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habitat for special-status wildlife) that would reduce O&M impacts on special-status terrestrial wildlife to a less-than-significant level.

Impact 3.5-3: Implementing restoration projects permitted under the Order could result in adverse effects on riparian habitat or sensitive natural communities.

The following general protection measures applicable to protection of sensitive natural communities during construction of projects permitted under the Order also apply to maintenance of those same projects:

- ◆ **GPM-5: Environmental Monitoring**
- ◆ **GPM-7: Environmentally Sensitive Areas**
- ◆ **GPM-8: Prevent Spread of Invasive Exotic Plants**
- ◆ **GPM-9: Environmentally Sensitive Areas**
- ◆ **GPM-12: Fugitive Dust Reduction**
- ◆ **GPM-15: Revegetate Disturbed Areas**
- ◆ **GPM-17: Fugitive Dust Reduction**
- ◆ **WQHM-4: Hazardous Materials Management and Spill Response Plan**
- ◆ **VHDR-2: Native and Invasive Vegetation Removal Materials and Methods**
- ◆ **VHDR-3: Revegetation Materials and Methods**

Additionally, restoration projects that could adversely affect riparian habitat or sensitive natural communities, would implement the following species protection measures, as applicable:

- ◆ General Species Protection Measures
 - **SPM-1: Preconstruction Surveys**
 - **SPM-2: Environmentally Sensitive Areas and/or Wildlife Exclusion**
- ◆ Invertebrate Species Protection Measures
 - **INVERT-1: Implement California Freshwater Shrimp Measures**
 - **INVERT-2: Vernal Pool Branchiopods Measures**
 - **INVERT-3: Implement Valley Elderberry Longhorn Beetle Protocol**

Findings (Effects of Constructed Facilities and O&M of those Facilities): Most long-term impacts on terrestrial biological resources of implementing the restoration projects permitted under the Order should be neutral or beneficial, because the specific purpose of these projects would be to correct existing conditions that contribute to resource degradation. Ongoing long-term maintenance of restoration sites may result in short-term impacts on sensitive natural communities, particularly if the maintenance would involve ground disturbance and vegetation management. However, operation of infrastructure-focused projects (e.g., fish passage improvements, water conservation projects) is not expected to result in ongoing effects on sensitive natural communities. Restoration-related activities permitted under the Order are expected to result in the expansion of many sensitive natural communities, particularly riparian habitat, which would be a focus of many of the targeted project types.

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In the unlikely case that the CEQA lead agency for a restoration project determines that the project's impacts on sensitive natural communities may be significant (e.g., conversion of a terrestrial-based sensitive natural community such as Great Valley oak riparian forest into side-channel riverine habitat) even with previously identified general protection measures, additional project-specific mitigation may be required. Much of the protection of sensitive natural communities would go hand-in-hand with species-specific protection measures developed under FESA and CESA consultation with the federal and state wildlife agencies. Nonetheless, operation of large-scale restoration projects permitted by the Order may convert particular sensitive natural community habitats to other natural community types, even ones considered sensitive by CDFW.

Thus, for the purposes of this programmatic analysis, impacts on sensitive natural communities would be **significant and unavoidable**. It cannot be determined with certainty that all projects permitted under the Order would be able to implement appropriate avoidance, mitigation, and/or minimization measures to reduce impacts on any sensitive natural community to a less-than-significant level.

Based on a review of prior CEQA analyses for large-scale restoration projects, only in rare circumstances would future CEQA analyses for individual projects permitted under the Order conclude that there would be a significant impact on a particular sensitive natural community. (This is principally because most restoration activities would focus on highly altered areas where sensitive natural communities have been already degraded or eliminated.) Most projects would generally increase the extent of certain sensitive natural communities such as riparian forest (e.g., Southern cottonwood willow riparian forest, Great Valley oak riparian forest) and marsh habitat (e.g., montane freshwater marsh).

Impact Category: Biological Resources - Aquatic

Impact 3.6-1: Implementing future restoration projects permitted under the Order could result in substantial adverse effects to special-status fish species directly, or indirectly through habitat modifications.

The following general protection measures would be required when applicable to address this impact to the extent feasible:

- ◆ **FISH-1: Habitat Disturbance Avoidance and Minimization.**
- ◆ **FISH-2: Habitat Assessment and Surveys**
- ◆ **FISH-3: Fish Capture and Relocation**
- ◆ **FISH-4: Reporting**
- ◆ **GPM-2: Construction Work Windows**
- ◆ **GPM-3: Construction Hours**
- ◆ **GPM-4: Environmental Awareness Training**
- ◆ **GPM-5: Environmental Monitoring**
- ◆ **IWW-1: Appropriate In-Water Materials**
- ◆ **IWW-2: In-Water Vehicle Selection and Work Access**
- ◆ **IWW-3: In-Water Placement of Materials, Structures, and Operation of Equipment**
- ◆ **IWW-4: In-Water Staging Areas and Use of Barges**

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- ◆ **IWW-5: Cofferdam Construction**
- ◆ **IWW-6: Dewatering/Diversion Restrictions**
- ◆ **IWW-7: Fish and Aquatic Species Exclusion while Installing Diversion Structures**
- ◆ **IWW-8: Removal of Diversion and Barriers to Flow**
- ◆ **IWW-9: In-Water Pile Driving Plan for Sound Exposure**
- ◆ **IWW-10: In-Water Pile Driving Methods**
- ◆ **IWW-11: Sediment Containment during In-Water Pile Driving**
- ◆ **IWW-12: Pile-Driving Monitoring**
- ◆ **IWW-13: Dredging Operations and Dredging Materials Reuse Plan**
- ◆ **SPM-3: Species Protection Construction Work Windows**
- ◆ **WQHM-1: Staging Areas and Stockpiling of Materials and Equipment**
- ◆ **WQHM-2: Storm Water Pollution Prevention Plan**
- ◆ **WQHM-3: Erosion Control Plans**
- ◆ **WQHM-4: Hazardous Materials Management and Spill Response Plan**
- ◆ **WQHM-5: In-Water Concrete Use**
- ◆ **WQHM-6: Accidental Discharge of Hazardous Materials**
- ◆ **VHDR-1: Avoidance of Vegetation Disturbance**
- ◆ **VHDR-2: Native and Invasive Vegetation Removal Materials and Methods**
- ◆ **VHDR-3: Revegetation Materials and Methods**
- ◆ **VHDR-4: Revegetation Erosion Control Materials and Methods**
- ◆ **VHDR-5: Revegetation Monitoring and Reporting**
- ◆ **VHDR-6: Herbicide Use**
- ◆ **VHDR-7: Herbicide Application Planning**
- ◆ **VHDR-8: Herbicide Application Reporting**

Findings (Effects of Project Construction Activities): In-water aquatic habitat may be physically disturbed during construction of restoration projects permitted under the Order, from activities such as dewatering, excavation, fill, and placement of materials. This disturbance could affect the juvenile and adult life stages of special-status fish species by causing direct injury or mortality, or by displacing fish or disrupting their normal behaviors. The size and extent of in-water construction activities would vary by the restoration objective. However, most of these activities would be discrete, affecting only localized areas.

All types of restoration projects requiring ground disturbance in or adjacent to streams or wetlands could increase turbidity and levels of suspended sediment within the project worksites and downstream. The resuspension and deposition of instream sediments would be an indirect impact of operating construction equipment and excavating and placing materials in the river. Short-term increases in turbidity and suspended sediment levels during construction may negatively affect fish populations and other aquatic organisms temporarily by reducing the availability of food, reducing feeding efficiency, and increasing the exposure of fishes to sediment released into the water column.

Several types of restoration projects permitted under the Order could generate noise, motion, and vibration from the use of heavy equipment, including pile driving and/or through the use of explosives for small dam removal.

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Potential construction activities (e.g., removing or adding structures, modifying the morphology and topography of streams and banks) may alter bank and riparian habitat through removal of native and nonnative vegetation, excavation, and grading. Numerous other project types, such as restoring off-channel, floodplain, wetland, or riparian habitat, would create additional riparian vegetation that would enhance fish habitat.

Using herbicides to remove invasive plant species could cause short-term impacts on special-status fish species. These potential indirect impacts include the short-term loss of shading and habitat provided by the invasive plants. To minimize these potential impacts, restoration projects would implement general protection measures that require the use of best practices (e.g., spraying practices) and herbicides and/or surfactants containing labels approving their use within or adjacent to waterways.

Heavy equipment and construction materials would be required for the construction of several types of restoration projects. Equipment refueling, fluid leakage, and maintenance activities in and near stream channels pose some risk of contamination by toxic chemicals and potential take.

In addition, water that comes into contact with wet cement and other construction materials during project construction could adversely affect water quality and may harm special-status fish species. If not properly contained, contaminants (e.g., fuels, lubricants, hydraulic fluids, construction materials) could be introduced into the water system, either directly or through surface runoff. Contaminants may be toxic to fish or cause altered oxygen diffusion rates and acute and chronic toxicity to aquatic organisms, thereby reducing growth and survival.

Dewatering entails placing a temporary barrier, such as a cofferdam, to isolate the work area; rerouting streamflow around the dewatered area; pumping water out of the isolated work area; relocating fish from the work area; and restoring the project site upon project completion. The life stage of fishes most likely to be exposed to the potential impacts of dewatering would be juveniles. However, the number of juvenile fish present at a given project site may be low. Migrating adult fish may be present, but in most cases, their mobility would enable them to avoid construction areas.

Any fish present during installation of a cofferdam could be injured by the in-water construction activity itself or could become trapped behind the cofferdam. Fish trapped behind a cofferdam would experience degraded water quality (e.g., higher temperatures, less dissolved oxygen). They would also become entrained in or impinged on the pumps used for dewatering or would become stranded after dewatering is complete.

Special-status fish species may be present in the study area, and the construction of restoration projects permitted under the Order has the potential to disturb habitat for these species.

Implementing restoration projects permitted under the Order could result in construction-related disturbance and associated impacts on special-status fish species. However, the general protection measures and species protection measures identified above would avoid and/or reduce potential impacts to a **less-than-significant** level.

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The only exception would be for the use of explosives for small dam removal. As described in Chapter 2 and above, in order to be considered a project eligible for the Order, the use of explosives for small dam removal would have to be justified due to site-specific conditions, including equipment access difficulties. Further, the use of explosives must be conducted in dry or dewatered conditions and potential harm to fish from the explosives blast and pressure waves would need to be analyzed. Incorporation of general protection measures and species protection measures identified above would avoid and/or reduce in most cases, however, because the exact details of blasting are yet to be determined for a given project, analysis of this type of activity is not possible at this time. As a result, the use of explosives for small dam removal would be a **significant and unavoidable impact**.

Impact Category: Cultural Resources

Impact 3.7-1: Implementing future restoration projects permitted under the Order could cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines Section 15064.5.

As part of the State Water Board or Regional Board's issuance of a NOA for a restoration project under the Order, compliance with Mitigation Measure CUL-1 would be required when applicable to a given project. Implementation of this mitigation measure would be the responsibility of the project proponent(s) under the jurisdiction of the State Water Board, appropriate Regional Board, or other authorizing regulatory agency.

Mitigation Measure CUL-1: Conduct Inventory and Significance Evaluation of Architectural Resources

Findings (Effects of Project Construction Activities, Constructed Facilities, and O&M of those Facilities): Project construction and constructed facilities and O&M for restoration projects permitted under the Order are the types of activities that have the potential to affect historical (i.e., architectural) resources. However, the exact details, including precise locations, of any such activities have yet to be determined. Therefore, it is not known whether implementing the restoration projects permitted under the Order would affect any architectural resources. Factors necessary to identify specific impacts on historical resources include the project's design, footprint, and type; the precise location of construction activities and facilities; and the type and location of operational activities.

Therefore, even with implementation of Mitigation Measure CUL-1, this impact would be **significant and unavoidable**.

Impact 3.7-2: Implementing future restoration projects permitted under the Order could cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5.

As part of the State Water Board or Regional Board's issuance of a NOA for a restoration project under the Order, compliance with Mitigation Measure CUL-2 and CUL-3 would be required when applicable to a given project. Implementation of this mitigation measure would be the responsibility of the project proponent(s) under the jurisdiction of the State Water Board, appropriate Regional Board, or other authorizing regulatory agency:

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Mitigation Measure CUL-2: Conduct Inventory and Significance Evaluation of Archaeological Resources

Mitigation CUL-3: Implement Measures to Protect Archaeological Resources during Project Construction or Operation

Findings (Effects of Project Construction Activities, Constructed Facilities, and O&M of those Facilities): Construction activities and constructed facilities and O&M for restoration projects permitted under the Order are the types of activities that have the potential to affect archaeological resources. However, the exact details, including precise locations, of any such activities have yet to be determined. Therefore, it is not known whether implementing restoration projects permitted under the Order would affect any archaeological resources. Factors necessary to identify specific impacts on archaeological resources include the project's design, footprint, and type; the precise location of construction activities and facilities; and the type and location of O&M activities.

Therefore, even with implementation of Mitigation Measures CUL-2 and CUL-3, this impact would be **significant and unavoidable**.

Impact 3.7-3: Implementing future restoration projects permitted under the Order could disturb any human remains, including those interred outside of dedicated cemeteries.

As part of the State Water Board or Regional Board's issuance of a NOA for a restoration project under the Order, compliance with Mitigation Measure CUL-2, CUL-3, and CUL-4 would be required when applicable to a given project. Implementation of this mitigation measure would be the responsibility of the project proponent(s) under the jurisdiction of the State Water Board, appropriate Regional Board, or other authorizing regulatory agency:

Mitigation Measure CUL-2: Conduct Inventory and Significance Evaluation of Archaeological Resources

Mitigation CUL-3: Implement Measures to Protect Archaeological Resources during Project Construction or Operation

Mitigation Measure CUL-4: Implement Measures to Protect Human Remains during Project Construction or Operation

Findings (Effects of Project Construction Activities, Constructed Facilities, and O&M of those Facilities): Construction activities and constructed facilities and O&M by project proponents for restoration projects permitted under the Order are the types of activities that have potential to affect human remains. However, the exact details, including precise locations, of any such activities have yet to be determined. Therefore, it is not known whether implementing restoration projects permitted under the Order would affect any human remains, either known or unknown, including those associated with archaeological resources. Factors necessary to identify specific impacts on human remains include the project's design, footprint, and type; the precise location of construction activities and facilities; and the type and location of operational activities.

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For these reasons, even with implementation of Mitigation Measures CUL-2, CUL-3, and CUL-4, this impact is **significant and unavoidable**.

Impact Category: Geology and Soils

Findings: The types of restoration projects permitted under the Order would not include the use of septic tanks or alternative wastewater disposal because the projects would not increase the demand for wastewater disposal from construction or operation crews or occupied structures. Therefore, impacts related to this threshold of significance are not addressed further.

Impact 3.9-5: Implementing future restoration projects permitted under the Order could directly or indirectly result in the loss of a unique paleontological resource or geological resource.

As part of the State Water Board or Regional Board's issuance of a NOA for a restoration project under the Order, compliance with Mitigation Measure GEO-9 and GEO-10 would be required when applicable to a given project. Implementation of this mitigation measure would be the responsibility of the project proponent(s) under the jurisdiction of the State Water Board, appropriate Regional Board, or other authorizing regulatory agency.

Mitigation Measure GEO-9: Conduct a General Project-Level Analysis

Mitigation Measure GEO-10: Conduct Worker Training

Findings (Effects of Project Construction Activities, Constructed Facilities, and O&M of those Facilities): To determine the effects of construction activities and constructed facilities, paleontological or geological resources would need to be known. Also, restoration projects permitted under the Order could directly or indirectly result in the loss of a unique paleontological resource or geological resource, if projects are located on or near areas where sediment with moderate to high paleontological sensitivity occurs. The potential exists for restoration projects permitted under the Order to result in adverse effects on paleontological or geological resources.

For these reasons, even with implementation of Mitigation Measures GEO-9 and GEO-10, this impact is **significant and unavoidable**.

Impact Category: Hazards and Hazardous Materials

Impact 3.10-3: Future restoration projects permitted under the Order could be implemented within 2 miles of an airport, resulting in a safety hazard.

To reduce the impacts of restoration projects permitted under the Order that would be located within 2 miles of a public or private airport, the Order includes the following general protection measure:

◆ **GPM-4: Construction Hours**

As part of the State Water Board or Regional Board's issuance of a NOA for a restoration project under the Order, compliance with Mitigation Measure HAZ-4 would be required when applicable to a given project. Implementation of this mitigation measure would be

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the responsibility of the project proponent(s) under the jurisdiction of the State Water Board, appropriate Regional Board, or other authorizing regulatory agency:

Mitigation Measure HAZ-4: Establish Airport Operation Area Buffer Zones

Findings (Effects of Project Construction Activities, Constructed Facilities, and O&M of those Facilities): Construction of restoration projects, constructed facilities (natural or artificial infrastructure), and operations and maintenance of those facilities permitted by the Order could be located within 2 miles of an airport. Because the exact locations of projects that would be permitted by the Order are not yet determined, it is possible that some projects could be constructed within 2 miles of an airport.

The level of significance of a potential impact of a restoration project permitted under the Order would depend, in large part, on its proximity to an airport land use plan or on whether it would be within 2 miles of a public or private airport. The necessary factors to identify airport safety risks include the location of the project relative to an airport. The potential would exist for restoration projects to create safety hazards by placing people at construction sites near airports, and to result in increased collisions between aircraft and wildlife near an airport or airport land use plan.

For these reasons, even with implementation of Mitigation Measure HAZ-4, this impact is **significant and unavoidable**.

Impact Category: Land Use and Planning

Impact 3.12-1: Restoration projects permitted under the Order could conflict with a land use plan, policy, or regulation adopted to avoid or mitigate an environmental effect.

Findings (Effects of Constructed Facilities and O&M of those Facilities): The majority of constructed facilities for restoration projects permitted under the Order would not conflict with a land use plan, policy, or regulation adopted to avoid or mitigate environmental effects. Other restoration projects could result in new long-term or permanent features that could conflict with land use plans, policies, or regulations adopted to avoid or mitigate environmental effects. Restoring and enhancing off-channel/side-channel habitat would involve reconnecting and creating side-channel, alcove, oxbow, pond, off-channel, floodplain, and other habitats, and potentially removing off-channel fill and plugs. Work may include removing or breaching levees, berms, and dikes; excavating channels; constructing wood or rock tailwater control structures; and constructing large wood habitat features. Impacts associated with construction activities and some operation activities have the potential to conflict with land use policies, such as those related to conversion of agricultural land and reduction of noise impacts. Therefore, constructed facilities and operation associated with restoration projects permitted under the Order could result in conflicts with a land use plan, policy, or regulation adopted to avoid or mitigate an environmental effect. In these limited instances, compliance with required permits and approvals would reduce impacts associated with projects to a less than significant level. However, if there is no jurisdiction by the agency and no requirement to obtain a permit, land use policy conflicts could occur. Because there could be potential adverse changes to land use

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and planning due to the construction of restoration projects, this impact would be **significant and unavoidable**.

Impact 3.12-2: Implementing restoration projects permitted under the Order could physically divide an established community.

Findings (Effects of Constructed Facilities and O&M of those Facilities):

Restoration projects permitted under the Order (e.g., new fish screens and floodplain restoration) likely would not physically divide an established community. These projects are generally located on the periphery of a community. They would not result in a permanent division of established communities, isolate industry from communities with services, or disrupt development patterns that would adversely affect the accessibility of the area.

Some facilities outside of communities could isolate developed areas from urban services. For example, removing roads for construction of a new setback levee might isolate agricultural areas from facilities and communities that provide services and markets to farmers. Also, periodic inundation of roadways from flood widening projects could preclude or inhibit access between communities and services.

Because the extent and location of restoration projects permitted under the Order are yet to be determined, it is not possible to conclude that the restoration projects would not physically divide an established community. Therefore, this impact would be **significant and unavoidable**.

Impact Category: Noise

Impact 3.14-1: Implementing future restoration projects permitted under the Order could result in a temporary or permanent increase in ambient noise levels in excess of standards established in applicable plans and ordinances.

The following general protection measures may apply to noise impacts:

- ◆ **GPM-2: Construction Work Windows**
- ◆ **GPM-3: Construction Hours**
- ◆ **GPM-6: Work Area and Speed Limits**
- ◆ **IWW-9: In-Water Pile Driving Plan for Sound Exposure**

As part of the State Water Board or Regional Board's issuance of a NOA for a restoration project under the Order, compliance with Mitigation Measure NOISE-1 would be required when applicable to a given project. Implementation of this mitigation measure would be the responsibility of the project proponent(s) under the jurisdiction of the State Water Board, appropriate Regional Board, or other authorizing regulatory agency:

Mitigation Measure NOISE-1: Minimize Noise Conflicts

Findings (Effects of Project Construction Activities): Construction activities for future restoration projects permitted under the Order could require the use of haul trucks and heavy equipment. Depending on the types and models of equipment used for construction, typical noise levels for these kinds of construction equipment would range from 80 to 95 dBA maximum noise level at 50 feet (FTA 2018). Most construction

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activities would occur during daylight hours; however, in rare cases, some activities, expedited projects, and projects where the construction schedule is nearing the prohibited work time frames (e.g., for biological species) may require continuous daytime and nighttime work. Also, several cities and counties have exempted construction activities from restrictive noise limits during specified daytime hours, while others have placed numeric limits on noise generated during construction.

Most restoration projects would likely occur far from residential areas and other sensitive receptors and would take place during the day. However, some construction-related activities may occur close to receptors and/or at night (e.g., if construction must be completed before a blackout period for a sensitive species).

However, the specific locations of restoration projects that would be permitted under the Order are yet to be determined. Therefore, even with implementation of general protection measures, some construction activities could result in temporary or permanent increases in ambient noise levels. Actual exposure levels would depend on multiple variables such as the intensity of construction activity, the distance of sensitive receptors to the noise source, and any structures or topography that might intervene and affect noise attenuation.

For these reasons, even with implementation of Mitigation Measure NOISE-1, this impact is **significant and unavoidable**.

Impact 3.14-2: Implementing future restoration projects permitted under the Order could expose sensitive receptors to excessive groundborne vibration.

The following general protection measures may apply to noise impacts:

◆ **IWW-9: In-Water Pile Driving Plan for Sound Exposure**

As part of the State Water Board or Regional Board's issuance of a NOA for a restoration project under the Order, compliance with Mitigation Measure NOISE-1 would be required when applicable to a given project. Implementation of this mitigation measure would be the responsibility of the project proponent(s) under the jurisdiction of the State Water Board, appropriate Regional Board, or other authorizing regulatory agency:

Mitigation Measure NOISE-1: Minimize Noise Conflicts

Findings (Effects of Project Construction Activities): Construction activities for restoration projects permitted under the Order could require the use of heavy equipment such as pile drivers, bulldozers, haul trucks, and jackhammers, and explosives. These types of equipment or processes could generate groundborne vibration at levels ranging from 0.035 to 1.518 inches per second PPV at 25 feet and 79–112 VdB at 25 feet (FTA 2018) and could expose sensitive receptors to elevated vibration levels.

Vibration levels typically tend to dissipate rapidly as distance increases from the vibration source. For example, stockpiling of materials may require constructing piers for barge landings, and pier construction may use pile drivers that could generate 1.518 inches per second PPV and 112 VdB at 25 feet. Applying FTA's recommended procedure for determining vibration levels at various distances from the source, the predicted most-

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to be done. Public health, recreation, economic development, and overall quality of life are not only compatible with but dependent upon the continued vigorous pursuit of California's environmental goals (Sustainable Conservation 2011).

Programmatic permits and authorizations for restoration projects, such as the Order, are one of the most effective approaches for enabling the faster approval of environmentally beneficial projects while ensuring that essential environmental protections are in place and funding is spent effectively on project implementation. Healthy, revitalized rivers and other waterways improve water quality and supply so that people, farms, and wildlife have the water they need to thrive. As Californians face ever more extreme climate changes and environmental challenges, each effort to restore and revitalize aquatic habitat adds up to a meaningful win for the entire state (Sustainable Conservation 2022).

The restoration projects permitted under the Order contribute to and are consistent with meeting California's environmental goals and providing environmental benefits to the residents of California.