Foreword

Introduction

The U.S. Department of the Interior, Bureau of Reclamation (Reclamation), and the California State Water Resources Control Board (State Water Board) are proposing the Battle Creek Salmon and Steelhead Restoration Project (Restoration Project). The proposed Restoration Project presents an opportunity to reestablish approximately 42 miles of prime salmon and steelhead habitat on Battle Creek, plus an additional 6 miles of habitat on its tributaries. Restoration would be accomplished primarily through the modification of the Battle Creek Hydroelectric Project (Federal Energy Regulatory Commission [FERC] Project No. 1121) (Hydroelectric Project) facilities and operations, including instream flow releases. Any proposed changes to the Hydroelectric Project trigger the need for the Pacific Gas and Electric Company (PG&E) to seek a license amendment from FERC.

Because of the federal and state actions associated with the Restoration Project, compliance with both the National Environmental Policy Act (NEPA) (42 U.S. Code [USC] 4321–4347) and the California Environmental Quality Act (CEQA) (Public Resources Code 21000 *et seq*.) is required. A joint environmental impact statement/environmental impact report (EIS/EIR) was prepared to fulfill the requirements of both NEPA and CEQA. Because the Restoration Project is an action funded by the California Bay-Delta Authority (CBDA), which assists with the implementation of the CALFED Bay-Delta Program (CALFED), environmental review of the Draft EIS/EIR tiers from the CALFED Final Programmatic EIS/EIR (CALFED Bay-Delta Program 2000).[1]

The Draft EIS/EIR was circulated for public comment from July 18 to October 16, 2003. The purpose of the Draft EIS/EIR was to disclose the impacts associated with the Restoration Project Proposed Action alternative and other project alternatives in order to reach a decision on the alternative to be implemented.

After the close of the public comment period, Reclamation and the State Water Board began responding to the comments that had been received during public

[1] CBDA, an agency that assists with the implementation of the CALFED Program, was previously known as the CALFED Bay-Delta Program. Documents published before this name change took place are identified in this Draft SEIS/REIR as being prepared by the CALFED Bay-Delta Program. In addition, the term CALFED is often used to refer to the CALFED Program, also known as the CALFED Plan.

review of the Draft EIS/EIR. As a result of this process, and subsequent reviews that were performed outside the NEPA/CEQA process, it became evident that significant new information would be added to the Draft EIS/EIR. Therefore, Reclamation and the State Water Board are recirculating portions of the Draft EIS/EIR for public comment as this Draft Supplemental EIS/Revised EIR (Draft SEIS/REIR).

New Information Presented in the Draft SEIS/REIR

Based on comments received during the public review period (July through October 2003), Reclamation and the State Water Board have made changes to the Draft EIS/EIR. Most of these changes were made for clarification and are not being recirculated for public comment in the Draft SEIS/REIR. These changes will be presented in the Final EIS/EIR. However, a subset of these changes was deemed to constitute significant new information and is being presented in this Draft SEIS/REIR. This new information includes the impacts listed in Table ES-5 from the Executive Summary, which are discussed in detail in Chapter 4 of this document, as well as the following information:

- Chapter 3, “Project Alternatives”
  - section entitled Five Dam Removal Alternative—Proposed Action, Inskip Diversion Dam/South Powerhouse, Access Road Improvements
  - section entitled Five Dam Removal Alternative—Proposed Action, Asbury Pump Station and Diversion Dam
  - section entitled Alternatives Eliminated from Further Consideration
- Chapter 4, “Affected Environment and Environmental Consequences”
  - environmental consequences discussion in Section 4.1, Fish
  - study methods for botanical, wetland, and wildlife resources; affected environment; and environmental consequences discussion in Section 4.2, Botanical, Wetland, and Wildlife Resources
  - environmental consequences discussion, including updated impact significance criteria, in Section 4.4, Water Quality
  - affected environment discussion under Agriculture in Section 4.6, Land Use
  - environmental consequences discussion in Section 4.8, Aesthetics
  - methodology, affected environment, and environmental consequences discussion in Section 4.15, Cultural Resources
  - section entitled Indirect Environmental Effects Associated with the Loss of Hydropower and Renewable Replacement Power under Power Generation and Economics in Section 4.16, Other NEPA Analyses

- affected environment and environmental consequences discussion under Socioeconomics in Section 4.16, Other NEPA Analyses

- Appendices
  - Appendix F, "Proposed Construction Areas at Restoration Project Sites"
  - Appendix K, "Optimal Water Temperature Habitat in Battle Creek"
  - Appendix L, "Biological Resources Documented at Battle Creek Project Sites"
  - Appendix M, "Waters of the United States Documented at Battle Creek Project Sites"
  - Appendix O, "Special-Status Species Accounts".

Reclamation and the State Water Board are presenting only the new impacts listed in Table ES-5 and the new sections listed above for public comment at this time.

Readers should refer to the July 2003 Draft EIS/EIR for the remainder of the project analysis not included in this Draft SEIS/REIR. The complete report of the July 2003 Draft EIS/EIR can be found at the following Battle Creek project Web site:

http://www.usbr.gov/mp/battlecreek/.

Reclamation and the State Water Board will reconsider this project in light of the full Draft SEIS/REIR, including this document and the unchanged portions of the 2003 Draft EIS/EIR (Jones & Stokes 2003). Together, these documents fulfill the requirements of NEPA and CEQA for preparation, circulation, and consideration of an EIS and an EIR.

Purpose of This Document and Limit on Scope of Comments

The purpose of this document is to address new significant information; therefore, Reclamation and the State Water Board request that reviewers limit their comments on this Draft SEIS/REIR to the revisions presented in this document for public comment. Reclamation and the State Water Board are responding to comments received on the July 2003 Draft EIS/EIR, as indicated below, and are no longer accepting comments on the Draft EIS/EIR at this time.

The responses to the comments previously received on the 2003 Draft EIS/EIR will be published in the Final EIS/EIR along with the responses prepared for comments received on the Draft SEIS/REIR. Therefore, it is not necessary to restate comments previously made on portions of the Draft EIS/EIR that are not included in this Draft SEIS/REIR.

How to Use This Document

According to the Council on Environmental Quality NEPA Regulations (40 CFR 15029[c][1]), a federal agency must prepare a supplement to a Draft EIS if the federal agency makes substantial changes in the proposed action that are relevant to its environmental effects or if there are significant new circumstances or information relevant to the environmental concerns that bear on the proposed action or its impacts. The supplement to an EIS focuses on only those sections of the EIS that require updating. The supplement does not typically repeat the information from the prior version of the EIS. If the Draft EIS is being supplemented, the lead agency will refrain from responding to comments on the prior draft and will respond to comments on both the draft and supplement in the Final EIS.

State CEQA Guidelines Section 15088.5 requires that a lead agency recirculate an EIR for public review and comment when significant new information is added to that EIR. Guidelines Section 15088.5(f) provides that when only a portion of the EIR is revised, that portion may be recirculated alone.

Update on Events That Have Occurred Since the Draft EIS/EIR Was Released for Public Review

Opportunities for Public Input

The release of the Draft EIS/EIR provided the public with an opportunity to provide input on the analysis of the environmental effects of the proposed project and the action alternatives examined in the Draft EIS/EIR. The Draft EIS/EIR was released for a 90-day public review on July 18, 2003. Responses to the comments received during the review of the Draft EIS/EIR will be presented in the Final EIS/EIR.

After the Draft EIS/EIR was released for public review, the Battle Creek Project Management Team (PMT) conducted two public information workshops in Manton, California, on July 23 and August 12, 2003, which allowed stakeholders and members of the public to ask questions and learn more about the contents of the Draft EIS/EIR. The PMT also conducted a public hearing in Manton, California, on August 27, 2003, which provided the public with an opportunity to present both written and verbal comments on the Draft EIS/EIR in a public forum. Reclamation has also presented six status reports at the CBDA Ecosystem Restoration Program (ERP) Subcommittee Meetings on January 15, February 19, March 25, April 15, May 20, and June 17, 2004, during which additional public input has been received on the Restoration Project and project alternatives. On March 15, 2004, a public meeting was held in Red Bluff, California, specifically to address public questions about the incremental benefits between the proposed Restoration Project (i.e., the Five Dam Removal

Alternative) and the Eight Dam Removal Alternative, which has been eliminated from further consideration in this document. Public comments have been encouraged at all public meetings on the Restoration Project.

Action Specific Implementation Plan

Since the publication of the Draft EIS/EIR, Reclamation and the State Water Board have initiated consultation with the California Department of Fish and Game (DFG), U.S. Fish and Wildlife Service (USFWS), and National Marine Fisheries Service (NOAA Fisheries) for compliance with the California Endangered Species Act (CESA), the California Natural Community Conservation Planning Act (NCCPA), and Section 7 of the federal Endangered Species Act (ESA). As the Restoration Project is a CALFED project, it is necessary to prepare an Action Specific Implementation Plan (ASIP) to meet CALFED environmental planning requirements. A draft ASIP was submitted to DFG, USFWS, and NOAA Fisheries in April 2004. An addendum to the draft ASIP is currently in preparation.

An ASIP is a unique document authorized for use in compliance with CESA, NCCPA, and ESA only for CALFED projects to simplify regulatory compliance. The Restoration Project ASIP serves as the biological assessment (BA) for compliance with Section 7 of the ESA and, if requested by the lead agency(s), the Natural Community Conservation Plan (NCCP) for compliance with the CESA and the NCCPA. The ASIP tiers from the programmatic CALFED Multi-Species Conservation Strategy (MSCS), which serves as the CALFED programmatic:

- BA under Section 7 of the ESA,
- habitat conservation plan under Section 10 of the ESA, and
- NCCP under the NCCPA.

The Restoration Project ASIP is consistent with the requirements of the programmatic CALFED ESA, CESA, and NCCPA compliance documents and agreements. The purpose of the Restoration Project ASIP is to present the information necessary for:

- USFWS to issue incidental take authorization under Section 7 of the ESA for one species covered under the CALFED USFWS Programmatic biological opinion (BO) (valley elderberry longhorn beetle);
- USFWS to concur that the Restoration Project will not likely adversely affect one species (bald eagle);
- NOAA Fisheries to issue incidental take authorizations under Section 7 of the ESA for three species covered under the CALFED NOAA Fisheries Programmatic BO (Central Valley spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, and Central Valley steelhead);

- pursuant to Section 305(b)(2) of the Magnuson-Stevens Act, for NOAA Fisheries to issue conservation recommendations necessary to address potential adverse effects of the Restoration Project on Essential Fish Habitat (EFH) for three anadromous fish species (Central Valley spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, and Central Valley fall-/late fall–run Chinook salmon); and
- DFG will, if formally requested by the lead agency(s), issue take authorization through an NCCP determination under Section 2835 of the NCCPA for ten species covered under the CALFED Programmatic NCCP Determination (Central Valley spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, Central Valley steelhead, American peregrine falcon, bald eagle, Cooper's hawk, little willow flycatcher, osprey, yellow-breasted chat, and northwestern pond turtle), if one should become necessary.

Through the consultation process with DFG and USFWS, some mitigation measures presented in the Draft EIS/EIR for botanical, wetland, and wildlife resources were modified and expanded for use in the ASIP. A summary of ASIP-related changes made to Section 4.2, Botanical, Wetland, and Wildlife Resources, of the Draft EIS/EIR follows.

- **Impact 4.2-1. Significant—Potential Disturbance or Loss of 7.2 Acres of Woody Riparian Vegetation and Associated Wildlife Habitat.** The mitigation measures have been refined per DFG and USFWS consultation recommendations. A discussion has been added to describe the new habitat compensation approach, which will be a combination of on-site restoration and use of habitat credits from a CBDA–funded conservation easement located within the Battle Creek watershed. In addition, the minimum compensation ratio has been increased from 1:1 (1 acre restored or enhanced for every 1 acre affected) to 2:1 for temporary effects and 3:1 for permanent effects.
- **Impact 4.2-3. Significant—Potential Loss or Disturbance of 5.7 acres of Waters of the United States (including Wetlands).** The mitigation measures have been refined per DFG and USFWS consultation recommendations. A discussion has been added to describe the new habitat compensation approach, which will be a combination of on-site restoration and use of habitat credits from a CBDA–funded conservation easement located within the Battle Creek watershed. In addition, the minimum compensation ratio has been increased from 1:1 (1 acre restored or enhanced for every 1 acre affected) to 2:1. This mitigation measure is contingent upon approval by the Corps.
- **Impact 4.2-4. Significant—Potential Loss or Disturbance of Common Upland Woodland and Forest Communities and Associated Wildlife habitat.** The mitigation measures have been refined per DFG and USFWS consultation recommendations. A discussion has been added to describe the new habitat compensation approach, which will be a combination of on-site restoration and use of habitat credits from a CBDA–funded conservation

easement located within the Battle Creek watershed. In addition, the minimum compensation ratio has been increased from 1:1 (1 acre restored or enhanced for every 1 acre affected) to 2:1 for temporary effects and 5:1 for permanent effects.

- **Impact 4.2-5. Significant—Potential Disturbance to Valley Elderberry Longhorn Beetle Habitat.** The mitigation measures have been refined per DFG and USFWS consultation recommendations, which include a more detailed mitigation approach and a commitment to implement mitigation measures according to the USFWS standard valley elderberry longhorn beetle compensation guidelines.
- **Impact 4.2-8. Significant—Potential Disturbance of Breeding Habitat for Yellow-Breasted Chat**. The mitigation measures have been refined per DFG and USFWS consultation recommendations to include more detail to the mitigation approach. In addition, the impact and mitigation measures have been expanded to include the little willow flycatcher.
- **Impact 4.2-9. Significant—Potential Disturbance to Nesting Raptors.** The mitigation measures have been refined per DFG and USFWS consultation recommendations to add more detail to the surveying protocols and mitigation approach. In addition, the impact and mitigation measures have been expanded to include Cooper's hawk, peregrine falcon, and bald eagle.
- **Impact 4.2-13. Less than Significant—Potential Disturbance of Mixed Chaparral Habitat**. A new impact and new mitigation measures for disturbance of mixed chaparral habitat have been included per DFG and USFWS consultation recommendations.
- **Impact 4.2-14. Less than Significant—Potential Disturbance of Annual Grassland Habitat**. A new impact and new mitigation measures for disturbance of annual grassland habitat have been included per DFG and USFWS consultation recommendations.

Reclamation and the State Water Board are not requesting comments on these changes at this time. The Final EIS/EIR will include the updated mitigation measures, and the ASIP Executive Summary will be included as an appendix to the Final EIS/EIR. The complete report of the Draft ASIP can be found at the Restoration Project Web site:

http://www.usbr.gov/mp/battlecreek

New and updated biological impacts and mitigation measures identified in this Draft SEIS/REIR will be included in an addendum to the Draft ASIP. These impacts are associated with activities at two Mount Lassen Trout Farm facilities—Jeffcoat , which includes Jeffcoat East, Jeffcoat West, and the Jeffcoat nursery, and Willow Springs—and include impacts on two species not previously identified in the Draft ASIP—the California black rail and the California red-legged frog. The ASIP addendum will be submitted to DFG, USFWS, and NOAA Fisheries in early 2005.

California Bay-Delta Authority Technical Panel Review of the Restoration Project

In addition to considering public comments received on the 2003 Draft EIS/EIR, Reclamation and the State Water Board have also thoroughly considered comments made by the CBDA technical review panel (TRP) on the merits of the Restoration Project in the *Technical Review Panel Report for the Battle Creek Salmon and Steelhead Restoration Project* (TRP Report) (Borcalli et al. 2003). This consideration has taken place outside the context of the NEPA and CEQA environmental review process at the request of the CBDA selection panel.

Technical Review Panel Evaluation of the Restoration Project

When Reclamation realized that additional funding would be required to complete the Restoration Project, they submitted a cost proposal to the CBDA selection panel in February 2003 for an additional $38 million. Based on this request, the selection panel formed an independent TRP to provide a comprehensive evaluation of the technical merit of the Restoration Project and to strengthen the effort to restore salmon and steelhead in Battle Creek.

The TRP summarized their results in the TRP Report, dated September 2003 (Borcalli et al. 2003). The panel found that the general cost of the project elements under the Five Dam Removal Alternative (established in the 1999 Memorandum of Understanding [MOU]) were reasonable, justified, and cost-effective; however, the panel identified several elements of the project that should be reexamined based on comments provided in the TRP Report, including fish counting design, estimation of mitigation costs, and the adequacy of funding for continued monitoring. The panel also presented several recommendations that would strengthen the effort to restore anadromous fish habitat in Battle Creek. The selection panel reviewed the TRP Report and concurred with the TRP's comments.

As part of the TRP Report, the TRP made several recommendations that would strengthen the restoration effort. These recommendations are listed below.

- Include funds for monitoring the intended responses of fish, channel geomorphology, water quality and temperature, and sediment dynamics as part of the Restoration Project.
- Strengthen the Battle Creek Restoration Project Adaptive Management Plan (AMP) and identify an explicit process for reviewing responses of salmon and sediment routing after dam removal.
- Include provisions for fish traps in the new ladders so that fish can be collected, examined, and marked.

- Design the fish ladders to include an alternative for insertion of an adult fish trap where possible.
- Include radio telemetry in the monitoring of adult fish passage to confirm that adults do not delay below ladders and consider Passive Integrated Transponder (PIT) tag technology as a long-term monitoring tool.
- Account for remote sensing locations and construction requirements (e.g., PIT tag sensors) in newly constructed fish ladders.
- Plan and schedule the Coleman Powerhouse tailrace barrier as an integral feature of the Restoration Project.

The selection panel requested that the PMT address the TRP's comments by responding to the selection panel and explaining how the PMT would modify project designs, planning and environmental documents, and implementation of the Restoration Project. The PMT was encouraged to address comments on monitoring and adaptive management, including modifying project features to enhance the ability to monitor fish. The selection panel also encouraged the PMT to explain how the following issues would be addressed.

- Consider a more comprehensive decommissioning of the Hydroelectric Project as a project alternative to determine whether increased benefit could be achieved.
- Reintroduce winter-run Chinook salmon to Battle Creek.
- Coordinate Coleman National Fish Hatchery Operations with restoration efforts.

Responding to the Technical Review Panel Report

In response to the comments presented in the TRP Report, the PMT and the adaptive management technical team (AMTT) prepared a series of responses to address the issues raised in the TRP Report. Responses to the TRP Report were submitted to the CBDA ERP selection panel between January and May 2004. To address the concerns and comments of the TRP, the PMT responded in the following manner.

- An additional alternative, the Eight Dam Removal Alternative, was analyzed in comparison with the Five Dam Removal Alternative outside the context of the environmental review process. While the Eight Dam Removal Alternative and the Five Dam Removal Alternative were found to substantially increase habitat benefits compared with baseline conditions, the habitat benefit differences between the two alternatives are not significant. In addition, the Eight Dam Removal Alternative was determined to be more costly than the Five Dam Removal Alternative and lacks a willing participant (PG&E), which is a requirement of any CALFED project. Therefore, the Eight Dam Removal Alternative was not selected for further analysis.

- To ensure a thorough and systematic review of the project design features, a review of the draft plans and specifications is scheduled for July 2005. FERC will take part in this review.
- The PMT/AMTT recognize the need to prioritize the restoration of winter-run Chinook salmon. The need to address this target species and the need for a feasibility analysis consistent with the Draft Recovery Plan for the Sacramento River Winter-Run Chinook (National Marine Fisheries Service 1997) were addressed in the CALFED ASIP for the Battle Creek Restoration Project.
- Design flaws or areas of improvement suggested by the TRP were considered, and changes to the facilities were made when possible. The PMT/AMTT attempted to address the TRP's comments when no changes could be made.
- To improve the AMP as a long-term tool for successful monitoring and management of the Restoration Project, it was substantially changed to reflect the comments of the TRP, including the use of radio tagging for fish passage monitoring.

The PMT submitted their final response to the selection panel on May 6, 2004. The selection panel is expected to present a final funding recommendation to the CBDA Board in time for their meeting in August 2005. A funding decision for the Restoration Project will be determined at this meeting.

Comparing the Removal of Five Diversion Dams (MOU Alternative) with the Removal of Eight Diversion Dams (Alternative B)

While the PMT prepared a formal response to the TRP Report (Borcalli et al. 2003), California Resources Agency requested that the Battle Creek PMT also conduct a cost analysis of the MOU Alternative (i.e., the Five Dam Removal Alternative) in comparison with other additional alternatives. The CBDA Selection Panel asked that this analysis take place outside the context of this NEPA/CEQA process.

In response to California Resources Agency's request and the CBDA Selection Panel, the PMT organized an independent group to conduct a cost review of other additional alternatives in comparison with the MOU Alternative. Three additional alternatives were identified by the cost review team and include:

- Alternative A (decommissioning the entire Hydroelectric Project, including PG&E's facilities upstream of the natural fish passage barriers on Battle Creek);

- Alternative B (the Eight Dam Removal Alternative, i.e., decommissioning of all diversion dams below the natural fish passage barriers on Battle Creek and its tributaries); and
- Alternative C (Alternative 6, i.e., decommissioning the entire Hydroelectric Project, including the removal of all hydroelectric dams and appurtenant facilities [except the two Volta Powerhouses], below the natural fish passage barriers on Battle Creek).

The cost review team presented their preliminary findings at the CBDA ERP subcommittee meeting on January 15, 2004. An independent consultant refined the energy production estimates in April 2004, and updated construction costs became available from Reclamation in May 2004. The preliminary cost review indicated that the MOU Alternative (the Five Dam Removal Alternative) and Alternative B (the Eight Dam Removal Alternative) were similar in cost. However, the final cost review shows the Five Dam Removal Alternative is expected to be less costly than the Eight Dam Removal Alternative ($113 million and $116 million, respectively). Because the remaining alternatives, Alternatives A and C, were significantly more expensive than the MOU Alternative, they were excluded from further consideration. Based on the preliminary results, it was decided at the January 2004 ERP subcommittee meeting that the PMT would further compare the potential incremental habitat benefits Alternative B and the MOU Alternative. A comparison of both alternatives is presented in Chapter 3 of this Draft SEIS/REIR.

Revisions to the Draft Adaptive Management Plan

A comprehensive AMP was developed by the Battle Creek AMTT for the Restoration Project pursuant to the 1999 MOU. The purpose of the Battle Creek AMP is to act as a tool to monitor results and refine the actions implemented by the Restoration Project where there are likely to be unanticipated influences on fishery restoration, or when initial actions may not produce expected results because of unforeseen factors. The Draft AMP was evaluated as an appendix to the Draft EIS/EIR) (Jones & Stokes 2003), which was released for public review from July 18 to October 16, 2003. The Draft AMP was also reviewed by the TRP (Borcalli et al. 2003). Comments received from the TRP, as well as some comments received during public review of the Draft EIS/EIR, expressed concern about adaptive management funding, monitoring, project success, technical analysis, design specifications, and sedimentation. As a result of these comments, the AMP was substantially modified to include more details pertaining to these issues.

The executive summary of the AMP will be included as Appendix C in the Final EIS/EIR. The complete report of the Revised Draft AMP, dated April 2004, can be found at the following Restoration Project Web site:

http://www.usbr.gov/mp/battlecreek.

Potential Effects of Coleman National Fish Hatchery Operations on Restoration Project Success

The Coleman National Fish Hatchery, constructed in 1942, is located on the north side of Battle Creek approximately 6 miles upstream of the confluence of Battle Creek and the Sacramento River. Because of its location on Battle Creek, facility operations at the hatchery are intimately linked to the Battle Creek watershed. The Coleman National Fish Hatchery is part of a complex federal and state hatcheries system instated in the Central Valley in order to mitigate the loss of habitat that resulted when upstream dams blocked access to historical salmonid spawning grounds. The authorized purpose of this hatchery is to mitigate the effects of Shasta Dam on salmonid populations. Shasta Dam resulted in the loss of approximately 187 miles of spawning and rearing habitat for anadromous salmonids (approximately 50% of the Chinook salmon and steelhead spawning and rearing habitats) (Skinner 1958). Coleman National Fish Hatchery operation is funded by Reclamation and is guided by USFWS policy and other state and federal laws.

Comments on the Draft EIS/EIR stated that the document did not adequately address potentially adverse effects of Coleman National Fish Hatchery operations on the Restoration Project. Specifically, the commentors stated that Coleman National Fish Hatchery operations should be coordinated with Restoration Project operations so the Coleman National Fish Hatchery barrier weir, as well as other hatchery operations, would not interfere with the migration of wild anadromous fish (spring-run and winter-run Chinook salmon and steelhead) in Battle Creek thereby compromising the success of the Restoration Project. Commentors explained that the USFWS's intention to "integrate" Coleman National Fish Hatchery operations with the Restoration Project is not enough and that a legally binding agreement among the relevant agencies would be appropriate. Additionally, commentors felt that the best means to address concerns related to Coleman National Fish Hatchery operations would be to develop and implement an adaptive management plan for the hatchery.

Since nearly the inception of the Restoration Project, the local community has expressed concern about how Coleman National Fish Hatchery operations could affect its success. Reclamation understands and acknowledges this concern. Beginning in 1997, the public has been invited to and involved in monthly meetings (e.g., meetings of the Battle Creek Working Group and its successor, the Greater Battle Creek Watershed Working Group [Working Group]) with agenda items and discussions including operations of Coleman National Fish Hatchery, monitoring of fish populations, and hydropower project operations. Since release of the Draft EIS/EIR for public review, Reclamation, USFWS, DFG, NOAA Fisheries, and the CBDA have taken measures to address the public's concerns regarding Coleman National Fish Hatchery operations.

On October 7 and 8, 2003, the California Bay-Delta Science Program convened a technical workshop to review some key issues involving the restoration of salmonid habitat in Battle Creek. The CBDA established a an independent

science panel, the Coleman National Fish Hatchery Science Panel (Coleman Science Panel), to investigate the Restoration Project and its relationships with operations of Coleman National Fish Hatchery. The Coleman Science Panel concluded that the operation of Coleman National Fish Hatchery may pose uncertainties and significant risk to the recovery of anadromous salmonids in Battle Creek (Technical Review Panel 2004). The Coleman Science Panel stated that an adaptive management plan for Coleman National Fish Hatchery operations is essential and that the adaptive process should be capable of changing management priorities, including those at Coleman National Fish Hatchery, to ensure the success of the Restoration Project.

In February 2004, the Battle Creek Watershed Conservancy prepared a letter proposing development and implementation of an adaptive management plan for Coleman National Fish Hatchery as one of four tasks necessary to formalize their support of the Restoration Project. As a result of this letter, in April 2004 the Battle Creek PMT drafted the *Proposal to Facilitate and Develop an Adaptive Management Plan for Coleman National Fish Hatchery for Consideration by Greater Battle Creek Watershed Working Group*. This proposal identified Reclamation as the lead agency for the Coleman National Fish Hatchery adaptive management plan, and the final draft version of the Coleman National Fish Hatchery adaptive management plan is scheduled to be completed within 18 months of contract initiation.

Additional workshops were organized by the CBDA and held on June 14 and August 4, 2004, to explore strategies for managing the adult hatchery-origin steelhead returning to Coleman National Fish Hatchery and potential steelhead supplementation activities in Battle Creek. The Coleman Science Panel independently evaluated scientific issues related to steelhead supplementation in Battle Creek and produced a report titled “Review of the Steelhead Supplementation Program in Battle Creek” (Coleman National Fish Hatchery Science Panel 2004). In addition, a comment letter dated June 23, 2004, was submitted by the Battle Creek Watershed Conservancy, and a Battle Creek Working Group meeting was held July 8, 2004, that included agenda items derived from the public workshop and the Coleman National Fish Hatchery Science Panel report on the meeting agenda.

Although the USFWS previously had committed to ensuring that Coleman National Fish Hatchery operations would be consistent with conservation of listed species (White et al. pers. comm.), the USFWS has furthered this commitment by suspending supplementation of steelhead above the Coleman National Fish Hatchery barrier weir until supplementation activities can be reassessed through a process involving stakeholder participation. All comments that have been developed through public workshops, letters, and other public meetings will be considered in developing a long-term program for the disposition of adult hatchery-origin steelhead that return to Coleman National Fish Hatchery. Restoration Project goals for steelhead can be found in the Restoration Project’s revised Adaptive Management Plan.

The USFWS has committed to support development of an adaptive management plan for the Coleman National Fish Hatchery to ensure hatchery operations are compatible with the Restoration Project (proposals for diagnostic studies and adaptive management were submitted to CBDA in May 2004). The Coleman National Fish Hatchery Adaptive Management Plan, as well as the future Fisheries Management Strategy to be developed by DFG and the Working Group, may contribute to decisions on future Coleman National Fish Hatchery operations.

As required by the federal Endangered Species Act (ESA), the USFWS has submitted a biological assessment (U.S. Fish and Wildlife Service 2001b) to NOAA Fisheries for consultation on current operations at Coleman National Fish Hatchery, and has agreed to reinitiate consultation with NOAA Fisheries for potential effects of hatchery operations on listed anadromous fish following completion of the Restoration Project and enhancement of salmonid populations (White et al. pers. comm.).

Potential Effects Related to the Infectious Hematopoietic Necrosis Virus on Mount Lassen Trout Farm Facilities and Darrah Springs Fish Hatchery

Some public comment letters received on the 2003 Draft EIS/EIR raised a concern that the potential effects of the Restoration Project on MLTF operations were not adequately analyzed or addressed in the Draft EIS/EIR.

MLTF is an aquaculture operation consisting of 12 small facilities in the Battle Creek watershed that raise rainbow trout for sale as stock for lakes and ponds. Two of these facilities, Jeffcoat and Willow Springs, use spring water in their trout ponds that could potentially come in part from seepage from two PG&E canals that carry Battle Creek water: the Eagle Canyon Canal and the Inskip Canal[2].

MLTF has certain restrictions regarding the ability to sell “disease-free” fish, although there is some risk of disease currently in the Battle Creek system. The goal of the Restoration Project is to restore populations of anadromous fish to Battle Creek, which increases the potential to carry the infectious hematopoietic necrosis (IHN) virus into the upper reaches of Battle Creek. Because of the extremely porous volcanic soils in the Battle Creek watershed, increasing the numbers of anadromous fish in Battle Creek could potentially increase the risk of the IHN virus seeping from PG&E’s canals into the groundwater and resurfacing at the MLTF source springs. If fish raised at MLTF facilities become exposed to the IHN virus through contaminated water, MLTF would experience economic losses as a result of fish mortality and regulations against selling diseased stock.

[2] Reclamation is currently conducting studies to confirm the hydrologic connection between PG&E facilities and MLTF’s Willow Springs site.

This adverse effect was identified in the Draft EIS/EIR, along with the assurance that Reclamation is working with MLTF to develop mutually agreeable compensation measures. However, many commentors requested a detailed description of these compensation measures in the Final EIS/EIR, and an analysis of IHN virus effects in Section 4.1, Fish; Section 4.4, Water Quality; and Section 4.6, Land Use. Concurrently, DFG expressed concern about the spread of the IHN virus from MLTF facilities, through stocking of these fish, to fish that reside in other waters of California where such diseases do not occur and, therefore, do not have as much immunity from the disease. Although the State of California has several regulatory planning processes intended to protect fish communities from the spread of diseases categorized as serious or catastrophic, DFG may not be able to implement these measures because of limited testing and enforcement capability (Rectenwald pers. comm.).

In addition to the concern that the IHN virus could be spread through stocking with MLTF fish, there is also a concern that fish at the Darrah Springs State Fish Hatchery could be affected with the IHN virus. This is because, similar to MLTF fish, fish from Darrah Springs State Fish Hatchery are planted in waters throughout the state of California, especially in northern California. The concern is that anadromous fish infected with the IHN virus could possibly infect fish from Darrah Springs if the anadromous fish were able to pass above Asbury Diversion Dam at high flows. If the disease is not detectable in the hatchery fish at the time they are transported off site, the disease could be conveyed to other fish communities where the hatchery stocking occurs.

Thus, Reclamation and the State Water Board proposed mitigation measures to ensure that MLTF and the Darrah Springs State Fish Hatchery fish will not be exposed to the IHN virus, thus avoiding any socioeconomic impacts on MLTF as well as avoiding risk of spreading the disease to other uninfected fish populations and waters of California. With respect to MLTF, these measures include diverting Eagle Canyon Canal water into a new watertight pipeline at a point along the canal that is sufficiently far enough upstream of the spring area to prevent canal water from mixing with MLTF spring water and would discharge back into Eagle Canyon Canal at a point downstream of the spring area. Several options are under consideration for the Willow Springs facility. These include installing a disinfection facility at MLTF's Willow Springs facility, relocating Willow Springs to raise trout at an off-site facility, modifying operations at Willow Springs so that farm-raised trout are not distributed to other state waters, and acquiring the Willow springs aquaculture business. Mitigation options under consideration for the Darrah Springs State Fish Hatchery include either structural or operational modifications at the Asbury Diversion Dam or waterfall modifications farther downstream of the dam.

Chapter 4, "Affected Environment and Environmental Consequences," of this Draft SEIS/REIR, presents the new impacts and mitigation measures identified above in Section 4.1, Fish, and Section 4.4, Water Quality. No impacts related to land use were identified; however, the affected environment discussion under Section 4.6, Land Use, has been modified to define aquaculture as a form of agriculture. Additionally, a modified discussion of project-related effects on

MLTF as described under Socioeconomics in Section 4.16, Other NEPA Analyses, is included for review in this document. All new impacts associated with the mitigation measures are presented in this Draft SEIS/REIR in Section 4.2, Botanical, Wetland, and Wildlife Resources, and in Section 4.8, Aesthetics.

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