acres of arundo removed for mitigation, including arundo removed by the Demonstration Project, which will significantly reduce arundo in the Salinas River over the long term. The Project's arundo removal plays a significant role in long-term efforts to completely eradicate arundo from the Salinas River.

Complete and long-term eradication of arundo in the Salinas River is planned and underway, through the RCD project (see Section B.3). The RCD project includes removal of all arundo along the Salinas River north of the Monterey-San Luis Obispo County line. Phase 2 of the project included inspection and retreatment of areas treated in 2008 as part of Phase 1, and the inspections found only sparse patches of regrowth with no evidence the patches are spreading. Phase 2 has achieved 95% control in treated areas, and the remaining 5% will be re-treated in Fall 2016. Phase 3 also includes re-treatment. The California Wildlife Conservation Board has provided much of the funding for Phases 2 and 3, and is working with the RCD to secure funding for future phases. The RCD is also working closely with the Monterey County Agricultural Commissioner's office and landowners to re-treat any areas of regrowth following initial control as these areas are reported by landowners. This ongoing effort is funded through the Monterey County Agricultural Commissioner's office.

MCWRA has plans to develop a long-term strategy for management of the Salinas River. Arundo control will be an essential ingredient of this strategy. Staff will continue to work with MCWRA, the RCD, and other stakeholders in the development and implementation of the long-term management strategy, and will ensure that arundo eradication is included in that strategy.

7. PROGRAM REASSESSMENT

While the Demonstration Project provided valuable insight into the effectiveness of the Project, the Project constitutes a new approach to channel maintenance in the Salinas River. A 10-year permit term may be too long and to allow adequate review of the Project and timely adaptive management to avoid or correct problems.

The Certification requires a review of the channel maintenance program by MCWRA and Staff after five years. The review will include assessment of maintenance activities, mitigation efforts, and all monitoring data to determine the effectiveness of the program at achieving the projected flood reduction benefits while ensuring environmental protection. Staff will also inspect maintenance and mitigation areas in the field, and will consult with staff from other regulatory agencies to identify any problems resulting from the Project and/or improvements needed to correct apparent problems or improve the Project's protection of water quality and beneficial uses. In addition, Staff will review the Work Plan each year, and maintenance activities will not commence in any year until Staff has provided written approval of the Work Plan.

G. Conclusion

The Project, as conditioned in the Certification, adequately achieves both the Project's flood risk reduction objective and the protection and minimization of impacts to beneficial uses and water quality as required by the Central Coast Water Board. In addition, the Project achieves these ends through a collaborative and science-based process. Staff anticipates that the Project will result in an overall improvement in riparian habitat function in the Salinas River.

H. Next Steps

Following this Informational Agenda Item, Staff will modify the draft Certification as needed to address input from the Central Coast Water Board. When the public review and comment period for the draft Certification ends on July 29, Staff will review all comments received and modify the draft Certification as appropriate. Staff will prepare written responses to comments for the Executive Officer's review prior to issuance of the final Certification. Following issuance, Staff will post the final Certification, Staff responses to public comments, and the draft Certification indicating modifications made in response to public comments, on the Central Coast Water Board website. Finally, Staff will submit to the Central Coast Water Board, as part of the Executive Officer's Report for the September 22-23, 2016 Central Coast Water Board Meeting, a summary of public comments and Staff's response to those comments, as well as a final copy of the Certification.

Staff expects that the final Certification will be issued by August 31, in time for Project activities to begin on September 1. Unless directed otherwise by the Central Coast Water Board, the Certification will be issued by the Executive Officer according to the typical procedure for issuing water quality certifications.

ATTACHMENTS

For copies, please refer to the Central Coast Water Board's internet website at:
<http://www.waterboards.ca.gov/centralcoast/>

1. Proposed CWA Section 401 Water Quality Certification No. 32716WQ02
2. Salinas River in Monterey County and Project Boundaries
3. Example of Secondary Channels
4. Selective Treatment Area 6.12
5. Conceptual Example of Treatment Approach in Selective Treatment Areas.
6. Summary of Project Impacts and Flood Reduction Benefits
7. Public Comments

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