

Attachment A

California Environmental Quality Act Findings and Mitigation Monitoring and Reporting Plan

Oroville Facilities

August 2010

The Final Environmental Impact Report (FEIR) for the Federal Energy Regulatory Commission (FERC) relicensing of Department of Water Resources' (DWR) Oroville Facilities (FERC No. 2100) identified one or more significant environmental effects of the project on water resources. CEQA prohibits an agency from approving a project for which significant effects have been identified, unless the agency can make one or more of a set of three findings set forth in Public Resources Code section 21081:

- (1) Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment.
- (2) Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
- (3) Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report. (See also Cal. Code Regs., tit. 14, § 15091.)

When significant effects are subject to a finding under paragraph (3) of subdivision (a), the public agency must find that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment, if the agency approves the project. (Pub. Resources Code, § 21081, subd. (b).)

CEQA requires public agencies to prepare a program for monitoring or reporting on the revisions which it requires in the project and the measures it has imposed to mitigate or avoid significant environmental effects. (CEQA Guidelines § 15097)

The State Water Resources Control Board (State Water Board) is a responsible agency for the Oroville Facilities relicensing. Under Public Resources Code section 21002.1, subdivision (d), when issuing an approval for an aspect of a project for which a lead agency has performed CEQA review, a responsible agency considers only the aspects of the project that the agency is required by law to carry out or approve. The State Water Board is charged with issuing water quality certification for the proposed relicensing of the Oroville Facilities, and these CEQA findings and Mitigation Monitoring and Reporting Plan concern water resource impacts identified in the FEIR.

DWR prepared an Environmental Impact Report (EIR) for the relicensing of the Oroville Facilities. The following findings and mitigation monitoring and reporting plan refer to impacts as numbered in the EIR. It is divided into Program-Level and Project-Level sections as represented in the EIR.

Program Level

Water Quality

Impact 5.2.2-a: Violate any water quality standards or waste discharge requirements; and **Impact 5.2.2-c:** Otherwise substantially degrade surface water quality. The Gravel Supplementation and Improvement Program, Channel Improvement Program, Structural Habitat Supplementation and Improvement Program, Fish Weir Program, and Riparian and Floodplain Improvement Program include construction projects or instream work with the potential to cause a discharge or impact water quality standards.

Mitigation Measure 1: Measures are needed to avoid or reduce the impact from construction on water quality. To avoid or minimize the short term construction-related impacts to water quality, DWR shall comply with the Best Management Practices (attached) and develop a water quality monitoring and reporting program for approval by the Deputy Director for Water Rights (Deputy Director) prior to beginning construction. The Deputy Director may require modifications as part of the approval. If, within 60 days, the Deputy Director does not either act on the request for approval or identify the need for additional information or actions, the program shall be deemed approved. The water quality monitoring and reporting program shall be designed to ensure compliance with the water quality standards in the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins. DWR shall submit a Notice of Intent (NOI) to comply with the General Permit for Storm Water Discharges Associated with Construction Activity, and a Storm Water Pollution Prevention Plan, to the Central Valley Regional Water Quality Control Board. A copy of this application and Storm Water Pollution Prevention Plan (SWPPP) shall be submitted to the Deputy Director. DWR shall monitor compliance with the BMPs, SWPPP, and approved water quality monitoring plan during construction and report any violations within 24 hours to the Regional Water Quality Control Board and the Deputy Director. DWR shall provide a final report summarizing water quality monitoring to the Deputy Director within 6 months after the completion of construction.

Implementation of Mitigation Measure 1 and compliance with Conditions S2, S3, S4, S5, and S6 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.2.2-b: Substantially alter an existing drainage pattern of the site or area, including alteration of the course of a stream or river, in a manner that would result in

substantial erosion, siltation on- or off-site, or otherwise substantially degrade water quality. The Channel Improvement Program, Flow/Temperature to Support Anadromous Fish, and Riparian and Floodplain Improvement Program include construction that could result in impacts to surface water quality.

Implementation of Mitigation Measure 1 and compliance with Conditions S3, S6, and S8 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Aquatic Resources

Impact 5.4-a: Interfere substantially with the movement of native resident or migratory fish, substantially reduce the habitat of a fish species, or cause a fish population to drop below self-sustaining levels. Potential future facilities modifications to reduce water temperature may have an adverse impact on warmwater fisheries habitat quality in Thermalito Afterbay. This potential impact would be fully evaluated in subsequent project-specific CEQA analysis, and will vary depending on which facility modification option is chosen. However, bass are a very hardy species, and none of the facilities modification options under consideration would put the population into jeopardy. Potential future facilities modifications to reduce water temperature may have an adverse impact on black bass habitat quality in Thermalito Afterbay. This potential impact will be fully evaluated in subsequent project-specific CEQA analysis. Construction-related impacts on aquatic resources for black bass would be short-term.

Implementation of Mitigation Measure 1 and compliance with Condition S8 will reduce the short-term, construction-related impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the short-term, construction significant environmental effect as identified in the FEIR.

Mitigation Measure 2: Measures are necessary to reduce or mitigate impacts to black bass from reduced water temperature. Construction and operation of potential facilities modification at Thermalito Afterbay to reduce water temperature may impact black bass. Plans for construction of facilities modifications required in Condition S8 must include measures to reduce or mitigate potential habitat degradation on black bass [or an explanation of why such measures are infeasible](#).

Implementation of Mitigation Measure 2 and compliance with Condition S8 will avoid or substantially lessen the long-term significant environmental effect on warm-water fisheries. These impacts are not likely to be large; however, without knowing what project will ultimately be implemented, it is not possible to ensure that the effect will be less than significant.

Facility modification is necessary to protect the COLD beneficial use. The Basin Plan for the Sacramento River watershed lists the river segment that includes Thermalito Afterbay as supporting both COLD and WARM beneficial uses. The Basin Plan provides that, where both COLD and WARM beneficial uses are listed, the COLD beneficial use should be preferentially protected. The EIR did not identify an alternative to protect the COLD beneficial use without facility modification. Specific social considerations make infeasible the mitigation measures or alternatives identified in the environmental impact report.

Impact 5.4-b: Cause a substantial decrease in the prey base for any species identified as a candidate, sensitive, or special-status species. Construction of the Gravel Supplementation and Improvement Program, Channel Improvement Program, Structural Habitat Supplementation and Improvement Program, Fish Weir Program, and Riparian and Floodplain Improvement Program could have short-term impacts on macroinvertebrates.

Implementation of Mitigation Measure 1 and compliance with Conditions S2, S3, S4, S5, and S6 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.4-c: Result in substantial habitat degradation for fisheries or aquatic species identified by DFG, NMFS, or USFWS as a candidate, sensitive, or special-status species. Implementation of the Gravel Supplementation and Improvement Program, Channel Improvement Program, Structural Habitat Supplementation and Improvement Program, Fish Weir Program, Riparian and Floodplain Improvement Program, and Flow/Temperature to Support Anadromous Fish could result in short-term construction-related impacts to aquatic resources. Implementation of the fish segregation weirs will reduce the currently available spawning habitat for fall-run Chinook salmon; however, this impact would be more than offset by the Lower Feather River Habitat Improvement Plan through gravel supplementation and side channel creation. Construction-related impacts on Chinook salmon, steelhead, and green sturgeon would be short-term.

Implementation of Mitigation Measure 1 and compliance with Conditions S2, S3, S4, S5, S6, and S8 will reduce the impacts to water quality from construction to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Wildlife Resources

Impact 5.5.4.1-a: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by DFG or USFWS. The Gravel Supplementation and Improvement Program, Channel Improvement Program, Structural Habitat Supplementation and Improvement Program, Fish Weir Program, and Recreation Management Plan have the potential to significantly impact bald eagle, Swainson's hawk, and giant garter snake habitat. The Gravel Supplementation and Improvement Program could have a potentially significant impact on bald eagle and Swainson's hawk nesting habitat. The Gravel Supplementation and Improvement Program, Channel Improvement Program, Structural Habitat Supplementation and Improvement Program, Fish Weir Program, Construction and Recharge of Brood Ponds, Provisions for Upland Food for Nesting Waterfowl, and Recreation Management Plan all have the potential to significantly impact giant garter snake. Staging areas for the Gravel Supplementation and Improvement Program could impact valley elderberry longhorn beetle, giant garter snake habitat, and bald eagle habitat.

Mitigation Measure 3: Measures are necessary to avoid or minimize the impact from habitat loss resulting from new construction on any species identified as a candidate, sensitive, or special-status species. The following actions shall be implemented to reduce the impact of habitat losses under the Proposed Project:

- DWR will consult with U.S. Fish and Wildlife Service and the Department of Fish and Game prior to beginning construction and follow the terms and conditions in the Biological Opinion in effect at the time.
- Surveys [to identify candidate, sensitive, or special status species](#) will be conducted prior to beginning construction [as required by the U.S. Fish and Wildlife Service and the Department of Fish and Game](#).
- Projects will be designed for spatial and/or temporal avoidance of species identified as a candidate, sensitive, or special-status species by the U.S. Fish and Wildlife Service and the Department of Fish and Game
- Projects will not occur during applicable limited operating periods to avoid impacts to nesting bald eagles and Swainson's hawk unless a variance is approved by the U.S. Fish and Wildlife Service and the Department of Fish and Game.
- Projects will be designed to minimize direct habitat loss. Key wildlife habitat elements will be retained to the extent possible including snags, woody dead and down material, live trees containing cavities, and shrub cover.
- Retain screening vegetation to limit indirect habitat loss and wildlife disruption/displacement.
- Retain mature trees and minimize use of non-native landscaping.
- Minimize recreational development in riparian or wetland habitats.
- Revegetate areas of disturbed soil.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

DWR shall be responsible for ensuring compliance with each of these measures during construction, and shall submit a final report to the Deputy Director within 6 months of completion of construction.

Implementation of Mitigation Measure 3 and compliance with Conditions S2, S3, S4, S5, S6, S8, S16, S17, S18, S19, and S22 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.5.4.1-b: Interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Construction and operation of the fish weir may impact the movement of the highly aquatic western pond turtle, a State Species of Special Concern.

Mitigation Measure 4: This measure is necessary to ensure the fish weir will not block the upstream and downstream movement of western pond turtles. DWR will design and operate the fish weir to allow turtle passage without allowing salmon passage. The design will allow shoreline/shallow-water passage during periods of stable flow. The design must be submitted to the Deputy Director for approval. The Deputy Director may require modifications as part of the approval. If, within 60 days, the Deputy Director does not either act on the request for approval or identify the need for additional information or actions, the design shall be deemed approved. Within one year after completion of construction DWR must evaluate the performance of the weir for turtle passage and a final report on the testing must be submitted to the Deputy Director within six months of the performance testing.

Implementation of Mitigation Measure 4 and compliance with Condition S5 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.5.4.1-e: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the DFG or USFWS. The Gravel Supplementation and Improvement Program has the potential to result in short term impacts to heron/egret rookeries through direct habitat loss and disturbance associated with construction access, staging, and in-water construction. Construction activities associated with the Gravel Supplementation and

Improvement Program, Channel Improvement Program, Structural Habitat Supplementation and Improvement Program, and Fish Weir Program could impact rookeries.

Implementation of Mitigation Measures 1 and 3 and compliance with Conditions S2, S3, S4, and S5 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.5.4.1-f: Substantial habitat degradation for wildlife species identified by U.S. Fish and Wildlife Service as Threatened or Endangered Species. Construction activities associated with the Gravel Supplementation and Improvement Program, Channel Improvement Program, Structural Habitat Supplementation and Improvement Program, and Fish Weir Program may have the potential for minor impacts on wildlife resources, including special-status species, which may include nesting bald eagles, Swainson's hawk, valley elderberry longhorn beetles, giant garter snakes, and California red-legged frogs, and their associated habitats. Staging areas and river access improvements required for the Gravel Supplementation and Improvement Program could impact valley elderberry longhorn beetle, giant garter snake habitat, and bald eagle and Swainson's hawk nesting habitat. Giant garter snake habitat losses may be associated with North Forebay fishing access improvements and the creation of a sandy beach at Larkin Road. Wildlife habitat enhancements and recreational developments at the Thermalito Complex could also affect habitat for Threatened or Endangered Species.

Implementation of Mitigation Measure 3 and compliance with Conditions S2, S3, S4, S5, S6, S17, S18, S19, S20, and S21 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.5.4.1-g: Result in a substantial impact on a wildlife species that is listed by the Department of Fish and Game or U.S. Fish and Wildlife Service as a Candidate, Sensitive, or Special-Status Species, or on its Designated Habitat. The Gravel Supplementation and Improvement Program has the potential to result in short-term adverse impacts on riparian and riverine habitats and species associated with these habitats through direct habitat loss and disturbance associated with construction access, staging, and in-water construction. These species could include American bittern, American white pelican, Barrow's goldeneye, black tern, California gull, California thrasher, Cooper's hawk, double-crested cormorant, osprey, yellow warbler, yellow-breasted chat, western pond turtle, and river otter. The Fish Weir Program has the potential to result in a substantial impact on western pond turtle by impairing upstream movement.

Implementation of Mitigation Measures 3 and 4 and compliance with Conditions S2 and S5 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Botanical Resources

Impact 5.5.4.2-a: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the DFG or USFWS. The Proposed Project includes a number of actions relating to environmental and recreational improvements that may affect riparian/wetland resources and special plant habitats. Implementation of the Gravel Supplementation and Improvement Program, the Channel Improvement Program, the Structural Habitat Supplementation and Improvement Program, the Fish Weir Program, the Riparian and Floodplain Improvement Program, Flow/Temperature to Support Anadromous Fisheries, and the Lake Oroville Warm Water Fishery Habitat Improvement Program would disturb the streambed, stream bank, and adjacent riparian/wetland areas. These projects would have short-term significant impacts on sensitive riparian/wetland habitats. These short-term impacts would be considered significant due to direct loss of these resources; however, the projects causing these short-term impacts are designed to ultimately improve these resources through restoration, creation, rehabilitation, and enhancement. The long-term effects of these actions will be beneficial.

Mitigation Measure 5: The following measures are necessary to avoid or reduce the impacts to riparian habitat or sensitive natural communities. Conditions S2, S3, S4, S5, S6, S8, and S10 require the submission of plans to the Deputy Director for modification and approval. The plans must include the following elements:

- Conduct pre-project surveys.
- Design projects to avoid disturbance and minimize direct loss.
- Use fencing to prevent access/disturbance to adjacent wetland/sensitive areas from construction and vehicles.
- Wetland/sensitive areas that are disturbed will be revegetated with appropriate native species.
- Use erosion control and stabilization devices to prevent sediment from entering wetland and riparian sites.
- Stockpile soil for reuse in areas of special resources to reinoculate the soils and seed bank.
- Use weed free straw or other materials to control erosion.

DWR shall submit a report to the Deputy Director within 6 months of the completion of construction demonstrating that each of these measures was addressed and that quantifies the impacts to riparian habitat and sensitive communities.

Implementation of Mitigation Measures 1 and 5 and compliance with Condition S1 will substantially lessen these short-term impacts. Despite implementation of these mitigation measures there will still be short-term significant impacts. While these projects will result in a short-term reduction in sensitive riparian/wetland habitat, there will ultimately be long-term increases in habitat through restoration, creation, rehabilitation, and enhancement. Long-term, these programs will benefit sensitive riparian/wetland habitat. The EIR did not identify any alternatives that will achieve benefits without short-term impacts. Specific social considerations make infeasible the mitigation measures or alternatives identified in the EIR.

Impact 5.5.4.2-c: Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, or hydrological interruptions, or other means. The Proposed Project includes a number of actions relating to environmental and recreational improvements that may affect jurisdictional waters. Implementation of the Gravel Supplementation and Improvement Program, the Channel Improvement Program, the Structural Habitat Supplementation and Improvement Program, the Fish Weir Program, the Riparian and Floodplain Improvement Program, Flow/Temperature to Support Anadromous Fisheries, and the Lake Oroville Warm Water Fishery Habitat Improvement Program would disturb the streambed, stream bank, and adjacent riparian/wetland areas. These projects would have short-term significant impacts on jurisdictional waters of the United States. These short-term impacts would be considered significant due to direct loss of these resources; however, these projects would be designed to ultimately improve these resources through restoration, creation, rehabilitation, and enhancement. The long-term effects of these actions would be considered beneficial and no mitigation would be required.

Implementation of Mitigation Measures 1 and 5 and compliance with Condition S1 will substantially lessen these short-term impacts. Despite implementation of these mitigation measures there will still be short-term significant impacts. While these projects will result in a short-term reduction in sensitive riparian/wetland habitat, there will ultimately be long-term increases in habitat through restoration, creation, rehabilitation, and enhancement. Long-term, these programs will benefit sensitive riparian/wetland habitat. The EIR did not identify any alternatives that will achieve benefits without short-term impacts. Specific social considerations make infeasible the mitigation measures or alternatives identified in the EIR.

Impact 5.5.4.2-d: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the Department of Fish and Game or U.S. Fish and Wildlife Service. Implementation of the Gravel Supplementation and Improvement Program, the Channel Improvement Program, the Structural Habitat Supplementation and Improvement Program, and the Fish Weir Program have the potential for minor impacts on special plant species from disturbance associated with access and staging areas.

Implementation of Mitigation Measures 1, 3, and 5 and compliance with Conditions S2, S3, S4, S5, and S6 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.5.4.2-e: Effects on Natural Communities, Wildlife Habitat, and Special-Status Species and Their Habitats from Invasive Plant Species. Implementation of the Gravel Supplementation and Improvement Program, the Channel Improvement Program, the Structural Habitat Supplementation and Improvement Program, the Fish Weir Program, and the Riparian and Floodplain Improvement Program would disturb the streambed, stream bank, and adjacent riparian/wetland areas and may potentially promote the establishment of invasive species by ground disturbance activities.

Implementation of Mitigation Measures 3 and 5 and compliance with Conditions S2, S3, S4, S5, and S6 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Recreational Resources

Impact 5.7-a: Cause a direct or indirect substantial physical degradation of either public recreation uses or public recreational facilities. The Structural Habitat Supplementation and Improvement Program includes placement of large woody debris (LWD) and boulders in the Feather River to improve habitat for fish. During placement of LWD and boulders, areas would be closed to recreation, creating a short-term impact to river users. Once placed, LWD could be a hazard to boats (hulls, anchor lines, and propellers) and could be a drowning hazard to swimmers and waders. Within the Structural Habitat Program, safety issues would be addressed to minimize risk to human safety. The Instream Structural Placement Plan would include an analysis of safety issues to avoid unreasonable risk to the safety of river users.

The Fish Weir Program includes the installation of two fish barrier weirs within the Feather River in two phases. Construction of the two weirs would likely cause short-term impacts on recreation; however, the level of impact cannot be identified without further details on weir construction. The weirs would have provisions for manually passing boats over the weirs, and therefore the weirs would not prevent boating, although they would be impediments, the severity of which would be based on final location and design. Most boat anglers focus on the Thermalito Afterbay Outlet, but some boaters travel the Feather River from Riverbend Park south toward the Thermalito Afterbay Outlet. Use of this section of the river may also increase due to the enhanced and now publicly accessible boat ramp at Riverbend Park. A boating compatibility analysis is also part of this measure and would identify impacts and ways

to minimize impacts on boating from the two weirs. Installation of two fish weirs would also lead to a “No Fishing Zone” immediately above and below the weirs, which would decrease available fishing area. However, this would be a small decrease compared to the amount of area available for fishing along the Feather River both within and outside of the FERC Project boundary.

The Lake Oroville Warm Water Fishery Habitat Improvement Program would create additional habitat for fish, primarily within the fluctuation zone of Lake Oroville. Construction of new habitat could provide obstacles to boating (boulders, weighted pipes, etc.) and may affect shore access from the water, depending on where enhancements are located around the reservoir. Some conflict with informal shoreline swimming locations may occur, given that areas of gradually sloping shoreline are favorable for both swimming and habitat enhancement. Riprap and other materials placed in the fluctuation zone may also affect the recreation setting, as the reservoir draws down and habitat enhancements become visible within the fluctuation zone. However, enhanced warm water fish habitat would benefit recreational angling opportunities in Lake Oroville, and the percentage of the fluctuation zone affected would be small.

The Flow/Temperature to Support Anadromous Fish proposed water temperature targets would likely be unnoticeable to anglers and boaters within the Feather River. The river is not commonly used for body water contact recreation, but is mainly used by boaters and shoreline anglers wearing waders. Water temperatures are already cold and a change of a few degrees colder would likely not be noticeable to most recreationists. The Proposed Project also includes future studies that would evaluate different ways to address temperature habitat needs for anadromous fish in the Low Flow Channel (LFC) and the High Flow Channel of the Feather River. Potential future facility modifications and operational changes resulting from this study would be subject to additional CEQA review and analysis.

Construction of the Channel Improvement Program, Riparian and Floodplain Improvement Program, and many proposed recreation facilities could cause short-term disruptions to recreation use and activities. Disruptions would likely only last during construction/implementation and would not continue once construction/implementation was completed (except for programs and specifics mentioned above and in the project-level impact section).

Mitigation Measure 6: Measures are needed to avoid or reduce impacts to recreational users and public recreation facilities. New facilities or projects must be designed to reduce impacts to recreational users and facilities (both water contact and non-contact). Conditions S3, S4, S5, S6, S8, and S10 require submission of plans to the Deputy Director for approval. The Deputy Director may require modifications as part of the approval. These plans must include an analysis of safety issues to avoid unreasonable risk to the safety of river users.

Implementation of Mitigation Measure 6 and compliance with Conditions S2, S3, S4, S5, S6, S8, and S10 will reduce the impacts to recreational resources to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Cultural Resources

Impact 5.8-a: Cause a substantial adverse change in the significance of a historical resource as defined in State CEQA Guidelines Section 15064.5.

Impact 5.8-b: Cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5. The continuation of certain operations and maintenance activities, construction of new or improved facilities, implementation of new programs involving ground disturbance, and actions that would increase public access to sensitive locations could result in the loss of or damage to significant archaeological sites, ethnographic resources, and historic structures.

Significant archaeological sites, ethnographic resources, and historic structures could be lost or substantially damaged through the construction of new facilities, modifications to the licensed power facilities (e.g., diversion canal around Thermalito Afterbay and Alternate Afterbay Channel and Outlet), and habitat improvement programs and plans (Gravel Supplementation and Improvement Program and Riparian and Floodplain Improvement Program). These programs could involve ground disturbance that would substantially alter resources or could result in indirect impacts such as limiting access to traditionally used plants. However, the protective measures in the Historic Properties Management Plan (HPMP) would be implemented. These measures emphasize planning of new and modified facilities/programs to avoid significant cultural resources where feasible, and provide measures such as data recovery and/or public interpretation to reduce impacts if a significant cultural resource cannot be avoided.

Mitigation Measure 7: DWR shall comply with the Historic Properties Management Plan (HPMP) approved by the Federal Energy Regulatory Commission. For any project required in the water quality certification, the licensee shall demonstrate to the Deputy Director that the mitigation measures in the HPMP have been met. In addition, for activities for habitat expansion of spring-run salmon provided under Section 9 of the Certification, the Licensee must provide a report to the Deputy Director demonstrating that it has complied with Section 106 (National Historic Preservation Act); 36 CFR Part 800 amended; and California Public Resources Code Sections 5097 et seq. (Archaeological Paleontological and Historical sites) and 5097.9 et seq. (Native American Historical, Cultural and Sacred sites).

Implementation of Mitigation Measure 7 and compliance with Conditions S2, S3, S4, S5, S6, S10, S17, S19, and S20 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.8-c: Disturb any human remains, including those interred outside of formal cemeteries. The continuation of certain operations and maintenance activities, construction of new or improved facilities, implementation of new programs involving ground disturbance (see Table 5.8-1), and actions that would increase public access to sensitive locations could result in the disturbance of Native American human remains, including those interred in archaeological deposits outside of formal cemeteries. Ongoing erosion, particularly in the fluctuation zone, also has the potential to disturb and expose human remains located within the project area.

Implementation of Mitigation Measure 7 and compliance with Conditions S2, S3, S4, S5, S6, S10, S17, S19, and S20 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Noise

Impact 5.11.2-b: Result in substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels. The construction noise resulting from the Gravel Supplementation and Improvement Program, Channel Improvement Program, Structural Habitat Supplementation and Improvement Program, Riparian and Floodplain Improvement Program, Lake Oroville Warm Water Fishery Improvement Program, Fish Weir Program, Lake Oroville Cold Water Fishery Improvement Program, Flow and Temperature to Support Anadromous Fish, and Construction of Recharge and Brood Ponds programs, if occurring during the daytime on weekdays and requiring the use of diesel engine-driven heavy equipment, would cause a substantial temporary increase in ambient noise levels to receptors within 75 feet of the work area, and the impact would be potentially significant. Further, construction noise resulting from these programs, if occurring during the nighttime or on weekends and requiring the use of diesel engine-driven heavy equipment, would cause a substantial temporary increase in ambient noise levels to receptors within 1,000 feet of the work area, and the impact would be potentially significant.

Mitigation Measure 8: Measures are necessary to reduce the impact of noise from construction activities. If construction requires the use of heavy construction equipment closer than 75 feet to residences, campgrounds, or similar recreation or noise sensitive areas, DWR will ensure the construction manager will either (a) arrange for all persons who would otherwise be within 75 feet of the work area to be moved to a farther distance or prevented from camping or recreating within the 75-foot limit, or, if not feasible, (b) erect temporary barriers of wood, noise abatement blankets, or similar material between the work area and the receptors. The barriers should be at least 8 feet high and solid from the ground to the top, and made of material that would reduce

noise through the barrier (transmission loss) by at least 20 dBA. Plywood one-half inch thick would meet this requirement. Noise-generating construction activities will be limited to the hours of 7 a.m. to 8 p.m., Monday through Friday, with no noise-generating activities on Saturdays, Sundays, or legal holidays. This restriction would not be applicable if it would result in operational impacts on the Oroville Facilities or prevent activities to mitigate adverse conditions such as response to emergencies or other unforeseen situations. DWR shall be responsible for field verification of these measures, and shall report any violations of these measures to the Deputy Director or designee within 24 hours.

Implementation of Mitigation Measure 8 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Public Health and Safety

Impact 5.15-b: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Hazardous materials could be accidentally released into the soil or an adjacent watercourse during construction activities. The Gravel Supplementation and Improvement Program, Structural Habitat Supplementation and Improvement Program, Riparian and Floodplain Improvement Program, and the Flow/Temperature to Support Anadromous Fish could involve the presence of hazardous materials such as oil, grease, or fuel near and/or in the FERC Project boundary. Accidental release of these materials into the soil or an adjacent watercourse could be potentially significant.

Mitigation Measure 9: Measures are necessary to avoid the release of hazardous materials during construction. DWR shall implement safe-handling procedures and prepare a Spill Prevention, Control, and Countermeasure Plan to prevent the release of hazardous materials and contain runoff. DWR shall incorporate into program implementation on-site handling rules to keep hazardous materials out of the soil and receiving waters. DWR shall:

- Equipment used in direct contact with water will be inspected daily to prevent the release of oil.
- Oil absorbent booms must be used when equipment is used in or immediately adjacent to waters.
- Store all reserve fuel supplies only within the confines of a designated staging area.
- Refuel equipment only in designated areas within the staging area.

- Require that staging areas be designed to contain contaminants such as oil, grease, and fuel products so that they do not drain toward receiving waters or storm drain inlets.
- Not allow uncured concrete to enter any water body in a quantity that changes pH more than 0.5.

DWR shall be responsible for ensuring compliance with the Spill Prevention, Control, and Countermeasure Plan and the measures above. DWR and/or its contractors must immediately report any spills of hazardous materials to the Department of Fish and Game, Regional Water Quality Control Board, and the Deputy Director.

Implementation of Mitigation Measures 1 and 9 and compliance with Conditions S3, S4, S6, and S8 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Project-Level Mitigation Measures

Geology

Impact 5.1-a: Specific projects that involve earth moving action could result in substantial soil erosion or loss of topsoil, degradation of soils or farmland, or changes in the rate of siltation, deposition, or erosion that could modify channel morphology or habitat use.

Implementation of Mitigation Measure 1 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.1-h: Directly or indirectly degrade a unique paleontological resource or site or compromise a significant paleontological site's scientific and educational values. Creation of brood ponds could result in disturbance to paleontological resources. These are in the vicinity of Lime Saddle where the blocks of Calaveras Limestone in the mélange sequence are known to contain fossils; an area about halfway along the Diversion Pool that is crossed by an outcrop of the Monte del Oro Formation that is known to contain fossils; and the vicinity of Thermalito Forebay and Thermalito Afterbay that overlie the Laguna Formation that in other places is known to contain vertebrate fossils. Construction of the brood ponds could involve earth-moving activities with the potential to disturb paleontological resources and could result in a potentially significant impact.

Mitigation Measure 10: Measures are necessary to avoid potentially significant impacts to paleontological resources during construction of brood ponds. Plans submitted to the Deputy Director in Condition S21 will include measures to screen for the presence of fossils. Plans will include measures to avoid disturbance. If avoidance is not possible the plans will include procedures for the recovery/preservation of any fossils encountered.

Implementation of Mitigation Measure 10 and compliance with Condition S21 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Water Quality

Impact 5.2.2-a: Violate Any Water Quality Standards or Waste Discharge Requirements; and **Impact 5.2.2-c:** Substantially Degrade Surface Water Quality. The Channel Improvement Program will include construction that could cause short term impacts to water quality. The Construction and Recharge of Brood Ponds Project could temporarily increase turbidity in Thermalito Afterbay. The Recreation Management Plan (RMP) includes construction of trails, equestrian facilities, day use area improvements, docks, boat ramps, and campgrounds, including new floating campsites. Construction of these facilities has the potential to increase soil disturbance and sediment transport. These recreation facilities may increase recreational use, which may in turn increase bacterial levels (e.g. through increased horse manure on trails, in parking lots, and equestrian campsites), oil and grease releases from increased boating and bicycling, and releases of other incidental floating materials into project waters.

Implementation of Mitigation Measure 1 and compliance with Conditions S12 and S13 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.2.2-b: Substantially alter an existing drainage pattern of the site or area, including alteration of the course of a stream or river, in a manner that would result in substantial erosion, siltation on- or off-site, or otherwise substantially degrade water quality. The construction of the new brood ponds could temporarily affect turbidity of Thermalito Afterbay.

Implementation of Mitigation Measure 1 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Aquatic Resources

Impact 5.4-b: Cause a substantial decrease in the prey base for any species identified as a candidate, sensitive, or special-status species. Construction of certain facilities could result in short term impact to macroinvertebrates.

Implementation of Mitigation Measure 1 and compliance with Conditions S2, S3, S4, S5, S6, and S8 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Wildlife Resources

Impact 5.5.4.1-a: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by DFG or USFWS. Construction of projects required in the Recreation Management Plan are estimated to involve habitat losses of 1 acre or more resulting in potentially significant impact on wildlife habitat.

Implementation of Mitigation Measures 1 and 3 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.5.4.1-b: Interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. The Fish Weir Program has the potential to create a barrier to wildlife dispersal and movement including the highly aquatic western pond turtle, a State Species of Special Concern. This passage issue is a potentially significant impact. Projects such as new construction at Lime Saddle, additional campsites, and new marina parking as described in Recreation Management Plan, could significantly affect a rookery located near the boat ramp access road. The Gravel Supplementation and Improvement Program has the potential to result in short-term impacts to heron/egret rookeries through direct habitat loss and disturbance associated with construction access, staging, and in-water construction and no mitigation is necessary.

Implementation of Mitigation Measures 1, 3 and 4 and compliance with Conditions S2 and S5 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.5.4.1-f: Substantial habitat degradation for wildlife species identified by the Department of Fish and Game as Threatened or Endangered Species. Staging areas and river access improvements required for the Gravel Supplementation and Improvement Program could have potentially significant impacts on bald eagle nesting habitats as well as giant garter snake habitat.

Implementation of Mitigation Measures 1 and 3 and compliance with Condition S2 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.5.4.1-f: Substantial Habitat Degradation for Wildlife Species Identified by the U.S. Fish and Wildlife Service as Threatened or Endangered Species. Staging areas and river access improvements required for the Gravel Supplementation and Improvement Program could impact valley elderberry longhorn beetle, giant garter snake habitat, and bald eagle nesting habitat.

Implementation of Mitigation Measures 1 and 3 and compliance with Condition S2 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Botanical Resources

Impact 5.5.4.2-a: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the DFG or USFWS. The Recreation Management Plan includes a number of improvements that have the potential to affect wetlands/waters of the United States including trails, equestrian facilities, day use area improvements, docks, boat ramps, and campgrounds. Some of the boat ramp extensions included in the Recreation Management Plan may involve significant fill material to be placed within water; however, this activity would be limited to areas that have been previously disturbed and inundated. The Recreation Management Plan actions could also cross drainages and, therefore, have potential to affect special-status plant species. Although when considered individually the acreage loss is small, the total loss could potentially be significant.

Implementation of Mitigation Measures 1 and 5 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.5.4.2-c: Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, or hydrological interruptions, or other means. A number of programs and actions contained in the Staff Alternative Settlement Agreement (SA) relating to environmental and recreational improvements may affect jurisdictional wetlands. Flow/Temperature to Support Anadromous Fish establishes a new minimum flow for the LFC. Implementation of this program in the LFC may affect riparian vegetation when the minimum flow is increased. However, the flows identified in the SA would not increase water levels significantly and vegetation should reestablish naturally at the water's edge. The construction of permanent water temperature monitoring stations would occur on a small scale. The Recreation Management Plan includes a number of improvements that have the potential to affect wetlands/waters of the United States including trails, equestrian facilities, day use area improvements, docks, boat ramps, and campgrounds. The Recreation Management Plan actions would affect a variety of riparian resources because they may cross drainages and have potential to affect wetland/waters of the United States. Although individually, the acreage loss is small, the total loss could be potentially significant. Some of the trail enhancements/additions proposed have the potential to affect drainages; therefore, they have the potential to affect riparian resources. A number of new actions relating to facilities around Lake Oroville could result in impacts on wetland resources. These impacts may be relatively small per site; however, the total loss could be potentially significant.

Implementation of Mitigation Measure 5 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.5.4.2-d: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by DFG or USFWS. Flow/Temperature to Support Anadromous Fish establishes a new minimum flow for the LFC. Implementation of this program in the LFC may affect riparian vegetation when the minimum flow is increased. However, the flows identified in the SA would not increase water levels significantly and vegetation should reestablish naturally at the water's edge. The construction of permanent water temperature monitoring stations

could create minor impacts on riparian resources or waters of the United States. The Recreation Management Plan includes a number of improvements that have the potential to affect wetlands/waters of the United States including trails, equestrian facilities, day use area improvements, docks, boat ramps, and campgrounds. The Recreation Management Plan actions would affect a variety of riparian resources because they may cross drainages and have potential to affect wetland/waters of the United States. Although individually, the acreage loss is small, the total loss could be potentially significant. Some of the trail enhancements/additions proposed have the potential to affect drainages; therefore, they have the potential to affect riparian resources. A number of new actions relating to facilities around Lake Oroville could result in impacts on wetland resources. These impacts may be relatively small per site; however, the total loss could be potentially significant.

Implementation of Mitigation Measure 5 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Recreational Resources

Impact 5.7-a: Cause a direct or indirect substantial physical degradation of either public recreation uses or public recreational facilities.

The Protection of Vernal Pools Conditions may influence location of recreation site expansion at the South Thermalito Forebay Boat Ramp/Day Use Area and may affect the location of a proposed trail along the south side of North Thermalito Forebay. Though proposed recreation development locations may be altered based on vernal pool locations, pools would not preclude recreation development. A vernal pool protection measure to abandon and revegetate roads that DWR determines are no longer necessary could affect recreation by reducing informal trail access on these roads. Specific roads have not yet been identified; therefore, the specific level and location of impacts on recreation cannot be identified at this time. The level of impact significance to recreation will depend on the location and current use of roads proposed for revegetation. However, prior to abandonment, DWR would assess potential affects and mitigate to less-than-significant levels through avoidance, minimization, or compensation.

DWR is required to develop a management plan to minimize disturbance to nesting bald eagles and submit the plan to USFWS within 30 days of nest discovery. DWR currently has four management plans covering the four active nests within the project area. There are two existing trails that are within or skirt the primary zone for one of these nests near the Diversion Pool; however, the nest has been productive in recent years under the existing level of recreational activity on these trails. The dynamic nature of bald eagle nesting from year to year and the potential for new nest discovery requires

that mitigation measures be developed for individual management plans as bird use is documented and impacts assessed. These management plans contain mitigation measures necessary to reduce disturbance during critical nesting months from recreation. Proposed day use development along Burma Road would likely not be affected by any measures to reduce disturbance to nesting bald eagles at the Diversion Pool, as proposed sites would be outside of the primary and secondary protection zones.

The Terrestrial Biological Assessment identifies minimal value giant garter snake habitat and states that potentially suitable habitat is currently not of sufficient quality to support the California red-legged frog. Furthermore, no giant garter snakes or red-legged frogs have been observed within the FERC Project boundary. Thus, existing recreation activities would not likely cause significant impacts on these species. Protection measures to minimize activities that modify habitat within 200 feet of giant garter snake and red-legged frog wetland habitat may result in specific trail alignments for shoreline access to avoid and minimize impacts for these species at North and South Thermalito Forebay. Additional development of the Larkin Road Car-Top Boat Ramp at the Thermalito Afterbay is proposed and would include five to ten new picnic tables, a beach, and a swimming area. Currently, visitors are informally swimming at the site and have impacted existing vegetation. Placement of the new day use facilities would be located to avoid or minimize impacts to potential giant garter snake habitat. Creation of a beach and associated connecting trail between the picnic area and the new beach designed to impact less than 0.10 acre as specified in the terrestrial biological assessment would ensure a less-than-significant impact to existing giant garter snake and red-legged frog habitat.

Protection measures to maintain the existing amount of habitat and avoid impacts on existing elderberry shrubs and valley elderberry longhorn beetle may influence the location of proposed day use and camping facilities at the Thermalito Afterbay Outlet and two watchable wildlife sites within the OWA. However, protection measures would not preclude recreation development.

The Thermalito Afterbay water level would be drawn down for an extended period during construction of waterfowl brood ponds. This drawdown could result in temporarily restricting access to the Thermalito Afterbay water surface for recreational activities and impact angling activity at the existing brood ponds. This is a short term construction impact and is considered less-than-significant when compared to the benefits afforded to recreation by the anticipated increases to waterfowl populations at Thermalito Afterbay.

Mitigation Measure 11: Measures are needed to mitigate direct or indirect substantial physical degradation of either public recreation uses or public recreational facilities. To ensure that impacts to recreation use is less-than-significant, DWR must submit plans to the Deputy Director prior to road abandonment. Projects will be designed to avoid and/or minimize impacts to recreation. If impacts cannot be avoided or minimized, then the plans will include adequate compensation to ensure a less-than-significant impact.

Implementation of Mitigation Measure 11 and compliance with Conditions S18, S19, S20, and S21 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Cultural Resources

Impact 5.8-a: Cause a substantial adverse change in the significance of a historical resource as defined in State CEQA Guidelines Section 15064.5.

Impact 5.8-b: Cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5.

Construction of new or improved facilities in locations containing significant cultural resources and actions that would increase public access to sensitive locations could result in the loss of or damage to significant archaeological sites, ethnographic resources, and historic structures. Significant archaeological sites, ethnographic resources, and historic structures could be lost or substantially damaged through the construction of certain new recreation facilities (e.g., improvements at Bidwell Canyon, new trails), modifications to the licensed power facilities (e.g., alterations to the Moe's and Hatchery ditches), and ground-disturbing actions undertaken to improve wildlife and plant habitat (e.g., construction of brood ponds in the Oroville Wildlife Area).

Implementation of Mitigation Measure 7 and compliance with Conditions S2, S3, S4, S5, S6, S10, S17, S19, and S20 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Impact 5.8-c: Disturb any human remains, including those interred outside of formal cemeteries. The construction of new or improved facilities involving ground disturbance, and actions that would increase public access to sensitive locations could result in the disturbance of Native American human remains, including those interred in archaeological deposits outside of formal cemeteries. Ongoing erosion, particularly in the fluctuation zone, also has the potential to disturb and expose human remains located within the project area.

Implementation of Mitigation Measure 7 and compliance with Conditions S2, S3, S4, S5, S6, S10, S17, S19, and S20 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Noise

Impact 5.11.2-b: Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels. The construction noise resulting from the Gravel Supplementation and Improvement Program, Channel Improvement Program, Structural Habitat Supplementation and Improvement Program, Riparian and Floodplain Improvement Program, Lake Oroville Warm Water Fishery Improvement Program, Fish Weir Program, Lake Oroville Cold Water Fishery Improvement Program, Flow and Temperature to Support Anadromous Fish and Construction of Recharge and Brood Ponds programs, if occurring during the daytime on weekdays and requiring the use of diesel engine–driven heavy equipment, would cause a substantial temporary increase in ambient noise levels to receptors within 75 feet of the work area, and the impact would be potentially significant. Further, construction noise resulting from these programs, if occurring during the nighttime or on weekends and requiring the use of diesel engine–driven heavy equipment, would cause a substantial temporary increase in ambient noise levels to receptors within 1,000 feet of the work area, and the impact would be potentially significant.

Implementation of Mitigation Measure 8 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Air Quality

Impact 5.12-c: Expose sensitive receptors to substantial pollutant concentrations. The Gravel Supplementation and Improvement Program, Channel Improvement Program, Structural Habitat Supplementation and Improvement Program, Riparian and Floodplain Improvement Program, Lake Oroville Warm Water Fishery Improvement Program, Fish Weir Program, Flow and Temperature to Support Anadromous Fish, and Construction of Recharge and Brood Ponds programs have the potential for the generation of dust from grading activities or diesel engine exhaust from construction equipment, or both. If the grading work is performed in close proximity to sensitive receptors, there will be a potential for exposure to substantial concentrations of pollutants. Therefore, there would be a potentially significant impact.

Mitigation Measure 12: Measures are necessary to avoid or minimize increases in air pollutant concentrations during construction. If projects include grading, moving soil or gravel, include the use of construction equipment, or otherwise have the potential to create emissions the following requirements shall apply:

DWR shall be responsible for ensuring that persons performing grading, excavation, or similar dust-generating activities shall take every reasonable precaution not to cause or allow the emissions of fugitive dust to be airborne into areas occupied by residents or

persons visiting the areas adjacent to the work site. DWR shall field verify compliance with the measures. Reasonable precautions shall include, but are not limited to:

- All materials excavated or graded should be sufficiently watered to prevent excessive amounts of dust. Watering should occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day.
- All clearing, grading, earth moving, or excavation activities should cease during periods of high wind (i.e. greater than 20 miles per hour average over one hour).
- The temporary closing of use areas downwind of the grading site.
- All materials transported off-site should be either sufficiently watered or securely covered to prevent excessive amounts of dust.
- All inactive portions of the construction site should be seeded and watered until vegetative cover is restored.
- On-site vehicle speed should be limited to 15 miles per hour. All areas subject to vehicle traffic (parking areas and dirt roads) shall be watered periodically.
- If used to suppress dust, petroleum based dust suppressants shall meet the road oil requirements of the applicable County APCD.
- Streets adjacent to the project site should be swept as needed to remove silt from construction activities.
- Equipment engines shall be maintained in good conditions and in proper tune as set forth in manufacturers' specifications.

Implementation of Mitigation Measure 12 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Public Health and Safety

Impact 5.15-b: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Implementation of Mitigation Measure 9 will reduce the impacts to a less-than-significant level.

Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the FEIR.

Best Management Practices

The planning and execution of Proposed Project and Federal Energy Regulatory Commission (FERC) Staff Alternative Settlement Agreement (SA) articles that involve site preparation and construction activities to be undertaken by the California Department of Water Resources (DWR) would include the adoption of numerous Best Management Practices (BMPs) designed to avoid or mitigate short-term effects typically associated with such activities.

**(From the California Stormwater BMP Handbook, Construction, by the California Stormwater Quality Association,
[HTTP://WWW.CABMPHANDBOOKS.COM/CONSTRUCTION.ASP](http://www.cabmphandbooks.com/construction.asp)**

Selection and implementation of BMPs is based on the pollution risks associated with the construction activity. The pollution prevention objectives of BMPs are defined by a review of information gathered during the assessment of the site and planned activities. Once defined, BMP objectives are developed and BMPs selected. The BMP objectives for construction projects are as follows:

- Control of Erosion, and Discharge of Sediment:
 - Minimize Disturbed Areas: Only clear land which will be actively under construction in the near term, minimize new land disturbance during the rainy season, and avoid clearing and disturbing sensitive areas (e.g., steep slopes and natural watercourses) and other areas where site improvements will not be constructed.
 - Stabilize Disturbed Areas: Provide temporary stabilization of disturbed soils whenever active construction is not occurring on a portion of the site. Provide permanent stabilization during finish grade and landscape the site.
 - Protect Slopes and Channels: Safely convey runoff from the top of the slope and stabilize disturbed slopes as quickly as possible. Avoid disturbing natural channels. Stabilize temporary and permanent channel crossings as quickly as possible and ensure that increases in runoff velocity caused by the project do not erode the channel.
 - Control Site Perimeter: Delineate site perimeter to prevent disturbing areas outside the project limits. Divert upstream run-on safely around or through the construction project. Runoff from the project site should be free of excessive sediments and other constituents.
 - Retain Sediment: Retain sediment-laden waters from disturbed, active areas within the site.

- Manage Non-Stormwater Discharges and Materials:
 - Practice Good Housekeeping: Perform activities in a manner to keep potential pollutants from coming into contact with stormwater or being transported off site to eliminate or avoid exposure.

- Contain Materials and Wastes: Store construction, building, and waste materials in designated areas protected from rainfall and contact with stormwater runoff. Dispose of all construction waste in designated areas, and keep stormwater from flowing onto or off of these areas. Prevent spills and clean up spilled materials.

ADDITIONAL GENERAL GUIDELINES

- Pre-construction surveys for sensitive species and environmental permitting/documentation will be done prior to commencement of work.
- No intentional harassment, killing, or collection of plants or animals at or around the work site will occur.
- No firearms are allowed on construction site, except for those used by peace officers, DFG [California Department of Fish and Game] wardens or State Park rangers.
- No pets will be allowed.
- All persons will stay within the boundaries of the work site.
- No other off-road travel or work will be permitted; all vehicles must be confined to existing roads or areas designated for vehicles.
- All trash, including food-related trash and cigarette butts, will be properly disposed of and removed by the workers daily.
- Always choose the site preparation method that creates the least soil disturbance, remains effective and safe, and accomplishes project goals.
- General timing restrictions will be employed to protect environmental resources.

GENERAL GUIDELINES FOR CONTROL OF RUNOFF & SEDIMENT FROM GROUND DISTURBANCE

General Guidelines when Removing Vegetation

- Disturbance of vegetation shall be kept to a minimum. Trees will be flagged and avoided during construction.
- Provide for rapid revegetation of all denuded areas through natural processes supplemented by artificial revegetation where necessary.
- Maintenance of existing woody vegetation:
- Preservation of existing vegetation shall be provided prior to the commencement of clearing and grubbing operations or other soil disturbing activities in areas identified on the plan as those to be preserved.
- Mark areas to be preserved with temporary fencing, such as orange polypropylene that is stabilized against UV [ultraviolet] light, and is at least 3 feet tall.
- Fence posts shall be wood or metal and spacing and depth shall be adequate to completely support the fence in an upright position.
- Minimize disturbed areas by locating temporary roadways to avoid stands of trees and shrubs and to follow existing contours and reduce cutting and filling.
- Consider the impact of grade changes to existing vegetation and the root zone.
- Keep equipment away from trees to prevent trunk and root damage.

- Construction materials, equipment storage, and parking areas shall be located where they will not cause root compaction.
- All workers shall be instructed to honor protective devices. No heavy equipment, vehicular traffic, or storage piles of any construction material shall be permitted within the dripline of any tree to be retained. No toxic or construction materials (including paint, acids, nails, gypsum board, chemicals, fuels, or lubricants) shall be stored within 15 meters (50 feet) of the drip line of any retained trees, nor disposed of in any way which would injure vegetation.

General Guidelines to Minimize Surface Erosion and Stabilize Material

Surface erosion measures:

- Erosion control measures involving revegetation (seeding and fertilization) should be planned and implemented as soon as practicable following disturbance.
- An integrated system of collection, control, and dispersal of surface runoff is very important to prevent erosion. Mechanical measures include construction of ditches, slash windrows, straw bale dams, sediment barriers, erosion netting and fabrics, terraces, benching, riprap, and tackifiers.
- Be aware of ongoing conditions of weather, soil conditions, and water movement and how these conditions may affect runoff and erosion.
- Employ regular inspections and maintenance of erosion control features.

Stabilization measures:

- A combination of practices that promote the reestablishment of vegetation on exposed slopes, provides physical protections to exposed surfaces, prevents the downslope movement of soil, and controls drainage.
- Employ regular inspections and maintenance of erosion control features.
- Measures to reestablish vegetation on exposed soils are usually accomplished by seeding suitable herbaceous vegetation in conjunction with mulching and fertilization. Treatments may include tree seedling planting, sprigging, or bioengineering.
- Measures to physically protect the soil surface from erosion or modify the topography to minimize erosion include the use of gravel on the road surface and use of mulches, riprap, erosion mats, and terracing on cuts, fills, and ditches as appropriate. Temporary waterbars in areas of uncompleted roads and trails can be effectively utilized to reduce sedimentation.
- Measures which physically inhibit the transport of sediments to streams include the use of slash filter windrows on or below the fill slopes, baled straw in ditches or below fillslopes, silt fences, and catch basins in culvert inlets.
- Measures that reduce the amount of solid disturbance in or near streams include immediate placement of large culverts in live streams prior to crossing stream with rock embankment during road construction. Temporary pipes should not be installed unless sedimentation can be minimized during installation, use and removal.

Specifics for Erosion Control and Stabilization

Erosion Control BMPs—source control practices that protect the soil surface and prevent soil particles from being detached by rainfall, flowing water, or wind. Erosion control consists of preparing the soil surface and implementing one or more of the following BMPs to the disturbed soil areas. See Section 3.1 of:

http://www.cabmphandbooks.com/Documents/Construction/Section_3.pdf

- Scheduling
- Preservation of Existing Vegetation
- Hydraulic Mulch
- Hydroseeding
- Soil Binders
- Straw Mulch
- Geotextiles or Mats
- Wood Mulching
- Earth Dikes and Drainage Swales
- Velocity Dissipation Devices
- Slope Drains
- Streambank Stabilization
- Polyacrylamide

Sediment Control BMPs—include any practice that traps soil particles after they have been detached and moved by rain, flowing water, or wind. Sediment Control measures are usually passive systems that rely on filtering or settling the particles out of the water or wind that is transporting them. See Section 3.2 of:

http://www.cabmphandbooks.com/Documents/Construction/Section_3.pdf

- Silt fence
- Sediment basin
- Sediment trap
- Check dam
- Fiber rolls
- Gravel bag berm
- Street sweeping and vacuuming
- Sandbag barrier
- Straw bale barrier
- Storm drain inlet protection
- Chemical treatment

Wind Erosion Control—consists of applying water or other dust palliatives to prevent or alleviate dust nuisance. See Section 3.3 of:

http://www.cabmphandbooks.com/Documents/Construction/Section_3.pdf

Non-Stormwater Management BMPs—source control BMPs that prevent pollution by limiting or reducing potential pollutants at their source or eliminating off-site discharge.

These BMPs are also referred to as “good housekeeping practices” which involve keeping a clean, orderly construction site. See Section 4.1 of:
http://www.cabmphandbooks.com/Documents/Construction/Section_4.pdf

- Water conservation practices
- Dewatering
- Paving and grinding operations
- Temporary stream crossings
- Clean water diversion
- Illicit connection/discharge
- Potable water/irrigation
- Vehicle and equipment cleaning, fueling and maintenance
- Pile driving operations
- Concrete curing and finishing
- Material and equipment use
- Demolition adjacent to water
- Temporary batch plants

Waste Management and Materials Pollution Control BMPs—source controls to prevent pollution by limiting or reducing potential pollutants at their source before they come in contact with stormwater. These, like the non-stormwater management BMPs, are “good housekeeping practices” which involve keeping a clean, orderly construction site. See Section 4.2 of:
http://www.cabmphandbooks.com/Documents/Construction/Section_4.pdf

- Materials delivery and storage
- Material use
- Stockpile management
- Spill prevention and control
- Waste management
- Solid waste
- Hazardous waste
- Contaminated soil
- Concrete waste
- Sanitary/septic waste

General Practices for Toxic or Hazardous Spills

- Locate service and refueling sites well away from wetlands and stream channels.
- Any chemical spills will be cleaned up and reported immediately.
- Wash chemical containers and clean equipment in special areas designated for these uses.
- Keep chemicals away from surface water when mixing.
- Latrines, vaults, or pit toilets for camps will be located a minimum of 100 feet from all perennial lakes and streams.
- Minor oil spills can be prevented by:

- Collecting used oil, oil filters, and grease tubes
- Requiring equipment operators to carry absorbent pads
- Providing containment and cleanup for portable fuel tanks including hose and nozzle
- Following approved disposal methods for waste products
- Regular checks for and prompt repair of leaks
- Developing Spill Prevention Control and Countermeasure Plans

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