SALINAS RIVER STREAM MAINTENANCE PROGRAM

INSTRUCTIONS FOR COMPLETION OF THE AGREEMENT BETWEEN PARTICIPANT AND MCWRA

PURPOSE OF FORM

The purpose of the *Salinas River Stream Maintenance Program Agreement Between Applicant and MCWRA* is to insure compliance with the terms and conditions of the U.S. Army Corps of Engineers' 404 Permit, State Regional Water Quality Control Board 401 Certification and the Program Guidelines. The *Agreement* must be signed and submitted to the MCWRA prior to work authorization.

TERMS AND DEFINITIONS

- RMU: River Management Unit along the Salinas River, from River Mile 94 to River Mile 2. The RMUs encompass the entire river channel width from bank to bank.

- Maintenance Area: Designated work areas outside of the low flow channel. These are numbered and refer to the RMU Site Plan.

INSTRUCTIONS

- Carefully review the terms of the *Agreement*. Print the property owner and lessee name (if applicable) on page 1 of the *Agreement*. Have all parties sign and date page 6 to indicate your acceptance of the terms of the *Agreement*. If you have questions regarding the *Agreement*, please contact MCWRA at (831) 755-4860.

FORM SUBMITTAL INSTRUCTIONS AND DEADLINES

- Upon completion, mail two (2) copies of this Agreement to:
  MCWRA
  Attn: Jennifer Bodensteiner
  PO Box 930 Salinas, CA
  93902

- Upon approval by MCWRA, a copy will be returned to the applicant for their file.

- All application materials should be received by MCWRA as soon as possible. Authorization will be granted based on available time and order of receipt.

SALINAS RIVER STREAM MAINTENANCE PROGRAM

AGREEMENT

Monterey County Water Resources Agency
and
Participants in the Stream Maintenance Program

A. This Agreement is entered into between the Monterey County Water Resources Agency (MCWRA), and _____ [and _____] hereinafter called Responsible Party/ies (also known as "Participants") (hereafter, the singular form "Party" includes the plural "Parties").

B. WHEREAS, Responsible Party has requested to participate in the MCWRA program titled Salinas River Stream Maintenance Program (2016-2025) SMP Regional General 404 Permit and 401 Water Quality Certification which identifies and conditions restoration and/or repair work on real property owned by or under control of Responsible Party as shown in the RMU Site Plan attached hereto and incorporated herein by this reference; and

C. WHEREAS, the MCWRA has secured the 404 Permit No. 22309S dated September 29, 2016 from the U.S. Army Corps of Engineers (USACE); and 401 Water Quality Certification No. 32716WQ02 dated August 31, 2016 from the State of California Regional Water Quality Control Board (RWQCB), San Luis Obispo, for work identified in the attached RMU Site Plan.

NOW, THEREFORE, in consideration of MCWRA obtaining permits referenced herein, and to participate in the SMP being permitted, Responsible Party hereby agrees as follows:

1. Responsible Party agrees to comply with all terms, conditions, and requirements identified in or resulting from the USACE Regional General 404 permit, the RWQCB 401 Water Quality Certification, and any applicable Department of Fish and Wildlife Section 1600 Streambed Alteration Agreement and all conditions set forth or referenced in this Agreement and in the Stream Maintenance Program Guidelines. Responsible Party will supply a copy of the Section1600 permit to the MCWRA upon request.

2. Responsible Party shall obtain each and every permit, license, approval and permission necessary or required under Federal, State, Local and regulation prior to initiation of project activity.

FOR OFFICE USE ONLY: RMU: _____ Maintenance Area: _____

3. Responsible Party represents and warrants that it is the owner, lessee, or other person entitled under the law to have and control access to the project site. Responsible Party grants, without cost or expense to MCWRA (including its staff, volunteers, consultants, agents and representatives), permission to access to all lands, easements, rights of way and rights of entry necessary to inspect and review work in progress for all work conducted under this Agreement, including the Project Site. Responsible Party further agrees to allow MCWRA representatives to inspect activity at the subject site(s) at any reasonable time to ensure compliance with all permits and this Agreement.

    3.1. This right of access applies to every phase of the project, including but not limited to survey, maintenance, restoration, monitoring and reporting, and follow-up monitoring. Consequently, the right of access will survive the expiration or termination of this Agreement.

4. Responsible Party warrants that he/she/they possesses title and/or interest in the property described in the RMU Site Plan sufficient to perform or permit performance of all stream maintenance work which is subject of this Agreement and is responsible to secure permission for access to or through adjacent parcels if necessary for implementation of work.

5. Responsible Party shall defend, indemnify and hold harmless the MCWRA, the County of Monterey, and their respective agents, officers and employees from any and all claims, liability, loss, injury or damage, actual or alleged, arising in connection with subject stream maintenance work. The Responsible Party's defense and indemnity obligations shall specifically include any responsibility that the MCWRA or the County of Monterey could have for the attorneys' fees and costs of an opposing party.

6. Responsible Party shall assume entire responsibility and liability for all actual or alleged damages or injuries to all persons, whether employees or otherwise, and to all property, arising out of, resulting from, or in any manner connected with the entry into this Agreement, the Program, the performance of the conditions and requirements of the program, including the actual or alleged errors or omissions of any of Responsible Party's employees, agents, consultants or contractors at the Property, except with respect to any liability or damages or injuries to persons or property finally adjudicated to have resulted from the intentional acts of the MCWRA, or the County of Monterey, or their respective officers and employees. To the fullest extent permitted by law, Responsible Party shall indemnify, defend (with counsel acceptable to the MCWRA and the County of Monterey) and hold harmless the MCWRA and the County of Monterey, and their officers and employees, from and against any and all actual or potential losses, damages, liens, claims, demands, costs, expenses and liabilities (including attorneys' fees and costs) and damages to persons or property which arise out of the entry into this Agreement, result from or are in any manner connected with Responsible Party's performance of the work

authorized under this permit, or the actual or alleged failure of Responsible Party to act in accordance with the requirements set forth in this Agreement. It is the intention of the Responsible Party and the MCWRA that these provisions be given the broadest possible interpretation in favor of indemnification, and where more than one interpretation can be reached, the one favoring the broadest defense and indemnity shall apply. The terms and conditions of this Section shall survive the expiration or termination of this Agreement.

7. MCWRA and the County of Monterey are not responsible for any aspect of the subject stream maintenance work, including the quality and adequacy of the design or construction, nor does MCWRA guarantee the performance of any work described herein. MCWRA and the County of Monterey are not responsible for any aspect of compliance or noncompliance with the requirements of the state or federal Endangered Species Acts or the U.S. Fish & Wildlife Service and the National Marine Fisheries Service concurrence letters and Biological Opinions referenced in the MCWRA's USACE 404 Permit, including, without limitation, the performance of biological surveys and environmental mitigation of any kind. Responsible Party shall legally and safely dispose of all material. Cut and dredged material will be disposed of in accord with all applicable laws and regulations, and after securing all applicable permits, licenses and approvals for doing so, and shall maintain comprehensive documentation of compliance with such requirements. The terms and conditions of this Section shall survive the expiration or termination of this Agreement.

8. Work will be conducted during the dry period (typically as early as June 1 – November 15) of each year. It is understood and agreed that the time period for completing all stream maintenance work authorized hereunder ends on November 15th of each year.

9. Participant shall complete and submit by January 15th an Annual Site Report that summarizes any site work conducted during the preceding calendar year. This report shall include before and after photographs showing site conditions. The terms and conditions of this Section shall survive the expiration or termination of this Agreement.

10. All work performed under this Agreement shall be confined to properties shown in the RMU Site Plan. Work under this Agreement shall be limited to the following (as subject to Items 10-17 of this Agreement):

    10.1. Vegetation maintenance to include mechanical or manual removal of native vegetation within maintenance areas or approved access ways only. This is allowed annually during the work period.

    10.2. Sand and sediment management including smoothing with blade in maintenance areas.

10.3. Sand and sediment removal limit of 554,420 cubic yards each year.

10.4. Removal of non-native invasive species using an approved method to ensure the efficacy. Retreatment is required until the target success rate is achieved and shall survive the termination or expiration of this Agreement.

11. Participant shall comply with all conditions of the California Regional Water Quality Control Board (CRWQCB) Water Quality Certification No 32716WQ02, dated August 31, 2016. A copy of Certification No.327156WQ02 is attached and incorporated by this reference.

11.1. Copies of the Certification and this Agreement must:1) be available at the Project site during construction for review by personnel and agencies; and 2) be provided to the contractor, subcontractors, consultants who will work at the Project Site. All personnel performing work on the Project shall be familiar with the content of the Certification and its available location on the Project site.

12. Low Flow Channel: Limited work will be conducted in the low flow channel or in any standing or flowing water. When maintenance area connects to the low flow channel it is referred to as a tie-in. Native vegetation removal in these tie-ins must be limited to smaller "punctures" with a maximum of 4 punctures each tie in up to 15ft wide. The rest of the tie-in is considered an avoidance area. All Arundo within the tie-in area can be removed. Low flow channel crossing locations for limited equipment access will be clearly marked with stakes and yellow flagging and will be limited to one per site.

13. Vegetation Removal: For native plant species, methods selected for vegetation removal will leave the roots intact where possible. Non-native invasive species will be completely destroyed and removed from the river channel, mulched in place to an acceptable size, or treated with Aquamaster (glyphosate), imazapyr, or tricolpyr herbicides in place.

14. Sediment Removal/Smoothing: Grading will only be allowed inside the maintenance areas. The slope must be that water will flow downstream. No grading will occur in the low flow channel unless it is in a designated Selective Treatment Area.

15. Any required re-vegetation will be conducted using only native vegetation similar to that removed, such as Cottonwood, Sycamore and Alder.

16. Biological Monitoring must be adhered to as outlined in the permits and ESA consultations.

17. Rain Event Work Restrictions must be adhered to as outlined in the permits.

18. Should the Participant conduct activities outside the allowed permit scope or desire to cease or abandon all or part of the work commenced pursuant to this Agreement, it is understood and agreed that MCWRA may require Participant to restore subject site.

19. Responsible Party agrees that any transfer of property on which work has been or is to be conducted pursuant to this Agreement shall be expressly conditioned on the transferee's execution of this Agreement. Failure of Responsible Party to obtain transferee's consent to the terms of this Agreement shall be grounds for suspension or revocation of authorization to proceed with work on the subject property at MCWRA's discretion.

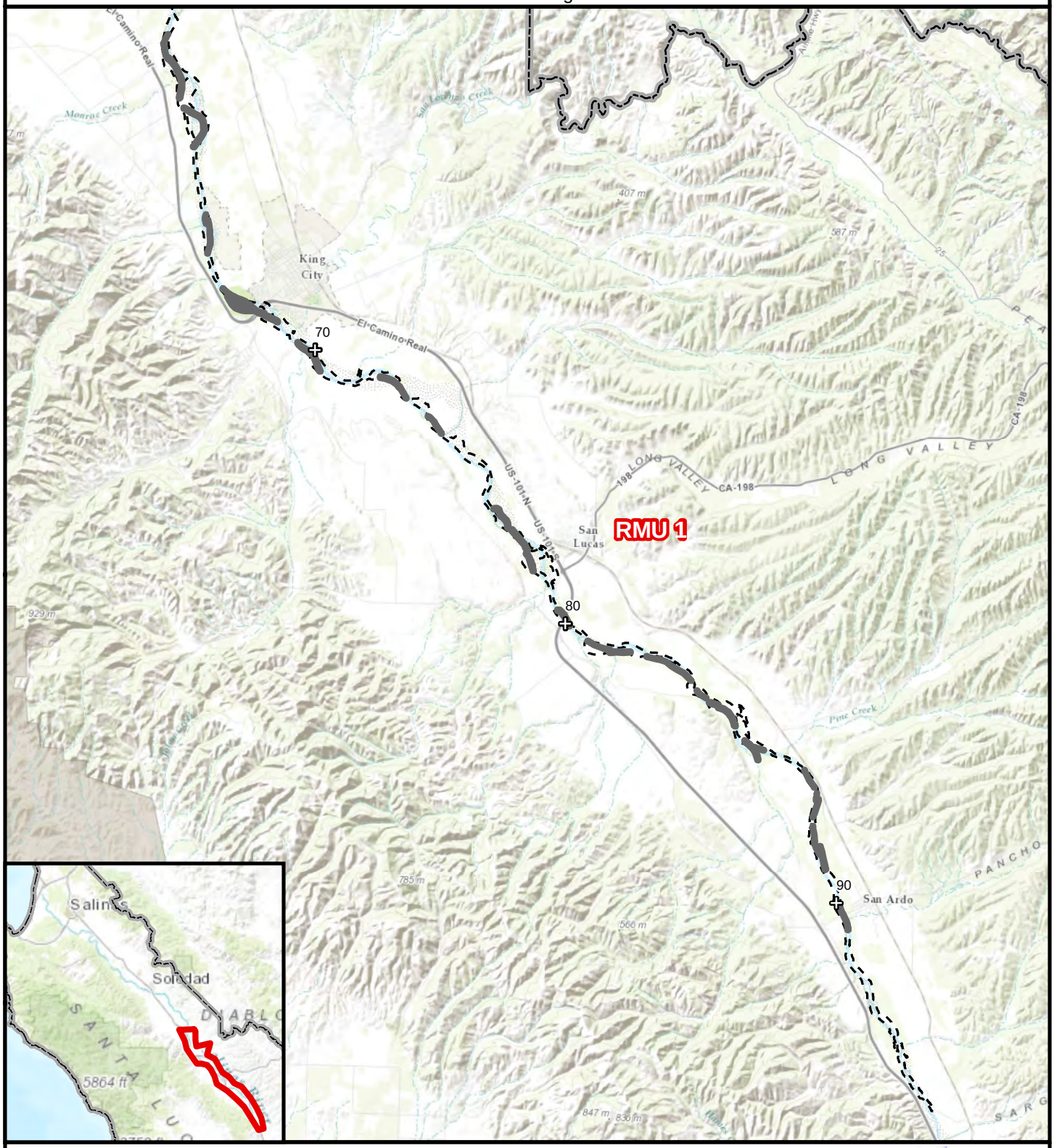
Certification: Responsible Party represents and warrants that he or she has read and understood all of the conditions and requirements of this Agreement and of the 404 Permit and 401 Certification under which this Agreement is issued. Responsible Party will provide a copy of the requirements and conditions of the Agreement, 404 Permit, and 401 Certification to its contractors, agents, employees, and representatives working in the area. Responsible Party will incorporate all said requirements into agreements with consultants, contractors, and others working in the subject areas and require them to comply with these conditions.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the day and year written below:

MONTEREY COUNTY WATER RESOURCES AGENCY	**RESPONSIBLE PARTIES:** **--OWNER**
By: _____ General Manager Date: _____	_____ *Corporate or other business entity By: _____ (Signature of Chair, President or Vice President) Its: _____ (Print Name and Title) Date: _____ **--LESSEE OR OTHER** _____ *Corporate or other business entity By: _____ (Signature of Secretary, Asst. Secretary, CFO, Treasurer or Asst. Treasurer) By: _____ Its: _____ (Print Name and Title) Date:_____

*INSTRUCTIONS: IF RESPONSIBLE PARTY is a corporation, including limited liability and non-profit corporations, the full legal name of the corporation shall be set forth above together with the signatures of two specified officers. If RESPONSIBLE PARTY is a partnership, the name of the partnership shall be set forth above together with the signature of a partner who has authority to execute this Agreement on behalf of the partnership. IF RESPONSIBLE PARTY is contracting in an individual capacity, the individual shall set forth the name of the business, if any, and shall personally sign the Agreement.

Salinas River Stream Maintenance Program
Individual River Management Units



Monterey County Water Resources Agency
Operations & Maintenance Division

Maintenance Areas
Ordinary High Water Mark
River Miles

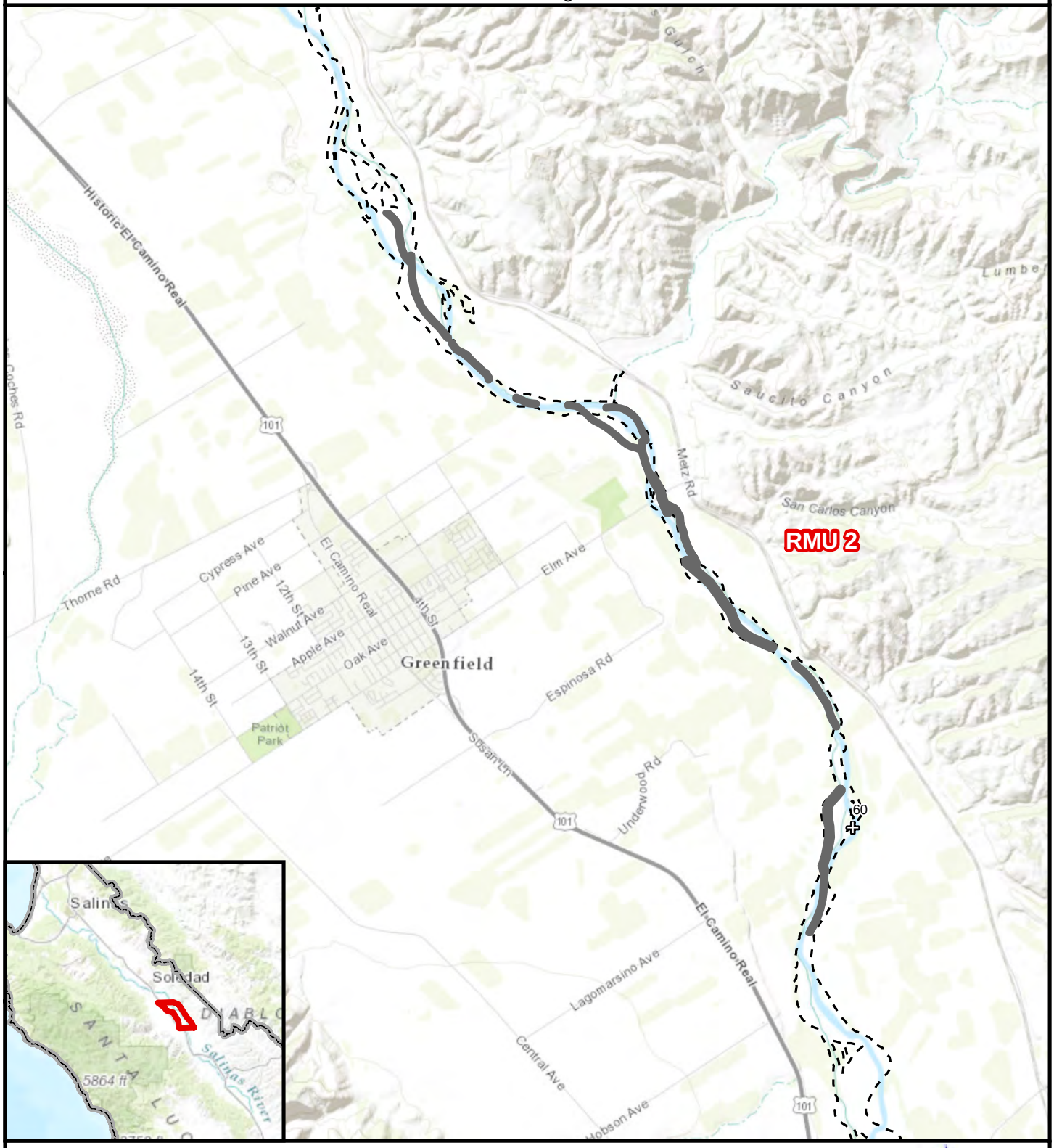
N
W E
S

0 2 4 6 8 Miles

The scale and configuration of all project boundaries and information shown herein are not intended as a guide for design or survey work.

Image Source: ESRI (2016)
Map prepared: 12/9/2015
Map revised: 3/25/2016

Salinas River Stream Maintenance Program
Individual River Management Units



Monterey County Water Resources Agency
Operations & Maintenance Division

Maintenance Areas
Ordinary High Water Mark
River Miles

N
W E
S

0 0.85 1.7 2.55 3.4 Miles

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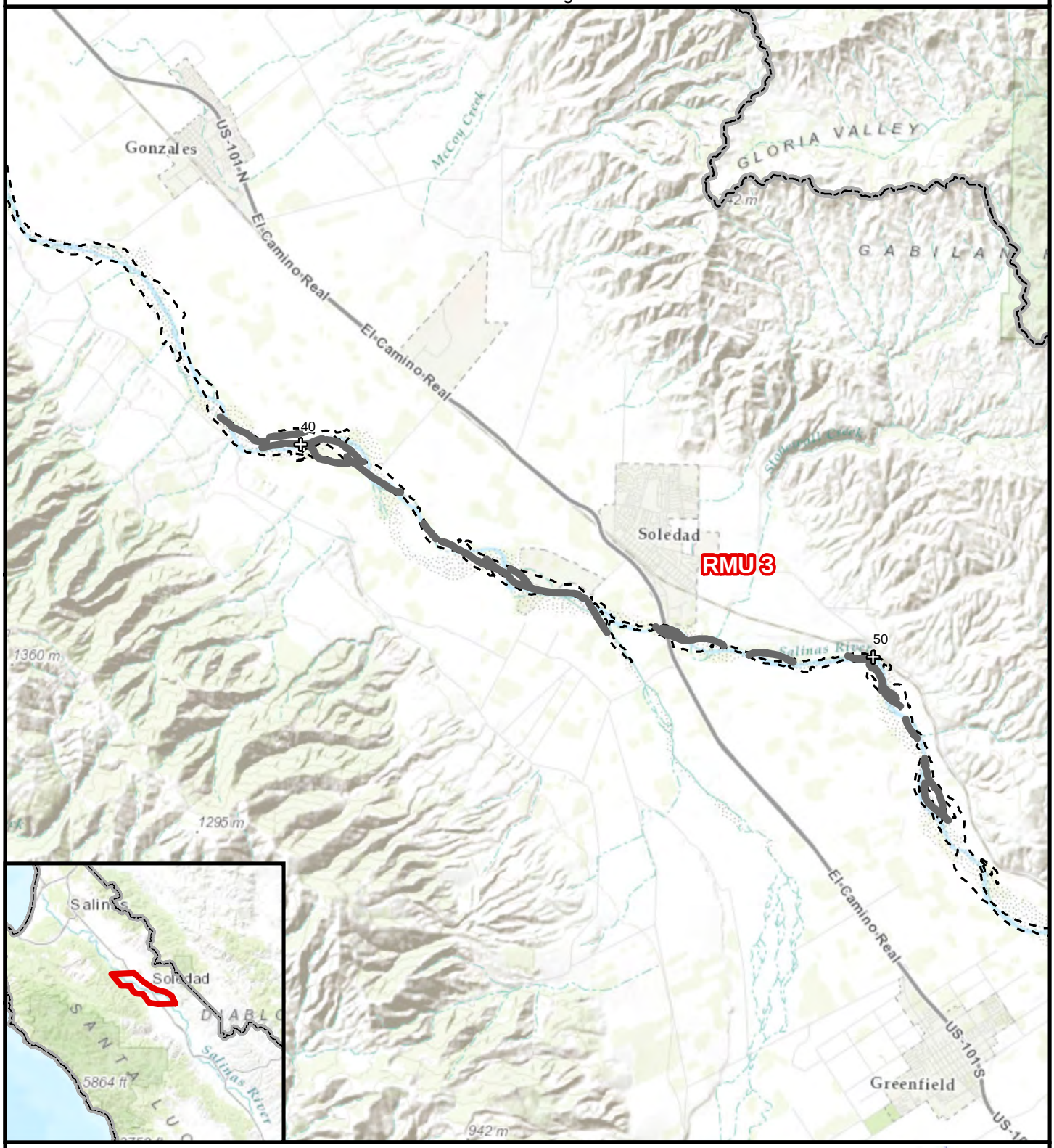
Image Source: ESRI (2016)
Map prepared: 12/9/2015
Map revised: 3/25/2016

Salinas River Stream Maintenance Program
Individual River Management Units



Monterey County Water Resources Agency
Operations & Maintenance Division

Maintenance Areas
Ordinary High Water Mark
River Miles

N
W E
S

0 1.5 3 4.5 6 Miles

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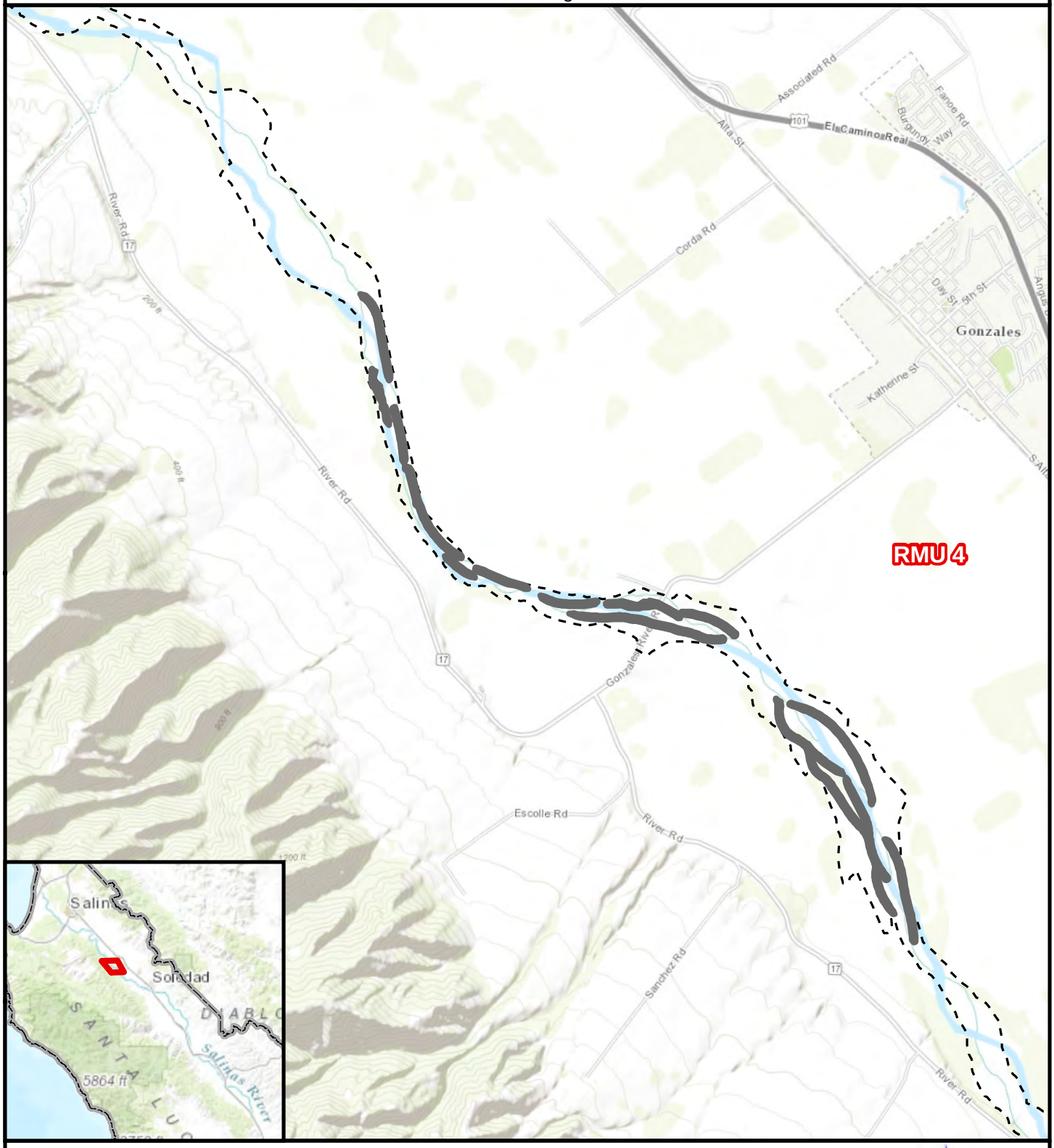
Map revised: 3/25/2016

Salinas River Stream Maintenance Program
Individual River Management Units



Monterey County Water Resources Agency
Operations & Maintenance Division

Maintenance Areas
Ordinary High Water Mark
River Miles

N
W E
S

0 0.5 1 1.5 2 Miles

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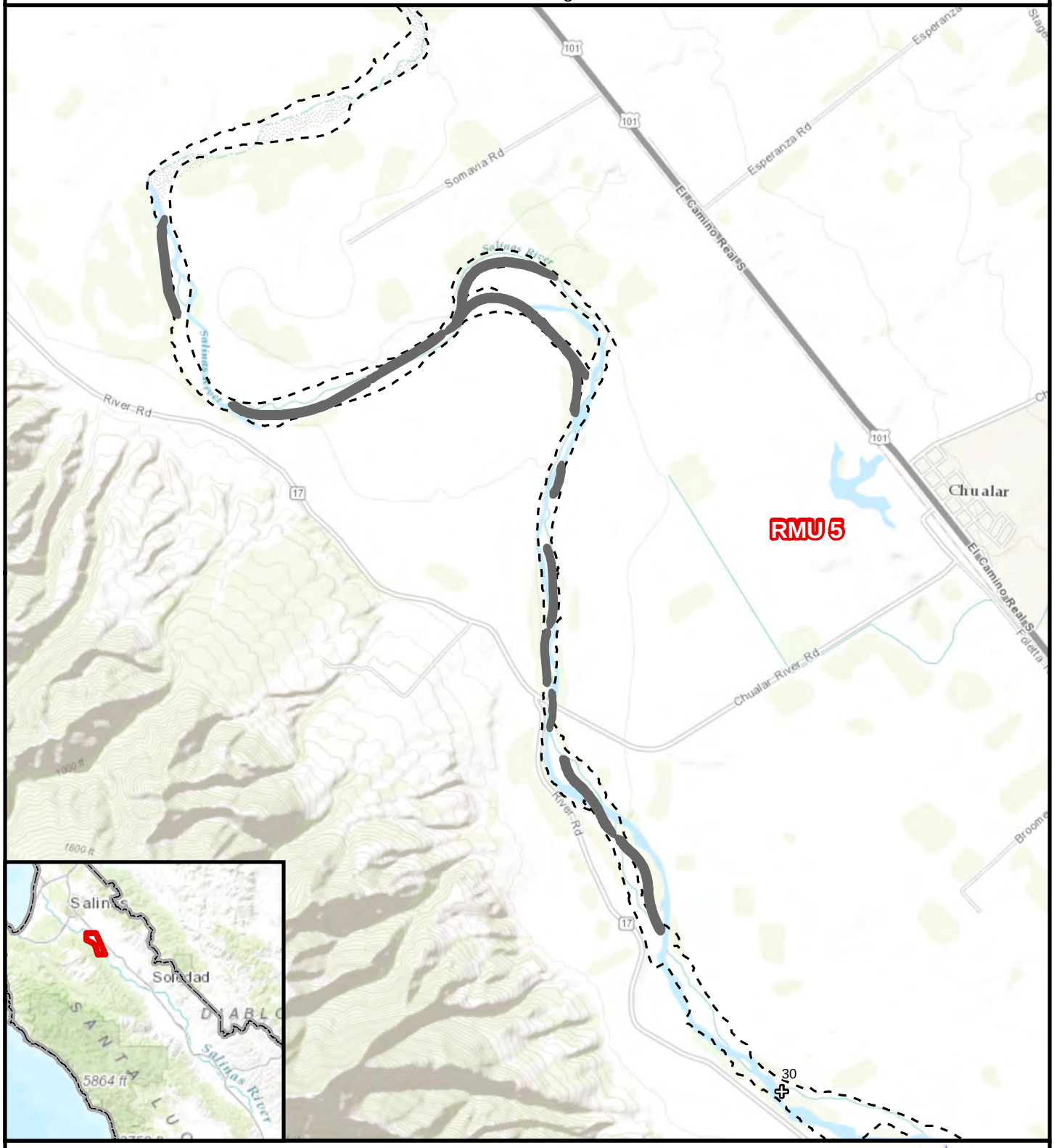
Salinas River Stream Maintenance Program
Individual River Management Units



Monterey County Water Resources Agency
Operations & Maintenance Division

Maintenance Areas
Ordinary High Water Mark
River Miles

N
W E
S

0 0.45 0.9 1.35 1.8 Miles

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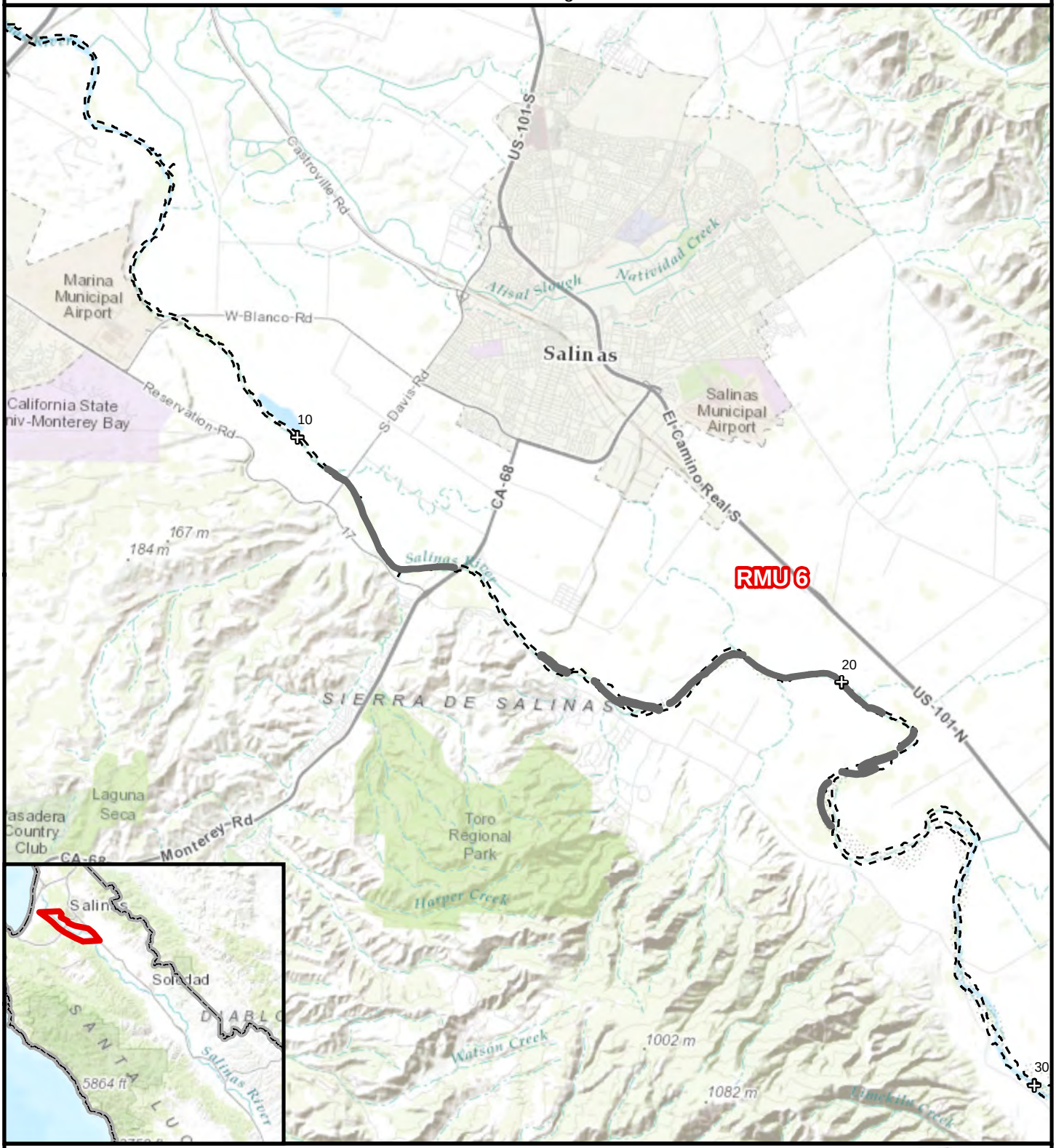
Map prepared: 12/9/2015
Map revised: 3/25/2016

Salinas River Stream Maintenance Program
Individual River Management Units



Monterey County Water Resources Agency
Operations & Maintenance Division

Maintenance Areas
Ordinary High Water Mark
River Miles

N
W E
S

0 1 2 3 4 Miles

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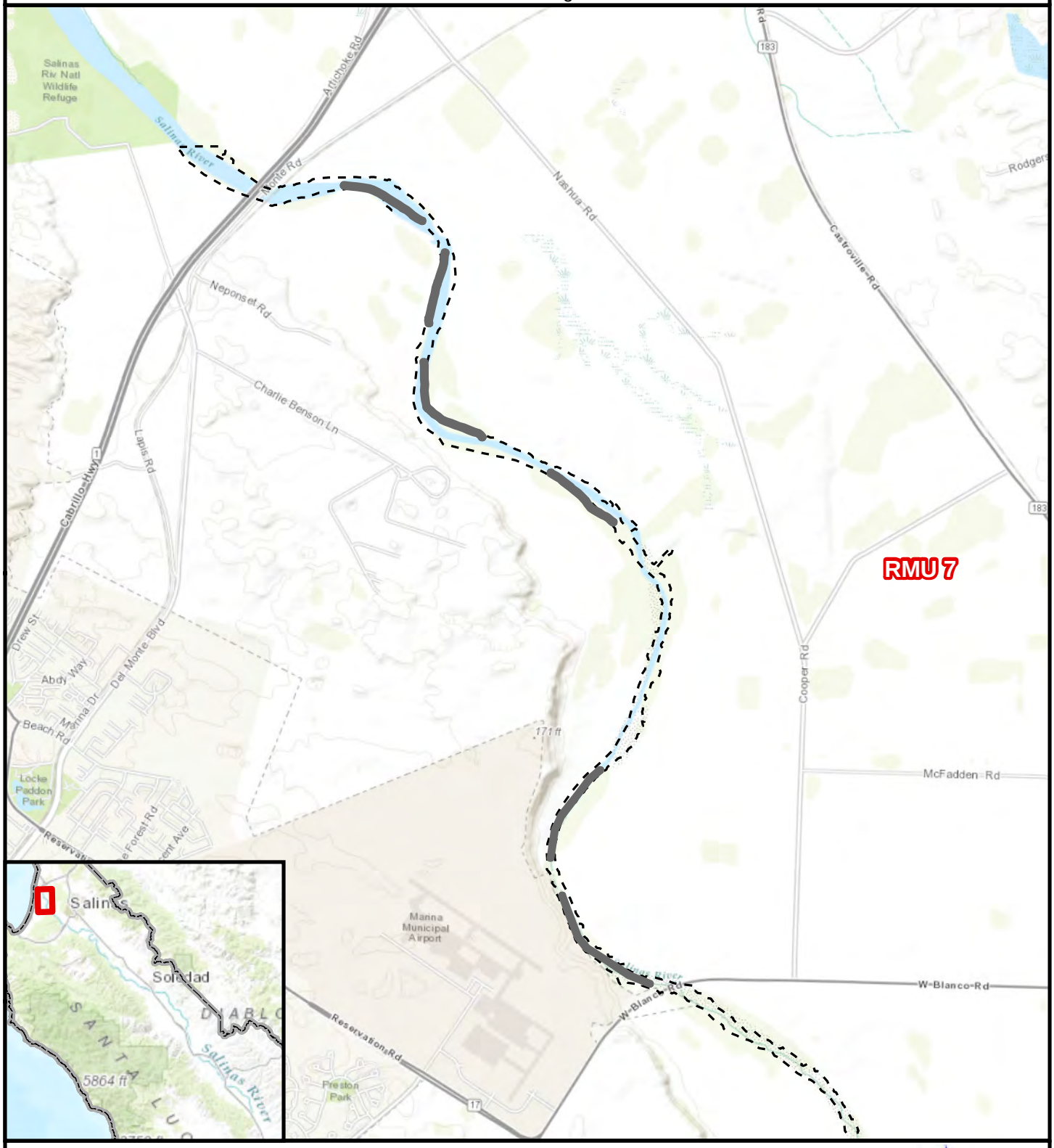
Map prepared: 12/9/2015
Map revised: 3/25/2016

Salinas River Stream Maintenance Program
Individual River Management Units



Monterey County Water Resources Agency
Operations & Maintenance Division

Maintenance Areas
Ordinary High Water Mark
River Miles

N
W E
S

0 0.5 1 1.5 2 Miles

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Image Source: ESRI (2016)
Map prepared: 12/9/2015
Map revised: 3/25/2016

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

DEPARTMENT OF THE ARMY REGIONAL GENERAL PERMIT 20 FOR THE SALINAS RIVER STREAM MAINTENANCE PROGRAM

PERMITTEE: Monterey County Water Resources Agency (MCWRA)

CORPS FILE NO.: 1996-22309S

ISSUING OFFICE: San Francisco District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate District or Division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below:

PROJECT DESCRIPTION: The Stream Maintenance Program (SMP) includes annual channel maintenance activities within seven designated River Management Units (RMU's) on the Salinas River within Monterey County, from river mile 2 upstream to river mile 94. Work within the RMUs will consist mostly of vegetation management (mowing and discing), sand/sediment management (channel smoothing and excavation), and non-native vegetation removal and herbicide treatment of arundo and tamarisk to reduce risk of flooding to adjacent farm fields and prevent bank erosion. Project activities will create and maintain a series of linear "secondary channels" paralleling the existing low-flow channel and designed to become active during higher flow events (5-year interval or approximately 25,000 cfs). Maintenance activities will generally occur between September 1 and November 15, but limited activities (tree planting and non-native vegetation treatment) could occur prior to September 1.

The proposed locations of secondary channels have been preferentially aligned along meander cutoffs, low-lying undeveloped areas, and former river alignments to mimic the historical braiding of the Salinas River. Most secondary channels will meet, or tie-in with, the low flow channel at upstream and downstream locations as would be expected in a more natural braided river channel. Where possible, tie-ins will be located: (1) to avoid or reduce potential impacts to higher value native vegetation (e.g., riparian or wetland areas); (2) in areas where large patches of arundo are found (i.e., to facilitate non-native species removal); (3) in areas where the bank is already low (e.g., 3-5 feet above the thalweg of the low-flow channel, versus 6-7 feet); (4) at existing bends (to facilitate natural overbank flow at the upstream end); and (5) to avoid potential impacts to adjacent banks via increased scour. Downstream tie-in points will also be positively graded at the area joining the low flow channel to avoid potential fish stranding. In a limited number of cases (<25%), the geomorphology or hydrology of the river may require tie-ins be located in an area requiring removal of larger sized riparian vegetation (e.g., multiple mid-successional willows greater than 6 inches dbh). In those instances, the tie-in will be made through two to four smaller notches ranging from 15-30 feet wide, rather than one larger opening in the riparian corridor that would result in removal of more trees and a larger riparian impact. Pre-construction staking and flagging will also be used to avoid large-trees, riparian vegetation, and wetlands, where possible,

when creating both secondary channels and their connection to the low-flow channel. Areas where arundo dominates the tie-in (> 95% coverage) will be treated to remove all arundo.

In addition to secondary channels, at limited locations within RMUs 6 and 7, vegetation maintenance and sediment removal activities will occur in focused selective treatment areas, rather than in linear secondary channels. The work in these 2 areas will include limbing of trees and sandbar ripping in areas directly adjacent to the thalweg.

The objective of the proposed management activities within these RMUs is to mimic natural braiding in the Salinas River historically provided by higher, scouring flows and especially in secondary channels. The goal is to increase channel complexity, slow velocities in the primary low flow channel, and encourage a wider range of riparian habitat conditions (earlier to later successional vegetation communities) that would have been present historically.

SMP activities will be implemented on a voluntary basis by individual property owners, growers, and municipalities throughout the program area. MCWRA will oversee and coordinate SMP activities, and will also perform SMP maintenance activities within three tributary reaches within the RMUs. Each year, MCWRA, in cooperation with the Monterey County Resource Conservation District (RCDMC) will be responsible for compiling proposed SMP activities into an annual work plan, which will be submitted to the regulatory agencies for approval at least 60 days before the work window begins for the year. At the conclusion of each year's maintenance season, completed SMP activities and mitigation will be documented in an Annual RMU Report developed by MCWRA and submitted to permitting agencies by March 31 of the following year.

AUTHORIZED WORK: This Regional General Permit (RGP) can be used to authorize SMP activities in up to 129 potential management areas (secondary channel locations and selective treatment areas) that have been identified throughout the 7 RMU's and 3 tributaries, totaling approximately 875 acres (enclosure 1). The majority of the work within these management areas will be conducted below the Ordinary High Water Mark (OHWM) of the Salinas River or its tributaries, on sediment bars that will be dry at the time of work. Work will avoid impacts to the active/low flow channel to the extent practicable. Maintenance activities will temporarily impact waters of the U.S. through sediment grading or removal. Up to 700 acres of native and non-native vegetation types within the management areas could be disturbed by vegetation management and/or sediment removal under the SMP. An additional 155 acres of unvegetated or bare ground may be temporarily disturbed during sediment grading or removal. Up to 554,420 cubic yards (CY) of sediment could be removed annually under the SMP, but no more than 785,000 CY of sediment can be removed in any two consecutive years. Additionally, no more than 450,000 CY of sediment can be removed from any given 1 mile length of river in the upper reach, and no more than 100,000 CY of sediment could be removed over any 1 mile length of river in the lower reach over a consecutive 2 year period. Sediment will be removed from the secondary channels by truck and moved to either integrate into adjacent farm fields or stored in demarcated stockpile areas above the OHWM and outside of any jurisdictional wetlands. Sediment removal and grading impacts to non-wetland areas are considered temporary impacts because of the dynamic nature of the river system, which is anticipated to shift vegetation and sediments within the floodplain during moderate to high flow events. Note that in RMU's 1-6 USACE jurisdiction is limited to the activities involving grading or other fill discharge below the OHWM and in wetlands. However, RMU 7 is considered Navigable under Section 10 of the Rivers and Harbors Act, and so all work below the OHWM (including vegetation removal) is subject to USACE jurisdiction in this reach. Annual limits on vegetation/grading impacts and sediment removal are summarized in the following table:

SMP Annual Limits of Sediment and Vegetation Removal

Area	River Mile[1] (RM)	Sediment Removal Quantity (CY)	Grading and Native Vegetation Removal (Acres)	Non-Native Vegetation Removal
Salinas River Mainstem	2.0 – 21.0	100,000	175	No Limit
	21.0 – 94.0	452,200	640	No Limit
Gonzales Slough	31.6	20	10	No Limit
Bryant Canyon Channel	47.1	200	10	No Limit
San Lorenzo Creek	69.0	2000	10	No Limit
TOTAL		**554,420**	**875**	**No Limit**

[1] In general, RM 2.0 to 21.0 corresponds to RMUs 6 and 7; RM 21.0 to RM 94.0 generally corresponds with RMUs 1 through 5. RM indicated for tributaries reflects the location of the confluence of the tributary with the Salinas River mainstem.

PERMIT CONDITIONS:

GENERAL CONDITIONS:

1. The time limit for completing the work authorized ends on November 15, 2021. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must cease all work and immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

7. You understand and agree that, if future operations by the United States require the removal, relocation or other alteration of the structure or work authorized herein, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, you will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

SPECIAL CONDITIONS:

1. A detailed annual work plan of the proposed maintenance activities to be performed each year shall be prepared by MCWRA and submitted to USACE at least 60 days prior to the start of the construction season for review and approval. For all proposed maintenance areas, this work plan shall:

    a. clearly describe and quantify the proposed activities, including the following information for all work below the OHWM: acreage of vegetation removal; acreage of channel smoothing/bar ripping or other grading; volume of sediment removal;
    b. include pictures of representative sites for the different types of maintenance activities requested;
    c. include plan drawings/maps identifying proposed channel maintenance locations, including location/extent of all channel smoothing/bar ripping or other grading, staging and channel access routes, and stockpile areas;
    d. identify Ordinary High Water Mark and any mapped wetland boundaries for all proposed maintenance areas, with a discussion of methods used to field-verify mapped wetlands;
    e. identify, describe, and quantify any anticipated wetland impacts, with a discussion of efforts to avoid and minimize wetland impacts;
    f. document field delineation of any impacted wetlands in accordance with USACE 1987 wetland delineation manual and Arid West Regional Supplement;
    g. identify and describe proposed restoration/mitigation of any wetland impacts, including plan drawings and success criteria for restoration of any temporary wetland impacts, and a mitigation plan consistent with the 2008 Mitigation Rule for any permanent wetland impacts;
    h. identify any special approaches or conditions to complete the proposed maintenance activities;
    i. identify any historic or cultural resources that may be impacted by SMP activities;
    j. include a completed electronic copy of the Impacts sheet and Aquatic Resource sheet in the latest version of the Consolidated ORM Upload Workbook (ORM-Upload_Sheet_Consolidated_Rapanos20151022.xlsm) available at http://www.spd.usace.army.mil/Portals/13/docs/regulatory/standards/Zip%20file.zip

    Copies of the report may be provided to all appropriate agencies including, but not limited to the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), Central Coast Regional Water Quality Control Board (RWQCB), California Department of Fish and Game (CDFG), and Environmental Protection Agency (EPA). At the end of the 30-day review period (or when all comments are received), USACE shall notify MCWRA which projects are verified under this RGP and when project construction may proceed. Based upon these comments, USACE may choose to exclude individual maintenance projects from authorization under the RGP, if any proposed maintenance action would have greater than minimal impacts or unanticipated effects on ESA listed species or historic or cultural resources. Authorization for these projects would need to be processed as a separate request.

2. An annual report on completed projects shall be submitted by March 31 of each year following project activity. This report shall include a description of the work performed, specifically noting any changes that were made in the project design that differs from what was outlined in the pre-construction report, success of invasive plant removal (change in percent cover) and success of native plant species plantings/recolonization (change in percent cover). The report shall also document any permanent fill, including grading, within jurisdictional wetlands and other waters of the U.S. for each project site. This report shall be reviewed by the resource agencies for compliance with the terms of the RGP. Field site visits may be performed, on representative sites, by the employees of these resource agencies, as a part of their compliance evaluation.

3. For temporary impacts to wetlands, the area must be restored to its preconstruction condition upon completion of the maintenance activity, and monitoring and documentation provided to ensure successful restoration.

4. For grading or any other permanent fill impacts to wetlands, or vegetation removal impacts to wetlands in RMU 7 which are subject to RHA Section 10, a mitigation plan which complies with the 2008 mitigation rule must be developed, submitted to USACE for review and approval, and implemented following approval by USACE.

5. Excavated material may be temporarily stockpiled within portions of the maintenance areas already impacted by grading, but must be completely removed from the river channel by November 15 and stockpiled outside the OHWM in areas not subject to USACE jurisdiction.

6. At any time, a meeting may be requested by MCWRA, USACE, or other regulatory agencies to discuss the terms of the permit and compliance with those terms. Based upon the results of these meetings, USACE may choose to revoke or modify the RGP.

7. Sediment management and native vegetation management work will be confined to September 1 through November 15. Management of non-native invasive vegetation may occur as early as August 15 (mechanized removal) or June 1 (herbicide treatment). Tree planting for mitigation may occur year round, subject to seasonal and/or weather-related restrictions.

8. All standard Best Management Practices shall be implemented to prevent the movement of sediment downstream. No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products, or other organic or earthen material shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into the waterways.

9. To remain exempt from the prohibitions of Section 9 of the Endangered Species Act, the non-discretionary Terms and Conditions for incidental take of federally-listed species shall be fully implemented as stipulated in the Biological Opinion titled *Biological Opinion for the Salinas River Stream Maintenance Program, Monterey County, California (2016-F-0318) (Corps file number 22309S)* dated August 22, 2016 (enclosure 2). Project authorization under this permit is conditional upon compliance with the mandatory terms and conditions associated with incidental take. Failure to comply with the terms and conditions for incidental take, where a take of a federally-listed species occurs, would constitute an unauthorized take and non-compliance with the authorization for your project. The USFWS is, however, the authoritative federal agency for determining compliance with the incidental take statement and for initiating appropriate enforcement actions or penalties under the Endangered Species Act.

10. The USFWS and NMFS concurred with the determination that the project is not likely to adversely affect the federally listed San Joaquin kit fox (*Vulpes macrotis mutica*), California tiger salamander

(Ambystoma californiense), yellow-billed cuckoo (*Coccyzus americanus*), Monterey spineflower (*Chorizanthe pungens*), South-Central California Coast steelhead *(Oncorhynchus mykiss)*, or designated critical habitat for these species. Their concurrence was premised, in part, on avoidance and minimization measures listed on pages 2-8 of the August 22, 2016 USFWS BO (enclosure 2), and project description on pages 1-4 of the September 6, 2016 NMFS concurrence letter (enclosure 3). Adherence to the project description and avoidance and minimization measures are incorporated as special conditions to the RGP authorization for your project to ensure unauthorized incidental take of species and loss of critical habitat does not occur.

11. To monitor for any unanticipated discoveries of buried cultural resources, you shall have an archaeologist monitor all ground-disturbing activities within the project area. Should any previously unknown cultural resources be identified during project activities, you shall cease work immediately and notify this office. In such a circumstance, USACE will inform the applicant when work may resume.

FURTHER INFORMATION:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

   (X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. Section 403).
   (X) Section 404 of the Clean Water Act (33 U.S.C. Section 1344).
   ( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. Section 1413).

2. Limits of this authorization:

   a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

   b. This permit does not grant any property rights or exclusive privileges.

   c. This permit does not authorize any injury to the property or rights of others.

   d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability: In issuing this permit, the Federal Government does not assume any liability for the following:

   a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

   b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

   c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

   d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

   a. You fail to comply with the terms and conditions of this permit.

   b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate. (See Item 4 above.)

   c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

   Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 C.F.R. Section 325.7 or enforcement procedures such as those contained in 33 C.F.R. Sections 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered hy this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 C.F.R. Section 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

David E. Chardavoyne 9/28/16

(PERMITTEE) (DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

28 Sept 2016

John C. Morrow
Lieutenant Colonel, U.S. Army
District Commander

(DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_____ _____

(TRANSFEREE) (DATE)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
08EVEN00-2016-I-0318

August 22, 2016

Holly Costa, Acting Chief
Regulatory Division
U.S. Army Corps of Engineers, San Francisco District
1455 Market Street
San Francisco, California 94103-1398

Subject: Biological Opinion for the Salinas River Stream Maintenance Program, Monterey County, California (2016-F-0318) (Corps file number 22309S)

Dear Ms. Costa:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the U.S. Army Corps of Engineers' (Corps) proposed issuance of a 5-year permit, pursuant to Section 404 of the Clean Water Act, to the Monterey County Water Resources Agency (MCWRA) for the second phase of a cooperative planning and flood risk reduction program (Project) encompassing 92 linear miles of the Salinas River and 2 linear miles of several tributaries in Monterey County, California. You have determined that the proposed project is likely to adversely affect the federally endangered least Bell's vireo (*Vireo bellii pusillus*) and tidewater goby (*Eucyclogobius newberryi*) and its critical habitat and federally threatened California red-legged frog (*Rana draytonii*), and may affect, but is not likely to adversely affect, the federally endangered San Joaquin kit fox (*Vulpes macrotis mutica*) and the federally threatened California tiger salamander (*Ambystoma californiense*), Monterey spineflower (*Chorizanthe pungens* var. *pungens*) and its critical habitat, and yellow-billed cuckoo (*Coccyzus americanus*). We received your March 31, 2016 request for informal consultation on April 4, 2016; you subsequently requested formal consultation via email on July 21, 2016. Your request and our response are made in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

We have based this biological opinion on information that accompanied your March 31, 2016 request for consultation, including the biological assessment (BA; MCWRA 2016a), permit application supplemental attachment with Appendix C maps (PSA; MCWRA & RCDMC 2016), and Program Area maps (MCWRA 2016b); the Project final environmental impact report, referenced in the BA (FEIR, MCWRA 2014a); the additional information packet and implementation flow chart (MCWRA 2016c) received on July 5, 2016; and other information in our files. We can make available a record of this consultation at the Ventura Fish and Wildlife Office.

Not Likely to Adversely Affect Determinations

You have determined that the proposed project may affect but is not likely to adversely affect the San Joaquin kit fox, California tiger salamander, Monterey spineflower and its critical habitat, and yellow-billed cuckoo. Data supporting this conclusion include observations made during reconnaissance level surveys in winter 2014 (River Management Units (RMU) 4 and 5 only) and spring and summer 2015, CNDDB occurrence data, relevant literature, and information provided by regional species experts and resource agencies. You have made your determination based on the low likelihood that these species and critical habitat will be present during and affected by Project activities and the limited availability of suitable habitat in the action area. To further reduce the likelihood of adverse effects, you have proposed the avoidance and minimization measures detailed below.

San Joaquin kit fox
San Joaquin kit fox have been reported as far north as river mile 47 of the Salinas River system at the northern boundary of RMU 2 (CNDDB 2016). Occurrences within the Project area date to 1975, while the most recent nearby occurrences are from Espinosa Canyon just west of the Salinas River in San Lucas (2002) and Pinalito Canyon approximately 7.5 miles northeast of the River near King City (1988). Habitat in RMUs 1, 2 and 3 provides moderate suitability for cover and foraging. Reconnaissance surveys did not identify potential burrow sites within proposed work areas and no San Joaquin kit fox sign was detected. Many farms adjacent to the Project area are enclosed by wildlife-impermeable fencing, reducing the ability of kit foxes to enter work areas from adjacent foothills, though several tributaries and isolated upland locations could provide movement corridors between the Salinas River and upland habitat. If San Joaquin kit fox were to use the Salinas River corridor it would most likely be for hunting and dispersal and occur at night when Project activities would not take place.

You have proposed the following measures to avoid and minimize adverse effects to the San Joaquin kit fox:

1. Between 30 and 14 days prior to the start of work, a Service-approved biologist will conduct pre-construction surveys for San Joaquin kit fox in all areas of suitable habitat within 200 feet of work areas following Service (2011) guidelines. Surveys will include both new work areas and areas receiving repeat maintenance in subsequent years.

2. Clearly marked exclusion zones will be established around dens found within the project area based on the following criteria: potential den, 50-foot radius; known or occupied den, 100-foot radius; known natal or pupping den, 150-foot radius; occupied natal or pupping den, 200-foot radius.

3. Disturbance to potential San Joaquin kit fox dens will be avoided to the maximum extent practicable. If destruction of a potential den is unavoidable, the Service-approved biologist may destroy the potential den if it is found to be unoccupied after appropriate monitoring.

4. Non-natal San Joaquin kit fox dens that cannot be avoided will be surveyed by a Service-approved biologist for three days to determine if they are occupied. Activity will be monitored by placing tracking medium at the den entrance every morning. Tracking material will be checked twice a day: every morning for tracks, and prior to sundown to ensure that tracking materials have not been damaged or blown away. Alternatively, a motion-triggered camera may be placed near the den entrance for three days.

5. If no San Joaquin kit fox activity is observed during monitoring, non-natal dens that are unavoidable will be physically closed to prevent occupation. If San Joaquin kit fox activity is observed at the unavoidable non-natal den, all activities which may harm kit foxes or affect the den will be halted, and the Service-approved biologist and the Corps will contact the Service immediately for instructions on how to proceed.

6. If a San Joaquin kit fox or kit fox natal den is observed at any time, all activities which may harm kit foxes or affect the den will be halted, and the Service-approved biologist and the Corps will contact the Service immediately for instructions on how to proceed.

7. A Service-approved biologist will provide mandatory worker awareness training for all project personnel before work begins and which includes, at a minimum, the biology, identification, and habitat needs of San Joaquin kit fox and the project conservation measures being taken to protect them.

8. Vehicles will observe a daytime speed limit of 20 mph on all roads in the Project area except county roads and State and Federal highways (nighttime work will not be allowed).

9. Nighttime work will not be allowed.

10. All food-related trash items will be disposed of in secure, closed containers and removed at least once per week to reduce the potential to attract predators and competitors of kit fox.

11. No pets of any kind will be permitted in the project area.

12. Herbicides, pesticides and rodenticides will be utilized in such a manner to prevent primary or secondary poisoning of San Joaquin kit foxes and depleting populations of their prey.

13. Excavated, steep-walled holes or walled trenches more than 2 feet deep will be completely covered at the end of each day by plywood or other materials or provided with escape ramps to prevent entrapment of kit foxes, and inspected for trapped animals before being filled. Pipes, culverts, or similar den-like structures with diameter 4 inches or greater stored overnight will be inspected for animals before being moved, buried, or capped.

California tiger salamander

California tiger salamanders have not been documented within the Project area. Occurrences within the species' dispersal distance include a 1991 breeding record approximately 0.66 miles

south of the Salinas River in RMU 4, and 4 vernal pools on the former Fort Ord approximately 1.0 to 1.3 miles southwest of the Salinas River in RMU 6 (CNDDB 2016, B. Kowalski pers. com.). Areas of intensive row-crop agriculture lacking upland refugial habitat separate these occurrences from the Project area, and a high traffic road is found between the Salinas River and pools on Fort Ord. Suitable breeding habitat does not occur in the Project area. Burrows that could serve as upland refugia were found adjacent to two proposed maintenance areas in RMUs 4 and 5 in 2014 and on higher floodplain terraces in 2015 during reconnaissance surveys. However, none were either within 2 miles of known breeding ponds or located in areas that would likely be accessible by dispersing individuals.

You have proposed the following measures to avoid and minimize adverse effects to the California tiger salamander:

1. A Service-approved biologist will survey work areas no more than 48 hours before the start of work to look for California tiger salamanders and will be present at the start of work. Surveys will occur in work areas located within 2 miles of known or potential breeding ponds, include areas identified for access, staging, and placement of removed sediment, and include new work areas and areas receiving repeat maintenance in subsequent years.

2. A Service-approved biologist will be present throughout all maintenance activities that occur in areas located within 2 miles of known or potential California tiger salamander breeding ponds, if work occurs during periods when salamanders may be active.

3. Each morning before work begins a Service-approved biologist or biological monitor trained by the biologist to identify California tiger salamanders will inspect all vehicles and heavy equipment for the presence of California tiger salamanders in all project areas where salamanders may occur.

4. If any California tiger salamanders are observed, activities which may harm salamanders will stop and the animal will be allowed to leave the area on its own. The Service will be contacted immediately for instructions on how to proceed.

5. Disturbance of emergent vegetation in areas with suitable habitat for California tiger salamanders will be minimized.

6. A Service-approved biologist will conduct mandatory worker awareness training for all Project personnel before work begins and which includes, at a minimum, the biology, identification, and habitat needs of California tiger salamanders and the project conservation measures being taken to protect them.

7. Herbicides will not be applied in areas or during weather where they may drift downwind or be carried via runoff to suitable aquatic or upland habitat for California tiger salamanders. Only herbicides approved for use in aquatic and wetland environments (glyphosate or imazapyr) will be used for non-native vegetation removal. No herbicides will be applied

within 24 hours of forecasted rain or within 24 hours following a rainfall event of 0.25 inches or greater.

8. All walled open trenches and other excavations 6 inches deep or greater in areas of suitable habitat will be covered each night or provided with soil escape ramps to prevent entrapment of California tiger salamanders. A Service-approved biologist or biological monitor trained by the biologist to identify California tiger salamanders will inspect excavations for salamanders prior to work in or around these features and before they are backfilled.

9. Soil stockpile areas will be covered at night or surrounded by exclusion fencing to discourage habitation by animals, and inspected in the morning for California tiger salamanders prior to disturbance.

10. Nighttime work will not be allowed.

11. Work will not occur in water or wetlands and most activities will be conducted outside the wet season when California tiger salamanders are most active. No work will be performed if a rain event of 0.25 inches or greater in a 24-hour period occurs. Construction may resume after precipitation ceases, a drying-out period of 24 hours is observed, and a Service-approved biologist inspects all work areas to verify absence of California tiger salamanders.

12. All food-related trash items will be disposed of in secure, closed containers and removed at least once per week to reduce the potential to attract predators of California tiger salamanders.

Monterey spineflower

Monterey spineflowers have been documented within and adjacent to the Project area, in RMU 3 near Soledad just south of the Salinas River channel (2013) and in its tributary the Arroyo Seco (1920), and adjacent to the Salinas River near the Blanco Road crossing in RMU 6 on the former Fort Ord (CNDDB 2016). An occurrence from the Salinas River valley near San Lucas (RMU 1) dating to 1935 is believed to be extirpated. Habitat information for Monterey spineflower within the Project area is not provided in the BA or FEIR, as this species was not included in the Corps' original consultation request. The FEIR notes that Monterey spineflower is found on sandy soils derived from ancient stabilized dunes in coastal dunes, coastal scrub, and farther inland in maritime chaparral at elevations below 1,475 feet, typically within bare sandy patches with little vegetative cover (MCWRA 2014a). The Monterey spineflower is an annual species that is not believed to develop a persistent soil seed bank (Fox et al. 2006, Service 2009). Suitable habitat would be expected to occur in scattered areas along the Salinas River system, but its location may shift with changes in hydrology, vegetation, and sediment deposition. Occurrences of this species in the Project area, especially below the ordinary high water mark where most activities would occur, may thus be subject to substantial long-term turnover and shifts in distribution and size (Service 1998a).

Monterey spineflower critical habitat
A very small portion of Monterey spineflower designated critical habitat Unit 9 (Soledad Unit) overlaps the Project area between approximately Salinas River miles 48.7 and 50.4. Unit 9 represents the southernmost interior location that supports a population of Monterey spineflower and the only critical habitat unit where the species grows in interior floodplain dune habitat (Service 2008). Unit 9 contains the physical and biological feature[1] (PBF) essential to the conservation of the species: a vegetation structure with openings between the dominant plants that changes in spatial position as a result of physical processes such as windblown sands, and that allows sunlight to reach the surface of selected sand and sandy loam soil types. The proposed maintenance activities in this part of the Project area would occur outside of critical habitat Unit 9 and removal of nonnative vegetation could improve the quality of the PBF, though negative indirect effects from herbicide application and other activities could occur.

You have proposed the following measures to avoid and minimize adverse effects to the Monterey spineflower and Monterey spineflower critical habitat:

1. A Service-approved biologist will survey for Monterey spineflowers in all areas of suitable habitat within and within 100 feet of proposed work areas before the start of work, including new work areas and areas receiving repeat maintenance in subsequent years. Surveys will be conducted during the May through August blooming period and include locations identified for access, staging, and placement of removed sediment. Surveys for work proposed to occur in suitable habitat from January through April in a given year will be conducted in the previous year during the blooming period, and repeated prior to the start of work.

2. If Monterey spineflowers are detected, all plant locations including an adjacent 50-foot buffer within which no work will occur will be clearly marked. Best management practices will be implemented to prevent the transport of dust, sediment, herbicides, or invasive plant materials into these areas. The Service will be contacted immediately to assess whether additional avoidance measures may be required.

3. A Service-approved biologist or biological monitor trained by the biologist to identify Monterey spineflowers and with the authority to stop work will be present during all work conducted adjacent to identified Monterey spineflower locations and Monterey spineflower critical habitat to ensure impacts to plants and their habitat are avoided.

4. Management activities including the stockpiling or placement of removed sediment will not occur within designated Monterey spineflower critical habitat Unit 9. If vehicle access through Monterey spineflower critical habitat is unavoidable, all travel will be confined to established roads and speed limits will be enforced.

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1 The critical habitat rule for the Monterey spineflower uses the term "primary constituent elements" (PCEs) to describe the "physical and biological features" (PBFs) as used in the current definition of "destruction or adverse modification of critical habitat." For this biological opinion, PCEs and PBFs are considered synonymous.

5. The transport or spread of dust, sediment, herbicides, or invasive plant materials into Monterey spineflower critical habitat Unit 9 will be prevented.

6. If impacts to any Monterey spineflowers detected in or adjacent to work areas cannot be avoided, all work which may harm or destroy spineflowers or degrade their habitat will be halted and the Service will be contacted immediately for instructions on how to proceed.

7. Herbicides will not be applied in areas or during weather where they may drift downwind or be carried via runoff to known Monterey spineflower locations or into Monterey spineflower critical habitat Unit 9. No herbicides will be applied within 24 hours of forecasted rain or within 24 hours following a rainfall event of 0.25 inches or greater.

8. A Service-approved biologist will conduct mandatory worker awareness training for all Project personnel before work begins and which includes, at a minimum, the biology, identification, and habitat needs of Monterey spineflowers and the Project conservation measures being taken to protect them.

Yellow-billed cuckoo

The yellow-billed cuckoo has not been documented within or adjacent to the Project area, though protocol surveys were not conducted for the BA and cuckoos may be difficult to detect, having large home ranges and calling infrequently (Halterman et al. 2016). The species has declined substantially west of the Rocky Mountains and the nearest known occurrence near the Salinas River is from 1950, over 50 miles from the action area (MCWRA 2016a). The yellow-billed cuckoo typically requires large areas (>50 acres) of continuous patches of riparian habitat with native broadleaf trees and shrubs for nesting, e.g. willow-cottonwood forest. Some riparian habitat within the southern RMUs may be suitable for breeding, cover and foraging. While unlikely to occur in the Project area, maintenance activities could increase the availability and quality of suitable habitat for cuckoos in the long-term by restoring more natural hydrologic processes in the Salinas River.

You have proposed the following measures to avoid and minimize adverse effects to the yellow-billed cuckoo:

1. A Service-approved biologist with demonstrable experience in yellow-billed cuckoo identification, vocalizations, and biology will survey for yellow-billed cuckoos in all areas of suitable habitat in and within 500 feet of work areas before the start of work, including areas receiving repeat maintenance in subsequent years. Surveys will follow Service-approved guidelines (Halterman et al. 2016) except that a minimum of two pre-construction surveys will be required, and the second survey will be conducted no more than 48 hours prior to the start of work. Surveys will be conducted for all work scheduled between April 15 and September 30 and include access, staging, and removed sediment placement areas.

2. If any yellow-billed cuckoos are detected, activities which may harm or disturb cuckoos will stop and the Service will be contacted immediately for instructions on how to proceed. A

Service-approved biologist will remain on site while the nest is active. A 500-foot buffer around each nest or territory detected will be established within which Project activities may not occur, and all portions of the buffer abutting work areas will be marked. Exceptions to this buffer distance will only be allowed with approval from the Service.

3. Invasive species including *Arundo* canes will be prevented from entering watercourses and be disposed of in a manner that will not contribute to further spread of the species.

4. Removal of native vegetation in *Arundo* removal areas will be minimized, and willows greater than 6 inches dbh will be avoided to the extent feasible.

5. A Service-approved biologist will conduct mandatory worker awareness training for all Project personnel before work begins and which includes, at a minimum, the biology, identification, and habitat needs of yellow-billed cuckoos and the project conservation measures being taken to protect them.

6. Nighttime work will not be allowed.

7. Vehicle traffic will be confined to designated roads.

8. All food-related trash items will be disposed of in secure, closed containers and removed at least once per week to reduce the potential to attract nest predators.

9. Herbicides will not be applied in areas or during weather where they may drift downwind or be carried via runoff into native riparian habitat and harm yellow-billed cuckoos.

We concur with your determination that the Salinas River Stream Maintenance Program may affect, but is not likely to adversely affect, the San Joaquin kit fox, California tiger salamander, Monterey spineflower and its critical habitat, and yellow-billed cuckoo. Our concurrence is based on the low likelihood of these species being present in work areas, the limited availability of suitable habitat, and/or implementation of the proposed avoidance and minimization measures. If circumstances arise indicating that the proposed project may result in adverse effects to the San Joaquin kit fox, California tiger salamander, Monterey spineflower and its critical habitat, or yellow-billed cuckoo, Project activities should be suspended and the Service should be contacted immediately to determine whether additional consultation is required.

Consultation History

The Service has participated in telephone calls, site visits, and communicated through electronic mail with the Corps, MCWRA, and representatives of collaborating parties including the National Marine Fisheries Service (NMFS), Central Coast Regional Water Quality Control Board (RWQCB), Resource Conservation District of Monterey County (RCDMC), The Nature Conservancy (TNC), California Department of Fish and Wildlife (CDFW), the U.S. Environmental Protection Agency (EPA), consultants, landowners, and growers regarding the

proposed Project. The Service transmitted letters to MCWRA in 2011 in response to requests for comment on the Project Environmental Impact Report, and provided a concurrence letter in response to the Corps' 2014 request for informal consultation on a prior demonstration project within two of the seven River Management Units (RMUs) in the proposed Project. We can make available a complete record of this consultation at the Ventura Fish and Wildlife Office.

The following dates represent significant milestones in the coordination and consultation process:

May 26, 2011	The Service transmits a letter to MCWRA in response to a request for comment on the Notice of Preparation of an Environmental Impact Report (EIR) for the Salinas River Channel Maintenance Program recommending the inclusion of updated survey data and conservation measures for least Bell's vireo, California red-legged frog, and arroyo toad.
August 15, 2011	The Service transmits a letter to MCWRA in response to a request for further information on points made in our May 26, 2011 letter.
July 30, 2014	The Corps requests informal consultation for impacts to California red-legged frog, California tiger salamander, least Bell's vireo, San Joaquin kit fox, and southwestern willow flycatcher from MCWRA's Salinas River Multi-Benefit Demonstration Project proposed for two RMUs.
September 22, 2014	The Service transmits a letter indicating our concurrence that the Salinas River Multi-Benefit Demonstration Project is not likely to adversely affect listed species in the Chualar and Gonzales RMUs.
October 23, 2015	The Service participates in a meeting with other agencies and Project partners organized by MCWRA to present details of the proposed program and discuss permitting requirements and biological resource impacts.
December 2, 2015	The Service attends a day-long site visit organized by MCWRA to view three proposed Project locations along the Salinas River with the Corps, NMFS, RWQCB, CDFW, and other Project participants.
April 4, 2016	The Corps requests informal consultation for impacts to California red-legged frog, California tiger salamander, least Bell's vireo, San Joaquin kit fox, southwestern willow flycatcher, and yellow-billed cuckoo from MCWRA's Salinas River Stream Maintenance Program.
June 7, 2016	The Service participates in a conference call with representatives from the Corps, MCWRA, NMFS, CDFW, TNC, Alnus Ecological (consultant), and other parties to discuss the proposed Project. The Service recommends formal consultation for California red-legged frog and

	potentially for least Bell's vireo and comments on survey methods.
June 30, 2016	The Service recommends by voicemail that the Corps consider formal consultation for California red-legged frog and least Bell's vireo for the Project. The Corps acknowledges these recommendations via voicemail.
July 7, 2016	MCWRA transmits additional Project information to the Service and other parties in response to comments received during June 7, 2016 call.
July 21, 2016	The Service recommends by telephone that the Corps propose formal consultation for least Bell's vireo and that southwestern willow flycatcher be removed from the consultation. The Service also recommends that tidewater goby and its critical habitat (formal) and Monterey spineflower and its critical habitat (informal) be added to the consultation request. The Corps confirms these changes via electronic mail.
July 25, 2016	The Service transmits suggested changes and additions to the proposed conservation measures to the Corps via electronic mail.
August 3, 2016	The Service participates in a meeting in Salinas with MCWRA, RCDMC, Alnus Ecological, and the Conservation Collaborative (consultant) to discuss proposed conservation measures and survey methods.
August 10, 2016	The Corps and MCWRA agree to proposed changes in conservation measures.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Corps proposes to issue a permit for a term of 5 years to MCWRA, pursuant to Section 404 of the Clean Water Act, for the second phase of the Salinas River Stream Maintenance Program, a cooperative planning and design process with agencies, stakeholders, landowners, and growers to establish a flood risk reduction approach for the Salinas River in Monterey County, California that is consistent with other management priorities and maintains or enhances native habitat and ecological and hydrological processes. Project goals are to increase channel complexity, slow velocities in the primary low flow channel, and encourage a wider range of riparian habitat conditions (earlier to later successional vegetation) as would have been present historically. The full Project is proposed to extend 10 years, thus MCWRA would apply for a second 5-year permit from the Corps following the term of the present action. Our analysis is for project actions over a 10-year term.

Project design

An initial demonstration phase permitted in 2014 included two River Management Units (RMUs) along 11.5 miles of the Salinas River west of Highway 101 near the towns of Chualar and Gonzales (see Service 2014). The proposed second phase would include these areas plus five additional RMUs, spanning 92 linear miles of the Salinas River mainstem and two linear miles of tributaries in San Lorenzo Creek, Bryant Canyon Channel, and Gonzales Slough (see BA, Table 1 and MCWRA 2016b, Figs 1-11). Hydraulic modeling was used to guide the Project design and indicated that while significant areas of farmland may continue to be inundated during high flow events following Project activities, the targeted clearing of vegetation including sediment removal in some secondary channels would reduce the extent of flooding. Project benefits are expected in all RMUs and would vary by location (MCWRA & RCDMC 2016, Appendix C).

Maintenance activities

The area of direct Project impacts represents a small fraction (4.2%) of the total area of vegetation in the RMUs, and would total approximately 855 acres or less and vary by RMU (BA Tables 3 & 4, MCWRA 2016c). A total of 125 discrete maintenance areas are proposed. Activities would include native vegetation management including mowing and disking, removal and retreatment of nonnative vegetation (giant reed, *Arundo donax* and tamarisk, *Tamarix parviflora*) by cutting, excavation of plant stocks and roots, and use of herbicides, and sand and sediment grading and removal (e.g. channel smoothing) to reduce the risk of flooding in adjacent farm fields and prevent bank erosion.

A series of linear "secondary channels" would be created and maintained adjacent to the existing low-flow channel (locations shown in PSA Appendix C maps, MCWRA & RCDMC 2016), designed to become active during higher flow events (5-year interval or approximately 25,450 cfs) and increase river flood-carrying capacity. Proposed secondary channels are aligned along meander cutoffs, low-lying undeveloped areas, and former river alignments to mimic the natural braiding of the Salinas River historically provided by higher, scouring flows. Most secondary channels would tie-in with the low flow channel at upstream and downstream locations as would be expected in a natural braided river channel. Downstream tie-in points would be positively graded where joining the low flow channel to avoid potential fish stranding. Where possible, pre-construction staking and flagging would be used to avoid large-trees, riparian vegetation, and wetlands when creating secondary channels.

Native vegetation would be removed above ground using a scraper, mower, bulldozer, excavator, truck, or similar equipment, and roots would be disked or left intact depending on site conditions. Non-native vegetation would be removed mechanically by mowing and shredding stems with a masticator and by herbicide treatment with imazapyr or glyphosate. An approved aquatic formulation would be used where water is present, while a standard formulation may be used in dry areas without potential for drift to open water. Motorized spray rigs would be utilized to transport herbicide; spray treatment would be from the rig, by hand-held power sprayers

extended from a feeder take by a hose, or backpack sprayer. *Arundo* removal areas would be re-sprayed in subsequent years to kill resprouts and underground biomass. To minimize localized erosion, native vegetation on the toe of the bank or on river banks that are steeper than 15% would not be removed (except for specified secondary channel tie-in locations).

Channel bed grading and smoothing following vegetation maintenance would establish a downstream gradient within and preferential flow down secondary channels. Limited limbing and removal of cottonwood trees in secondary channels would follow a decision protocol weighing flow conveyance benefits and safety considerations (MCWRA 2016c). No more than 25% of the canopy cover of a tree would be removed in a given year. Due to dense vegetation and channel constraints prohibiting the creation of secondary channels, a modified treatment approach would be used in RMUs 6 and 7 (work areas 6.12 and 7.01, see maps in Appendix C of MCWRA & RCDMC 2016). This would involve vegetation removal in and adjacent to the river thalweg, limbing of trees, and sand bar ripping including in low floodplain benches directly adjacent to the existing low flow channel to decrease channel roughness and restart natural sediment transport processes.

Up to 554,420 cubic yards (cy) of sediment could be removed annually from all Salinas River secondary channels (BA Table 5) and no more than 785,000 cy (i.e. half the 1.57 million cubic yards of average annual sediment load in the mainstem Salinas River) would be allowed in any two consecutive years. No more than 450,000 cy of sediment would be removed from any given 1-mile length of river in the upper reach, and no more than 100,000 cy of sediment would be removed over any 1 mile length of river in the lower reach, over a consecutive 2 year period. Sediment removal areas would be graded to match adjacent grade, and all sediment removed from secondary channels would be placed in demarcated upland areas outside of the active floodplain and above the ordinary high water mark. Sediment would not be removed in or within 10 feet of the low-flow channel or on banks steeper than 15%, and would only occur in areas that are dry (i.e., on a dry channel bottom or sandbar) and more than 9-inches above any standing water (see criteria in MCWRA 2016c).

Timing, work windows, and avoidance of water and sensitive habitats

Activities would occur annually with reduced activity expected later in the 10-year project period, with most vegetation management occurring in the first five years followed subsequently by spot management. Activities would avoid most sensitive and rare habitat types, focusing on more transient, early successional vegetation and/or areas dominated by *Arundo* or dense stands of willow (*Salix* spp.). Nighttime work would not occur. Work would not occur in water and wetlands or during rain events, dewatering of river reaches would not occur, and precautions would be taken to ensure flows do not activate secondary channels during maintenance activities; if unexpected rains introduce water into secondary channels during construction, work would be halted in these locations. The timing of activities would have limited overlap with the nesting season for listed birds. Most work would occur below the Ordinary High Water Mark (OHM) of the Salinas River and tributaries, though sediment removed from secondary channels would be placed in demarcated areas outside the active floodplain and above the OHM. Most activities

would occur from September 1 to November 15, except mechanized removal of invasive plants treated with herbicide could begin as early as August 15, and herbicide application would occur from June 1 to November 15 while target plants are green. Mitigation plantings could occur year-round but primarily between January 1 and March 31, and would not occur within, or on banks above, standing or flowing water.

Avoidance measures and compensatory mitigation

In addition to the design features described above, species-specific avoidance and minimization measures and general Best Management Practices would be incorporated into all Project activities. All activities conducted in areas of suitable habitat potentially occupied by listed species would be preceded by appropriate surveys. Compensatory mitigation for unavoidable impacts to native riparian vegetation would be provided through *Arundo* removal or planting of native trees and shrubs on a per-stem basis using mitigation ratios based on the type of vegetation removed (MCWRA & RCDMC 2016). Plantings would be watered and managed to the point of establishment and creation of larger patches of vegetation would be emphasized to provide better habitat for edge-sensitive riparian birds.

Effectiveness monitoring, annual reporting, and adaptive management

Effectiveness monitoring of maintenance areas will include pre- and post-maintenance centerline topographic surveys in 10% of all secondary channels and located in all RMUs. Surveys will extend from the low flow channel of the Salinas River into the upstream tie-in point of the secondary channel, out the downstream tie-in, and back into the low flow channel. Survey data would be used to refine inputs to the hydraulic model to account for major changes in topography. Repeat surveys of maintenance areas following flood flows may also be used to better understand sediment dynamics (scour and deposition) and the effectiveness of secondary channels or selective treatment sites in inducing scour and/or deposition.

A summary Annual RMU Report documenting all maintenance and mitigation actions would be prepared each year by MCWRA and RCDMC and provided to permitting agencies. The report would describe the year's maintenance in the RMU by activity and acreage (vegetation management and sediment grading or movement), photos of typical work areas before and after maintenance, and an evaluation of adaptive management needs for the following year's maintenance in the RMU if significant flows (5-year flow or greater) occur. For mitigation actions, the Annual RMU Report would include documentation of replacement planting including number of plants, species, GPS location, and photo documentation. *Arundo* removal for mitigation would be provided and documented via GPS location and maps.

If the primary low-flow channel is realigned during a high-flow event, one or more secondary channels or selective treatment areas proposed for maintenance may require minor modifications in location, length, or other characteristics to avoid impacts to the new low flow channel. The design and survey protocols developed for the currently proposed secondary channels would be used for any realignments, and proposed modifications would be distributed to permitting

agencies for consideration and comment by May 15 of that year. Activities within newly-defined secondary channels would include vegetation clearing and *Arundo* removal. Sand and sediment management in new channel locations would require full vetting by permitting agencies. Neither the existing or new low flow channels would be cleared or managed except in in RMUs 6 and 7 where such work is necessary.

Conservation measures

To reduce impacts to listed species, the Corps and MCWRA propose to implement the following measures, which include measures originally proposed by the Corps and MCWRA and additional measures recommended by the Service. Additional best management practices (BMPs) to be implemented are described in the biological assessment (MCWRA 2016a):

1. The limits of access and staging areas, locations designated for placement of removed sediment, and work areas adjacent to sensitive habitats to be avoided will be clearly marked.

2. Work will not occur in water or wetlands, including the low flow or active river channel and secondary channels activated by unexpected rain events. Dewatering of river reaches will not occur.

3. No work will be performed if a rain event of 0.25 inches or greater in a 24-hour period occurs. Work may resume after precipitation ceases, a drying-out period of 24 hours is observed, and a Service-approved biologist inspects all work areas to verify absence of listed species.

4. Existing access ramps and roads will be utilized to the fullest extent feasible to access stream areas.

5. Vehicles will observe a daytime speed limit of 20 mph on all roads in the project area except county roads and State and Federal highways.

6. Soil disturbance will not exceed the minimum extent necessary in maintenance areas.

7. Only herbicides approved for use in aquatic and wetland environments (glyphosate or imazapyr) will be used for non-native vegetation removal. Mixing of herbicides will occur in areas adjacent to existing roads with compacted disturbed soils lacking native vegetation.

8. Herbicides will not be used in areas where listed species have been identified by a Service-approved biologist, and will be utilized in such a manner as to prevent poisoning of listed species or their habitat. Herbicide use may only occur after the biologist has relocated the species out of harm's way or has confirmed the species to no longer be at risk from direct or indirect impacts.

9. No herbicides will be applied within 24 hours of forecasted rain or within 24 hours following

a rainfall event of 0.25 inches or greater. Best management practices will be followed to prevent unintended transport of herbicides by air or water into native habitats.

10. Invasive species including *Arundo* canes will be prevented from entering watercourses and be disposed of in a manner that will not contribute to further spread of the species.

11. Removal of native vegetation in *Arundo* removal areas will be minimized, and willows greater than 6 inches dbh will be avoided to the extent feasible.

12. If impacts to listed species are unavoidable, maintenance activities will be redesigned to avoid direct and indirect impacts to listed species.

13. To minimize local erosion from vegetation and sediment removal, native vegetation on the toe of the bank or on river banks that are steeper than 15% will not be removed, and 5- to 10-foot wide vegetated buffers will be established around maintenance locations and clearly marked.

14. Run-off of sediments into surface waters from soil stockpiled within or adjacent to channels will be prevented.

15. Nighttime work will not be allowed.

16. All food-related trash items will be disposed of in secure, closed containers and removed at least once per week to reduce the potential to attract predators of listed species. After construction, all trash and construction debris will be removed from work areas.

17. No fueling, repair, maintenance, or washing of vehicles or equipment will occur in waterways, the adjacent floodplain, or top-of-bank areas that may flow into a creek channel. A hazardous materials spill prevention and response plan will be in place before work begins.

18. A Service-approved biologist will be on-site or on-call to visit maintenance areas at any time during work in the event a special-status species is encountered. A biological monitor trained by the approved biologist will be the contact for any employee or contractor who inadvertently kills or injures a listed species or who finds a dead, injured, or entrapped individual if the approved biologist is not present. The biologist or biological monitor will report the incident to the Service via electronic mail and telephone within one working day.

19. A Service-approved biologist will provide mandatory worker awareness training for all project personnel before work begins and which includes, at a minimum, the biology, identification, and habitat needs of the least Bell's vireo, tidewater goby, and California red-legged frog and the project conservation measures being taken to protect them.

20. A Service-approved biologist with demonstrable experience in least Bell's vireo identification, vocalizations, and biology will survey for vireos in all areas of suitable habitat

in and within 500 feet of work areas before the start of work, including areas receiving repeat maintenance in subsequent years. Surveys will include stands of *Arundo* where these occur adjacent to or within areas of suitable native habitat. Survey methods will conform to Service guidelines for the least Bell's vireo (Service 2001) except that a minimum of two pre-construction surveys will be required, and the second survey will be conducted no more than 48 hours prior to the start of work. Surveys will be conducted for all work scheduled between March 15 and September 15 and include access, staging, and removed sediment placement areas.

21. If any least Bell's vireo nests or individuals are detected the Service will be contacted immediately. A 500-foot buffer around each territory or nest will be established and all portions of the buffer abutting Project activity areas will be marked. A Service-approved biologist will remain on site while the nest is active, and no Project activities will be performed within the buffer until all young have fledged and are foraging independently. If work activities occur immediately adjacent to the 500-foot buffer, the biologist will closely monitor the territory or nest to assess potential effects of Project activities on least Bell's vireos. No exceptions to this buffer distance will be allowed without prior approval from the Service.

22. To avoid impacts to least Bell's vireos, noise levels in suitable habitat within and adjacent to work areas will be minimized to the fullest extent feasible. Noise generating activities occurring within and adjacent to suitable habitat will be conducted outside the vireo breeding season to the fullest extent feasible.

23. The Corps and MCWRA in cooperation with a Service-approved biologist will develop and implement a tidewater goby survey plan to document the presence, distribution, and abundance of the species within and adjacent to the Project area, including the Salinas River downstream of the Salinas River Diversion Facility (SRDF) and the Salinas River Lagoon. The survey plan will be developed in coordination with the National Marine Fisheries Service to avoid duplication of effort and excessive disturbance of habitat. The survey plan will be submitted to the Service for review and approval.

24. Each year before the start of work in RMU 7 and no later than August 1, information on the current status of tidewater goby (e.g., presence, estimated number of individuals) in the Salinas River Lagoon will be submitted to the Service for review.

25. The Service will be contacted immediately if tidewater gobies are observed at any time in the Project area or within the Salinas River Lagoon.

26. Water quality reports providing monitoring data on temperature, dissolved oxygen, and specific conductivity in the Salinas River and Salinas River Lagoon that are developed for the Salinas Valley Water Project will be provided annually to the Service. Additional data on water depth, sediment deposition, vegetation characteristics, and other relevant variables will be provided to the Service if and when these become available to monitor potential impacts

on tidewater goby and its critical habitat.

27. If a Service-approved biologist determines that any tidewater gobies are at risk of harm from project activities, the biologist will capture and relocate gobies to a secure location provided a suitable relocation site can be identified in advance. The biologist will have the authority to stop work which may harm tidewater gobies until they are relocated out of harm's way. The Service will be contacted within 24 hours following any relocation.

28. Disturbance of emergent vegetation will not be allowed in areas with suitable habitat for California red-legged frogs, for tidewater gobies downstream of the SRDF, and in tidewater goby critical habitat Unit MN-2. Only treatment of *Arundo* will occur adjacent to aquatic habitats occupied by tidewater gobies or California red-legged frogs. *Arundo* treatment will not be conducted in the wetted low flow channel.

29. A Service-approved biologist will survey for California red-legged frogs in all areas of suitable habitat within 48 hours of the start of work, and will be present at the start of maintenance activities at each location. Surveys will include locations identified for access, staging, and placement of removed sediment, and will include both new work areas and all areas receiving repeat maintenance in subsequent years.

30. A Service-approved biologist will be present throughout all work in areas located near aquatic or riparian habitats where California red-legged frogs have been observed or are likely to be present. The Service-approved biologist will have the authority to stop work if there is a threat of harm to California red-legged frogs, and will notify the Service within one working day of any work stoppage.

31. The Service-approved biologist will have the authority to handle California red-legged frogs. If adults, juveniles, tadpoles or eggs are observed and may be affected by project activities, the biologist will be allowed sufficient time to capture and relocate them out of harm's way to nearby suitable habitat before work may begin. Suitable relocation sites will be identified prior to the start of work. The Service will be notified immediately if fully aquatic stages of the California red-legged frog (tadpoles or egg masses) are identified at any time.

32. Each morning before work begins a Service-approved biologist or biological monitor trained by the biologist to identify California red-legged frogs will inspect all vehicles and heavy equipment for the presence of California red-legged frogs.

33. The Declining Amphibian Populations Task Force's Fieldwork Code of Practice (Appendix A) will be followed to minimize the possible spread of chytrid fungus and other amphibian pathogens and parasites. This measure is applicable to all construction personnel and equipment as well as to biologists. Decontamination procedures and stations will be established at all work areas near aquatic habitat.

34. All walled open trenches and other excavations 6 inches deep or greater in areas of suitable habitat will be covered each night or provided with soil escape ramps to prevent entrapment of California red-legged frogs. A Service-approved biologist or biological monitor trained by the biologist to identify California red-legged frogs will inspect excavations prior to work in or around these features and before they are backfilled.

35. For work conducted within or adjacent to aquatic, riparian, and upland habitats suitable for California red-legged frogs, exclusion fencing will be placed around larger excavations which cannot be covered or provided escape ramps to prevent entrapping frogs. Exclusion fencing will be placed around work areas adjacent to suitable habitat to discourage California red-legged frogs from entering work areas.

36. Soil stockpile areas will be covered at night or surrounded by exclusion fencing to discourage habitation by animals, and inspected in the morning for California red-legged frogs prior to disturbance.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY AND ADVERSE MODIFICATION DETERMINATIONS

Jeopardy Determination

Section 7(a)(2) of the Endangered Species Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers or distribution of that species" (50 CFR 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the range-wide conditions of the least Bell's vireo, tidewater goby, and California red-legged frog, the factors responsible for that condition, and the species' survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the least Bell's vireo, tidewater goby, and California red-legged frog in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of these species; (3) the Effects of the Action, which identifies the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the least Bell's vireo, tidewater goby, and California red-legged frog; and (4) the Cumulative Effects, which evaluates the effects of future, non-Federal activities, that are reasonably certain to occur in the action area, on the least Bell's vireo, tidewater goby, and California red-legged frog.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the current status of the least Bell's vireo,

tidewater goby, and California red-legged frog, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to reduce appreciably the likelihood of both the survival and recovery of the least Bell's vireo, tidewater goby, and California red-legged frog in the wild by reducing the reproduction, numbers, and distribution of each species.

Adverse Modification Determination

Section 7(a)(2) of the Endangered Species Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of designated critical habitat. A final rule revising the definition of "destruction or adverse modification of critical habitat" was published on February 11, 2016 (81 FR 7214). The revised definition states: "Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features."

The revised "destruction or adverse modification" definition focuses on how Federal actions affect the quantity and quality of the physical or biological features (PBFs)[2] in the designated critical habitat for a listed species and, especially in the case of unoccupied habitat, on any impacts to the critical habitat itself. Specifically, the Service will generally conclude that a Federal action is likely to "destroy or adversely modify" designated critical habitat if the action results in an alteration of the quantity or quality of the essential physical or biological features of designated critical habitat, or that precludes or significantly delays the capacity of that habitat to develop those features over time, and if the effect of the alteration is to appreciably diminish the value of critical habitat for the conservation of the species.

The Service may consider other kinds of impacts to designated critical habitat. For example, some areas that are currently in a degraded condition may have been designated as critical habitat for their potential to develop or improve and eventually provide the needed ecological functions to support species' recovery. Under these circumstances, the Service generally concludes that an action is likely to "destroy or adversely modify" the designated critical habitat if the action alters it to prevent it from improving over time relative to its pre-action condition. The "destruction or adverse modification" definition applies to all physical or biological features; as described in the proposed revision to the current definition of "physical or biological features" (50 CFR 424.12), "[f]eatures may include habitat characteristics that support ephemeral or dynamic habitat conditions" (79 FR 27066).

The adverse modification analysis in this biological opinion relies on four components: (1) the Status of Critical Habitat, which describes the range-wide condition of designated critical habitat for the tidewater goby, in terms of physical or biological features (PBFs), the factors responsible

[2] The critical habitat rule for the tidewater goby uses the term "primary constituent elements" (PCEs) to describe the "physical and biological features" (PBFs) as used in the revised definition of "destruction or adverse modification of critical habitat." For this biological opinion, PCEs and PBFs are considered synonymous.

for that condition, and the intended recovery function of the critical habitat overall; (2) the Environmental Baseline, which analyzes the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated and interdependent activities on the PBFs and how that will influence the recovery role of the affected critical habitat unit; and (4) Cumulative Effects, which evaluates the effects of future non-Federal activities that are reasonably certain to occur in the action area on the PBFs and how that will influence the recovery role of affected critical habitat unit.

For purposes of the adverse modification determination, the effects of the proposed Federal action on the critical habitat of the tidewater goby are evaluated in the context of the range-wide condition of the critical habitat, taking into account any cumulative effects, to determine if the critical habitat range-wide would remain functional (or would retain the current ability for the PCEs to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for the tidewater goby.

STATUS OF THE SPECIES

Least Bell's Vireo

The Service listed the least Bell's vireo as endangered in 1986 (Service 1986), and critical habitat was designated in 1994 (Service 1994) with no areas in or near the action area. Although a final recovery plan has not been published, a draft recovery plan was completed in 1998 (Service 1998b). The Service issued a 5-year review in 2006 (Service 2006) in which we recommended downlisting to threatened status because of a 10-fold increase in population size since listing, expansion of locations with breeding pairs throughout southern California, and conservation and management of suitable breeding habitat throughout its range. Additional information on the least Bell's vireo may be found in Wilbur (1980), Garrett and Dunn (1981), Zembal et al. (1985), Miner (1989), Pike and Hays (1992), and Service (1998b).

The least Bell's vireo is a small, migratory songbird that nests and forages almost exclusively in riparian woodland. It is one of four recognized subspecies (AOU 1998), and each is isolated from another throughout the year (Hamilton 1962, Service 1998b). Least Bell's vireos are site-tenacious across breeding seasons and highly territorial. They typically inhabit structurally diverse woodlands along watercourses that feature dense cover within 0.9 to 1.8 m (3 to 6 ft) of the ground and a dense, stratified canopy (Goldwasser 1981, Salata 1983, Gray and Greaves 1984, Service 1998b). The understory of the habitat is typically dominated by mulefat (*Baccharis salicifolia*), California wild rose (*Rosa californica*), poison oak (*Toxicodendron diversiloba*), sandbar willow (*Salix hindsiana*), young individuals of other willow (*Salix*) species, and several perennial species (Service 1998b). Important canopy species include mature arroyo willow (*Salix lasiolepis*) and black willow (*Salix gooddingii*), and occasional cottonwood (*Populus* spp.), western sycamore (*Platanus racemosa*e), and coast live oak (*Quercus agrifolia*).

Least Bell's vireos feed primarily on insects, especially lepidopteran larvae within willow stands or associated riparian vegetation (Miner 1989, Brown 1993). The feeding behavior consists largely of gleaning prey from leaves or woody surfaces while perched or hovering, and less frequently by aerial pursuit (Salata 1983, Miner 1989). Least Bell's vireos concentrate most of their foraging between 0 to 6 m (20 ft) above ground level (Salata 1983, Miner 1989).

Least Bell's vireos generally arrive in breeding areas in southern California from mid-March to early April, with males arriving before females and older birds arriving before first-year breeders (Service 1998b). Least Bell's vireos generally remain on the breeding grounds until late September, although some post-breeding migration may begin as early as late July (Service 1998b). Males establish and defend breeding territories by singing and chasing intruders (Barlow 1962, Beck 1996, Service 1998b). Although territories typically range in size from 0.2 to 3.0 ha (0.5 to 7.5 ac; Service 1998b), no relationship appears to exist between size and quality of the territory (Newman 1992).

Nest building commences a few days after pair formation, with the female selecting a nest site and both sexes constructing the nest (Pitelka and Koestner 1942, Barlow 1962, Service 1998b). Nests are typically suspended in forked branches within 0.9 m (3 ft) above the ground and with no preference for any particular plant species as the nest host (Nolan 1960, Barlow 1962, Gray and Greaves 1984, Service 1998b). Typically 3 or 4 eggs are laid on successive days shortly after nest construction (Service 1998b). The eggs are incubated by both parents for approximately 14 days with the young remaining in the nest for another 10 to 12 days (Pitelka and Koestner 1942, Nolan 1960, Barlow 1962). Each nest appears to be used only once (Greaves 1987). Least Bell's vireos may attempt up to five nests within a breeding season, but they are typically limited to one or two successful nests within a breeding season (Service 1998b).

Multiple long-term monitoring studies indicate that approximately 59 percent of nests successfully produce fledglings, with an average of 1.8 chicks fledging per nest (Service 1998b). Although nests appear to be more accessible to terrestrial predators because of their relatively low placement (Franzreb 1989), western scrub-jays (*Aphelocoma californica*) account for the majority of documented depredation (Peterson 2002, Peterson et al. 2004). Predation rates can exceed 60 percent of the total nests in the area within a year (Kus 1999), but typical nest predation rates average around 30 percent (Franzreb 1989), which is comparable to predation rates for other North American passerines (Martin and Clobert 1996, Grishaver et al. 1998, Ferree 2002).

Nest parasitism by brown-headed cowbirds (*Molothrus ater*) is another major source of failure for nests of least Bell's vireos (Franzreb 1989; Service 1998b; Kus 1999, 2002; Griffith and Griffith 2000; Sharp 2002). The nests that are parasitized are either abandoned or fledge cowbird chicks rather than least Bell's vireos. It is believed that cowbirds did not historically occur within the range of the least Bell's vireo, which may explain why least Bell's vireos have not evolved adequate defenses to avoid loss of productivity due to parasitism (Franzreb 1989, Kus 2002). Cowbird trapping and focused nest monitoring can substantially reduce parasitism

and its effects (Franzreb 1989, Service 1998b, Griffith and Griffith 2000, Kus 2002).

Cowbird trapping has proven a successful tool to halt least Bell's vireo population declines over the short term within a limited area, but Kus and Whitfield (2005) have argued that trapping may not be the best method for long-term recovery of the least Bell's vireo because maintaining cowbird populations at low levels may not allow the least Bell's vireo to evolve resistance to cowbird parasitism. It is unclear as to the best way to manage this threat over the long term, and additional research is needed to determine whether there are any alternatives to the intensive cowbird trapping programs currently being implemented (Service 2006).

Fledgling least Bell's vireos expand their dispersal distances from approximately 11 m (35 ft) the first day to approximately 61 m (200 ft) several weeks after fledging (Hensley 1950, Nolan 1960). This distance has been shown to increase to at least 1.6 km (1 mi) prior to their first fall migration (Gray and Greaves 1984). Banding records indicate that while most first-year breeding individuals return to their natal drainage after winter migration, some disperse considerable distances to other breeding locations (Greaves and Labinger 1997, Service 1998b, Kus and Beck 1998). Movement by least Bell's vireos between drainages within San Diego County is not uncommon (Kus and Beck 1998). Additionally, several least Bell's vireos banded as nestlings in San Diego County have been sighted as breeding adults in Ventura County, and the opposite movement from Ventura to San Diego has been observed also (Greaves and Labinger 1997). The maximum, documented dispersal distance is approximately 209 km (130 mi; Service 1998b). Although movement between sites by older birds may occur, site fidelity by least Bell's vireos after the first breeding season is generally high. Most dispersal occurs prior to the first breeding season (Service 1998b).

The least Bell's vireo historically occurred from Tehama County in northern California to northwestern Baja California, Mexico, and eastward to Owens Valley, Death Valley and the Mojave River (Grinnell and Miller 1944, Service 1998b). Although previously considered to be abundant locally, regional declines were observed by the 1940's (Grinnell and Miller 1944), and it was believed to be extirpated from California's Central Valley by the early 1980's (Franzreb 1989). Except for a few outlying pairs, by 2002 the least Bell's vireo was mostly restricted to southern California south of the Tehachapi Mountains and northwestern Baja California (Wilbur 1980, Garrett and Dunn 1981, Franzreb 1989, USGS 2002). The largest current concentrations of least Bell's vireos are in San Diego County along the Santa Margarita River on Camp Pendleton and in Riverside County at the Prado flood control basin (Service 2006).

Historically, the San Joaquin and Sacramento Valleys were considered to be the center of the least Bell's vireo's breeding range (60 to 80 percent of the historic population; Service 1986), but the least Bell's vireo has not yet meaningfully re-colonized those areas. In 2005 and 2006, the first breeding pair of least Bell's vireos detected in the San Joaquin Valley since listing successfully bred at the San Joaquin National Wildlife Refuge in Stanislaus County (Service 2006). There have been no sightings of least Bell's vireos in the Sacramento Valley since prior to listing, and it is unlikely that breeding has occurred within recent years in the Sacramento Valley (Service 2006).

At the time of listing (Service 1986), 99 percent of the remaining least Bell's vireos were in southern California (Santa Barbara County and southward), with 77 percent in San Diego County. Ninety-nine percent still remain in southern California (Service 2006), although 54 percent are in San Diego County and 30 percent in Riverside County. Thus, despite a significant increase in overall numbers, the species remains mostly restricted to the southern portion of its historic range (Service 2006).

Causes for decline include destruction or degradation of habitat, river channelization, water diversions, lowered water tables, spread of invasive nonnative plants (e.g. *Arundo donax*), gravel mining, agricultural development, and cowbird parasitism (Service 1986, 1994, 1998b). Habitat losses have fragmented most remaining populations into small, disjunct, widely dispersed subpopulations (Franzreb 1989). Habitat fragmentation negatively affects abundance and distribution of neotropical migratory songbirds by increasing incidence of nest predation and parasitism (Whitcomb et al. 1981, Small and Hunter 1988, Yahner and DeLong 1992, Sharp 2002, Peterson 2002). Least Bell's vireos nesting in areas with much degraded habitat have lower productivity (e.g., hatching success) than those in areas with high quality habitat (Pike and Hays 1992).

Since listing, the least Bell's vireo population in California has increased 10-fold as indicated by the number of known territories (from 291 to 2,968 known territories; Service 2006). The population has grown during each 5-year period since listing, although the rate of increase has slowed over the last 10 years. Population growth has been greatest in San Diego County and Riverside County, with lesser but substantial increases in Orange County, Ventura County, San Bernardino County and Los Angeles County. The population in Santa Barbara County has declined since listing in 1986. Kern, San Luis Obispo, Monterey, San Benito and Stanislaus Counties have each had a few isolated individuals and/or breeding pairs since listing, but these counties have not supported sustained populations.

Recovery Objectives

The 1998 draft recovery plan for the least Bell's vireo (Service 1998b) states that the goal of recovery efforts is the reclassification of the subspecies from endangered to threatened and, ultimately, delisting of the subspecies. The draft plan states that reclassification to threatened status may be considered when there are stable or increasing population/metapopulations of least Bell's vireos for a period of 5 consecutive years, each consisting of several hundred or more breeding pairs at the following sites: Tijuana River, Dalzura/Jamul Creek/Otay River, Sweetwater River, San Diego River, San Luis Rey River, Camp Pendleton/Santa Margarita River, Santa Ana River, an Orange County/Los Angeles County metapopulation, Santa Clara River, Santa Ynez River, and an Anza Borrego Desert metapopulation. The draft plan states that each of these populations and metapopulations should be protected and managed.

The draft plan states that delisting of the least Bell's vireo may be considered when the subspecies meets the criterion for downlisting and there are stable or increasing least Bell's vireo

population/metapopulations for a period of 5 consecutive years established at the following currently unoccupied areas of the subspecies' historical range: Salinas River, a San Joaquin Valley metapopulation, and a Sacramento Valley metapopulation. The draft plan states that each of these populations and metapopulations should be protected and managed.

Lastly, the draft plan states that threats to the least Bell's vireo at the aforementioned sites should be reduced or eliminated so that these populations/metapopulations are capable of persisting without significant human intervention, or perpetual endowments are secured for cowbird trapping and exotic plant control in riparian habitat occupied by the least Bell's vireos.

The draft recovery plan describes a strategy for reclassification, recovery, and delisting. Instrumental to this strategy is securing and managing riparian habitat within the historical breeding range of the least Bell's vireo, annual monitoring and range-wide surveys, and research activities necessary to monitor and guide the recovery effort.

5-Year Status Review

The Service completed a five-year status review for the least Bell's vireo in September 2006 (Service 2006). The 5-year review reported a 10-fold increase in the least Bell's vireo population since listing. Substantial increases occurred in San Diego County, Riverside County, Orange County, Ventura County, San Bernardino County, and Los Angeles County, while Santa Barbara County appears to have experienced a decline. The 5-year review reiterates that nest parasitism by the brown-headed cowbird is the most important threat to the least Bell's vireo. While acknowledging that the least Bell's vireo has not met the downlisting criteria from the draft recovery plan, the 5-year review determined that the sub-species is no longer in danger of extinction throughout all or a significant portion of its range, and recommended that the Service downlist the least Bell's vireo to threatened status.

Tidewater goby

The Service listed the tidewater goby as endangered on March 7, 1994 (59 Federal Register (FR) 5494). On June 24, 1999, we proposed to remove the populations occurring north of Orange County, California, from the endangered species list (64 FR 33816). In November 2002, the Service withdrew this proposed delisting rule and determined it appropriate to retain the tidewater goby's listing as endangered throughout its range (67 FR 67803). A recovery plan for the tidewater goby was completed on December 12, 2005 (Service 2005) and the 5-Year Review for the tidewater goby was completed in September 2007 (Service 2007). We revised critical habitat in 2013 (78 FR 8746, Service 2013) and a proposed rule to down list the tidewater goby was published in the Federal Register on March 13, 2014 (79 FR 14339).

Detailed information on the biology of the tidewater goby can be found in Wang (1982), Irwin and Soltz (1984), Swift et al. (1989), Worcester (1992), and Swenson (1995). We based much of the information in this status section on these sources.

The tidewater goby is endemic to California and typically inhabits coastal lagoons, estuaries, and marshes, preferring relatively low salinities of approximately 12 parts per thousand (ppt). Tidewater goby habitat is characterized by brackish estuaries, lagoons, and lower stream reaches where the water is fairly still but not stagnant. Tidewater gobies tend to be found in the upstream portions of lagoons. They can withstand a range of habitat conditions and have been documented in waters with salinity levels that range from 0 to 60 ppt, temperatures from 46 to 77 degrees Fahrenheit, and depths from approximately 10 inches to 6.5 feet.

Tidewater gobies feed on small invertebrates, including mysids, amphipods, ostracods, snails, aquatic insect larvae, and particularly chironomid larvae; however, tidewater gobies of less than 0.30 inch in length probably feed on unicellular phytoplankton or zooplankton, similar to many other early stage larval fishes.

The tidewater goby is primarily an annual species in central and southern California, although some variation in life history has been observed. If reproductive output during a single season fails, few (if any) tidewater gobies survive into the next year. Reproduction typically peaks from late April or May to July and can continue into November or December depending on the seasonal temperature and amount of rainfall. Males begin the breeding ritual by digging burrows (3 to 4 inches deep) in clean, coarse sand of open areas. Females then deposit eggs into the burrows, averaging 400 eggs per spawning effort and males remain in the burrows to guard the eggs. Male tidewater gobies frequently forego feeding, which may contribute to the mid-summer mortality observed in some populations. Within 9 to 10 days, larvae emerge and are approximately 0.20 to 0.27 inch in length. Tidewater gobies live in vegetated areas until they are 0.60 to 0.70 inch long. When they reach this life stage, they become substrate-oriented, spending the majority of time on the bottom rather than in the water column. Both males and females can breed more than once in a season, with a lifetime reproductive potential of 3 to 12 spawning events. Vegetation is critical for over-wintering tidewater gobies because it provides refuge from high water flows.

Historically, the tidewater goby occurred in at least 135 California coastal lagoons and estuaries, from Tillas Slough near the Oregon/California border south to Agua Hedionda Lagoon in northern San Diego County. The southern extent of its distribution has been reduced by approximately 8 miles. The species is currently known to occur in about 112 locations, although the number of sites fluctuates with climatic conditions. Some of these locations presumed to be occupied have not been surveyed in over 10 years. Currently, the most stable populations are in lagoons and estuaries of intermediate size (5 to 124 acres) that are relatively unaffected by human activities. Tidewater gobies that are found upstream of lagoons in summer and fall tend to be juveniles. The highest densities of tidewater gobies are typically present in the fall.

Tidewater gobies enter the marine environment when sandbars are breached during storm events. The species" tolerance of high salinities (up to 60 ppt) for short periods of time enables it to withstand marine environment conditions where salinities are approximately 35 ppt, thereby allowing the species to re-establish or colonize lagoons and estuaries following flood events. However, genetic studies indicate that individual populations rarely have contact with other

populations so natural recolonization may be rare. In Santa Barbara County during the fall of 1994, tidewater gobies were reported as common in the Santa Ynez River 4 miles upstream from the lagoon (Swift et al. 1997); however, by January 1995, they were absent at the upstream sites.

Native predators are not known to be important regulators of tidewater goby population size in the lagoons of southern California. Rather, population declines are attributed to environmental conditions. During high flows, lagoon barriers are breached; exposing tidewater gobies to strong tidal conditions. As a result, tidewater goby populations generally plummet. Populations typically recover quickly in summer, with recorded mean densities of 54 to 323 fish per square foot. Tidewater goby densities are greatest among emergent and submerged vegetation (Moyle 2002).

The decline of the tidewater goby is attributed primarily to habitat loss or degradation resulting from urban, agricultural, and industrial development in and around coastal wetlands, lagoons, and estuaries. Some extirpations are believed to be related to pollution, upstream water diversions, and the introduction of non-native predatory fish species [most notably, centrarchid sunfish (*Lepomis* spp.) and bass (*Micropterus* spp.)]. These threats continue to affect some of the remaining populations of tidewater gobies.

Recovery Objectives

The goal of the tidewater goby recovery plan (Service 2005) is to conserve and recover the tidewater goby throughout its range by managing threats and maintaining viable metapopulations within each recovery unit while retaining morphological and genetic adaptations to regional and local environmental conditions. The decline of the tidewater goby is attributed primarily to habitat loss or degradation resulting from urban, agricultural, and industrial development in and around coastal wetlands. The recovery plan identifies six recovery units: North Coast Unit, Greater Bay Unit, Central Coast Unit, Conception Unit, Los Angeles/Ventura Unit, and South Coast Unit.

The recovery plan specifies that the tidewater goby may be considered for down listing when:

1. Specific threats to each metapopulation (e.g., coastal development, upstream diversion, channelization of rivers and streams) have been addressed through the development and implementation of individual management plans that cumulatively cover the full range of the species.

2. A metapopulation viability analysis based on scientifically credible monitoring over a 10-year period indicates that each recovery unit is viable. The target for down listing is for individual sub-units within each recovery unit to have a 75 percent or better chance of persistence for a minimum of 100 years.

The tidewater goby may be considered for delisting when the down listing criteria have been met and a metapopulation viability analysis projects that all recovery units are viable and have a 95 percent probability of persistence for 100 years.

5-Year Status Review

The 5-year review for the tidewater goby (Service 2007) stated that the recovery plan reflects up-to-date information; however, the 5-year review reconsidered the down listing and delisting criteria that had been included in the recovery plan (Service 2005). The 5-year review stated that other, currently available information on the species may also be used to determine the appropriate listing status of the species under the Act. These include the current number of occupied localities, current laws and regulations that act to protect the species, and our current understanding of threats and their impact on the tidewater goby. The 5-year review recommended that we reclassify the tidewater goby from endangered to threatened because we concluded that the species was not in imminent danger of extinction. The main reason for this recommendation was that the number of localities known to be occupied had more than doubled since listing.

The 5-year review also concluded that the tidewater goby may be more resilient in the face of severe drought events than believed at the time of listing. The 5-year review also stated that threats identified at the time of listing had been reduced or were not as serious as thought at that time. Although numerous threats to the tidewater goby have been identified (e.g., non-native predation and competition, pollution, cattle grazing), information on the degree of impact of these threats is generally lacking. According to the 5-year review, the increase in occupied localities indicated that the threats appeared not to be having a major impact on the tidewater goby.

On May 18, 2010, we received a petition from The Pacific Legal Foundation, requesting that the tidewater goby be reclassified as threatened under the Act. Included in the petition was reference to the 5-year review. We published a 90-day finding on January 19, 2011 (76 FR 3069), stating our conclusion that the petition presented substantial scientific or commercial information indicating that the petitioned action (reclassification of the tidewater goby) may be warranted. We published a proposed rule to down list the tidewater goby on March 13, 2014 (79 FR 14339). A final rule has not been published so the tidewater goby remains listed as endangered.

Tidewater goby critical habitat

We originally designated critical habitat for the tidewater goby on November 20, 2000 (65 FR 69693). In January 2008, we finalized a revised designation of critical habitat (73 FR 5920). On October 19, 2011, another revision to critical habitat was proposed (76 FR 64996), and on February 6, 2013, a final rule designating revised critical habitat for the tidewater goby was published (78 FR 8745).

Under the Act and its implementing regulations, we are required to identify the physical and biological features essential to the conservation of the tidewater goby in areas occupied at the time of listing, focusing on the features' primary constituent elements. We consider primary constituent elements to be the physical and biological features that, when present in the appropriate quantity and spatial arrangement to provide for a species' life-history processes, are essential to the conservation of the species. The primary constituent element specific to the tidewater goby include:

Persistent, shallow (in the range of approximately 0.3 to 6.6 feet), still-to-slow-moving water in lagoons, estuaries, and coastal streams with salinity up to 12 ppt, which provide adequate space for normal behavior and individual and population growth that contain one or more of the following:

- Substrates (e.g., sand, silt, mud) suitable for the construction of burrows for reproduction;

- Submerged and emergent aquatic vegetation, such as *Potamogeton pectinatus, Ruppia maritime, Typha latifola,* and *Scirpus* spp., that provides protection from predators and high flow events; or

- Presence of a sandbar(s) across the mouth of a lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary, thereby providing relatively stable water levels and salinity.

In total, approximately 12,156 acres fall within the boundaries of the 2013 final revised critical habitat designation. The revised critical habitat is located in Del Norte, Humboldt, Mendocino, Sonoma, Marin, San Mateo, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Diego Counties and includes 65 separate units. Approximately the last 2.5 river miles of the proposed Project, located in RMU 7, fall within critical habitat Unit MN-2 (Salinas River unit). Unit MN-2 also includes the Salinas River lagoon located immediately adjacent to and downstream of the action area and encompasses approximately 466 acres, representing approximately 3.8 percent of the total area of critical habitat designated throughout the range of the tidewater goby. Critical habitat Unit MN-2 is described in greater detail in the Environmental Baseline section of this document.

California Red-legged Frog

The California red-legged frog was federally listed as threatened on May 23, 1996 (61 Federal Register (FR) 25813, Service 1996). Revised critical habitat for the California red-legged frog was designated on March 17, 2010 (75 FR 12816, Service 2010). The Service issued a recovery plan for the species (Service 2002). A detailed description of California red-legged frogs can be found in Storer (1925), Stebbins (2003), and Jennings and Hayes (1994).

The historical range of the California red-legged frog extended coastally from southern Mendocino County and inland from the vicinity of Redding, California, southward to

northwestern Baja California, Mexico (Storer 1925, Jennings and Hayes 1985, Shaffer et al. 2004). The California red-legged frog has sustained a 70 percent reduction in its geographic range as a result of several factors acting singly or in combination (Davidson et al. 2001).

The California red-legged frog uses a variety of habitat types, including various aquatic systems, riparian, and upland habitats. California red-legged frogs have been found at elevations that range from sea level to about 5,000 feet. California red-legged frogs use the environment in a variety of ways, and in many cases they may complete their entire life cycle in a particular area without using other components (i.e., a pond is suitable for each life stage and use of upland habitat or a riparian corridor is not necessary). Populations appear to persist where a mosaic of habitat elements exists, embedded within a matrix of dispersal habitat. Adults are often associated with dense, shrubby riparian or emergent vegetation and areas with deep (greater than 28 inches) still or slow-moving water; the largest summer densities of California red-legged frogs are associated with deep-water pools with dense stands of overhanging willows (*Salix* spp.) and an intermixed fringe of cattails (*Typha latifolia*) (Jennings 1988). California red-legged frogs spend considerable time resting and feeding within dense riparian vegetation; it is believed the moisture and camouflage provided by the riparian plant community provide good foraging habitat and riparian vegetation provides cover during dispersal (Rathbun et al. 1993).

Breeding sites of the California red-legged frog are in aquatic habitats; larvae, juveniles, and adult frogs have been collected from streams, creeks, ponds, marshes, deep pools and backwaters within streams and creeks, dune ponds, lagoons, and estuaries. California red-legged frogs frequently breed in artificial impoundments such as stock ponds, given the proper management of hydro-period, pond structure, vegetative cover, and control of exotic predators. While frogs successfully breed in streams and riparian systems, high spring flows and cold temperatures in streams often make these sites risky egg and tadpole environments. An important factor influencing the suitability of aquatic breeding sites is the general lack of introduced aquatic predators. When riparian vegetation is present, California red-legged frogs spend considerable time resting and feeding in it; the moisture and camouflage provided by the riparian plant community likely provide good foraging habitat and may facilitate dispersal in addition to providing pools and backwater aquatic areas for breeding. Accessibility to sheltering habitat is essential for the survival of California red-legged frogs within a watershed, and can be a factor limiting population numbers and distribution.

During periods of wet weather, starting with the first rains of fall, some individual California red-legged frogs may make long-distance overland excursions through upland habitats to reach breeding sites. In Santa Cruz County, Bulger et al. (2003) found marked California red-legged frogs moving up to 1.7 miles through upland habitats, via point-to-point, straight-line migrations without apparent regard to topography, rather than following riparian corridors. Most of these overland movements occurred at night and took up to 2 months. Similarly, in San Luis Obispo County, Rathbun and Schneider (2001) documented the movement of a male California red-legged frog between two ponds that were 1.78 miles apart; this was accomplished in less than 32 days. However, most California red-legged frogs in the Bulger et al. (2003) study were non-migrating frogs and always remained within 426 feet of their aquatic site of residence (half of the

frogs always stayed within 82 feet of water). Rathbun et al. (1993) radio tracked several California red-legged frogs near the coast in San Luis Obispo County at various times between July and January; these frogs also stayed rather close to water and never strayed more than 85 feet into upland vegetation. Nine California red-legged frogs radio-tracked from January to June 2001, in East Las Virgenes Creek in Ventura County remained relatively sedentary as well; the longest within-channel movement was 280 feet and the furthest movement away from the stream was 30 feet (Scott 2002). Hayes and Tennant (1985) found juveniles to be active diurnally and nocturnally, whereas adults were largely nocturnal.

After breeding, California red-legged frogs often disperse from their breeding habitat to forage and seek suitable dry-season habitat. Cover within dry-season aquatic habitat could include boulders; downed trees; logs; agricultural features such as drains, watering troughs, spring boxes, abandoned sheds, or hay-ricks; and industrial debris. California red-legged frogs use small mammal burrows and moist leaf litter (Rathbun et al. 1993, Jennings and Hayes 1994); incised stream channels with portions narrower and deeper than 18 inches may also provide habitat (61 FR 25813). This type of dispersal and habitat use, however, is not observed in all California red-legged frogs and is most likely dependent on the year-to-year variations in climate and habitat suitability and varying requisites per life stage. For the California red-legged frog, this habitat is potentially all aquatic and riparian areas within the range of the species and includes any landscape features that provide cover and moisture (61 FR 25813).

Although the presence of California red-legged frogs is correlated with still water deeper than approximately 1.6 feet, riparian shrubbery, and emergent vegetation (Jennings and Hayes 1985), there are numerous locations in the species' historical range where these elements are well represented yet California red-legged frogs appear to be absent. The cause of local extirpations does not appear to be restricted solely to loss of aquatic habitat. The most likely causes of local extirpation are thought to be changes in faunal composition of aquatic ecosystems (i.e., the introduction of non-native predators and competitors) and landscape-scale disturbances that disrupt California red-legged frog population processes, such as dispersal and colonization. The introduction of contaminants or changes in water temperature may also play a role in local extirpations. These changes may also promote the spread of predators, competitors, parasites, and diseases.

Over-harvesting, habitat loss, non-native species introduction, and urban encroachment are the primary factors that have negatively affected the California red-legged frog throughout its range (Jennings and Hayes 1985, Hayes and Jennings 1988). Habitat loss and degradation, combined with over-exploitation and introduction of exotic predators, were important factors in the decline of the California red-legged frog in the early to mid-1900s. Continuing threats to the California red-legged frog include direct habitat loss due to stream alteration and loss of aquatic habitat, indirect effects of expanding urbanization, competition or predation from non-native species including the bullfrog (*Rana catesbeiana*), catfish (*Ictalurus* spp.), bass (*Micropterus* spp.), mosquitofish (*Gambusia affinis*), red swamp crayfish (*Procambarus clarkii*), and signal crayfish (*Pacifastacus leniusculus*). Chytrid fungus (*Batrachochytrium dendrobatidis*) is a waterborne

fungus that can decimate amphibian populations, and is considered a threat to California red-legged frog populations.

Recovery Objectives

The 2002 final recovery plan for the California red-legged frog (Service 2002) states that the goal of recovery efforts is to reduce threats and improve the population status of the California red-legged frog sufficiently to warrant delisting. The recovery plan describes a strategy for delisting, which includes (1) protecting known populations and reestablishing historical populations; (2) protecting suitable habitat, corridors, and core areas; (3) developing and implementing management plans for preserved habitat, occupied watersheds, and core areas; (4) developing land use guidelines; (5) gathering biological and ecological data necessary for conservation of the species; (6) monitoring existing populations and conducting surveys for new populations; and (7) establishing an outreach program. This species will be considered for delisting when:

1. Suitable habitats within all core areas are protected and/or managed for California red-legged frogs in perpetuity, and the ecological integrity of these areas is not threatened by adverse anthropogenic habitat modification (including indirect effects of upstream/downstream land uses);

2. Existing populations throughout the range are stable (i.e., reproductive rates allow for long-term viability without human intervention). Population status will be documented through establishment and implementation of a scientifically acceptable population monitoring program for at least a 15-year period, which is approximately 4 to 5 generations of the California red-legged frog. This 15-year period will preferably include an average precipitation cycle;

3. Populations are geographically distributed in a manner that allows for the continued existence of viable metapopulations despite fluctuations in the status of individual populations (i.e., when populations are stable or increasing at each core area);

4. The species is successfully reestablished in portions of its historic range such that at least one reestablished population is stable/increasing at each core area where California red-legged frog are currently absent; and

5. The amount of additional habitat needed for population connectivity, recolonization, and dispersal has been determined, protected, and managed for California red-legged frogs.

The recovery plan identifies eight recovery units, which are based on the assumption that various regional areas of the species' range are essential to its survival and recovery. The status of this species is considered within the smaller scale of recovery units as opposed to the overall range. These recovery units are delineated by major watershed boundaries as defined by U.S. Geological Survey hydrologic units and the limits of the range of the California red-legged frog.

The goal of the recovery plan is to protect the long-term viability of all extant populations within each recovery unit.

Within each recovery unit, core areas have been delineated and represent contiguous areas of moderate to high California red-legged frog densities that are relatively free of exotic species such as bullfrogs. The goal of designating core areas is to protect metapopulations that, combined with suitable dispersal habitat, will allow for long-term viability within existing populations. This management strategy will allow for the recolonization of habitat within and adjacent to core areas that are naturally subjected to periodic localized extinctions, thus assuring the long-term survival and recovery of California red-legged frogs.

ENVIRONMENTAL BASELINE

Action Area

The implementing regulations for section 7(a)(2) of the Act define the "action area" as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 Code of Federal Regulations 402.02). The action area for this biological opinion includes River Management Units 1 through 7 of the Salinas River within their designated boundaries (see maps, MCWRA 2016b), encompassing river miles 2.0 through 94.0 of the Salinas River and including portions of Gonzales Slough, Bryant Canyon Channel, and San Lorenzo Creek. To address potential effects to tidewater goby and tidewater goby critical habitat, the Salinas River downstream of RMU 7 (i.e. northwest of the Highway 1 bridge) and the Salinas River Lagoon were added. This defines a larger action area than was described in the Corps' original request (Corps 2016).

Habitat Characteristics of the Action Area

A range of habitat types are found in the action area, and their distribution and quality vary both spatially and annually with changes in precipitation, river hydrology, and water management. Vegetation in the Salinas River channel and floodplain (2 mile buffer) includes aquatic, low-flow channel or unvegetated, low stature herbaceous wetland, *Arundo*-dominated, sparse herbaceous, early successional perennial riparian, mid-successional willow, and early to mid-successional cottonwood forest (Table 2, BA; see also FEIR Table 3.5-1). Adjacent upland areas of the RMUs also include non-native ruderal grassland, coastal scrub, oak and pine woodland, isolated dune vegetation, actively farmed agricultural fields, grazing lands, developed and disturbed ground, and paved and unpaved roadway. Presence and distribution of vegetation communities vary across RMUs. RMU 1 includes a higher diversity of vegetation than other RMUs, including riparian forest (e.g. sycamore cottonwood groves) as well as emergent wetlands and sparsely vegetated sandbars. By contrast, the channel in RMU 5 is dominated by sparse herbaceous and early successional riparian vegetation and small, isolated stands of young cottonwoods, with *Arundo* prominent on many levee faces. (details in BA, "Program Area Overview").

Existing Conditions in the Action Area

RMUs in the action area primarily include privately owned farm properties which are adjacent to, enter, or cross the active river channel. The Salinas River in the action area is characteristic of a depositional environment where transverse, lateral, and point bars form the predominant channel pattern. The river represents a weakly braided channel system upstream of river mile (RM) 23.0 characterized by occasional midchannel bars. Braiding is less evident downstream of RM 23.0, possibly due to the more extensive levee system in lower reaches. Levees confine the formerly expansive floodplain, reducing the availability of deposition sites and formation of extensive sand bars. Below RM 23.0 the low-flow channel is narrower and appears less sinuous than upstream. The location and duration of surface water within each RMU varies annually (details by RMU in "Program Area Overview" in BA).

Non-native invasive plant species are pervasive in the Salinas River watershed, which has the second largest infestation of *Arundo donax* in the State of California (Cal-IPC 2011, referenced in BA), and the extent of *Arundo* varies across the RMUs (Table 2, BA). Other invasive species include tamarisk, *Cortaderia* spp. (pampas and jubata grass), and *Phoenix canariensis* (Canary Island date palm). Recent field observations suggest that drought conditions may be facilitating the spread of tamarisk in RMU 1.

Previous Consultations in the Action Area

On August 13, 1992, the Service issued a biological opinion (1-6-92-F-44) to the Corps on your permitting of the Monterey County Flood Control and Water Conservation District's (later renamed MCWRA) breaching of the Salinas River Lagoon. That biological opinion addressed the effects of breaching operations on the federally endangered Smith's blue butterfly (*Euphilotes enoptes smithi*) and brown pelican (*Pelecanus occidentalis*). That biological opinion was issued before the California red-legged frog was listed under the Act, and we determined that the proposed project was not likely to jeopardize the continued existence of either species.

We consulted formally with the Corps in 2007 on your issuance of permits to MCWRA for construction of a surface water diversion structure in the Salinas River and for mechanical breaching of the Salinas River Lagoon. We determined in our biological opinion (1-8-06-F-54) issued on July 24, 2007 that the proposed project was not likely to jeopardize the continued existence of the brown pelican, California red-legged frog, or federally threatened western snowy plover (*Charadrius alexandrinus nivosus*).

We consulted informally with the Corps in 2014 on your issuance of a permit to MCWRA for the Salinas River Multi-Benefit Demonstration Project, a smaller-scale pilot version of the proposed Project in RMUs 4 and 5, and issued our concurrence (2014-I-0416) that the proposed project was not likely to adversely affect the California red-legged frog, California tiger salamander, least Bell's vireo, San Joaquin kit fox, or southwestern willow flycatcher on September 22, 2014. The Salinas River Multi-Benefit Demonstration Project has been implemented in RMUs 4 and 5 for the past two years with no reported impacts to listed species

(MCWRA 2016a).

Status of the Species in the Action Area

Information used to develop this section includes CNDDB occurrence data, observations made during reconnaissance-level surveys of the action area in winter 2014 (RMUs 4 and 5 only) and spring and summer 2015, reports submitted to the Service, published literature, and information provided by regional species experts and resource agencies. Protocol surveys for listed species were not conducted for the proposed Project. A description of the methods utilized for the reconnaissance-level surveys can be found in the biological assessment (MCWRA 2016a) and final environmental impact report (MCWRA 2014a). The Salinas River Multi-Benefit Demonstration Project has been implemented in RMUs 4 and 5 for the past two years, with no reported impacts to listed species to date (MCWRA 2016a).

Least Bell's vireo

RMUs 1-5 and the majority of RMU 6 are within the historic range of the least Bell's vireo (Service 1998b). Critical habitat for the least Bell's vireo is not found within the action area. The species was considered extirpated from Monterey County by around 1960. Surveys conducted along the Salinas River between the Highway 1 Bridge and Bradley between 1996 and 2001 for an Army Corps Regional General Permit found no least Bell's vireos (MCWRA 2016a). However, a singing male was observed in 1993 near Bradley (Service 1998b) and a non-territorial male was observed in 2012 near San Miguel in northernmost San Luis Obispo County, just over the county line and approximately 20 miles upstream of the action area (HTH 2013). A stable breeding population is not currently known to exist along the Salinas River, but systematic surveys have not been conducted within the action area in 15 years and individuals may breed in localized areas. Recent observations suggest least Bell's vireos are using and may be recolonizing upstream reaches in adjacent San Luis Obispo County. In 2005 a male and breeding pair were observed near Paso Robles but nesting was never confirmed (SBC 2007, CNDDB 2016), and in 2005 and 2009 a territorial male was observed near Wellsona Road north of Paso Robles. Protocol-level surveys conducted in 2012 near Wellsona Road detected no least Bell's vireos (Service 2012). Least Bell's vireos were also recorded breeding successfully outside of the Salinas River watershed in 2001 near San Juan Bautista, approximately 13 linear miles northeast of RMU 7 (CNDDB 2016).

Agriculture and development immediately adjacent to the Salinas River are recognized disturbances, but areas of suitable early and mid-successional riparian habitat with the dense understory preferred by breeding vireos occur in scattered patches throughout the action area. The highest quality habitat is concentrated in RMUs 1 and 2, particularly from river miles 70 to 94 where habitat structure is more suitable and reaches are free of *Arundo* infestation (Service 1998b, MCWRA 2014a, 2016a). However, it is worth noting that least Bell's vireos have occasionally been observed in southern California nesting in dense *Arundo* patches and in a variety of habitat types adjacent to riparian habitats (Labinger and Greaves 2001, Pike et al. 2004). There is also potential for least Bell's vireos to breed in the proposed maintenance areas

within Bryant Canyon Channel and San Lorenzo Creek. Least Bell's vireo numbers have increased 10-fold overall since their listing as endangered in 1996, and the species is re-colonizing previously occupied areas and occurring in locations where it was previously undocumented (Service 2006, Howell et al. 2010). Thus, while the current probability of least Bell's vireos occurring in the action area is believed to be low, the species could occur and potentially breed within the action area during the proposed 10-year duration of the Project, and the proposed action could increase the likelihood of occurrence over the life of the Project.

Recovery

The action area encompasses 92 miles of the Salinas River, one of three historically occupied sites identified as recovery targets in Criterion 2 of the draft recovery plan for the least Bell's vireo (Service 1998b). Recovery Criterion 2 is one of two delisting criteria, and defines the goal of achieving stable or increasing populations/ metapopulations of the least Bell's vireo, consisting of several hundred or more breeding pairs, along the Salinas River, Sacramento Valley, and San Joaquin Valley. The draft recovery plan emphasizes the conservation and management of riparian habitat within the historical range of the least Bell's vireo, including the reduction of threats from cowbird parasitism and invasion by exotic plants. The action area provides areas of suitable breeding habitat for least Bell's vireos, particularly in RMUs 1 and 2. Nesting by least Bell's vireos has not been confirmed along the Salinas River since 1983. However, individuals have been observed sporadically in locations upstream of the action area in Monterey and San Luis Obispo Counties since the species' listing in 1986 and as recently as 2012, suggesting the species may be recolonizing areas of its historic range. If least Bell's vireos were observed using the action area in the future, especially for breeding, this would be significant and represent further evidence of the species' overall recovery. The proposed maintenance activities, if successful, may improve the quality of riparian habitat in the long term and promote future use of the action area for breeding by least Bell's vireos.

Tidewater goby

The Salinas River Lagoon immediately downstream of RMU 7 is within the historic range of the tidewater goby, and together with the most downstream approximately 1.7 river miles of RMU 7 down to the Highway 1 bridge constitutes designated critical habitat for this species (see "Tidewater goby critical habitat" below). Tidewater gobies were believed to be locally extirpated from the Salinas River Lagoon after being last collected there in 1951, and were not observed during surveys in 1991,1992, or in more recent surveys conducted through 2004 (Service 2005). However, tidewater gobies were recently found by MCWRA in the Salinas River Lagoon in 2013 (2 individuals) and 2014 (≥67 individuals) during annual fisheries monitoring surveys for south central California coast steelhead associated with the Salinas Valley Water Project (MCWRA 2014b, Hagar & MCWRA 2015). These were the first surveys in which tidewater gobies were detected in the Lagoon since monitoring efforts were initiated there in 2002, and represent a significant recolonization of historically occupied habitat (see also "Recovery" immediately below). More recent survey data for the Salinas River Lagoon are not yet available.

Current information regarding habitat availability and quality for tidewater goby is not provided in the BA, as this species was not included in the Corps' initial consultation request. The recovery plan for the species (Service 2005) describes habitat conditions in the lower Salinas River and its lagoon at the time it was written, as the site constitutes a recovery sub-unit for the species (see "Recovery" below). The recovery plan states that available tidewater goby habitat encompassed approximately 250 acres in 2005, considered large in relation to other historic and currently occupied sites. Approximately 20 percent of adjacent lands were owned and managed by the Salinas National Wildlife Refuge, the remaining were privately owned. The Salinas River estuary at the time of the recovery plan was designated as "Water Quality Limited" by the State Water Resources Control Board, subject to pollutants and stressors such as fecal coliform from past sewage discharge, pesticides and nutrients from agricultural activities, high salinity/ chlorides, and sedimentation/siltation resulting from agriculture, grazing, road construction, land development, channel erosion. Recent analyses indicate water quality issues remain in the lower Salinas River (CCWQCB 2014). The recovery plan also identified exotic fishes and altered hydrology from channelization and water diversions as threats, and indicated the amount of habitat restoration needed here was high. Given similar current land use in the vicinity, we also expect that the latter threats are still present to varying extents.

Recovery

The most downstream portion of the action area is an essential site in the context of the overall recovery of the tidewater goby. The Salinas River Lagoon and the final approximately 1.3 river miles of RMU 7 lie within the Greater Bay Area Recovery Unit and Recovery Sub-Unit GB 11 (Monterey County-Salinas River) for the tidewater goby, and mark the southernmost extent of this sub-unit as defined in the recovery plan (Service 2005). The lower Salinas River is identified as a potential reintroduction site in the recovery plan, thus the recent detection of tidewater gobies in 2013 and again in 2014 in the Salinas River Lagoon following a long period of presumed extirpation from this site marks a significant event in the context of the species' overall recovery. If tidewater gobies continue to occur in the lagoon it is likely they would also be present in perennial portions of the lower Salinas River itself upstream of the Highway 1 bridge, wherever suitable habitat exists in the lower portions of RMU 7. Continued monitoring of the lagoon and lower Salinas River will be essential in understanding the recovery of the tidewater goby overall and in Recovery Sub-Unit GB11.

Tidewater goby critical habitat

The Salinas River Lagoon and the most downstream approximately 1.7 river miles of RMU 7 constitute designated critical habitat Unit MN-2 (Salinas River) for the tidewater goby (Service 2013). As described in the critical habitat rule, this unit constitutes 466 acres and is largely and approximately equally under federal and private ownership. At the time of listing Unit MN-2 was outside the known occupied range of the tidewater goby, but was nonetheless determined to be essential for the conservation of the species. The area in Unit MN-2 was identified as a potential reintroduction site in the recovery plan (Service 2005). MN-2 would provide habitat

for tidewater gobies dispersing south from Bennett Slough and Moro Cojo Slough, either naturally or via reintroduction, which may serve to decrease the risk of extirpation of this local metapopulation. Unit MN-2 also allows for connectivity between tidewater goby source populations and thereby may support gene flow and metapopulation dynamics within the Greater Bay Area Recovery Unit. This unit is one of only three locations in Monterey County that have harbored tidewater goby, and one of two subpopulations in the metapopulation described in the recovery plan. Therefore, this unit is especially important for ensuring the viability of the metapopulation (Service 2013).

Unit MN–2 possesses the primary constituent element that is needed to support the tidewater goby. On an intermittent basis, MN–2 possesses a sandbar across the mouth of the lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary, and thereby provides relatively stable conditions (PCE 1c). PCEs 1a (substrates suitable for construction of burrows for reproduction) and 1b (submerged and emergent aquatic vegetation providing protection from predators and high flow events) occur throughout the unit, although their precise location during any particular time period may change in response to seasonal fluctuations in precipitation, tidal inundation, and water management of the Salinas River system.

California red-legged frog

The action area is located within the current range of the California red-legged frog. Designated critical habitat is not found within or downstream of the action area, with the nearest units approximately 2.6 miles from the nearest riverside parcel in RMU 3 and 3.1 miles from RMU 4 (MCWRA 2016a). Protocol surveys for California red-legged frogs were not conducted for this Project, but frogs have been recorded within and near downstream portions of the action area (CNDDB 2016, MCWRA 2016a). Subadult frogs were observed in 2008 and 2009 at the site of the then-future Salinas River Diversion Facility in RMU 7 near river mile 5, on the east bank of the Salinas River in streamside emergent vegetation. In 1999, a juvenile California red-legged frog was observed along the edge of the Salinas River between the lagoon and the diversion dam site (MCWRA 2016a). Near the action area, California red-legged frog larvae were found in 2011 southwest of RMU 6 in the former Fort Ord's Toro Pond, adjacent to El Toro Creek and approximately 3.0 river miles upstream from its confluence with the Salinas River (Bruce Delgado, pers. com.). Frogs have also been reported from Moro Cojo Slough (2007) and near Elkhorn Slough (2007) approximately 5 linear miles north of the Salinas River in RMU 7 (CNDDB 2016). Most of the action area and adjacent uplands are in private ownership, and thus have likely never been surveyed for California red-legged frogs.

The BA (Table 6) indicates that RMUs 1, 6, and 7 are most likely to support California red-legged frogs, with the remainder of the action area providing low habitat suitability. There are no known breeding locations in the action area and suitable breeding habitat is limited, but non-breeding aquatic and riparian habitat has been identified at scattered locations along the mainstem of the Salinas River (MCWRA 2016a). RMU 1 provides non-breeding habitat but there are no known occurrences within 10 miles of the channel, and RMUs 1 to 5 lack nearby

breeding habitat and there are no known observations within 5 miles. Suitable habitat is more prevalent in the lower portions of RMU 6 and in RMU 7. It is likely that the availability of aquatic habitat preferred by California red-legged frogs (still or slow-moving backwaters and pools) and its suitability for breeding varies with precipitation and other conditions in the Salinas River system. Upland habitat is present in the action area during at least portions of the year depending on flows in the Salinas River, while a range of habitat types in the action area including roads and disturbed areas may provide dispersal habitat, especially during wet weather. There is a low potential that California red-legged frogs could use habitat in Bryant Canyon Channel and San Lorenzo Creek. The probability of encountering any life stage of the California red-legged frog in the action area would be greater during the wet season.

Recovery

The action area is wholly within the Diablo Range and Salinas Valley (RMUs 1, 2, 5, 6 and most of RMUs 3 and 4) and Central Coast (small portions of RMUs 3 and 4 and all of RMU 7) Recovery Units described in the recovery plan for the California red-legged frog (Service 2002). The recovery status of the California red-legged frog in the Diablo Range and Salinas Valley Recovery Unit was considered "medium" at the time the recovery plan was written with threats identified from agriculture, grazing, mining, non-native species, recreation, urbanization, and water management/diversions, while the species' status in the Central Coast Recovery Unit was considered "high" though a similar suite of threats remained in that unit. The lower half of RMU 6, all of RMU 7, and a tributary of the lower Salinas River (El Toro Creek) are also within the Watsonville Slough-Elkhorn Slough Core Recovery Area (Core Area 19, previously referred to as the Salinas River-Pajaro River Core Area in the recovery plan) within the Diablo Range and Salinas Valley Recovery Unit. Core areas are locations targeted for development and implementation of management and protection plans for the California red-legged frog. The Watsonville Slough-Elkhorn Slough core area encompasses approximately 201,897 acres and was selected because it was currently occupied, serves as a source population providing colonizers to nearby areas, and provides necessary connectivity between known populations (Service 2002). Conservation actions identified for the Watsonville Slough-Elkhorn Slough Core Area include protect existing populations, protect habitat connectivity, reduce impacts of agriculture, improve water quality, and reduce impacts of urbanization.

EFFECTS OF THE ACTION

Least Bell's vireo

The least Bell's vireo has not been reported within the action area in recent years and a breeding population is currently not known to exist along the Salinas River, but the species has been observed sporadically since 1993 as near as 20 river miles upstream of RMU 1. Most of the action area is in private ownership and has not been recently surveyed, with the last systematic surveys conducted in 2001. Suitable breeding habitat occurs, predominantly in RMUs 1 and 2, and maintenance activities may result in an increase in breeding habitat over the course of the

Project which could attract vireos. While we consider the current probability of occurrence to be low, least Bell's vireos may occur and breed in the action area, thus the Project could have direct and indirect effects on vireos.

A maximum of approximately 875 total acres of habitat within all RMUs would be directly affected during the course of the proposed Project, with 700 acres constituting vegetated areas 250 acres of which are *Arundo*-dominated (MCWRA 2016c). Some or all of the total acreage could be affected in multiple years of the Project through re-treatment and ongoing maintenance. Removal of native shrubs and trees outside of the breeding season could decrease local breeding and foraging habitat for vireos colonizing the site in the future, and if occurring within or adjacent to a previously occupied least Bell's vireo breeding territory, could make the site less suitable for vireos returning the following spring given the species' high site fidelity. The latter could indirectly harm vireos by decreasing foraging opportunities and expose adults forced to search for a new breeding site to increased risk from predation, expenditure of energy, and lowered reproductive success. Most of these impacts would likely manifest themselves incrementally and be very difficult to observe or quantify.

Arundo treatment and removal during the breeding season could directly harm vireos using this plant for nesting but not detected during surveys by destroying nests containing eggs or nestlings or disturbing adults caring for young, or indirectly by lowering habitat suitability and displacing returning adults from a previously used territory. Improper handling of removed *Arundo* plant parts could also degrade downstream vireo habitat if this material entered the river system, but the proposed conservation measures to properly handle and dispose of this material should minimize this impact. In the longer term the proposed vegetation management activities should benefit least Bell's vireos, in particular the removal of *Arundo* should promote the development of far more suitable native vegetation.

Mitigation planting of larger willows, cottonwoods and other species should have long-term benefit for least Bell's vireos, but in the short term the activity associated with mitigation planting, if conducted during the breeding season, could harm nesting vireos by harassing them and interfering with normal breeding behavior and caring of young, or by displacing adults and fledglings from their territory. Concentrating this activity outside the breeding season and conducting pre-activity surveys for vireos during the breeding season would avoid and minimize these effects.

Least Bell's vireos could be exposed to herbicides (glyphosate and/or imazapyr) applied during the breeding season for *Arundo* removal through drift or by coming into contact with recently treated vegetation. Studies indicate that both glyphosate and imazapyr have low toxicity to avian receptors (EXTOXNET 1996, EPA 2000, Fisher et al. 2003, Durkin and Follansbee 2004, EPA 2007, Kegley et al 2010, MOEEA 2012). The Service classifies glyphosate and imazapyr as Class 0 pesticides for ecotoxicity to small avian species: based on the results of a screening-level hazard assessment, we consider these pesticides to be practically nontoxic to small avian species (White 2007). Herbicide application during the breeding season will be preceded by surveys for least Bell's vireos and adequate buffers will be established around any nests detected, thus we

expect direct effects from herbicide application to be minimal. Herbicide application could indirectly affect least Bell's vireos if non-target native vegetation is inadvertently killed by overspray by reducing suitability of foraging or nesting habitat within active territories or displacing vireos returning to breeding sites. Proper application of herbicides and avoidance of days when wind or rainfall may disburse herbicides will minimize the likelihood of these effects.

Vegetation and sediment removal and side channel creation and grading have the potential to alter the overall geomorphology and hydrology of the Salinas River within and upstream of the action area in unexpected ways. This could in turn potentially alter the distribution and/or availability of suitable riparian habitat for vireos, e.g. by increasing bank erosion or mobilizing sediments that collect around and cover native plants in downstream areas. Hydraulic modeling results indicate that the Project design and amount of sediment to be removed annually should not result in streambed degradation of the Salinas River within the action area, and should lead to more natural floodplain conditions and improved streamside native habitat conditions over the life of the Project. In the short term we do not expect maintenance activities to degrade or reduce the availability of habitat for least Bell's vireos overall, and in the long-term habitat suitability and availability should improve.

Grading and recontouring of side channels following vegetation removal and associated use of heavy equipment could temporarily reduce suitable riparian habitat for least Bell's vireos by compacting soils within and adjacent to side channels and in turn inhibiting the growth or regeneration of native plants. Given that the location of side channels has been designed to minimize removal of native vegetation and side channels have been designed to become active during relatively frequent (i.e. 5-year) flood events, we expect that any such impacts would be limited and temporary.

Disturbance from Project activities conducted during the March 15 – September 15 breeding season, including presence of workers, vehicles, heavy equipment and associated noise, dust, vibration, and other disturbance, could cause least Bell's vireos to leave or avoid suitable habitat, despite conservation measures to avoid nests and reduce noise in breeding habitat. Moving to an unfamiliar territory may expose adults to exhaustion and reduced fitness or starvation associated with decreased foraging opportunities, increased predation risk, adverse inter- and intra-specific interactions, and decreased probability of nesting success. If an active nest is present juveniles could be flushed from protected areas, increasing predation risk. Many project activities would occur outside of the nesting season, but if least Bell's vireos are present in work areas during the breeding season the proposed conservation measures, including establishing adequate buffer zones around nests and territories, would minimize these effects.

Human presence may attract predators to an area. Predators as well as parasitic cowbirds may be able to "home in" on least Bell's vireos that become agitated by human presence and destroy or parasitize vireo nests (TNC 1997, Chace et al. 2002). Trash left during or after Project activities could attract predators including coyotes (*Canis latrans*) and raccoons (*Procyon lotor*) that could prey on least Bell's vireo eggs or nestlings. This potential impact would be reduced or avoided by the proposed control and removal of trash during the Project.

Activities including excavation, compaction and grading occurring within or adjacent to riparian habitat during the breeding season may produce noise and negatively affect least Bell's vireos. Many songbirds, including the least Bell's vireo, are sensitive to prolonged, loud noises; construction-related noise and vibrations can adversely affect breeding and nesting behavior and reduce nesting success. If construction noise increases after a least Bell's vireo has established a nest or breeding territory near the project, nest abandonment could occur, resulting in a failed breeding attempt, death of eggs and fledglings, exposure of adults to increased predation risk, negative inter- and intraspecific interactions, and decreased foraging opportunities. Moreover, least Bell's vireos rely on auditory signals in the form of songs, alarm and scolding calls to establish and defend territories, attract a mate, feed and care for young at the nest, and locate and evade potential predators (Scherzinger 1979). Increased ambient noise levels may hinder the ability of the species to cue in on these signals. The Service uses 60 decibels (dB) as a practical threshold above which substantial impacts to the least Bell's vireo may occur. Based upon this threshold, RECON (1989) estimated that noise levels above 60 dB from March 15 to September 15 may impact least Bell's vireo reproductive success. Avoiding the use of heavy equipment and noise-generating activities during the breeding season, and limiting noise levels during the breeding season in riparian habitat occupied by vireos by establishing adequate buffers, would reduce these impacts.

In summary, given recent occurrences of the species upstream of the action area, the presence of suitable breeding habitat, and proposed activities in riparian habitats, the Project could adversely affect some least Bell's vireos by removing or degrading suitable habitat or by harassment leading to avoidance of or displacement from the action area and disruption of normal behavior. The likelihood that the species would be present is relatively low, many activities would take place outside of the breeding season, and the Corps and applicant have proposed avoidance and minimization measures to reduce potential impacts. Based on these factors, we anticipate that few least Bell's vireos are likely to be killed or injured by the proposed project.

Effects on Recovery

We anticipate that effects on recovery of the least Bell's vireo will be minimal in the short term, and likely beneficial in the long term. The Salinas River corridor is an historically occupied site and is targeted in the draft recovery plan for reestablishment of a breeding population (Service 1998b). A stable breeding population is not currently known to exist on the Salinas River and least Bell's vireos have been observed sporadically upstream of the action area since 1983. The current likelihood of least Bell's vireos occurring in the action area is relatively low, though vireos are more likely to occur in southern portions of the action area. The Project would impact up to 700 total acres of vegetation annually representing 4.2% of the vegetation in the RMUs, and 250 acres of which is *Arundo*-dominated. Restoration of larger native shrubs and trees would occur concurrently. We therefore expect that the Project will not significantly reduce foraging or breeding habitat for least Bell's vireos or affect their numbers or distribution in the short term.

The draft recovery plan emphasizes conservation and management of riparian habitat within the historical range of the least Bell's vireo including the reduction of threats from invasion by exotic plants including *Arundo*. The Project would emphasize removal of *Arundo*, removal of in-channel sediment, and creation of side channels, together designed to produce more natural floodplain behavior and maintain or increase the quantity and quality of native vegetation types over the 10-year work period. If the Project results in the predicted improvements it could promote recolonization of the Salinas River by least Bell's vireos and contribute to the species' overall recovery in the long-term, and increase the likelihood that vireos could occupy and breed in the action area over the life of the project.

Disturbance from ongoing maintenance activities during the breeding season could cause vireos to avoid or leave the area or disrupt breeding, diminishing or negating Project benefits on recovery. Pre-work surveys, establishment of nest buffers, and the tailing-off of management actions in later Project years would avoid or minimize these impacts. The Corps would contact the Service if vireos are observed, providing the opportunity to adjust activities if needed. The proposed surveys could provide valuable information for recovery efforts, given that the action area is largely under private ownership and much of it has not been systematically surveyed. Thus we expect the project to result in no long-term reductions, and potentially a local increase, in least Bell's vireo numbers and distribution, and to potentially contribute positively to the species' recovery.

Summary of effects to least Bell's vireo

Based on the relatively low likelihood of occurrence, limited amount of breeding habitat (at least at the start of the project),, the minimal temporary loss and potential long-term gain of riparian habitat including breeding habitat, and proposed avoidance and minimization measures to be implemented by the Corps and applicant, we conclude that few least Bell's vireos are likely to be killed or injured as a result of Project activities. The Project would affect at most a small number of least Bell's vireos in the short term if any occur, primarily in the form of habitat degradation or removal and disturbance leading to avoidance of the action area, while over the long-term the project is expected to have a neutral or positive effect on the species. We anticipate no long-term negative effects to the overall population, breeding and reproductive capacity, or recovery of the least Bell's vireo due to the Corps' proposed action, and the Project may contribute positively to the species' recovery if it is successful in removing *Arundo* infestations and promoting more natural hydrologic and ecological conditions along the lower Salinas River.

Tidewater goby

Tidewater gobies have recently been detected immediately adjacent to the action area in the Salinas River Lagoon and may be present in downstream areas of RMU 7. Project activities would take place adjacent to but outside of aquatic habitats and precautions would be taken in the event of rain and increased river flows which could activate newly-constructed side channels. Nonetheless project activities could have direct and indirect effects on tidewater gobies.

If rain events or unexpected high flows on the Salinas River activate side channels before excavation is complete and allow tidewater gobies to enter work areas, goby adults, fry and eggs could be inadvertently crushed by workers or construction equipment. Tidewater gobies left stranded in flooded side channels could die from desiccation, suffocation, or opportunistic predation. Side channel construction would take place before November 15 and work would not occur in the event of rain, and a Service approved biologist would survey for and relocate any tidewater gobies found in work areas. Side channels would also be designed to activate in the event of a 2-5 year flow event and provide positive drainage, making these effects less likely. In the long-term, side channel creation may benefit tidewater gobies by creating new areas of suitable habitat adjacent to the main channel.

Survey, capture, and relocation of tidewater gobies could result in injury or death as a result of unintended physical injury, intraspecific competition with individuals at the relocation site, and increased risk of predation. The lack of familiarity with the relocation site could also adversely affect potential breeding, feeding, and sheltering behavior. Use of Service-approved biologists to survey, capture, and move individuals, and relocation of individuals to the Salinas River Lagoon with which they may be more familiar would reduce these effects. We also expect that few tidewater gobies will need to be relocated during the course of the proposed Project as most activities will occur in the dry season and outside of aquatic habitat.

Removal of emergent aquatic vegetation in RMU 7 could negatively affect tidewater goby habitat by reducing the availability of plants used for cover, which could in turn increase predation risk and make gobies more susceptible to being swept downstream by high flow events. Removal of streamside riparian plants and trees could alter goby habitat by raising water temperatures. We expect these effects to be minimal because the applicant proposes to avoid removal of emergent vegetation in areas of potential goby habitat, and the amount of streamside riparian vegetation to be removed would be a small proportion of the total in RMU 7.

The transport of invasive plant materials (e.g. tamarisk, *Arundo*) downstream from vegetation management areas could have negative impacts on tidewater goby habitat in downstream portions of RMU 7 or in the Salinas River Lagoon. Establishment of invasive aquatic and riparian plants has been shown to reduce habitat quality for tidewater gobies (Service 2005). The applicant proposes to carefully control and dispose of nonnative invasive plant materials removed during management activities, and management areas would be retreated for invasive plants as needed during the 10-year Project timeframe, reducing the likelihood of these effects.

Herbicides may adversely affect water quality in RMU 7 or the Salinas River Lagoon. Herbicides drifting into aquatic areas have potential to harm tidewater gobies and eggs or their prey species. The applicant proposes to use glyphosate or imazapyr, herbicides approved for use in aquatic environments. No information is available regarding the toxicity of either of these compounds to the tidewater goby. Toxicity studies of imazapyr in various other species indicate imazapyr is of low to moderate toxicity to fish (TNC 2004, Kegley et al. 2010, MOEEA 2012). Toxicity studies on bluegill sunfish (*Lepomis macrochirus*) and rainbow trout (*Oncorhynchus mykiss*) indicate that Aquamaster (active ingredient glyphosate) is practically non-toxic to these

species (Monsanto 2005). Studies compiled by the Pesticide Action Network indicate that both imazapyr and glyphosate range from not acutely toxic to moderately toxic depending on the fish species (Kegley et al., 2010). Because the toxicity of imazapyr- and glyphosate-containing products can vary significantly between species, a conservative assumption would be that products containing these substances are moderately toxic to tidewater gobies. The concentration that tidewater gobies could be exposed to would be much less than the application concentration due to dilution by river and lagoon waters. We anticipate this concentration will result in minimal toxic effects to tidewater gobies. The applicant would apply herbicides in the dry season outside of aquatic habitats, and avoid application when wind and rain could increase the risk of transport to water in RMU 7. Therefore, we expect that few tidewater gobies would be injured or killed through overspray of herbicides.

Sedimentation into habitats occupied by tidewater gobies may be increased by Project activities in the short-term. Sediments may be mobilized by bar ripping, side channel excavation and grading, removal of in-channel native and invasive non-native vegetation, and changes in the hydrology and sediment transport behavior of the Salinas River. Increased sediment deposition in occupied habitat could harm adults by impairing the efficiency of their gill filaments and exposing them to higher salinities and/or predation as they flee downstream. Sediments could smother tidewater goby eggs, reduce the suitability of substrates for burrow creation, and alter benthic food webs and prey availability. A reduction in phytoplankton can result from increased turbidity, which can in turn reduce zooplankton, in turn reducing benthic macroinvertebrate prey available to tidewater gobies (Henley et al. 2000). We are not able to determine the likelihood or magnitude of these potential effects, given that water management of the Salinas River system and maintenance activities upstream may interact to affect downstream transport and accretion of sediment unpredictably. However, the amount of sediment potentially mobilized by Project activities is expected to represent a small fraction of that typically found in Salinas River flows. The project is designed to achieve the long-term goal of reducing flow velocities overall in the Salinas River, with model results predicting no increase in overall sediment mobilization. The proposed surveys for tidewater gobies and water quality monitoring of the lower Salinas River and lagoon should provide information to help better assess the extent, if any, of these effects.

Unintended spills of fuel, oil, herbicides, and other chemicals could harm tidewater gobies if these materials were transported to aquatic habitats. These materials could poison or otherwise injure or kill tidewater gobies or require additional, unplanned clean up or restoration of affected areas. The Corps and MCWRA propose to conduct mixing of herbicides and fueling, washing, and maintenance of vehicles and equipment in locations where the risk of transport to sensitive habitats is minimized and to prepare a spill response plan. We anticipate these measures would minimize the risk of releasing contaminants into the channel and that such spills are unlikely to adversely affect tidewater gobies.

It is unclear whether the Project could alter the regime of lagoon breaching downstream of the action area, and if this occurred how it would affect the tidewater goby. The Project was designed using hydrological modeling to increase the overall carrying capacity of the Salinas River during high flow events to reduce the probability of flooding on adjacent lands, with the

predicted effects varying by RMU. The Salinas River system is also highly managed for flood control and water storage purposes, and incorporates a flow prescription to balance these needs with conservation of steelhead that involves both lagoon breaching and water releases (MCWRA 2005). An increase in the rate of breaching of the Salinas River Lagoon and number of days it is open could have negative effects on tidewater gobies, which are adapted to a brackish environment and may be "washed out" of lagoons during high flow events (Service 2007). Conversely, the Project could benefit tidewater gobies if increased carrying capacity of the Salinas River resulted in a lagoon breaching regime more favorable to gobies. Thus we are not able to estimate the likelihood, direction, or magnitude of any effects to the tidewater goby from river or reach-scale hydrological changes and effects on lagoon breaching, however we expect these to be minimal, and the Project may have overall benefits if its intended goals are achieved.

Effects on Recovery

We do not anticipate that the proposed action would substantially affect conservation of the tidewater goby in the Greater Bay Area Recovery Unit or the long-term survival and recovery of the species. The lower Salinas River including its lagoon is within recovery Sub-Unit GB-11 and was identified in the 2005 recovery plan as a potential reintroduction site. The observation of tidewater gobies in the Salinas River Lagoon in 2013 for the first time in more than 60 years constitutes a significant milestone in the species' recovery, and gobies may still be present in or downstream of the action area. The tidewater goby recovery plan emphasizes the importance of conserving population units and metapopulation dynamics. There could be negative effects to individual gobies from the Project in the short term, but these should be minimal with implementation of the proposed conservation measures, and no long-term affects to the local population are expected.

While there is some uncertainty regarding river-scale changes to hydrology and sediment mobilization and transport that could result from Project activities, modeling results suggest that in the long term the Project should increase the carrying capacity of the Salinas River and reduce overall flow velocities. This result, combined with the creation of side channels in RMU 7, may in turn increase the availability or quality of suitable goby habitat in Sub-Unit GB-11, and could potentially lead to a more favorable regime of lagoon breaching if the frequency of flooding of lands adjacent to RMU 7 is successfully reduced. The proposed tidewater goby surveys and habitat assessments of the lower Salinas River and lagoon will also contribute essential knowledge to tidewater goby recovery in Sub-Unit GB-11 and help assess the extent to which Project activities may be affecting the species locally. The proposed Project may thus help improve the stability of the local population, and in doing so contribute to the recovery of the species in the long-term.

Summary of effects to tidewater goby

Based on the likely presence of tidewater gobies in the Salinas River Lagoon and lower areas of RMU 7, we expect that the proposed Project could adversely affect tidewater gobies in the short term. Effects including increases in sedimentation, overspray and transport of herbicides into

aquatic habitat, and the potential need to capture and relocate gobies in the action area could result in death or injury of tidewater gobies, and a portion of the suitable habitat available in recovery Sub-Unit GB-11 may be directly disturbed or indirectly affected. We expect these effects to be relatively small and primarily temporary, and with implementation of the proposed avoidance and minimization measures we conclude that a small proportion, if any, of the tidewater gobies present are likely to be killed or injured in the short term. We anticipate no long-term negative effects to the local population, or to the reproductive capacity or recovery of the species. The Project may contribute positively to the species' recovery in the long term by removing *Arundo* infestations and promoting more natural hydrologic and ecological conditions along the lower Salinas River.

Tidewater goby critical habitat

Increased sediment mobilization or unexpected changes in sediment transport or hydrology resulting from maintenance activities may result in temporary impacts to or loss of substrate used for burrow construction (PCE 1a) in critical habitat Unit MN-2. However, we expect based on the Project design that any negative effects would be temporary and small relative to baseline conditions in the Salinas River, and that long-term flood control benefits from the Project may increase the stability of substrate in MN-2. Vegetation removal, transport of invasive plant materials downstream from vegetation management areas, and unexpected increases in sediment mobilization could cause loss of aquatic vegetation (PCE 1b). We expect that implementation of the proposed conservation measures would minimize the risk of new invasive plant infestations, and that any increases in sediment input to tidewater goby habitat in MN-2 would be temporary and small relative to normal levels. Unexpected large-scale changes in Salinas River hydrology resulting from the Project could require changes in the timing or frequency of manual breaching of the sandbar at the mouth of the Salinas River Lagoon (PCE 1c) and reduce the stability or extent of suitable habitat. However, we expect any such effects to be intermittent and temporary. Moreover, Project activities and locations have been designed to increase the flood carrying capacity of the river, thus may be expected to reduce the likelihood that the lagoon would require more frequent or unexpected manual breaching in the long term. Annual habitat monitoring in MN-2 would also provide important information that could be used to incorporate conservation of tidewater goby habitat into ongoing river management regimes.

Summary of effects to tidewater goby critical habitat

We expect the proposed action may temporarily alter or reduce the availability of substrate (PCE 1a) in tidewater goby critical habitat Unit MN-2, but that any effects would be temporary and relatively small. There could be some loss or degradation of aquatic vegetation (PCE 1b) from maintenance activities or due to transport of invasive plants and sediment, but again these effects should be small and short term. Unexpected changes in Salinas River hydrology could intermittently degrade PCE 1c and the stability of lagoon conditions, but the Project has been designed to promote river-scale changes which should reduce the likelihood of this effect. Thus, we expect adverse effects to tidewater goby critical habitat may occur, but they would likely be short term and minimal in a range-wide context, and that in the long run the Project may improve

the quality and stability of the PCEs in the action area.

California red-legged frog

California red-legged frogs have been observed in RMU 7 and within 3 miles of RMU 6. Limited persistent areas of slow-moving or ponded water may be suitable for breeding in some years, and suitable aquatic non-breeding, upland, and/or dispersal habitat has been identified in areas of RMUs 1, 6 and 7 and may occur in other areas depending on annual conditions. California red-legged frogs are expected to occur during some Project activities, though work conducted in the dry season will avoid periods when frogs are most active.

Vegetation management including native plant removal and trimming and non-native plant treatment would remove or disturb a maximum of approximately 700 acres of vegetation annually, any of which could provide sheltering, foraging, or dispersal habitat for the California red-legged frog during the wet season or if found in proximity to persistent water. Habitat loss has the potential to cause injury or death of California red-legged frogs if they are forced into adjacent, less suitable habitat. We expect these impacts would be reduced with implementation of the proposed conservation measures. In the long term we expect that vegetation would naturally regenerate in most maintenance areas, and is likely to be replaced in created side channels with more suitable aquatic and riparian habitat that may lead to an eventual increase in California red-legged frog numbers. This could potentially increase the likelihood that frogs would be present during maintenance activities in later years of the Project and be susceptible to impacts described below, but the frequency and extent of maintenance activities would decrease over the life of the Project and all conservation measures would still be in place.

All California red-legged frogs that occur in the action area could be adversely affected by Project activities. Injury or mortality could occur from animals being crushed by heavy equipment, vehicles, debris, and worker foot traffic and activities such as excavation of side channels, grading, bar ripping, sediment stockpiling, and vegetation clearing. Frogs could also become trapped and die in upland sheltering habitat if it is crushed or covered. California red-legged frogs may experience a significant disruption of normal behavioral patterns from worker foot traffic and activities such as sediment excavation and their associated noise and vibration to the point that reaches the level of harassment. This disruption could cause California red-legged frogs to leave or avoid suitable habitat and may increase the potential for predation, desiccation, competition for food and shelter, or strike by vehicles. These disruptions would be temporary and frogs are expected to return to areas of habitat after activities are completed. Pre-construction surveys, conducting many activities in the dry season and outside of water and wetland habitats, and the relocation of California red-legged frogs from work areas by a Service-approved biologist would reduce these impacts.

Mitigation planting of native tree species should have long-term benefit for California red-legged frogs by maintaining the quality of riparian habitat, but in the short term the equipment and worker traffic associated with this work may harm or injure frogs directly, or may harass individuals and displace them from suitable habitat to unfamiliar areas where they are vulnerable

to predation and other threats. These activities will have less effect when occurring outside the wet season and conducting pre-activity surveys for California red-legged frogs during the wet season would avoid and minimize these effects.

California red-legged frogs could become trapped and die in excavated or backfilled trenches. Examination of trenches before the start of work, use of exclusion fencing, and provision of escape ramps should minimize this impact.

California red-legged frog eggs, tadpoles, juveniles or adults may be exposed directly or indirectly to herbicides (imazapyr or glyphosate) used to treat invasive plants through direct overspray of wetlands or upland habitats, aerial drift, or contaminated runoff from treated areas. No information is available regarding the toxicity of glyphosate or imazapyr products specifically to California red-legged frogs, but studies of products containing these compounds with other amphibians indicate that it is likely the surfactants used in some formulations to improve their efficiency, and not the active ingredient itself, that are toxic (Lajmanovich et al. 2003, Edington et al. 2004, Howe et al. 2004, Govindarajulu 2008, Yahnke et al. 2013). Aquatic products containing glyphosate and imazapyr are generally formulated without the use of surfactants to reduce their toxicity. The applicant proposes to use a glyphosate or imazapyr formulation approved for use in aquatic environments, therefore, we anticipate the adverse effects of herbicide application on California red-legged frogs would be minimized and controlled. Nonetheless, we anticipate some level of injury or mortality could potentially occur as a result of the use of herbicides during the Project.

Project activities in the Salinas River including vegetation removal, side channel creation, and sediment removal may in the short term increase erosion and alter stream hydrology, potentially resulting in increased channel flows in localized areas and greater transport of sediment into habitats occupied by California red-legged frogs. Sediments could smother frogs directly, increased flows could flush frogs, eggs and tadpoles downstream from breeding areas, and sediment deposition could bury areas of suitable aquatic or riparian habitat. While some California red-legged frogs may be harmed by these effects, they are expected to be localized and temporary because the Project has been designed to increase the overall capacity of the Salinas River and reduce flow velocities in the long term, with a likely reduction in overall sediment transport.

Transport of stockpiled soil, spilled oil, fuel or other contaminants into aquatic, wetland, and upland habitat could degrade habitat to a degree where California red-legged frogs are injured or killed. The proposed avoidance measures, including conducting work in the dry season, avoiding work in or adjacent to water or wetlands, conducting fueling and vehicle washing away from aquatic habitats, and preparing a hazardous spill response plan would reduce these impacts.

California red-legged frogs can disperse overland in mesic conditions if substantial rainfall (greater than 0.5 inch of rain in a 24-hour period) occurs. During such periods of rainfall, we expect a higher likelihood of California red-legged frogs occurring in the Project area. Any amphibians moving through the Project site would be at risk of injury or death caused by

vehicles, equipment, or workers, and fencing and excavation of linear trenches could entrap frogs and interfere with their movement. The applicant's proposal to conduct most Project activities between June 1 and November 15 when California red-legged frogs are less likely to be active, to stop work in the event of rain, and cover or provide escape ramps for open trenches should minimize these impacts.

Capture and relocation of California red-legged frogs could result in injury or death as a result of improper handling, containment, transport, or release into unsuitable habitat. Although survivorship for translocated California red-legged frogs has not been estimated, survivorship of translocated wildlife in general is reduced due to intraspecific competition, lack of familiarity with the location of potential breeding, feeding, and sheltering habitats, and increased risk of predation. Using Service-approved biologists, limiting the duration of handling, and requiring the proper transport of individuals should reduce these impacts, and overall the translocation of individuals from work areas would likely reduce the level of mortality that otherwise would occur if California red-legged frogs were not removed.

Observations of diseased and parasite-infected amphibians are now frequently reported. Releasing amphibians following a period of captivity, during which time they can be exposed to infections, may cause an increased risk of mortality in wild populations. Amphibian pathogens and parasites can also be carried between habitats on the hands, footwear, or equipment of fieldworkers, which can spread them to localities containing species that have had little or no prior contact with such pathogens or parasites. Chytrid fungus is a water-borne fungus that can be spread through direct contact between aquatic animals and by a spore that can move short distances through the water. The fungus only attacks the parts of an animal's skin that have keratin (thickened skin), such as the mouthparts of tadpoles and the tougher parts of adults' skin, such as the toes. It can decimate amphibian populations, causing fungal dermatitis, which usually results in death in 1 to 2 weeks. Infected animals may spread the fungal spores to other ponds and streams before they die. Once a pond has become infected with chytrid fungus, the fungus stays in the water for an undetermined amount of time. Relocation of individuals captured from the Project area could contribute to the spread of chytrid fungus. In addition, infected equipment or footwear could introduce chytrid fungus into areas where it did not previously occur. The Corps' and applicant have proposed to follow the Declining Amphibian Populations Task Force's Fieldwork Code of Practice to minimize the spread of chytrid fungus and other pathogens during the Project.

Trash left during or after Project activities could attract predators to the work site, which could in turn prey upon California red-legged frogs. For example, raccoons (*Procyon lotor*) and feral cats (*Felis catus*) are attracted to trash and also prey opportunistically on the California red-legged frog. This potential impact would be reduced or avoided by the proposed control of waste products at all work sites.

Uninformed workers could disturb, injure, or kill California red-legged frogs. The potential for this to occur would be reduced by educating workers on the presence and protected status of these species and the measures that are being implemented to protect them during Project

activities. The use of flagging to demarcate work areas would further reduce these potential impacts by preventing workers from encroaching into environmentally sensitive habitat.

In summary, the proposed action may injure or kill some California red-legged frogs directly, harass individuals and displace them from habitats, or remove suitable habitat, given the previous occurrence of the species in downstream portions of the action area and the availability of aquatic breeding, non-breeding, upland, and dispersal habitat in some locations. However, the Corps and MCWRA have proposed avoidance and minimization measures to reduce these impacts, would avoid work in aquatic and wetland habitats, and would conduct most Project activities in the dry season to reduce the likelihood that California red-legged frogs would be present. Based on these factors and the temporary nature of most impacts, we anticipate that few California red-legged frogs are likely to be killed or injured during this work.

Effects on Recovery

We do not expect the proposed Project to substantially affect the recovery of the California red-legged frog in the Diablo Range and Salinas Valley or Central Coast Recovery Units or within the Watsonville Slough-Elkhorn Slough Core Recovery Area. The proposed Project would not increase the threats currently impacting the California red-legged frog in these Recovery Units or Core Area as identified in the Recovery Plan and described above. The Project would not preclude the Service's ability to implement recommended recovery actions in these areas including protecting existing populations and improving water quality (Service 2002). Project impacts would be largely temporary, affect a small proportion of the available habitat within the recovery areas most of which is of low to moderate suitability and currently unoccupied, and would not affect the capacity of the Watsonville Slough-Elkhorn Slough Core Recovery Area to serve as a source population or provide connectivity between known populations. The Project may benefit recovery for the species by increasing in the availability of suitable habitat in the long term, and pre-activity surveys may yield data important to recovery as many areas of the Salinas River are under private ownership and have never been surveyed. Thus we do not believe the proposed Project would substantially affect the conservation and recovery of the California red-legged frog and may provide a net recovery benefit.

Summary of effects to the California red-legged frog

Based on the prior occurrence of the species and presence of suitable habitat in limited portions of the action area, we expect that the proposed Project could harm or harass some California red-legged frogs in the short term. Use of heavy equipment and the potential need to capture and relocate individuals could result in death or injury of California red-legged frogs, while removal of vegetation, mobilization of sediments, and overspray and transport of herbicides could reduce the quality and availability of habitat or harm frogs by displacing them to less secure locations. We expect these effects to be relatively small and primarily temporary, and with implementation of the proposed avoidance and minimization measures and dry season work windows we conclude that a small number of California red-legged frogs are likely to be killed or injured during the Project. We anticipate no long-term effects to the local population or to the

reproductive capacity or recovery of the species. The Project may contribute positively to the species' recovery in the long term by promoting more natural hydrologic and ecological conditions along the lower Salinas River and increasing the availability of suitable habitat in and adjacent to the created side channels.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. We do not consider future Federal actions that are unrelated to the proposed action in this section because they require separate consultation pursuant to section 7 of the Act. We are not aware of any non-Federal actions that are reasonably certain to occur. Activities within and adjacent to the action area (e.g. agriculture, water management) are not expected to change in the near future. Thus impacts to listed species potentially associated with these activities, such as the attraction of cowbirds which could parasitize nesting least Bell's vireo nests or the erosion and runoff of sediment and agricultural chemicals into aquatic habitats, would likely continue at present levels.

CONCLUSION

The regulatory definition of "to jeopardize the continued existence of the species" focuses on assessing the effects of the proposed action on the reproduction, numbers, and distribution, and their effect on the survival and recovery of the species being considered in the biological opinion. For that reason, we have used those aspects of the status of the least Bell's vireo, tidewater goby, and California red-legged frog as the basis to assess the overall effect of the proposed action on each species.

Least Bell's vireo

Reproduction

Noise, vibration, and other disturbance associated with maintenance activities conducted during the breeding season could cause least Bell's vireos to avoid or leave the action area or reduce their nesting success, and attraction of nest predators and parasitic cowbirds could lead to nest failure. Removal of riparian vegetation, including *Arundo* if used for nesting, could reduce availability of breeding habitat in the short term. Few if any least Bell's vireos are expected to be present in the short term given the limited availability of suitable habitat and current absence of the species in Project RMUs. Project activities could result in habitat conditions more suitable to vireos in the long term, but this may also increase the likelihood of impacts. To minimize Project effects on reproduction of the least Bell's vireo the Corps proposes to conduct surveys, set protective buffers around nests, control trash that may attract nest predators, and contact the Service if vireos are detected. These actions should effectively reduce Project-related impacts to the species' reproduction. Therefore, we expect the local effect of the Project on reproduction of the least Bell's vireo to be minimal in the short term and minimal or potentially positive in the

long term, and conclude that the proposed Project will not appreciably reduce the species' ability to reproduce rangewide.

Numbers

The area of direct impacts encompasses a relatively small proportion of least Bell's vireo foraging and breeding habitat available locally and regionally. The Corps also proposes measures to reduce impacts that could disturb individuals or nests, such as establishing buffers around nests and avoiding nighttime work. The species has not been observed in the action area and only sporadically in upstream areas in recent years, though surveys have been limited and not conducted in the action area since 2001. Detecting the species in the action area would be significant and least Bell's vireos have been recolonizing areas of suitable habitat in recent years, but we expect that with the proposed conservation measures adverse effects from the Project would be minimal and few if any least Bell's vireos would be killed or injured. The Project would concurrently restore riparian habitat and may result in a net long-term gain in habitat quantity and quality. This may attract vireos to the Project site in the future and promote local reproduction. Project activities could in turn adversely affect vireos attracted to the project site, but implementation of conservation measures should minimize these impacts. Therefore, we have determined that implementation of the proposed Project is not expected to appreciably reduce numbers of the least Bell's vireo locally or rangewide in the short term, and may increase numbers in the long term pending success of the proposed maintenance activities at promoting a more natural river channel and habitats.

Distribution

The project is located outside of the current known breeding range of the least Bell's vireo but is within the historical breeding range which includes the Salinas River. Since 1983, only sporadic occurrences of individuals have been reported in the upstream vicinity. While least Bell's vireos have recolonized some historically occupied sites in recent years, there is no current evidence of a breeding population along the Salinas River, though recent survey data from the action area are lacking. We expect the probability of occurrence to be relatively low in the action area and likely limited to areas in RMU 1 and 2. The project would disturb or remove up to approximately 700 acres of vegetation annually of which approximately 250 acres would be *Arundo*-dominated, constituting a relatively small proportion of habitat available locally and regionally. The Project would concurrently restore native riparian habitat, and is designed to promote a more natural river channel that may increase availability of suitable riparian habitat for the least Bell's vireo. Project activities could cause the species to avoid or leave the action area, but conservation measures proposed by the Corps would reduce the likelihood of impacts in the short and long term. Detection of the species within the action area especially if it were found to be breeding would be significant; we consider this to be more likely in the long-term. Therefore, we conclude that the project will not reduce the distribution of the least Bell's vireo at the local or rangewide level, and may contribute to the species' long-term recolonization of previously occupied breeding habitat and range expansion.

Recovery

The action area lies along the historically occupied Salinas River, targeted for reestablishment of a breeding population in the least Bell's vireo draft recovery plan. A breeding population is not currently known to exist on the Salinas River, and the likelihood of least Bell's vireos occurring on the project site is relatively low and limited to areas in RMU 1 and 2. The project would disturb or remove riparian habitat in the short term, much of which is *Arundo*-dominated, and be balanced by concurrent habitat restoration and, potentially, a long-term net gain in suitable breeding habitat. Project activities may cause least Bell's vireos to avoid or leave the action area but proposed conservation measures should minimize these effects. Maintenance activities could promote future use of the site for breeding by least Bell's vireos and contribute to the species' overall recovery, though ongoing Project activities could disrupt breeding and diminish or negate the benefits of restoration. Pre-activity surveys, establishment of nest buffers, and other proposed measures would avoid or minimize these impacts. The Corps would contact the Service if vireos are detected, providing the opportunity to adjust conservation measures, and the proposed surveys could inform recovery efforts. Thus we expect the Project to result in no appreciable long-term impacts to least Bell's vireo numbers and distribution, and it may contribute positively to the species' recovery along the Salinas River and overall.

Conclusion for the least Bell's vireo

After reviewing the current status of the least Bell's vireo, the environmental baseline for the action area, the effects of the proposed Salinas River Stream Maintenance Program and the cumulative effects, it is the Service's biological opinion that the Salinas River Stream Maintenance Program, as proposed, is not likely to jeopardize the continued existence of the least Bell's vireo, because:

1. The project would not appreciably reduce reproduction of the species either locally or rangewide;
2. Although survey information is very limited and date, least Bell's vireos appear to be rare in the action area, thus the project would likely only affect a small number of individuals, and thus would not appreciably reduce numbers of the least Bell's vireo at the local level or rangewide;
3. The project would not reduce the species' distribution either locally or rangewide;
4. The project would not cause any effects that would preclude our ability to recover the species, and could provide useful data relevant to its recovery;
5. Project activities may increase the quantity and quality of suitable habitat for least Bell's vireos in the long term, and contribute positively to their overall recovery.

Tidewater goby

Reproduction

The proposed Project may temporarily reduce the availability of tidewater goby breeding habitat

locally, and maintenance activities may harm a proportion of any tidewater gobies breeding in the lower Salinas River and lagoon or their eggs and young. Any loss of breeding habitat is expected to be temporary and would represent a relatively small portion of breeding habitat available rangewide. Conservation measures would limit direct and indirect effects to breeding habitat and a Service-approved biologist would survey for and relocate all tidewater gobies at risk of immediate harm to suitable sites. We expect these measures to minimize disturbances to breeding activity. The successful increase of flood carrying capacity and removal of invasive plants in the Salinas River proposed to result from the Project may increase the availability of breeding habitat in the long term. Therefore, we expect that relatively few breeding tidewater gobies would be affected by the Project and that tidewater goby reproduction in the action area or rangewide would not be appreciably reduced.

Numbers

We are unable to determine the precise number of tidewater gobies that may be affected by the proposed Project because numbers of individuals in occupied sites vary between breeding and non-breeding seasons and across years. We anticipate that a small proportion of tidewater gobies present at any time may be injured or killed, temporarily reducing their numbers locally. However, because the tidewater goby produces numerous offspring under favorable conditions and the frequency and extent of maintenance activities would diminish over the course of the Project, any losses are likely to be compensated for during subsequent breeding seasons. Project activities may also increase availability of breeding habitat and thus numbers in the long term. Thus we anticipate that the proposed action would not substantially reduce the species' numbers locally or rangewide in the short term, and may increase numbers in the long term pending the success of maintenance activities in improving ecological conditions in the lower Salinas River.

Distribution

The proposed Project could result in the direct loss of a proportion of any tidewater gobies currently present in the Salinas River Lagoon and lower Salinas River and indirectly reduce their reproductive capacity through temporary loss and degradation of habitat. Complete loss of the local population within recovery Sub-Unit GB-11 would significantly reduce the distribution of the species locally, as tidewater gobies had been presumed extirpated from the Salinas River estuary until gobies were detected here in 2013 and again in 2014. However, the proposed maintenance activities are expected to result in the loss of only a small proportion at most of any tidewater gobies present at any given time during the course of the Project. Thus the Project would not appreciably reduce the distribution of the tidewater goby within the Greater Bay Area recovery unit or at a range-wide level, and may help increase the stability of the local population by increasing the availability of suitable habitat and reducing the frequency of flooding events requiring manual breaching of the Salinas River Lagoon.

Recovery

We do not anticipate that the proposed action would substantially affect conservation of the tidewater goby in the Greater Bay Area Recovery Unit or the long-term survival and recovery of the species. The lower Salinas River including its lagoon was identified in the 2005 recovery plan as a potential reintroduction site within recovery Sub-Unit GB-11, thus the observation of tidewater gobies in the Salinas River Lagoon in 2013 represents a significant milestone in the species' recovery. The recovery plan emphasizes the importance of conserving population units and metapopulation dynamics. While there could be negative effects to some individual tidewater gobies and to goby habitat in the short term, these should be minimal and temporary with implementation of the proposed conservation measures. Project activities are designed to promote expansion of native riparian and aquatic habitats, create low velocity side channels, and reduce the frequency of flooding events, which together may improve the availability and stability of tidewater goby habitat in the Salinas River estuary. Surveys and habitat assessments would provide information valuable to recovery efforts in Sub-Unit GB-11. Thus we expect no long-term negative affects to the local population or metapopulation of the tidewater goby and the Project may contribute to the species' recovery in the long term.

Conclusion for the tidewater goby

After reviewing the current status of the tidewater goby, the environmental baseline for the action area, the effects of the proposed Salinas River Stream Maintenance Program and the cumulative effects, it is the Service's biological opinion that the Salinas River Stream Maintenance Program, as proposed, is not likely to jeopardize the continued existence of the tidewater goby, because:

1. The project would not appreciably reduce reproduction of the species either locally or rangewide;
2. The project would affect a small proportion of the individuals present, and thus would not appreciably reduce tidewater goby numbers at the local level or rangewide;
3. The project would not reduce the species' distribution either locally or rangewide;
4. The project would not cause any effects that would preclude our ability to recover the species, and could provide useful data relevant to its recovery;
5. Project activities may increase the quantity and quality of suitable habitat for tidewater gobies in the long term, and contribute positively to their overall recovery.

Tidewater goby critical habitat

Conclusion for tidewater goby critical habitat

After reviewing the current status of the critical habitat of the tidewater goby, the environmental baseline of critical habitat for the action area, the effects of the proposed Salinas River Stream Maintenance Program on critical habitat, and the cumulative effects, it is the Service's biological opinion that the Salinas River Stream Maintenance Program, as proposed, is not likely to result

in the destruction or adverse modification of critical habitat of the tidewater goby, because:

1. The project would have small and temporary effects on the primary constituent elements in critical habitat Unit MN-2; and

2. The overall function and conservation value of critical habitat would not be appreciably reduced.

California red-legged frog

Reproduction

California red-legged frogs have not been reported to breed in the action area, but the proposed Project may temporarily reduce the availability of any breeding habitat available locally. Maintenance activities may harm some California red-legged frogs, eggs and larvae if present. Any loss of breeding habitat is expected to be temporary and would represent a small portion of that available rangewide. Conservation measures would limit direct and indirect effects to breeding habitat and a Service-approved biologist would survey for and relocate California red-legged frogs at risk of harm to suitable sites. We expect these measures to minimize disturbances to breeding activity if any occurs. The proposed creation of side channels and associated riparian habitat in the Salinas River may increase the availability of breeding habitat in the long term. Therefore, we expect that relatively few California red-legged frogs would be affected by the Project and that the species' reproduction in the action area or rangewide would not be appreciably reduced.

Numbers

We expect that a small number of California red-legged frogs may be injured or killed as a result of maintenance activities and capture and relocation efforts, temporarily reducing their numbers locally, and that the amount of available habitat may temporarily decrease. Though prior records are limited, the California red-legged frog is known to occur within and near to downstream portions of the action area and may occur during Project activities. However, the temporary nature of most Project impacts, avoidance of the wet season for most activities, and the proposed conservation measures will minimize the number of California red-legged frogs lost. Project activities may increase the availability of breeding habitat, and thus numbers, in the long term. Thus we anticipate that the proposed action would not substantially reduce the species' numbers locally or rangewide in the short term, and may increase numbers in the long term the proposed maintenance activities increase habitat suitability for California red-legged frogs along the Salinas River.

Distribution

The proposed Project could result in the direct loss of some California red-legged frogs and indirectly reduce their reproductive capacity through temporary loss and degradation of habitat.

Maintenance activities may indirectly impact aquatic breeding and non-breeding habitat and directly impact upland and dispersal habitat, but most impacts would be temporary and disturbed areas would likely return to their previous condition, or would become more suitable as nonnative plants are replaced by natives and side channels provide areas of slower moving water. The Project would affect a small proportion of the California red-legged frog habitat available in the action area and a very small proportion of that available in the species' geographic range. Also, the Corps and applicant have proposed conservation measures to minimize the risk of adverse effects on individuals and would conduct most work in the dry season. Thus the Project would not appreciably reduce the distribution of the California red-legged frog at the local or range-wide level, and may increase the extent of local populations by increasing suitable habitat and promoting more natural hydrologic conditions along the Salinas River.

Recovery

We do not anticipate that the proposed action would substantially affect conservation and recovery of the California red-legged frog in the Diablo Range and Salinas Valley or Central Coast Recovery Units, or within the Watsonville Slough-Elkhorn Slough Core Recovery Area. While there could be negative effects to individual California red-legged frogs and to their habitat in the short term, these should be minimal and temporary with implementation of the proposed conservation measures and timing of Project activities. The proposed Project would not increase the threats currently impacting the California red-legged frog in these recovery units or core recovery area, would result in no appreciable change in reproduction, population numbers and distribution, and would not preclude the Service's ability to implement any of the measures identified in the recovery plan for the species. Project activities may promote expansion of suitable riparian and aquatic habitats for California red-legged frogs in the long term, and pre-activity surveys would provide information valuable to recovery efforts. Thus we conclude that the proposed Project would not appreciably reduce the likelihood of recovery of the California red-legged frog, and may contribute positively to its recovery in the long-term.

Conclusion for the California red-legged frog

After reviewing the current status of the California red-legged frog, the environmental baseline for the action area, the effects of the proposed Salinas River Stream Maintenance Program and the cumulative effects, it is the Service's biological opinion that the Salinas River Stream Maintenance Program, as proposed, is not likely to jeopardize the continued existence of the California red-legged frog, because:

1. The Project would not appreciably reduce reproduction of the species either locally or rangewide;
2. The Project would affect a very small number of individuals, and would not appreciably reduce numbers of the California red-legged frog at the local level or rangewide;
3. The Project would not reduce the species' distribution either locally or rangewide; and
4. The Project would not cause any effects that would preclude our ability to recover the species.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened wildlife species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

In June 2015, the Service finalized new regulations implementing the incidental take provisions of section 7(a)(2) of the Act. The new regulations also clarify the standard regarding when the Service formulates an Incidental Take Statement [50 CFR 402.14(g)(7)], from "…if such take may occur" to "…if such take is reasonably certain to occur." This is not a new standard, but merely a clarification and codification of the applicable standard that the Service has been using and is consistent with case law. The standard does not require a guarantee that take will result; only that the Service establishes a rational basis for a finding of take. The Service continues to rely on the best available scientific and commercial data, as well as professional judgment, in reaching these determinations and resolving uncertainties or information gaps.

Least Bell's vireo

We anticipate that some least Bell's vireos could be taken as a result of the proposed action. For activities conducted during the nesting season, we expect the incidental take to be in the form of loss of nests and young from nonnative vegetation treatment and mitigation planting activities, and harassment and harm from indirect effects associated with noise, vibration, and visual disturbance from maintenance activities and attraction of nest predators and cowbirds to the construction site. Adults and juveniles could also experience increased predation risk if disturbed by work activities and displaced from the action area into unfamiliar habitat. Vegetation removal conducted outside of the breeding season may also harm least Bell's vireos by reducing or degrading breeding habitat, causing returning adults to look for more suitable habitat and exposing them to increased predation and other risks.

We cannot quantify the precise number of least Bell's vireos that may be taken as a result of the Corps' proposed action because least Bell's vireos move over time; for example, animals may enter or leave the action area after the time of pre-construction surveys. Least Bell's vireos may

be difficult to detect due to their preference for dense riparian habitat, and death or injury of individuals displaced to areas outside of the action area would be difficult to observe. Finding a dead or injured least Bell's vireo may also be unlikely due to their small size, potentially large territory, and the likelihood that dead individuals would be quickly scavenged. The protective measures proposed by the Corps and applicant are likely to prevent mortality or injury of most individuals.

Consequently, we are unable to reasonably anticipate the actual number of least Bell's vireos that would be taken by the proposed project; however, we must provide a level at which formal consultation would have to be reinitiated. The Environmental Baseline and Effects Analysis sections of this biological opinion indicate that we expect few, if any, least Bell's vireos to be observed in the action area, and that adverse effects to the species would likely be low given the nature of the proposed activities. Therefore, we anticipate that take of least Bell's vireos would also be low.

Therefore, if 1is found dead or injured, the Corps must contact our office immediately to reinitiate formal consultation. If an active nest is detected over the 10-year Project term, the Corps must contact our office immediately so we can review the Project activities to determine if additional protective measures are needed. Project activities that are likely to cause additional take should cease during this review period because the exemption provided under section 7(o)(2) would lapse and any additional take would not be exempt from the section 9 prohibitions.

Tidewater goby

We anticipate that some tidewater gobies could be taken as a result of the proposed action. We expect the incidental take to be in the form of harm, capture, injury, and mortality. Tidewater gobies may also be subject to harm if unexpected changes in Salinas River hydrology or sediment mobilization increase sediment transport into downstream areas or require changes in the breaching regime of the Salinas River Lagoon. Sediment release could affect occupied habitats and smother burrows, while breaching could reduce habitat quality and quantity or cause gobies to be flushed out of the lagoon or stranded. Tidewater gobies may also be injured or killed by herbicides, chemical spills, and degraded water quality from project materials or activities. We cannot quantify the precise number of tidewater gobies that may be taken as a result of the Corps' proposed action because tidewater gobies are a mobile species in their aquatic environment and may enter or depart the action area since the time of the last surveys. Other individuals may not be detected due to their cryptic nature and small size. The measures proposed by the Corps and MCWRA and avoidance of aquatic habitats are intended to minimize injury and mortality of most individuals. In addition, finding dead or injured tidewater gobies is unlikely.

While we are unable to reasonably anticipate the actual number of tidewater gobies that would be taken by the proposed action, we must provide a level at which formal consultation would have to be reinitiated. The Environmental Baseline and Effects Analysis sections of this biological opinion indicate that adverse effects to tidewater gobies would likely be low given the

nature of the proposed activities and protective measures, and we, therefore, anticipate that take of tidewater gobies would also be low. We also recognize that for every tidewater goby found dead or injured, other individuals may be killed or injured that are not detected, so when we determine an appropriate take level we are anticipating that the actual take would be higher and we set the number below that level.

The considerations we used in arriving at the take we anticipate include: (1) tidewater goby populations fluctuate greatly in number of individuals; (2) dead or injured individuals are difficult to detect; (3) some tidewater gobies may be killed or injured by chemicals, spills, erosion, degraded water quality from project materials or activities; (4) because the number of tidewater gobies in a population may be high, many individuals could be taken without a substantial effect on the population; (6) minimization measures proposed by the Corps should be effective at minimizing adverse effects to tidewater gobies; and (7) the level of take we anticipate must be consistent with a non-jeopardy determination, in that it cannot appreciably reduce the numbers, reproduction, or distribution of the species. For take due to capture, we anticipate that all tidewater gobies encountered within work areas will be captured, and that some injury or mortality will occur as a result of unpredictable circumstances. Because we are unable to reasonably anticipate the actual number of tidewater gobies that would be captured, we are using injury or mortality during capture as a measure of the take we anticipate, as described above.

Based on the proposed project activities, the assumption that tidewater gobies occur within the action area, the limited number of recent surveys of the Salinas River Lagoon where tidewater gobies were detected, and the uncertainty of how many tidewater gobies would be captured and moved out of harm's way, we have determined that if more than 25 tidewater gobies are found dead or injured or more than 10 percent of the tidewater gobies captured and relocated die, the Corps must contact our office immediately to reinitiate formal consultation. Project activities that are likely to cause additional take should cease during this review period because the exemption provided under section 7(o)(2) would lapse and any additional take would not be exempt from the section 9 prohibitions.

California red-legged frog

We anticipate that some California red-legged frogs could be taken as a result of the proposed action. We expect the incidental take to be in the form of capture during relocation activities, and in the form of harassment, harm, injury, or death as a result of maintenance activities if they are accidentally injured or killed during capture and relocation or are unable to be collected for relocation and remain in active construction areas. The probability of these risks may be increased if substantial rainfall (greater than 0.5 inch of rain in a 24-hour period) occurs and California red-legged frogs are dispersing through the area during work activities, though most activities would occur outside of the rainy season. California red-legged frogs could also be killed or wounded by predators if they abandon habitat within or adjacent to work areas and be subject to desiccation if they leave shelter sites.

We cannot quantify the precise number of California red-legged frogs that may be taken as a result of the Corp's proposed action because the species moves over time; for example, animals may enter or leave the action area after the time of pre-activity surveys. California red-legged frogs may be difficult to detect due to their small body size and use of aquatic habitats, underground burrows, or dense cover. Animals injured or killed during translocation efforts are likely to be observed; however, mortality from other sources, including the indirect effects of translocation (e.g., unable to find food in a new location) or displacement from the action area, would be difficult to observe. Finding a dead or injured California red-legged frog may also be unlikely due to their cryptic coloration and potential to be quickly scavenged. The protective measures proposed by the Corps and MCWRA are likely to prevent mortality or injury of most individuals.

Consequently, we are unable to reasonably anticipate the actual number of California red-legged frogs that would be taken by the proposed Project; however, we must provide a level at which formal consultation would have to be reinitiated. The Environmental Baseline and Effects Analysis sections of this biological opinion indicate that we expect some California red-legged frogs to be observed in downstream portions of the action area (RMUs 6 and &), but that adverse effects to the species would likely be low given the nature of the proposed activities and conservation measures. Therefore, we anticipate that take of California red-legged frogs would also be low. We also recognize that for every California red-legged frog found dead or injured, other individuals may be killed or injured that are not detected, so when we determine an appropriate take level we are anticipating that the actual take would be higher and we set the number below that level.

Similarly, for estimating the number of California red-legged frogs that would be taken by capture, we cannot predict how many may be encountered for reasons stated earlier. While the benefits of relocation (i.e., minimizing mortality) outweigh the risk of capture, we must provide a limit for take by capture at which consultation would be reinitiated because high rates of capture may indicate that some important information about the species in the action area was not apparent (e.g., it is much more abundant than previously believed). Conversely, because capture and relocation can be highly variable, depending upon the species and the timing of the activity, we do not anticipate a number so low that reinitiation would be triggered before the effects of the activity were greater than what we determined in the Effects Analysis.

Therefore, if 2 adult or 2 juvenile California red-legged frogs are found dead or injured, the Corps must contact our office immediately to reinitiate formal consultation. If 10 adult or 10 juvenile California red-legged frogs are captured and relocated, the Corps must contact our office immediately so we can review the Project activities to determine if additional protective measures are needed. Also, if any other life stages of the California red-legged frog are identified in the action area that are completely dependent on water (i.e. egg masses or tadpoles), the Corps must contact our office immediately so we can review the Project activities to determine if additional protective measures are needed. Project activities that are likely to cause additional take should cease during this review period because the exemption provided under section 7(o)(2) would lapse and any additional take would not be exempt from the section 9

prohibitions.

REASONABLE AND PRUDENT MEASURES

The measures described below are non-discretionary, and must be undertaken by the Corps or made binding conditions of any grant or permit issued to MCWRA, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require MCWRA to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, contract or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Corps or MCWRA must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the impacts of the incidental take of least Bell's vireos, tidewater gobies, and California red-legged frogs:

1. Biologists must be authorized by the Service before they survey for least Bell's vireos, tidewater gobies, and California red-legged frogs, and before they capture and move tidewater gobies and California red-legged frogs in the action area.

2. Effects to the least Bell's vireo, tidewater goby, and California red-legged frog must be minimized in the action area.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline reporting and monitoring requirements. These terms and conditions are non-discretionary.

1. The following term and condition implements reasonable and prudent measure 1:

   The Corps and MCWRA must request our approval of any biologists that they or their contractors employ to conduct project activities associated with the least Bell's vireo, tidewater goby, and California red-legged frog pursuant to this biological opinion. Such requests must be in writing, and be received by the Ventura Fish and Wildlife Office at least 30 days prior to any such activities being conducted. Please be advised that possession of a 10(a)(1)(A) permit for the covered species does not substitute for the implementation of this measure. Authorization of Service-approved biologists is valid for this project only.

2. The following term and condition implements reasonable and prudent measure 2:

> Prior to the onset of any Project related activities, the Service-approved biologist must identify appropriate locations to receive tidewater gobies and California red-legged frogs from the Project area in the event that any need to be relocated. These locations must be in proximity to the Project site, contain suitable habitat for the respective species, not be affected by project activities, and be free of exotic predatory species (i.e., bullfrogs, crayfish) to the best of the approved biologist's knowledge.

REPORTING REQUIREMENTS

Pursuant to 50 CFR 402.14(i)(3), the Corps must report the progress of the action, including compliance with the above measures and the impact of the action on the species, to the Service as specified in this incidental take statement to the Service's Ventura Fish and Wildlife Office (2493 Portola Road, Suite B, Ventura, California 93003) within 60 days following completion of the proposed 10- year Project. The Corps has indicated that MCWRA and parties contracted by the applicant may prepare and submit the final report to the Corps and the Service documenting compliance with the above measures and reporting all impacts to the species. The report must describe all activities that were conducted under this biological opinion, including activities and conservation measures that were described in the proposed action and required under the terms and conditions, and discuss any problems that were encountered in implementing conservation measures or terms and conditions and any other pertinent information. The report must also include the following information:

> An annual report must be prepared by MCWRA and RCDMC and made available to the Service for review after March 31 of each year of maintenance. The annual report will document the maintenance and mitigation actions conducted for the year, all observations of listed species including time, date, location (including a map), and a description of the animal and any take, and the implementation of conservation measures for listed species including an explanation of why any measures were not fully implemented, if applicable. Within six months upon completion of the project, a comprehensive report must be provided to the Service that includes all information from the annual reports.

The Service recognizes that MCWRA and other parties may author the reports described above. However, the Corps must review all reports to ensure compliance with the requirements of this biological opinion prior to submitting them to the Service.

Upon completion of the project, the Corps must report all observations of federally listed species to CDFW for inclusion in the CNDDB.

DISPOSITION OF DEAD OR INJURED SPECIMENS

As part of this incidental take statement and pursuant to 50 CFR 402.14(i)(1)(v), upon locating a dead or injured least Bell's vireo, tidewater goby, or California red-legged frog initial

notification within 3 working days of its finding must be made by telephone and in writing to the Ventura Fish and Wildlife Office (805-644-1766). The report must include the date, time, location of the carcass, a photograph, cause of death or injury, if known, and any other pertinent information.

The Corps and MCWRA must take care in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. The Corps and MCWRA must transport injured animals to a qualified veterinarian. Should any treated least Bell's vireos, tidewater gobies or California red-legged frogs survive, the Corps or MCWRA must contact the Service regarding the final disposition of the animal(s).

Any least Bell's vireos found dead must be provided to the Western Foundation of Vertebrate Zoology; Contact: Rene Corado, Collections Manager, Western Foundation of Vertebrate Zoology, 439 Calle San Pablo, Camarillo, CA 93012, (805) 388-9944. Any tidewater gobies found dead should be preserved in a solution of at least 80 percent ethanol for possible genetic analysis and the Service should be contacted to determine the appropriate disposition location. We recommend that dead California red-legged frogs identified in the action area be tested for amphibian disease; however, this recommendation is discretionary and to be determined by the Corps upon contacting the Ventura Fish and Wildlife Office at the discovery of a dead California red-legged frog. If the Corps chooses not to submit dead California red-legged frogs for testing, they must be placed with the California Academy of Sciences; Contact: Jens Vindum, Collections Manager, California Academy of Sciences Herpetology Department, Golden Gate Park, San Francisco, California, 94118, (415) 750-7037.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that the Corps advise Service-approved biologist(s) to relocate other native reptiles or amphibians found within work areas to suitable habitat outside of Project areas if such actions are in compliance with State laws.

2. We recommend that dead California red-legged frogs identified in the action area be tested for amphibian disease.

3. We recommend that the Corps advise Service-approved biologist(s) to remove non-native aquatic animals such as bullfrogs and crayfish which may prey on tidewater gobies and California red-legged frogs and other native amphibians whenever these are detected during surveys.

4. The Recovery Plan for the tidewater goby identifies the lower Salinas River as a reintroduction site, and lists the amount of habitat restoration needed here as high due to impacts from sedimentation, pesticide and nutrient runoff, and poor water quality. The Corps and MCWRA in cooperation with NMFS should integrate a monitoring program for tidewater goby into ongoing studies and management of the lower Salinas River, and coordinate with partner agencies and local landowners to address restoration needs.

5. The Recovery Plan for the California red-legged frog identifies conservation goals for the Watsonville Slough-Elkhorn Slough Core Recovery Area including reducing impacts of agriculture, improving water quality, and reducing impacts of urbanization. The Corps and MCWRA should coordinate with partner agencies and local landowners to promote these goals.

The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the actions outlined in the request for formal consultation. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the Corp's action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the Corps' action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) may have lapsed and any further take could be a violation of section 4(d) or 9. Consequently, we recommend that any operations causing such take cease pending reinitiation.

If you have any questions about this biological opinion, please contact Mark Ogonowski of my staff at (805) 644-1766 ext. 370, or by electronic mail at mark_ogonowski@fws.gov.

Sincerely,

Stephen P. Henry
Field Supervisor

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PERSONAL COMMUNICATIONS

Bruce Delgado, U.S. Bureau of Land Management, May 4, 2011.

Bart Kowalski, Chenega Support Services, Ford Ord Base Realignment and Closure Division, May 16, 2016.

APPENDIX A. The Declining Amphibian Populations Task Force Fieldwork Code of Practice

The Declining Amphibian Populations Task Force Fieldwork Code of Practice

1. Remove mud, snails, algae, and other debris from nets, traps, boots, vehicle tires, and all other surfaces. Rinse cleaned items with sterilized (e.g., boiled or treated) water before leaving each work site.

2. Boots, nets, traps, and other types of equipment used in the aquatic environment should then be scrubbed with 70 percent ethanol solution and rinsed clean with sterilized water between study sites. Avoid cleaning equipment in the immediate vicinity of a pond, wetland, or riparian area.

3. In remote locations, clean all equipment with 70 percent ethanol or a bleach solution, and rinse with sterile water upon return to the lab or "base camp." Elsewhere, when washing-machine facilities are available, remove nets from poles and wash in a protective mesh laundry bag with bleach on the "delicates" cycle.

4. When working at sites with known or suspected disease problems, or when sampling populations of rare or isolated species, wear disposable vinyl[3] gloves and change them between handling each animal. Dedicate sets of nets, boots, traps, and other equipment to each site being visited. Clean them as directed above and store separately at the end of each field day.

5. When amphibians are collected, ensure that animals from different sites are kept separately and take great care to avoid indirect contact (e.g., via handling, reuse of containers) between them or with other captive animals. Isolation from unsterilized plants or soils which have been taken from other sites is also essential. Always use disinfected and disposable husbandry equipment.

6. Examine collected amphibians for the presence of diseases and parasites soon after capture. Prior to their release or the release of any progeny, amphibians should be quarantined for a period and thoroughly screened for the presence of any potential disease agents.

7. Used cleaning materials and fluids should be disposed of safely and, if necessary, taken back to the lab for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags.

The Fieldwork Code of Practice has been produced by the Declining Amphibian Populations Task Force with valuable assistance from Begona Arano, Andrew Cunningham, Tom Langton, Jamie Reaser, and Stan Sessions.

3 Do not use latex gloves as latex is toxic to amphibians.

For further information on this Code, or on the Declining Amphibian Populations Task Force, contact John Wilkinson, Biology Department, The Open University, Walton Hall, Milton Keynes, MK7 6AA, UK, e-mail: DAPTF@open.ac.uk.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

West Coast Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404

September 6, 2016 **Refer to NMFS No:** WCR-2016-4711

Holly Costa
Acting Regulatory Branch Chief
U.S. Department of the Army
San Francisco District, Corps of Engineers
1455 Market Street
San Francisco, California 94103-1398

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Monterey County Water Resource Agency's Salinas River Stream Maintenance Program (Corps File No. 22309S)

Dear Ms. Costa:

On April 4, 2016, NOAA's National Marine Fisheries Service (NMFS) received your request for a written concurrence that the U.S. Army Corps of Engineers' (Corps) proposed authorization of the Monterey County Water Resource Agency's (MCWRA) Salinas River Stream Maintenance Program (Program) under Section 404 of the Clean Water Act of 1973 (33 U.S.C. Section 1344) is not likely to adversely affect species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). As described below, the first phase of the proposed Program was authorized by the Corps in 2014. This proposed authorization would include the first phase and expand the Program area (*i.e.*, Phase II). This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparations of letters of concurrence.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The concurrence letter will be available through NMFS' Public Consultation Tracking System (https://pcts.nmfs.noaa.gov/pcts-web/homepage.pcts).[1] A complete record of this consultation is on file at NMFS California Coastal Office, Santa Rosa, California.

Proposed Action and Action Area

The following information was obtained from: MCWRA's January 2016 Biological Assessment Salinas River Stream Maintenance Program: Salinas River Multi-Benefit Demonstration Project: Chualar and Gonzales River Management Units Project Description, prepared by The Nature

[1] Once on the PCTS homepage, use the following PCTS tracking number within the Quick Search column: WCR 2016-4711.

Conservancy (The Nature Conservancy 2014); the Corps' March 31, 2016, letter requesting written concurrence; MCWRA's July 1, 2016 *Additional Information for the Salinas River Stream Maintenance Program* (MCWRA 2016a); MCWRA's January 2016 Salinas River Stream Maintenance Program Permit Application Supplemental Attachment (MCWRA 2016b); and, the Corps' June 30, 2016 Public Notice of the proposed Program. NMFS consolidated the information from these sources in describing one project description (NMFS 2016) for the Program.

MCWRA has applied for a 10-year (2016-2025) Corps Regional General Permit (RGP) to oversee the Program and the Corps is requesting consultation on the proposed 10-year Program. The Corps intends to issue a 5-year RGP for the Program with the intent to renew the RGP for another 5 years to cover the remainder of the 10-year term of the Program. The Corps intends to reassess the Program after five years, prior to renewing the Program, and determine in cooperation with NMFS if reinitiation of consultation is necessary. If reinitiation of consultation is deemed necessary, then the Corps would request reinitiation of consultation. If the Corps and NMFS determine reinitiation is not warranted, the Corps would renew the RGP for another five years. MCWRA will review proposed work activities of private landowners, determine whether they comply with the Regional General Permit, and request confirmation from the Corps. As a Program participant, MCWRA will also perform the maintenance activities in the tributaries. MCWRA will also provide Program oversight, monitoring, and submit annual reports.

The Salinas River Multi-Benefit Demonstration Project (Phase I) was permitted by the Corps in 2014 following written concurrence by NMFS (NMFS 2014), and authorized project activities which occurred in 2014 and 2015 in two discrete River Management Units (RMUs). The current proposed Program (Phase II) includes continuation of the previously authorized work in Phase 1 areas to include five additional RMUs which expands the 2014 action to 55 miles over 92 linear miles of the Salinas River mainstem. The proposed Program also includes approximately two linear miles of the following tributaries: San Lorenzo Creek (1.5 miles), Bryant Canyon Channel (0.15 miles), and Gonzales Slough (70 feet).

The Program proposes to reduce the flood risk of the Salinas River to adjacent farm fields and prevent bank erosion. Proposed activities include native vegetation management (mowing and discing), removal and retreatment of nonnative vegetation (giant reed [*Arundo donax*] and tamarisk [*Tamarix parviflora*]), and sand and sediment grading (*e.g.*, channel smoothing) and removal.

These Program activities would create and maintain a series of linear relic "secondary channels" adjacent to the existing low-flow channel. Program activities will improve higher stream flow access into to the secondary channels, which tie into the low-flow channel from an upstream location and then rejoin the low-flow channel at a downstream location. Work activities in the secondary channels have been designed to avoid the low-flow channel except where the secondary channels join the low-flow channel. Selective treatment areas are also included where physical constraints in channel width require a modified approach as discussed below. The secondary channels and selective treatment areas will be the only maintenance areas in the Salinas River.

The activities described below would occur annually between September 1 and November 15.[2] Best management practices (*e.g.*, no work will be done in the wetted channel; all work will be completed prior to the initiation of winter rains; soil disturbance shall not exceed the minimum area necessary to complete as described in the application; only herbicides approved for use in aquatic and wetland environments that have no impacts on wildlife species will be used for non-native vegetation removal; no fueling of equipment/vehicles will be done in a waterway or immediate floodplain) will be incorporated into all work (MCWRA 2016b). Work activities will occur only within the dry portion of the Salinas River and tributaries.

Pre-maintenance surveys of maintenance areas will be completed no more than 60 days in advance of the commencement of work. These surveys will be used to: set clear, enforceable boundaries for where work will occur; ensure sensitive resources are avoided where possible; and quantify unavoidable resource impacts (*i.e.*, tree removal) in order to identify mitigation needs. These surveys will be conducted under the direction of a qualified biologist with landowners, MCWRA and/or RCDMC personnel, and other technical staff present in the field, as necessary. Project area staking and avoidance flagging will be completed during these surveys. A report will be prepared by the qualified biologist after each survey.

Vegetation Management

Program participants will use heavy equipment to mow or disc native vegetation within the secondary channels. Once vegetation is mowed and/or disced, Program participants may smooth the surface of the channel. Though not mandatory, smoothing of the secondary channel surface to homogenize the topography and, if possible, create a slight downstream gradient in the secondary channel, is considered a key component of maintenance. *Arundo* may also be removed.

Sediment management

Up to 554,420 cubic yards (cy) of sediment may be removed annually from the Program area. MCWRA will limit the total cumulative extraction in any two consecutive years to no more than 785,000 cy. Additionally, over a consecutive two-year period, no more than 100,000 cy of sediment will be removed from any given one mile length of river in the lower reach (rivermile [RM] 2.0 to RM 22.0) and no more than 450,000 cy will be removed from any given one mile length of river in the upper reach (RM 22.0 to RM 94.0). The annual limit within the tributaries is 2,220 cy. No more than two feet (depth) of sediment will be removed from any given secondary channel, and sediment removal areas will be graded to match adjacent grade. All sediment removed from secondary channels will be placed in demarcated upland areas outside of the active floodplain and above the ordinary high-water mark. Similar to vegetation management activities, sediment removal will not occur within the primary low flow channel, on river banks steeper than 15 percent, or within a 10-foot wide buffer around the low flow channel, depending in site-specific conditions. All sediment removal activities will occur in areas that are dry and more than nine inches above any standing water. For sediment removal activities, landowners and/or growers will be required to

2 Planting of trees to comply with compensatory mitigation requirements may occur year-round, as described in MCWRA 2016b.

obtain necessary and applicable local permits[3] (MCWRA 2016b). Program participants will adhere to sediment removal criteria as described in MCWRA (2016a).

Selective treatments in RMUs 6 and 7

Because the river is more constrained in these RMUs than the others, portions of these RMUs do not accommodate the secondary channel approach for use throughout the rest of the Program. The river corridor in these constrained RMUs is as narrow as 200 feet between levees and, therefore, the secondary channels could put banks and levees at risk of erosion. The river bed here also contains denser and more continuous cover of vegetation than it did historically (due to reservoir releases in the summer) and the thalweg and adjacent benches contain sediment bars that vary between three and eight feet in height and are often held in place by dense root balls. According to MCWRA (2016b), the combined reduction in cross-sectional area created by these larger bars and the roughness created by dense vegetation exacerbate the already acute flood risk in these reaches.

In two proposed areas within RMUs 6 and 7 (work areas 6.12 and 7.01, respectively), the Program will use a selective treatment approach to provide flood risk reduction while minimizing potential impacts to sensitive habitats and water quality. This approach will use a similar conceptual framework and scientific principles to the secondary channel approach proposed throughout the rest of the Program. Focused disturbance and vegetation removal in and adjacent to the thalweg (*i.e.*, within the 10-foot buffer and the low floodplain benches) will occur, as well as limbing of trees and sand bar ripping/grading to decrease channel roughness and restart natural sediment transport processes. Work area 6.12 is approximately 2.2 miles in length, and work area 7.01 is approximately 0.6 miles in length.

Limited tree removal, limbing of large trees, vegetation mowing in the thalweg and within the 10-foot buffer (but no more than 50 percent of the area may be mowed or disked during an annual maintenance season) sediment management, and bar ripping (limited to 10 bars within work area 6.12 and 8 bars within work area 7.01) will occur in work areas 6.12 and 7.01. A field evaluation and protocol will be implemented in determining areas for bar ripping, as described in MCWRA 2016a.

The action area for this Program includes 94 miles of the Salinas River mainstem beginning at RM 94 and ending at the Salinas River lagoon (the tidally influenced portion of the Salinas River extends from the mouth to approximately three miles upstream of the Highway 1 bridge) and encompasses the entire river channel width from bank to bank within the 55 miles where maintenance activities will occur (between RM2 and RM 94). In these 55 miles, 125 secondary channels and two selective treatments areas are proposed. The Program also includes approximately two linear miles of the following tributaries: San Lorenzo Creek (1.5 miles), Bryant Canyon Channel (0.15 miles), and Gonzales Slough (70 feet). Gonzales Slough enters the Salinas River at RM 31.6, Bryant Canyon Channel at RM 47.1, and San Lorenzo Creek at RM 69. Thus the Program covers 57 river miles where maintenance activity is proposed over the total 94 miles in the Program area.

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3 This concurrence letter does not address compliance with the State of California's Surface and Mining Reclamation Act of 1975, nor does it authorize commercial sand mining.

There are no interrelated or interdependent activities associated with the proposed action.

Action Agency's Effects Determination

The Corps determined that the Program is not likely to adversely affect listed species and their critical habitat. The Corps' determination is based on current site conditions, Program activities, and the applicant's proposed minimization measures.

Available information indicates the threatened South-Central California Coast (S-CCC) steelhead (*Oncorhynchus mykiss*) Distinct Population Segment (DPS) (71 FR 834; January 5, 2006) and their designated critical habitat (70 FR 52488; September 2, 2005) may be affected by the proposed Program.

The life history of steelhead is summarized in Busby *et al.* (1996). Steelhead are an anadromous fish, spending some time in both fresh- and saltwater. Steelhead use the Salinas River as a migration corridor. Steelhead smolts pass through the mainstem Salinas River on their downstream migration and adult steelhead pass through during their spawning migration. Smolt and adult migrations generally take place in the winter and spring months. Recent surveys conducted in the Salinas River lagoon documented low numbers of juvenile steelhead rearing in the lagoon (Hagar Environmental Science and MCWRA 2015).

Consultation History

The concept of the Salinas River Multi-Benefit Demonstration Project was initiated in October 2013 by The Nature Conservancy in partnership with MCWRA, landowners and growers. Since that time, NMFS has been involved with the development of the Salinas River Multi-Benefit Demonstration Project, the proposed Program, and participated in numerous site visits. The Salinas River Multi-Benefit Demonstration Project (Phase I) was permitted by the Corps in 2014 following written concurrence by NMFS (NMFS 2014). Documents received from the Corps included photos to illustrate pre-and post-post conditions and monitoring of representative 2015 maintenance areas. Informal consultation on the proposed Program (Phase II) was initiated with NMFS' July 5, 2016 receipt of MCWRA's July 1, 2016 *Additional Information for the Salinas River Stream Maintenance Program.*

ENDANGERED SPECIES ACT

Effects of the Action

Under the ESA, "effects of the action" means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is not likely to adversely affect listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat.

Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

The Salinas River flows approximately 180 miles north-northwest from its headwaters in San Luis Obispo County through the Salinas Valley before reaching Monterey Bay near Castroville, California. The tidally influenced portion of the Salinas River extends from the mouth to approximately three miles upstream of the Highway 1 Bridge. The Salinas River within the Program area is roughly divided into two reaches based on channel morphology: the lower reach (RM 2.0 to RM 22.0, which includes RMUs 6 and 7) is generally characterized by a narrower channel (typically approximately 500 to 1,000 feet); and the upper reach (RM 22.0 to RM 94.0, which includes RMUs 1-5) which is relatively wide, with top widths than can exceed 2,000 feet. The channel bed in both reaches is typically either flat with little vertical oscillation in topography, or comprised of low amplitude dune-ripples. The channel bed and banks along both reaches are dominated by sand. RMUs along both reaches consist primarily of private agricultural lands which border or extend into the river channel, but also contain bridges, municipal land and facilities, and other public infrastructure.

There are 57 river miles in the Program area that have maintenance activity proposed out of the total 94 miles in the Program area. The total acreage of vegetation in the Program area is 20,220 acres. In the 55 miles of the Salinas River mainstem, only 4.2 percent of the total vegetation in the Program area will be disturbed. Only 0.08 percent of the total vegetation in the Program Area will comprise the Selective Treatment Areas (channels 6.12 and 7.01). The maximum acres of vegetation that may be impacted over all RMUs is 700.4 acres, 250.7 of which are *Arundo*-dominated. The remaining ~ 450 acres comprise 2.4 percent of the non-*Arundo*-dominated vegetation in the Program area. Ninety-eight percent of the maintenance work proposed in the Program is focused on relic secondary channels with multiple, small (less than 100-feet wide) incursions into the historic streamside buffer along and at the inlet and outlet of the secondary channel.

The effects of the proposed action are reasonably likely to include temporary and minor increases in turbidity and temporal loss of vegetation. However, the Program's proposed work period avoids the co-occurrence of work activities with listed steelhead. Further, by conducting work activities between September 1 and November 15, the Program avoids the migration seasons of steelhead adults and smolts in the Salinas River, and juvenile steelhead will not be present in the mainstem Salinas River due to unsuitable habitat conditions. Thus, NMFS anticipates no listed anadromous salmonids will be present in the Salinas River during work activities, and impacts associated with the Program are expected to be temporary and insignificant.

Work activities will disturb the Salinas River, San Lorenzo Creek, Bryant Canyon Channel, and Gonzales Slough beds and may mobilize sediment resulting in minor and temporary increases in turbidity following the first rains. However, best management practices (*e.g.*, soil disturbance shall not exceed the minimum area necessary to complete the work activity, no equipment will enter the wetted Salinas River) are expected to reduce the likelihood of effects to water quality. Following the first rains, the potential increase in turbidity due to the proposed Program is expected to be considerably less than the levels that would cause behavioral or physical impacts to steelhead. Sediment transport and suspended sediment concentrations have always been high in the Salinas

River (MCWRA 2014). For these reasons, the minor and temporary increase in turbidity as a result of work activities is expected to be insignificant to S-CCC steelhead, including those that may he rearing in the lagoon.

San Lorenzo Creek, Bryant Canyon Channel, and Gonzales Slough do not support steelhead and are not designated critical habitat. The Salinas River is designated critical habitat for S-CCC steelhead. Steelhead use the Salinas River within the Program as a migratory corridor. The designation of critical habitat for S-CCC steelhead uses the term primary constituent elements (PCEs). The new critical habitat regulations (81 FR 7414) replace this term with physical or biological features (PBFs). This shift in terminology does not change the approach used in conducting our analysis, whether the original designation identified primary constituent elements, physical or biological features, or essential features. In this letter of concurrence, we use the term PBF to mean PCE. The PBFs of designated critical habitat for S-CCC steelhead include freshwater migration corridors free of obstruction and excessive predation, with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival. PBFs include sites essential to support one or more life stages of the species. These sites in turn contain physical and biological features that are essential to the conservation of the species.

Work activities include sediment removal and vegetation management which may temporarily affect critical habitat. During work activities, critical habitat may be temporarily affected by potential increases in turbidity. As discussed above, water quality effects in the form of increased turbidity are expected to be temporary and insignificant.

NMFS' *Sediment Removal Guidelines* (NMFS 2004) recommends that proposed extraction plans allow for pass-through of 50 percent of the unimpaired incoming coarse sediment load to maintain downstream habitats. Simply maintaining a positive sediment budget that supplies coarse sediment for downstream habitat may not protect geomorphic resources and habitat at the removal sites. Therefore, NMFS (2004) recommends site-specific habitat, geomorphic features, and physical processes also be protected.

Sediment removal is not expected to result in vertical transitions or elevation blockages between removal areas and upstream and downstream secondary channel areas (MCWRA 2016b).We expect the proposed sediment removal activities will protect migratory habitat for juvenile and adult steelhead habitat, because we do not expect the amount and manner of sediment removed to affect the primary low flow channel (the expected route of migrating steelhead) in terms of channel migration. The average annual sediment load of the Salinas River is 1.57 million cubic yards (MCWRA 2014); the proposed maximum annual removal of 554,420 cubic yards is approximately 35 percent of 1.57 million. If the maximum annual amount of sediment is removed in one year, then only 230,580 cubic yards may he removed the following year; 230,580 cubic yards is approximately 15 percent of 1.57 million. Focused sediment removal activities at the head of bars will mobilize heads of bars which are important to mobilize in order to begin the incremental scour of the bar over several flow periods. Destabilizing the head of the bar reduces the area for continued sediment buildup and expansion of vegetation. The secondary channels are at a higher elevation than the low flow channel and are located sufficiently far enough away from the low flow channel to avoid affecting it. Maintaining at least one foot of elevation above the low flow channel

in the secondary channels and avoiding the primary low flow channel is expected to protect geomorphic features (*i.e.*, sand bars) and physical processes (*i.e.*, low flow channel confinement). Regarding selective treatments in RMUs 6 and 7, total channel length of work areas 6.12 and 7.01 is approximately 2.8 miles (or approximately 3 percent of the Salinas River mainstem within the Program area). Because maintenance activities will occur in only a portion of the selective treatment area which comprise a minor fraction of the low flow channel within the Program area, geomorphic features and physical processes within the Program area will be protected.

Because the secondary channels are located at elevations above those of the low flow channel, work activities are not expected to affect stream flow velocity during base-flow conditions. At higher flows, such as during typical yearly storm events, these secondary channels will begin to activate and convey flow but will remain relatively shallow. During these periods, the secondary channels will have little effect on velocities or depth in the primary low flow channel because they will not convey a significant portion of the flow. Modeling indicates the secondary channels will experience a minor change in velocity, but the velocity in the primary low flow channel will be slightly lower than existing. Such events may cause sand dune formation to occur, but otherwise minimal sediment transport, scour, or erosion is expected (The Nature Conservancy 2014).

The current level of vegetation within the Salinas River channel is thought to be an artifact of summer releases from the reservoirs rather than a natural condition of the river bed. Under historic flow conditions, the lower mainstem of the Salinas River was dry throughout much of the summer and fall months, and would not have water to support the dense vegetation currently present. Under historic conditions, it is also likely there were higher sandbars, deeper pools and during winter months more water in the channel for a longer period of time. Thus, the amount of riparian vegetation may have been less of a concern for steelhead migration. An objective of the proposed Program is to encourage a wider range of riparian habitat conditions spatially over the river floodplain (earlier to later successional vegetation communities) that would have been present historically. Program activities would result in a river corridor closer to recent past (*i.e.*, pre-Salinas Valley Water Project) and historical conditions than currently exist, with a more open thalweg and mix of vegetation types and heights along adjacent and higher benches (MCWRA 2016b). Additionally, the limited tree removal activities over the permit term would retain the majority of the taller habitat currently in 6.12 and 7.01.

In wide river systems, such as the Salinas River, the area of the water surface relative to the volume of water is large, exposing the river to more insolation and more heat gain (Beschta *et al.* 1987). The influence of riparian vegetation on larger rivers, such as the Salinas, is proportionately less than for smaller rivers and tributaries as the shade cast by trees adjacent to the watercourse covers less of the water's surface. This decreases the cooling influence of shade on mainstem waters, particularly those that have higher than normal summer flows because of releases from upstream storage reservoirs.

Due to the work window, existing conditions, and mitigation, we do not expect the proposed removal of vegetation to increase water temperatures, decrease cover, or result in significant delay or interruption of steelhead migration. For these reasons, the potential effects of vegetation removal are expected to be insignificant to S-CCC steelhead and their critical habitat.

Based on the above, the proposed work activities are not expected to degrade PBFs for S-CCC steelhead. The potential effects of this Program are considered insignificant or discountable and are not expected to result in either a net change to existing habitat values or result in adverse impacts to designated critical habitat.

Conclusion

Based on this analysis. NMFS concurs with the Corps that the proposed action is not likely to adversely affect S-CCC steelhead or their designated critical habitat.

Reinitiation of Consultation

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

MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

Under the MSA, consultation is intended to promote the protection, conservation and enhancement of Essential Fish Habitat (EFH) as necessary to support sustainable fisheries and the managed species' contribution to a healtby ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10), and "adverse effect" means any impact which reduces either the quality or quantity of EFH (50 CFR 600.910(a)). Adverse effects may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

Pacific Coast Groundfish EFH is present in the Salinas River lagoon. The Corps did not request EFH consultation for the Program, but NMFS has determined the proposed action may result in localized and temporary degradation of water quality. Therefore, NMFS has determined the proposed action would adversely affect EFH for various lifestages of fish species managed under the Pacific Coast Groundfish Fishery Management Plan; however, adverse effects are minimal and localized. Thus, NMFS has no practical EFH Conservation Recommendations to provide.

Please direct questions regarding this letter to William Stevens, North Central Coast Office in Santa Rosa, California at (707) 575-6066, or via e-mail at William.Stevens@noaa.gov.

Sincerely,

William W. Stelle, Jr.
Regional Administrator

cc: Greg Brown, Corps, San Francisco, California
Shaunna Juarez, MCWRA, Salinas, California
Jon Rohrbough, Central Coast Regional Water Quality Control Board, SLO
Abby Hart, The Nature Conservancy, San Francisco, California
Copy to ARN File # 151422WCR2014SR00191
Copy to ARN File # 151422WCR2016SR00206
Copy to Chron File

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Water Boards

Central Coast Regional Water Quality Control Board

August 31, 2016

VIA ELECTRONIC MAIL

David E. Chardavoyne
Monterey County Water Resource Agency
P.O. Box 930
Salinas, CA 93901
Email: ChardavoyneDE@co.monterey.ca.us

Dear Mr. Chardavoyne:

TECHNICALLY CONDITIONED WATER QUALITY CERTIFICATION NUMBER 32716WQ02 FOR 2016-2025 SALINAS RIVER STREAM MAINTENANCE PROGRAM, MONTEREY COUNTY

Thank you for the opportunity to review your January 25, 2016 application for water quality certification of the 2016-2025 Salinas River Maintenance Program (Project). The application was completed on February 3, 2016. The Project, if implemented as described in your application and with the additional mitigation and other conditions required by this Clean Water Act Section 401 Water Quality Certification (Certification), appears to be protective of beneficial uses of State waters. We are issuing the enclosed Certification. Should new information come to our attention that indicates a water quality problem, we may require additional monitoring and reporting, issue Waste Discharge Requirements, or take other action.

Your Certification application and submitted documents indicate that Project activities have the potential to affect beneficial uses and water quality. The Central Coast Regional Water Quality Control Board (Central Coast Water Board) issues this Certification to protect water quality and associated beneficial uses from Project activities. We need reports to determine compliance with this Certification. All technical and monitoring reports requested in this Certification, or any time after, are required per Section 13267 of the California Water Code.

Failure to submit reports required by this Certification, or failure to submit a report of technical quality acceptable to the Executive Officer, may subject you to enforcement action per Section 13268 of the California Water Code. The Central Coast Water Board will base enforcement actions on the date of certification. Any person affected by this Central Coast Water Board action may petition the State Water Resources Control Board (State Water Board) to review this action in accordance with California Water Code Section 13320; and Title 23, California Code of Regulations, Sections 2050 and 3867-3869. The State Water Board, Office of Chief Counsel, PO Box 100, Sacramento, CA 95812, must receive the petition within 30 days of the date of this Certification. We will provide upon request copies of the law and regulations applicable to filing petitions.

If you have questions please contact **Jon Rohrbough at (805) 549-3458** or via email at Jon.Rohrbough@waterboards.ca.gov, or Phil Hammer at (805) 549-3882. Please mention the above certification number in all future correspondence pertaining to this project.

Sincerely,

John M. Robertson

Digitally signed by John M. Robertson
Date: 2016.08.31 16:57:43 -07'00'

John M. Robertson
Executive Officer

Enclosures: Action on Request for CWA Section 401 Water Quality Certification

cc: With enclosures

Elizabeth Krafft
Monterey County Water Resources Agency
Email: krafftea@co.monterey.ca.us

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Action on Request for
Clean Water Act Section 401 Water Quality Certification
for Discharge of Dredged and/or Fill Materials

PROJECT: 2016-2025 Salinas River Stream Maintenance Program

APPLICANT: David E. Chardavoyne
Monterey County Water Resources Agency
P.O. Box 930
Salinas, CA 93901

ACTION:
1. ☐ Order for Standard Certification
2. ● Order for Technically-conditioned Certification
3. ☐ Order for Denial of Certification

ATTACHMENTS
1. Project Information and Conditions
2. Findings

STANDARD CONDITIONS:

1. This Certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment per section 13330 of the California Water Code and section 3867 of Title 23 of the California Code of Regulations (23 CCR).

2. This Certification action is not intended to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent Certification application was filed per 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license was being sought.

3. The validity of any non-denial Certification action (Actions 1 and 2) is conditioned upon total payment of the fee required under 23 CCR section 3833, unless otherwise stated in writing by the certifying agency.

ADMINISTRATIVE CONDITIONS:

1. This Certification is subject to the acquisition of all local, regional, state, and federal permits and approvals as required by law. Failure to meet any conditions contained herein or any conditions contained in any other permit or approval issued by the State of California or any subdivision thereof may result in the revocation of this Certification and civil or criminal liability.

2. In the event of a violation or threatened violation of this Certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under state law. For purposes of Section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with

the water quality standards and other pertinent requirements incorporated into this Certification.

3. In response to a suspected violation of any condition of this Certification, the Central Coast Water Board may require the holder of any permit or license subject to this Certification to furnish, under penalty of perjury, any technical or monitoring reports the Central Coast Water Board deems appropriate, provided that the burden, including costs, of the reports shall have a reasonable relationship to the need for the reports and the benefits obtained from the reports.

4. In response to any violation of the conditions of this Certification, the Central Coast Water Board may add to or modify the conditions of this Certification as appropriate to ensure compliance.

5. The Central Coast Water Board reserves the right to suspend, cancel, or modify and reissue this Certification, after providing notice to the applicant, if the Central Coast Water Board determines that the Project fails to comply with any of the terms or conditions of this Certification.

6. A copy of this Certification, the application, and supporting documentation must be available at the Project site during construction for review by site personnel and agencies. A copy of this Certification must also be provided to the contractor and all subcontractors who will work at the Project site. All personnel performing work on the proposed Project shall be familiar with the content of this Certification and its posted location on the Project site.

7. The Permittee shall grant Central Coast Water Board staff, or an authorized representative, upon presentation of credentials and other documents as may be required by law, permission to enter the Project site at reasonable times, to ensure compliance with the terms and conditions of this Certification and/or to determine the impacts the Project may have on waters of the State.

8. The Permittee must, at all times, fully comply with the application, plans, specifications, and technical reports submitted to support this Certification; all subsequent submittals required as part of this Certification; and this Certification. The conditions within this Certification and attachment(s) supersede conflicting provisions within applicant submittals.

9. The Permittee shall notify the Central Coast Water Board within 24 hours of any unauthorized discharge to waters of the U.S. and/or State; measures that were implemented to stop and contain the discharge; measures implemented to clean-up the discharge; the volume and type of materials discharged and recovered; and additional BMPs or other measures that will be implemented to prevent future discharges.

10. This Certification is not transferable to any person except after notice to the Executive Officer of the Central Coast Water Board. The Permittee shall submit this notice in writing at least 30 days in advance of any proposed transfer. The notice must include a written agreement between the existing and new responsible party containing a specific date for the transfer of this Certification's responsibility and coverage between the current responsible party and the new responsible party. This agreement shall include an acknowledgement that the existing responsible party is liable for compliance and violations up to the transfer date and that the new responsible party is liable from the transfer date on.

11. The total fee for this project is $90,000. The remaining fee payable to the Central Coast Water Board is $0.

SPECIAL CONDITIONS

A. Permit Term

1. This Certification expires on November 30, 2025, except that compensatory mitigation implementation, monitoring, and reporting requirements and conditions of this Certification remain in effect until the Permittee complies with all such requirements and conditions. Central Coast Water Board staff will assess the implementation and effectiveness of the Project after five years, and consider modifications to this Certification for the second five years of the permit term. MCWRA shall not begin maintenance activities in any year unless written approval of the Annual Work Plan has first been obtained from the Central Coast Water Board Executive Officer in accordance with Special Condition E.3. This Certification constitutes approval of the Annual Work Plan for the 2016 maintenance season.

B. Definitions

1. Low-flow channel. For the purposes of this Certification, "low-flow channel" means the lowest channel in the riverbed, in which the lowest flows are conveyed.

2. Greater channel. For the purposes of this Certification, "greater channel" means the river channel defined by the outermost banks / levees or the outermost edge of the riparian corridor, whichever is larger.

C. Activities

1. Monterey County Water Resources Agency (MCWRA) shall submit the Final *Salinas River Stream Maintenance Program Permit Application Supplemental Attachment* (Final Supplemental Attachment) **by November 30, 2016**. The Final Supplemental Attachment shall be a revision of the draft *Salinas River Stream Maintenance Program Permit Application Supplemental Attachment*, dated January 2016 (Draft Supplemental Attachment), incorporating the following additional information:
   a. Permit conditions contained in this Certification and other agency permits;
   b. Final *Additional Information for the Salinas River Stream Maintenance Program*; and
   c. Final *Salinas River Stream Maintenance Program Mitigation Strategy*.

2. MCWRA shall implement the Salinas River Stream Maintenance Program as described in the Final Supplemental Attachment and this Certification. Where conditions contained in this Certification disagree with statements in the Final Supplemental Attachment, this Certification shall govern.

3. MCWRA may only conduct maintenance activities in the 123 secondary channel areas, two selective treatment areas, and three tributary maintenance areas (San Lorenzo Creek, Bryant Canyon Channel, and Gonzales Slough) identified in the Final Supplemental Attachment. MCWRA shall not conduct maintenance activities outside of these identified areas, and access routes to maintenance areas identified in accordance with Special Condition C.5, unless prior written approval is received from the Central Coast Water Board Executive Officer in accordance with Special Condition E.2.

   a. MCWRA may conduct removal and/or herbicidal treatment of arundo and other invasive species anywhere within the greater channel, subject to the methods described in the Final Supplemental Attachment and the conditions of this Certification, provided that invasive species removal and herbicidal treatment areas are identified in the Annual

Work Plan and delineated in the pre-maintenance survey in accordance with Special Conditions E.3 and E.4, respectively.

b. MCWRA may conduct compensatory mitigation planting activities anywhere within the greater channel, subject to Special Condition G and the recommendations of the biologist.

4. MCWRA shall not conduct vegetation or sediment management activities in secondary channels or selective treatment areas within 30 feet of developed areas, including agricultural fields and farm roads, except to construct temporary access routes to maintenance areas in accordance with Special Condition C.5. This condition does not prohibit MCWRA from conducting vegetation or sediment management activities in tributary maintenance areas within 30 feet of developed areas, subject to prior Central Coast Water Board Executive Officer approval of the Annual Work Plan in accordance with Special Condition E.3.

5. MCWRA shall use existing roads, trails, and access ramps to access maintenance areas to the maximum extent practicable. Access routes shall minimize crossings of the low-flow channel to the maximum extent practicable. Where existing access routes are not sufficient, MCWRA shall construct access routes along sections of existing farm roads. New access routes shall be identified by the biologist during the pre-maintenance survey in accordance with Special Condition E.4 and shall be sited to minimize impacts to native habitat.

   a. Access routes shall not cross the low-flow channel when water is present, either by bridge, culvert, or ford, unless prior written approval has been obtained from the Central Coast Water Board Executive Officer.

6. MCWRA shall not conduct maintenance activities in standing or flowing water. MCWRA shall not operate equipment within the wetted stream, or use heavy equipment to cross the wetted stream. Vehicles and equipment shall not enter or cross the low-flow channel when standing or flowing water is present.

7. Herbicide use shall 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.

8. Sediment removed from maintenance areas shall be transported outside of the greater channel, and shall be placed in locations outside of waters of the State and in locations where sediment cannot flow into waters of the State, except as authorized below.

   a. Sediment may be temporarily stockpiled within the greater channel, provided that stockpiles (i) shall be placed only in already-disturbed areas; (ii) shall not be placed on native riparian vegetation (low-stature herbaceous wetland habitat, early- and mid-successional cottonwood habitat, mid-successional willow habitat, and early-successional perennial riparian habitat); and (iii) shall be removed from the greater channel by November 15 of each year.

   b. Central Coast Water Board staff will consider approval of permanent sediment stockpile locations within the greater channel on a case-by-case basis upon written request from MCWRA. MCWRA shall not leave sediment stockpiles within the greater channel after November 15 without written approval from the Central Coast Water Board Executive Officer, or in any location within the greater channel not specified in the Central Coast Water Board Executive Officer's written approval.

9. Identification of new maintenance areas not already designated in the Final Supplemental Attachment, or relocation or realignment of designated maintenance areas except as described in the Final Supplemental Attachment and Special Conditions E.2. and E.4, is not authorized by this Certification.

D. Impacts

1. Total project disturbance in waters of the State shall not exceed 863.7 acres, except as provided for in Special Condition E.2, including the following vegetation communities as defined in the Final Supplemental Attachment:
   a. Approximately 13.1 acres of low-stature herbaceous wetland habitat;
   b. Approximately 27.7 acres of early- and mid-successional cottonwood habitat;
   c. Approximately 12.8 acres of mid-successional willow habitat;
   d. Approximately 422.3 acres of early-successional perennial riparian habitat;
   e. Approximately 161.9 acres of sparse herbaceous vegetation;
   f. Approximately 66.0 acres of arundo-dominated vegetation; and
   g. Approximately 159.7 acres of unvegetated or bare ground habitat.

2. MCWRA shall limit impacts to low-stature herbaceous wetland habitat, to the greatest extent practicable, to temporary vegetation damage resulting from driving essential equipment across these wetland areas. Vehicles shall not enter wetland areas when water is present or the ground is moist. Other impacts to low-stature herbaceous wetland habitat are not authorized by this Certification.

3. MCWRA shall field-verify the acreage of impacts to low-stature herbaceous wetland habitat, early- and mid-successional cottonwood habitat, mid-successional willow habitat, and early-successional perennial riparian habitat during the pre-maintenance survey (see Special Condition E.4). The field verification shall update the approximate impact acreages listed in the Final Supplemental Attachment for these habitat types, and shall account for any adjustments to the mapped maintenance areas.

E. Program Management

1. The Project includes maintenance activities previously permitted under Water Quality Certification No. 32714WQ03 for the Salinas River Multi-Benefit Demonstration Project. MCWRA shall conduct ongoing maintenance activities in previously permitted areas, as well as compensatory mitigation implementation, monitoring, and reporting activities required and/or begun for impacts in previously permitted areas, as described in this Certification No. 32716WQ02. This Certification replaces Water Quality Certification No. 32714WQ03 for the Salinas River Multi-Benefit Demonstration Project.

2. Adaptive Management. MCWRA may propose adaptive management, as described in the Final Supplemental Attachment, if flood events cause designated secondary channel maintenance areas to shift location or alignment, or if shifts in the location or alignment of the Salinas River low-flow channel indicate a need to modify a designated secondary channel maintenance area. MCWRA shall not implement adaptive management, as described in the Final Supplemental Attachment, without obtaining prior written approval from the Central Coast Water Board Executive Officer as required in this Certification.

   a) **By May 31 of each year**, beginning with the 2017 maintenance season, MCWRA shall identify designated secondary channels that may need to be relocated or realigned that

year, and shall submit to Central Coast Water Board staff, as part of the Annual Report, the list of all potential adaptive management locations.

b) **By July 15 of each year**, beginning with the 2017 maintenance season, MCWRA shall assess and determine the need for adaptive management for any of the designated secondary channel maintenance areas identified in accordance with Special Condition E.2.a, and shall submit to Central Coast Water Board staff a proposal to implement adaptive management. MCWRA shall not implement the proposal unless written approval of the proposal has first been obtained from the Central Coast Water Board Executive Officer.

i. The proposal shall be based on evaluation of field conditions, including visual monitoring of (A) each secondary channel proposed to be relocated or realigned; (B) the reach of the low-flow channel for which each secondary channel proposed to be relocated or realigned is designed to reduce flow; and (C) upstream and downstream connection points between the low-flow channel and each secondary channel proposed to be relocated or realigned.

ii. The proposal shall implement the design approach described in the Final Supplemental Attachment.

iii. The proposal shall identify the significant fluvial geomorphological changes to the river, specific maintenance area(s) proposed to be modified, MCWRA's recommendation for the relocation and/or realignment of each specific maintenance area, MCWRA's rationale for the recommendation, and supporting photographs.

iv. MCWRA shall not propose modification of any secondary channel that was not identified in the list of potential adaptive management locations submitted in accordance with Special Condition E.2.a.

3. Annual Work Plan. MCWRA shall submit an Annual Work Plan to Central Coast Water Board staff each year, beginning with the 2017 maintenance season. The Annual Work Plan shall consist of the following parts:

a) **By May 1 of each year**, MCWRA shall submit a work plan for herbicide treatment of non-native vegetation to be conducted as early as June 1. The work plan shall (i) identify whether MCWRA proposes to conduct herbicide treatment of non-native vegetation that year; and, if early herbicide treatment of non-native vegetation is proposed, (ii) identify the specific areas where activities are proposed that year and the non-native vegetation targeted by the herbicide treatment, and describe the treatment methods MCWRA will implement. MCWRA shall not begin herbicide treatment of non-native vegetation unless written approval has first been obtained from the Central Coast Water Board Executive Officer.

b) **By July 15 of each year**, beginning with the 2017 maintenance season, MCWRA shall submit a work plan for all vegetation and sediment management activities to be conducted after August 15, including any herbicide treatment of non-native vegetation not included in the first part of the Annual Work Plan submitted by May 1. The work plan shall identify the specific mapped maintenance areas where maintenance activities are proposed that year, describe the maintenance activities proposed in each maintenance area, and identify the route that will be used to access each maintenance area. MCWRA shall not begin maintenance activities unless written approval has first been obtained from the Central Coast Water Board Executive Officer.

4. Pre-Maintenance Survey. No more than 60 days prior to commencement of maintenance activities, MCWRA shall conduct a pre-maintenance survey of all maintenance areas proposed for maintenance in that year. Pre-maintenance surveys shall be performed by a qualified and trained biologist, and shall:
   a) Evaluate the proposed alignment of each 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) Clearly identify and delineate, by flagging or staking, the boundaries of each maintenance area and points of connection to the low-flow channel;
   c) Clearly identify and delineate, by flagging or staking, the boundaries of arundo and other invasive species removal and/or herbicide treatment areas that are outside of designated maintenance areas;
   d) Identify acceptable access routes and temporary low-flow channel crossing locations, where applicable;
   e) Identify and protect sensitive resources to be avoided;
   f) Field-verify actual Project impacts as described in Special Condition D.3; and
   g) Determine anticipated mitigation obligations resulting from anticipated impacts.

5. Training. All personnel who engage in maintenance activities or their oversight at any maintenance area (MCWRA staff, biologists, landowners and/or their representatives who will perform the work, etc.) must attend training, prior to commencement of their activities, on the conditions of this Certification and how to perform their activities in compliance with those conditions. Trainings shall be conducted by a qualified individual with experience in Water Quality Certification conditions and compliance.

6. Oversight. MCWRA shall conduct daily monitoring of all active maintenance sites during maintenance activities during business days, and shall inspect on the following Monday any maintenance site where maintenance activities were conducted over the weekend, to ensure that activities are conducted in accordance with the Final Supplemental Attachment, the pre-maintenance survey, and this Certification. Any alteration to the maintenance locations and boundaries established during the pre-maintenance survey must be approved by a qualified biologist. MCWRA shall also (a) quantify actual impacts to low-stature herbaceous wetland habitat, early- and mid-successional cottonwood habitat, mid-successional willow habitat, and early-successional perennial riparian habitat in each maintenance area; b) quantify sediment removed; and c) determine actual mitigation obligations resulting from actual impacts.

7. MCWRA shall prevent the establishment of new arundo growth areas within designated maintenance areas. As part of Pre-Maintenance Surveys (Special Condition E.4) and visual inspection of maintained areas (Special Condition H.1), MCWRA shall note and map any new arundo growth outside of previously mapped arundo growth areas. MCWRA shall treat new arundo growth areas as necessary, and subject to the conditions of this Certification, to achieve less than 1% cover by arundo in new arundo growth areas throughout the term of this Certification.

F. **Scheduling**

1. Work Window. MCWRA shall conduct all vegetation and sediment removal activities in waters of the State from June 1 through November 15 each year. No vegetation or sediment removal activities shall be conducted from November 16 through May 31 of any

year unless prior written approval has been obtained from the Central Coast Water Board Executive Officer. Requests to conduct vegetation or sediment removal activities from November 16 through May 31 in any year shall be submitted to Central Coast Water Board staff at least 21 days prior to the planned work date.

a) Tree planting for compensatory mitigation purposes may occur all year, except that tree planting activities shall not occur during rain events, in standing or flowing water, or on a bank above standing or flowing water. In addition, tree planting activities performed from November 16 through May 31 in any year shall be conducted using hand tools only.

2. Rain Events. MCWRA shall not conduct maintenance, mitigation, or restoration activities during rain events. MCWRA shall comply with the following conditions when scheduling and conducting maintenance, mitigation, or restoration activities:

a) At 2:00 p.m. on the day before planned activities, if the National Weather Service forecast for the nearest municipality predicts a 25% or more chance of 0.25 inch of rain within 24 hours, MCWRA shall install effective erosion control, sediment control, and other protective measures and shall smooth active sediment removal and/or movement sites in anticipation of potential rain events. MCWRA may plan to conduct maintenance, mitigation, or restoration activities the following day subject to the other conditions of this Certification.

b) At 2:00 p.m. on the day before planned activities, MCWRA shall cancel the following day's work, and shall smooth active sediment removal and/or movement areas and remove arundo debris piles outside the outer banks/levees, if flow conditions at any of the locations listed below indicate the possibility that standing or flowing water may occur in areas where maintenance is proposed the following day. (For the purposes of this Certification, "arundo debris pile" means cut material that has been gathered into a pile rather than chipped in place).

i. Salinas River at the USGS flow gauge near Bradley (gauge no. 11150500);

ii. Salinas River at the USGS flow gauge at the Highway 101 bridge near Soledad (gauge no. 11151700); or

iii. Arroyo Seco River at the USGS flow gauge at the Arroyo Seco Road bridge near Soledad (gauge no. 11152050).

c) At 7:00 a.m. on the day of planned activities, MCRWA shall cancel that day's work at any maintenance site if any of the following applies at the site:

i. Rainfall is occurring. For the purposes of this Certification, "rainfall" includes rain, showers, or drizzle, but not fog or mist; or

ii. Standing or flowing water is present in work areas.

d) At 7:00 a.m. on the day of planned activities, if the National Weather Service forecast for the nearest municipality predicts a 25% or more chance of rain that day (regardless of amount) but rainfall is not presently occurring, MCWRA may conduct scheduled work activities subject to the following:

i. MCWRA shall keep equipment, trash, and non-plant-matter debris within the levees to a minimum.

ii. MCWRA shall chip cut arundo debris in place.

iii. MCWRA shall not drive equipment across the low- flow river channel or work in any location that requires access across the low -flow river channel.

iv. MCWRA shall not conduct any sediment removal or movement activities. For the purposes of this Certification, "sediment removal or movement activities" means any shaping of the riverbed beyond what is incidental to vegetation removal activities.

e) MCWRA shall cease work; install effective erosion control, sediment control, and other protective measures; and remove equipment, trash, and non-plant-matter debris outside the outer banks/levees at any time rainfall begins, as defined in this Certification. MCWRA may resume work when rainfall ceases, provided that rainfall appears to be over for the day and subject to Special Condition F.2.d.

G. Compensatory Mitigation

1. MCWRA shall implement compensatory mitigation installation, maintenance, and monitoring as described in the *Salinas River Stream Maintenance Program Revised Final Environmental Impact Report*, dated June 2014 (EIR); the Final Supplemental Attachment; and this Certification. Where statements in the Final Supplemental Attachment disagree with statements in the EIR, the Final Supplemental Attachment shall govern. Where conditions contained in this Certification disagree with statements in the EIR or the Final Supplemental Attachment, this Certification shall govern.

2. MCWRA shall provide the following compensatory mitigation for actual Project impacts:
   a) MCWRA shall mitigate for removal of non-willow riparian trees (e.g., cottonwood, alder, box elder, sycamore) larger than two inches in diameter by planting cottonwood, sycamore, or alder trees at a 3:1 ratio (trees planted to trees removed).
   b) MCWRA shall mitigate for removal of willows equal to or greater than six inches in diameter at a 2:1 ratio (trees planted to trees removed).
   c) MCWRA shall mitigate for impacts to mid-successional willow habitat through the removal of arundo at a 3:1 ratio (acres of arundo removed to acres of mid-successional willow habitat removed). Arundo removal as compensatory mitigation for impacts to mid-successional willow habitat shall occur within the greater channel, but only outside designated maintenance areas (including secondary channels, selective treatment areas, and tributary maintenance areas).
   d) MCWRA shall mitigate for impacts to early-successional perennial riparian habitat through the removal of arundo at a 0.5:1 ratio (i.e., one-half acre of arundo removed to one acre of early-successional perennial riparian habitat removed). Arundo removed from designated maintenance areas may be counted toward the mitigation requirement for impacts to early-successional perennial riparian habitat at one-half the value of arundo removed outside the designated secondary channels (i.e., one acre of arundo removal from designated maintenance areas will provide compensatory mitigation for one acre of early-successional perennial riparian habitat removed).

3. Mid-successional willow and early-successional perennial riparian habitats growing as secondary vegetation within early- to mid-successional cottonwood forest shall be counted as mid-successional willow and early-successional perennial riparian habitat for the purpose of calculating mitigation obligations.

4. MCWRA shall mitigate for impacts to low-stature herbaceous wetland habitat by restoring impacted wetland areas to pre-impact conditions.

5. MCWRA shall be required to provide compensatory mitigation for impacts only once during the 10-year permit term. Repeat maintenance activities in a previously-maintained area shall not require additional compensatory mitigation.

a) Repeat maintenance activities in maintenance areas where initial maintenance was conducted under Certification No. 32714WQ03 prior to issuance of this Certification No. 32716WQ02, and for which compensatory mitigation has also been provided under Certification No. 32714WQ03, need not be mitigated again during the 10-year term of this Certification No. 32716WQ02.

5. MCWRA shall re-treat arundo removal areas as described in the Final Supplemental Attachment and as necessary to achieve final performance criteria.

7. Compensatory mitigation shall achieve the following final performance criteria:
   a) Mitigation tree plantings shall achieve 85% survival five years after planting.
   b) Arundo removal areas, including arundo removed within designated maintenance areas and not intended as mitigation for impacts, shall achieve 5% or less cover by arundo five years after initial removal.
   c) Impacted wetland areas shall achieve pre-maintenance conditions two years after impact.
   d) Mitigation plantings must be without supplemental irrigation for at least two years prior to assessment of final performance criteria.

8. MCWRA shall complete implementation of mitigation plantings within 12 months of completion of maintenance activities for which the plantings are required as compensatory mitigation. MCWRA shall complete initial removal of arundo within 12 months of the completion of maintenance activities for which the arundo removal is required as compensatory mitigation.

9. MCWRA shall restore all other temporary impacts (e.g., access routes, temporary crossings, etc.) to pre-maintenance conditions. Temporary access routes shall be restored to pre-maintenance conditions at the end of the maintenance season. Access routes not removed at the end of the maintenance season in which they are constructed shall be considered "permanent" access routes, and MCWRA shall provide compensatory mitigation for impacts to native vegetation in accordance with Special Condition G. "Permanent" access routes that MCWRA does not expect to use in the future shall be restored to pre-maintenance conditions at the end of the permit term.

H. Inspections and Monitoring

1. MCWRA shall visually inspect all maintenance sites and areas of the greater channel adjacent to maintenance sites following completion of maintenance activities and for one subsequent rainy season to ensure that maintenance activities are not causing excessive erosion or other water quality problems. If maintenance activities do cause water quality problems, MCWRA shall contact the Central Coast Water Board staff member overseeing the Project. MCWRA shall be responsible for obtaining any additional permits necessary for implementing plans for restoration to prevent further water quality problems.

2. Following all flood events equal to or exceeding 42,800 cfs (10-year event), as measured at United States Geological Survey (USGS) stream gage 11152500 near Spreckels, MCWRA shall visually inspect the low-flow channel and all designated secondary channels within the Project area for channel movement due to fluvial processes. MCWRA shall conduct this monitoring after flood waters have receded and the low-flow channel and secondary channel areas are visible. MCWRA shall submit the results of the visual inspection, including

identification of any channel movements due to fluvial processes, to Central Coast Water Board staff no later than May 31 of the following year as part of the annual report.

3. MCWRA shall monitor compensatory mitigation planting sites each year for five years following completion of planting. Monitoring shall include assessment of growth, survival, percent cover, general health and stature, and progress toward achieving final performance criteria; and shall determine whether remedial actions are needed to achieve final performance criteria. Monitoring shall also include photographs taken from vantage locations identified prior to revegetation activities that enable Central Coast Water Board staff to identify changes in size and cover of plants. If final performance criteria are not achieved within five years, MCWRA shall continue biennial (every other year) monitoring and maintenance until final performance criteria are achieved.

4. MCWRA shall monitor all arundo removal areas each year for five years following completion of initial removal, including arundo removed within designated maintenance areas and not intended as mitigation for impacts. Monitoring shall include assessment of arundo regrowth and progress toward achieving success criteria, and shall determine whether remedial actions are needed to achieve final performance criteria. If final performance criteria are not achieved within five years, MCWRA shall continue biennial monitoring and maintenance until final performance criteria are achieved.

5. During monitoring of arundo removal areas outside of designated secondary channels, MCWRA shall also assess natural recruitment of native vegetation. Monitoring shall include visual assessment of the amount, extent, and distribution of plant recruitment; plant species recruited; extent of native versus non-native plants recruited; and overall health and stature of native plants recruited.

6. MCWRA shall monitor impacted low-stature herbaceous wetland areas for two years after the initial impact.

7. MCWRA shall monitor temporary impact areas for two years after completion of restoration activities to ensure that impact areas are restored to pre-maintenance conditions.

I. Long-Term Effectiveness Assessment

1. MCWRA shall develop a Long-Term Effectiveness Assessment Plan to (a) evaluate the Project's overall effectiveness at achieving projected flood reduction benefits while also protecting beneficial uses and habitat function, and (b) identify Project- and watershed-based actions MCWRA can implement to optimize Project effectiveness and watershed health and function. MCWRA shall submit the plan for review and approval by the Central Coast Water Board Executive Officer with the 2017 Annual Report by **May 31, 2017**. The plan shall describe the information MCWRA will collect, the monitoring activities MCWRA will conduct to collect the information, and the analyses MCWRA will perform to evaluate the Project's overall effectiveness.

2. The Long-Term Effectiveness Assessment Plan shall include at least the following information and analyses:

   a) Effectiveness monitoring: MCWRA shall conduct pre- and post-maintenance topographic surveys of 10% of all secondary channels in all river management units, and shall use the survey data to determine how the maintenance areas are functioning and assess the sediment transport characteristics of the maintenance areas.

b) Design verification monitoring: MCWRA shall analyze all flow events equal to or exceeding 25,450 cfs (5-year event), as measured at USGS stream gage 11152500 near Spreckels, to answer the following questions, at a minimum:
   - Are secondary channels activated under the flow conditions anticipated by the design?
   - Are secondary channels functioning as designed?
   - Is channel complexity (primary and secondary channels, channel braiding) increasing as anticipated in the design?
   - Where flow velocity data are available, are flow velocities in the low-flow channel decreasing as anticipated in the design?

c) Flood reduction monitoring: MCWRA shall analyze all flow events equal to or exceeding 42,800 cfs, as measured at USGS stream gage 11152500 near Spreckels, to determine whether the Project achieves the anticipated flood reduction benefits. The analysis shall answer the following questions, at a minimum:
   - How does the observed extent of flooding compare to the extent of flooding predicted by the hydraulic model?
   - Where flow velocity data are available, how do observed flow velocities compare to flow velocities predicted by the hydraulic model?

d) Biological function monitoring: MCWRA shall collect and analyze information indicative of the Project's overall effect on beneficial uses and habitat function. Biological function monitoring shall include observation and analysis designed to assess the following elements, at a minimum:
   - Recruitment of native riparian vegetation in areas where arundo was removed for mitigation purposes (outside of designated maintenance areas);
   - Increasing diversity of riparian habitat conditions (earlier to later successional vegetation communities); and
   - Increasing wildlife movement and habitation within the greater channel.

e) Watershed assessment: MCWRA shall collect and analyze information to assess the Project and its effects within the larger context of the Salinas River watershed in Monterey County, with the long-term goal of identifying implementation actions that optimize watershed health and function while also achieving MCWRA river management objectives. Watershed assessment shall include analysis of the following, at a minimum:
   i. The interaction between the Project and known watershed issues, such as flood control, river flows, reservoir releases, water quality, habitat loss, ecological function loss, and fish habitat and passage;
   ii. The interaction between the Project and all other MCWRA river management activities (current and planned), such as reservoir operations and activities downstream;
   iii. The cumulative effect of the Project and all other MCWRA river management activities (current and planned) on watershed health and function;
   iv. The most effective use of management resources to optimize watershed health and function while also achieving MCWRA river management activity purposes, such as the optimal collective use of mitigation resources;
   v. Potential implementation actions or modifications to the Project or other river management activities to optimize watershed health and function, while also achieving MCWRA river management objectives; and
   vi. Recommended implementation actions or modifications to the Project or other river management activities to optimize watershed health and function, while also achieving MCWRA river management activity purposes.

3. The plan shall be developed by qualified personnel with expertise in the biology of riparian ecosystems, fluvial geomorphology, and hydrologic and hydraulic modeling of braided riverine systems.

4. The plan shall include a timeline and interim objectives for submitting the following Long-Term Effectiveness Assessment Reports to the Central Coast Water Board:
   a) A first report, covering the first five years of Project implementation, with the 2021 Annual Report **by May 31, 2021** (this first report need not report on Special Conditions I.2.e.iv-vi); and
   b) A final report, covering nine years of Project implementation, with the 2025 Annual Report **by May 31, 2025**.

5. The Long-Term Effectiveness Assessment Reports shall include the analyses, assessments, and other information identified in Special Condition I.1 and the approved Long-Term Effectiveness Assessment Plan.

J. Reporting

1. MCWRA shall submit all required reporting to the Central Coast Water Board staff member overseeing the Project and to RB3_401Reporting@waterboards.ca.gov.

2. Streambed Alteration Agreement. MCWRA shall submit a signed copy of the Department of Fish and Wildlife's streambed alteration agreement to the Central Coast Water Board immediately upon execution and prior to commencement of maintenance activities.

3. Final Supplemental Attachment. **By November 30, 2016**, MCWRA shall submit the Final *Salinas River Stream Maintenance Program Permit Application Supplemental Attachment* in accordance with Special Condition C.1.

4. Annual Work Plans. **By May 1 of each year**, MCWRA shall submit to the Central Coast Water Board the Annual Work Plan for herbicide treatment of non-native vegetation in accordance with Special Condition E.3.a. **By July 15 of each year**, MCWRA shall submit to the Central Coast Water Board the Annual Work Plan for mechanical vegetation and sediment management activities in accordance with Special Condition E.3.b.

5. Annual Report. **By May 31 of each year**, MCWRA shall submit to the Central Coast Water Board an annual report. MCWRA shall submit Annual Reports until MCWRA has conducted all required monitoring, mitigation has achieved all final performance criteria, and MCWRA has notified the Central Coast Water Board of mitigation completion. Each Annual Report shall include, at a minimum:
   a) Identification of any adaptive management modifications made in accordance with Special Condition E.2;
   b) A summary of training activities, including information demonstrating compliance with Special Condition E.5;
   c) A summary of pre-maintenance survey activities, including a description of any adjustments made in the field to maintenance area alignments as described in Special Condition E.4, and observation of any new arundo growth areas as described in Special Condition E.7;
   d) A description of maintenance activities performed, including identification of all maintenance areas where maintenance occurred, and a summary of the work performed;

e) The quantity of impacts to early- and mid-successional cottonwood, mid-successional willow, and early-successional perennial riparian habitats;

f) A description of impacts to low-stature herbaceous wetland habitat, including the quantity of impact and how impacts were restored;

g) The quantity of mitigation required to compensate for Project impacts occurring since the commencement of Project maintenance activities, the quantity of mitigation implemented since the commencement of Project maintenance activities, and the quantity of mitigation that remains to be implemented in order to satisfy mitigation requirements for all impacts to-date;

h) A description of the results of required visual inspections of the Project site and areas of waters of the State adjacent to Project impact areas, including:

   i. Erosion conditions;

   ii. Water quality and beneficial use conditions;

   iii. Observation of any new arundo growth areas, and treatment results (percent cover of arundo) in previously mapped new arundo growth areas, as described in Special Condition E.7;

   iv. Representative photographs of the Project site and areas of waters of the State adjacent to Project impact areas; and

   v. If the visual inspection monitoring period is over, but water quality problems persist, the Annual Report shall identify corrective measures to be undertaken, including extension of the monitoring period until the Project is no longer causing excessive erosion or other water quality problems.

l) Identification of all flow events equal to or exceeding 25,450 cfs and all flow events equal to or exceeding 42,800 cfs, as measured at USGS stream gage 11152500 near Spreckels;

j) Mitigation reporting, including the following information:

   i. A description of mitigation activities completed, including type and quantity of mitigation, date mitigation activities began, and date mitigation activities were completed;

   ii. Verification that mitigation activities were conducted according to the Final Supplemental Attachment and the conditions of this Certification;

   iii. The results of mitigation monitoring conducted in accordance with the conditions of this Certification and as described in the Final Supplemental Attachment;

   iv. Any remedial actions taken or needed;

   v. Any additional information specified in the Final Supplemental Attachment; and

   vi. Annual photo-documentation representative of all mitigation areas, taken from vantage points from which Central Coast Water Board staff can identify changes in size and cover of plants. Compare photos of installed mitigation with photos of the mitigation areas prior to installation.

k) A description of mitigation completion status that identifies the amount of mitigation monitoring and maintenance remaining, or certifies that mitigation is complete and all required mitigation monitoring and maintenance has been conducted and all final performance criteria achieved. If the monitoring period is over, but all final performance criteria have not been achieved, the Annual Report shall identify corrective measures to be undertaken, including extension of the monitoring period until the criteria are met.

6. Potential Adaptive Management Locations. **By May 31 of each year**, MCWRA shall submit with the Annual Report any potential adaptive management locations, in accordance with Special Condition E.2.a.

7. Adaptive Management Proposals. **By July 15 of each year**, MCWRA shall submit the adaptive management proposal described in Special Condition E.2.b, if applicable.

8. Program Reassessment Reporting. **By May 31, 2021**, MCWRA shall submit the information listed below to the Central Coast Water Board with the 2021 Annual Report. Central Coast Water Board staff will use the information to assess the implementation and effectiveness of the Project. Submitted information shall include:
   a) A summary of maintenance activities, impacts, and mitigation activities conducted in the first five years of Project implementation; and
   b) A summary of all monitoring information collected, as well as a detailed description and results of all analysis required, in accordance with Special Condition H.

9. Long-Term Effectiveness Assessment Reporting. MCWRA shall submit to the Central Coast Water Board the following Long-Term Effectiveness Assessment Plan reporting developed in accordance with Special Condition I. Long-Term Effectiveness Assessment Plan reports shall be submitted with the Annual Report.
   a) **By May 31, 2017**, the Long-Term Effectiveness Assessment Plan;
   b) **By May 31, 2021**, the first report; and
   c) **By May 31, 2025**, the final report.

K. Records and Data Management

1. MCWRA shall develop and maintain a data management system to track maintenance and mitigation activities. The data management system shall be capable of tracking the following information:
   a) The date of all required trainings;
   b) The date of all required pre-maintenance surveys;
   c) Adjustments made to maintenance area alignments resulting from adaptive management decisions or pre-maintenance surveys;
   d) The date maintenance activities occurred in each maintenance area, including repeat maintenance efforts in the same maintenance area(s);
   e) The quantity of impacts to habitat types requiring mitigation, and the date the impact occurred;
   f) Identification of all mitigation areas, including the location and size of each mitigation area;
   g) The date mitigation implementation was completed in each mitigation area;
   h) The date of all visual inspections required by Special Conditions H.1 and H.2;
   i) The date of all compensatory mitigation monitoring activities required by Special Conditions H.3 through H.7, and the date of any remedial actions taken;
   j) A comparison of the total mitigation obligation accrued with the total quantity of compensatory mitigation implemented; and
   k) The date of all Long-Term Effectiveness Assessment Monitoring activities conducted in accordance with Special Condition I.

2. MCWRA shall maintain records of all visual inspections and monitoring events conducted in accordance with Special Condition H, including personnel performing the inspections, inspection dates, locations, observations, and corrective actions taken.

3. MCWRA shall retain all required records for a period of at least 10 years following completion of the project.

L. **General Project Requirements**

1. All work performed within waters of the State shall be completed in a manner that minimizes impacts to beneficial uses and habitat. Measures shall be employed to minimize land disturbances that will adversely impact the water quality of waters of the State. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete Project implementation.

2. MCWRA shall implement effective erosion control, sediment control, and other protective measures prior to the start of any rain events.

3. MCWRA shall remove all equipment, trash, debris, and arundo debris piles outside the outer banks/levees at the end of each work day.

4. MCWRA shall retain a spill plan and appropriate spill control and clean up materials (e.g., oil absorbent pads) onsite in case spills occur.

5. All vehicles and equipment used on site shall be well maintained and checked daily for fuel, oil, and hydraulic fluid leaks or other problems that could result in spills of toxic materials. All vehicle fueling and maintenance activity shall occur at least 100 feet away from the greater channel of the Salinas River and other waters of the State, and in designated staging areas, unless a requested exception on a case-by case basis granted by prior written approval has been obtained from the Central Coast Water Board Executive Officer.

6. Dewatering and stream diversion measures are not authorized based on the application.

7. All construction-related equipment, materials, and any temporary BMPs no longer needed shall be removed and cleared from the site upon completion of the Project.

8. Central Coast Water Board staff shall be notified if mitigations as described in the 401 Water Quality Certification application for this Project are altered by the imposition of subsequent permit conditions by any local, state or federal regulatory authority. MCWRA shall inform Central Coast Water Board staff of any modifications that interfere with compliance with this Certification.

CENTRAL COAST WATER BOARD CONTACT PERSON:

Jon Rohrbough
(805) 549-3458
Jon.Rohrbough@waterboards.ca.gov

Please refer to the above certification number when corresponding with the Central Coast Water Board concerning this project.

WATER QUALITY CERTIFICATION:

I hereby issue an order certifying that as long as all the conditions listed in this Certification are met, any discharge from the 2016-2025 Salinas River Stream Maintenance Program shall comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated pursuant to State Water Board Water Quality Order No. 2003-0017-DWQ, which requires compliance with all conditions of this Certification.

Except insofar as may be modified by any preceding conditions, all Certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicant's project description and the attached Project Information and Conditions, and (b) compliance with all applicable requirements of the Central Coast Water Board's policies and Water Quality Control Plan (Basin Plan).

John M. Robertson

Digitally signed by John M. Robertson
Date: 2016.08.31 16:58:32 -07'00'

August 31, 2016
Date

John M. Robertson
Executive Officer
Central Coast Water Board

Attachment 1
PROJECT INFORMATION AND CONDITIONS

Application Date	Received: December 25, 2016 Completed: February 3, 2016
Applicant	David E. Chardavoyne Monterey County Water Resources Agency P.O. Box 930 Salinas, CA 93901 Email: ChardavoyneDE@co.monterey.ca.us 831-755-4860
Applicant Representatives	Elizabeth Krafft Monterey County Water Resources Agency P.O. Box 930 Salinas, CA 93901 Email: krafftea@co.monterey.ca.us 831-755-4860
Project Name	2016-2025 Salinas River Stream Maintenance Program
Application Number	32716WQ02
Type of Project	Bank and Channel Modification
Project Location	Monterey County From: Latitude: 35° 58' 16.55" N Longitude: -120° 53' 20.09" W To: Latitude: 36° 43' 54.76" N Longitude: -121° 46' 58.70" W
County	Monterey
Receiving Water(s)	Salinas River, San Lorenzo Creek, Bryant Canyon Channel, Gonzales Slough 309.10, 309.30, and 309.40 Salinas Hydrologic Unit
Water Body Type	Streambed, river
Designated Beneficial Uses	Municipal and Domestic Supply (MUN) Agricultural Supply (AGR) Industrial Process Supply (PROC) Industrial Service Supply (IND) Ground Water Recharge (GWR) Water Contact Recreation (REC-1) Non-Contact Recreation (REC-2) Wildlife Habitat (WILD) Cold Fresh Water Habitat (COLD) Warm Fresh Water Habitat (WARM) Migration of Aquatic Organisms (MIGR) Spawning, Reproduction, and/or Early Development (SPWN) Rare, Threatened or Endangered Species (RARE) Commercial and Sport Fishing (COMM)
Project Description (purpose/goal)	The purpose of this Project is to provide flood risk reduction that protects ecological conditions. The Project includes maintenance activities in seven river management

	units (RMUs) along the Salinas River in Monterey County, including RMUs 4 and 5, which were previously permitted under Water Quality Certification No. 32714WQ03 for the Salinas River Multi-Benefit Demonstration Project. This Certification replaces Water Quality Certification No. 32714WQ03. Central Coast Regional Water Quality Control Board (Central Coast Water Board) staff understands that the Project includes the following activities: 1. Removing vegetation from 123 secondary channels and two selective treatment areas within the greater channel of the Salinas River between river miles 2 and 94; 2. Removing vegetation from portions of three tributaries (San Lorenzo Creek, Bryant Canyon Channel, and Gonzales Slough); 3. Removing sediment from designated maintenance areas; and 4. Constructing temporary access routes into the Salinas River greater channel where needed to conduct vegetation and sediment management activities.
U.S. Army Corps of Engineers Permit No.	Regional General Permit No. 22309S
Federal Public Notice	NA
Dept. of Fish and Wildlife Streambed Alteration Agreement	Streambed Alteration Agreement is pending. Final, signed copy shall be forwarded immediately upon execution.
Status of CEQA Compliance	Environmental Impact Report Lead Agency: Monterey County Water Resources Agency (CEQA Findings of Fact are included in Attachment 2)
Total Certification Fee	$90,000
Area of Disturbance	Approximately 863.7 acres total Streambed: 863.7 acres temporary
Dredge Volume	NA
Excavation Volume	Approximately 554,420 cubic yards total (maximum, per year) Streambed: 554,420 cubic yards temporary (maximum, per year)
Fill Volume	NA
Compensatory Mitigation	See Special Condition G
Monitoring Requirements	See Special Conditions H and I
Reporting Requirements	See Special Condition K

Attachment 2
FINDINGS

A. CEQA Findings of Facts

1. Environmental Review. On July 29, 2014, MCWRA, as lead agency, certified a Final Environmental Impact Report (EIR) (State Clearinghouse No. 2011041066) for the Project and filed a Notice of Determination with the State Clearinghouse on July 31, 2014. The Central Coast Water Board is a responsible agency under CEQA (Pub. Resources Code, § 21069), and in making its determinations and findings must presume that MCWRA's certified Final EIR comports with the requirements of CEQA and is valid (Pub. Resources Code, § 21167.3). The Central Coast Water Board has reviewed and considered the Final EIR and finds that the Final EIR prepared by MCWRA addresses the Project's water resource impacts (Cal. Code Regs., tit. 14, § 15096, subd. (f)). The Final EIR includes the mitigation, monitoring, and reporting program developed by MCWRA for all mitigation measures that have been adopted for the Project to reduce potential significant impacts (Pub. Resources Code, § 21081.6, subd. (a)(1); Cal. Code Regs., tit. 14, § 15091, subd. (d)).

2. Incorporation by Reference.

   a) Pursuant to CEQA, these Findings of Facts (Findings) support the issuance of this Certification based on the Project Final EIR, the application for this Certification, and the *Salinas River Stream Maintenance Program Permit Application Supplemental Attachment*, dated January 2016 (Draft Supplemental Attachment).

      i. The Project Draft EIR, which includes analyses of broad impacts and serves as a first tier document for the Final EIR, is available at:
      http://www.mcwra.co.monterey.ca.us/salinas_river_maintenance/eir.php.

      ii. All CEQA project impacts, including those discussed in subsection C below, are analyzed in detail in the Project Final EIR which is incorporated herein by reference. The Project Final EIR is available at:
      http://www.mcwra.co.monterey.ca.us/salinas_river_maintenance/eir.php.

   b) Requirements under the purview of the Central Coast Water Board in the mitigation, monitoring, and reporting program are incorporated herein by reference.

   c) MCWRA's application for water quality certification of the Project, including the Final Supplemental Attachment and all other supplemental information provided, is incorporated herein by reference.

3. Findings. The Final EIR describes the potential significant environmental effects to water resources. Having considered the whole of the record (including comments received during the public review process for this Certification), the Central Coast Water Board makes the following findings:

   a) Findings regarding impacts that will be mitigated to a less than significant level. (Pub. Resources Code, § 21081, subd. (a)(1); Cal. Code Regs., tit. 14, § 15091, subd. (a)(1).)

      There are changes or alterations that have been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

I.A. Potential Significant Impact: Loss of Waters of the State

The Project could result in the loss and/or disturbance of waters of the State. The Project includes targeted removal of riparian vegetation from the Salinas River greater channel. The Project's vegetation removal activities could result in temporary disturbance to and loss of riparian habitat, and could thereby increase habitat fragmentation and reduce riparian habitat quality.

I.B. Facts in Support of Finding:

All Project impacts are temporary. In addition, the Project provides mitigation for impacts to riparian habitat. The Project includes removal of arundo, which will directly improve ecological function of the riparian corridor and will allow recruitment of native habitat in arundo removal areas.

II.A. Potential Significant Impact: Water Quality

The Project could result in degradation of water quality, with corollary degradation of beneficial uses. The Project includes operation of vehicles and equipment within the Salinas River greater channel.

II.B. Facts in Support of Finding:

All maintenance activities will be conducted between June 1 and November 15 each year, when water is unlikely to be present in the Salinas River outside the low-flow channel. No maintenance activities, including operation of vehicles and equipment, will be permitted in standing or flowing water. No vehicles or equipment will be permitted to enter or cross the low-flow channel when standing or flowing water is present. In addition, this Certification includes standard water quality protection provisions addressing staging, vehicle refueling and maintenance, and activities during rain events.

III.A. Potential Significant Impact: Steelhead

The Project's vegetation removal and sediment management activities could affect steelhead migration habitat due to increased turbidity. Project activities could increase the amount of fine sediment available to be mobilized by the river and increase water column turbidity, particularly during high flows in the winter and spring.

III.B. Facts in Support of Finding:

Sediment removed during maintenance activities will not be stockpiled within waters of the State, and will be disposed of outside of the greater channel, unless otherwise approved in writing by the Central Coast Water Board Executive Officer, on a case-by-case basis. MCWRA will implement erosion and sediment controls to prevent sediment from stockpile and disposal areas from re-entering the greater channel. The Salinas River is already a very turbid waterbody. The FEIR estimates the average sediment load carried by the Salinas River to be 1.57 million cubic yards.[1] In addition, Project activities will disturb only 863 acres out of approximately

[1] *Salinas River Stream Maintenance Program Revised Final EIR*, volume 1, June, 2014. (p. 3-142).

12,400 acres of riparian habitat within the greater channel estimated by the EIR.[2] Sediment mobilization related to vegetation and sediment management activities would make a negligible contribution to sediment load compared with sediment supplied by the riverbed itself and from upland sources conveyed to the river during storm events.[3] The Project also includes erosion and sediment control measures to reduce sediment discharges related to Project activities.

iv.A. Potential Significant Impact: Sensitive Species

The Project could affect sensitive species through runoff of sediments or pollutants. The Project includes herbicide application for control of non-native and invasive species.

iv.B. Facts in Support of Finding:

The Project includes erosion and sediment control measures to reduce pollutant discharges related to Project activities. Herbicides will be limited to products approved by the U.S. Environmental Protection Agency for aquatic use, and 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.

4. Determination.

The Central Coast Water Board has determined that the Project, when implemented in accordance with the mitigation, monitoring, and reporting program and the conditions in this Certification, will not result in any significant adverse water quality or supply impacts. (Cal. Code Regs., tit. 14, § 15096, subd. (h).) The Central Coast Water Board will file a NOD with the SCH within five (5) working days from the issuance of this Certification. (Cal. Code Regs., tit. 14, §§ 15096, subd. (l).)

B. Public Review and Comment

1. Central Coast Water Board staff posted MCWRA's application for water quality certification for the Project on February 1, 2016, for a 21-day public review and comment period. Notice of the application was posted on the Central Coast Water Board website and distributed to interested parties.

2. Central Coast Water Board staff posted the draft Certification on July 6, 2016, for a 23-day public review and comment period. Notice of the draft Certification was posted on the Central Coast Water Board website and distributed to interested parties. The Central Coast Water Board also discussed the application for water quality certification at its July 29, 2016 Board Meeting, and the discussion included public comment on the draft Certification.

3. Central Coast Water Board staff reviewed and considered all public comments during preparation of this Certification. Central Coast Water Board staff prepared written responses to public comments, and will post the responses, along with the final Certification, on the Central Coast Water Board website, and distribute notice of Central Coast Water Board staff responses to comments and this Certification to the interested parties list.

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[2] *Ibid.*, p. 2-26.
[3] *Salinas River Stream Maintenance Program Revised Final EIR*, volume 1, June, 2014. (pp. 3-141 to 3-142).

4. The Central Coast Water Board Executive Officer has reviewed all public comments received on MCWRA's application for water quality certification and on this Certification, Central Coast Water Board staff's responses to comments, and this Certification.

C. Permit Renewal

1. MCWRA implements the Project within a large portion of the Salinas River in Monterey County, and within the context of other MCWRA river management activities. During the length of this Certification term, MCWRA is likely to alter some of its other river management activities, or implement new management activities. These changes or new activities are likely to affect beneficial uses and water quality. Further, as this Project is implemented, monitored, and assessed, understanding of the Project's impacts to beneficial uses and water quality will increase. Therefore, in order to continue to ensure the Project will meet water quality standards and avoid impacts to the maximum extent practicable, the Central Coast Water Board needs information to assess the cumulative and mutually interactive effects of the Project and other MCWRA river management activities within the larger context of overall watershed health, prior to certifying the Project for a subsequent permit term. This Certification includes provisions requiring MCWRA to collect and analyze information to assess the Project within the larger context of the Salinas River watershed in Monterey County. This Certification also includes conditions requiring MCWRA to develop recommendations for ongoing management of the Project and other MCWRA river management activities based on this information and analysis. The Central Coast Water Board finds that a long-term river management plan developed on the basis of the information, analyses, and recommendations required by this Certification is necessary to ensure future iterations of the Project will meet water quality standards and avoid impacts to the maximum extent practicable. Therefore, any future Certification application for this Project, or for any future stream maintenance activities after the term of this Certification, must include a long-term river management plan developed on the basis of the information, analysis, and recommendations required in this Certification in order for the Central Coast Water Board to issue a new Certification.