
State Water Resources Control Board

June 21, 2024

Mr. Robert Barsotti
Black Oak Ranch Partnership
P.O. Box 1479
Laytonville, CA 95454
Sent via Email: barsotti@mcn.org

**Black Oak Ranch Water Conservation Project
Mendocino County
Streeter Creek and Unnamed Tributary, Tributaries to Tenmile Creek**

NOTICE OF APPLICABILITY, CLEAN WATER ACT SECTION 401 GENERAL WATER QUALITY CERTIFICATION FOR BLACK OAK RANCH WATER CONSERVATION PROJECT, MENDOCINO COUNTY, CALIFORNIA

Dear Mr. Barsotti:

On December 28, 2023, the State Water Resources Control Board (State Water Board) received Black Oak Ranch Partnership's (Partnership) Notice of Intent (NOI) to enroll the Black Oak Ranch Water Conservation Project (Project) under the General Order for Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements, Order No. WQ-2022-0048-DWQ for Restoration Projects Statewide ([Restoration General Order](#), Enclosure A)¹. Implementation of the Project will require a permit from the United States Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act. The Partnership is seeking authorization under USACE's Nationwide Permit (NWP) No. 27 Aquatic Habitat Restoration, Enhancement, and Establishment Activities.

State Water Board staff have reviewed the Partnership's NOI and find the Project meets the requirements of the Restoration General Order. The Project is hereby enrolled under the Restoration General Order. The Restoration General Order certifies that as long as all the conditions listed in the order are met, implementation of restoration projects statewide will comply with Clean Water Act sections 301, 302, 303, 306, and 307. The Partnership may proceed with the Project following any additional federal and/or state approvals such as USACE authorization under NWP No. 27.

The Partnership shall comply with this Notice of Applicability (NOA) and all applicable Restoration General Order requirements. Enclosure B provides additional information related to the Restoration General Order's conditions to conform to the recommendation

¹ Available online at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2022/wqo2022-0048-dwq.pdf.

in 40 CFR § 121.7(d)(3). Failure to comply with this NOA and the Restoration General Order constitutes a violation of the California Water Code and may result in enforcement action or termination of enrollment under the Restoration General Order.

PROJECT NOTICING

In accordance with Section 401(a)(1) of the Clean Water Act and California Code of Regulations, title 23, section 3858, the State Water Board issued a public notice for the Project on January 26, 2024. The State Water Board did not receive any comments relevant to Project certification.

PROJECT DESCRIPTION

The Project is on Streeter Creek and an Unnamed Tributary, which are tributaries of Tenmile Creek, and is located approximately 5 miles north of Laytonville in Mendocino County. The overall objective of the Project is to shift the timing of the Partnership's diversions from the dry summer season to the wet winter season to improve stream habitat. To accomplish this objective, the Partnership will construct a new pond and upgrade the storage tank system to be able to store water diverted in the wet winter and spring months for use during the dry season. The Partnership will then forbear diverting water from the creeks in the dry summer and fall. Collecting and storing water during the wet season and forbearing in the dry summer and fall will improve stream habitat for anadromous fish and other aquatic species in Tenmile Creek that rely on sustained flow in the dry season. The Partnership proposes to dedicate approximately 5.55 acre-feet (1.11 acre-feet/month) of flow to Tenmile and Streeter Creeks during the dry season (May through September) each year.

Black Oak Ranch currently has riparian water rights for Streeter and Tenmile Creeks. An appropriative water right is being acquired as part of this Project to facilitate storage during the wet winter and spring months. Project actions include: (1) installing a Coanda box in an Unnamed Tributary for diversion; (2) constructing a small pond to store the water diverted by the Coanda box; (3) upgrading an existing point of diversion on Streeter Creek to increase pumping capacity and improve the streambank; (4) augmenting the existing storage tank system to increase capacity; and (5) constructing multiple trenches for water pipes and electrical lines for the new and upgraded water distribution system.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

On August 16, 2022, the State Water Board adopted Order WQ 2022-0048-DWQ and certified the consolidated final Program Environmental Impact Report ([PEIR](#); State Clearinghouse (SCH) No. 2019100230) for restoration projects statewide.² The State Water Board reviewed and considered the PEIR as required by CEQA Guidelines sections 15168 subsections (c)(1) and (2) and concluded that the Project is within the overall scope of the PEIR, the activities will not result in environmental effects that were not examined in the PEIR, and none of the conditions described in CEQA Guidelines section 15162 calling for the preparation of a subsequent environmental impact report have occurred. The State Water Board hereby incorporates the mitigation, monitoring,

² https://www.waterboards.ca.gov/water_issues/programs/cwa401/generalorders.html

and reporting program. The State Water Board will file a Notice of Determination for this Project consistent with CEQA Guidelines section 15094(b).

TRIBAL CONSULTATION

On May 17, 2023, pursuant to Restoration General Order Condition E.7, the Eel River Recovery Project (ERRP) on behalf of the Partnership received a Sacred Lands File and Native American Contacts List from the Native American Heritage Commission. On June 5, 2023, EERP notified tribal representatives of tribal organizations traditionally and culturally affiliated with the Project's geographic area that the Partnership planned to file an NOI for the Project. ERRP received no comments from any tribal representatives. ERRP completed tribal consultation for the Project consistent with Restoration General Order E.7. As the State Water Board concludes the Project is within the scope of the PEIR (as discussed above), the State Water Board has already complied with tribal consultation requirements pursuant to Assembly Bill 52 (Statutes 2014, Chapter 532, Gatto) as described in the PEIR.

CONSTRUCTION GENERAL PERMIT

Coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities ([Construction General Permit](#))³ is required for discharges of pollutants associated with construction activities that disturb one or more acres of soil or activities that disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres. Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but do not include regular maintenance activities performed to restore the original line, grade, or capacity of a facility. Coverage is required pursuant to Clean Water Act sections 301 and 402 which prohibit certain discharges of stormwater containing pollutants except in compliance with an NPDES permit. (33 U.S.C. §§ 1311, 1342(p); 40 C.F.R. pts. 122, 123, and 124.)

PROJECT FEE

An application fee of \$796 was received by check on December 28, 2023. The 2023-2024 Application Fee for Category D: Ecological Restoration and Enhancement Projects is a flat fee set at \$796. Accordingly, the total fee associated with this NOA is \$796. This NOA is conditioned on total payment of any fee required under California Code of Regulations, title 23, division 3, chapter 28. Annual fees may apply if Project implementation, including any required monitoring, notification, or reporting, exceeds 12 months from this NOA. Annual fees will continue to be charged until a Notice of Project Complete Letter is issued by the Deputy Director for the Division of Water Rights (Deputy Director). Failure to notify the State Water Board of Project completion may result in continued billing of annual fees.

³ Water Quality Order No. 2009-0009-DWQ NPDES No. CAS000002, as amended by Order No. 2010-0014-DWQ, Order No. 2012-0006-DWQ, Order No. 2022-0057-DWQ, and any amendments thereto. Available online at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction/general_permit_reissuance.html

AUTHORIZED IMPACTS

Excavation and fill activities authorized by this NOA are limited to 7.0 acres and 0.002 acres/120 linear feet of temporary impacts⁴ to upland areas and a stream channel, and 9 cubic yards/70 linear feet of permanent impacts⁵ to a stream channel.

PROJECT SPECIFIC AVOIDANCE AND MINIMIZATION MEASURES

The Partnership shall implement the Avoidance and Minimization and Best Management Practices (Enclosure C) identified in its December 28, 2023 NOI.

WATER RIGHTS COMPLIANCE

The Partnership shall not operate the diversion until an appropriative water right permit associated with Application A033365 is issued. The Partnership shall comply with the appropriative water right permit associated with Application A033365, once issued. If the Partnership chooses to proceed with Project construction in advance of issuance of an appropriated water right permit, the Partnership shall provide the Deputy Director, for review and consideration of approval, with a schedule and sequencing of which elements of the Project will be completed in advance of issuance of the appropriative water right permit associated with Application A033365 and which elements will be completed following issuance of appropriative water right permit. The Deputy Director may require modifications as part of approval. The Partnership shall not proceed with construction in advance of issuance of the appropriative water right permit unless Deputy Director approval is granted.

REQUIREMENTS

The Partnership shall comply with all applicable conditions of the Restoration General Order, including but not limited to the following:

- Pursuant to section IX of the Restoration General Order, the Partnership shall minimize impacts to waters of the state to the greatest extent possible. To comply with the requirements of this NOA, the Partnership shall at a minimum implement applicable water resource-related mitigation measures outlined in Attachment A of the Restoration General Order.
- Pursuant to section XIII of the Restoration General Order, the Partnership shall implement the Project in conformance with the information provided in the December 28, 2023 NOI. Any proposed changes to the Project design described in the NOI must be submitted to and approved by the Deputy Director prior to implementation.
- Pursuant to section XIII.B.1.a of the Restoration General Order, the Partnership shall submit a Commencement of Construction Notice to the Deputy Director at least seven (7) days prior to the start of initial ground disturbance activities.

⁴ Temporary impacts from the Project include seven acres of upland grading and the disturbance of the streambed and riparian bank during installation of the new diversion structure on the Unnamed Tributary and upgrades to the point of diversion on Streeter Creek.

⁵ Permanent impacts include the installation of diversion structures into the bed and bank of the Unnamed Tributary and Streeter Creek. Boulders and large woody debris that comprise the fish habitat enhancement structure that buttress the Streeter Creek point of diversion will be permanent but beneficial.

- Pursuant to section XIII.B.1.c of the Restoration General Order, the Partnership shall submit a Request for Notice of Project Complete Letter to the Deputy Director within 30 days following completion of all Project activities including post-construction monitoring of restoration sites. Failure to notify the State Water Board of Project completion may result in continued billing of annual fees until a Notice of Project Complete Letter is issued. Upon approval of the request, the State Water Board will issue a Notice of Project Complete Letter to the Project proponent.
- Pursuant to section XIII.D.4 of the Restoration General Order, nothing in this Order shall be construed as State Water Board approval of the validity of any water rights, including pre-1914 claims. The State Water Board has separate authority under the California Water Code to investigate and take enforcement action, if necessary, to prevent any unauthorized or threatened unauthorized diversions of water. Prior to diverting water from new or updated points of diversion, the Partnership shall obtain any needed water right permit or license modification approvals from the State Water Board's Division of Water Rights.
- Pursuant to section XIII.E.9 of the Restoration General Order, the Partnership shall obtain coverage under and comply with the Construction General Permit and any amendments thereto.

If you have questions about this NOA, please contact Glenn Hoffmann, Project Manager, by phone call to: (916) 319-9943 or email to: Glenn.Hoffmann@waterboards.ca.gov.

Sincerely,



Eric Oppenheimer
Executive Director

Enclosures:

- Enclosure A: General Order for Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements for Restoration Projects Statewide, Order No. WQ 2022-0048-DWQ
- Enclosure B: Additional Information for Conformity with 40 CFR § 121.7(d) for Order WQ 2022-0048-DWQ Conditions
- Enclosure C: Notice of Intent (NOI) Avoidance and Protection

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**State Water Resources Control Board
Order WQ 2022-0048-DWQ**

**Order for Clean Water Act Section 401 Water
Quality Certification and Waste Discharge
Requirements for Restoration Projects Statewide**

FINAL

August 16, 2022



FINAL ORDER WQ 2022-0048-DWQ
CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION AND WASTE
DISCHARGE REQUIREMENTS FOR RESTORATION PROJECTS STATEWIDE

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STATE WATER RESOURCES CONTROL BOARD
FINAL ORDER **WQ 2022-0048-DWQ**
ORDER FOR CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION
AND WASTE DISCHARGE REQUIREMENTS FOR
RESTORATION PROJECTS STATEWIDE

I. Executive Summary

This Order for Waste Discharge Requirements and Clean Water Act section 401 Certification (Order) and Attachments A through F provides Clean Water Act (CWA) Section 401 Water Quality Certification for projects that require authorization from the U.S. Army Corps of Engineers (USACE) under CWA Section 404 and Rivers and Harbors Act of 1899 (RHA) Section 10 and Section 14 (33 USC 408, known as “Section 408”). This Order also provides Waste Discharge Requirements (WDRs) pursuant to the Porter-Cologne Water Quality Control Act (California Water Code §1300 et seq.). This Order covers projects that may directly or indirectly discharge to “waters of the state,” including “waters of the U.S.”

If the eligibility requirements set forth in this Order including Attachment A are not met, the State Water Resources Control Board (State Water Board) or Regional Boards (collectively Water Boards) will not authorize the proposed project under this Order and instead require the project proponent to apply for an individual certification or certification under another Order. A project proponent may also independently choose to apply for an individual water quality certification or WDRs.

The categories of eligible project types covered under this Order are listed below. Detailed eligible project type descriptions are provided in Attachment A. An individual project covered under this Order may include more than one of these types:

1. Improvements to Stream Crossings and Fish Passage
2. Removal of Small Dams, Tide Gates, Flood Gates, and Legacy Structures
3. Bioengineered Bank Stabilization
4. Restoration and Enhancement of Off-Channel and Side-Channel Habitat
5. Water Conservation Projects
6. Floodplain Restoration
7. Removal or Remediation of Pilings and Other In-Water Structures
8. Removal of Nonnative Terrestrial and Aquatic Invasive Species and Revegetation with Native Plants
9. Establishment, Restoration, and Enhancement of Tidal, Subtidal, and Freshwater Wetlands
10. Establishment, Restoration, and Enhancement of Stream and Riparian Habitat and Upslope Watershed Sites

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II. Order

This CWA Section 401 Water Quality Certification action and waste discharge requirements Order, which includes Attachments A through F, is issued for Restoration Projects Statewide. This Order is for the purpose described below.

III. Public Notice

The State Water Board provided public notice of the draft Order pursuant to California Code of Regulations, title 23, section 3858 and California Water Code section 13167.5 from June 30, 2021, to August 13, 2021. The State Water Board received seventy-nine (79) comment letters regarding the Order during the 45-day comment period. Public notice regarding the Program Environmental Impact Report (PEIR) is described in Attachment C, California Environmental Quality Act (CEQA) Findings of Fact.

The approving Water Board will also provide a 21-day public notice of a Notice of Intent (NOI; Attachment B) for an individual project proposed for authorization under this Order.

IV. Project Purpose

The State Water Board currently provides general certification for small habitat restoration projects that (a) shall not exceed five (5) acres or a cumulative total of less than 500 linear feet of stream bank or coastline and (b) qualify for the California Environmental Quality Act (CEQA) Class 33 Categorical Exemption (California Code of Regulations title 14, section 15333).

The purpose of this Order is to provide authorization for restoration projects that meet the eligibility criteria herein and do not qualify for coverage under the Order for Small Habitat Restoration Projects.

V. Project Description

All covered projects must meet the definition of a restoration project as defined below and comply with all applicable water quality control plans and state policy for water quality control.

A "restoration project" is defined as one that would result in a net increase in aquatic or riparian resource area functions and/or services through implementation of the eligible project types, relevant general protection measures (GPMs), and consideration of design guidelines, summarized below and described in detail in Attachment A, Order Description and Eligibility.

The approving Water Board determines if a proposed project meets the definition of a restoration project and is eligible for authorization under this Order.

VI. Project Location

An individual project authorized by the Water Board under this Order (project) may occur anywhere in California except as restricted herein. A map showing the nine Regional Boards' jurisdictional boundaries is provided in Attachment A of this Order. The nine Regional Boards are: North Coast Regional Board, San Francisco Bay Regional Board, Central Coast Regional Board, Los Angeles Regional Water Board,

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Central Valley Regional Board, Lahontan Regional Board, Colorado River Regional Board, Santa Ana Regional Board, and San Diego Regional Board (collectively Regional Boards).

VII. Project Impact and Receiving Waters Information

Receiving waters, groundwater, and inflow potentially impacted by projects authorized under this Order are protected in accordance with the applicable water quality control plans and state policy for water quality control, which may be accessed online at: http://www.waterboards.ca.gov/plans_policies/. Water quality control plans include water quality standards, which consist of existing and potential beneficial uses of waters of the state, water quality objectives to protect those uses, and the state and federal anti-degradation policies.

It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring project proponents to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

Project proponents will identify the receiving waters and beneficial uses of waters of the state to be impacted by a proposed project, as listed in the applicable Regional Board water quality control plan. This information is required in the NOI (Attachment B), which must be completed by a project proponent to apply for authorization under this Order.

VIII. Description of Direct Impacts to Waters of the State

Project proponents will describe all proposed project features, including those potentially offsite and/or adjacent to waters of the state which could result in impacts to waters of the state, in the NOI, which must be completed for authorization under this Order.

IX. Avoidance and Minimization

Project impacts to waters of the state must be avoided and minimized to the greatest practicable extent. Project proponents will describe project design steps taken to first avoid, and then minimize, impacts to waters of the state to the maximum extent practicable in the NOI.

Project proponents shall identify (in the NOI) applicable GPMs proposed to be implemented for an individual restoration project. The purpose of including GPMs is to incorporate best management practices (BMPs) and to avoid and/or minimize potential short term, long term, and cumulative adverse effects. These standards and practices represent sound and proven methods to reduce the potential adverse effects of an action. A comprehensive suite of GPMs is provided in Attachment A. Additional or modified project-specific measures to protect water quality and/or beneficial uses may be proposed by the project proponent and/or recommended by the approving Water Board during the application process, based on site-specific conditions or technological constraints or advances. Each GPM may be used in combination with other measures, as applicable to each restoration project.

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Additionally, project type-specific design guidelines (Attachment A) have been developed with input from multiple regulatory agencies (e.g., California Department of Fish and Wildlife [CDFW], National Marine Fisheries Service [NMFS], U.S. Fish and Wildlife Service [USFWS]) to help project proponents during the design development of their individual projects, in a manner that is appropriate and sustainable, minimizes adverse effects on aquatic habitats, and maximizes the ecological benefits of the restoration.

X. California Environmental Quality Act (CEQA)

This Order certifies a PEIR (State Clearinghouse (SCH) No. 2019100230) and approves the mitigation monitoring and reporting program (MMRP). Pursuant to CEQA, the State Water Board has made Findings of Facts (Findings) which support the issuance of this Order and are included in Attachment C.

XI. Petitions for Reconsideration

Any person aggrieved by this action may petition the State Water Board to reconsider this Order in accordance with California Code of Regulations, title 23, section 3867. A petition for reconsideration must be submitted in writing and received within 30 calendar days of the issuance of this Order.

XII. Application Fees

The application fee amount is determined as required by California Code of Regulations, title 23, sections 3833(b)(3) and 2200(a)(3). A fee calculator can be found online at: https://www.waterboards.ca.gov/water_issues/programs/cwa401/#fees.

The calculator is useful for estimation of fees, but project proponents must confirm the correct fee amount through consultation with the approving Water Board prior to submitting payment. Appropriate fees will be determined by the current fee regulations at the time of NOI submittal for an individual restoration project. Authorization of a project under this Order is not determinative of whether a project is a restoration project in the context of the fee schedule. Projects authorized under this Order may not automatically qualify for a particular fee discharge category. Note that fees are periodically adjusted.

XIII. Conditions

The Water Boards will independently review any project proposed for authorization under this Order to analyze impacts to water quality and designated beneficial uses within the applicable watershed(s). If the eligibility requirements set forth in this Order including Attachment A are not met, Water Boards will not authorize the proposed project under this Order and instead require the project proponent to apply for an individual certification or certification under another Order. Specifically, the approving Water Board may only authorize the proposed project under this Order if it determines that the following requirements are met: 1) the project meets the definition of a restoration project (as defined in Section V of the Order); 2) the project adopts and implements all appropriate GPMs and CEQA mitigation measures to protect water quality and beneficial uses; 3) the project proponent fulfills all approving Water Board

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requirements for project information and reporting; and 4) the project is designed to protect water quality and beneficial uses in accordance with regional or statewide water quality control plans.

The following conditions are limitations necessary to assure compliance with the water quality standards and other pertinent requirements of state law. California Code of Regulations, title 23, Chapter 28 sets forth regulations pertaining to water quality certifications. As set forth in section 3861, the State Water Board may issue a general certification for discharges for a class or classes of activities only if those activities will not individually or cumulatively result in significant adverse impacts or violations of water quality objectives. Accordingly, the State Water Board imposes the conditions set forth in this Order to assure that the discharge complies with water quality objectives adopted or approved under Sections 13170 or 13245 of the California Water Code. These conditions are also generally required to comply with the state's Anti-Degradation Policy (State Board Resolution No. 68-16), which requires that for any "activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the state will be maintained." All Regional Board Water Quality Control Plans incorporate the state's Anti-Degradation Policy by reference. The state Anti-Degradation Policy incorporates the federal Antidegradation Policy (40 CFR Part 131.12 (a)(1)), which requires "[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." According to U.S. EPA, dischargers of dredged or fill material comply with the federal Antidegradation Policy by complying with U.S. EPA's section 404(b)(1) Guidelines. The State Water Board adopted a modified version of U.S. EPA's section 404(b)(1) Guidelines in the Dredge or Fill Procedures (State Supplemental Guidelines). Notwithstanding any determinations by any federal agency made pursuant to 40 C.F.R. section 121.9, dischargers must comply with the entirety of this Order because the Order also serves as waste discharge requirements.

Project proponents authorized under this Order may proceed with the project under the following conditions:

A. Request for Authorization

Requests for authorization shall be submitted to the Regional Board for the region in which the discharge may occur. Where the discharge falls under the jurisdiction of more than one Regional Board, the request shall be submitted to the State Water Board. Project proponents with projects authorized under this Order shall pay the required fee and follow reporting and notification requirements described below and found in Attachments B and D of this Order. Project proponents shall contact the appropriate Water Board to request a pre-application meeting as soon as the project concept is developed, or at least 30-days prior to submittal of an NOI. The approving Water Board may waive the pre-application meeting requirement. If the proposed restoration activities may involve a Federal Energy Regulatory Commission (FERC)-

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licensed facility, the project proponent shall notify the State Water Board Division of Water Rights. Where the proposed restoration activities may involve a FERC-licensed facility, the restoration project may be covered by this Order only upon receipt of written approval by the Deputy Director for the Division of Water Rights or their designee. Otherwise, the Deputy Director for the Division of Water Rights or their designee may determine that an individual certification is necessary. Project proponents shall submit a complete NOI to the appropriate Water Board as described in Attachment B before commencement of any project activity. The approving Water Board will review the NOI and respond to the project proponent with a request for additional information, an approval in the form of a Notice of Applicability, or a denial in the form of a Notice of Exclusion. As applicable to a project, the approving Water Board will consult with the State Water Board, Division of Water Rights on whether the restoration project requires any water right approvals, including but not limited to, a new water right, petition to change purpose/place of use or point of diversion, time extension, or wastewater change petition. There may be limited instances where it may be more appropriate for the Division of Water Rights to process an individual certification to accompany a water right approval depending on the scope of the water right approval needed. If an individual certification is deemed necessary, project proponents must file a new and separate application with the State Water Board pursuant to California Code of Regulation, title 23, section 3855.

Other regulatory agencies may also have authority separate and in addition to this Order to authorize restoration projects. Project proponents are encouraged to collaborate with other applicable regulatory agencies in coordination with the approving Water Board during project design, especially when fish passage and/or listed species are considerations.

B. Reporting and Notification Requirements

Project proponents with projects authorized under this Order shall follow notification and reporting requirements described in this section, and those found in Attachment D of this Order. This Order and its associated monitoring and technical reporting provisions are also adopted pursuant to California Water Code sections 13383 and 13267, subdivision (b)(1). The reports required under this Order are necessary to verify and ensure compliance with permitting requirements and protect waters of the state. The reports confirm that the BMPs required under this Order are sufficient to protect beneficial uses and water quality objectives. The reports related to accidental discharges also ensure that corrective actions, if any, that are necessary to minimize the impact or clean up such discharges can be taken as soon as possible. The burden of preparing these reports, including costs, is reasonable to the need and benefits of obtaining the reports. The anticipated costs are minimal as the reporting obligations require only visual monitoring and notification reporting. The following section describes the reporting and notification types and timing of submittals. Requirements for the content of these reporting and notification types are detailed in Attachment D, including specifications for photo and map documentation. Written reports and notifications must be submitted using the Reporting and Notification

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Cover Sheet located in Attachment D, which must be signed by an authorized representative who meets the signatory requirements specified in Attachment E.

1. Project Status Notifications

- a. **Commencement of Construction:** The project proponent shall submit a Commencement of Construction Notice at least seven (7) days before the start of initial ground-disturbing activities.
- b. Upon request, a construction schedule shall be provided to the approving Water Board.
- c. **Request for Notice of Project Complete Letter:** The project proponent shall submit a Request for Notice of Project Complete Letter within thirty (30) days following completion of all project activities including post-construction monitoring of restoration sites. The Request for Notice of Project Complete Letter shall meet the terms and include the contents listed in Attachment D, Reporting and Notification Requirements. Failure to notify the Water Board or approving Regional Board of project completion may result in continued billing of annual fees until a Notice of Project Complete Letter is issued. Upon approval of the request, the Water Board shall issue a Notice of Project Complete Letter to the project proponent.

2. Project Reporting

- a. **Annual Reporting:** If required in the Notice of Applicability (NOA) issued by the approving Water Board, the project proponent shall submit an Annual Report within one month of the anniversary of the effective date of the NOA (or within a timeframe provided by the approving Water Board in the NOA). Annual reporting shall continue until a Notice of Project Complete Letter is issued to the project proponent.

3. Conditional Notifications and Reports The following notifications and reports are required, as applicable:

- a. **Accidental Discharge of Hazardous Material¹ Report:** Following an accidental discharge of a reportable quantity of hazardous material, sewage, or an unknown material, the following applies (California Water Code, § 13271):

¹ "Hazardous material" means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment. (California Health & Safety Code, § 25501.)

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- i. As soon as (A) project proponent has knowledge of the discharge or noncompliance, (B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures then:
 - first call – 911 (to notify local response agency);
 - then call – Office of Emergency Services (OES) State Warning Center at: (800) 852-7550 or (916) 845-8911; and
 - lastly follow the required OES procedures as set forth in the most current version of the California Hazardous Materials Spill/Release Notification Guidance. At the time of issuance of this Order, the current version is dated February 2014, and is accessible at:
https://www.caloes.ca.gov/FireRescueSite/Documents/CalOES-Spill_Booklet_Feb2014_FINAL_BW_Acc.pdf.
 - ii. Following notification to OES, the project proponent shall notify the Water Board contact person identified in the NOA as soon as practicable (ideally within 24 hours). Notification may be via telephone, e-mail, delivered written notice, or other verifiable means.
 - iii. Within five (5) working days of notification to the Water Board, the project proponent must submit an Accidental Discharge of Hazardous Material Report to the Water Board contact person identified in the NOA (Attachment D.)
- b. Violation of Compliance with Water Quality Standards Report:** The project proponent shall notify the Water Board of any event causing a violation of compliance with water quality standards. Notification may be via telephone, e-mail, delivered written notice, or other verifiable means.
- i. Examples of noncompliance events include lack of storm water treatment following a rain event, discharges causing a visible plume in a water of the state, and water contact with uncured concrete.
 - ii. This notification must be followed within three (3) working days by submission of a Violation of Compliance with Water Quality Standards Report.
- c. In-Water Work and Diversions Water Quality Monitoring Report:**
- i. If required in the NOA issued by the approving Water Board, the project proponent shall notify the Water Board at least forty-eight (48) hours prior to initiating work in flowing or standing water or stream diversions. Notification may be via e-mail, delivered written notice, or other verifiable means.
 - ii. Within three (3) working days following completion of work in water or stream diversions or within a timeframe specified by the approving Water

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Board, an In-Water Work and Diversions Water Quality Monitoring Report must be submitted to the Water Board.

- d. Project Modifications:** Prior to implementing any change to the project that may be a material change as defined in California Water Code section 13260(c) as a proposed change in character, location, or volume of the discharge, the project proponent shall obtain prior written approval of the approving Water Board Executive Director or Officer. If the approving Water Board is not notified of the material change to the discharge, it will be considered a violation of this certification, and the project proponent may be subject to Water Board enforcement action(s).

Minor or non-material changes may be addressed with an 'Order Deviation' as provided in Attachment F. The approving Water Board will review the notification and determine whether the deviation can be approved under this Order or is subject to additional permitting requirements.

- e. Transfer of Property Ownership Notification:** Authorization by an NOA under this Order is not transferable in its entirety or in part to any person or organization except after notice to the Water Board in accordance with the following terms:
- i.** The project proponent must notify the Water Board of any change in ownership or interest in ownership of the project area by submitting a Transfer of Property Ownership Notification. The project proponent and purchaser must sign and date the notification and provide such notification to the Water Board at least ten (10) days prior to the transfer of ownership. The purchaser must also submit a written request to the Water Board to be named as the project proponent in a revised NOA.
 - ii.** Until such time as the NOA has been modified to name the purchaser as the project proponent, the current project proponent shall continue to be responsible for all requirements set forth in this Order.
- f. Transfer of Long-Term GPM Maintenance Notification:** If maintenance responsibility for post-construction GPMs is legally transferred, the project proponent must submit to the Water Board a copy of such documentation and must provide the transferee with a copy of a long-term GPM maintenance plan that complies with manufacturer or designer specifications. The project proponent must provide such notification to the Water Board at least ten (10) days prior to the transfer of GPM maintenance responsibility.

Until such time as the NOA has been modified to name a new legally responsible party for maintenance of post-construction GPMs, the current project proponent shall continue to be responsible for all maintenance of post-construction GPMs set forth in this Order.

C. Water Quality Monitoring

- 1. General:** In and immediately adjacent to work areas during construction, visual monitoring shall be conducted during working hours and storm event inspections to detect discharges and threatened discharges of construction related pollutants (e.g., oil and grease, turbidity plume, uncured concrete).
- 2. Accidental Discharges/Noncompliance:** Upon occurrence of an accidental discharge of hazardous materials or a violation of compliance with a water quality standard, the Water Board may require water quality monitoring based on the discharge constituents and/or related water quality objectives and beneficial uses.
- 3. In-Water Work or Diversions:** A dewatering plan and, if required, Water Quality Monitoring Plan shall be submitted to the approving Water Board for acceptance at least thirty (30) days in advance of commencement of project activity. The approving Water Board may require the dewatering plan and, if required, Water Quality Monitoring Plan be submitted before approval of the NOA. Standards for in-water work or diversions are discussed in General In-Water Measures, specifically IWW-6, presented in Attachment A. Project proponent shall comply with the approving Water Board-specific water quality control plan water quality objectives and reporting requirements.
- 4. Post-Construction:** If the proposed project includes ground disturbance, when conducting post-construction monitoring, visually inspect the project site at least monthly or at an interval agreed to by the approving Water Board during the rainy season (October 1 – April 30) unless not safely accessible (e.g., high flows, inundation, ground saturation) or visually accessible (e.g., meadows covered in snow, area inundated with high turbidity water) until a Notice of Project Complete Letter is issued to ensure excessive erosion, stream instability, or other water quality pollution is not occurring in or downstream of the project site. If water quality pollution is occurring, contact the Water Board staff member overseeing the project within three (3) working days. The Water Board may require the submission of a Violation of Compliance with Water Quality Standards Report. Additional permits may be required to carry out any necessary site remediation.

D. Standard Conditions

1. This Order is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to California Water Code section 13330, and California Code of Regulations, title 23, chapter 28, Article 6 commencing with section 3867. Additionally, the State Water Board may cancel or modify and reissue this Order pursuant to California Code of Regulations, title 23, chapter 28, section 3861.
2. Certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a FERC license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to Subsection 3855(b) of this Chapter and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility

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was being sought. Project proponent shall notify the State Water Board Division of Water Rights whenever the proposed activities may involve a FERC-licensed facility. Where the proposed restoration activities may involve a FERC-licensed facility, the restoration project may be covered by this Order only upon receipt of written approval by the Deputy Director for the Division of Water Rights or their designee.

3. This Order is conditioned upon total payment of any fee required under title 23 of the California Code of Regulations and owed by the project proponent.
4. Nothing in this Order shall be construed as Water Board approval of the validity of any water rights, including pre-1914 claims. The State Water Board has separate authority under the California Water Code to investigate and take enforcement action, if necessary, to prevent any unauthorized or threatened unauthorized diversions of water.

E. General Compliance

1. Enrollment and authorization of restoration projects under this Order are for the discharges of waste associated with only the restoration action and shall not be construed as authorization or any compliance determination for any related underlying project or activity. Restoration projects serving as mitigation for a related project or activity may be enrolled under this Order; however, this Order does not include any findings regarding the underlying related activity's impact to water quality, public trust resources, or other matters of public interest. When considering the impact of restoration projects under this Order, the approving Water Board considers only those adverse changes that may result from approval of the new restoration project, including multi-benefit projects that may include non-restoration action elements (e.g., recreation, flood protection).
2. Any plan developed as a condition of this Order requires review and approval by the appropriate Water Board. The Water Board will not approve any plan that does not adequately protect beneficial uses of receiving waters and prevent degradation of water quality. The project proponent shall not implement any plans or reports until after receiving Water Board approval and any other necessary regulatory approvals. The Water Boards may take enforcement action post-enrollment if the project proponent fails to provide or implement a required item outlined in the approved plan(s).
3. This Order shall not be construed as replacement or substitution for any necessary federal, state, and local approvals. The project proponent is responsible for compliance with all applicable federal, state, or local laws or ordinances and shall obtain authorization from applicable regulatory agencies prior to the commencement of project activities.

In the event of any violation or threatened violation of the conditions of this Order, the violation or threatened violation shall be subject to any remedies, penalties, process, or sanctions as provided for under state and federal law, including the Porter-Cologne Water Quality Control Act and the Clean Water Act. The project

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proponent may then be subject to administrative and/or civil liability pursuant to California Water Code section 13385.

4. In response to a suspected violation of any condition of this Order, the Water Board may require a project proponent with authorization under this Order to furnish, under penalty of perjury, any technical or monitoring reports the Water Board deem appropriate, provide that the burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The additional monitoring requirements ensure that permitted discharges and activities comport with any applicable effluent limitations, water quality standards, and/or other appropriate requirement of state law.
5. The project proponent must, at all times, fully comply with engineering plans, specifications, and technical reports submitted to support approval of a project under this Order; and all subsequent submittals required as part of approval of a project under this Order. The conditions within this Order and Attachments supersede conflicting provisions within project proponent submittals.
6. This Order and all of its conditions contained herein continue to have full force and effect regardless of the expiration or revocation of any federal license or permit issued for the project.
7. Project proponents shall submit a Sacred Lands File & Native American Contacts List Request to the Native American Heritage Commission (NAHC) at the initial stages of project development (or as early as practicable) to determine if a project would have an impact on Native American cultural resources. The project proponent shall coordinate with the approving Water Board or other CEQA lead agency, if applicable, as soon as possible whenever tribes that are traditionally and culturally affiliated to a project area are identified. Any tribe identified by the NAHC, or on the CEQA lead agency's Assembly Bill 52 (AB 52) consultation list, will require notification of the proposed project by the lead agency as soon as practicable during early design, pursuant to AB 52 and the California Governor's Executive Order G-10-22, or not more than 14 days after submittal of the NOI to the approving Water Board.

Tribes will be consulted if a request is received from a tribe after initial notification. Consultation will include discussion regarding project design, cultural resource survey, Tribal Cultural Resources as defined by AB 52, protocols for construction monitoring, and any other tribal concern. The CEQA Notice of Determination (NOD) for the project will not be signed until tribal consultation has either concluded or been terminated as defined by AB 52. Construction of the project will not commence until the approving Water Board achieves compliance with the State Water Resources Control Board Tribal Consultation Policy (June 2019).

8. **Historical Sites:** This Order does not authorize any activity adversely impacting a significant historical or archeological resource; directly or indirectly destroying a unique paleontological resource or site or unique geologic feature; disturbing any human remains; or eliminating important examples of the major periods of

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California history or prehistory, unless the activity is authorized by the appropriate historical resource agencies.

- 9. Construction General Permit Requirement:** This Order does not provide coverage under the Construction General Permit. As applicable, project proponents shall maintain compliance with conditions described in, and required by, NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ; NPDES No. CAS00002, as amended or any subsequently issued permit). For ground disturbing activities that do not require enrollment in Order No. 2009-0009-DWQ, the NOI will include appropriate erosion and sediment control measures to be considered by the approving Water Board.
- 10. Aquatic Herbicide General Permit Requirement:** If aquatic herbicides are proposed to be applied, the project proponent shall apply for coverage and maintain compliance with conditions described in, and required by, NPDES General Permit for Residual Aquatic Pesticide Discharges to Waters of The United States from Algae and Aquatic Weed Control Applications (Order No. 2013-0002-DWQ (General Permit No. CAG990005) or any subsequently issued permit). Also, see Section XIII.F., Prohibitions.
- 11. Cumulative Impacts:** Activities permitted under this Order shall not result in adverse impacts that are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

F. Prohibitions

1. Permitted actions shall not cause or contribute to an exceedance of any applicable water quality standards or water quality objectives or impair designated (existing or potential) beneficial uses for receiving waters. The source of any such discharge must be eliminated as soon as practicable.
2. The approving Regional Board may have the authority to address short-term, construction-related impacts that would affect water quality and allow for exceedances of water quality objectives for limited magnitude and duration during construction of individual restoration projects. A project proponent should contact the approving Regional Board to determine if an exemption is possible.
3. The discharge shall not result in adverse destabilization of the channel or bed of receiving water.
4. The discharge shall not include substances in concentrations toxic to human, plant, animal, or aquatic life or that produce detrimental physiological responses.
5. The discharge shall not include waste classified as "hazardous" or "designated" as defined in Title 22 California Code of Regulations, Section 66261 and California Water Code Section 13173.

G. Specific Compliance

1. **Programmatic Sideboards** - Project proponents must design and implement projects enrolled under this Order in accordance with the techniques and minimization measures described in the programmatic sideboards in Attachment A. The approving Water Board may authorize modified approaches based on site-specific conditions, technological constraints or advances, or regionally accepted guidance documents.

The Lahontan water quality control plan contains both region-wide and hydrologic unit specific waste discharge prohibitions. As applicable, project proponents must work with Lahontan Regional Board staff to ensure that applicable criteria are satisfied in order to be exempted from waste discharge prohibitions.

2. **Pre-Application Consultation** – The project proponent will contact the approving Water Board to submit available project information and request a pre-application consultation meeting a minimum of thirty (30) days prior to submittal of the NOI. The approving Water Board may waive the pre-application meeting requirement. Restoration projects can be complex and often benefit from pre-application consultation with the approving Water Board during the early stages of planning and design. During the pre-application consultation, the approving Water Board will review draft project materials and provide project-specific guidance for navigating the approval process. A site visit may also be conducted at the discretion and request of the approving Water Board. The intent of the Order is to streamline project reviews and approvals, but the duration of pre-application consultation will depend on project complexity and development of design and planning.

Project information for the pre-application meeting shall include on a case-by-case basis (to the extent available):

- i. Project name
- ii. The project proponent and agent, including contact info
- iii. Project purpose
- iv. Brief project description
- v. Conceptual design (including problem identification, context, objectives, and relevant project design documentation for the project)
- vi. Project location and map, including latitude/longitude
- vii. Brief description of the surrounding area
- viii. Where identified, proposed GPMs, and mitigation measures developed as part of CEQA review
- ix. Grant funding, timelines, and any specific conditions related to the grant
- x. Existing permits

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- xi. Any studies completed to date (e.g., aquatic resource delineation, biological assessment, hydrologic or geotechnical study, soil test results).

The approving Water Board will review the project information and may identify concerns, formulate questions and/or recommendations regarding the project design, and inclusion of applicable GPMs, including recommendations for modification of GPMs, where necessary, to accommodate and/or address site-specific conditions.

3. Exclusions and Prohibited Activities - The following activities are not within the scope of the Order, and will require separate permitting approvals with the Water Boards:

- i. Use of gabion baskets, boxes, or cages.
- ii. Use of cylindrical riprap (e.g., Aqualogs).
- iii. Use of undersized riprap (e.g., rock that will not remain in place during a 100-year flow event or other standard accepted by the approving Water Board).
- iv. Construction of permanent dams (does not apply to beaver dam analogs) or concrete-lined channels of any sort.
- v. Use of chemically treated timbers used for grade or channel stabilization structures, bulkheads, or other instream structures.
- vi. Activities that result in long-term, substantial disruption of the movement of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the project areas (see Attachment A for additional discussion/measures on maintaining passage).
- vii. Elimination of riffle, pool, or riffle/pool complex that is not replaced/enhanced elsewhere by the project. (Note: In some instances, a restoration project may affect or modify a riffle/pool complex depending on project-specific conditions and design objectives. For example, a culvert removal may affect an existing pool. These types of projects would be allowed under the Order.)
- viii. Water diversions. Action to temporarily dewater the construction site of a restoration project or a water diversion that is part of a water conservation project as described in Section A.4.5 of Attachment A could, however, be authorized under this Order.
- ix. Off-channel/side-channel projects that require the installation of a flashboard dam, head gate, or other mechanical structures. However, eligible water conservation projects (Section A.4.5 in Attachment A) with these features may be authorized by the approving Water Board under this Order.

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- x. Creation or potential creation of a barrier to anadromous fish passage as determined by the NMFS fish passage guidelines (including any associated maintenance activities, or lack thereof).
- xi. Use of riprap bank protection, beyond the minimum amount needed to achieve the project goals, as determined by the approving Water Board.
- xii. Installation of infiltration galleries (i.e., subsurface structure, typically including perforated conduits in gravel, to expedite transfer of water to or from a soil).
- xiii. Managed surrogate floodplain and managed returned flows that do not allow for volitional movement (ingress and egress) of fish to the main channel (up and/or downstream).

4. Monitoring Plan – The project proponent shall identify the goal(s) of monitoring and reporting components in the NOI. The level of detail of the monitoring and reporting requirements shall be commensurate with the scope, complexity, and objectives of the project, and in consideration of project site conditions. See requirements in Attachment D, Post-Construction Monitoring Report. At a minimum, the following information shall be provided to the approving Water Board in the NOI or in a separate Monitoring Plan appended to the NOI:

- i. Function(s) of the water resources and/or newly restored area.
- ii. Project purpose and goal(s).
- iii. Measurable performance standards and success criteria appropriate to each goal.
- iv. Methods to determine whether performance standards have been met.
- v. The timeframe and responsible party for achieving the performance standards.
- vi. The monitoring schedule.
- vii. Long-term management and maintenance practices and responsible party.
- viii. The reporting schedule as needed to determine achievement of performance standards.

H. Administrative

1. Signatory requirements for all document submittals required by this Order are presented in Attachment E.
2. Data and/or reports shall be submitted electronically or in a format accepted by the approving Water Board.
3. This Order does not authorize any act which results in the taking of a threatened, endangered or candidate species or any act, which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species

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Act (CESA) (California Fish & Game Code, §§ 2050-2097) or the federal Endangered Species Act (FESA) (16 U.S.C. §§ 1531-1544) except as authorized by an agency with jurisdiction to protect those species under CESA and/or FESA. The project proponent is responsible for meeting all requirements of the applicable endangered species act for the Project authorized under this Order.

4. The project proponent shall grant Water Board staff or an authorized representative (including an authorized contractor acting as a Water Board representative), upon presentation of credentials and other documents as may be required by law, permission to:
 - a. Enter upon the project site(s) premises where a regulated facility or activity is located or conducted, or where records are kept.
 - b. Have access to and copy any records that are kept and are relevant to the project or the requirements of this Order.
 - c. Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order.
 - d. Sample or monitor for the purposes of verifying compliance with this Order.
5. A copy of this Order must be available at the project site(s) during construction. All personnel performing work on the project, including any consultants, contractors, and subcontractors working on the project, shall be familiar with the content of this Order and its posted location at the project site. The project proponent shall be responsible for work conducted by its consultants, contractors, and any subcontractors.
6. Lake and Streambed Alteration Agreement – If issued, the project proponent shall submit a signed copy of the Department of Fish and Wildlife’s lake and streambed alteration agreement to the Water Board prior to any discharge to waters of the state.

I. Restoration and Monitoring of Impacts

1. The project proponent shall restore all areas of temporary impacts as described in the NOA and applicable GPMs, specifically GPM-15, provided in Attachment A. The project proponent shall provide annual monitoring reports, if required in the NOA, in accordance with Reporting and Notification Attachment D.
2. The project proponent shall demonstrate that all permanent impacts to waters of the state are offset by the restoration project.
3. If restoration of temporary and permanent impacts to waters of the state is not completed within three hundred sixty-five (365) days of the start of post-construction monitoring (or a schedule approved by the Water Board during review of the NOI and supplemental materials), the approving Water Board may require the following: compensatory mitigation to offset temporal loss of waters of the state; remedial actions (e.g., re-seeding); and/or extension of the monitoring period if performance standards have not been met or are not likely to be met.

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XIV. Water Quality Certification

This Order for Restoration Projects Statewide (WQ 2022-0048-DWQ) hereby certifies that as long as all of the conditions listed in this Order are met, any discharge from the Implementation of Restoration Projects Statewide will comply with the applicable provisions of Clean Water Act 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). This Order is also adopted pursuant to California Water Code section 13263 as waste discharge requirements pursuant to the Porter-Cologne Water Quality Control Act (California Water Code, § 13000 et seq.). The State Water Board has considered the factors in section 13241 in establishing the requirements in this Order. The ability to discharge waste is a privilege, not a right, and adoption of this Order shall not be construed as creating a vested right to continue discharging waste (California Water Code, § 13263, subd. (g).) Notwithstanding any determinations by any federal agency made pursuant to 40 C.F.R. section 121.9, dischargers must comply with the entirety of this Order because the Order also serves as waste discharge requirements.

Except insofar as may be modified by any preceding conditions, all Order actions are contingent on: (a) discharges being limited and all requirements being completed in strict compliance with the conditions of this Order and the attachments to this Order; and (b) compliance with all applicable requirements of Statewide Water Quality Control Plans and Policies, the Regional Boards' Water Quality Control Plans and Policies.

CERTIFICATION

I, Jeanine Townsend, Clerk to the Board, do hereby certify that this Order with all its attachments is a full, true, and correct copy of an Order adopted by the State Water Board, on **August 16, 2022**.

AYE: Chair E. Joaquin Esquivel
Vice Chair Dorene D'Adamo
Board Member Sean Maguire
Board Member Laurel Firestone
Board Member Nichole Morgan

NAY: None

ABSENT: None

ABSTAIN: None

 for
Jeanine Townsend
Clerk to the Board

Final Attachment A

Description and Eligibility

Categories of Eligible Project Types, Geographic Scope,
Programmatic Sideboards, General Protection Measures,
Other Requirements, and Design Guidelines

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Description and Eligibility

A.1 Introduction

The State Water Resources Control Board (State Water Board) has developed a General Order for Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements for Restoration Projects Statewide (Order) to improve the efficiency of regulatory reviews for projects throughout the state that would restore aquatic and riparian resource functions and/or services. The Order establishes an authorization process for environmentally beneficial restoration projects.

The purpose of the Order is to expedite consultation, authorization, and permitting of restoration projects intended to help the State of California achieve its habitat restoration, species recovery, and water quality improvement goals.

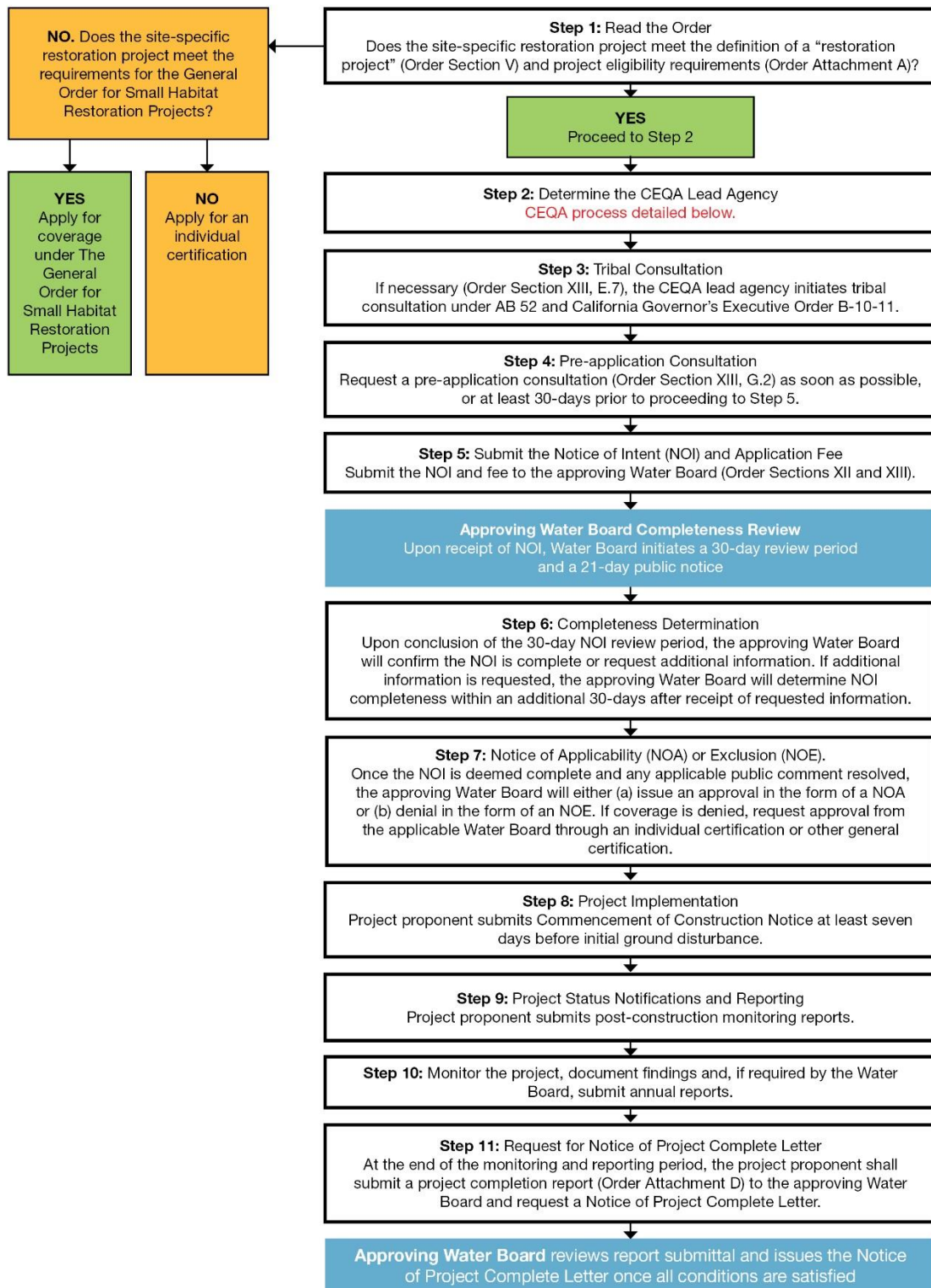
It is anticipated that the Order will authorize projects that originate from a variety of mandates and programs, including projects that are part of larger programs and/or initiatives that guide restoration throughout the State (e.g., Propositions 1 and 68 funds administered by state, regional, and local conservancies and state agencies, California Department of Fish & Wildlife [CDFW] Fisheries Restoration Grant Program [FRGP], State Water Board Comprehensive Response to Climate Change (Resolution), State Water Board Non-point Source (Section 319h) grant program for restoration activities, California EcoRestore, Bay-Delta Water Quality Control Plan (Basin Plan), Central Valley Flood Protection Plan – Conservation Strategy, San Joaquin River Restoration Program, San Francisco Bay Restoration Authority (Measure AA), and others).

The State Water Board has previously adopted a programmatic authorization for restoration projects less than 5 acres and a cumulative total of 500 linear feet of stream bank or coastline, and that qualify under the California Environmental Quality Act (CEQA) categorical exemption under California Code of Regulations title 14, section 15333, “Small Habitat Restoration Projects” (General Order Number SB12006GN). This Order intends to provide authorization for restoration projects that meet the eligibility criteria in this Order, but do not qualify for authorization under the Order for Small Habitat Restoration Projects. Order and CEQA process flow charts (Figures A-1 and A-2) provide general step-by-step guides to assist a project proponent through the project eligibility and notification process.

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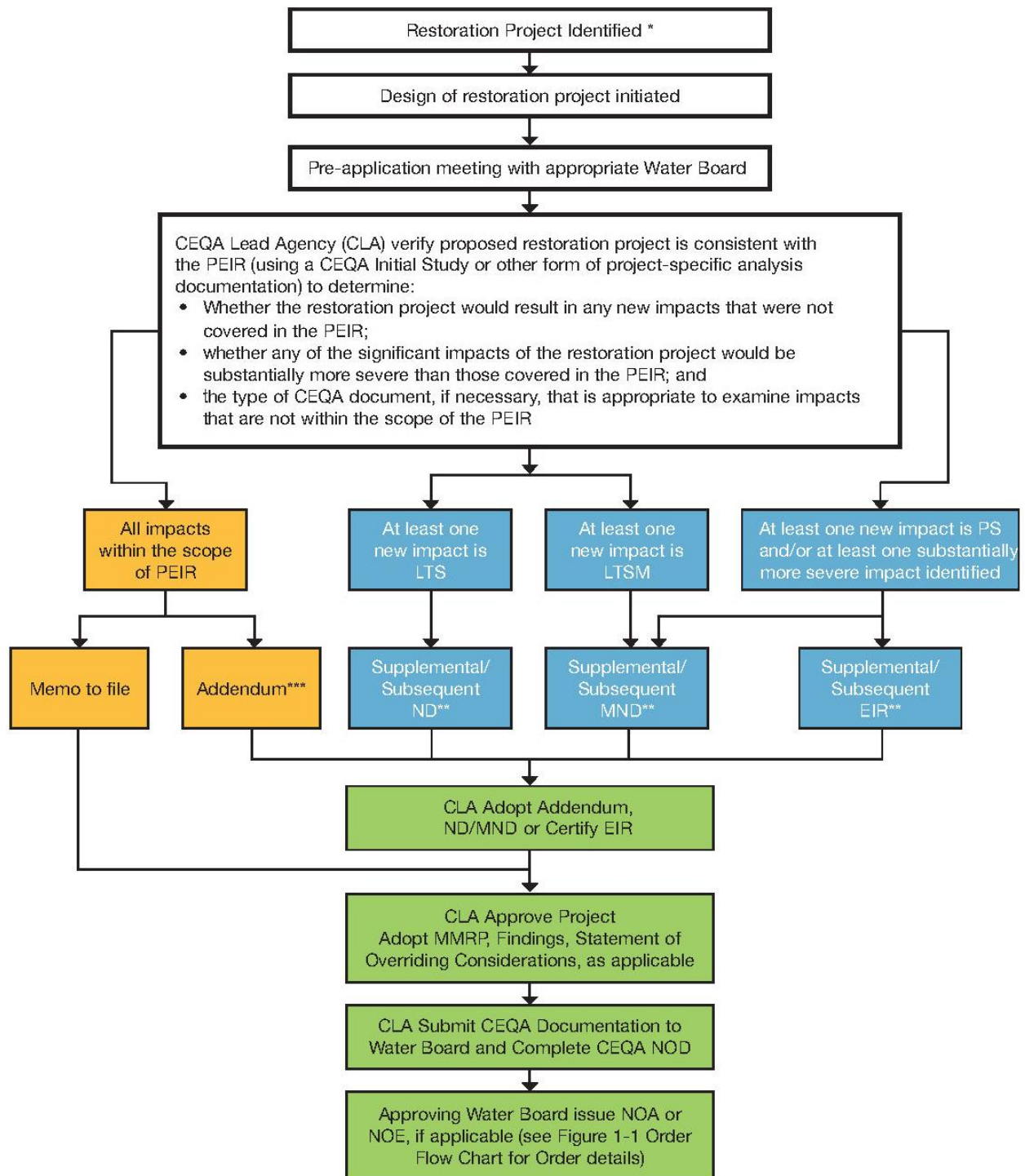
Figure A-1 Restoration Projects Statewide Order Process Flow Chart

Source: ESA 2020



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Figure A-2 Restoration Projects Statewide Order CEQA Process Flow Chart
 Source: ESA 2020



* Meets the definition of a restoration project and conditions outlined in the Restoration Projects Statewide Order and PEIR and does not meet the requirements for the General Order for Small Habitat Restoration Projects
 ** Pursuant to CEQA Guidelines Sections 15162 (e.g. major revisions to PEIR) and 15163 (e.g. minor revisions to PEIR and doesn't meet the requirements of Section 15163)
 *** Pursuant to CEQA Guidelines Section 15164 (e.g. minor additions or changes to PEIR and doesn't meet the requirements of Sections 15162 or 15163)
 EIR = Environmental Impact Report; LTS = Less than significant; LTSM = less than significant with mitigation; ND = Negative Declaration;
 MND = Mitigated Negative Declaration; NOA = Notice of Availability; NOD = Notice of Determination; NOE = Notice of Exemption; PS = Potentially Significant, PP = Project Proponent
 Note: This figure represents the process to implement restoration projects under the PEIR. Please refer to the CEQA Statute and Guidelines for additional information

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As described in the Order, all authorized projects must meet the definition of a restoration project as defined below and comply with all applicable water quality control plans and state policy for water quality control. A "restoration project" is defined as one that would result in a net increase in aquatic or riparian resource area functions and/or services through implementation of the eligible project types, relevant general protection measures, and consideration of design guidelines. The approving Water Board determines if a proposed project meets the definition of a restoration project and is eligible for authorization under this Order.

A.2 Categories of Eligible Project Types

The categories of restoration project types eligible for enrollment under the Order are listed below. These eligible project types are described in detail in Section A.4, *Categories of Restoration Projects in the Order*. An individual permitted project may incorporate one or more of these project types. Projects may conduct restoration activities such as establishment, reestablishment, rehabilitation, and/or enhancement for any of these project types:

- ◆ **Improvements to Stream Crossings and Fish Passage**—for upstream and downstream movement by fish and other species, and to improve functions of streams.
- ◆ **Removal of Small Dams, Tide Gates, Flood Gates, and Legacy Structures**—to improve fish and wildlife migration, tidal and freshwater circulation and flow, and water quality.
- ◆ **Bioengineered Bank Stabilization**—to reduce input of fine sediment, enhance aquatic and riparian habitat, and improve water quality.
- ◆ **Restoration and Enhancement of Off-Channel and Side-Channel Habitat**—to improve aquatic and riparian habitat for fish and wildlife; to restore the hydrologic, hydraulic, and biogeochemical functions and processes of streams; or both.
- ◆ **Water Conservation Projects**—to reduce low-flow stream diversions, through installation of features such as off-stream storage tanks and ponds and necessary off-channel infrastructure.
- ◆ **Floodplain Restoration**—to improve ecosystem function by creating hydrologic connections between streams and floodplains, through such measures as breaching and removal of levees, breaching and removal of berm and dike setbacks, and hydraulic reconnection and revegetation.
- ◆ **Removal or Remediation of Pilings and Other In-Water Structures**—to improve water quality and aquatic habitat for fish and wildlife.
- ◆ **Removal of Nonnative Invasive Species and Revegetation with Native Plants**—to improve watershed functions, such as aquatic and riparian habitat for fish and wildlife.

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- ◆ **Establishment, Restoration, and Enhancement of Tidal, Subtidal, and Freshwater Wetlands**—to create or improve wetland ecological functions.
- ◆ **Establishment, Restoration, and Enhancement of Stream and Riparian Habitat and Upslope Watershed Sites**—to create or restore the functions of streams and riparian areas, including upslope watershed sites that could contribute sediment to streams or disrupt floodplain and riparian functions.

A.3 Geographic Scope

The Order considers a variety of types of aquatic, riparian, and floodplain restoration projects that take place throughout California. The State Water Board protects water quality by setting statewide policy for water quality control and water quality control plans and coordinating and supporting the nine Regional Water Quality Control Boards. The Regional Boards conduct rulemaking and regulatory activities through issuance and implementation of regional water quality control plans (basin plans). Because the Order is administered and used, in part, by the Regional Boards, the study area (geographic scope) is defined as the nine water quality control regions (Figure A-3).

A.3.1 Region 1—North Coast

The North Coast Regional Board’s jurisdiction encompasses watersheds draining to the Pacific Ocean from California’s northern border to the southerly boundaries of the Estero de San Antonio and Stemple Creek watersheds. This region includes all of Del Norte, Humboldt, Trinity, and Mendocino Counties, and portions of Siskiyou, Modoc, Glenn, Lake, Sonoma, and Marin Counties. Major bodies of water in this region include the Smith, Klamath, Trinity, Eel, Mattole, and Russian Rivers, and Humboldt Bay.

A.3.2 Region 2—San Francisco

The San Francisco Bay Regional Board’s jurisdiction encompasses watersheds draining to the Pacific Ocean from Tomales Bay in the north to Pescadero Creek in the south, excluding watersheds that drain to either the Sacramento River or the San Joaquin River. This region includes all of San Francisco County and portions of Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, Santa Clara, San Mateo, and Santa Cruz Counties. The dominant feature of this region is the San Francisco Bay estuary, which conveys the waters of the Sacramento and San Joaquin Rivers into the Pacific Ocean. Other major tributaries to the San Francisco Bay estuary include the following watersheds: Alameda, Contra Costa, Marin, Napa, San Mateo, Santa Clara Basin, Solano, and Sonoma. This region also includes coastal portions of Marin and San Mateo Counties.

A.3.3 Region 3—Central Coast

The Central Coast Regional Board’s jurisdiction encompasses watersheds draining to the Pacific Ocean from Pescadero Creek south to the southeasterly boundary of the Rincon Creek watershed. This region includes all of Santa Cruz and Monterey Counties and portions of San Mateo, Santa Clara, San Benito, San Luis Obispo, Santa Barbara, Kern, and Ventura Counties. Major bodies of water in this region include the Pajaro and Salinas Rivers, and Morro and Monterey Bays.

A.3.4 Region 4—Los Angeles

The Los Angeles Regional Board's jurisdiction encompasses watersheds draining to the Pacific Ocean from the Ventura River watershed south to the San Gabriel River watershed. This region includes portions of Ventura County, Los Angeles County, and Orange, Kern, and Santa Barbara Counties. Major bodies of water in this region include the Santa Clara, Los Angeles, and San Gabriel Rivers; Santa Monica Bay; and the drainages of five coastal islands (Anacapa, San Nicolas, Santa Barbara, Santa Catalina, and San Clemente).

A.3.5 Region 5—Central Valley

The Central Valley Regional Board's jurisdiction encompasses all watersheds that drain to the Sacramento and San Joaquin Rivers. This region includes Tehama, Butte, Plumas, Colusa, Sutter, Yuba, Sacramento, San Joaquin, Stanislaus, Merced, Fresno, Kings, Tulare, Kern, Madera, Mariposa, Tuolumne, Calaveras, and Amador Counties. It also includes portions of Modoc, Lassen, Sierra, Nevada, Placer, El Dorado, and Alpine Counties to the east, and portions of San Benito, Santa Clara, Alameda, Contra Costa, Solano, Napa, Lake, Glenn, and Siskiyou Counties to the west. Major rivers in this region include the Sacramento, Pit, Feather, Yuba, Bear, American, San Joaquin, Cosumnes, Mokelumne, Calaveras, Stanislaus, Tuolumne, Merced, Chowchilla, and Fresno Rivers. Major reservoirs and lakes in this region include Shasta, Oroville, Folsom, Clear, Pardee, New Hogan, Millerton, McClure, Don Pedro, and New Melones Lakes.

A.3.6 Region 6—Lahontan

The Lahontan Regional Board's jurisdiction encompasses all watersheds within the boundaries of California that drain to the Great Basin. Jurisdiction extends from California's northern border to the northern Mojave Desert and includes all of California's eastern border east of the Sierra Nevada crest. This region includes Inyo and Mono Counties and portions of Los Angeles, Kern, San Bernardino, Alpine, El Dorado, Placer, Nevada, Sierra, Plumas, Lassen, and Modoc Counties. Major bodies of water in this region include Lake Tahoe; Eagle, Honey, Owens, and Mono Lakes; and the Susan, Truckee, Carson, Walker, Owens, and Mojave Rivers.

A.3.7 Region 7—Colorado River

The Colorado River Regional Board's jurisdiction encompasses all watersheds within the boundaries of California that drain to the Colorado River. This region includes Imperial County and portions of San Bernardino, Riverside, and San Diego Counties. Major bodies of water in this region include the Salton Sea, the Southern Mojave and Lower Colorado Rivers, the Imperial Reservoir, and Havasu and Mohave Lakes.

A.3.8 Region 8—Santa Ana

The Santa Ana Regional Board's jurisdiction encompasses the Santa Ana River watershed, which drains to the Pacific Ocean. This region includes portions of Los Angeles, San Bernardino, Riverside, and Orange Counties. Major bodies of water in this region include Anaheim and Newport Bays, the Santa Ana and Jacinto Rivers, and Lake Elsinore.

Figure A-3 Restoration Projects Statewide Order Geographic Scope

Source: ESRI 2018; State Water Board 2019; ESA 2019



A.3.9 Region 9—San Diego

The San Diego Regional Board's jurisdiction encompasses all watersheds that drain to the Pacific Ocean from the southern border of the Santa Ana Regional Board's jurisdictional limits to the southern border of California. This region includes portions of San Diego, Riverside, and Orange Counties. Major water bodies in this region include the San Juan, Santa Margarita, San Luis Rey, Carlsbad, San Dieguito, Peñasquitos, San Diego, Pueblo San Diego, Sweet Water, Otay, and Tijuana Rivers and San Diego and Oceanside Harbor bays.

A.4 Categories of Restoration Projects in the Order

The Order addresses restoration practices that require Section 401 water quality certification and/or waste discharge requirements. Sections A.4.1 through A.4.10 below present detailed descriptions of the categories of restoration project types eligible for enrollment under the Order. Each project category discussion briefly summarizes the project purpose, describes different activities and/or subproject types, and summarizes typical construction activities associated with projects falling into that category.

During the Order enrollment process, the approving Water Boards will determine whether an individual restoration project is eligible for inclusion in the Order. Where restoration activities may involve a FERC-licensed facility, the restoration project may be covered by this Order only upon receipt of written approval by the Deputy Director for the Division of Water Rights or their designee. All projects authorized under the Order must also incorporate applicable general protection measures into their project design to ensure avoidance and minimization of impacts on aquatic resources. A description of programmatic sideboards, general protection measures, design guidelines, and other requirements can be found in Sections A.5 and A.6.

A.4.1 Improvements to Stream Crossings and Fish Passage

Improvements to stream crossings and fish passage, including fish screens, provide a number of ecological benefits. For example, they provide safe passage for migratory and nonmigratory species, beneficial transport of sediment and debris, and improved hydrology and hydraulics. Stream crossing and fish passage improvements must be consistent with National Marine Fisheries Service (NMFS) and CDFW fish passage criteria.

Stream Crossings, Culverts, and Bridges

Stream crossing, culvert, and bridge projects generally involve removing, replacing, modifying, retrofitting, installing, or resetting existing culverts, fords, bridges, and other stream crossings and water control structures of any size. This includes projects that are developed to upgrade undersized, deteriorated, or misaligned culverts.

Projects to replace culverts or bridges are ineligible for coverage under the Order if they do not meet the definition of a restoration project (as provided in section V.) and the terms and conditions of the Order. Bridges and culverts should be designed to match gradients and adequately convey flow and materials (e.g., the 100-year flood) in addition to allowing fish passage. Any new or replacement crossing, culvert, or bridge that intersects potential habitat for listed salmonid species, also must meet CDFW

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and/or NMFS fish passage criteria, as applicable. If a bridge or culvert is designed to convey less than the 100-year design flow, the project should demonstrate that a smaller structure will not result in excessive flooding, erosion/sedimentation, headcutting, or habitat impacts.

Constructing or installing a stream crossing, culvert, or bridge may include site excavation, formation and pouring of a concrete foundation and walls/abutments, and installation of the crossing structure, as well as placement of bioengineered and/or rock slope protection (RSP) to protect abutments, piers and walls. Where RSP is deemed necessary, use natural stream material to fill and cover exposed rock and/or use bioengineered techniques, listed below, where appropriate.

Fish Screens

Projects in this category involve installing, operating, and maintaining fish screens on existing water intakes. See the additional discussion in Section A.5.3, *Pre-Application Consultation*.

Constructing or installing a fish screen usually includes site excavation, formation and pouring of a concrete foundation and walls, and installation of the fish screen structure. Typically, if the fish screen is placed in or near flood-prone areas, rock or other armoring is installed to protect the screen. Fish screen types include self-cleaning screens (including flat plate, rotary drum screens, cone screens, and other designs with a variety of cleaning mechanisms) and non-self-cleaning screens (including tubular, box, and other designs). All fish screens must be consistent with NMFS fish screening criteria.

Fishways

This project type involves removing, relocating, constructing, repairing, or maintaining fishways. This project type may include riffle-pool complexes (e.g., rock/boulder ramps) or installation of fishways that bypass barriers. Engineered fish ladder structures should be avoided unless there are no other viable alternatives. See the additional discussion in Section A.5.3, *Pre-Application Consultation*.

Constructing and/or installing fishways usually includes site excavation, formation and pouring of a concrete foundation and walls, pile driving, excavation and installation of an entry and exit channel, and installation of the fishway structure. Heavy equipment is typically used for excavation and preparation of the ladder site.

Headcut Stabilization

Stabilizing headcuts¹ is often required to stabilize the bed of a stream and promote structural sustainability over time. This improvement is also used to stop stream incision, increase connection to the adjacent floodplain, and enhance floodplain inundation.

¹ Headcut, in stream geomorphology, is an erosional feature of some intermittent and perennial streams with an abrupt vertical drop, also known as a knickpoint, in the stream bed.

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Construction of these project types typically includes site excavation and may include installation of a control structure (e.g., boulders, earthen fill). Heavy equipment is typically used for excavation.

A.4.2 Removal of Small Dams, Tide Gates, Flood Gates, and Legacy Structures

These projects are designed to reconnect stream corridors, floodplains, and estuaries; establish wetlands; improve passage by aquatic organisms; and restore more natural channel and flow conditions. They also help to restore fisheries access to historic habitat for spawning and rearing and improve the long-term quality of aquatic habitat and stream geomorphology. All projects must be designed with seasonal construction considerations to minimize potential adverse effects on water quality and/or aquatic species.

This project type involves removing small dams, tide gates, flood gates, and legacy structures to improve fish and wildlife migration, tidal and freshwater circulation and flow, and water quality. This project type may also include separation of streams from artificial impoundments (e.g., ponds or lakes) by realigning and/or rerouting channels around these artificial water bodies and/or through the use of vertical concrete or sheet-pile walls.

Removal of Small Dams

Small dams are removed to restore fisheries access to historic habitat for spawning and rearing and to improve long-term habitat quality and natural stream geomorphology. Types of eligible small dams include permanent, flashboard, debris basin, earthen, and seasonal dams that have the characteristics listed below.

Consistent with the NMFS programmatic restoration *Biological Opinion to Facilitate Implementation of Restoration Projects in the Central Valley* (NMFS 2018), small dams included in the Order are those defined by the California Division of Dam Safety as dams of non-jurisdictional size. Those dams are smaller in height or impounding capacity than dams as defined by California Water Code Section 2002 (Division 3, Part 1, Chapter 1, 6002), where “dam” means:

Any artificial barrier, together with appurtenant works, which does or may impound or divert water, and which either (a) is or will be 25 feet or more in height from the natural bed of the stream or watercourse at the downstream toe of the barrier, as determined by the department, or from the lowest elevation of the outside limit of the barrier, as determined by the department, if it is not across a stream channel or watercourse, to the maximum possible water storage elevation or (b) has or will have an impounding capacity of 50 acre-feet or more.

Facilities under the jurisdiction of the Federal Energy Regulatory Commission (FERC) may be covered by this Order upon receipt of written approval by the Deputy Director for the Division of Water Rights. See additional discussion in Section A.5.3, *Pre-Application Consultation*.

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Implementing small dam removal projects may require the use of heavy equipment (e.g., self-propelled logging yarders, mechanical excavators, backhoes). Some small dams can be removed using hand tools such as jackhammers. Any use of explosives for removal of a small dam must be justified by individual restoration project conditions including equipment access difficulties. The use of explosives must occur in dry or dewatered conditions and potential harm to special-status species from the explosives blast and pressure waves must be analyzed. Using explosives is an eligible activity; however, this approach would also require additional review and approval by appropriate regulatory agencies.

Projects meeting any of the following conditions are ineligible for authorization under the Order:

- ◆ Projects involving dams licensed under FERC that have not received authorization from the Director of the Division of Water Rights.
- ◆ Sediments stored behind the dam have a reasonable potential to contain environmental contaminants (dioxins, chlorinated pesticides, polychlorinated biphenyls [i.e., PCBs], or mercury) beyond the freshwater probable effect levels summarized in the National Oceanic and Atmospheric Administration Screening Quick Reference Table guidelines (NOAA 2008). OR
- ◆ Projects that have been determined, through pre-application consultation (Section A.5.3), to require more detailed analysis based on the risk of significant loss or degradation of downstream spawning or rearing areas by sediment deposition.

Sites are considered to have a reasonable potential to contain contaminants of concern if they are downstream of historical contamination sources such as lumber or paper mills, industrial sites, mining sites, or intensive agricultural production going back several decades (i.e., since chlorinated pesticides were legal to purchase and use). Therefore, preliminary sediment sampling is advisable in these areas to determine whether a project is eligible for authorization under the Order.

Conversely, small dams that do not have historical contamination sources in the upstream watershed are considered to have low potential to contain contaminants; therefore, they could be considered low risk with reduced sediment sampling and evaluation.

This Order will only include dam removal that will restore natural contours upstream, naturally or with excavation, to minimize negative effects on downstream habitat. Dam removal projects will (1) have a volume of sediment available for release that is small relative to the size of the stream channel, and that when released by storm flows, will have minimal effects on downstream habitat as verified by a qualified and appropriate scientist and engineer, and reviewed by either CDFW or NMFS scientists and engineers, or (2) be designed to remove sediment trapped by the dam down to the elevation of the target thalweg including design channel and floodplain dimensions.

Removal of Tide Gates and Flood Gates

Removal of or upgrades to existing tide and flood gates involve modifying gate components and mechanisms in tidal stream systems where full tidal exchange is incompatible with the current land use (e.g., where high-tide backwater effects are of concern). Tide/flood gate replacement or retrofitting may include such activities as installation of temporary cofferdams and dewatering pumps, and excavation of existing channels, adjacent floodplains, flood channels, and wetlands, and may include structural elements such as streambank restoration and hydraulic roughness.

The placement of new gates where they did not previously exist is not eligible for authorization under the Order. The replacement of tide gates is eligible only if project proponents can demonstrate that such a replacement would increase or enhance ecological processes. Tide and flood gates may be plugged by removing the culvert and backfilling the berm or levee to prevent fish from accessing unsuitable habitat.

Excavators, cranes, boats, barges, pumps, dump trucks, and similar equipment are typically used to implement the projects in this category.

Removal of Legacy Structures

This activity includes the removal of nonfunctioning in-channel and floodplain legacy habitat structures (e.g., grade control structures and defunct boulder weirs) to improve water quality and channel geomorphology.

Removal of legacy structures may require the use of excavators, cranes, dump trucks, vibratory pile drivers, and similar equipment.

A.4.3 Bioengineered Bank Stabilization

Bioengineered bank stabilization projects improve riparian and stream habitat by increasing stream shade to lower stream temperatures, production of invertebrates, future recruitment of large woody material, and bank stability. Riparian habitat restoration projects increase the number of plants and plant groupings, and include natural regeneration, exclusion fencing for livestock, bioengineering, and revegetation.

To improve aquatic and riparian habitats and reduce soil erosion and sedimentation of streams and wetlands, bioengineered bank stabilization integrates living woody and herbaceous materials with earthwork and recontouring of streambanks. Both organic and inorganic materials are put into place to stabilize and improve the structure of the soil where site constraints limit opportunities for natural channel meander. Bank stabilization structures that use bioengineering techniques minimize many of the impacts on aquatic resources commonly caused by traditional or conventional engineered bank structures. Examples of bioengineering project types include revetment² consisting of trees, native plant materials, or willow walls, and willow siltation baffles, brush mattresses, brush check dams, and brush bundles. Bioengineered project

² Revetments are sloping structures placed on banks or cliffs in such a way as to absorb the energy of incoming water.

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types may also include the placement of buried riprap³ with soil and vegetation plantings on top.

Bioengineered bank stabilization techniques use a minimal amount of hard materials (e.g., rock) and are not intended to include traditional hard engineering techniques, which would not be permitted under the Order. Part XI, *Riparian Habitat Restoration*, of the CDFW *California Salmonid Stream Habitat Restoration Manual* (Flosi et al. 2010: Vol. II) identifies examples of techniques that would be permitted under the Order.

Bioengineered bank stabilization structures are suitable for many low-order, low-gradient stream segments where the channel is not aggrading⁴ or degrading⁵ rapidly, and where sufficient space is available to reshape the eroding bank to an appropriate slope. The Order would not cover projects that merely protect property from bank erosion; however, many restoration project types, including multi-benefit projects that include bioengineered bank stabilization would be eligible for coverage under the Order.

The use of boulders should be limited in scope and quantity to the minimum necessary to stabilize the slope and protect it from expected streamflows during storms. Boulder structures should be part of a larger restoration design with the primary purpose of improving habitat, and should include a riparian revegetation element. Bridge abutments and other structural improvements installed as part of the restoration design of fish passage projects may require additional stabilization with boulder and rock banks.

Guidelines for streambank stabilization techniques are described in Part VII, *Project Implementation*, of the CDFW *Riparian Habitat Restoration Manual* (Flosi et al. 2010: Vol. I or subsequent updates).

Projects in this category may require the use of heavy equipment (e.g., self-propelled logging yarders, excavators, backhoes, and/or dump trucks).

A.4.4 Restoration and Enhancement of Off-Channel and Side-Channel Habitat

Restoring and enhancing off-channel and side-channel habitat features helps to improve aquatic and riparian habitat for fish and wildlife. Restoration project types in this category have the following benefits:

- ◆ Increase habitat diversity and complexity
- ◆ Improve heterogeneity (e.g., nonuniform character) of flows
- ◆ Provide long-term nutrient storage and substrate for aquatic macroinvertebrates
- ◆ Moderate flow disturbances
- ◆ Increase retention of leaf litter
- ◆ Provide refuge for fish during high flows

³ Riprap is placed rock or other material used to armor shorelines and streambeds against scour and water, wave erosion.

⁴ A stream becoming increasingly shallow as a result of sediment deposition.

⁵ A stream actively deepening its channel and capable of transporting more sediment load than is presently provided.

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Projects proposed for side-channel or off-channel habitat also typically improve hydrologic connections between main channels and their floodplains.

This project category typically involves reconnecting and creating side-channel, alcove, oxbow, pond, off-channel, floodplain, and other habitats, and potentially removing off-channel fill and plugs. New side channels and alcoves may be constructed in geomorphic settings that accommodate such features. This activity category typically applies to areas where side channels, alcoves, and other backwater habitats have been filled or blocked from the main channel, disconnecting them from most if not all flow events.

Work may involve removing or breaching levees, berms, and dikes; excavating channels; constructing wooden or rock tailwater⁶ control structures; and constructing large wood habitat features.

The use of logs or boulders as stationary water-level control structures is an eligible project element under the Order. With the exception of offstream storage projects to reduce low-flow stream diversions, projects involving the permanent installation of a flashboard dam, head gate, or other mechanical structure are not eligible for authorization under the Order.

Excavators, bulldozers, dump trucks, front-end loaders, and similar equipment may be used to implement projects.

A.4.5 Water Conservation

Creation, operation, and maintenance of water conservation projects including offstream storage tanks and ponds and associated off-channel infrastructure reduce low-flow stream diversions and enhance streamflows, particularly base flows for fish and wildlife habitat during the dry season. These projects typically require placing infrastructure (e.g., pumps, piping, screens, and headgates) in or adjacent to the stream to provide alternative water intake facilities. Exclusion fencing may be constructed to manage grazing in aquatic and riparian habitat as described in Section A.4.10, *Establishment, Restoration, and Enhancement of Stream and Riparian Habitat and Upslope Watershed Sites*.

Other projects in this category include piping ditches to create a more efficient use of water where the water saved will be dedicated to fish and wildlife under the terms of California Water Code Section 1707 or forbearance agreements. These projects are designed to improve streamflow and riparian habitat for fish and wildlife. Excavators and other heavy equipment may be used to implement the projects.

A.4.6 Floodplain Restoration

Project types in this category improve the diversity and complexity of aquatic, meadow, and riparian habitat, as well as ecosystem function, because they have the following effects:

- ◆ Provide opportunities for sediment to deposit on the floodplain seasonally, which enhances meadow vegetation, use by birds and mammals, and fish rearing and spawning; and also provide refuge from predators and physical stressors

⁶ Water body located downstream of a dam or other dam or other barrier.

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- ◆ Create intermittent hydrologic connections between streams and floodplains
- ◆ Increase floodway capacity and the frequency and duration of floodway inundation
- ◆ Improve ecosystem functions for aquatic and terrestrial species and also improve water quality
- ◆ Reconnect stream channels to floodplains, thus improving the fluvial dynamics of the watershed system, for example, by allowing normal patterns of sediment deposition and transport, as well as, channel migration
- ◆ Reduce or eliminate areas that strand native fish or provide habitat for nonnative predatory fish, or both
- ◆ Provide high-flow and thermal refuges for native fish and other aquatic species

Floodplains should mimic natural flooding patterns and remain flooded/inundated long enough to activate food webs. Floodplain restoration can involve rock placement, specifically as engineered stream material, riffle ramps, weirs, and other strategies to aggrade the channel and enable connectivity to floodplains.

Floodplain restoration projects may be implemented through various strategies. Some involve setback, breaching, and removal of levees, berms, and dikes, and excavation and/or fill for hydraulic reconnection (including restoration to stage zero⁷) and revegetation.

Levee setback projects involve constructing new levees to facilitate removal or breaching of existing levees and creation of aquatic or riparian habitat. These project types may also include filling and/or reshaping of on- and off-channel gravel pits. Levees may be adjusted or a low levee bench may be created to allow for tidal inundation or channel margin habitat.

Floodplain projects may also reconnect historical stream and river channels and freshwater deltas with floodplains, and reconnecting historical estuaries to tidal influence, through levee removal, setback, and breaching or construction of floodplain surfaces that connect at base flow. Floodplain restoration projects may be planned where floodplains and estuaries have been disconnected from adjacent streams and rivers.

Meadow and floodplain restoration may involve reconnecting down-cut channels to their floodplains to restore hydrologic processes and meadow health; filling incised, entrenched channels; creating new stream channels; regrading floodplains; or realigning channels or installing stabilization structures. Incised channels should only be filled if the watershed conditions that triggered incision have been considered and would not result in continued incision (project failure) and/or can be mitigated by the project. These restoration actions may rely on watershed processes to complete work over time to restore a channel network and floodplain that supports wetlands or grasslands.

⁷ Streams that are fully connected with their floodplains; typically, multi-thread.

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Project proposals to create off-channel or side-channel habitats, floodplain restoration will include as appropriate information regarding considerations for water supply (channel flow, overland flow, and groundwater), water quality, and reliability; risks of channel changes; and channel and hydraulic grade.

Excavators, bulldozers, dump trucks, front-end loaders, and similar equipment may be used to implement these projects.

A.4.7 Removal or Remediation of Pilings and Other In-Water Structures

Untreated and chemically treated wood pilings, piers, vessels, boat docks, derelict seawalls (within embayments), derelict fishing gear, and similar structures built using plastic, concrete, and other materials, may be removed and/or remediated to improve water quality and habitat for fish and wildlife. These projects are designed to remove contaminant sources and hazards from stream, river, and estuary habitats.

Boats, barges, excavators, dump trucks, front-end loaders, and similar equipment may be used to implement these projects.

A.4.8 Removal of Nonnative Terrestrial and Aquatic Invasive Species and Revegetation with Native Plants

Removing nonnative terrestrial and aquatic invasive species and/or revegetating with native plants improves aquatic, riparian, and wetland habitat for fish and wildlife in a variety of ways. These projects are designed to improve or provide the following benefits:

- ◆ Composition, structure, and abundance of native biological communities important for bank stability
- ◆ Stream shading, riparian canopy, and understory establishment and diversity
- ◆ Input of large wood and other organic material into streams
- ◆ Nesting and roosting habitat
- ◆ Reduction of soil erosion
- ◆ Water quality improvement
- ◆ Greater dune stability and habitat complexity
- ◆ Improved soil health
- ◆ Other ecological benefits, all of which are important elements of species habitat and water quality

Removal of Nonnative Terrestrial and Aquatic Invasive Species

Manual, mechanical, biological, and chemical methods can be used independently or in combination to remove invasive nonnative species from aquatic and riparian areas. Sites with a variety of invasive species may receive several different types of treatments. If chemical methods are used, the treatment will need to comply with labeling, application by qualified individuals (when required), as well as any required buffers from

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aquatic areas and/or additional authorizations, such as National Pollution Discharge Elimination System (NPDES) permit, as applicable.

This project type also includes removal and/or management of nonnative predatory fish and other nonnative fish and wildlife, as long as the activity is associated with a restoration project.

Revegetation with Native Plants

Revegetation with native plants should mimic the area's naturally occurring riparian and aquatic habitats and use seed or plant stock from the local watershed. Activities may include:

- ◆ Planting and seeding native trees, shrubs, and herbaceous plants
- ◆ Placing sedges, rushes, grasses, succulents, forbs, and other native vegetation
- ◆ Gathering and installing willow cuttings, stakes, mats, and fences
- ◆ Temporary irrigation
- ◆ Coordination with upstream operators to control dam releases or instream flow levels to provide water during plant establishment

A.4.9 Establishment, Restoration, and Enhancement of Tidal, Subtidal, and Freshwater Wetlands

Establishing, restoring, and enhancing tidal, subtidal, and freshwater wetlands results in more wetland area, increased primary and secondary ecological productivity, and more diversity of habitat.

This project type generally involves grading (e.g., creating depressions, berms, and drainage features), installing related infrastructure (e.g., water control structures, siphons, sills, etc.), and/or breaching (e.g., excavating breaks in levees, dikes, and/or berms), or both, to create topography, improve water management capabilities, and/or improve hydrology that:

- ◆ Facilitates water delivery and conveyance to benefit aquatic species, wildlife, or wetland vegetative response
- ◆ Supports native wetland plants (planted or recruited naturally)
- ◆ Provides habitat elements for target species
- ◆ Provides other targeted wetland functions
- ◆ Allows fish and other aquatic species to use channel networks and marsh plains with hydrologic variability (seasonally or tidally)
- ◆ Provides hydrologic connectivity to local, low-lying subwatershed areas

These projects also establish, maintain, restore, or enhance off-channel and vernal pools to support habitat for amphibians or vernal pools, which support plants and animals.

Project types in this category also create ecotones (transitional zones between two habitat or community types [aquatic/upland interface]) and/or "living shorelines" that could use fill and excavation with native vegetation (submerged and/or emergent), alone or in combination with offshore sills (e.g., artificial reefs), to stabilize the shoreline.

Creation of ecotones could require extensive beneficial fill and have the potential to affect adjacent existing wetlands; however, these projects are necessary to allow tidal

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wetlands to respond to sea level rise, and they provide refuge for native wildlife and buffer wetlands from adjacent municipal and industrial land uses.

Living shorelines can provide a natural alternative to “hard” shoreline stabilization methods like stone sills or bulkheads; they provide numerous ecological benefits, including water quality improvements, habitat for fish and invertebrates, and buffering of the shoreline from waves and storms.

Living shoreline projects use a suite of habitat restoration techniques to reinforce the shoreline, minimize coastal erosion, and maintain coastal processes while protecting, restoring, enhancing, and creating natural habitat for fish and aquatic plants and wildlife (e.g., wetlands, dunes, beaches, seaweed beds, rocky intertidal areas). The term “living shorelines” was coined because the approach provides living space for estuarine and coastal organisms. Strategic placement of native vegetation and natural materials or shells for native shellfish settlement enhances habitat values by creating new living space. The techniques also increase the connectivity of wetlands and deeper intertidal and subtidal lands while providing a measure of shoreline protection.

Living shoreline design strategies can use rock armoring, rock sill, groin, or breakwater installations only if the use of such design strategies is integral to the restoration basis of design.

Project types in this category include excavation, removal, and/or placement of fill materials to restore or approximate pre-disturbance site conditions; contouring wetlands to establish more natural topography, hydrology, and/or hydraulics; and setting back, modifying, or breaching existing dikes, berms, and levees.

This project category may also include:

- ◆ Constructing transitional tidal marsh habitat (i.e., “horizontal levees,” setback berms, or ecotones slopes, including revegetation and enhancement work in the associated upland transition, intertidal, and subtidal habitat zones)
- ◆ Thin-layer sediment augmentation for tidal marshes and nearshore habitat adaptation to rising sea levels (e.g., USFWS Salt Marsh Sediment Augmentation Project – Seal Beach)
- ◆ Biological enhancements to pilings, piers, and docks (e.g., wrapping pilings, and attaching tiles and ledges to increase surface area for intertidal and subtidal species)
- ◆ Biological enhancements to estuarine and coastal shoreline stabilization structures and other nature-based solutions
- ◆ Backfilling artificial channels
- ◆ Removing existing drainage structures, such as drain tiles
- ◆ Filling, blocking, or reshaping drainage ditches to restore wetland hydrology

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- ◆ Establishing tidal/fluviol channels and wetlands in tidal waters where those wetlands previously existed, or have migrated or will migrate as a result of sea level rise
- ◆ Installing structures or fill necessary to establish wetland or stream hydrology
- ◆ Constructing nesting/planting islands
- ◆ Beach renourishment
- ◆ Constructing open water areas
- ◆ Constructing noncommercial, native oyster habitat (e.g., reefs) over an unvegetated bottom in tidal waters
- ◆ Conducting noncommercial, native shellfish seeding
- ◆ Establishing submerged aquatic vegetation (e.g., eelgrass beds) in areas where those plant communities previously existed (e.g., San Francisco Bay Eelgrass Restoration)

Activities needed to establish vegetation including plowing or disking for preparation of seed beds and planting appropriate wetland species may also be included.

Project activities that plan for climate change, including sea level rise, should be considered in tidally influenced locations. California's Climate Adaptation Strategy recommends using ecotones and living shorelines as a potential adaptation method to reduce the need for engineered "hard" shoreline protection devices and to provide valuable, functional coastal habitat (CNRA 2018). The California State Coastal Conservancy's Climate Change Policy also supports the use of living shorelines for their ability to improve the resiliency of estuarine habitat to future sea level rise and other related effects of climate change (SCC 2011). More information about the benefits of these projects for climate change resilience can be found in sources such as the: San Francisco Bay Subtidal Habitat Goals Report, Baylands Habitat Goals Science Update, USFWS Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California, Wetlands on the Edge: the Future of Southern California's Wetlands [Southern California Wetlands Recovery Project Regional Strategy Update 2018], San Francisco Estuary Adaptation Atlas, San Francisco Estuary Blueprint, San Francisco Estuary Institute & The Aquatic Science Center New Life for Eroding Shorelines Report).

Ecotone habitat levees, where appropriate for an individual project location, should be used when new exterior levees are required to protect adjacent landowners from the return of tidal inundation. The project side of the levee should be constructed with areas of longer gentle slopes to accommodate upland refugia for sensitive salt marsh and brackish marsh species during higher tides associated with phenomena such as storm surges and king tide events. Interior berms' connection to adjacent uplands must consider access by predators during high tides. In addition, sidecast material should be used during the excavation of new channels to recontour pond bottoms to achieve the desired hydrology. This would include creating islands disconnected from uplands to provide future upland refugia and nesting areas in larger marshes.

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Excavators, graders, bulldozers, dump trucks, front-end loaders, boats, barges, and similar equipment may be used to implement these projects.

A.4.10 Establishment, Restoration, and Enhancement of Stream and Riparian Habitat and Upslope Watershed Sites

Stream and Riparian Habitats

Establishing, restoring, and enhancing stream and riparian habitats provides the following benefits:

- ◆ Habitat complexity, diversity, and cover for fish and other aquatic species
- ◆ Increased spawning and rearing habitat
- ◆ Improved migration corridors
- ◆ Improved pool habitat and pool-to-riffle ratios
- ◆ Restoration of sinuosity
- ◆ Improved water quality
- ◆ Reconnection of the channel to the floodplain and associated functions

These projects may typically include the following activities:

- ◆ Placing large woody material and boulders
- ◆ Constructing engineered logjams
- ◆ Constructing porous boulder structures and vanes
- ◆ Installing small wood structures or beaver dam analogues
- ◆ Enhancing vegetation
- ◆ Conducting bank stabilization and erosion control work
- ◆ Stabilizing headcuts
- ◆ Augmenting and placing gravel
- ◆ Removing and replacing concrete-lined channels with natural materials

Project activities may also include excavating, sorting, placing, and contouring existing on-site materials (e.g., historic mine tailings) on perched floodplains and in channels to reconnect those habitats and improve spawning and rearing conditions.

Project types in this category typically occur in areas where channel structure is lacking because of past stream cleaning (removal of large woody material), riparian timber harvest, historic grazing and meadow dewatering practices, hydromodification, or urbanization, and in areas where natural gravel supplies are low as a result of human-caused disruptions. These projects occur in stream channels and adjacent floodplains to increase channel stability, rearing habitat, pool formation, deposition of spawning gravel, channel complexity, hiding cover, low-velocity areas, and floodplain function. Helicopters, excavators, dump trucks, front-end loaders, full-suspension yarders, and similar equipment may be used to implement these projects.

Engineered logjams are large wood structures that include an anchoring system, such as rebar pinning, ballast rock, or vertical posts. These structures are designed to redirect flows and change scour and deposition patterns. To the extent practical, they are patterned after stable natural logjams and can be anchored in place using rebar, rock, or piles (driven into a dewatered area or the streambank, but not in water). Engineered logjams create a hydraulic shadow (low-velocity zone downstream) that

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allows sediment to settle. Scour holes develop adjacent to the engineered logjam. While providing valuable fish and wildlife habitat, they also redirect flow and can stabilize a streambank or downstream gravel bar.

Large woody material may be installed using either anchored or unanchored logs, or both, depending on site conditions and wood availability. Wood loading methods may include but are not limited to direct felling, whole-tree tipping and placement, use of helicopters, use of excavators, and grip hoisting.

Establishment, restoration, and enhancement of stream habitats may also include the following activities:

- ◆ Removing revetment and other streambank armoring materials
- ◆ Installing grade control structures using native/natural materials to improve general habitat and water quality, thus allowing establishment of native vegetation for birds, fish, and other species
- ◆ Improving stream morphology and channel dynamics; restoring sediment input and retention balance; and improving water quality
- ◆ Placing boulder structures (e.g., roughened channels, boulder ramps/riffle ramps, boulder weirs, vortex boulder weirs, boulder clusters, and single and opposing boulder wing deflectors)
- ◆ Placing imported spawning gravel

In addition, infrastructure located along streams and in riparian areas may be removed or relocated. The primary purpose of infrastructure removal is to eliminate or reduce impacts on riparian areas and vegetation, improve bank stability, reduce erosion, reduce sedimentation into adjacent streams, and provide for native revegetation or natural native plant recruitment. Among the types of infrastructure that could be removed or relocated are boat docks, boat haul-out locations, campgrounds and campsites, day-use sites, roads/trails, off-highway/off-road vehicle routes, and legacy railroad grades that affect aquatic resources or riparian habitat. See Section A.4.7, *Removal or Remediation of Pilings and Other In-Water Structures*, for further detail on removal of in-water structures.

Upslope Watershed Sites

Sites in upslope watershed areas may be restored to reduce the delivery of sediment to streams, promote natural hydrologic processes, and restore habitats for birds, amphibians, fish, and other species. This project type also includes road- and trail-related restoration including decommissioning, upgrading, and storm-proofing of roads and trails. The following are some of the specific techniques that may be used:

- ◆ Removing, installing, or upgrading culverts

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- ◆ Constructing water bars⁸ and dips
- ◆ Deep-ripping decommissioned roadbeds
- ◆ Reshaping road prisms to improve watershed functions
- ◆ Vegetating fill, cut slopes, and roadbeds
- ◆ Removing and stabilizing sidecast materials
- ◆ Grading or resurfacing roads and trails that have been improved for aquatic restoration, using gravel, bark chips, or other permeable materials
- ◆ Shaping the contours of the road or trail base
- ◆ Removing road fill to native soils
- ◆ Installing new culverts under trails or roads to reduce ditch length
- ◆ Stabilizing the soil and tilling compacted soils to establish native vegetation

These actions target priority roads and trails that contribute sediment to streams or disrupt floodplain and riparian functions.

This project type may also include installing exclusion fencing to manage or prevent grazing access to stream and riparian areas to facilitate the establishment of native riparian and stream habitat and the improvement of water quality. This project type includes controlled access to walkways that livestock use to cross streams and adjacent riparian areas. At stream crossings, gravel may be placed above the ordinary high-water mark within the fenced corridor to reduce trail erosion and delivery of sediment to the stream. Upland watering facilities (that do not involve water rights concerns) may be installed to reduce livestock use in riparian areas and stream channels. Planting native plants such as trees, shrubs, forbs, and graminoids may be necessary to manage invasive species and establish a healthy riparian corridor. Such projects reduce impacts of livestock on riparian soils and vegetation, streambanks, channel substrates, and water quality.

Equipment such as excavators, bulldozers, dump trucks, and front-end loaders may be used to implement these projects, which promote water quality and habitat improvement.

A.5 Programmatic Sideboards, General Protection Measures, and Other Requirements

In order to qualify for coverage under the Order, projects must meet the appropriate programmatic sideboards, general protection measures, and other conditions described in Sections A.5.1 through A.5.4. Section A.5.5 identifies activities that are prohibited under the Order.

Depending upon a project's construction details, not all general protection measures may be appropriate or necessary for a project to avoid and minimize impacts. Alternative measures may be proposed in the Notice of Intent for approving Water Board consideration to accommodate site-specific constraints or technological advances.

⁸ A water bar or interceptor dike is a road construction feature that is used to prevent erosion on sloping roads, cleared paths through woodland (for utility companies such as electricity pylons), or other accessways by reducing flow length.

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A.5.1 Programmatic Sideboards

Individual habitat restoration projects authorized through the Order should be designed, planned, and implemented in a manner consistent with the techniques and minimization measures presented in the following guidance documents, as appropriate to project type:

- ◆ CDFW's *California Salmonid Stream Habitat Restoration Manual*, Fourth Edition, Volume II (Flosi et al. 2010), which consists of the following four chapters:
 - Part IX, *Fish Passage Evaluation at Stream Crossings*
 - Part X, *Upslope Assessment and Restoration Practices*
 - Part XI, *Riparian Habitat Restoration*
 - Part XII, *Fish Passage Design and Implementation*
- ◆ CDFW Fisheries Restoration Grant Program guidance documents (<http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=183423>)
- ◆ *NMFS Guidelines for Salmonid Passage at Stream Crossings* (NMFS 2001)
- ◆ *NMFS Fish Screening Criteria for Anadromous Salmonids* (NMFS 1997)
- ◆ *NMFS Science based and tools for evaluating stream engineering, management, and restoration proposals* (Skidmore et al. 2011)
- ◆ *Stream Habitat Restoration Guidelines* (Cramer 2011)
- ◆ Any relevant future updates, guidance, and/or agency requirements, where appropriate

Actions not guided by the above manuals but may be eligible for permitting under the Order include newer, innovative approaches to restoration design that are not yet in the manual but have demonstrated success. Examples include fishway operation and maintenance, and permanent removal of summer dams and other types of small dams.

The Order requires that all projects implement appropriate general protection measures, which are identified in the application materials, to reduce the potential for ancillary effects on aquatic resources, including effects on water quality, sensitive habitats, special-status species, and other riparian and aquatic species. These required measures are described below in Section A.5.2, *General Protection Measures*.

General administration of the Order will be conducted by the State Water Board. The State Water Board and Regional Boards will be responsible for enrolling individual restoration projects under the Order, as applicable, within their respective jurisdictional boundaries as outlined under Section A.3, Geographic Scope, above. The approving Water Board will have the authority to issue a Notice of Applicability (NOA).

A.5.2 General Protection Measures

All projects permitted under the Order must incorporate applicable general protection measures, identified below, to ensure avoidance and minimization of impacts to aquatic/riparian resources from construction activities.

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General protection measures are fundamental to enrollment under the Order and applicable measures must be incorporated into project design. The purpose of the Order's protection measures is to incorporate best management practices (often referred to as BMPs) into projects submitted for review and approval through the Order, and to avoid and/or minimize potential short-term, long-term and cumulative adverse effects. These standards and practices represent sound and proven methods to reduce the potential adverse effects of an action. However, modified measures may be proposed by the project proponent or recommended by the approving Water Board, based upon site-specific conditions or technological constraints or advances. Each general protection measure described herein may be used in combination with other measures, as applicable to each restoration project.

Specific measures may be modified, added, or removed on an individual basis by the project proponent with authorization from the approving Water Board or on a programmatic (or statewide) basis with the State Water Board's approval. Further, it is important to note that additional protection measures pertaining to resources outside of Water Board's jurisdiction may be recommended and/or required by other agencies to address potential resource impacts on a project-by-project basis. This may include measures addressing impacts to special-status wildlife, fish, and plant species, air quality, noise, cultural resources and others. These measures would typically be expected to be incorporated into projects as environmental commitments or as mitigation measures developed and committed to as part of the CEQA review process. (See the *Program Environmental Impact Report (PEIR) for Restoration Projects Statewide Order* for mitigation measures identified as part of the CEQA review process for this Order.) Additional conditions may also be required by other agencies during their permitting processes.

General Protection Measures

- ◆ **GPM-1: Receipt and Copies of All Permits and Authorizations:** Work will not begin until all necessary permits and authorizations have been received (e.g., USACE, USFWS, NMFS, State and Regional Boards, CDFW). The project proponent will ensure that a readily available copy of the applicable agency permits and authorizations (e.g., USFWS Biological Opinion, NMFS Biological Opinion, Section 404 permit, etc.) is maintained by the construction foreman/manager on the project site for the duration of project activities.
- ◆ **GPM-2: Construction Work Windows.** Construction work windows may be required in order to avoid impacts to aquatic resources and associated beneficial uses during the wet season. Project proponents must also follow the applicable Regional Board's construction work windows, unless otherwise approved.
- ◆ **GPM-3: Construction Hours.** Construction activities will generally be limited to daylight hours, to the extent feasible. If nighttime construction is necessary, including in tidally influenced waters where tides may limit daylight access and work schedules, all project lighting (e.g., staging areas, equipment storage sites, roadway, and construction footprint) will be selectively placed and directed onto the roadway or construction site and away from aquatic habitats. Light glare shields will be used to reduce the extent of illumination into aquatic habitats. If

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the work area is near surface waters, the lighting will be shielded so that it does not shine directly into the water.

- ◆ **GPM-4: Environmental Awareness Training.** For projects occurring in aquatic resources (e.g., wetlands, riparian areas, etc.), prior to engaging existing or new personnel in construction activities, new construction personnel will participate in environmental awareness training conducted by an agency-approved biologist or resource specialist.⁹ Construction personnel will be informed regarding the identification, potential presence, legal protections, avoidance and minimization measures, and applicable general protection measures for all aquatic resources with the potential to occur within or immediately adjacent to the project site. Construction personnel will be informed of the procedures to follow should aquatic resources be disturbed during construction activities. For projects where the agency-approved biologist or resource specialist is not regularly on the project site, training may be provided via online/web-based meeting with an interactive portion (e.g., web-based or in-person discussion) to be included during remote training sessions. For projects that may continue over an extended duration and require excessive training events, a training video developed under the supervision of the FWS-approved biologist or resource specialist may be used to train new personnel, as long as an FWS-approved biologist or resource specialist is available via phone to answer questions about the training or that may arise during construction
- ◆ **GPM-5: Environmental Monitoring.** As required in the NOA, a resource specialist will ensure that all applicable protective measures are implemented during project construction. The resource specialist will have authority to stop any work if they determine that any permit requirement is not fully implemented. The resource specialist will prepare and maintain a monitoring log of construction site conditions and observations, which will be kept on file.
- ◆ **GPM-6: Work Area and Speed Limits.** Construction work and materials staging will be restricted to designated work areas, routes, staging areas, temporary interior roads, or the limits of existing roadways. Prior to initiating construction or grading activities, brightly colored fencing or flagging or other practical means will be erected to demarcate the limits of the project activities, including the boundaries of designated staging areas; ingress and egress corridors; stockpile areas for spoils disposal, soil, and materials; and equipment exclusion zones. Flagging or fencing will be maintained in good repair for the duration of project activities. Vehicles will obey posted speed limits on public roadways and will limit speeds to 20 miles per hour (mph) within the project area on unpaved surfaces and unpaved roads (to reduce dust and soil erosion) or in areas where special-status species have the potential to occur. Speeds greater than 20 mph may be permitted in the project area where special-status species are not expected to occur (e.g., within areas from which special-status species have been excluded)

⁹ Agency-approve monitor refers to monitors who demonstrate qualifications and can be approved by CDFW, NMFS, and/or USFWS and accepted by approving Water Board.

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and where there is no risk of generating excessive dust (e.g., surfaces are paved, saturated, or have been treated with other measures to prevent dust).

- ◆ **GPM-7: Environmentally Sensitive Areas:** Monitoring, flagging, or fencing will be used, where appropriate, to minimize disturbance to environmentally sensitive areas (e.g., waters and wetlands).

If fencing is used:

- Fencing used must be approved by CDFW and/or USFWS for compatibility with species under their jurisdiction, as applicable, that may occur on site.
 - The agency-approved biologist or resource specialist will determine the location of fencing prior to the start of construction (e.g., between active work area(s) and sensitive resources).
 - Fencing will remain in place throughout the duration of the construction activities and will be inspected and maintained regularly by the agency-approved biologist or resource specialist until completion of the project.
 - Repairs to the fencing will be made within 24 hours of discovering any failure.
 - Fencing will be removed when all construction equipment is removed from the site, the area is cleared of debris and trash, and the area is returned to natural conditions.
- ◆ **GPM-8: Prevent Spread of Invasive Species.** The spread or introduction of invasive exotic plant species by arriving vehicles, equipment, imported gravel, and other materials, will be avoided to the maximum extent possible. When practicable, invasive exotic plants in the project areas will be removed and properly disposed of in a manner that will not promote their spread. Equipment will be cleaned of any sediment or vegetation at designated wash stations before entering or leaving the project area to avoid spreading pathogens or exotic/invasive species. Isolated infestations of noxious weeds identified in the project area will be treated with approved eradication methods at an appropriate time to prevent further formation of seed and destroy viable plant parts and seed. Wash sites must be in confined areas that limit run-off to any surrounding habitat and on a flat grade. Upland areas will use rice straw or invasive species-free local slash/mulch for erosion control, while the remainder of the project area will use certified, weed-free erosion control materials. Mulch must be certified weed-free. The project proponent will follow the guidelines in the CDFW's California Aquatic Invasive Species Management Plan (CDFW 2008) and Aquatic Invasive Species Disinfection/Decontamination Protocols (CDFW 2016), where relevant. Construction supervisors and managers will be educated on weed identification and the importance of controlling and preventing the spread of noxious weeds. The project proponent will follow any applicable local guidance to prevent the spread of invasive animal species. Construction supervisors and managers will be responsible for implementation of appropriate protocols (e.g., disinfection of equipment and footwear) to prevent the spread of invasive animals.

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- ◆ **GPM-9: Practices to Prevent Pathogen Contamination.** The project proponent will review and implement restoration design considerations and best management practices as published by the Working Group for *Phytophthoras* in Native Habitats (www.calphytos.org), when there is a risk of introduction and spread of plant pathogens in site plantings. (<http://www.suddenoakdeath.org/welcome-to-calphytos-org-phytophthoras-in-native-habitats/resources/#restoration>.)
- ◆ **GPM-10: Equipment Maintenance and Materials Storage.** Vehicle traffic will be confined to existing roads and the proposed access route(s). All machinery must be in good working condition, showing no signs of fuel or oil leaks. Oil, grease, or other fluids will be washed off at designated wash stations prior to equipment entering the construction site. Inspection and evaluation for the potential for fluid leakage will be performed daily during construction. Where possible, and where it would not result in greater impact to aquatic resources, no equipment refueling, or fuel storage will take place within 100 feet of a body of water. All fuel and chemical storage, servicing, and refueling will be done in an upland staging area or other suitable location (e.g., barges) with secondary containment to prevent spills from traveling to surface water or drains. Project proponents will establish staging areas for equipment storage and maintenance, construction materials, fuels, lubricants, solvents, and other possible contaminants in coordination with resource agencies. Staging areas will have a stabilized entrance and exit and will be located in upland areas to the extent possible and at least 100 feet from bodies of water unless site-specific circumstances do not provide such a setback or would result in further damage to sensitive resources, in which case the maximum setback possible will be used. Fluids will be stored in appropriate containers with covers and properly recycled or disposed of offsite. Machinery stored on site will have pans or absorbent mats placed underneath potential leak areas as a precautionary measure to further reduce the potential for impact from an unintended or previously undetectable leak.
- ◆ **GPM-11: Material Disposal.** All refuse, debris, unused materials, and supplies that cannot reasonably be secured will be removed daily from the project work area and deposited at an appropriate disposal or storage site. All construction debris will be removed from the project work area immediately upon project completion. The Water Quality and Hazardous Materials measures (below), will be implemented as applicable to ensure proper handling and disposal of hazardous materials.
- ◆ **GPM-12: Fugitive Dust Reduction.** To reduce dust, construction vehicles will be speed restricted as described in GPM-6, *Work Area and Speed Limits* when traveling on non-paved surfaces. Stockpiled materials susceptible to wind-blown dispersal will be covered with plastic sheeting or other suitable material to prevent movement of the material. During construction, water (e.g., trucks and portable pumps with hoses) or other approved methods will be used to control fugitive dust, as necessary. Dust suppression activities must not result in a discharge to waters of the state unless such discharges are approved by the State or Regional Board.

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- ◆ **GPM-13: Trash Containment and Removal.** During project activities all trash will be properly contained within sealed containers and removed from the work site and disposed of as necessary to maintain a trash-free work area (e.g., trash containers will not be used beyond capacity and fully close/seal).
- ◆ **GPM-14: Project Cleanup after Completion.** Work pads, temporary falsework, and other construction items will be removed from the 100-year floodplain by the end of the construction window. Removal of materials must not result in discharge to waterbodies.
- ◆ **GPM-15: Revegetate Disturbed Areas.** All temporarily disturbed areas will be de-compacted and seeded/planted with an assemblage of native riparian, wetland, and/or upland plant species suitable for the area. The project proponent will develop a revegetation plan, including (as applicable) a schedule; plans for grading of disturbed areas to pre-project contours; planting palette with plant species native to the project area; invasive species management; performance standards; success criteria; and maintenance requirements (e.g., watering, weeding, and replanting). Plants for revegetation will come primarily from active seeding and planting; natural recruitment may also be proposed if site conditions allow for natural recruitment to reestablish vegetation and avoid potential negative risks associated with erosion and impacts to water quality. Plants imported to the restoration areas will come from local stock, and to the extent possible, local nurseries. Only native plants (genera) will be used for restoration efforts. Certified weed-free native mixes and mulch will be used for restoration planting or seeding. Revegetation activities within and adjacent to waters of the state will commence as soon as is practicable after construction activities at a site are complete.

Water Quality and Hazardous Materials

Staging and Stockpiling of Materials

- ◆ **WQHM-1: Staging Areas and Stockpiling of Materials and Equipment.** Staging, storage, and stockpile areas must be outside of waters of the state. To the extent feasible, staging will occur on access roads or other previously disturbed upland areas, such as developed areas, paved areas, parking lots, areas with bare ground or gravel, and areas clear of vegetation, to avoid aquatic habitats and limit disturbance to surrounding habitats. Similarly, all maintenance equipment and materials (e.g., road rock and project spoil) will be restricted to the existing service roads, paved roads, or other determined designated staging areas. See GPM-10 for more details regarding protection measures for materials storage.

Staging areas will be established for equipment storage and maintenance, construction materials, fuels, lubricants, solvents, and other possible contaminants in coordination with resource agencies. Staging areas will have a stabilized entrance and exit and will be located at least 100 feet from bodies of water unless site-specific circumstances do not provide such a setback, in such cases the maximum setback possible will be used. If an off-road site is chosen and if special-status species are potentially present, the Biological Monitor will

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survey the selected site to verify that no aquatic resources would be disturbed by staging activities.

Stockpiling of materials, portable equipment, vehicles and supplies (e.g., chemicals), will be restricted to the designated construction staging areas. If rain is predicted in the forecast during the dry season, and stockpiled soils will remain exposed and unworked for more than 7 days, then erosion and sediment control measures must be used. If there is a high-wind scenario (to be defined by the approving Water Board as appropriate for an individual project site), then soils will be covered at all times. During the wet season, no stockpiled soils will remain exposed, unless properly installed and maintained erosion and sediment controls are in place on and around the stockpile. Temporary stockpiling of material onsite will be minimized. Stockpiled material will be placed in upland areas far enough away from aquatic habitats that these materials cannot discharge to a water of the state.

Erosion and Sedimentation Control Measures

- ◆ **WQHM-2: Storm Water Pollution Prevention Plan.** All projects covered by the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) will prepare and implement the required, site-specific, storm water pollution prevention plan (SWPPP).
- ◆ **WQHM-3: Erosion and Sediment Control Measures.** For projects that do not require coverage under a NPDES permit per GPM WQHM-2, the project proponent will develop and implement erosion and sediment control measures (or plan), which will include appropriate BMPs to reduce the potential release of water quality pollutants to receiving waters. BMPs may include the following measures:
 - Employ tackifiers, soil binders, or mulch as appropriate for erosion control.
 - Install sediment control measures, such as straw bales, silt fences, fiber rolls, or equally effective measures, at repair areas adjacent to stream channels, drainage canals, and wetlands, as needed. Sediment control measures will be monitored during and after each storm event for effectiveness. Modifications, repairs, and improvements to sediment control measures will be made as needed to protect water quality.
 - No sediment control products will be used that include synthetic or plastic monofilament or cross-joints in the netting that are bound/stitched (such as straw wattles, fiber rolls, or erosion control blankets), and which could trap snakes, amphibians, and other wildlife.

Other Water Quality Measures

- ◆ **WQHM-4: Hazardous Materials Management and Spill Response Plan.** As part of the SWPPP or Erosion Control Plan (WQHM-2 and WQHM-3), project proponent will prepare and implement a hazardous materials management and spill response plan. Project proponent will ensure that any hazardous materials

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are stored at the staging area(s) with an impermeable membrane between the ground and hazardous material and that the staging area is designed to prevent the discharge of pollutants to groundwater and runoff water. Project proponent will stop work, follow the spill response plan, and arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills. (See WQHM-6. *Accidental Discharge of Hazardous Materials* for accidental discharges of a reportable quantity of a hazardous material, sewage, or an unknown material.) Project proponent will notify regulatory agencies within 24 hours of any leaks or spills. Project proponent will properly contain and dispose of any unused or leftover hazardous products off-site. Project proponent will use and store hazardous materials, such as vehicle fuels and lubricants, in designated staging areas located away from stream channels and wetlands, according to local, state, and federal regulations, as applicable. Also see GPM-10: *Equipment Maintenance and Materials Storage* for more detail on spill prevention.

- ◆ **WQHM-5: In-Water Concrete Use.** A dewatering plan must be submitted and approved by State and/or Regional Boards for in-water concrete use. Where possible, poured concrete should be excluded from contact with surface or groundwater during initial curing, ideally for 30 days after it is poured. During that time, runoff from the concrete will not be allowed to enter surface or groundwater. If this is not feasible due to expected flows and site conditions, commercial sealants that are non-toxic to aquatic life may be applied before it comes into contact with flowing water. Only sealants that have been tested and found non-toxic to freshwater aquatic life, including benthic macro-invertebrates, may be used on concrete surfaces that could come into contact with flowing water. Concrete is considered to be cured when water poured over the surface of concrete consistently has a pH of less than 8.5. (Note: Demonstration of non-toxicity to aquatic life may be evaluated by measuring survival of test organisms in a 96-hour bioassay. The bioassay should be performed according to the most up-to-date protocols in 40 C.F.R. part 136, currently *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms*, 5th Edition (EPA-821-R-02-012), including sample collections, handling, and preservation per U.S. EPA protocols).

- ◆ **WQHM-6. Accidental Discharge of Hazardous Materials.** Following an accidental discharge of a reportable quantity of a hazardous material, sewage, or an unknown material, the following applies (Wat. Code, § 13271):

As soon as (A) discharger has knowledge of the discharge or noncompliance, (B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures then:

- first call – 911 (to notify local response agency)
- then call – Office of Emergency Services (OES) State Warning Center at: (800) 852-7550 or (916) 845-8911

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- Lastly, follow the required OES procedures as set forth in:
http://www.caloes.ca.gov/FireRescueSite/Documents/CalOESSpill_Booklet_Feb2014_FINAL_BW_Acc.pdf

Following notification to OES, the discharger will notify the State or Regional Board (and other agencies requiring notification in their respective permits), as soon as practicable (ideally within 24 hours). Notification may be via telephone, e-mail, delivered written notice, or other verifiable means.

General In-Water Measures

- ◆ **IWW-1: Appropriate In-Water Materials.** Selection and use of gravels, cobble, boulders, and instream woody materials in streams, and other materials (e.g., oyster shells, other substrates) for reef/bed restoration will be performed to avoid and/or minimize adverse impacts to aquatic resources, special-status aquatic species, and their habitats. On-site gravels will be screened and sorted; gravels imported from a commercial source will be clean-washed and of appropriate size. As necessary to protect aquatic species, placement will be overseen by an agency-approved Monitor; implementation timing will be determined based on the least amount of overlap, or impact on, all aquatic natural resources that may be affected and the timing of their use of the receiving area. Imported gravel from outside the project watershed will not be from a source known to contain historic hydraulic gold mine tailings, dredger tailings, or mercury mine waste or tailings. Materials that may foul or degrade spawning gravels, such as sand or soil eroding from sand bag or earthen dams will be managed to avoid release and exposure in salmonid streams. Oyster shells or other substrates for reef/bed restoration will be cured and inspected to be free of pathogens and/or non-native species.
- ◆ **IWW-2: In-Water Vehicle Selection and Work Access.** If work requires that equipment enter wetlands or below the bank of a waters of the state, equipment with low ground-pressure (typically less than 13 to 20 pounds per square inch (psi)) should be selected where feasible to minimize soil compaction. Low ground-pressure heavy equipment mats should be used if needed to lessen soil compaction. Hydraulic fluids in mechanical equipment working in the waters of the state, will not contain organophosphate esters. Vegetable based hydraulic fluids are preferred, where feasible. The amount of time this equipment is stationed, working, or traveling in the waters of the state will be minimized. All equipment will be removed from the aquatic feature during non-work hours where appropriate or returned to the agency-approved staging area in the aquatic feature.
- ◆ **IWW-3: In-Water Placement of Materials, Structures, and Operation of Equipment.** Material used for bank stabilization or in-water restoration will minimize discharge sediment or other forms of waste to waters of the state. Where feasible, construction will occur from the top of the stream bank, or on a ground protection mat underlain with filter fabric, or a barge. All materials placed in streams, rivers or other waters will be nontoxic. Any combination of wood, plastic, cured concrete, steel pilings, or other materials used for in-channel structures will not contain coatings or treatments, or consist of substances toxic

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to aquatic organisms (e.g., zinc, arsenic, creosote, copper, other metals, pesticides, or petroleum-based products) that may leach into the surrounding environment in amounts harmful to aquatic organisms. Except for the following conditions, equipment must not be operated in standing or flowing waters without site-specific approval from State or Regional Board staff:

- All construction activities must be effectively isolated from water flows to minimize the potential for runoff. This may be accomplished by working in the dry season or dewatering the work area in the wet season.
- When work in standing or flowing water is required, structures for isolating the in-water work area and/or diverting the water flow must not be removed until all disturbed areas are cleaned and stabilized. The diverted water flow must not be contaminated by construction activities.
- All open flow temporary diversion channels must be lined with filter fabric or other appropriate liner material to prevent erosion. Structures used to isolate the in-water work area and/or divert the water flow (e.g., coffer dam or geotextile silt curtain) must not be removed until all disturbed areas are stabilized.
- ◆ **IWW-4: In-Water Staging Areas and Use of Barges.** Where appropriate and practical, barges will be used to stage equipment and construct the project, while reducing noise, traffic disturbances and effects to terrestrial vegetation. When barge use is not practical, construction equipment and project materials may be staged in designated agency-approved staging areas. Existing staging sites, maintenance toe roads, and crown roads will be used to the maximum extent possible for project staging and access to avoid affecting previously undisturbed areas. For projects that involve in-water work for which boats and/or temporary floating work platforms are necessary, buoys will be installed so that moored vessels will not beach on the shoreline and anchor lines will not drag. Moored vessels and buoys will not be within 25 feet of vegetated shallow waters.

Dewatering Activities and Aquatic Species Relocation

- ◆ **IWW-5: Cofferdam Construction.** Cofferdams may be installed both upstream and downstream, and along portions of the cross section of a channel or other waterway if necessary to isolate the extent of the work areas. When feasible, construction of cofferdams will begin in the upstream area and continue in a downstream direction, allowing water to drain and allowing fish and aquatic wildlife species to leave (under their own volition), from the area being isolated by the cofferdam, prior to closure. The flow will then be diverted only when construction of the upstream dam is completed and the work area has been naturally drained of flow, at this point, the downstream dam, if necessary, would be completed and then flow would be diverted around the work area. Cofferdams and stream diversion systems will remain in place and fully functional throughout the construction period. In order to minimize adverse effects to aquatic species, stream diversions will be limited to the shortest duration necessary to complete in-water work. In-water cofferdams will only be built from materials such as

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sandbags, plastic, clean gravel (possibly wrapped in impermeable material), rubber bladders, vinyl, steel, or earthen fill, in a manner that minimizes siltation and/or turbidity. Sandbags may only be used to build cofferdams upstream of spawning gravels when filled with clean gravel (or other material acceptable to the approving Water Board). Where possible, cofferdams should be pushed into place. If pile driving (sheet piles) is required, vibratory hammers should be used and impact hammer should be avoided. If necessary, the footing of the cofferdam will be keyed into the channel bed at an appropriate depth to capture the majority of subsurface flow needed to dewater the streambed. When cofferdams with bypass pipes are installed, debris racks will be placed at the bypass pipe inlet in a manner that minimizes the potential for fish impingement and/or entrapment. As needed and where feasible, bypass pipes will be monitored for accumulation of debris. All accumulated debris will be removed. When appropriate, cofferdams will be removed so surface elevations of water impounded above the cofferdam will not be reduced at a rate greater than one inch per hour. Cofferdams in tidal waters should be removed during the lowest possible tide and in slack water to the extent feasible to minimize disturbance and turbidity. This will minimize the probability of fish and other aquatic species stranding as the area upstream becomes dewatered. All dewatering/diversion facilities will be installed such that natural flow is maintained upstream and downstream of project areas.

An area may need to be dewatered for long enough to allow special-status species to leave on their own before final clearance surveys and construction can begin.

- ◆ **IWW-6: Dewatering/Diversion.** The area to be dewatered will encompass the minimum area necessary to perform construction activities. The project proponent will provide a dewatering plan with a description of the proposed dewatering structures, and appropriate types of BMPs for the installation, operation, maintenance, and removal of those structures. The period of dewatering/diversion will extend only for the minimum amount of time needed to perform the restoration activity and to allow special-status species time to leave on their own before final clearance surveys and construction can begin. Where feasible and appropriate, dewatering/diversion will occur via gravity-driven systems, and where water is pumped from within the construction area, it should be pumped to upland areas (where feasible) and to a location where it can infiltrate without return flows to the watercourse. Dewatering/diversion will be designed to avoid direct and preventable indirect mortality of fish and other aquatic species. If special-status fish species may be present in the area to be dewatered, a fish capture and relocation plan will be developed and implemented for review and approval by appropriate agencies (e.g., CDFW, NMFS, USFWS, as applicable). Stream flows will be allowed to gravity flow around or through the work site using temporary bypass pipes or culverts. Bypass pipes will be sized to accommodate, at a minimum, twice the expected construction-period flow, to not increase stream velocity, and will be placed at stream grade. Conveyance pipe outlet energy dissipaters will be installed to prevent scour and turbidity at the discharge location. When use of gravity-fed dewatering is not feasible and pumping is necessary to dewater a work site, a temporary siltation basin and/or

use of silt bags may be required. Silt fences or mechanisms to avoid sediment input to the flowing channel will be installed adjacent to flowing water. Water pumped or removed from dewatered areas will be conducted in a manner that does not contribute turbidity to nearby receiving waters. Where possible, pumps will be refueled in an area well away from the stream channel. Fuel absorbent mats will be placed under the pumps while refueling. Equipment working in the stream channel or within 25 feet of a wetted channel will have a double (i.e., primary and secondary) containment system for diesel and oil fluids.

- ◆ All work will comply with the CDFW Fish Screening Criteria (CDFW 2001) and NMFS Fish Screening Criteria for Anadromous Salmonids (NMFS 1997). Pump intakes will be covered with mesh per the requirements of current fish screening criteria to prevent potential entrainment of fish or other aquatic species that could not be removed from the area to be dewatered. The pump intake will be checked periodically for impingement of fish or other aquatic species. Diverted flows must be of sufficient quality and quantity, and of appropriate temperature, to support existing fish and other aquatic life both above and below the diversion. Pre-project flows must be restored to the affected surface water body upon completion of work at that location. Where diversions are planned, contingency plans will be developed that include oversight for breakdowns, fueling, maintenance, leaks, etc.
- ◆ **IWW-7: Fish and Aquatic Species Exclusion While Installing Diversion Structures.** Fish and other aquatic species will be excluded from occupying the area to be dewatered by blocking the stream channel above and below the area to be dewatered with fine-meshed block nets or screens while coffer dams and other diversion structures are being installed. Block net mesh will be sized to ensure aquatic species upstream or downstream do not enter the areas proposed for dewatering. Mesh will be no greater than 1/8-inch diameter. The bottom of the net must be completely secured to the channel bed. Block nets or screens must be checked at least twice daily at the beginning and end of the workday and cleaned of debris to permit free flow of water. Block nets or screens will be placed and maintained throughout the dewatering period at the upper and lower extent of the areas where aquatic species will be removed. Net placement is temporary and will be removed once dewatering has been accomplished or construction work is complete for the day.
- ◆ **IWW-8: Removal of Diversion and Barriers to Flow.** Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that will allow flow to resume with the least disturbance to the substrate and consideration of turbidity levels. Alteration of creek beds will be minimized to the maximum extent possible; any imported material that is not part of the project design will be removed from stream beds upon completion of the project.

In-water Pile Driving and Pile Replacement

- ◆ **IWW-9: In-Water Pile Driving Plan for Sound Exposure.** Project proponents will develop a plan for pile-driving activities to minimize impacts to special-status species and submit it to relevant agencies for approval prior to the start of in-

water pile driving activities. Measures will be implemented to minimize underwater sound pressure to levels below fish thresholds for peak pressure and accumulated sound exposure levels. Threshold levels for special-status fish under NMFS jurisdiction are established in the Fisheries Acoustic Work Group's Agreement in Principle for Interim Criteria for Injury to Fish from Pile Driving Activities (FAWG 2008) and may be used as a guideline for special-status fish. The plan will describe the least impactful method to aquatic organisms, and will identify the number, type, and size of piles, estimated sound levels caused by the driving, how many piles will be driven each day, qualifications of monitors, any other relevant details on the nature of the pile driving activity, and the actions that will be taken to ensure a project stays within the required sound exposure thresholds.

- ◆ **IWW-10: In-Water Pile Driving Methods.** Pile driving will occur during approved work windows with reduced currents and only during daylight hours. Pile driving will be conducted with vibratory or low/nonimpact methods (i.e., hydraulic) that result in sound pressures below threshold levels to the extent feasible. Applied energy and frequency will be gradually increased until necessary full force and frequency are achieved. If it is determined that impact hammers are required and/or underwater sound monitoring demonstrates that thresholds are being exceeded, the contractor will implement sound dampening or attenuation devices to reduce levels to the extent feasible; these may include the following:
 - A cushioning block used between the hammer and pile.
 - Use of a confined or unconfined air bubble curtain.
 - If feasible, pile driving could be done in the dry area (dewatered) behind the cofferdam.

Pile driving will follow the criteria outlined in the most recent version of the California Department of Transportation's *Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish* (Caltrans 2015).

- ◆ **IWW-11: Sediment Containment during In-Water Pile Driving.** Caissons or a continuous length of silt curtain, fully surrounding the pile driving area and installed in close proximity to piers, must be used as necessary and as practicable to protect aquatic resources and to provide sediment containment while construction activities are occurring if working in a wetted channel. The silt curtain will prevent the release of a turbidity plume and trap sediment that may become suspended as a result of the pile driving. The bottom of the silt curtains must be weighted with ballast weights or rods affixed to the base of the fabric to resist the natural buoyancy of the silt curtain fabric and lessen its tendency to move in response to currents. Where feasible and applicable, the floating silt curtains must be anchored and deployed from the surface of the water to just above the substrate. The silt curtain must be monitored for damage, dislocation or gaps and must be immediately repaired where it is no longer continuous or where it has loosened. The silt curtain must restrict the surface visible turbidity plume to the area of pile construction and must control and contain the migration of re-suspended sediments at the water surface and at depth.

- ◆ **IWW-12: Pile-driving Monitoring.** An agency-approved biologist will be on site during pile-driving activities to minimize effects to special-status species that could be present. If any stranding, injury, or mortality to special-status species is observed, federal and state wildlife agencies will be notified in writing (e.g., via email) within 24 hours and in-water pile driving will cease until the applicable federal and/or state agencies provide guidance on how to proceed.

Dredging Operations and Dredge Materials Reuse

- ◆ **IWW-13: Dredging Operations and Dredging Materials Reuse Plan.** Project proponent will develop and implement a dredging operations and dredging materials management plan to minimize the effects that could occur during dredging operations and material reuse and disposal. If material is being imported from off-site or if there are specific concerns about residual contaminants in the soil from historic land use activities (which can be determined on a site-specific basis in collaboration with the approving Water Board), the plan will describe a sampling program for conducting physical and chemical analyses of sediments before import and/or disturbance. It will also describe BMPs to be implemented during dredging operations (e.g., using less intrusive dredging procedures, properly containing dredging spoils and water, using silt curtains, methods to minimize turbidity, and timing dredging activity to coincide with low flows). The plan also will describe methods to evaluate the suitability of dredged material for reuse and disposal.

Vegetation/Habitat Disturbance and Revegetation, and Herbicide Use

Vegetation/Habitat Disturbance and Revegetation

- ◆ **VHDR-1: Avoidance of Vegetation Disturbance.** The project proponent will minimize, to the greatest extent feasible, the amount of soil, terrestrial vegetation, emergent native vegetation, and submerged vegetation (e.g., eelgrass and kelp in marine areas, or submerged aquatic vegetation in brackish and freshwater areas) disturbed during project construction and completion and using methods creating the least disturbance to vegetation. Disturbance to existing grades and native vegetation, the number of access routes, the size of staging areas, and the total area disturbed by the project will be limited to the extent of all temporary and permanent impacts as defined by the final project design. All roads, staging areas, and other facilities will be placed to avoid and limit disturbance to waters of the state and other aquatic habitats (e.g., streambank or stream channel, riparian habitat) as much as possible. When possible, existing ingress or egress points will be used and/or work will be performed from the top of the creek banks or from barges on the waterside of the stream or levee bank, or dry gravel beds. Existing native vegetation will be retained as practicable, emphasizing the retention of shade-producing and bank stabilizing trees and brush with greater than 6-inch diameter branches or trunks. Where possible, vegetation disturbance and soil compaction will be minimized by using low ground-pressure (typically less than 13 to 20 pounds psi) equipment that exerts less pressure per square inch on the ground than other equipment. To minimize impacts to vegetation, select equipment with a greater reach.

- ◆ **VHDR-2: Native and Invasive Vegetation Removal Materials and Methods:** If riparian vegetation is to be removed with chainsaws or other power equipment, machines that operate with vegetable-based bar oil will be used, as practicable. All invasive plant species (e.g., those rated as invasive by the California Invasive Plant Council or local problem species) will, if feasible, be removed from the project site, using locally and routinely accepted agriculture practices. Invasive plant material will be destroyed using approved protocols and disposed of at an appropriate upland disposal or compost area. Invasive plant materials stockpiled at sites known to experience flash flooding outside the flood season will be removed within 15 days of the initial creation of the stockpile in order to contain the potential spread of invasive plant material. Stockpiling of invasive plant materials is prohibited during the flood season.
- ◆ **VHDR-3: Revegetation Materials and Methods.** Upon completion of work, site contours will be returned to preconstruction conditions or to contours specified in a Water Board-approved project design that provides enhanced biological and hydrological functions. Where disturbed, topsoil will be conserved (and watered at an appropriate frequency) for reuse during restoration to the extent practicable. Native plant species comprising a diverse community structure (plantings of both woody and herbaceous species, if both are present) that follow an agency-approved plant palette will be used for revegetation of disturbed and compacted areas, as appropriate. See also GPM-15: Revegetate Disturbed Areas, which also allows for revegetation through natural recruitment (e.g., in tidal and managed wetlands and working landscapes where disturbed areas typically revegetate more quickly through natural recruitment than through seeding). Any area barren of vegetation as a result of project implementation will be restored to a natural state by mulching, seeding, planting, or other means with native trees, shrubs, willow stakes, erosion control native seed mixes, or herbaceous plant species following completion of project construction. Irrigation may also be required in order to ensure survival of containerized shrubs or trees or other vegetation, depending on rainfall. Soils that have been compacted by heavy equipment will be decompacted, as necessary, to allow for revegetation at project completion as heavy equipment exits the construction area.
- ◆ **VHDR-4: Revegetation Erosion Control Materials and Methods.** If erosion control fabrics are used in revegetated areas, they will be slit in appropriate locations as necessary to allow for plant root growth. Only non-monofilament, wildlife-safe fabrics will be used. All plastic exclusion netting placed around plantings will be removed after 2 years or sooner if practicable.
- ◆ **VHDR-5: Revegetation Monitoring and Reporting.** All revegetated areas will be maintained and monitored for a minimum of 2 years after replanting is complete and until success criteria are met, to ensure the revegetation effort is successful. The standard for success is at least 60% absolute cover compared to pre-project conditions at the project site or at least 60% cover compared to an intact, local reference site (or an available reference site accepted by the approving Water Board). If an appropriate reference site or pre-project conditions cannot be identified, success criteria will be developed for review and approval

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by the approving Water Board on a project-by-project basis based on the specific habitat impacted and known recovery times for that habitat and geography. The project proponent will prepare a summary report of the monitoring results and recommendations at the conclusion of each monitoring year.

Herbicide Use

- ◆ **VHDR-6: General Herbicide Use.** Chemical control of invasive plants and animals will only be used when consistent with water quality control plans (e.g., basin plans) and when other methods are determined to be ineffective or would create greater environmental impacts than chemical control. Chemical use will be evaluated on a project-by-project basis with consideration of (and preference given towards) integrated pest management (IPM) strategies wherever possible. See University of California Statewide IPM Program for guidance documents (<http://ipm.ucanr.edu/index.html>). Broadcast spraying, including the use of aerial drones, may be used if it provides greater application accuracy and access.

Chemical use is restricted in accordance with approved application methods and best management practices designed to prevent exposure to non-target areas and organisms. Any chemical considered for control of invasive species must be approved for use in California, adhere to all regulations per the California Environmental Protection Agency (CEPA 2011 or most recent version), and be applied by a licensed applicator under all necessary state and local permits. Use herbicides only in a context where all treatments are considered, and various methods are used individually or in concert to maximize the benefits while reducing undesirable effects and applying the lowest legal effective application rate, unless site-specific analysis determines a lower rate is needed to reduce non-target impacts. Treat only the minimum area necessary for effective control. Within 25 feet of any water of the state, only formulations approved by EPA and State Water Board for aquatic use will be utilized. Soil-activated herbicides can be applied as long as directions on the label are followed. Aquatic pesticides will be applied in compliance with NPDES order(s), where applicable (https://www.waterboards.ca.gov/water_issues/programs/npdes/pesticides/) or with authorization from the approving Water Board.

- ◆ **VHDR-7: Herbicide Application Planning.** Written chemical application recommendations should be provided by each project proponent from a certified Pest Control Advisor (PCA) (CEPA 2011). The PCA can ensure that legal, appropriate, and effective chemicals are used with appropriate methodologies. Field scouting must be done before application, and the licensed Applicator (CEPA 2011) must be on-site to lead all applications and will adhere to standard protection measures for application. Prior to field scouting or application, the PCA or licensed applicator, will receive Environmental Awareness Training (see GPM-4) for the project so that they are aware of special status species and habitats present at the project site.
- ◆ **VHDR-8 Herbicide Application Reporting.** The licensed applicator will keep a record of all plants/areas treated, amounts and types of herbicide used, and dates of application, and pesticide application reports must be completed within

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24 hours of application and submitted to applicable agencies for review. Wind and other weather data will be monitored and reported for all application reports.

A.5.3 Pre-Application Consultation

The project proponent will contact the approving Water Board to submit available project information and request a pre-application consultation meeting prior to submittal of the NOI. The approving Water Board may waive the pre-application meeting requirement on a case-by-case basis.

Restoration projects can be complex and often benefit from pre-application consultation with the approving Water Board during the early stages of planning and design. During the pre-application consultation meeting, the approving Water Board will review project materials and provide project-specific guidance for navigating the approval process. A site visit may also be conducted at the discretion and request of the approving Water Board. Whether or not a waiver is granted, and/or the extent of the pre-application consultation, will depend on project complexity and development of design and planning.

A.5.4 Projects Requiring Oversight by Other Agencies

The following project types may require additional design review and oversight by other regulatory agency staff and agency engineers, including, but not limited to:

- ◆ NMFS—for projects where anadromous and/or marine fish considered federal special-status species¹⁰ are present
- ◆ USFWS—for projects where freshwater fish and wildlife considered federal special-status species¹⁰ are present
- ◆ CDFW—for projects where fish and wildlife considered state special-status species¹⁰ are present

The aforementioned regulatory agencies may impose specific requirements, including but not limited to the following, for certain project types:

- ◆ For stream crossing projects, allow passage of the life stages and special-status salmonid species historically passing there.
- ◆ For retrofit culverts, meet the fish passage criteria for the passage needs of the special-status species and life stages that historically passed through the site before the existence of the road crossing according to NMFS Crossing Guidelines and CDFW stream crossing criteria (Part XII, *Fish Passage Design and Implementation*, of the CDFW *California Salmonid Stream Habitat Restoration Manual* [Flosi et al. 2010:Vol. II]).

¹⁰ Special-status species are species that are legally protected or otherwise considered sensitive by federal or state resource agencies (federal Endangered Species Act [FESA], California Endangered Species Act [CESA], or Species of Special Concern) or by local resource agencies.

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- ◆ Designs for fish ladders and culvert replacement or modification projects planned in fish-bearing waterways, reviewed and authorized by a NMFS (or CDFW) fish passage specialist before the start of work.
- ◆ Designs for fishways and culvert replacement or modification designs, designed and stamped by a State of California–registered Engineer.
- ◆ Designs for fishways, consistent with the fishway design guidelines presented in NMFS's *Anadromous Salmonid Passage Facility Design* (NMFS 2011).
- ◆ New fishways, constructed to provide passage conditions suitable for year-round, bidirectional movement by adult and juvenile salmonids.
- ◆ New fishways, have a maximum vertical jump of six inches, unless NMFS guidelines are changed.
- ◆ Flow patterns in new fishways, be stable, with no water surges.
- ◆ Energy dissipation in new fishways, be complete in a step-and-pool fishway, with no carryover from pool to pool.
- ◆ Sediment composition and quantity, and effects of sediment transport, evaluated by a qualified geomorphologist for all summer dam removal projects.

A.5.5 Activities Prohibited under the Order

The following activities are not within the scope of the Order and will require separate permitting approvals with the State Water Board and/or Regional Boards:

- ◆ Use of gabion baskets, boxes, or cages.
- ◆ Use of cylindrical riprap (e.g., Aqualogs).
- ◆ Use of undersized riprap (e.g., will not remain in place during a 100-year flow event or other standard accepted by the approving Water Board).
- ◆ Construction of permanent dams (does not apply to beaver dam analogs) or concrete-lined channels of any sort.
- ◆ Use of chemically treated timbers used for grade or channel stabilization structures, bulkheads, or other structures within or immediately adjacent to waters of the state, or where runoff from the treated material could enter waters of the state.
- ◆ Activities that result in long-term, substantial disruption of the movement of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the project areas.
- ◆ Elimination of a riffle, pool, or riffle/pool complex that is not replaced/enhanced elsewhere by the project. (Note: In some instances, a restoration project may affect or modify riffle/pool complex depending on project-specific conditions and design objectives. For example, a culvert removal may affect an existing pool. These types of projects would be allowed under the Order.)

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- ◆ Water diversions, except diversions associated with water conservation projects as described in Section A.4.5, *Water Conservation*; diversions associated with delivery or conveyance to and within managed wetland habitats as described in Category A.4.9, *Establishment, Restoration and Enhancement of Tidal, Subtidal and Freshwater Wetlands*; and those necessary to temporarily dewater the construction site of a restoration project.
- ◆ Installation of flashboard dams, head gates, or other mechanical structures are generally prohibited; however there are exceptions for certain projects that require them to meet ecological goals (e.g., storage projects to reduce low flow stream diversions (Section A.4.5), off-channel/side-channel managed floodplain, and managed wetland habitat), and for the required replacement of legacy structures under the Small Dam, Tide Gate, Flood Gate, and Legacy Structure Removal project category.
- ◆ Creation or potential creation of a barrier to anadromous fish passage as determined by the NMFS fish passage guidelines or equivalent CDFW guidelines, as applicable (including any associated maintenance activities, or lack thereof).
- ◆ Use of excess riprap bank protection, other than the minimum amount needed to achieve project goals, as determined by the State Water Board or appropriate Regional Board, as applicable.
- ◆ Installation of infiltration galleries (subsurface structure, typically including perforated conduits in gravel, to expedite transfer of water to or from a soil).
- ◆ Managed surrogate floodplain and managed returned flows that do not allow for volitional movement (ingress and egress) of fish to the main channel (up and/or downstream).

A.6 Design Guidelines

Project type–specific design guidelines have been developed with assistance from multiple regulatory agencies (e.g., CDFW, NMFS, USFWS) to help project proponents during the design development of their individual projects, in a manner that is appropriate and sustainable, minimizes adverse effects on aquatic habitats, and maximizes the ecological benefits of the restoration. For example, these guidelines include designing restored streams in ways that provide fish passage and withstand probable flooding events. The project proponent may modify design approaches that do not conform with the specific guidelines, based on site-specific conditions or technological constraints or advances, or regionally accepted guidance documents. The guidance included in this section is not meant to encompass all possible project designs that may be approved for enrollment under the Order.

General

The design of restoration projects should be based on a process-based approach that considers the multiple interactions of physical, chemical, and biological processes over a wide variety of spatial and temporal scales in order to identify the root causes of the problems, and to confirm the proposed solution (project) will be effective and

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appropriate given the physical setting (Kondolf et al., 2001; Simon et al., 2007; Smith and Prestegard, 2005; Wohl et al, 2005, Wohl et al., 2015).

Improvements to Stream Crossings and Fish Passage

Stream Crossing, Culvert, and Bridge Projects

Design guidelines for this category typically includes:

- ◆ All stream crossing projects permitted under the Order should consider storm-proofing measures presented in Weaver et al. (2014). Culverts should also conform to design guidelines for conveyance of the 100-year peak flow and associated sediment and wood loads, as specified in Cafferata et al. (2017).
- ◆ Projects located in channels that provide potential spawning and/or rearing habitat for anadromous salmonids should follow NMFS guidelines for salmonid passage at stream crossings.
- ◆ Bridges and culverts should be designed to adequately convey flow and materials (e.g., 100-year flood), in addition to allowing for fish passage. If a bridge/culvert is designed to convey less than the 100-year design flow, then the project should demonstrate how the smaller culvert avoids excessive erosion/sedimentation, headcutting, or habitat impacts.
- ◆ Culverts should be designed to match channel gradients.
- ◆ All road and stream crossing structures should comply with current NMFS and CDFW fish passage guidelines and utilize stream simulations following NMFS Stream Simulation Design to inform the project design.
- ◆ Structures should be designed to provide passage for all life stages of native fish species.
- ◆ Bridges (including concrete box culverts, which are constructed as bridges in accordance with current NMFS and CDFW guidelines) should be designed with vertical abutments. Treated wood should not be used for bridge construction or replacement.
- ◆ Placement of rock slope protection (RSP) within the bankfull width of the stream should be avoided except for the minimum necessary for protection of bridge abutments and pilings, culverts and other stream crossing infrastructure. The amount and placement of any RSP should not constrict the bankfull flow. The toe of RSP used for streambank stabilization should be placed sufficiently below the streambed scour depth to ensure stability. Where RSP is deemed necessary, use natural stream material to fill and cover exposed rock and/or use bioengineered techniques, listed below, where appropriate.
- ◆ Drivable wet crossings should be appropriately armored on the downstream side to reduce potential for scouring.

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Fish Screens

This category includes the installation, operation, and maintenance of fish screens on water intakes. See additional discussion in the Section A.5.3, *Pre-Application Consultation*.

Fishways

Design guidelines for this type includes:

- ◆ Fishway projects should conduct watershed and reach scale analysis of the hydrograph, sediment and large woody debris supply and transport, and of streambed and bank dynamics (e.g., is the channel actively incising or aggrading) to confirm that the proposed design is appropriate and expected to function as designed over the lifetime of the project (20-to-30 years).
- ◆ Design fishways should be based on target species, level of maintenance, and monitoring requirements to ensure reliable fish passage.
- ◆ Where appropriate, design fishways considering passage for other aquatic wildlife species (e.g., amphibians), in addition to that of salmonids, sturgeon and other native fish species. Fishways primarily designed for salmonids can be impediments to passage of other aquatic species, if they do not have adequate surfaces for attachment, velocities are too high, or there are inadequate places for resting. For example, providing for rounded corners, resting areas or providing a natural stream channel (stream simulation) or wetted ramp for passage over the impediment have been effective in facilitating passage of other aquatic wildlife.
- ◆ See additional discussion above, Section A.5.3, *Pre-Application Consultation*.

Headcut Stabilization

Design guidelines for headcut stabilization includes:

- ◆ Where appropriate based on evaluation and review with agencies (i.e., low risk to property and infrastructure), project designs should consider avoiding headcut stabilization and allow the stream to naturally adjust to a new grade. Where headcut stabilization is necessary, provide fish passage through constructed riffles for pool/riffle streams or a series of log or rock structures for step/pool channels as described below.
 - Headcuts should be designed with sufficient amounts of appropriately sized and installed material to prevent continued up-stream migration of the headcut. Materials could include both rock and organic materials.
 - Materials should not contain gabion baskets, boxes, or cages sheet pile, concrete, articulated concrete block, and cable anchors.
 - Stabilization efforts should focus on the plunge pool, the headcut, as well as a short distance of stream above the headcut.

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- Designs should minimize lateral migration of channel around headcut (“flanking”) by placing rocks and organic material at a lower elevation in the thalweg to direct flows to the natural low point of the channel.
- ◆ If large wood and boulder placement will be used for headcut stabilization, refer to conditions for large wood as described under Stream and Riparian Habitat Establishment below.
- ◆ Construct structures in a ‘V’ or ‘U’ shape, oriented with the apex upstream, and lower in the center or along the thalweg, to direct flows to the middle of channel.
- ◆ Key structures into the streambed to minimize structure undermining due to scour, if practicable, at least 2.5x their exposure height. The structures should also be keyed into both banks—if feasible greater than 8 feet.
- ◆ If several structures will be used in series, consider spacing them at the appropriate distances to promote fish passage of all life stages of native fish. Consider incorporating current NMFS and/or CDFW fish passage criteria (e.g., jump height, pool depth, etc.) in the design of step structures. Spacing should be no closer than the net drop in water surface elevation (in feet) divided by the channel gradient (in percent expressed as a decimal)) (e.g., a one-foot high step structure in a stream with a two-percent gradient should have a minimum spacing of 50 feet [1/0.02]).
- ◆ Designs should consider including gradated (cobble to fine) material in the rock structure material mix to help seal the structure/channel bed, thereby preventing subsurface flow and ensuring fish passage immediately following construction if natural flows are sufficient.

Small Dam, Tide Gate, Flood Gate, and Legacy Structure Removal

Small Dam Removal

See additional discussion above under Section A.5.3, *Pre-Application Consultation*.

Tide Gate Removal

Design guidelines for tide gate removal includes:

- ◆ If a culvert or bridge will be constructed at the location of a removed tide gate, consider designing the structure to allow for full tidal exchange, if feasible.

Removal of Legacy Structures

Design guidelines for legacy structure removal includes:

- ◆ If the structure being removed contains material (i.e., large wood, boulders, concrete, etc.) not typically found within the stream or floodplain at that site, consider disposing of removed material at an approved landfill or disposal site.
- ◆ If the structure being removed contains material (i.e., large wood, boulders, etc.) that is typically found within the stream or floodplain at that site, the material could be reused to implement habitat improvements described under other restoration project types in the Order.

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- ◆ If the structure being removed is keyed into the bank, consider filling in "key" holes with native materials to restore contours of stream bank and floodplain. Fill material should be adequately compacted to prevent washing out of the soil during over-bank flooding. Material from the stream channel should not be mined to fill in "key" holes.
- ◆ When removal of buried log structures may result in significant disruption to riparian vegetation or the floodplain, consider using a chainsaw to extract the portion of log within the channel and leaving the buried sections within the streambank.
- ◆ If the legacy structures (log, rock or gabion weirs) were placed to provide grade control, evaluation of the site for potential headcutting and incision due to structure removal should be conducted. If headcutting and channel incision are likely to occur due to structure removal and are not desired to achieve proper functioning habitat conditions, additional measures should be taken to minimize these impacts, to the extent practicable.

Bioengineered Bank Stabilization

Guidelines for stream bank stabilization techniques are described in Part VII of the CDFW Manual, *Project Implementation*. Design guidelines for this project type includes:

- ◆ Restore damaged streambanks to a natural slope and profile suitable for establishment of riparian vegetation.
- ◆ When necessary, consider the use of soil layers or lifts that are strengthened with biodegradable fabrics that are penetrable by plant roots.
- ◆ Include large wood to the extent it would naturally occur. If possible, wood should have untrimmed root wads to provide functional refugia habitat for fish. Wood that is already within the stream or suspended over the stream may be repositioned to allow for greater interaction with the stream.
- ◆ Use a diverse assemblage of vegetation species that is appropriate for the project area, including trees, shrubs, and herbaceous species. Vegetation, such as willow, sedge and rush mats, may be gathered from abandoned floodplains, stream channels, etc., if the soil is not contaminated with pathogens
- ◆ Install fencing and signage, as necessary to prevent access to revegetated sites by livestock or unauthorized persons. Coordination with local public agencies, such as police and social work groups, should be considered for site protection.
- ◆ Limit the extent and quantity of rock or boulders to the minimum necessary to prevent scour from expected moderate to high stream flows and velocities. For projects that will restore fish passage, bridge abutments and associated infrastructure may require additional boulder and rock bank stabilization.

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Off-Channel/Side-Channel Habitat Restoration and Enhancement

Design guidelines for this project type includes:

- ◆ Off- and side-channel habitat restoration site selection and design should be based, in part, on the review of evidence of historical channel location, such as land use surveys, historical photographs, topographic maps, remote sensing information, or personal observation.
- ◆ Excavated material removed from off- or side-channels should be hauled to an upland site or spread across the adjacent floodplain, as long as the soil is considered suitable for application (e.g., free of contaminants and/or pathogens), in a manner that does not restrict floodplain capacity or otherwise degrade floodplain function and is in compliance with regulations.
- ◆ Where special-status species that require access to stream habitat are present, a project should not create habitats that could attract fish and then become isolated from the stream without providing special status fish an opportunity to return to the stream. Instead, off-channel features should be designed so that they slope towards and drain to the primary stream habitat as streamflow subsides. Isolated pools or ponds that do not incorporate return channels to the stream should be located at an appropriate distance away from the edge of the active channel to avoid temporary connectivity and subsequent fish stranding following flood events. Projects should not result in stranding of fish in isolated water bodies.

Water Conservation Projects

Design guidelines for this project type includes:

- ◆ Design tanks so that water diverters have sufficient storage capacity to cover any domestic, irrigation, or livestock needs during the no-pump time periods, (e.g., dry season). No-pump time period should be based upon the season, local conditions, forbearance agreement and existing studies if available.
- ◆ Screen all pump intakes in accordance with current NMFS and CDFW fish screen criteria.
- ◆ Register water conservation projects that include water storage tanks and a forbearance agreement for the purpose of storing winter and early spring water for summer and fall use, pursuant to California Water Code § 1228.3 and with the State Water Board, as applicable.

Floodplain Restoration

Design guidelines for floodplain restoration projects include:

- ◆ As applicable, fish passage and or screening needs should be addressed with the installation of new structures.
- ◆ Channel reconstruction, reset, or relocation:
 - Design actions to restore floodplain characteristics—elevation, width, sinuosity, gradient, length, and roughness—in a manner that closely mimics

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- or resets, to the extent possible, those that would naturally occur at that stream and valley type.
- Where appropriate, remove non-native fill material from the channel and floodplain to an upland site or appropriate offsite disposal location, potentially including a landfill (for human debris).
 - Where appropriate, construct geomorphically appropriate stream channels and floodplains (e.g., enable natural transport processes including the creation of depositional and scour features) within a watershed and reach context.
 - When necessary, decompact soils once overburden material is removed. Overburden or fill comprised of pathogen free (where feasible) and native materials, which originated from the project area, may be used within the floodplain where appropriate to support the project goals and objectives.
 - Structural elements should fit within the geomorphic context of the stream system. For example, construct riffles preferentially in pool-riffle stream types, and roughened channels and boulder step structures in step-pool and cascade stream types.
 - To the extent feasible, select weed-free locally occurring material (large wood, rock, sand, gravel) that mimic natural stream system materials.
 - To the extent feasible, salvage and utilize existing native materials such as sod, willows, and topsoil.
 - ◆ Setback or removal of existing berms, dikes and levees:
 - Design actions to restore floodplain characteristics—elevation, width, gradient, length and roughness—in a manner that closely mimics, to the extent possible, those that would naturally occur in that area.
 - Remove drain pipes, fences, concrete and other structural improvements to the extent possible.
 - Remove non-native fill material from the floodplain and, if pathogen free, reuse or dispose of it at an upland site, to the extent possible. Trash and debris should be disposed at an appropriate offsite disposal location, potentially including a landfill (for human debris).
 - Where it is not possible to remove or setback all portions of dikes and berms, or in areas where existing berms, dikes and levees support abundant riparian vegetation, and their removal or setback is not part of the project design, openings may be created with carefully planned and approved breaches. Timing and spacing of breaches should be planned for maximum positive environmental outcomes.
 - When necessary for plant establishment, loosen compacted soils once overburden material is removed. Overburden or fill comprised of native materials, which originated from the project area, may be used within the

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floodplain, only if pathogen free (where feasible), to create set-back dikes and fill anthropogenic holes provided that floodplain function is not impeded.

Piling and Other In-Water Structure Removal

Design guidelines for this project type includes:

- ◆ Removing an intact pile:
 - Install caissons and a floating surface boom to capture floating surface debris, as necessary.
 - To the extent possible, keep all equipment (e.g., bucket, steel cable, vibratory hammer) out of the water, grip piles above the waterline, and complete all work during low water level and low current conditions.
 - Dislodge the piling with an excavator bucket (through pushing and pulling) or vibratory hammer, whenever feasible. Never intentionally break a pile by twisting or bending.
 - Slowly lift piles from the sediment and through the water column.
 - Place chemically treated piles in a containment basin on a barge deck, pier or shoreline without attempting to clean or remove any adhering sediment. A containment basin for the removed piles and any adhering sediment may be constructed of durable plastic sheeting with sidewalls supported by hay bales or another support structure to contain all sediment.
 - Fill the holes left by each piling with clean, native sediments located from the project area if available, as needed.
 - Dispose of all removed piles, floating surface debris, any sediment spilled on work surfaces, and all containment supplies at a permitted disposal site.
 - Pile cutting should be considered a last resort following multiple attempts to fully extract piling using other methods. If cutting piles, piles should be cut below the mudline to provide more habitat and ensure that as much debris is removed as possible. Areas with low levels of contamination, wave and/or currents conducive to mixing (i.e., high energy environments), and/or small numbers of piles removed may not need to be cut to prevent remobilization of contaminants.
- ◆ Removing a broken pile:
 - If dredging is likely in the area of piling removal, use a global positioning device (GPS) to note the location of all broken piles for future use in site debris characterization. Test soil prior to conducting any dredging to determine if sediments are contaminated and manage dredged materials appropriately based on testing results.
 - If a pile breaks above the surface of uncontaminated sediment, or less than 2 feet below the surface, every attempt short of excavation should be made to remove it entirely.

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- If a pile breaks above presumed, or known contaminated sediment, saw the stump off at the sediment line; if a pile breaks within contaminated sediment, make no further effort to remove it and cover the hole with a cap of clean substrate appropriate for the site, as applicable.

Non-Native Terrestrial and Aquatic Invasive Species Removal and Native Plant Revegetation

Design guidelines for this project types includes:

- ◆ Design species palette for revegetation based on the species that naturally or historically occur in the project area, have the best chance of survival considering current site conditions, and can provide required habitat elements for special-status species.
- ◆ Control nearby vegetation that will compete with plantings, especially weed species listed as invasive in the Cal-IPC Inventory. This could include clearing and maintaining a 24" diameter buffer around plantings.
- ◆ Where appropriate, test and prepare the soil prior to planting. The soil in planting and seeding areas should be finish graded, pathogen-free, weed-free, de-compacted and amended as appropriate given the habitat and site conditions. Decompaction to a minimum depth of 6 inches is recommended.
- ◆ Revegetation that is not dependent on irrigation systems is generally preferred; however, there can be instances where irrigation is desirable. If an irrigation system is necessary for plant reestablishment, install and have the system operational prior to installation of planting, or prior to any periods where the weather forecast may jeopardize successful establishment of plants.
- ◆ Acquire native seed or plant sources as close to the project site as possible. Keep seed in a cool dry place during delivery and when temporarily stored onsite, protect seed from moisture, wind, heat, vandalism, rodents, insects, weather, and other conditions that would damage or impair viability of seed.
- ◆ For installation of pole cuttings, source cuttings from healthy plants, limiting collection to no more than 30% of individual plants or populations. Pole cuttings should be taken from live wood at least one-year-old or older. Keep cuttings moist until planted.
- ◆ Appropriately size prefabricated vegetated mats (i.e., sedge and rush mats) within riparian zone, channels, floodplains, and areas with high runoff, to prevent their movement during high flow events.
- ◆ Plant cuttings when dormant and within 48 hours of collection, if possible. Do not allow cuttings to dry out. Pole cuttings should be installed at a depth sufficient to allow root growth into the groundwater table, or as necessary to provide long-term survival of the planting.
- ◆ Enclose plantings with fencing, cages, tubex or other protective measure, as appropriate, in areas where plantings are subject to browse by animals, such as

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deer, elk, beavers, livestock, gophers, or moles. Remove any non-biodegradable fencing material after plantings are adequately established.

Tidal, Subtidal, and Freshwater Wetland Establishment, Restoration, and Enhancement

Design guidelines for this project types includes:

- ◆ Implement projects to repair or restore estuary functions, while not putting adjacent landowners at increased flood risk once dikes/levees are breached and the project area is flooded.
- ◆ Where possible, recreate historic channel morphology that supports wetland function. Channel designs may be based on aerial photograph interpretation, literature, topographic surveys, and nearby undisturbed channels. Channel dimensions (width and depth) are based on measurements of similar types of channels and the drainage area. For example, channels may have varied topography throughout their length to encourage sinuosity of the developing channel.
- ◆ To the extent possible, prior to restoration, remove or decommission infrastructure or ditches that were installed historically to drain wetlands or unwanted historical structures, such as duck blinds, docks, or boat hides. Restore contours created through the drain tile removal by backfilling the ditch with clean fill.
- ◆ Remove temporary access roads and decompact soils as necessary to support desired revegetation.
- ◆ Restore wetlands to elevations necessary to support the desired vegetation communities, accounting for anticipated natural sediment accumulation. Appropriate dredge material or other clean fill material may be imported to raise subsided landscapes, depending on the desired habitat to be restored. Overfill may be necessary to accommodate settling. When projects involve dredge material, conduct a pre-application consultation.
- ◆ If grading of intertidal plain (landform) is required, implement the following measures, to the extent feasible, to avoid and/or minimize adverse effects to water quality, aquatic resources, and/or special-status species:
 - after grading of tidal plane is complete, implement water management activities to re-vegetate and stabilize exposed soils on the plane prior to removing cofferdam and/or breaching dikes or levees;
 - install fish screens that meet NMFS, USFWS, and CDFW criteria, as applicable, on any new pump intakes that could be used for pre-breach water management activities; and
 - implement the following pre-breach water management measures:
 - release on-site water gradually; water from the project area should be released gradually to reduce the effect of potentially low dissolved oxygen

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- (DO) and high temperature water on the surrounding water body; this would allow the plume of degraded water to dissipate without harmful effects to aquatic life;
- limit water level management activities during migration periods for special-status species such as salmon to reduce the potential effects upon these species; and
 - maintain short water residence time (high water exchange rate) to reduce the opportunity for adverse water quality conditions (i.e., high temperature or anaerobic) to develop; residence time is controlled by the rate at which water is exchanged between the managed area and its adjacent tidal source; projects should utilize appropriate water control structures that allow flexibility in management to avoid and/or minimize adverse water quality conditions.
- ◆ For projects that include the use of donor vegetation beds for use in restored marsh and/or emergent or submerged vegetation sites, no more than five percent of the below ground biomass of an existing donor bed should be harvested for transplanting purposes. Plants harvested should be taken in a manner that thins an existing bed without leaving any noticeable bare areas. Harvesting of flowering shoots for seed buoy techniques should occur only from widely separated plants and only a certain percent of the donor stock may be used per year. This percent is site dependent and prior to restoration requires intimate knowledge of the genetics and population dynamics of the donor site.
 - Shellfish substrate should be placed to encourage oyster larval recruitment. Substrate could be placed on hard substrate that represents former reef habitat, if the hard substrate is not currently producing oysters at a sustainable level. Natural substrate (oyster or clam shells) is preferred due to the oysters' affinity for it but is not always available. Shells are most often deployed loose or in mesh bags. Artificial substrate should be used when there is not enough shell substrate available to create larger reef areas or when the bottom substrate is unstable and substantial sinking of the reef is likely to occur. Common artificial substrates include limestone rock and baycrete (e.g., Reef Balls, Oyster Castles, etc.). Regardless of type, most substrate is deployed from a boat or barge, but in some shallow water situations, restoration practitioners and community volunteers may carry the substrate to the reef location.
 - If the local oyster population is not large enough to produce viable larvae or has been fully extirpated from the area, live shellfish should be released into the restoration area. Release single oysters or oyster spat on shell. Release non-reef-forming organisms such as clams and abalone as individuals, caged as necessary (e.g., to reduce predation).
 - Shell sources – Shell or other substance used for substrate enhancement should be procured from clean sources that do not deplete the existing supply of shell bottom. Shells should be left on dry land for a minimum of one month

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before placement in the aquatic environment. Shells from the local area should be used whenever possible.

- Native species and disease – When possible, species native to the project area should be used. Any shellfish transported across state lines or grown through an aquaculture facility should be certified disease free (see also A Guide to Olympia Oyster Restoration and Conservation, June 2015 or the most recent update for example implementation approaches).

Stream and Riparian Habitat Establishment, Restoration, and Enhancement

Design guidelines for this project types includes:

- ◆ Where appropriate, the CDFW Manual and Fluvial Habitat Center at Utah State, Low-Tech Process-Based Restoration Design Manual (<http://lowtechpbr.restoration.usu.edu/>) should be consulted during the planning and design process.
- ◆ Large wood
 - For the purposes of large wood placement, trees may be felled or pulled/pushed over, if tree felling does not significantly degrade the habitat of special-status species (i.e., an active nest site), create excessive stream bank erosion, destabilize stream banks, create temperature increases in waterbodies, concentrate surface runoff.
 - Where feasible, retain trees killed through fire, insects, disease, blow-down and other means rather than felling live trees for the project. Retain snags and trees with broad, deep crowns (“wolf” trees), damaged tops or other abnormalities that may provide a valuable wildlife habitat component.
 - Stabilizing or key pieces of large wood should be intact, hard, with little decay, and if possible, have root wads (untrimmed) to provide functional refugia habitat for fish.
 - Orient key pieces such that the hydraulic forces upon the large wood increase stability. Wood pieces that are oriented parallel to flow are typically more stable than pieces oriented at 45 or 90 degrees to the flow.
 - Place large wood and boulders in areas where they would naturally occur and in a manner that closely mimic natural accumulations for that stream type. For example, boulder placement may not be appropriate in low gradient meadow streams. Engineered logjams should be patterned after stable natural log jams in the project area, either present or historical.
 - Project design should simulate log jams, debris flows, wind throw, tree breakage, and other disturbance events.
 - For engineered logjams that occupy >25% of the cross-sectional bankfull area, fish passage should be maintained consistent with NMFS and CDFW guidelines.

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- Operating tractors, vehicles, or equipment on soils with high or extreme erosion hazard rating, known slides, or unstable areas, including slopes greater than 50% grade, should be avoided. On these high erosion soils with grades greater than 60%, aerial or cable operations may be necessary to retain bank stability.
- If large wood anchoring is required, a variety of methods could be used. These including buttressing the wood between riparian trees, and the use of manila, sisal or other biodegradable ropes for lashing connections. If hydraulic conditions warrant use of structural connections, rebar pinning or bolted connections could be used. Clean rock could be used for ballast but is limited only to that the extent needed to anchor the large wood.
- ◆ Stream Channel Reconstruction
 - In situations where excessive sediment releases from the project site or surrounding watershed currently pose a threat to downstream habitat and organisms, use stream simulations following NMFS Stream Simulation Design to inform the project design. Stream simulation designs should:
 - identify a suitable reference reach;
 - quantify the average cross-sectional shape, bankfull width, bed and bank sediment grain size distributions, and the geomorphic features of the channel (e.g., pool-riffle sequences, meander lengths, step pools, etc.); and
 - reproduce the geomorphic features found within the reference reach in the project reach.
- ◆ Porous boulder structures and vanes
 - Design and construct boulder step structures to allow upstream and downstream passage of fish species and life stages that occur in the stream.
 - Size and select rock for boulder step structures that is durable and of suitable quality to assure long-term stability in the climate in which it is to be used. Rock sizing depends on the size of the stream, maximum depth of flow, planform, entrenchment, and ice and debris loading.
 - Couple full spanning boulder step structure placement with measures to improve habitat complexity and protection of riparian areas to provide long-term inputs of large wood. Install full channel spanning boulder structures only where appropriate, such as:
 - in highly uniform, incised, bedrock-dominated channels to enhance or provide fish habitat;
 - in stream reaches where log placements are not practicable due to channel conditions (not feasible to place logs of sufficient length, bedrock

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dominated channels, deeply incised channels, artificially constrained reaches, etc.);

- where damage to infrastructure on public or private lands is of concern;
 - where private landowners will not allow log placements due to concerns about damage to their streambanks or property; or
 - in parts of the state where boulders rather than large wood may typically be the predominant instream habitat feature.
- Avoid use of gabions, cable, or other means of non-natural structure to prevent the movement of individual boulders in a boulder step structure.
 - Place boulder step structures diagonally across the channel or in more traditional upstream pointing “V” or “U” configurations with the apex oriented upstream.
 - Install boulder structures low in relation to channel dimensions so that they are completely overtopped during channel-forming flow event (approximately a 1.5-year flow event).
 - The project designer or an inspector experienced in these structures should be present on-site during installation.
- ◆ Gravel augmentation
 - Limit gravel augmentation to locations where the natural supply has either been eliminated, significantly reduced through anthropogenic disruptions, or where it can be used to initiate gravel accumulations in conjunction with other projects, such as simulated log jams and debris flows.
 - Size gravel with the proper gradation for the stream, using non-angular rock. When possible use gravel of the same lithology as found in the watershed.
 - Do not mine gravel from the floodplain at elevations above bankfull in a manner that would cause stranding during future flood events. Avoid use of crushed rock.
 - Use imported gravel that is free of invasive species and non-native seeds.
 - Place gravel directly into the stream channel, at tributary junctions, or other areas in a manner that mimics natural debris flows and erosion.
 - ◆ Road and trail erosion control and decommissioning
 - Road and trail erosion control and decommissioning should use the Handbook for Forest, Ranch, and Rural Roads; A Guide for Planning, Designing, Constructing, Reconstructing, Maintaining and Closing Wildland Roads (Weaver et al. 2014) and any subsequent editions.
 - When demolishing or removing road segments immediately adjacent to a stream, use sediment control barriers between the project and stream.

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- Where feasible, use existing vegetative buffers along access roads or trails to avoid or minimize runoff of sediment and other pollutants to surface waters.
- Minimize disturbance of existing native vegetation in ditches and at stream crossings.
- Space drainage features used for stormproofing and erosion treatment projects to hydrologically disconnect road surface runoff from stream channels. If grading and resurfacing is required, use clean, permeable materials for resurfacing.
- To the extent feasible and appropriate, avoid or minimize activities that compact soil.
- Dispose of slide and waste material in stable sites out of the flood-prone area. Clean material may be used to restore natural or near-natural contours.
- For projects within riparian areas, recontour the affected area to mimic natural floodplain contours and gradient to the extent possible.
- For permanent decommissioning of roads, complete excavation of stream crossing fills, including 100-year flood channel bottom widths and stable side slopes. Excavate unstable or potential unstable sidecast and fill slope materials that could otherwise fail and deliver sediment to a stream. Perform road surface drainage treatments (e.g., ripping, outsloping, and/or cross draining) to disperse and reduce surface runoff.
- ◆ Road relocation
 - When a road is decommissioned in a floodplain and future vehicle access through the area is still required, relocate the road away from the stream, as far as practical. New road construction should be outside of waters of the state.
 - The drainage network should not be increased through a road relocation. Keep relocated road drainage features disconnected from the stream network to the extent practical. New cross drains should discharge to stable areas where the outflow will quickly infiltrate the soil and not develop a channel to a stream.
- ◆ Livestock fencing, stream crossings and off-channel livestock watering
 - Livestock fencing to protect, restore, or establish aquatic or riparian resources
 - Design fence placement to allow for lateral movement of a stream, migration or dispersal of special-status species through the area, and establishment of riparian plant species. To the extent possible, fences should be placed outside the channel migration zone. Install cross-stream fencing at fords, with breakaway wire, swinging floodgates, hanging electrified chain, or other devices to allow the passage of floodwater and large woody material during high flows.
 - Fence posts and bracing (e.g., dead men) should not be set with wet concrete in waters of the state.

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- Where appropriate, construct fences at water gaps in a manner that allows passage of large wood and other debris.
- Avoid use of riparian fencing to create livestock containment or handling facilities.
- To protect the habitat, construct wildlife-friendly fences around springs to prevent livestock damage.
- If pressure treated lumber is used for fence posts, complete all cutting and drilling outside the area of expected inundation so that treated wood chips and debris do not enter the channel.
- Avoid and minimize vegetation removal when constructing fence lines, to the extent feasible. Large, established vegetation should not be removed.
- Livestock stream crossings to protect, restore, or establish aquatic or riparian habitat:
 - Design and construct essential livestock stream crossings to handle reasonably foreseeable flood risks, including associated bedload and debris, and to prevent the diversion of streamflow out of the channel and down the trail if the crossing fails.
 - Use existing access roads and stream crossings whenever possible, unless new construction would result in less habitat disturbance and the old trail or crossing is retired. Locate new livestock stream crossings or water gaps where streambanks are naturally low. Avoid placement of stream crossings in or near aquatic habitats for special-status species; livestock crossings or water gaps should not be in areas where compaction or other damage can occur to sensitive soils and vegetation (e.g., wetlands) due to congregating livestock.
 - Minimize the number of stream crossings within a single reach and across a watershed for livestock to limit vegetation disturbance and erosion.
 - Stream crossings and water gaps should be designed and constructed to the narrowest width adequate for expected use to minimize the time livestock will spend in the crossing or riparian area.
 - Discourage livestock loafing in the stream by locating crossings, where possible, out of shady riparian areas or by including gates in the design. Livestock-only crossing should be no less than 6 feet wide and no more than 30 feet wide, as measured from the upstream end to the downstream end of the stream crossing, not including the side slopes.
 - Use appropriate rock sizes that accommodate the intended traffic without causing injury to livestock or people, or damage to vehicles using the crossing. For a rock livestock crossing, use a hoof contact zone or alternative surfacing method over the rock.

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- Off-Channel Livestock Watering
 - Limit the use of springs for livestock source water to ways that do not significantly damage the function of the spring (e.g., piping, fencing to keep out livestock), and do not degrade habitat for special-status species such that existing population would be permanently negatively affected.
 - Withdrawals for livestock watering should not dewater habitats, cause stream flow conditions that adversely affect special-status species, or significantly reduce habitat value.
 - Each livestock water development should have a float valve or similar device, a return flow system, a fenced overflow area, or similar means to minimize water withdrawal and potential runoff and erosion.
 - If water intakes are placed in native fish-bearing streams, screen surface water intakes to meet current NMFS, USFWS, and CDFW fish screen criteria. Screens should be self-cleaning, or regularly maintained by removing debris buildup. Conduct regular inspection and as needed maintenance on pumps and screens.
 - Place troughs or tanks far enough from a stream or surround with a protective surface to prevent mud and sediment delivery to the stream. Avoid steep slopes and areas where compaction or damage could occur to sensitive soils, slopes, or vegetation due to congregating livestock.
 - Troughs and other water capture and storage tanks that are accessible by wildlife should be equipped with properly designed and sized wildlife escape ramps to prevent wildlife from drowning.
 - Avoid and minimize removal of vegetation around springs and wet areas.
 - Part X of the CDFW Manual, *Upslope Assessment and Restoration Practices*, describes methods for identifying and assessing erosion, evaluating appropriate treatments, and implementing erosion control treatments.

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**Final Attachment B
Notice of Intent Form**

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The purpose of the Statewide Restoration General Order (Order) is to expedite consultation, authorization, and permitting of eligible restoration projects. The structure, function, and biodiversity of aquatic and riparian resources are vulnerable to a variety of stressors associated with population growth and development, impacts from land use activities and legacy problems, disruption of native communities, changes to instream flows, effects of climate change, and the cumulative effects of past and present impacts. The goal of aquatic and riparian resource restoration is implementation of proactive, restorative measures to correct impairment, prevent further degradation, and/or increase resilience of natural (prior to impact from stressors) structure, function, or biodiversity. The Order is intended to promote projects to help restore the chemical, physical, and biological integrity of aquatic and riparian resource functions and services statewide.

Enrolling Projects Under the Order

The following provides an overview of the steps that occur *before* a restoration project is permitted under the Order.

- Step 1: Read the Order. Project proponents must become familiar with the Order prior to submittal of a Notice of Intent (NOI). Not all projects will qualify for coverage based on the type of activity and other considerations (Order Section XIII Conditions). The site-specific restoration project must meet the definition of a “restoration project” (Order Section V) and project eligibility requirements (Order Attachment A). Verify eligibility with the approving Water Board if necessary.
- Step 2: Determine CEQA lead agency. Consult with the California Environmental Quality Act (CEQA) lead agency to determine if the Environmental Impact Report for Implementation of Restoration Projects Statewide (SCH # 2019100230) can be used for CEQA coverage or if a project-specific CEQA document must be prepared (Attachment A, Figure A-2). Project proponent shall submit a Sacred Lands File & Native American Contacts List Request to the Native American Heritage Commission (NAHC) at the initial stages of project development (or as early as practicable) to determine if a project would have an impact on Native American cultural resources. If necessary, prepare CEQA compliance documentation. A CEQA Notice of Determination (NOD) or Notice of Exemption (NOE), as appropriate, must be filed by the CEQA lead agency before or concurrently with a Notice of Applicability (NOA) for an individual restoration project. The project proponent is responsible for paying CEQA filing fees, including the California Department of Fish and Wildlife (CDFW) CEQA Environmental Document Filing Fee (<https://wildlife.ca.gov/Conservation/CEQA/Fees>), if applicable. CEQA filing fees will be submitted by the CEQA lead agency with the NOD.
- Step 3: Tribal consultation. If an additional CEQA document is necessary (Order Section XIII, E.7), the CEQA lead agency initiates tribal

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consultation under AB 52 and California Governor's Executive Order B-10-11 within 14 days of the decision to undertake the project, or at least within 14 days of submission of a complete NOI to the approving Water Board. Consulting Tribes have 30 days to respond after receiving the request to consult.

- Step 4: Pre-application consultation. Restoration projects often benefit from pre-application consultation with the approving Water Board during the early stages of planning and design. Project proponents shall request a pre-application consultation as soon as the project concept is developed, or at least 30-days prior to submitting the NOI. During the pre-application consultation, the approving Water Board will review project materials and provide project-specific guidance for navigating the approval process. The duration of the pre-application consultation will depend on project complexity and development of design and planning. See Order Section XIII Conditions, G.2. Specific Compliance for further information.

Where restoration activities may involve a FERC-licensed facility, the restoration project may be covered by this Order only upon receipt of written approval by the Deputy Director for the Division of Water Rights or their designee. Project proponents should request this approval from the State Water Board Division of Water Rights before submitting an NOI. If written approval is not obtained by the time of NOI submittal, project proponent must stay actively engaged with the State Water Board Division of Water Rights, and under no circumstance shall an NOA be issued without the required written approval.

Note that other regulatory agencies, such as U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), California Department of Fish and Wildlife (CDFW), and California Coastal Commission (CCC), may also have authority separate and in addition to this Order to authorize restoration projects. Project proponents are encouraged to collaborate with other applicable regulatory agencies in coordination with the approving Water Board during project design, especially when fish passage and/or listed species are considerations.

- Step 5: Submit a completed NOI and application fee. The NOI must be electronically submitted to the approving Water Board, including an electronic carbon copy (cc) to the State Water Board at: stateboard401@waterboards.ca.gov. Contact information for the Regional Boards can be obtained from the Telephone and Address Directory for the 401 Certification and Wetlands Program (http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/staffdirectory.pdf).

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In addition to relevant information discussed at the pre-application consultation, the NOI must include:

1. Project design steps taken to first avoid, and then minimize, impacts to waters of the state.
2. Applicable General Protection Measures (GPMs listed in Attachment A) to be implemented for the project.
3. Mitigation Measures (per CEQA considerations) to be implemented for the project.
4. Proof of the Sacred Lands Search and proof of tribal notification (and opportunity to comment) regarding the proposed project.

The NOI application fee can be mailed to the appropriate Water Board or submitted electronically (https://www.waterboards.ca.gov/make_a_payment/). Projects authorized under this Order do not automatically qualify for a particular fee discharge category.

See Order Sections XII Application Fees and XIII Conditions for further information.

Step 6: Completeness determination. Within 30 calendar days of receipt of an NOI, the approving Water Board will determine in writing whether the NOI is complete and will transmit the determination to the project proponent. If the NOI is deemed incomplete, the Water Board will specify in writing the information needed to complete the NOI. When additional information is submitted, the approving Water Board will determine completeness within 30-days of receipt of the required information. A request for pre-application consultation (Step 4) is required and should reduce the likelihood of receiving an incomplete determination. The approving Water Board will also provide a 21-day public notice of applications for authorization under this Order.

Step 7: Notice of Applicability or Exclusion. Once the NOI is deemed complete and any applicable public comments resolved, the approving Water Board will either (a) issue an approval in the form of a Notice of Applicability (NOA) or (b) denial in the form of a Notice of Exclusion (NOE). If coverage is denied, the project proponent may request approval from the applicable Water Board through an individual certification or other general certification.

The following provides an overview of the steps that occur after a project has been approved for coverage under the Order.

Step 8: Project implementation. Implementation of the restoration project may proceed after all other state and federal permits or authorizations have been acquired. The Commencement of Construction Notice shall be submitted at least seven days before initial ground disturbance

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Step 9: Project status notifications and reporting. The project proponent will submit the appropriate notifications and reports as outlined in the Order (Section XIII.B. Reporting and Notification Requirements) to the approving Water Board.

Step 10: Monitor the project and document findings. Water quality monitoring may be required by the approving Water Board during project implementation (Section XIII.C. Water Quality Monitoring).

Project proponents are required to inspect the project following completion in accordance with information provided in the NOI and approved in the NOA or in a separate approved Monitoring Plan (Section XIII.G.4. Monitoring Plan). The project proponent shall maintain documentation of site inspection findings and submit performance reports in accordance with a schedule agreed to in the NOA or separate approved Monitoring Plan.

Step 11: Submit a Request for Notice of Project Complete Letter. At the end of the monitoring and reporting period, the project proponent shall submit a project completion report to the approving Water Board and request a Notice of Project Complete Letter. The report shall include the information outlined in Attachment D, Reporting and Notification Requirements.

**FINAL NOTICE OF INTENT
TO COMPLY WITH THE TERMS OF
ORDER FOR CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION AND
WASTE DISCHARGE REQUIREMENTS FOR RESTORATION PROJECTS STATEWIDE**

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Regional Water Quality Control Board (Regional Board) and State Water Resources Control Board (State Water Board) - <i>FOR AGENCY TRACKING USE ONLY</i>			
WDID:	Regional Board Office:	Date NOI Received:	Check No:

I. MANDATE OR PROGRAM/FUNDING SOURCE

<p>MARK ALL APPLICABLE (select "other" if not associated with the mandates or programs listed and identify an alternate program or funding source. The listed mandates and programs are not a requirement for eligibility for coverage):</p>	<p><input type="checkbox"/> Water Bond (California Proposition 1)</p> <p><input type="checkbox"/> Parks, Environment and Water Bond (California Proposition 68)</p> <p><input type="checkbox"/> State Water Board Non-Point Source (319h) Grant Program</p> <p><input type="checkbox"/> CDFW Fisheries Restoration Grant Program Project</p> <p><input type="checkbox"/> DWR EcoRestore Program Project</p> <p><input type="checkbox"/> San Joaquin River Restoration Program Project</p> <p><input type="checkbox"/> Central Valley Flood Protection Plan and Conservation Strategy</p> <p><input type="checkbox"/> San Francisco Bay Restoration Authority</p> <p><input type="checkbox"/> Other Click here to enter text.</p>
--	--

II. PROJECT and LEGALLY RESPONSIBLE PERSON INFORMATION

Project Title:	Click here to enter text.		
Legally Responsible Person Name:	Click here to enter text.		
Business/Agency:	Click here to enter text.		
Street Address:	Click here to enter text.		
City, County, State, Zip:	Click here to enter text.		
Telephone:	Click here to enter text.	Fax	Click here to enter text.
E-mail:	Click here to enter text.		

III. DULY AUTHORIZED REPRESENTATIVE INFORMATION

Duly Authorized Representative Name:	Click here to enter text.		
Business/Agency:	Click here to enter text.		
Street Address:	Click here to enter text.		
City, County, State, Zip:	Click here to enter text.		
Telephone:	Click here to enter text.	Fax	Click here to enter text.
E-mail:	Click here to enter text.		

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IV. PROPERTY OWNER

Check Box if Same as Legally Responsible Person

Name:	Click here to enter text.		
Street Address:	Click here to enter text.		
City, County, State, Zip:	Click here to enter text.		
Telephone:	Click here to enter text.	Fax	Click here to enter text.
E-mail:	Click here to enter text.		

V. PROJECT LOCATION

A. Address or description of project location.			
Click here to enter text.			
B. Check box to verify that a map of at least 1:24000 (1" = 2000') detail of the proposed project site (e.g., USGS 7.5 minute topo map) is enclosed:			<input type="checkbox"/> Project Map Enclosed
C. County:	Click here to enter text.		
D. Assessor's Parcel No.:	Click here to enter text.		
E. Coordinates (provide latitude/longitude in decimal degrees)			
Latitude/Longitude:	Latitude:	Click here to enter text.	Longitude: Click here to enter text.
F. Name the aquatic resources directly impacted by the project (provide name if known and type if unnamed):	Click here to enter text.		
G. Name the receiving watershed or water body:	Click here to enter text.		
H. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts (https://www.rivers.gov/california.php) ?	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> unknown <input type="checkbox"/> not applicable		
I. Is the watershed listed as impaired under Section 303(d) of the Clean Water Act (https://www.epa.gov/tmdl/monitoring-assessment-and-tmdls-california) ?	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> unknown Pollutant Category(ies):		
J. Has a Total Maximum Daily Load (https://www.waterboards.ca.gov/water_issues/programs/tmdl/) been established for the impairment?	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> unknown		TMDL Name:

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VI. PROJECT INFORMATION (Attach additional pages as necessary and provide specific references to those attachments in the boxes below)

A. What eligible project type(s) does the project include? (check one or more boxes below)				
<input type="checkbox"/> Improvements to Stream Crossings and Fish Passage <input type="checkbox"/> Removal of Small Dams, Tide Gates, Flood Gates, and Legacy Structures <input type="checkbox"/> Bioengineered Bank Stabilization <input type="checkbox"/> Restoration and Enhancement of Off-Channel/Side-Channel Habitat <input type="checkbox"/> Water Conservation Projects <input type="checkbox"/> Floodplain Restoration <input type="checkbox"/> Removal of Pilings and Other In-Water Structures <input type="checkbox"/> Removal of Nonnative Invasive Species and Revegetation with Native Plants <input type="checkbox"/> Establishment, Restoration, and Enhancement of Tidal, Subtidal, and Freshwater Wetlands <input type="checkbox"/> Establishment, Restoration, and Enhancement of Stream and Riparian Habitat and Upslope Watershed Sites				
B. Pre-application Consultation Meeting:	Request for meeting date (Month / Year)	Click or tap here to enter text.	Meeting date or waiver (Month / Year)	Click or tap here to enter text.
C. Estimated Project Schedule:	Beginning (Month / Year)	Click or tap here to enter text.	Ending (Month / Year)	Click or tap here to enter text.
D. Seasonal Work Period:				
E. Estimated Total Number of Work Days:				
F. Describe the project in detail and enclose diagrams, drawings, plans, and/or maps that provide all the following: site specific construction details; dimensions of each structure; extent of activity in the bed of the channel, bank, or floodplain; where equipment will enter or exit the area; if applicable, project overview showing the location of each structure and dimension of area of disturbance. (Attach additional pages as needed).				
Click here to enter text.				
G. 1. Describe project design steps taken to first avoid, and then minimize, impacts to waters of the state to the maximum extent practicable. 2. Identify the applicable General Protection Measures and other applicable environmental protection measures to be implemented. (Attach additional pages as needed).				
Click here to enter text.				
H. If the proposed restoration activities may involve a FERC-licensed facility, has the project proponent requested written approval by the Deputy Director for the Division of Water Rights or their designee?			<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> unknown	
I. Does the project require a new water right, change to an existing water right, or other water right approval from the State Water Board?			<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> unknown	
J. Specify the equipment and machinery (if any) that will be used to complete the project.				
Click here to enter text.				
K. Will flowing or standing water be present during the proposed work period:			<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> unknown	

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L. Will the proposed project require work in the wetted portion of the aquatic resource? If yes, describe the work that will be required, the type of equipment to be used, whether dewatering will be required and method and design if required, how long equipment will be in the wetted portion of the aquatic resource, and if a Water Quality Monitoring Plan is required by the approving Water Board.	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> unknown
Click here to enter text.	

VII. DISCHARGE INFORMATION

A. Within the box provided below, identify the type(s) of material that are proposed to be “introduced”, or “discharged” into waters of the state as a result of the project.			
<input type="checkbox"/> Soil <input type="checkbox"/> Rock Riprap <input type="checkbox"/> Native Vegetation <input type="checkbox"/> Non-native Vegetation <input type="checkbox"/> Large woody material <input type="checkbox"/> Rootwads <input type="checkbox"/> Erosion Control Materials (jute netting, straw wattles, etc.) <input type="checkbox"/> Culverts <input type="checkbox"/> Anchoring (bolts, cables, rebar, chains, etc.) <input type="checkbox"/> Fertilizers <input type="checkbox"/> Pesticides ¹ <input type="checkbox"/> Concrete <input type="checkbox"/> Other: Click here to enter text.			
B. For each of the materials identified above, provide a brief narrative regarding the intended purpose and relation to waters of the state, including if available the volume, acreage, or quantity of material that is intended to be introduced or “discharged”. Identify whether or not the material type is expected to cause a “temporary” or “permanent” impact. Include estimates of incidental material discharges that may occur from project implementation, or as a result of post-project adjustment.			
<u>Material Type and Intended Purpose</u>	<u>Volume, Acreage, or Number</u>	<u>Temporary Impact</u>	<u>Permanent Impact</u>
1. Click here to enter text.	Click here to enter text.	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
2. Click here to enter text.	Click here to enter text.	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
3. Click here to enter text.	Click here to enter text.	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
4. Click here to enter text.	Click here to enter text.	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
5. Click here to enter text.	Click here to enter text.	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no

¹ The point source discharge of aquatic pesticides into Waters of the United States requires a separate National Pollutant Discharge Elimination System (NPDES) permit administered by the State Water Resources Control Board. Information about pesticide permits can be found at the following Web address: http://www.waterboards.ca.gov/water_issues/programs/npdes/aquatic.shtml.

VIII. PROJECT SIZE, IMPACTS, AND ENVIRONMENTAL BENEFITS

A. Total Project Areas: Identify the acreage and linear feet of the aquatic and upland areas comprising the project site. The project size includes access, staging, and work areas.		
	Project Size	
	Acres	Linear Feet
AQUATIC AREAS	Click here to enter text.	Click here to enter text.
UPLAND AREAS	Click here to enter text.	Not applicable
TOTAL	Click here to enter text.	Click here to enter text.

B. Temporary and Permanent Project Impacts and Benefits to Water of the State: For each of the applicable water body type(s) listed below, indicate the area(s) in ACRES and LINEAR FEET that will be temporarily impacted and permanently impacted by the project. ^{2,3} If applicable, indicate the volume of excavation and/or fill in each water body type in CUBIC YARDS. Quantify the water body type(s) that will be enhanced, restored, or rehabilitated when restoration activities are complete. Include proposed direct project impacts, including potential offsite and/or adjacent impacts to waters of the state.								
Water Body Type	Project Impacts						Aquatic/Riparian Resource Established/Enhanced/Restored	
	Temporary			Permanent				
	Acres	Cubic Yards	Linear Feet	Acres	Cubic Yards	Linear Feet	Acres	Linear Feet
Wetland	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Vernal Pool	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.

² Permanent impacts to aquatic resources include permanent loss of aquatic resource area or resource function resulting from a discharge of dredged or fill material that changes an aquatic area to dry land or changes the bottom elevation or dimensions of a waterbody, or changes the surface elevation or dimensions of a wetland.

³ Temporarily impacted areas are those that can temporarily cause a physical loss and/or degradation of an aquatic resource. Temporarily impacted areas can include areas such as temporary material staging areas, parking lots, or access roads. Generally, temporarily impacted areas are those that can be restored to pre-project conditions within a short period of time (e.g. prior to the end of a growing season, or the occurrence of a sensitive resource period, such as a spawning season). The approving Water Board may determine on a project specific basis that specific time frames for restoration must be imposed to avoid temporal loss which would otherwise be included in the permanent loss estimates.

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Riparian	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Streambed/ Stream bank	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Lake/ Reservoir	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Ocean/ Estuary/Bay	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
TOTAL:	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.

C. Describe the nature of direct temporary/permanent impacts and anticipated functional lift of aquatic resources below.

Click here to enter text.

IX. MONITORING PLAN

Monitoring and reporting information shall be included below to address temporary and permanent impacts to waters of the state. The level of detail of the monitoring and reporting requirements shall be commensurate with the scope, complexity, and objectives of the restoration project, and in consideration of project site conditions. Alternatively, the information can be provided in a separate Monitoring Plan attached to this NOI.

Monitoring Plan is attached (check box). If not attached, complete A. through H. below

A. Function(s) of the impacted water resources:

Click here to enter text.

B. Project purpose and goal(s):

Click here to enter text.

C. Measurable performance standards and success criteria appropriate to each goal:

Click here to enter text.

D. Monitoring parameters and protocols used to determine whether performance standards have been met:

Click here to enter text.

E. The timeframe and responsible party for determining attainment of performance standards:

Click here to enter text.

F. Monitoring schedule:

Click here to enter text.

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G. Long-term management and maintenance practices and responsible party:
 Click here to enter text.

H. Reporting Schedule for the period stated as required for achievement of performance standards:
 Click here to enter text.

X. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

All projects utilizing this Order must comply with the terms of the California Environmental Quality Act. The Order was analyzed in the Environmental Impact Report for Implementation of Restoration Projects Statewide (SCH # 2019100230)

This project conforms to the requirements of CEQA through the Environmental Impact Report for Implementation of Restoration Projects Statewide (SCH # 2019100230).	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> The CEQA Lead Agency has prepared other/additional CEQA compliance documentation (noted below) Click here to enter text.
--	---	--

A. Additional information relative to CEQA compliance documentation:
 Click here to enter text.

XI. OTHER DOCUMENTATION AND COMPLIANCE

Check and attach the following applicable documents or note approval status

<p>Required Permits/Approvals:</p> <input type="checkbox"/> USACE Section 404 Clean Water Act Permit USACE Contact: Click here to enter text. <input type="checkbox"/> USFWS Biological Opinion/Incidental Take Permit USFWS Contact: Click here to enter text. <input type="checkbox"/> NMFS Biological Opinion/Incidental Take Permit NMFS Contact: Click here to enter text. <input type="checkbox"/> CDFW Lake or Streambed Alteration Agreement (FGC 1600) CDFW Contact: Click here to enter text. <input type="checkbox"/> CDFW Incidental Take Permit (FGC Section 2081) CDFW Contact: Click here to enter text. <input type="checkbox"/> Coastal Development Permit or Consistency Determination CCC/ Local Coastal Plan (LCP) Contact: Click here to enter text. <input type="checkbox"/> List Others: Click here to enter text.	<p>Status (check one):</p> <input type="checkbox"/> In Review <input type="checkbox"/> Approved <input type="checkbox"/> Not Applicable <input type="checkbox"/> In Review <input type="checkbox"/> Approved <input type="checkbox"/> Not Applicable <input type="checkbox"/> In Review <input type="checkbox"/> Approved <input type="checkbox"/> Not Applicable <input type="checkbox"/> In Review <input type="checkbox"/> Approved <input type="checkbox"/> Not Applicable <input type="checkbox"/> In Review <input type="checkbox"/> Approved <input type="checkbox"/> Not Applicable <input type="checkbox"/> In Review <input type="checkbox"/> Approved <input type="checkbox"/> Not Applicable
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Additional supporting documents (check if attached or note their status):

<input type="checkbox"/> Biological resources report	<input type="checkbox"/> Hydrology study	<input type="checkbox"/> Aquatic resources delineation report
<input type="checkbox"/> Pre-project photographs		

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XII. APPLICATION REQUIREMENTS AND FEES

Permit:	Submit Application to following:
401 Water Quality Certification and Waste Discharge Requirements for Restoration Projects Statewide	Approving Water Board, including an electronic carbon copy (cc) the State Water Board at: stateboard401@waterboards.ca.gov . Contact information for the Regional Boards can be obtained from the Telephone and Address Directory for the 401 Certification and Wetlands Program (http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/staffdirectory.pdf).
Fees:	Fees must be submitted with the NOI and are subject to the most current Dredge & Fee calculator. Refer to the Fees section of the Dredge/Fill (401) and Wetlands program web site for the most current fee information. https://www.waterboards.ca.gov/water_issues/programs/cwa401/#fees .

XIII. SIGNATURE / CERTIFICATION

<p><u>State Water Resources Control Board: Notice of Intent to Comply with the Terms of Water Quality Certification and Waste Discharge Requirements for Restoration Projects Statewide</u></p> <p>I certify under penalty of law that this application and all attachments were prepared under my direction or supervision in accordance with a process designed to assure that qualified personnel properly gather and evaluate the information submitted. The project proponent hereby certifies that all information contained herein is, true, accurate, and complete to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</p>	
_____	_____
Legally Responsible Person	Date

Printed Name	
_____	_____
Duly Authorized Representative Signature	Date

Printed Name	

Final Attachment C CEQA Findings of Fact

(Available with the Consolidated Final Program Environmental Impact Report at California State Water Resources Control Board, 401 Water Quality Certification and Wetlands Program Homepage

https://www.waterboards.ca.gov/water_issues/programs/cwa401/)

Final Attachment D
Reporting and Notification Requirements

Report Submittal Instructions

1. Check the box on the Report and Notification Cover Sheet next to the report or notification you are submitting.
 - **Part A (Project Reporting):** Annual reports will be submitted annually within one month of the anniversary of the effective date of the NOA until a Notice of Project Complete Letter is issued. Post-construction monitoring reports will be submitted in accordance with the Monitoring Plan schedule.
 - **Part B (Project Status Notifications):** Used to notify the approving Water Board of the status of the Project schedule that may affect Project billing.
 - **Part C (Conditional Notifications and Reports):** Required on a case-by-case basis for accidental discharges of hazardous materials, violation of compliance with water quality standards, or other reports.
2. Sign the Report and Notification Cover Sheet and attach all information requested for the Report Type.
3. **Electronic Report Submittal Instructions:**

Submit signed Report and Notification Cover Sheet and required information via email to the approving Water Board contact provided in the NOA. If the contact name on the NOA is no longer valid, contact information can be obtained from the [Telephone and Address Directory for the 401 Certification and Wetlands Program](http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/staffdirectory.pdf) (http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/staffdirectory.pdf).

 - Include in the subject line of the email:
Subject: ATTN: [Name of Project]; Identification Number [Reg. Measure ID # or WDID # # or Place ID] Report

Terms

1. **Notice of Intent (NOI)**: The application to enroll a project under this Order. The NOI form is found in Attachment B, Notice of Intent Form.
2. **Notice of Applicability (NOA)**: The authorization for enrollment under this Order. The NOA is issued by the approving Water Board upon approval of the NOI.
3. **Request for Notice of Project Complete Letter**: This request by the project proponent to the approving Water Board pertains to projects that either have completed post-construction monitoring and achieved performance standards or have no post-construction monitoring requirements, and no further Project activities are planned. The project proponent submits a project completion report to the approving Water Board stating that the project is complete and permit requirements have been met. The approving Water Board reviews the permit requirements and issues correspondence (usually by email) that the project has met the requirements and will be un-enrolled from the Order. Annual fees will be terminated with receipt of project complete correspondence from the approving Water Board.

Map/Photo Documentation Information

When submitting maps or photos, please use the following formats.

1. Map Format Information:

Preferred map formats of at least 1:24000 (1" = 2000') detail (listed in order of preference):

- **GIS shapefiles:** The shapefiles must depict the boundaries of all project areas and extent of aquatic resources impacted. Each shape should be attributed with the extent/type of aquatic resources impacted. Features and boundaries should be accurate to within 33 feet (10 meters). Identify datum/projection used and if possible, provide map with a North American Datum of 1983 (NAD38) in the California Teale Albers projection in feet.
- **Google KML files** saved from Google Maps: My Maps or Google Earth Pro. Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. Include URL(s) of maps. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.
- **Other electronic format** (CAD or illustration format) that provides a context for location (inclusion of landmarks, known structures, geographic coordinates, or USGS DRG or DOQQ). Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.
- Aquatic resource maps marked on paper **USGS 7.5-minute topographic maps** or **Digital Orthophoto Quarter Quads (DOQQ)** printouts. Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.

- ### 2. Photo-Documentation:
- Include a unique identifier, date stamp, written description of photo details, and latitude/longitude (in decimal degrees) or map indicating location of photo. Successive photos should be taken from the same vantage point to compare pre/post construction conditions.

REPORT AND NOTIFICATION COVER SHEET (Includes Signature Page)

Project:

Project Proponent:

Reg. Meas. ID# / WDID #:

Place ID:

Order Effective Date:

Report Type Submitted

Part A – Project Reporting

Report Type 1 **Annual Report**

Report Type 2 **Post-Construction Monitoring Report**

Part B - Project Status Notifications

Report Type 3 **Commencement of Construction Notification**

Report Type 4 **Request for Notice of Project Complete Letter**

Part C - Conditional Notifications and Reports

Report Type 5 **Accidental Discharge of Hazardous Material Report**

Report Type 6 **Violation of Compliance with Water Quality Standards Report**

Report Type 7 **In-Water Work and Diversions Water Quality Monitoring Report**

Report Type 8 **Transfer of Property Ownership Notification**

Report Type 9 **Transfer of Long-Term GPM Maintenance Notification**

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“I certify under penalty of law that this application and all attachments were prepared under my direction or supervision in accordance with a process designed to assure that qualified personnel properly gather and evaluate the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Print Name ¹

Affiliation and Job Title

Signature

Date

¹ STATEMENT OF AUTHORIZATION (include if authorization has changed since application was submitted)

I hereby authorize _____ to act in my behalf as my representative in the submittal of this report, and to furnish upon request, supplemental information in support of this submittal.

Legally Responsible Person's Signature

Date

*** This Report and Notification Cover Sheet must be signed by the legally responsible person or a duly authorized representative and included with all written submittals.**

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Part A – Project Reporting

Report Type 1	Annual Report
Report Purpose	Notify the approving Water Board staff of Project status during the active discharge monitoring period.
When to Submit	If required by the NOA, annual reports shall be submitted each year within one month of the anniversary of the effective date of the NOA. Annual reports shall continue until a Notice of Project Complete Letter is issued to the project proponent.
Report Contents	<p>The contents of the annual report shall include the topics indicated below for each project period. Report contents are outlined in Annual Report Topics below.</p> <p><u>During the Active Discharge Period</u></p> <ul style="list-style-type: none"> • Topic 1: Construction Summary

Annual Report Topics

Annual Report Topic 1	Construction Summary
When to Submit	With the annual report during the Active Discharge Period.
Report Contents	<ol style="list-style-type: none"> 1. Project progress and schedule including initial ground disturbance, site clearing and grubbing, road construction, site construction, and the implementation status of general protection measures (GPMs). If construction has not started, provide estimated start date and reasons for delay. 2. Map showing general Project progress. 3. Planned date or progress of any plant installations. If installation is in progress, provide a map of what has been completed to date. If installations are complete, provide a map of the locations of plant species installed along with photographs. 4. If applicable: Summary of Conditional Notification and Report Types 5, 6, and 7 (Part C below).

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Report Type 2	Post-Construction Monitoring Report
Report Purpose	Notify the approving Water Board staff of Project status during the post-discharge monitoring period.
When to Submit	Post-construction monitoring reports shall be submitted on the anniversary of the date that the project restoration activities were completed. Monitoring reports shall continue in accordance with the monitoring schedule provided in the Monitoring Plan.
Report Contents	<p>Post-construction monitoring reports shall document the status of achievement of performance standards and project goals. The monitoring reports shall include:</p> <ol style="list-style-type: none"> 1. Summary of monitoring results, including monitoring data and status of performance standards and goals as applicable. 2. Identification and discussion of issues achieving performance standards, as applicable. 3. Proposed corrective measures, as applicable (requires Water Board approval). 4. Photo documentation of restoration sites.

Part B – Project Status Notifications

Report Type 3	Commencement of Construction Notification
Report Purpose	Notify the approving Water Board staff of the date of commencement of Project construction.
When to Submit	Must be received by Water Board staff at least seven (7) days prior to commencement of initial ground-disturbing activities.
Report Contents	<ol style="list-style-type: none"> 1. Date of commencement of Project construction. 2. Overall Project construction schedule.

Report Type 4	Request for Notice of Project Complete Letter
Report Purpose	Notify the approving Water Board staff that construction and/or any post-construction monitoring is complete, or is not required, and no further Project activity is planned.
When to Submit	Must be received by Water Board staff within thirty (30) days following completion of all Project activities.
Report Contents	<p>Part A: Post-Construction Storm Water GPMs</p> <ol style="list-style-type: none"> 1. Date of storm water Notice of Termination(s), if applicable. 2. Report status and functionality of all post-construction GPMs. <p>Part B: Habitat Restoration Success</p> <ol style="list-style-type: none"> 1. A final monitoring report that summarizes the annual post-construction monitoring efforts and demonstrates the performance standards outlined in the Monitoring and Reporting Plan have been met for the Project site, including upland areas of temporary disturbance which could result in a discharge to waters of the state. 2. Pre- and post-photo documentation of habitat restoration sites.

Part C – Conditional Notifications and Reports

Report Type 5	Accidental Discharge of Hazardous Material Report
Report Purpose	Notifies the approving Water Board staff that an accidental discharge of hazardous material has occurred.
When to Submit	Within five (5) working days following the date of an accidental discharge. Continue reporting as required by Water Board staff.
Report Contents	<ol style="list-style-type: none"> 1. The report shall include the OES Incident/Assessment Form, a full description and map of the accidental discharge incident (i.e., location, time and date, source, discharge constituent and quantity, aerial extent, and photo documentation). If applicable, the OES Written Follow-Up Report may be substituted. 2. If applicable, any required sampling data, a full description of the sampling methods including frequency/dates and times of sampling, equipment, locations of sampling sites. 3. Locations and construction specifications of any barriers, including silt curtains or diverting structures, and any associated trenching or anchoring.

Report Type 6	Violation of Compliance with Water Quality Standards Report
Report Purpose	Notifies the approving Water Board staff that a violation of compliance with water quality standards has occurred.
When to Submit	The project proponent shall report any event that causes a violation of water quality standards within three (3) working days of the noncompliance event notification to Water Board staff.
Report Contents	The report shall include: the cause; the location shown on a map; and the period of the noncompliance including exact dates and times. If the noncompliance has not been corrected, include: the anticipated time it is expected to continue; the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and any monitoring results if required by Water Board staff.

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Report Type 7	In-Water Work and Diversions Water Quality Monitoring Report
Report Purpose	Notifies the approving Water Board staff of completion of work in water or stream diversions.
When to Submit	Within three (3) working days following completion of work in water or stream diversions.
Report Contents	<ol style="list-style-type: none"> 1. The report shall include a brief description of the in-water work activities and dates in-water work was performed. 2. If applicable, any required water quality sampling data, a full description of the sampling methods including frequency/dates and times of sampling, sampling equipment used, and locations of sampling sites.

Report Type 8	Transfer of Property Ownership Notification
Report Purpose	Notifies the approving Water Board staff of change in ownership of the Project or project proponent-responsible mitigation area.
When to Submit	At least 10 working days prior to the transfer of ownership.
Report Contents	<ol style="list-style-type: none"> 1. A statement that the project proponent has provided the purchaser with a copy of this Order and that the purchaser understands and accepts: <ol style="list-style-type: none"> a. the Order’s requirements and the obligation to implement them or be subject to administrative and/or civil liability for failure to do so; and b. responsibility for compliance with any long-term maintenance plan requirements in this Order. 2. A statement that the project proponent has informed the purchaser to submit a written request to the Water Board to be named as the project proponent in a revised order.

Report Type 9	Transfer of Long-Term GPM Maintenance Notification
Report Purpose	Notifies the approving Water Board staff of transfer of long-term maintenance responsibility.
When to Submit	At least 10 working days prior to the transfer of maintenance responsibility.
Report Contents	A copy of the legal document transferring maintenance responsibility of post-construction measures.

Final Attachment E
Signatory Requirements

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SIGNATORY REQUIREMENTS

All documents submitted in compliance with this Order shall meet the following signatory requirements:

1. All applications, reports, or information submitted to the Water Boards must be signed and certified as follows:
 - a. For a corporation, by a responsible corporate officer of at least the level of vice-president.
 - b. For a partnership or sole proprietorship, by a general partner or proprietor, respectively.
 - c. For a municipality, or a state, federal, or other public agency, by either a principal executive officer or ranking elected official.
2. A duly authorized representative of a person designated in items 1.a through above may sign documents if:
 - a. The authorization is made in writing by a person described in items 1.a through 1.c above.
 - b. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated activity.
 - c. The written authorization is submitted to the Water Board Staff Contact prior to submitting any documents listed in item 1 above.
3. Any person signing a document under this section shall make the following certification:

“I certify under penalty of law that this application and all attachments were prepared under my direction or supervision in accordance with a process designed to assure that qualified personnel properly gather and evaluate the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Final Attachment F
Order Deviation Procedures

ORDER DEVIATION PROCEDURES

A. Introduction

Minor or non-material changes to the project may be required by the project proponent following the start of construction. These deviations may potentially increase or decrease impacts to waters of the state. In such cases, an Order Deviation, as defined in Section XIII.B.3.d of the Order, may be requested by the project proponent as set forth below.

B. Process Steps

1. **Who may apply:** The project proponent or the duly authorized representative or agent (hereinafter, "project proponent") as designated in the Notice of Intent (NOI).
2. **How to apply:** By letter or email to the Water Board staff designated as the contact for the Notice of Applicability (NOA).
3. **Order Deviation Request:** The project proponent will request verification from the Water Board staff that the project change qualifies as an Order Deviation. The request should:
 - a. Describe the project change or modification, including:
 - i. Why an Order Deviation is necessary for the project;
 - ii. Why the proposed change or modification is minor in terms of impacts to waters of the state and the environment;
 - iii. How the project activity is currently addressed in the NOA; and
 - iv. The proposed net change in impact area by water body type(s) in acres, linear feet and cubic yards.
 - b. Describe location (latitude/longitude coordinates), the date(s) it will occur, as well as associated impact information (i.e., temporary or permanent, federal or non-federal jurisdiction, water body name/type, estimated impact area, etc.) and general protection measures and/or mitigation measures to be implemented.
 - c. Provide all updated environmental survey information for the new impact area.
 - d. Provide a map that includes the activity boundaries with photos of the site.
 - e. Provide a compensatory mitigation proposal, if applicable.
 - f. Provide verification from the CEQA Lead Agency that the proposed changes or modifications do not trigger the need for a subsequent environmental document, an addendum to the environmental document, or a supplemental EIR. (Cal. Code Regs., tit. 14, §§ 15162-15164.)

C. Order Deviation Approval: The approving Water Board will review the request and determine whether the deviation can be approved under the Order or is subject to additional permitting requirements. Project proponents will receive Order Deviation approvals, if appropriate, in writing from the approving Water Board. No activity associated with an Order Deviation request may begin until the project proponent receives the written approval.

D. Post-Construction Monitoring Report and Annual Report for Approved Order Deviations: The Post-Construction Monitoring Report and Annual Report (Attachment D Reporting and Notification Requirements) shall include a compilation of any approved Order Deviation activities with the construction summary of all project activities. Reporting will continue until a Notice of Project Complete Letter is issued to the project proponent (Section XIII.B.2.a of the Order).

**Black Oak Ranch Water Conservation Project Notice of Applicability:
Enclosure B:
Additional Information for Conformity with 40 CFR § 121.7(d) for
Order WQ 2022-0048-DWQ Conditions**

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Conformity with 40 CFR § 121.7(d)**

Additional Information to Conform with 40 CFR § 121.7(d)

The information set forth in the State Water Resources Control Board (State Water Board) *General Order for Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements, Order No. WQ-2022-0048-DWQ* for Restoration Projects Statewide ([Restoration General Order or Order](#)), which is included as Enclosure A of this Notice of Applicability (NOA), is sufficient to comply with Title 40 Code of Federal Regulations (CFR) section 121.7. This Enclosure B provides additional information regarding the conditions set forth in Order WQ 2022-0048-DWQ, to conform to the recommendation in 40 CFR section 121.7(d)(3).

Notwithstanding any determinations by the United States Army Corps of Engineers or other federal agency made pursuant to 40 CFR section 121.9, the project proponent, Black Oak Ranch Partnership, must comply with the entirety of the NOA enrolling the Black Oak Ranch Water Conservation Project (Project) in the Restoration General Order, which sets forth waste discharge requirements pursuant to the Porter-Cologne Water Quality Control Act.

The following information is generally applicable to the conditions set forth in the Restoration General Order. Waste discharge requirements shall implement any relevant water quality control plans that have been adopted and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of section 13261. (Wat. Code, § 13263(a).) In addition, California Code of Regulations, title 23,¹ Chapter 28 sets forth regulations pertaining to water quality certifications that must be implemented. Section 3859 requires the implementation of applicable water quality standards and other appropriate requirements. These conditions are also generally required to comply with the state's Anti-Degradation Policy (State Board Resolution No. 68-16), which requires that for any "activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the state will be maintained." All Regional Water Quality Control Board water quality control plans (Basin Plans) incorporate the state's Anti-Degradation Policy by reference. The state Anti-Degradation Policy incorporates the federal Antidegradation Policy (40 CFR § 131.12 (a)(1)), which requires "[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." According to the United States Environmental Protection Agency (USEPA), dischargers

¹ Unless as otherwise noted, all citations are to title 23 of California Code of Regulations.

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of dredged or fill material comply with the federal Antidegradation Policy by complying with USEPA's section 404(b)(1) Guidelines. The State Water Board adopted a modified version of USEPA's section 404(b)(1) Guidelines in the Dredge or Fill Procedures (State Supplemental Guidelines) in its *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (Dredge or Fill Procedures). These conditions are necessary to comply with the review and approval requirements set forth in the Dredge or Fill Procedures, section B.1.

The organization and statements below correspond with the conditions set forth in section XIII of the Restoration General Order. Restoration General Order sections I through XII and XIV are not "conditions" as used in 40 CFR section 121.7.

XIII. Order WQ 2022-0048-DWQ (Enclosure A) Conditions

A. Request for Authorization

Authorization under the Restoration General Order is granted through an NOA based on the application submitted. This condition is necessary because the State Water Board and Regional Water Quality Control Boards (collectively Water Boards) are authorized to issue a certification as required under the Federal Water Pollution Control Act (Wat. Code, § 13160) and this condition is consistent with regulations regarding water quality certifications (Cal. Code of Regs., tit. 23, § 3855). A pre-application meeting request is required pursuant to 40 CFR section 121.4. A pre-application meeting request was received on 01/27/2023, and held on 04/07/2023.

B. Reporting and Notification Requirements

These reporting and notification conditions are necessary to confirm that the general protection measures required under the Restoration General Order are sufficient to protect beneficial uses and water quality objectives. The reports related to accidental discharges also ensure that corrective actions, if any, that are necessary to minimize the impact or clean up such discharges can be taken as soon as possible. Authorization under the Restoration General Order is granted based on the application and supporting information submitted. This condition is necessary to ensure that any modifications to the Project do not materially change the character of the discharge from the one that formed the basis for issuance of the NOA. These monitoring and reporting conditions are authorized because the Water Boards have the authority to investigate the quality of any waters of the state within their jurisdiction under Water Code sections 13383 and 13267. The burden of preparing these reports, including costs, are reasonable to the need and benefits of obtaining the reports. The anticipated costs are minimal as the reporting obligations typically require only visual monitoring and notification reporting.

C. Water Quality Monitoring

The water quality monitoring conditions are consistent with the Dredge or Fill Procedures, section IV.A.2.c. Water quality monitoring plans are required for any in-

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water work, including temporary dewatering or diversions. These conditions are required to assure that: (1) Project activities shall not adversely affect the beneficial uses of the receiving water or cause a condition of nuisance; (2) Project activities shall comply with all applicable water quality objectives; and (3) treatment and control of the discharges from Project activities shall be implemented to assure that pollution and nuisance will not occur, and the highest water quality is maintained. A water quality monitoring plan is necessary to conform to water quality standards for oil and grease, dissolved oxygen, pH, turbidity, and temperature. The Basin Plans contain provisions related to all these constituents. These conditions are authorized under Water Code sections 13383 and 13267. The burden of preparing these reports, including costs, are reasonable to the need and benefits of obtaining the reports. The anticipated costs are minimal as the sampling requirements are typically either visual or only require a grab sample every four (4) hours.

D. Standard Conditions

The standard conditions are necessary to ensure that this Project will comply with water quality requirements. Water quality requirements include state regulatory requirements for point source discharges into waters of the United States. California Code of Regulations, title 23, Chapter 28 sets forth regulations pertaining to water quality certification for point source discharges to waters of the United States. These conditions were included to comply with section 3860, which sets forth conditions that must be included in all water quality certifications. In addition, the State Water Board has separate authority under the California Water Code to investigate and take enforcement action, if necessary, to prevent any unauthorized or threatened unauthorized diversions of water.

E. General Compliance

1. “Enrollment and authorization of restoration projects under this Order are for the discharges of waste associated with only the restoration action...”

This condition is necessary to ensure that any Project activities authorized under the Restoration General Order will comply with water quality standards because the NOA only authorizes activities explicitly described therein. (Wat. Code, § 13264.) Additional activities may have impacts on water quality that need to be separately analyzed and authorized.

Authorization under the Restoration General Order is granted through an NOA based on the request for authorization and supporting information submitted. The project proponent is required to detail the scope of project impacts in a complete application pursuant to California Code of Regulations, title 23, section 3856, subdivision (h). Pursuant to Water Code section 13260, subdivision (c), each person discharging waste, or proposing to discharge waste shall file a report of waste discharge relative to any

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material change or proposed change in the character, location, or volume of the discharge. Pursuant to Water Code section 13264, subdivision (a), the project proponent is prohibited from initiating the discharge of new wastes, or making material changes to the character, volume, and timing of waste discharges authorized herein without filing a report required by Water Code section 13260 or its equivalent for certification actions under California Code of Regulations, title 23, section 3856.

A request for authorization under the Restoration General Order is required to identify other licenses, permits, and agreements in the application. In the event a project proponent needs authorization from the state or federal authorities, California Code of Regulations, title 23, section 3856, subdivision (e), requires that the project proponent provide copies of “any final and signed federal, state, and local licenses, permits, and agreements (or copies of the draft documents, if not finalized) that will be required for any construction, operation, maintenance, or other actions associated with the activity. If no final or draft document is available, a list of all remaining agency regulatory approvals being sought shall be included.” This condition helps ensure the integrity of the certification process and its focus on ensuring that Project activities meet water quality standards and other appropriate requirements of state law.

2. “Any plan developed as a condition of this Order requires review and approval...”

This condition is necessary because the Water Boards are authorized to issue a certification as required under the Federal Water Pollution Control Act. (Wat. Code, § 13160.) Any Project activity that is not specifically authorized in the Restoration General Order is prohibited (Wat. Code, § 13264.)

3. “This Order shall not be construed as replacement or substitution for any necessary federal, state and local approvals...”

This condition is necessary to protect water quality because it makes it clear that additional authorizations may be required and deters violations or threatened violations of the Restoration General Order conditions. (Wat. Code, §§ 13350, 13385.)

4. “In response to a suspected violation of any condition of this Order...”

This condition protects water quality by requiring that the project proponent provide monitoring reports after a violation or suspected violation of the conditions of the Restoration General Order. This monitoring would document whether or not water quality impacts occurred as a result of the violation or suspected violation and allow the Water Boards and project proponent to act to remedy the situation. Monitoring and reporting requirements are authorized by Water Code sections 13267 and 13383.

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- 5. “The project proponent must, at all times, fully comply with engineering plans, specifications, and technical reports submitted...”**

This condition protects water quality by ensuring that the authorized activity is implemented as proposed and approved. (Wat. Code, § 13264.) Deviations from the approved plans and practices could result in adverse impacts to water quality.

- 6. “This Order and all of its conditions contained herein continue to have full force and effect...”**

This condition protects water quality by ensuring that the Restoration General Order and all of its conditions that protect water quality remain in place if federal licenses or permits are revoked or expire. Enrollment in the Restoration General Order serves as waste discharge requirements under the Porter-Cologne Water Quality Act. (Wat. Code, § 13263.)

- 7. “Project proponents shall submit a Sacred Lands File & Native American Contacts List Request to the...”**

This condition is necessary to ensure compliance with water quality requirements because it satisfies the requirements to consult with California Native American tribes that are traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Res. Code, § 21080.3.1.) (See also California Governor’s Executive Order G-10-22.) The State Water Board Tribal Consultation Policy (June 2019) ensures collaboration and input from all California Native American Tribes and helps the Water Boards advance decisions and policies that better protect California’s water resources.

- 8. Historical Sites**

This condition protects water quality by ensuring that the authorized activity is implemented as proposed and approved. (Wat. Code, § 13264.) This condition is required in order to comply with section 101(c) of the National Historic Preservation Act of 1966 (54 U.S.C. § 300101 et seq.) as amended. The regulations adopted under the act are set forth in Part 61 (commencing with section 61.1) of Title 36 of the Code of Federal Regulations. California Code of Regulations, title 14, section 15064.5 defines “historical resources” and details steps that should be taken in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery.

- 9. Construction General Permit Requirement**

This condition is necessary to ensure compliance with water quality requirements because dischargers who are required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General

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Permit; Order No. 2009-0009-DWQ or 2022-0057-DWQ; NPDES No. CAS00002, as amended or any subsequently issued permit) must obtain separate authorization. (33 U.S.C. § 1342.) For ground disturbing activities that do not require enrollment in the Construction General Permit, the condition requires the implementation of appropriate erosion and sediment control measures. (Wat. Code, § 13263.)

10. Aquatic Herbicide General Permit Requirement

This condition is necessary to ensure compliance with water quality requirements because dischargers who are required to obtain coverage under the NPDES General Permit for Residual Aquatic Pesticide Discharges to Waters of The United States from Algae and Aquatic Weed Control Applications (Order No. 2013-0002-DWQ; General Permit No. CAG990005, or any subsequently issued permit) must obtain separate authorization. (33 U.S.C. § 1342.)

11. Cumulative Impacts

This condition is necessary to ensure compliance with water quality requirements because Water Code section 13263 requires consideration of other waste discharges.

F. Prohibitions

These conditions are necessary to prevent violation of state discharge prohibitions and protect water quality objectives. Basin Plans prohibit the discharge of construction materials and byproducts from being discharged into waters of the state. (Wat. Code, §§ 13146, 13247, 13263.)

These conditions also reserve the approving Water Board's authority to add to or modify conditions of the Restoration General Order in the NOA to ensure that project activities meet water quality objectives and protect beneficial uses. (See Wat. Code, § 13160.)

Destabilization of the channel or bed of the receiving water can contribute to significant degradation of the waters of the state; therefore, it is necessary to implement actions to limit or eliminate such discharges in order to protect water quality and associated beneficial uses.

Additionally, these conditions are required pursuant to the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, which prohibits the discharge of substances in concentrations toxic to human, plant, animal, or aquatic life. Toxic compounds can impair the beneficial uses of cold freshwater habitat, estuarine habitat, marine habitat, preservation of rare and endangered species, fish migration, fish spawning, warm freshwater habitat, and wildlife habitat. Conditions related to toxic and hazardous materials are necessary to ensure Project activities comply with any water quality objectives adopted or approved under sections 13170 or 13245 of the Water Code. Additionally, the conditions related to

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hazardous discharges protect water quality by ensuring hazardous materials are not discharged to waters of the state. (Dredge or Fill Procedures, section IV.B.1.)

G. Specific Compliance

1. Programmatic Sideboards

This condition is necessary to implement relevant water quality control plans, protect beneficial uses, comply with the water quality objectives, and prevent nuisance. (Wat. Code, § 13263.) This condition also ensures the authorized project is designed, planned, and implemented in a manner consistent with the techniques and minimization measures presented in the Restoration General Order, Attachment A, section A.5. Project site-specific conditions may require different approaches to ensure compliance with applicable water quality standards and other appropriate requirements (33 USC § 1341; Cal. Code of Regs., tit. 23, § 3859, subd. (a)) and may result in impacts to water quality that require additional environmental review. (Cal. Code of Regs., tit. 14, §§ 15062-15063.) Water Code section 13383 authorizes the Water Boards to establish monitoring, inspection, entry, reporting, and other recordkeeping requirements (e.g., general protection measures listed in Attachment A), as authorized by Water Code section 13160, for any person who discharges, or proposes to discharge, to navigable waters.

2. Pre-Application Consultation

This condition satisfies the 40 CFR §121.4 requirement to request a pre-filing meeting with the certifying authority at least thirty (30) days prior to submitting a certification request.

3. Exclusions and Prohibited Activities

This condition is necessary to comply with water quality requirements because the identified excluded activities may require additional conditions to protect beneficial uses and prevent nuisance. (Wat. Code, § 13263.) For instance, erosion and sedimentation can contribute to significant degradation of the waters of the state; therefore, it is necessary to implement actions to limit or eliminate such discharges to protect water quality and associated beneficial uses. The exclusions and prohibited activities listed in the Restoration General Order section G.3 could result in erosion and sedimentation that could increase turbidity. Project activities affected by erosion and increased sediment loads directly impact water quality and associated beneficial uses.

This condition also helps to ensure that an applicant for a federal license or permit that involves a discharge to navigable waters understands that, except as specified in the Restoration General Order, the Order does not excuse the project proponent from obtaining any other Water Board approvals required for the activity.

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4. Monitoring Plan

This condition is necessary to comply with water quality requirements because it confirms that the general protection measures required under the Restoration General Order are sufficient to protect beneficial uses and water quality objectives. (Wat. Code, §§ 13267, 13383.)

H. Administrative

1. “Signatory requirements for all document submittals...”

Signatory requirements are required pursuant to Water Code section 13267, which requires any person discharging waste that could affect the quality of waters of the state to provide to the Water Boards, under penalty of perjury, any technical or monitoring program reports as required by the Water Boards. The signatory requirements are consistent with 40 CFR section 122.22.

2. “Data and/or reports shall be submitted...”

This condition relates to submittal of data and reports that are authorized under the Water Boards’ authority to investigate the quality of any waters of the state within their jurisdiction under Water Code sections 13383 and 13267. Monitoring, reporting, and assessment actions, and the information developed through such actions, must be readable, shared, and coordinated with other appropriate entities, and accessible to ensure that Project activities comply with water quality requirements. Water Code section 13167 requires the Water Boards to ensure that monitoring data and assessment information are available in a single location and that the information is presented in a manner easily understandable by the public. To fulfill this legislative mandate, this condition requires electronic data submittal in a compatible format with existing system specifications. Compliance with this condition enhances the accessibility of data and transparency of regulatory actions. This allows regulatory agencies and the public to better assess compliance and understand water quality trends or data anomalies by compiling data and making it readily available.

3. “This Order does not authorize any act which results in the taking of a threatened, endangered or candidate species...”

Project activities associated with construction activities have the potential to interfere with native aquatic species, which depend heavily on aquatic food or live in riparian or wetland habitats, and adversely impact habitat use. Implementation of this condition will avoid impacts to water quality and the beneficial uses related to aquatic biological resources and wildlife habitat. Water Code section 13160, subdivision (b)(1), allows the State Water Board to issue a certification when there is “reasonable assurance that an activity of any person subject to the jurisdiction of the state board will comply with applicable requirements” of state and federal law. In accordance with the California Endangered Species Act (Fish & G. Code, § 2050 et seq.) and federal Endangered

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Species Act (16 U.S.C. § 1531 et seq.), this condition does not authorize any act which results in the taking of a threatened, endangered, or candidate species.

4. “The project proponent shall grant Water Board staff or an authorized representative...”

This condition protects water quality by allowing the Water Boards, or a representative, to investigate site conditions to ensure that the authorized activity is compliant with the Restoration General Order. This condition is authorized pursuant to the Water Boards’ authority to investigate the quality of any waters of the state within its region under Water Code sections 13267 and 13383.

5. “A copy of this Order must be available at the project site(s)...”

This condition requires site personnel and any agent of the project proponent to be familiar with the content of the Restoration General Order and availability of the document at each project site. This condition is necessary to ensure that all activities will comply with applicable water quality standards and other appropriate requirements (33 USC section 1341; California Code of Regulations, title 23, section 3859, subdivision (a)), which cannot be adhered to if the project proponent’s agents are unaware of applicable requirements. This condition is required to ensure that any authorized Project activity will comply with the terms and conditions of the Order, which requires compliance with all of the water quality objectives and beneficial uses adopted or approved. (Dredge of Fill Procedures, section IV.B.1.)

6. “Lake and Streambed Alteration Agreement...”

This condition is required pursuant to California Code of Regulations, title 23, section 3856 subdivision (e), which requires that as part of an application for water quality certification, copies be provided to the Water Boards of “any final and signed federal, state, and local licenses, permits, and agreements (or copies of the draft documents, if not finalized) that will be required for any construction, operation, maintenance, or other actions associated with the activity. If no final or draft document is available, a list of all remaining agency regulatory approvals being sought shall be included.”

I. Restoration and Monitoring of Impacts

Conditions in this section are related to restoration and/or mitigation of temporary and permanent impacts. These conditions are necessary to ensure compliance with state and federal anti-degradation policies and are consistent with section IV.B.1.a of the Dredge or Fill Procedures, which requires that the Water Boards will approve a project only after it has been determined that a sequence of actions has been taken to first avoid, then to minimize, and lastly compensate for adverse impacts that cannot be practicably avoided or minimized. (See also California Code of Regulations, section 3856, subdivision (h) [requiring submittal of proposed mitigation and description

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of steps taken to avoid, minimize, or compensate].) These conditions are also consistent with the Dredge or Fill Procedures, which requires "in all cases where temporary impacts are proposed, a draft restoration plan that outlines design, implementation, assessment, and maintenance for restoring areas of temporary impacts to pre-project conditions." (Dredge or Fill Procedures section IV. A.2(d) & B.4.) Mitigation is also necessary to ensure compliance with Executive Order W-59-93 that requires no net loss of the structure or function of California's wetland resources.

Furthermore, impacts that are not restored within a reasonable amount of time could contribute to long-term degradation of water quality. The longer the lag time between impact and restoration, the more opportunity there is for water quality degradation. This condition protects water quality by ensuring that restoration is initiated in a reasonable amount of time after impacts have occurred. (Dredge or Fill Procedures, sections IV.A.2.d, IV.B.4-5.) Technical reporting and monitoring requirements under this condition are consistent with the Water Boards' authority to investigate the quality of any waters of the state and require necessary reporting and monitoring pursuant to Water Code sections 13267 and 13383.

**Enclosure C:
Black Oak Ranch Water Conservation Project
Notice of Intent (NOI) Avoidance and Protection**

(This enclosure was provided by the Black Oak Ranch Partnership and summarizes how it will comply with applicable provisions of the Restoration General Order, Order No. WQ-2022-0048-DWQ.)

**Enclosure C: Black Oak Ranch Water Conservation Project
Notice of Intent (NOI) Avoidance and Protection**

NOI VI G: Impact Avoidance Including General Protection Measures (GPM)

1. Describe project design steps taken to first avoid, and then minimize, impacts to waters of the state to the maximum extent practicable.

All elements of the Black Oak Ranch Water Conservation Project are designed to improve instream water quality and availability. Great care will be taken to make sure that no harm to water quality occurs as a result of implementation.

There are two points of diversion that will require excavation and instream work to install and improve existing infrastructure. The existing banks of these streams are mostly bare and vertical and soil already sluffs off resulting in direct sediment delivery. When the infrastructure is installed, wood and rock will be placed to reduce erosion in these locations. Strategic planting on banks where points of diversions are installed will further reduce future erosion.

The proposed pond is located in a flat field where sediment delivery would be naturally inhibited by the lack of slope. Because the pond will disturb approximately 7 acres in it's construction, a Storm Water Pollution Prevention Plan will be required. The tanks are likewise located on a flat plateau far from streams. Overflows from both the tanks and pond are designed to release excess water on near flat slopes and allow for spreading and infiltration. While the tank location requires a less than 3-acre conversion, the location was chosen in an effort to minimize the cutting of large trees, especially hardwoods like oaks and madrones. The design minimizes excavation and earthwork so that little new bare soil and bed material will be exposed or moved.

GPM-1: Receipt and Copies of All Permits and Authorizations

All permits obtained by ERRP for the Black Oak Ranch Water Conservation Project will be provided to the State Water Resources Control Board Water Rights Division 401 staff as soon as secured, including CDFW 1600 LSA Agreement, ACOE 404 permit, and NMFS Programmatic Biological Opinion for Northern California restoration projects. Copies of permits will also be printed and available on-site from the construction foreman/manager on the project site for the duration of the project.

GPM-2: Construction Work Windows

All instream work on the Project and all grading work will be done between May 15 and October 15 in order to avoid saturated ground conditions in the meadow area or wet conditions of roadbeds and stream crossings.

Construction of the diversion infrastructure at the unnamed tributary will begin after May 15th. Construction of diversion infrastructure on Streeter Creek will take place in the summer after July 15, when the likelihood of salmonids being present in Streeter Creek is low. If it appears that Streeter Creek may lose surface flow altogether, the start of construction may be deferred to August 1. All construction of instream work will cease by October 15th. Construction of tanks, plumbing, electrical, and treatment infrastructure may occur year-round.

Enclosure C: Black Oak Ranch Water Conservation Project Notice of Intent (NOI) Avoidance and Protection

GPM-3: Construction Hours.

All work on all projects will take place during daylight hours between 7 AM and 7 PM.

GPM-4: Environmental Awareness Training

All contractors associated with the Black Oak Ranch Water Conservation Project will be informed about sensitive aquatic and wetland resources prior to implementation, especially those involved in the construction of Streeter Creek point of diversion that may affect ESA-listed salmonids. A specially trained crew will be on hand for the construction of a coffer dam and by-pass pipe in case it is necessary to dewater Streeter Creek to construct the diversion infrastructure. They will be trained in the identification and handling of listed species by a qualified fisheries biologist approved by CDFW and NMFS who will operate the electrofisher and oversee relocation to an area suitable for the survival of fish removed.

GPM-5: Environmental Monitoring

All aspects of the Black Oak Ranch Water Conservation Project will be monitored to make sure that no environmental damage results from any activity conducted. The greatest risk to aquatic resources is from the construction of the point of diversion on Streeter Creek, which will be supervised very closely. In the event that equipment used is leaking fluids or otherwise causing pollution in the stream bed, all work will be halted, the spill kit materials will be applied, and equipment will be moved away from the stream, and appropriate repairs made. Managers of different project elements will keep a daily journal of compliance with permit mitigation measures and record-related activities and those records will be part of deliverables and kept on file by ERRP.

GPM-6: Work Area and Speed Limits

The work areas for stream-related projects will be located at:

The parking areas on either side of the new Streeter Creek bridge, and the field adjacent to (and south of) the unnamed tributary POD. They will be set back from the stream to limit potential contamination of the waters from construction-related runoff.

The access to the stream will be directly from the 3 work areas, connecting them to the POD locations with a short, narrow road to minimize disturbance directly adjacent to the stream that could result in excessive sediment delivery. The bank will be pulled back adjacent to where the Streeter POD will be installed at the stream restoration site. It may also be accessed from the opposite bank by a mini-excavator on the trail, but no trees should be removed, so the equipment must be small to pass between them.

Equipment and traffic on the Black Oak Ranch property will not exceed 15mph. A water truck will be used periodically during grading work for dust abatement.

Enclosure C: Black Oak Ranch Water Conservation Project Notice of Intent (NOI) Avoidance and Protection

GPM-7: Environmentally Sensitive Areas

There are no environmentally sensitive areas near the sites beyond Streeter Creek and the unnamed tributary already mentioned. There is a wetland in the field several hundred feet away from the pond. Because of the flat nature of the field, sediment, and contaminants are not at risk of being transported near this wetland.

GPM-8: Prevent the Spread of Invasive Species

Before being imported to the site, heavy equipment for construction of diversion infrastructure and water storage will be thoroughly cleaned at a car wash or similar facility to ensure that no invasive weed seeds are imported or pathogens, such as sudden oak death syndrome spores. Post-project monitoring will include checking that pests like star thistle were not introduced and ensuring they are removed to prevent their establishment and spread. All mulch or straw used to control surface erosion after project completion will be certified weed-free. Construction supervisors will be aware of these requirements, make sure protocols are followed, and record compliance in their daily journals. Protocols for preventing the importation of invasive species and their eradication, if introduced, will follow the guidance of CDFW's California Aquatic Invasive Species Management Plan (CDFW 2008) and Aquatic Invasive Species Disinfection and Decontamination Protocols (CDFW 2016). However, there is little opportunity for the importation of invasive animal species related to project construction.

GPM-9: Practices to Prevent Pathogen Contamination

The Guidelines for Restoration and Fieldwork published by the California Oak Mortality Task Force will follow to make sure that equipment imported to build water conservation infrastructure will have been thoroughly cleaned to prevent importation of sudden oak death syndrome (*Phytophthora*).

GPM-10: Equipment Maintenance and Materials Storage

All equipment will be maintained in top working order and measures taken to prevent any leaks of fuel or petroleum products during operation, staging, and on-site storage. Absorbent padding "Diapers," a tarp, and a bucket will be the minimum contents of spill kits kept on sight. Equipment will be inspected daily and any sign of impairment will lead to a stop work order until appropriate repairs are made. Absorbent pads will be placed under equipment when it is not being operated to detect leaks and prevent contamination of soil. Fueling and the addition of fluids necessary for equipment operation will take place at least 100 feet from any water course. All fuel and other fluids needed for equipment operation will be in leak-proof containers and kept either in a truck bed or some other form of secondary containment.

Enclosure C: Black Oak Ranch Water Conservation Project Notice of Intent (NOI) Avoidance and Protection

GPM -11: Material Disposal

All aspects of the Black Oak Ranch Water Conservation Project will be diligent in making sure that no refuse, contaminants, or debris is left at the job site upon project completion. Any hazardous materials, such as fuel and lubricants for equipment, will be handled with caution and any fueling will take place further than 100 feet from any water course. Containers for hazardous materials will be closely controlled and disposed of appropriately off-site at an appropriate facility.

GPM-12: Fugitive Dust Reduction

As noted in GPM-6, vehicles traveling on the Black Oak Property will travel at a speed of 15 mph or slower to reduce dust caused by traffic. During grading activities, a water truck will be used to control dust from road grading and culvert replacement activities.

GPM-13: Trash Containment and Removal

All trash generated by any activity related to the Black Oak Ranch Water Conservation Project activities will be immediately confined in sealed trash containers and placed at the staging area. All project materials will be secured in staging areas and no packaging or empty containers left untended that the wind could carry away. No trash will be left at the job site or at the staging area at the end of the project.

GPM-14: Project Cleanup After Completion

All construction materials, work pads, and trash receptacles will be removed from all job sites at the completion of work and all sites fully treated to prevent erosion. At the stream sites, there will be no foreign materials of any kind at the end of each day and materials will be secured away from the stream in staging areas.

GPM-15: Revegetate Disturbed Areas

The disturbed areas will be revegetated with native grass seed as well as native forbs. The tanks are located in areas that will undergo a forestland conversion. Trees will not be replanted because they are at risk of falling on the tanks. Willows will be planted at the Streeter Creek POD next to the fish habitat enhancement structure.

Water Quality and Hazardous Materials

WQHM-1: Staging Areas and Stockpiling of Materials and Equipment.

Staging areas will be located on the flat field next to the pond and the point of diversion for the unnamed tributary. Equipment for the Streeter POD will be located on the flat area beyond the bank of the stream near the existing water treatment facility. The tanks may be staged in the flat parking lot near Irene's Farm prior, and up the hill on top of the plateau where tank construction will occur. All equipment staging areas will have straw wattles available onsite in case a summer storm occurs.

Enclosure C: Black Oak Ranch Water Conservation Project Notice of Intent (NOI) Avoidance and Protection

Maintenance of equipment will take place in these staging areas. A botanical survey was conducted as part of our current permitting process and no rare and endangered plants were identified or noted as needing protection. If rain is predicted in the forecast any construction work would cease and any exposed soil areas in the project treated with weed-free straw to prevent surface erosion.

Erosion and Sedimentation Control Measures

WQHM-2: Storm Water Pollution Prevention Plan.

The County of Mendocino requires a Storm Water Pollution Prevention Plan for pond construction because it is over an acre of grading as part of a subsequent implementation project. However, County permits will be pursued in a separate, subsequent implementation grant. A SWPP will not be required by the County for the tanks, under a separate building permit, unless disturbance exceeds an acre.

WQHM-3: Erosion and Sediment Control Measures

Following grading of the two water storage locations erosion control materials will be installed. These will include a native seed mix and weed-free straw. Biodegradable wattles will be staked around the edges of the graded areas. Erosion and sediment control measures are discussed above in GPM-4, GPM-6, GPM-12, and GPM-14. Best management practices that will be employed to reduce the risk of sediment contributions are 1) application of rice straw or weed-free mulch to any bare soil areas at project completion or during any wet period during construction; 2) planting native grass seed on bare soil areas will help with soil stabilization in the long term, 3) planting riparian plants near the points of diversion in addition to native grasses with long term benefit of erosion control accrued as bushes mature and root systems expand. Coir may be used for erosion control because it is made of coconut fiber and breaks down completely over time.

WQHM-4: Hazardous Materials Management and Spill Response Plan

ERRP will create an Accidental Discharge of Hazardous Materials memo that site managers for the various elements of the project will all have that directs them on response to spills of fuel or lubricants for equipment that are the only hazardous materials employed by the project. Sections above in GPM-10 and GPM-14 note that no fueling or replacement or addition of fluids to any piece of equipment will take place within 100 feet of a water course. As noted in GPM-11, all containers with petroleum products will also be stored, tracked, and disposed of appropriately after contents have been added to machines. A tarp, tray, or truck bed will be placed under any stored fuel and lubricants in the staging area prior to use. Equipment used to create the point of diversion infrastructure will be especially closely scrutinized and inspected daily before conducting work in the stream bed. If any leak is detected, work will stop and absorbent pads used to make sure that no significant pollution of the stream bed occurs.

Enclosure C: Black Oak Ranch Water Conservation Project Notice of Intent (NOI) Avoidance and Protection

WQHM-5: In-Water Concrete Use.

The concrete used in diversion infrastructures will be installed and allowed to cure when the streams are dry or diverted. Personnel working on concrete will be trained on stormwater pollution prevention measures. All concrete equipment and tools will be rinsed at a washout station designed to hold the wash water with either berms and a tarp or a kitty pool such that the water can evaporate. The remaining dried-out concrete will be brought to a waste disposal site.

WQHM-6: Accidental Discharge of Hazardous Materials

The Accidental Discharge of Hazardous Materials memo created for this project will be in the possession of project managers and will have contact information in the event of a significant fuel or fluid spill for 1) universal emergencies (911), 2) the Office of Emergency Services (OES) State Warning Center at (800) 852-7550 or (916) 845-8911, and 3) the North Coast Regional Water Quality Control Board (707 576-2220).

IWW-1: Appropriate In-Water Materials

Nothing will be introduced to the stream channel except boulders and large wood with root wads that will be used for the fish habitat enhancement structure that will buttress intake of Streeter Creek POD. These materials have no risk for introduction of aquatic pathogens. Any sediment that might slough from banks during construction of diversion works or fish habitat structure will be removed before heavy equipment leaves the channel.

IWW-2: In-water Vehicle Selection and Access

A 33,000 pound tracked excavator will be used to install fish habitat enhancement structure at Streeter POD and for creation of diversion works. The equipment will enter the channel only after the stream has been de-watered and fish removed and relocated. Heavy equipment will be moved to storage locations outside the channel in the evening and absorbent pads placed under it to catch any leaking fluids.

IWW-3: In-Water Placement of Materials, Structures, and Operation of Equipment

As noted above in WQHM-3, no sediment or pollution of any kind will be introduced into stream channels during construction of PODs because of implementation of BMPs.

IWW-5 & IWW-6: Cofferdam Construction & Dewatering/Diversion

A single coffer dam will be constructed above the Streeter Creek POD to de-water the creek so that fish can be removed and relocated and the plan is detailed in the *Biological Assessment and EFH Assessment for Black Oak Ranch Water Conservation Project (Higgins 2023)*. The dewatering and fish removal and relocation plan is being approved by NMFS and CDFW and will be covered by a NMFS Take Permit.

Enclosure C: Black Oak Ranch Water Conservation Project Notice of Intent (NOI) Avoidance and Protection

IWW-7 & IWW-8: Fish Exclusion During Construction and Removal of Barrier

Similar to IWW-5 and IWW-6, the BA and EFH for BOR (Higgins 2023) includes detailed plans for fish removal and relocation and for limiting the time that stream flow is routed through by-pass pipe to the minimum possible. Any foreign materials or sediment will be removed from stream channels before flow is restored.

VHDR-1: Avoidance of Vegetation Disturbance

The pond will be constructed in a field that has a history of cultivation for agriculture since the 1860s and has largely non-native grasses, and the pond berm will be mulched and native grass seed spread. The construction of the unnamed creek POD and renovation of Streeter Creek POD will not require any riparian disturbance to other than non-native plants, but willows will be planted after construction to help prevent erosion.

VHDR-2: Native Vegetation Removal – Non-Native Plant Material Disposal

No native vegetation or trees will be removed and no chain saws will be used in project construction. Non-native grasses removed by excavation during pond construction will be re-interred with soil to build the berm surrounding the pond and native grass seed will be planted on the top of the berm.

VHDR-3: Revegetation Materials and Methods

As noted above in GPM-15, mulch will be spread on disturbed soil areas and native grass seed spread, including on the berm surrounding the pond. Native willows will also be planted around the PODs after construction for long term erosion control and to improve riparian function.

VHDR-4: Revegetation Erosion Control Materials and Methods

Mulch mixed with native grass seed will be the preferred method of preventing erosion of soil in areas disturbed by construction. If any erosion control fabric is used, it will be coir, which is coconut fiber that breaks down completely over time.

VHDR-5: Revegetation Monitoring and Reporting

Bare soil areas covered with mulch and planted with native grass seeds will develop ground cover of at least 60% or native grass seed will be spread repeatedly until this cover level is achieved.