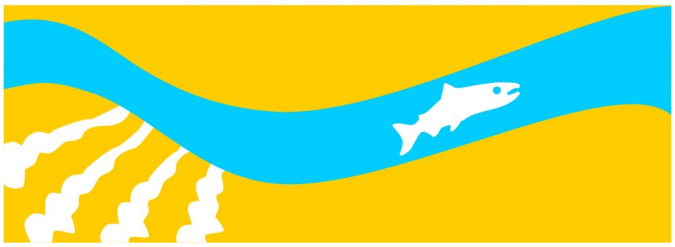
Final

Program Environmental Impact Statement/Report

SAN JOAQUIN RIVER
RESTORATION PROGRAM



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List of Abbreviations and Acronyms

2008 USFWS CVP/SWP Operations BO	2008 Biological Opinion on the Coordinated Operations of the CVP and SWP
2009 NMFS CVP/SWP Operations BO	NMFS 2009 Final Biological and Conference Opinion on the Long-Term Operations of the CVP and SWP
Act	San Joaquin River Restoration Settlement Act
BO	biological opinion
C2VSIM	California Central Valley Groundwater-Surface Water Simulation Model
CCID	Central California Irrigation District
CCR	California Code of Regulations
CD	compact disc
CEQ Regulations	Council on Environmental Quality's Regulations for Implementing NEPA
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Commission
CFR	Code of Federal Regulations
cfs	cubic feet per second
CVFPB	Central Valley Flood Protection Board
CVGSM	Central Valley Groundwater and Surface Water Model
CVHM	Central Valley Hydrologic Model
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CWA	Clean Water Act
DDT	dichloro-diphenyl-trichloroethane
Delta	Sacramento-San Joaquin Delta
DFG	California Department of Fish and Game
DMC	Delta-Mendota Canal
DMC	Delta-Mendota Canal
DSM2	Delta Simulation Model 2
DWR	California Department of Water Resources
EDT	Ecosystem Diagnosis and Treatment
EIR	Environmental impact Report
EIS	Environmental Impact Statement

EM	Engineering Manual
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act of 1973
ESHE	Emigrating Salmonid Habitat Estimation
ETL	Engineering Technical Letter
Exchange Contractors	San Joaquin River Exchange Contractors Water Authority
Flood Control Manual	Operation and Maintenance Manual for Levee, Irrigation and Drainage Structures, Channels and Miscellaneous Facilities
FMWG	Fisheries Management Workgroup
FPP	Friant Power Project
HEC-RAS	Hydraulic Engineering Center – River Analysis System
INSAR	Interferometric Synthetic Aperture Radar
IPAR	Initial Program Alternatives Report
KingIGSM	Kings Groundwater Basin Model
LSJLD	Lower San Joaquin Levee District
MCR	master comment response
MMRP	Mitigation Monitoring and Reporting Program
MOU	Memorandum of Understanding
MW	megawatt
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOP	Notice of Preparation
NULE	Non-Urban Levee Evaluation
OCAP	Operations Criteria and Plan
PARCS	Parks, After School, Recreation, and Community Service
PCB	polychlorinated biphenyl
PEIS/R	Program Environmental Impact Statement/Report
PRC	Public Resource Code
RA	Restoration Administrator
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
RMC	Resource Management Coalition
ROD	Record of Decision
RPA	reasonable and prudent alternatives
RWA	Recovered Water Account
RWQCB	Regional Water Quality Control Board
SDIP	South Delta Improvements Program

Settlement	Stipulation of Settlement in NRDC, et al., v. Kirk Rodgers, et al
SJRC	San Joaquin River Conservancy
SJRPCT	San Joaquin River Parkway and Conservation Trust
SJRRP	San Joaquin River Restoration Program
SJTA	San Joaquin Tributaries Association
SLCC	San Luis Canal Company
SLDMWA	San Luis and Delta-Mendota Water Authority
State	State of California
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAF	thousand acre-feet
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
VAMP	Vernalis Adaptive Management Program
WESTSIM	Westside Simulation Model

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Chapter 1.0 Introduction

The San Joaquin River Restoration Program (SJRRP) was established in late 2006 to implement a Stipulation of Settlement (Settlement) in *NRDC, et al., v. Kirk Rodgers, et al*. The U.S. Department of the Interior, Bureau of Reclamation (Reclamation), as the Federal lead agency under the National Environmental Policy Act (NEPA), and the California Department of Water Resources (DWR), as the State of California (State) lead agency under the California Environmental Quality Act (CEQA), have prepared this joint Final Program Environmental Impact Statement/Report (PEIS/R) to implement the Settlement. Federal authorization for implementing the Settlement is provided in the San Joaquin River Restoration Settlement Act (Act) (Public Law 111-11).

This Final PEIS/R, which includes the entirety of the Draft PEIS/R made available for public comment on April 22, 2011, has been prepared in accordance with the requirements of NEPA and CEQA to respond to comments received during the agency and public review period for the Draft PEIS/R, and to present corrections, revisions, and other clarifications to the Draft PEIS/R.

Authority for combined Federal and State documents is provided in Title 40, Code of Federal Regulations (CFR), Sections 1502.25, 1506.2, and 1506.4 (Council on Environmental Quality's (CEQ) Regulations for Implementing NEPA (CEQ Regulations)), and in California Code of Regulations (CCR) Title 14, Division 6, Chapter 3 (State CEQA Guidelines), Section 15222 (Preparation of Joint Documents). This document also was prepared consistent with U.S. Department of the Interior regulations specified in 43 CFR, Part 46 (U.S Department of the Interior Implementation of NEPA).

The Draft PEIS/R evaluates potential direct, indirect, and cumulative impacts on the environment at a program level that could result from implementing the Settlement consistent with the Act. The Draft PEIS/R also analyzes, at a project level of detail, the potential direct, indirect, and cumulative impacts that could result from implementing the following aspects of the Settlement: release, conveyance, and recapture of Interim and Restoration flows; monitoring and management actions; and conservation measures. In addition, the Draft PEIS/R includes feasible mitigation measures to avoid, minimize, rectify, reduce, or compensate for significant adverse impacts.

Where this document refers to the "Draft PEIS/R," this reference pertains to the document released for public review in April 2011, described above. Where this document refers to the "Final PEIS/R," this reference pertains to the chapters and appendices of this document, released for public review in July 2012. References to the "PEIS/R," without denoting Draft or Final, encompass the text presented in this document, as well as the text of the Draft PEIS/R as revised by errata and revisions presented in Chapter 4.0, "Errata," of this Final PEIS/R.

1.1 Public Review Process

The public comment period for the Draft PEIS/R began April 22, 2011, and ended September 21, 2011. On April 22, 2011, a Notice of Availability was published in the Federal Register, and the Draft PEIS/R and a Notice of Completion were provided to the State Clearinghouse for distribution to interested State agencies. A Notice of Availability was also filed in Contra Costa, Fresno, Kern, Madera, Merced, Sacramento, San Joaquin, Stanislaus, Tulare, and Yolo counties, California. The Draft PEIS/R was made available online at the SJRRP Web site (www.restoresjr.net), Reclamation's Web site (http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=2940), and at libraries in Contra Costa, Fresno, Kern, Madera, Merced, Sacramento, San Joaquin, Stanislaus, Tulare, and Yolo counties. More than 500 copies on compact disc (CD) and approximately 55 hard copies of the Draft PEIS/R were distributed to interested parties.

Four public hearings at the following times and locations were held to receive oral and written comments on the Draft PEIS/R:

- Tuesday, May 24, 2011, in Visalia, California
- Tuesday, May 24, 2011, in Fresno, California
- Wednesday, May 25, 2011, in Los Banos, California
- Thursday, May 26, 2011, in Sacramento, California

The public comment period was extended at the request of stakeholders for an additional 3 months beyond the initial comment due date of June 21, 2011, closing on September 21, 2011. The lead agencies received comments on the Draft PEIS/R by mail, fax, and e-mail, and through transcripts of comments made at the public hearings. More than 80 comment letters were received during the public comment period. These comments were considered in preparation of this Final PEIS/R.

1.2 Final PEIS/R Organization

In addition to the Draft PEIS/R, which is included in its entirety as part of this Final PEIS/R, this Final PEIS/R also includes the following chapters and appendices:

- **Chapter 1.0, Introduction** – This chapter describes the public review process for the Draft PEIS/R, content and organization of this Final PEIS/R, responses to comments, future NEPA and CEQA actions, and the Preferred Alternative.
- **Chapter 2.0, Master Comment Responses** – This chapter presents nine master comment responses (MCR) that were prepared to address numerous similar comments on several specific issue areas in the Draft PEIS/R.

- **Chapter 3.0, Individual Comments and Responses** – This chapter presents the list of persons, organizations, and public agencies commenting on the Draft PEIS/R; comments and recommendations received by the lead agencies on the Draft PEIS/R, including at the four public hearings; and individual responses of the lead agencies to significant environmental points raised during the public review of the Draft PEIS/R.

- **Chapter 4.0, Errata** – This chapter presents errata and revisions/clarifications to the Draft PEIS/R.

- **Chapter 5.0, References** – This chapter contains references to documents used to support the responses to comments.

- **Chapter 6.0, List of Preparers** – This chapter lists individuals involved in preparing and reviewing this document.

- **Appendix A, Final PEIS/R Distribution List** – This appendix contains the distribution list for this document.

- **Appendix B, Central Valley Steelhead (*Oncorhynchus mykiss*) Monitoring Plan for the San Joaquin River Restoration Program** – Contains the Central Valley Steelhead (*Oncorhynchus mykiss*) Monitoring Plan for the San Joaquin River Restoration Program as developed and currently under implementation with National Marine Fisheries Service (NMFS) as part of the Water Year 2012 Interim Flows Program.

- **Appendix C, CVP/SWP Long-Term Operations Sensitivity Analyses** – This appendix presents an assessment of the potential for anticipated effects of the program alternatives to change from those presented in the Draft PEIS/R, given potential changes in operations of the Central Valley Project (CVP) and State Water Project (SWP). The sensitivity analyses discussed in this appendix evaluate the program alternatives under a range of potential implementation of reasonable and prudent alternatives (RPA) presented in the U.S. Fish and Wildlife Service (USFWS) 2008 Biological Opinion on the Coordinated Operations of the CVP and SWP (2008 USFWS CVP/SWP Operations BO) and NMFS 2009 Final Biological and Conference Opinion on the Long-Term Operations of the CVP and SWP (2009 NMFS CVP/SWP Operations BO) (2009a). The sensitivity analyses do not result in any: (1) revisions or changes to the Draft PEIS/R, (2) new significant environmental effects, (3) substantial increases in the severity of previously identified significant effects in the Draft PEIS/R, (4) new information of substantial importance, or (5) mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the program.

- **Appendix D, Fish and Wildlife Coordination Act Report –**The Fish and Wildlife Coordination Act Report assesses the potential effects of implementing

the Settlement on fish and wildlife resources, and provides USFWS's recommendations to avoid, minimize, or compensate potential effects.

1.3 Responses to Comments

NEPA and CEQA require lead agencies to evaluate comments on environmental issues received from persons who reviewed the Draft PEIS/R and to prepare written responses to comments received within the public comment period. This Final PEIS/R contains responses to comments from elected officials, Federal agencies, tribes, State agencies, regional and local governments or agencies, special interest groups, and individuals. When there has been significant public comment, NEPA and CEQA allow the lead agency to summarize or consolidate responses to similar comments, as long as all substantive issues are represented. Chapter 2.0, "Master Comment Responses," contains Master Comment Responses that address numerous similar comments received on specific topics in the Draft PEIS/R. Many comment letters contained similar, if not identical, comments. Master Comment Responses are provided once in Chapter 2.0 and are referenced to supplement related individual responses to comments presented in Chapter 3.0, "Individual Comments and Responses."

1.4 Future NEPA/CEQA Actions

Not less than 30 days after release of the Notice of Availability for this Final PEIS/R (40 CFR 1506.10), Reclamation will consider the proposed action and issue its Record of Decision (ROD). Not less than 10 days after providing copies of this Final PEIS/R to all commenting public agencies (Public Resources Code Section 21092.5(a)), DWR will consider both certification of the Program Environmental Impact Report (PEIR) and approval of the proposed project. DWR will also need to make written findings for each significant environmental effect of the SJRRP, accompanied by a brief explanation of the rationale for each finding (State CEQA Guidelines Section 15091); make a Statement of Overriding Considerations (State CEQA Guidelines 15093); adopt a Mitigation Monitoring and Reporting Program (MMRP) (State CEQA Guidelines Section 15097); file a Notice of Determination (State CEQA Guidelines Section 150940); and comply with other CEQA requirements for certifying an Environmental impact Report (EIR) and approving the project.

Under the programmatic approach used for this PEIS/R, additional technical analyses, project-level NEPA and CEQA environmental compliance documents, permitting, and MMRPs will be necessary before implementation of some future actions.

1.5 Preferred Alternative

Reclamation and DWR have identified Alternative C1, Reach 4B1 at 475 cubic feet per second (cfs), New Pumping Plant Recapture, as the Preferred Alternative.

Reclamation is required to identify the Preferred Alternative in a Final Environmental Impact Statement (EIS) (unless prohibited by law) (40 CFR 1502.14(e) and 43 CFR 46.425). It should be noted that CEQ regulations do not require identification of a Preferred Alternative in a Draft EIS if none has been determined. The Preferred Alternative should be an alternative that completes the action and that best meets the purpose and need for the action, as defined in an EIS. Defining the Preferred Alternative does not define the Federal lead agency's final decision. It is not necessary to provide a separate discussion in an EIS on the rationale for selecting of a Preferred Alternative. That specific discussion is most appropriate for the ROD. The intention is to inform the public what the Federal lead agency considers best, based on available information. Public comments or other considerations may result in a change in the Preferred Alternative and may even result in the final decision (recorded in the ROD) not being the Preferred Alternative identified in a Final EIS.

If an alternative exists that has the consensus of the affected community and is reasonable and practicable, meets the purpose and need for action, and is within Reclamation's statutory authority to implement, Reclamation should designate that alternative as the Preferred Alternative or explicitly explain why it was not so designated (43 CFR 46.110). No such consensus-based alternative has yet to be proposed by any party.

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Chapter 2.0 Master Comment Responses

Reclamation as the Federal lead agency under NEPA, and DWR as the State lead agency under CEQA, received more than 80 letters commenting on the Draft PEIS/R for the SJRRP, containing more than 1,000 individual comments. When there is significant public comment, NEPA and CEQA allow lead agencies to summarize or consolidate responses to similar comments, as long as all substantive issues are represented.

Some comments on the Draft PEIS/R were made frequently, demonstrating common concerns among those submitting written comments and those speaking at the public hearings. The array of similar comments about particular topics revealed different aspects of common issues. To present responses that address all aspects of these related comments, MCRs were prepared for recurrent topics and themes that were raised in a number of comments on the Draft PEIS/R. The MCRs provide a means of providing a broader context to the response than may be possible when making individual responses. In some cases, an individual comment may be answered by one or more of the MCRs. The MCRs are presented in this chapter to supplement related individual responses to similar comments presented in Chapter 3.0, "Individual Comments and Responses." Many of the individual responses contained in Chapter 3.0 rely on all or portions of the MCRs in the individual response to comment.

This chapter presents nine MCRs, as follows:

- **MCR-1** – Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals
- **MCR-2** – SJRRP Funding Availability, Sources, and Cost Estimates
- **MCR-3** – Order and Schedule of Implementing Settlement Actions
- **MCR-4** – Segmentation Under NEPA and CEQA
- **MCR-5** – Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA
- **MCR-6** – Third-Party Concerns and Outreach
- **MCR-7** – Adequacy of Conservation Strategy
- **MCR-8** – Operations and Maintenance Agreement Considerations
- **MCR-9** – Recreation Impacts and Kings River

2.1 MCR-1: Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals

Several comments raised the topic of SJRRP feasibility related to the Settlement, the Act, and technical evaluations presented in the Draft PEIS/R. Some raised concerns regarding the absence of a feasibility assessment to accompany the Draft PEIS/R. Other comments reflect concern over the ability to achieve the Restoration and Water Management goals by implementing the provisions of the Settlement and the Act. This MCR presents the relationship of these issues to the content and purpose of the PEIS/R, as well as to other planning and implementation efforts that the Implementing Agencies are currently undertaking.

A third issue regarding feasibility raised in several comments concerns the feasibility of implementing the Settlement consistent with the Act in the manner described in the Draft PEIS/R in the form of the action alternatives, including concerns about financing, implementation schedule, and Third-Party impacts. Responses to concerns about financing, implementation schedule, and Third-Party impacts are addressed separately in MCR-2, MCR-3, and MCR-6, respectively.

2.1.1 Feasibility Studies and NEPA/CEQA

Feasibility studies for Reclamation projects are completed consistent with the *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*, commonly called the *Principles and Guidelines*, prepared by the U.S. Water Resources Council (1983). As described in the Principles and Guidelines, the purpose of a feasibility study is to ensure proper and consistent planning by Federal agencies in formulating and evaluating water and related land resource studies. As described in Reclamation's *Directive and Standards*, CMP-05-02 (2000), "Feasibility studies are detailed investigations specifically authorized by law to determine the desirability of seeking congressional authorization for implementation." In addition, "feasibility studies cannot be initiated until specifically authorized in accordance with the Federal Water Project Recreation Act (Public Law 89-72, Section 8; 79 Statute 217)." Consistent with the *Directive and Standards*, CMP-05-02, a feasibility study is intended to "develop a preferred plan from a range of alternative courses of action to meet recognized needs, problems, and opportunities associated with the planning area of concern." A feasibility study is conducted as authorized by law. While NEPA/CEQA compliance documents are often prepared in conjunction with feasibility studies, specific feasibility assessments of the effectiveness of a proposed action are not required by either NEPA or CEQA.

The Settlement does not require a feasibility study, as defined in Reclamation's *Directive and Standards* (2000), for any part of the SJRRP or for the SJRRP as a whole. The Act requires feasibility studies for specific Water Management actions. For example, Section 10201 authorizes and directs the Secretary of the Interior to conduct feasibility studies in coordination with appropriate Federal, State, regional, and local authorities on several specific improvements and facilities in the Friant Division that can contribute toward achieving the Water Management Goal. These project-level feasibility studies are

ongoing. The PEIS/R provides substantial information, particularly with respect to environmental resources, impacts, and mitigation, to inform these project-level feasibility studies. The Act does not authorize or direct the Secretary to conduct feasibility studies on other parts of the SJRRP (including actions to achieve the Restoration Goal), to assess the SJRRP, or as a condition of implementing the SJRRP.

2.1.2 Achieving Restoration and Water Management Goals

Reclamation, DWR, and other Implementing Agencies acknowledge that implementing the Settlement will involve many challenges, some of which are not specifically addressed through provisions of the Settlement or the Act. Several comments reflect concern over the ability to achieve the Restoration and Water Management goals by implementing the provisions of the Settlement consistent with the Act, the overall likelihood of success of the SJRRP, or the likelihood of success of particular actions, such as reintroducing Chinook salmon (*Oncorhynchus tshawytscha*). The PEIS/R evaluates the potential impacts of implementing the Settlement consistent with the Act. The PEIS/R does not evaluate the feasibility of the Settlement, the likely efficacy of Settlement actions in achieving the Restoration or Water Management goals, or the interactions of individual Settlement actions with other Settlement actions. Such evaluations could be undertaken in a feasibility study but, as described above, a feasibility study on implementing the Settlement consistent with the Act was not required before, or as a condition of, Settlement implementation.

The Implementing Agencies recognize the unprecedented nature of the SJRRP, and acknowledge that flexibility in implementing the Settlement is necessary to ultimately achieve the Restoration and Water Management goals. In consideration of this necessary and anticipated flexibility, the SJRRP management process involves a broad range of strategies to guide implementation of the Settlement consistent with the Act and incorporates a continuously growing set of data and scientific information. The Interim Flows program, initiated in 2009, will contribute substantially to the set of historical data by facilitating collection of information regarding flow, water temperature, fish behavior and needs, habitat response and other biological effects, geomorphologic effects, seepage, and water recapture, recirculation, and reuse opportunities.

The project description presented in the Draft PEIS/R incorporates many tools and strategies to make timely and relevant use of this growing set of data, and to periodically evaluate progress toward achieving the Restoration and Water Management goals. As described in the Draft PEIS/R, the Restoration Administrator (RA) and the Technical Advisory Committee serve in critical roles in implementation of the Settlement. The RA, in consultation with the Technical Advisory Committee, the Secretary, and other appropriate Federal, State, and local agencies, will continue to develop and recommend to the Secretary implementation of a program of Interim Flows. The RA's duties, as defined in the Settlement, also include consulting with the Secretary on implementing actions under Paragraph 11 of the Settlement and identifying and recommending additional actions under Paragraph 12 of the Settlement. In addition, the RA is responsible for consulting with the Secretary on the reintroduction of Chinook salmon under Paragraph 14 of the Settlement. Consistent with the Settlement, the RA's

recommendations are taken into consideration by the Secretary in making decisions or taking specific actions to be implemented under the Settlement.

Implementation of all action alternatives would be supported by the formation and/or continuation of several technical work groups to facilitate, coordinate, and communicate the various technical activities required to implement the Settlement. As described in the Draft PEIS/R, all action alternatives would include establishing and administering a Channel Capacity Advisory Group to provide independent review of estimated then-existing channel capacities, monitoring results, and management actions identified by Reclamation to address vegetation and sediment transport within the system. Additionally, the SJRRP has established a Fisheries Management Work Group and Technical Feedback Group, Environmental Compliance and Permitting Work Group, Seepage and Conveyance Technical Feedback Group, Restoration Goal Technical Feedback Group, and Water Management Work Group and Technical Feedback Group. These work groups enable representatives of the Implementing Agencies to receive feedback from members of the public through topic-specific technical feedback meetings. The SJRRP also communicates with stakeholders through the SJRRP Web site (http://www.restoresjr.net) by producing annual reports, fact sheets, brochures, and program updates; conducting site-specific landowner meetings; distributing notifications through an e-mail distribution list; and monitoring feedback on potential seepage-related impacts through e-mail (InterimFlows@restoresjr.net) and the Seepage Hotline (916-978-4398). This ongoing involvement of technical work groups and stakeholder and public input is an important factor in achieving the Restoration and Water Management goals, and maintaining flexibility in meeting those goals, as described below.

The action alternatives presented in the PEIS/R include provisions for necessary and anticipated flexibility in implementing the Settlement. In this manner, all of the action alternatives would achieve implementation of the Settlement consistent with the Act. The Settlement and the Act include provisions for accommodating implementation flexibility, and mechanisms for evaluating success of the Restoration and Water Management goals; the project description presented in the Draft PEIS/R is consistent with these provisions. Following is a partial list of provisions of the Settlement and the Act related to implementation flexibility, and clarification on how the Draft PEIS/R incorporates these provisions:

- **Settlement Paragraph 12 –** Provides for implementing "additional modifications" beyond specific actions identified in Paragraph 11 of the Settlement "that may further enhance the success of achieving the Restoration Goal." The project description includes several potential actions, such as gravel augmentation and side-channel establishment, which could be implemented to enhance the success of achieving the Restoration Goal. This range of potential actions is included in all action alternatives and evaluated in the Draft PEIS/R at a program level.

- **Settlement Paragraph 14(a)** – Describes provisions related to reintroducing Chinook salmon and other native fishes to the Restoration Area. Appendix E, *Fisheries Management Plan*, of the Draft PEIS/R describes a framework for

addressing specific actions related to fisheries and evaluating the merits of these actions in an action routing process to maximize the success of the Chinook salmon reintroduction program. Paragraph 14 also states that, "In the event that competition, inadequate spatial or temporal segregation or other factors determined to be beyond the control of the Parties make achieving the Restoration Goal for both spring-run and fall-run Chinook salmon infeasible, then priority shall be given to restoring self-sustaining populations of wild spring-run Chinook salmon." The project description accommodates but does not require this potential prioritization because a decision to prioritize spring-run Chinook salmon would be made after finalization of the PEIS/R. The monitoring and evaluation of conditions within the Restoration Area and response of the system during the release of Interim and Restoration flows would help inform this decision, as described in Appendix E of the Draft PEIS/R, "Fisheries Management Plan."

- **Settlement Paragraph 20 –** Describes the process for modifying the quantity or timing of Restoration Flows. Evaluation of a requested change in Restoration Flows, according to Paragraph 20(d), shall be made in light of the extent of implementing the Settlement and the extent of success in achieving the Restoration and Water Management goals. The project description includes the full range of potential Interim and Restoration flows, as described in the Settlement. A change in Restoration Flows pursuant to Paragraph 20 would require consideration of several factors, including "…the likely effect on… downstream environmental conditions." Alternatives to the Restoration Flow schedule presented in Exhibit B of the Settlement are not explicitly included in the project description or evaluated in the PEIS/R. However, the project description presented in the PEIS/R does accommodate a range of potential flows up to full Restoration Flows, and includes provisions for applying flexible flow periods, as described in Exhibit B of the Settlement; the use of a 10 percent buffer flow to help meet the Restoration Goal; and the release of acquired water for unanticipated river seepage losses for Restoration Flows.

- **Settlement Paragraphs 24, 25, and 26 –** Describe the steps to be taken in light of a "force majeure event," meaning "an event beyond the reasonable control of the Secretary that prevents the Secretary from fulfilling any obligation required by this Settlement despite the exercise of due diligence." The project description does not assume the occurrence of such a force majeure event.

- **Section 10011(d) of the Act –** Directs the Secretary of Commerce to report to Congress on the progress made on reintroduction no later than December 31, 2024, and sets forth requirements for that report. This section does not apply directly to implementing the action alternatives or to developing the PEIS/R.

2.2 MCR-2: SJRRP Funding Availability, Sources, and Cost Estimates

Several comments reflected concerns regarding the continued availability of funding to implement the Settlement consistent with the implementation schedule envisioned in the Settlement. Some commenters requested that a disclosure of proposed funding sources be included in the PEIS/R. The PEIS/R evaluates the environmental effects of implementing the Settlement within the planning horizon of 2030. The SJRRP implementation schedule and its correlation with available funding are not presented in the PEIS/R, nor are there resulting environmental effects that should be considered in the PEIS/R. Throughout Settlement implementation, however, the Implementing Agencies will remain cognizant of funding availability and the need to prioritize individual actions in recognition of their estimated costs and anticipated effectiveness. Although including funding sources in an EIS or EIR is not required under NEPA or CEQA, respectively, this MCR summarizes current funding sources for implementing the SJRRP and is provided for informational purposes only to respond to comments on this subject.

2.2.1 Funding Availability and Sources

Several funding sources for implementing the Settlement have been identified. However, the amount and timing of funding on a year-to-year basis may vary considerably. Because of this variability, the Implementing Agencies coordinate activities and budgets closely to minimize or avoid delays in implementation.

The following funding sources are available to the SJRRP:

- **San Joaquin River Restoration Fund (Restoration Fund)** – Section 10009(c) of the Act created the San Joaquin River Restoration Fund. Funds deposited into the Restoration Fund include funds from Friant Division surcharges, capital component, proceeds from the sale of water, and any non-Federal sources. The Act authorized all funds deposited into the Restoration Fund for appropriation, and made $88 million of such funds available for expenditure without further appropriation. After October 1, 2019, all funds in the Restoration Fund are available for expenditure without further appropriation. Funds deposited into the San Joaquin River Restoration Fund include the following:

  - **Friant Division surcharges** – Continuation and the dedication of the "Friant Surcharge," an environmental fee charged pursuant to the Central Valley Project Improvement Act (CVPIA) of $7 per acre-foot of water delivered to Friant Contractors. The Friant Division surcharge was authorized in the Reclamation Projects Authorization and Adjustments Act of 1992, Title XXXIV of Public Law 102-575, Section 3406(c)(1), October 30, 1992. Section 10009(c)(1)(A) of the Act redirects the Friant Division Surcharge to the San Joaquin River Restoration Fund through 2020. The Friant Division surcharges are estimated to average $5.6 million per year. After 2020 and consistent with Section 10010(d) of the Act, the surcharge rate can be reduced

to no less than $4 per acre-foot of water delivered to the Friant Contractors, resulting in an estimated average annual collection of $3.2 million per year.

- **Capital component** – Section 10009(c)(1)(B) of the Act redirected the construction cost component of payments made by the Friant Division, Hidden Unit, and Buchanan Unit long-term contractors pursuant to their long-term water service contract or to repayment contracts executed pursuant to Section 10010 of the Settlement Act to the Restoration Fund. The capital component is estimated to be approximately $245 million.

- **Proceeds from the sale of water** – Section 10009(c)(1)(C) of the Act directs the proceeds from the sale of water pursuant to the Settlement, or from the sale of property or interests in property, as provided in Section 10005 of the Act, to the Restoration Fund. This includes proceeds from sale of Recovered Water Account water. Proceeds from the sale of water are estimate to average $1.5 million per year.

- **Any non-Federal funds** – Section 10009(c)(1)(D) of the Act allows for depositing any non-Federal funds, including State cost-sharing funds, contributed to the United States for implementing the Settlement.

- **Central Valley Project Improvement Act** – Section 10009(b)(2) of the Act authorized the use of up to $2 million (at October 2006 price levels) in any fiscal year from the Central Valley Project Restoration Fund for implementing the Settlement.

- **Federal appropriations** – Section 10009(b)(1) of the Act authorized $250 million to be appropriated (at October 2006 price levels) to implement the Settlement, and Section 10203(c) of the Act authorized an additional $50 million to be appropriated to implement specific Water Management Goal actions included in the Act.

- **State of California funds** – The State of California is providing an aggregate $200 million that includes bond funds from State propositions 84, 1E, and 13.

The Implementing Agencies and Settling Parties recognize that appropriated funding needs for the SJRRP will remain a critical focus throughout the next several years. Similar to all projects subject to appropriations, there is inherent uncertainty as to the amount of funding that will be authorized each year.

The SJRRP has recently published an accounting of funds approved, obligated, and expended by the end of fiscal year 2011 along with a detailed description of what has been accomplished thus far (SJRRP 2012a). This document, *Approved, Obligated and Expended Funds: Fiscal Year 2007-2011*, can be found at http://www.restoresjr.net./program_library/02-Program_Docs/index.html.

2.2.2 Cost Estimates

Funding amounts received to date are sufficient, based on initial cost estimates developed by the lead agencies and Settling Parties, to cover the costs of SJRRP implementation. The Settling Parties have also recently developed a Third-Party working draft *Framework for Implementation* for the SJRRP (SJRRP 2012b). The *Framework for Implementation* outlines actions to be taken to implement the Settlement, and presents a schedule and budget for these actions. The *Framework for Implementation* also provides an accounting of the remaining funds available to implement the SJRRP. The *Framework for Implementation* can be found on the SJRRP Web site at www.restoresjr.net. While the *Framework for Implementation* presents a revised schedule for implementing the SJRRP, it does not result in any new significant environmental impacts or a substantial increase in the severity of an environmental impact, or create a feasible project alternative or mitigation measure that would clearly lessen environmental impacts identified in the PEIS/R.

In addition to cost estimates developed by the lead agencies, comments submitted on the Draft PEIS/R on behalf of the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors) and the San Joaquin River Resource Management Coalition (RMC) (and joined into by several individuals), included a cost estimate to implement the SJRRP. The lead agencies recognize and appreciate the careful consideration of the SJRRP and valuable knowledge of the Restoration Area that is reflected in this cost estimate.

The PEIS/R does not include or address cost estimates, nor is there a specific requirement in NEPA or CEQA to do so. Thus, the text has not been revised in response to the cost estimate provided by the Exchange Contractors and RMC.

2.3 MCR-3: Order and Schedule of Implementing Settlement Actions

Several comments reflect concerns regarding the order of implementing Settlement actions, as well as the likelihood of implementing the Settlement actions consistent with the milestone dates identified in the Settlement. In particular, several comments raised concerns regarding reintroducing spring-run Chinook salmon before completing Phase 1 and Phase 2 projects. This MCR addresses these concerns and clarifies the relationship of these issues to the content and purpose of the Draft PEIS/R, as well as to other planning and implementation efforts that the Implementing Agencies are currently undertaking.

2.3.1 Settlement Schedule

As described in Chapter 1.0, "Introduction," of the Draft PEIS/R, the Implementing Agencies are committed to attaining the milestone dates recommended in the Settlement and identified in Table 1-2 of the Draft PEIS/R. It is anticipated that future milestone dates may not be met as described in the *Framework for Implementation* (SJRRP 2012b). The impact assessment presented in the PEIS/R is structured to accommodate a range of potential construction intensities to reflect potential variation in the implementation schedule. For example, Chapter 22.0, "Socioeconomics," of the Draft PEIS/R evaluates the direct, indirect, and induced effects that yearly construction expenditures of $1 million, $10 million, and $50 million could have on the total output and employment of Fresno, Madera, and Merced counties, reflecting a range in the potential timeline and scale of construction activities within the Restoration Area.

The milestone dates identified in the Settlement were based on an implementation schedule that assumed *favorable* conditions throughout all stages of implementation regarding the availability of funding; close cooperation and coordination with other Federal, State, and local agencies; cooperation from landowners and other stakeholders; and no additional major project elements beyond those identified in the Settlement. It also was assumed that final designs would be generally consistent with initial conceptual plans and no additional engineering features beyond those identified in the Settlement and described in the Draft PEIS/R would be required to achieve the Restoration and Water Management goals.

The implementation schedule presented in the Settlement was based on a technical understanding of the Restoration Area at that time, including assumptions regarding necessary modifications to the Restoration Area based on the limited availability of detailed, site-specific information. The historical data set is continuously growing and informing implementation of the Settlement. Ongoing data collection efforts related to the Interim Flow releases, initiated in 2009, contribute to the set of historical data by facilitating collection of information regarding flows, temperatures, fish needs, biological effects, geomorphologic effects, seepage, and water recapture, recirculation, and reuse opportunities. As more information on the condition of the Restoration Area is collected, understanding the steps necessary to implement the Settlement will be refined as needed based on the best available information.

Comments submitted on the Draft PEIS/R on behalf of the Exchange Contractors and RMC (and joined in by several individuals), included recommendations on the schedule for SJRRP implementation. The lead agencies recognize and appreciate the careful consideration of the SJRRP and valuable knowledge of the Restoration Area that is reflected in these recommendations. As described in the following section, the action alternatives in the Draft PEIS/R are structured to accommodate a developing understanding of the Restoration Area and potential changes in implementation needs and schedule. Schedule recommendations provided by the Exchange Contractors and RMC will be considered during implementation of the SJRRP.

2.3.2 Phase 1 and Phase 2 Improvements and Chinook Salmon Reintroduction

Several comments raised concerns regarding the potential for reintroducing spring-run Chinook salmon before Phase 1 projects is completed. Paragraph 11 of the Settlement specifies channel and structural improvements (Phase 1 and Phase 2 improvements) described as "necessary to fully achieve the Restoration Goal." The Settlement milestone dates include reintroducing spring- and fall-run Chinook salmon by December 31, 2012; completing Paragraph 11(a) actions (Phase 1 improvements) by December 31, 2013; initiating full Restoration Flows by January 1, 2014; and completing Paragraph 11(b) actions (Phase 2 improvements) by December 31, 2016. As previously described, the dates for completing Phase 1 and potentially Phase 2 improvements may change based on when compliance, coordination, consultation, data collection, and related efforts are completed. Neither the Settlement nor the Act links progress in completing Phase1 and Phase 2 improvements to salmon reintroduction. Furthermore, the Settlement does not specify that Phase 1 projects need to be completed before Chinook salmon are reintroduced. Rather, the Settlement envisioned that both spring-run and fall-run Chinook would be reintroduced before Phase 1 and Phase 2 projects are completed, as presented in the Settlement's milestone dates.

The action alternatives are structured to accommodate a continuously evolving understanding of the system and potential changes in implementation needs and schedule. Program- and project-level actions described in this PEIS/R provide a broad direction for a wide range of possible future actions, while allowing flexibility to respond to changing needs and conditions (see MCR-5 for further discussion of this topic). The Implementing Agencies acknowledge that additional analysis pursuant to NEPA and/or CEQA will be required in the future for activities addressed at a program level in this PEIS/R, after specific project details are identified. At that time, the Implementing Agencies would require compliance with the mitigation measures and performance standards set forth in this PEIS/R as conditions for approval of subsequent actions, when appropriate. The extent of environmental review for future actions will depend on a number of factors, including the extent to which the programmatic analysis, mitigation measures, and performance standards have anticipated and accounted for the project-specific impacts of the future action. Additional analysis must be completed for actions evaluated only at a program level in this PEIS/R pursuant to NEPA and/or CEQA at a project level of detail, unless further analysis demonstrates that any such action meets criteria for being exempted or excluded from further analysis pursuant to NEPA and/or CEQA.

Specific environmental effects related to reintroducing spring-run Chinook salmon would be addressed in subsequent project-specific analysis under NEPA and CEQA, as appropriate, and in compliance with an associated Special Rule authorizing the experimental population. The timing of reintroducing salmon related to other Settlement actions, including the completing Phase 1 and Phase 2 improvements and releasing of full Restoration Flows, may be considered during development of alternatives for evaluation in future NEPA and CEQA analyses. However, timing of reintroducing salmon related to other Settlement actions is not determined in this PEIS/R because it would be too speculative for meaningful consideration without the availability of additional details and information on potential project-level actions. An evaluation of the potential effects of reintroduction (or other Settlement actions) on the reintroduced salmon population itself would constitute an evaluation of the potential effects of implementing the proposed action on the success of the proposed action itself.

Paragraph 14 of the Settlement states that the Secretary, through USFWS, and in consultation with the Secretary of Commerce, the California Department of Fish and Game (DFG), and the RA, will reintroduce spring- and fall-run Chinook salmon "at the earliest practical date after commencement of sufficient flows and the issuance of necessary permits." As described in the Draft PEIS/R and previously in MCR-1, the RA, in consultation with the Technical Advisory Committee, is responsible for consulting with the Secretary on the reintroduction of Chinook salmon under Paragraph 14 of the Settlement, on implementing actions under Paragraph 11 of the Settlement, and on identifying and recommending additional actions under Paragraph 12 of the Settlement. The RA's recommendations would be considered by the Secretary in making decisions or taking specific actions to be implemented under the Settlement. The Implementing Agencies continue to evaluate the appropriate timing and other site-specific details of the reintroduction process; however, this evaluation is ongoing, beyond the scope of this PEIS/R, and has been addressed only to the degree that information was available at the time the Draft PEIS/R and Final PEIS/R were prepared and then only in the context of evaluating potential environmental impacts. The *Fisheries Management Plan*, included in the Draft PEIS/R as Appendix E, describes the framework for addressing specific actions related to fisheries and evaluates the merits of the actions in an action routing process.

2.4 MCR-4: Segmentation Under NEPA and CEQA

Several comments reflect concerns that the Draft PEIS/R may segment the proposed project and, in doing so, have improperly addressed the effects of certain actions that are part of the Settlement. In particular, comments raised segmentation concerns with respect to actions identified in Paragraphs 11(a) and 11(b) of the Settlement (also known as Phase 1 and Phase 2 actions, respectively), as well as site-specific projects that have already been completed or are currently in progress. This MCR clarifies how these actions are addressed in the PEIS/R in a manner consistent with NEPA and CEQA. It also addresses the relationship between the PEIS/R and other NEPA/CEQA compliance documents prepared separately for actions that have been completed or are currently in progress, and which have also been evaluated in the PEIS/R.

A related topic, the adequacy of the purpose and need, and the range of alternatives, is discussed in MCR-5. A related topic, data collected during Interim Flows, is addressed in MCR-8.

2.4.1 Segmentation

To ensure a comprehensive analysis in an EIS or EIR, both NEPA and CEQA require a lead agency to analyze the potential environmental effects of the entirety of a proposed project or action. This is specifically addressed under NEPA in 40 CFR 1502.4(a) which states the following:

> *Agencies shall make sure the proposal which is the subject of an environmental impact statement is properly defined. Agencies shall use the criteria for scope (Sec. 1508.25) to determine which proposal(s) shall be the subject of a particular statement. Proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement.*

Similar guidance under Section 15378 of the State CEQA Guidelines states the following:

> *'Project' means the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment…*

The term "segmentation" is often used to refer to the improper division of a project into separate pieces, or segments, for the purpose of analysis. Segmentation of related and interdependent pieces of a project for separate environmental analysis can obscure the disclosure of the full breadth of environmental impacts of the whole of a project by leaving out the effects of parts of a project. The result is an understating of the impacts of the entirety of a project, which, if evaluated as the whole action, could render greater environmental impacts than if disclosed individually. Thus, segmentation of a project

would fail to meet the NEPA and CEQA requirements for full disclosure of environmental effects.

Determination of proper or improper definition of a project under NEPA and CEQA is related to several concepts. Under NEPA, a project must include all connected actions, which "means that they are closely related and therefore should be discussed in the same impact statement," according to 40 CFR 1508.25(a):

> *Actions are connected if they:*
>
> *(i) Automatically trigger other actions which may require environmental impact statements.*
>
> *(ii) Cannot or will not proceed unless other actions are taken previously or simultaneously.*
>
> *(iii) Are interdependent parts of a larger action and depend on the larger action for their justification.*

Actions that have "independent utility" are not connected. A project is considered to have independent utility if the project serves a distinct purpose or function regardless of whether other projects are contemplated. Under the CEQ Regulations for implementing NEPA, a project demonstrates independent utility if it does not meet the definition of 40 CFR 1508.25(a). More specifically, the concept of independent utility is raised in 40 CFR 1506.1(a) and (c), which address limitations on actions during the NEPA process, and which state the following:

> *(a) Until an agency issues a record of decision as provided in Sec. 1505.2 (except as provided in paragraph (c) of this section), no action concerning the proposal shall be taken which would:*
>
> *1. Have an adverse environmental impact; or*
>
> *2. Limit the choice of reasonable alternatives…*
>
> *(c) While work on a required program environmental impact statement is in progress and the action is not covered by an existing program statement, agencies shall not undertake in the interim any major Federal action covered by the program which may significantly affect the quality of the human environment unless such action:*
>
> *1. Is justified independently of the program;*
>
> *2. Is itself accompanied by an adequate environmental impact statement;*
>
> *and*

3. *Will not prejudice the ultimate decision on the program. Interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives.*

Like NEPA, the State CEQA Guidelines strive to ensure that project actions are not undertaken in a way so as to compromise the ability of the lead agency to consider and minimize environmental impacts. Section 15004(b)(2) of the State CEQA Guidelines states that the following:

> *…public agencies shall not undertake actions concerning the proposed public project that would have a significant adverse effect or limit the choice of alternatives or mitigation measures, before completion of CEQA compliance. For example, agencies shall not:*
>
> *(A) Formally make a decision to proceed with the use of a site for facilities which would require CEQA review, regardless of whether the agency has made any final purchase of the site for these facilities, except that agencies may designate a preferred site for CEQA review and may enter into land acquisition agreements when the agency has conditioned the agency's future use of the site on CEQA compliance.*
>
> *(B) Otherwise take any action which gives impetus to a planned or foreseeable project in a manner that forecloses alternatives or mitigation measures that would ordinarily be part of CEQA review of that public project.*

Thus, the emphasis under NEPA and CEQA is that the definition or evaluation of a project may not be divided into pieces, or segmented, so as to limit the range of alternatives considered in an EIS and EIR or to constrain the discretion of a lead agency in making a decision related to the action.

The SJRRP is a major program made up of numerous actions to be implemented over a long period of time. The PEIS/R represents a good-faith effort to reasonably evaluate and disclose the environmental effects of the whole of the SJRRP. The PEIS/R evaluates potential direct, indirect, and cumulative impacts of the whole of the SJRRP on the environment at a program level that could result from implementing the Settlement consistent with the Act. The PEIS/R also analyzes at a project level of detail the potential direct, indirect, and cumulative impacts that could result from implementing certain aspects of the Settlement, including release, conveyance, and recapture of Interim and Restoration flows. In addition, the PEIS/R includes feasible mitigation measures to avoid, minimize, rectify, reduce, or compensate for significant adverse impacts.

These multiple levels of analysis are appropriate and proper under NEPA and CEQA. In fact, CEQA specifically allows that an EIR should focus on the level of detail that is inherent in the project description. The more that is known about a project, the greater

the level of detail called for in the EIR. More specifically, Section 15146 of the State CEQA Guidelines establishes that "…[t]he degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR." This guideline goes on to direct that "…[a]n EIR on a construction project will necessarily be more detailed in the specific effects of the project than will be an EIR on the adoption of a local general plan or comprehensive zoning ordinance because the effects of the construction can be predicted with greater accuracy," but that "[a]n EIR on a project such as the adoption or amendment of a comprehensive zoning ordinance or a local general plan should focus on the secondary effects that can be expected to follow from the adoption or amendment, but the EIR need not be as detailed as an EIR on the specific construction projects that might follow." Therefore, the differentiation in the level of analysis between certain parts of the proposed SJRRP is entirely proper under CEQA and does not represent piecemeal analysis or "segmentation" of the project.

This PEIS/R addresses the potential environmental effects of all Settlement actions in full compliance with NEPA and CEQA. In evaluating the "whole of the action" for the SJRRP, this PEIS/R considers all Phase 1 and Phase 2 actions, as well as unconnected but related actions completed before completion of this Final PEIS/R and actions currently under study separately from the PEIS/R, as described below.

2.4.2 Phase 1 and Phase 2 Actions

Some comments specifically stated that the Draft PEIS/R appeared to treat Phase 1 and Phase 2 actions as part of the environmental baseline. Consistent with the requirements of both NEPA and CEQA, the PEIS/R environmental baseline includes the conditions present in the study area before implementation of the Settlement. This is proper under both NEPA and CEQA, and is addressed clearly in the State CEQA Guidelines wherein Section 15126.2(a) states that "[i]n assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced."

Phase 1 and Phase 2 actions are not included in the environmental baseline evaluated in the PEIS/R, nor are they included in the No-Action Alternative. Baseline conditions are considered in the No-Action Alternative to provide a basis of comparison with the action alternatives. The No-Action Alternative is described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, and a detailed discussion of the conditions present in the study area is presented in Chapters 4.0 through 25.0. Phase 1 and Phase 2 actions are appropriately included in the action alternatives and are evaluated at a program level in the PEIS/R. All Phase 1 actions and most Phase 2 actions are included in all action alternatives, and are described beginning on page 2-37 of the Draft PEIS/R. Phase 2 actions not contained in all action alternatives include improvements to provide at least 4,500 cfs in Reach 4B1 (consistent with Paragraph 11(b)(1)). These actions are contained in Alternatives A2, B2, and C2 only, as described beginning on page 2-80 of the Draft PEIS/R.

Project-level NEPA and CEQA environmental documentation required for actions evaluated at a program level in the PEIS/R will be completed before the actions are implemented. These future project-level environmental documents may incorporate the findings of this PEIS/R through "tiering," and/or incorporating general or specific information, discussions, or analyses from the PEIS/R by reference. A PEIS/R can be used in these ways to streamline and simplify preparation of future related environmental documents. It is anticipated that these future project-specific documents will focus solely on issues specific to the project under evaluation, and will not require additional systemwide evaluations beyond those presented in this PEIS/R. The program-level assessments presented in this PEIS/R include impact evaluations and mitigation measures with performance standards, as appropriate. When developing project-level environmental compliance for any action addressed at a program level in the PEIS/R, the Implementing Agencies would require compliance with the appropriate mitigation measures and performance standards set forth in this PEIS/R as conditions for approval of each action.

2.4.3 Program vs. Project Level of Detail

The Draft PEIS/R presented two levels of analyses: program-level and project-level analyses. The program-level, or first-tier, analysis of the alternatives was performed in accordance with CEQ Regulations (40 CFR 1502.20), and consistent with California Public Resource Code (PRC) Sections 21093 and 21094, Title 14 CCR Sections 15152 and 15168, and 40 CFR 1500.4(i), 1502.4(b), and 1502.20, among others. The program-level analysis evaluated the actions identified in the Settlement. The Draft PEIS/R also included more detailed project-level analysis of certain actions in each alternative. Table 2-1 in the Draft PEIS/R summarizes the level of analysis (program or project) provided in the Draft PEIS/R for Settlement actions.

Some comments were directed at the level of detail in the Draft PEIS/R. While not directly a "segmentation" issue, these concerns focused on the limited amount of information available on program-level actions. A programmatic EIS (40 CFR 1500.4(i), 1502.4(b) and (c), and 1502.20) analyzes broad-scope actions that are similar in terms of timing, geography, or other characteristics that provide a basis for evaluating environmental consequences. A programmatic EIS provides a generic analysis of impacts that may not attempt to define site-specific effects in detail but does present at least a range of effects that reflect reasonably foreseeable consequences of the program. Federal agencies are encouraged to use programmatic and project-level EISs to eliminate repetitive discussions of the same issues and to focus on actual issues ripe for decision at each level of environmental review (40 CFR 1508.28). Similarly, CEQA Guidelines Section 15168 encourages the use of program EIRs for programs similar to the SJRRP, with future project-level CEQA documents tiering from the program EIR.

The Implementing Agencies acknowledge that additional analysis pursuant to NEPA and/or CEQA will be required in the future for activities addressed at a program level in this PEIS/R, after specific project details are identified. At that time, the Implementing Agencies would require compliance with the mitigation measures and performance standards set forth in this PEIS/R, where appropriate, as conditions for approving subsequent actions. Presenting information at different levels of detail is appropriate in a

PEIS/R that contains both program- and project-level analyses and descriptions of actions, as long as all reasonably available information is used. Project segmentation under NEPA and CEQA, therefore, does not occur simply because the PEIS/R contains two different levels of analyses for program- and project-level actions.

2.4.4 Site-Specific Projects Completed to Date

During preparation of the PEIS/R, several agencies have undertaken actions that are included in the PEIS/R project description. These actions have independent utility; however, if combined with other Phase 1 and Phase 2 actions, they would contribute to the achievement of the purpose and need, as described in the Draft PEIS/R. Importantly, the lead agencies for these projects have complied with 40 CFR 1506.1(c) by ensuring that each of these projects (1) is justified independently of the SJRRP, (2) is itself accompanied by an adequate NEPA and/or CEQA document, and (3) will not limit the range of alternatives to be considered in the PEIS/R or prejudice the ultimate decision on the SJRRP.

The actions that have been undertaken before completion of this Final PEIS/R and associated decision documents have independent utility while also potentially serving as essential first steps that contribute to implementing the Settlement. None of the actions taken to date, such as release of Interim Flows, data collection, monitoring, and others, commit the Implementing Agencies to undertaking any other part of the SJRRP; they are independent actions that benefit SJRRP if it is approved, as well as benefiting other programs, such as DWR's Non-Urban Levee Evaluation (NULE) Project. To a considerable degree, these early actions have the character of planning and feasibility studies that have been statutorily exempted from CEQA. Section 15262 of the State CEQA Guidelines states that a project is exempt from CEQA if it involves only "…feasibility or planning studies for possible future actions which the agency, board, or commission has not approved, adopted, or funded does not require the preparation of an EIR or Negative Declaration but does require consideration of environmental factors. This section does not apply to the adoption of a plan that will have a legally binding effect on later activities."

Data collection and monitoring activities are useful in evaluating channel characteristics and capacity, infiltration losses, levee stability and seepage, water temperature, fish management, and recapture conditions. The urgency to implement these selected actions before completing the Final PEIS/R was discussed in detail in the environmental compliance documents completed and certified were implemented. While the respective lead agencies have not sought to exempt these actions from NEPA or CEQA, these actions do not represent approval, adoption, or funding of the SJRRP, and also do not commit the Implementing Agencies to any further actions. The data are being applied to several programs unrelated to the SJRRP, such as NULE. Moreover, the environmental impacts of these already completed actions were considered in their respective NEPA and CEQA documents in the context of all other environmental effects resulting from all other actions in the PEIS/R, to the degree that they could be without undue speculation, as well as cumulatively with past, present, and reasonably foreseeable future projects.

All reasonably foreseeable SJRRP actions during public scoping (August 2, 2007, through September 26, 2007) are included in the project description and analyzed in the PEIS/R. Further, all actions completed before the Final PEIS/R is completed, but which are considered to be part of the overall SJRRP, are also included in all action alternatives evaluated in the PEIS/R along with all anticipated actions necessary for implementing the Settlement. The program-level analysis presented in the PEIS/R addresses the full range of effects of implementing the Settlement, including the project-level actions evaluated in detail in the PEIS/R, as well as cumulative impacts. This approach provides necessary flexibility to respond to changing needs and conditions. Most importantly, the "whole of the action," and potential environmental effects thereof, are evaluated in their entirety in the PEIS/R. Further, to the degree feasible without undue speculation, the remaining SJRRP actions were considered by lead agencies in the NEPA and CEQA documents that have been prepared for the few data-gathering actions completed before the PEIS/R ROD and certification.

The first of these physical actions was the installation of streamflow gages and monitoring wells, and the release and recapture of Interim Flows in October 2009. Site-specific NEPA and CEQA environmental documentation was prepared for these actions necessary to meet the Settlement schedule for release of Interim Flows, as shown in Table 2-8 of the Draft PEIS/R.

The most significant project completed to date is the release of Interim Flows, beginning in Water Year 2010. The release of Interim Flows during Water Years 2010 through 2012 was specifically called for in the Settlement, and is a demonstration project that has independent utility by providing important information on flows, temperatures, fish needs, seepage losses, shallow groundwater conditions, recapture, recirculation and reuse conditions, channel capacity (high and low flows), and levee stability regardless of future implementation of the Settlement. The release of Interim Flows does not commit the Implementing Agencies to any further actions, and the data are being applied to several programs unrelated to the SJRRP, such as NULE. Moreover, Interim Flows released during Water Years 2010 through 2012 were recirculated to minimize the impacts to Friant Division contractors of implementing the Interim Flows project.

While the release, conveyance, recapture, and recirculation of Interim Flows is identified in the Settlement as one of the first steps in implementing the SJRRP, these projects can be implemented successfully in meeting the purpose and need and objectives described in associated Interim Flows NEPA/CEQA compliance documents regardless of decisions about approval or denial of subsequent SJRRP activities. Most importantly for the adequacy of the PEIS/R, the environmental analysis in the PEIS/R considers and evaluates the combined effects of implementing Interim Flows, Restoration Flows, and all other actions described in the action alternatives. Other projects completed to date, such as installing and rehabilitating stream gages, installing monitoring wells, and implementing other projects, as shown in Table 2-8 of the Draft PEIS/R, serve similar data collection purposes with independent utility, while contributing to implementing the SJRRP.

Both NEPA and CEQA provide guidance for undertaking environmental review and documentation at the earliest possible time, yet not so early that the implications of projects cannot be reasonably understood. Under NEPA, an EIS "shall be prepared early enough that it can serve practically as an important contribution to the decision-making process and will not be used to rationalize or justify decisions already made" (40 CFR 1502.5). Section 15004 of the State CEQA Guidelines states that "[c]hoosing the precise time for CEQA compliance involves a balancing of competing factors. EIRs and negative declarations should be prepared as early as feasible in the planning process to enable environmental considerations to influence project program and design and yet late enough to provide meaningful information for environmental assessment." Thus, while the SJRRP was being developed, agencies that sought to undertake unconnected but related projects prepared project-level NEPA and CEQA documents pertaining to those proposed actions, as described above.

For each individual action implemented to date, all environmental impacts were fully disclosed to the degree possible in project-level NEPA and CEQA documents that were completed before the actions were approved and implemented. The project-level NEPA and CEQA documents disclosed project-level effects, including, to the extent feasible and practicable without being too speculative for meaningful consideration, impacts associated with the larger context of the SJRRP. The PEIS/R includes all impacts associated with implementing all SJRRP phases and actions, those related actions that have already been subject to evaluation in NEPA and CEQA documents (actions both implemented and currently in progress). Therefore, the PEIS/R does not in any way minimize the effects of the whole of the SJRRP; the effects of the whole of the action are described fully to the degree possible in the PEIS/R, and in each project-level NEPA and CEQA document covering actions that relate to the SJRRP.

2.4.5 Site-Specific Studies Currently in Progress

Currently, several actions related to the Settlement are in initial scoping, plan formulation, preliminary design, or other early phases of planning and compliance. Actions in these stages include the reintroduction of Chinook salmon, modifications to Reach 2B, modifications to Sack Dam and Arroyo Canal, and modifications to Reach 4B1. The NEPA and/or CEQA lead agencies for these projects are currently or will soon begin preparing environmental compliance documents for the projects. The PEIS/R and resulting ROD issuance and EIR certification are expected to be completed before the site-specific actions specified herein are implemented. Although site-specific technical and NEPA and/or CEQA studies are overlapping with PEIS/R public review, the PEIS/R considers and fully discloses all potential impacts of the entire SJRRP, including site-specific studies currently in progress, several already completed actions, and future SJRRP actions, and cumulatively with other past, present, and reasonably foreseeable future projects, to the greatest degree possible without impacts being too speculative for meaningful consideration.

Reclamation and DWR are currently conducting a site-specific study on the potential effects of implementing actions for conveying Interim and Restoration flows and incorporating fish habitat through Reach 4B1 and the bypasses, consistent with the Settlement and the Act. Actions pursuant to Paragraphs 11(a)(4) and 11(b)(1) concern

flow routing between Reach 4B1 and the Eastside Bypass. The flow-routing decision and implementation of actions under these paragraphs is the subject of Section 10009(f) of the Act. The action alternatives in this PEIS/R reflect a range of potential implementation actions that will be further developed in the Reach 4B1, Eastside Bypass, and Mariposa Bypass Channel and Structural Improvements Project, including the flow-routing decision. The PEIS/R identifies and discloses the potential combined environmental effects of this action combined with all other actions that are included in the action alternatives. Subsequent environmental review for site-specific projects will address localized effects of project elements, and will rely on information presented in the PEIS/R supplemented with site-specific information.

As described above, under NEPA and CEQA the whole of an action must be evaluated in a way and at a time that does not limit the discretion of the lead agency to consider a reasonable range of feasible alternatives and does not compromise the lead agency's authority to approve or deny the proposed project or any alternative. In this case, the entirety of the SJRRP has been described and considered in the PEIS/R. All direct, indirect, and cumulative effects of the entire SJRRP are disclosed in this PEIS/R. Related specific project-level actions that have already been undertaken have been included within the scope of the action and have been analyzed cumulatively with impacts from other past, present, and reasonably foreseeable future projects. Actions that have been completed to date have independent utility. The SJRRP in its entirety is not a reasonably foreseeable consequence of the actions already completed. However, the SJRRP is informed through data collection efforts such that the SJRRP can be refined, and the environmental impacts and mitigation disclosed in the PEIS/R can be more precise and accurate with respect to flow-related effects.

2.5 MCR-5: Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA

Several comments reflect concerns that the purpose and need for action and the alternatives identified in the Draft PEIS/R are not adequate under NEPA or CEQA. This MCR clarifies how the purpose and need and the range of alternatives presented in the Draft PEIS/R meet the requirements of NEPA and CEQA. The related topic of segmentation under NEPA and CEQA is discussed in MCR-4.

2.5.1 Purpose and Need/Objectives

Some comments expressed concern that the purpose and need and project objectives were too narrowly defined to comply with NEPA and CEQA. To address the comments, it is important to understand the requirements under both NEPA and CEQA. In 40 CFR 1502.13, the NEPA regulations state that an EIS "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action." The correlative language under CEQA relates to the required statement of project objectives about which Section 15124(b) of the State CEQA Guidelines states the following: "The statement of objectives should include the underlying purpose of the project." The same section also clarifies that "[a] clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary."

Several key cases address the structure and substance of the purpose and need in an EIS. In *Northwest Ecosystem Alliance v. Rey*, 380 F. supp. 2d 1175 (W.D.Wash.2005), the courts held that although the purpose and need should not be so narrow that only a single outcome is possible, it should also not be so broad as to require analysis of alternatives that are inconsistent with the project's overarching purpose. The Federal Court of Appeal also addressed this issue in *Friends of Southeast's Future v. Morrison*, 153 F. 3rd 1059 (9th Cir. 1998) in which it stated that "[w]hen the purpose [of the project] is to accomplish one thing, it makes no sense to consider alternative ways by which another thing might be achieved."

The California Supreme Court, in *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings*, has provided similar direction related to the establishing project objectives by stating that "[a]lthough a lead agency may not give a project's purpose an artificially narrow definition, a lead agency may structure its EIR alternative analysis around a reasonable definition of underlying purpose and need not study alternatives that cannot achieve that basic goal." The court further clarified that "an EIR need not study in detail an alternative that is infeasible or that the lead agency has reasonably determined cannot achieve the project's underlying fundamental purpose."

In Chapter 1.0, "Introduction," of the Draft PEIS/R, the purpose and need of the SJRRP is stated as follows:

> *The purpose of the proposed action is to implement the Settlement consistent with the Act. The Act authorizes and directs the Secretary to implement the Settlement.*
>
> *The Settlement specifies the need, which requires changes to the operation of Friant Dam in support of achieving the Restoration Goal while reducing or avoiding adverse impacts to Friant Division long-term contractors' water deliveries caused by releasing Interim or Restoration flows in support of achieving the Water Management Goal.*

Thus structured, the purpose and need allow for identifying project objectives as required under CEQA and identifying and evaluating a reasonable range of feasible alternatives. The purpose and need and project objectives are adequate under both NEPA and CEQA because they capture the underlying purpose to which the lead agencies are responding in formulating a reasonable range of feasible alternatives. The purpose and need are consistent with and responsive to direction provided to the Secretary in the Act, which states, "The Secretary of the Interior is hereby authorized and directed to implement the terms and conditions of the Settlement in cooperation with the State of California."

The purpose and need were initially defined in October 2007, and released for public review on the SJRRP Web site, http://www.restoresjr.net, in the *Draft Purpose and Need for Action Technical Memorandum* (SJRRP 2007). The draft technical memorandum describes the purpose and need as follows:

> *The purpose of the SJRPP is to implement the Settlement Agreement by meeting two goals:*
>
> - *Restoration Goal – Restore and maintain fish populations in "good condition" in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish (Restoration Goal); and*
>
> - *Water Management Goal – Reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows (Water Management Goal).*
>
> *The need for action is three-fold. First, the need for action arises from the historic operation of Friant Dam, which has resulted in significant portions of the main stem of the San Joaquin River between Friant Dam and the confluence of the Merced River being dry during significant portions of the year in most years, with corresponding impacts on fisheries downstream from Friant Dam. Interim and Restoration Flows, in addition to other improvements providing for channel capacity, fish habitat, related flood protection, fish passage,*

> *and fish screening, are necessary elements to meet the Restoration Goal. Second, the Interim and Restoration Flows would create a substantial loss in water supplies to Friant Division long-term Contractors. The need for action to develop and implement water management actions is essential to reduce or avoid these adverse water supply impacts, and is equal in significance to the needs of the Restoration Goal. Third, from a legal perspective, the need for action is in response to the Stipulation of Settlement in NRDC, et al., v. Kirk Rodgers, et al., which was approved by the Court in October 2006. Accordingly, the need for action is justified from a biological, water supply, and legal basis.*

The purpose and need were subsequently revised, simplified, and released for public review on the SJRRP Web site, http://www.restoresjr.net, in the *Initial Program Alternatives Report* (IPAR) (SJRRP 2008). The reason for circulating the *Purpose and Need for Action Technical Memorandum* and IPAR was to facilitate early coordination regarding initial concepts and approaches then under consideration by the Implementing Agencies with the Settling Parties, other stakeholders, and interested members of the public. Based in part on feedback received on these documents, the lead agencies further refined the statement of purpose and need to that presented in the Draft PEIS/R.

The purpose and need and project objectives comply with the requirements of NEPA and CEQA because they establish the broad basic purpose and objectives of the SJRRP without overly constraining the range of alternatives that could be developed to achieve the stated purpose and objectives. More specifically, two general goals were established: one to achieve restoration and maintenance of fisheries in the San Joaquin River between Friant Dam and the Merced River, and the second to avoid or reduce water supply impacts to Friant Division long-term contractors. The needs that were established, which further define and reflect the purpose and objectives, reflect the lead agencies' understandings of necessary biological, water management, and legal factors that must be addressed by any alternative to achieve the purpose and basic objectives of the SJRRP. In this way, the purpose and need and project objectives presented in the SJRRP PEIS/R implement and achieve the balance described in the Code of Federal Regulations and the State CEQA Guidelines, and interpreted by Federal and State courts.

2.5.2 Range of Alternatives

Some comments expressed concern that the range of alternatives evaluated in the PEIS/R is inadequate under NEPA and CEQA.

NEPA requires that an EIS "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources" (42 U.S. Code (USC) Sec. 4332(2)(E)). Under NEPA Regulations (40 CFR 1502.14), an EIS is required to "[r]igorously explore and objectively evaluate all reasonable alternatives," including a no-action alternative and alternatives outside the jurisdiction of the lead agency.

Under CEQA (Section 15126.6 of the State CEQA Guidelines), an EIR is required to do the following:

> *…describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.*

The range of alternatives considered in the EIR is governed by the rule of reason, but "shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects." Section 15126.6(c) of the State CEQA Guidelines notes that among the reasons that can be used to eliminate certain alternatives from consideration are: "(i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts."

Under CEQA, the term feasible means "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors" (see State CEQA Guidelines Section 15364). The Act authorizes and directs the Secretary to implement the terms and conditions of the Settlement in cooperation with the State of California. Although CEQ has indicated that under NEPA there are conditions in which compliance with the law does not necessarily make an alternative to that law unreasonable, in this case, the Act and the Settlement have come after 18 years of legal dispute and negotiation. Because of the length of time and investments that have been made by agencies and stakeholders in developing the Act and achieving the Settlement, the Implementing Agencies have determined that alternatives that do not comply with the Act and the Settlement are neither reasonable nor feasible. Therefore, the PEIS/R evaluates alternative approaches to implement the provisions of the Settlement, but does not evaluate alternatives to the Settlement other than the required No-Action Alternative. This is proper under both NEPA and CEQA because alternatives that failed to achieve the provisions of the Settlement would be neither legal nor feasible.

Much of the focus in comments discussing the range of alternatives is related to the Interim and Restoration flows. Under Paragraph 20(d)(6) of the Settlement, any of the Settling Parties may request a change in the Restoration Flows after December 31, 2025, and before July 1, 2026. Potential alternatives to the Restoration Flows under Paragraph 20(d)(6), therefore, would be speculative and would violate the Act's directive for the

Secretary to implement the terms and conditions of the Settlement (including Interim and Restoration flows). The Interim and Restoration flows, presented in Table 2-5 and Figures 2-5 and 2-6 of the Draft PEIS/R, represent a culmination of 18 years of evaluations and negotiations of alternative flow schedules and other actions leading to the Settlement. For these reasons, as well as the Act directing the Secretary to implement the terms and conditions of the Settlement in cooperation with the State of California, alternatives to the Interim and Restoration flow schedules included in the Settlement were not presented or evaluated in the PEIS/R because such alternatives would be highly speculative and would violate the terms and conditions of the Settlement.

Reclamation and DWR undertook an extensive process to identify the alternatives evaluated in the PEIS/R. The Implementing Agencies also helped identify alternatives, in coordination with Settling Parties, other stakeholders, and interested members of the public. The IPAR (SJRRP 2008) documented the alternatives formulation process. The IPAR evaluated numerous actions and ultimately described eight initial alternatives to achieve the Restoration Goal and eight initial alternatives to achieve the Water Management Goal. Each of the 16 alternatives emphasized a range of physical actions presented in the Settlement. This approach was chosen to identify the possible physical actions that could be implemented in site-specific projects. The potential range for each Restoration Goal and Water Management Goal action was represented within the alternatives contained in the IPAR. As the eight initial Restoration Goal and eight Water Management Goal alternatives were developed, the Implementing Agencies also identified data needed to evaluate the alternatives. However, these data were limited, and sufficient additional data could not be collected in a timely manner to evaluate and compare the 16 initial program alternatives presented in the IPAR. Therefore, it was found that more project specifics would be needed to fully evaluate and compare the 16 alternatives. In recognition of data limitations and long-term reliance on future monitoring data for Settlement implementation, action alternatives presented in the PEIS/R are defined more broadly and address large-scale systemwide variations, with flexibility for different methods of implementation. The different methods of implementation represent key decision points, including the ultimate extent of channel modifications and flow routing within the Restoration Area, and the extent and location of long-term water recapture opportunities. This approach is appropriate for identifying ranges of potential impacts that could result from implementing the Settlement, and for developing appropriate mitigation strategies at a program level of detail. Alternatives that include flow routings not addressed in the Settlement, such as conveying no Interim or Restoration flow through Reach 4B1 or conveying some or all of the Interim and Restoration flows through the Chowchilla Bypass on a long-term basis, were eliminated from further consideration because these alternatives would not meet the purpose, need, or objectives of the Settlement. This process is described in greater detail in Appendix G of the Draft PEIS/R, “Plan Formulation.”

Starting on page 2-37 of the Draft PEIS/R, all Phase 1 actions and most Phase 2 actions are included as common Restoration actions in all action alternatives; subsequent sections of Chapter 2.0, “Description of Alternatives,” of the Draft PEIS/R describe the range of potential implementation of these actions. Phase 2 actions not included in all action alternatives as common Restoration actions include modifications to provide at least

4,500 cfs through Reach 4B1 (consistent with Paragraph 11(b)(1)). These actions are included in Alternatives A2, B2, and C2, as described beginning on page 2-80 of the Draft PEIS/R. Project-level actions, including the release of Interim and Restoration flows, are described at a greater level of detail beginning on page 2-14 of the Draft PEIS/R.

Under CEQA, lead agencies have considerable discretion to articulate and evaluate alternatives that meet the basic objectives of the project. The California Supreme Court addressed this issue in *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* by stating that "[a]lthough a lead agency may not give a project's purpose an artificially narrow definition, a lead agency may structure its EIR alternative analysis around a reasonable definition of underlying purpose and need not study alternatives that cannot achieve that basic goal." Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R describes a reasonable range of potentially feasible alternatives, especially given the purpose and objectives of implementing the Settlement consistent with the Act. Thorough analysis of the action alternatives is presented in Chapters 4.0 through 26.0 of the Draft PEIS/R, with sections dedicated to program- and project-level analyses, as appropriate. These chapters fully disclose the potential impacts of implementing the action alternatives, and identify feasible mitigation measures, when available, for all significant and potentially significant impacts.

2.6 MCR-6: Third-Party Concerns and Outreach

Several comments raised concerns that the Draft PEIS/R may not provide mitigation measures sufficient to reduce impacts to Third Parties in a manner consistent with the Settlement and the Act. This MCR discusses the protections provided to Third Parties within the Restoration Area and external processes related to the resolution of issues pertaining to ongoing SJRRP implementation. Further, this MCR clarifies how the content of the PEIS/R is consistent with the Settlement and the Act.

The term "Third Parties" is a phrase commonly used in SJRRP documents, including the Settlement and the Act. Typically, the term "Third Party" refers to groups that are not party to a lawsuit or agreement, but are implicated in such lawsuits or agreements. In the context of this MCR, Third Parties include landowners and agencies that have a vested interest in implementing the SJRRP. These entities include the Exchange Contractors, Central California Irrigation District (CCID), Firebaugh Canal Water District, San Luis Canal Company (SLCC), Columbia Canal Company, Merced Irrigation District, Turlock Irrigation District, Modesto Irrigation District, Oakdale Irrigation District, South San Joaquin Irrigation District, San Joaquin Tributaries Association (SJTA), RMC, Westlands Water District, and San Luis and Delta-Mendota Water Authority (SLDMWA). A Memorandum of Understanding (MOU) between Reclamation and the Third Parties regarding planning, designing, and implementing appropriate aspects of the Settlement outlines the manner through which the Third Parties are involved in the SJRRP. As stated in the MOU, Reclamation and the other Implementing Agencies and Settling Parties are primarily responsible for implementing the Settlement. The Third Parties are not party to the Settlement. While the MOU states that the Third Parties agree to cooperate with Reclamation in implementing the Settlement, the Third Parties retained all rights of actions or claims of relief with respect to implementing the Settlement that they have under any applicable law.

Several comments from concerned Third Parties assert that no impacts to Third Parties should occur from SJRRP implementation. The Settlement and the Act, however, present requirements separate and distinct from NEPA and CEQA requirements for evaluating environmental impacts. Reclamation is committed to implementing the SJRRP to meet Settlement requirements while meeting Third-Party protections provided in the Act. Additionally, nothing in the Settlement or the Act prevents full disclosure of environmental impacts under NEPA and CEQA, whether or not such impacts adversely affect Third Parties. Paragraph 7 of the Settlement states the following:

> *The [Settling] Parties believe that this Settlement provides numerous important benefits to the State of California, including third parties located in the San Joaquin River Basin or who use the waters of the San Joaquin River or the Sacramento-San Joaquin Delta. The Parties neither intend nor believe that the implementation of this Settlement will have a material adverse effect on any third parties or other streams or rivers tributary to the San Joaquin River.*

The PEIS/R demonstrates that, while adverse impacts would occur to various resources with implementing the Settlement, benefits to numerous resources such as vegetation, wildlife, fisheries, water quality, land use, recreation, socioeconomics, and visual resources would occur, as shown in Table ES-8 of the Draft PEIS/R. The Act subsequently described, in Section 10004, specific provisions for mitigating potential impacts on adjacent and downstream water users and landowners:

> *(d) MITIGATION OF IMPACTS. – Prior to the implementation of decisions or agreements to construct, improve, operate, or maintain facilities that the Secretary determines are needed to implement the Settlement, the Secretary shall identify –*
>
> *1. the impacts associated with such actions; and*
>
> *2. the measures which shall be implemented to mitigate impacts on adjacent and downstream water users and landowners.*

Completing the PEIS/R as part of the NEPA process and identifying mitigation measures to be implemented fulfills Reclamation's obligations under this section of the Act.

Several comments also raised concerns that potential impacts to Third Parties were inconsistent with the Settlement or the Act. Comments received on the PEIS/R show a general trend toward a grouping of similar items with common themes related to Third Parties. Numerous comments address concerns related to protections afforded through the Federal and State Endangered Species Acts, seepage, water supply, and the subsequent outreach associated with these activities, as discussed below.

2.6.1 Federal and State Special-Status Species Concerns

The Implementing Agencies are examining several potential protections for landowners and agencies who will continue to conduct routine agricultural operations and maintenance activities in the Restoration Area after protected spring-run Chinook salmon are reintroduced to the San Joaquin River. These protections are found in specific Federal and State laws pertaining to reintroducing populations of protected species, as described below.

Federal Law

Under Section 10(j) of the Federal Endangered Species Act of 1973 (ESA), the Secretary of Commerce can authorize the release of an experimental population outside a species' current range, but within its historical range, when (1) the experimental population is geographically separate from the nonexperimental population, and (2) the designation will further conservation of the listed species. Several comments raised concerns about the potential liability of landowners for harming reintroduced listed species, and the potential placement of restrictions and prohibitions on Federal and private activities to protect the reintroduced fish. As stated in the Draft PEIS/R, USFWS submitted a 10(a)(1)(a) Enhancement of Species Permit application to NMFS on September 30, 2010, for introducing an experimental population of spring-run Chinook salmon, consistent

with the schedule identified in the Settlement. NMFS will issue a final rule pursuant to Section 10(j) of the ESA by December 31, 2012.

The term "take" is defined by the ESA as "to harass, harm, pursue, hunt, shoot, wound, trap, capture, or collect, or attempt to engage in any such conduct." A population designated as experimental is treated as threatened regardless of the species' designation elsewhere in its range. Section 4(d) of the ESA allows NMFS to adopt regulations necessary to provide for conservation of a threatened species. This provides flexibility for NMFS to customize prohibitions and regulate activities to conserve threatened species, potentially without involving many or all restrictions that apply to endangered species. Exact requirements depend on the species' biology and conservation needs, and threats being managed. Under the 4(d) rule for reintroducing spring-run Chinook salmon to the Restoration Area, NMFS would create a set of protective regulations specific to the experimental population. Under the 4(d) rule, NMFS may elect to allow take for the experimental population if the take is incidental to a lawful activity, such as agricultural activities, and is unintentional or not due to negligent conduct. NMFS is currently developing a document describing considerations for issuing a 4(d) rule as part of Settlement implementation.

California State Law

Under Fish and Game Code Section 2080.4, if a population of spring-run Chinook salmon in the San Joaquin River is designated as an experimental population under Section 10(j) of the ESA, no further authorization or approval is necessary under The California Endangered Species Act (CESA) for any person to incidentally take members of that experimental population if specific requirements are met, including the following:

- The Secretary of Commerce has published regulations in the Federal Register specifying management restrictions, protective measures, prohibitions, and exceptions to the prohibitions for the designated experimental population of spring-run Chinook salmon in the San Joaquin River.

- The action or activity that results in incidental take of the designated experimental population is authorized by the regulations published in the Federal Register.

Additionally, DFG may permit take of endangered, threatened, or candidate species, including spring-run Chinook salmon, if specific requirements are met, including that the take is incidental to otherwise lawful activities, and the impacts of the take comply with Fish and Game Code Section 2081.

2.6.2 Seepage Concerns

Some Third Parties contend that impacts to property have occurred as a result of SJRRP Water Year 2010, 2011, and 2012 Interim Flow releases (including specific examples provided by the Exchange Contractors and RMC in comment EC1-95 (see Section 3.7, "Special Interest Group Comments and Responses"). Reclamation is addressing these issues in separate forums appropriate to the nature of the individual issues to minimize or avoid seepage-related impacts. The lead agencies continue to review the content of the

PEIS/R in light of all issues associated with Interim Flows, including these issues, as well as new data collected during release of Interim Flows.

Section 10004(h)(3) of the Act states the following:

> *(3) SEEPAGE IMPACTS.—The Secretary shall reduce Interim Flows to the extent necessary to address any material adverse impacts to third parties from groundwater seepage caused by such flows that the Secretary identifies based on the monitoring program of the Secretary.*

Implementing the *Seepage Monitoring and Management Plan* (an attachment to Appendix D of the Draft PEIS/R) and, specifically, actions to reduce Interim and Restoration flows to the extent necessary to address any material adverse impacts to Third Parties will fulfill Reclamation's obligations under this section of the Act. The plan includes flow reductions in response to groundwater levels observed in the buffer or threat zones as part of SJRRP implementation. Groundwater monitoring efforts are ongoing; Reclamation is currently monitoring more than 150 groundwater monitoring wells and will continue to install and monitor groundwater elevations, as appropriate. Reclamation will continue to coordinate through the Seepage and Conveyance Technical Feedback Group meetings to obtain feedback and to implement long-term solutions to implementing the SJRRP in relation to potential seepage impacts.

The *Physical Monitoring and Management Plan* (Appendix D of the Draft PEIS/R) specifies guidelines for observing and adjusting to changes in physical conditions related to flow, seepage, channel capacity, native vegetation, and spawning gravel. Specific portions of the *Physical Monitoring and Management Plan* relevant to vegetation growth and sediment erosion and deposition include the Channel Capacity Monitoring and Management Component Plan and the monitoring programs identified therein. Potential immediate responses to reduced channel capacity include removing vegetation and debris. Results of monitoring and management activities performed as part of the SJRRP would be used to inform estimates of then-existing channel capacities, and would be included for review in reports to the Channel Capacity Advisory Group, as described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R. The Channel Capacity Advisory Group, which would consist of representatives from Reclamation, DWR, U.S. Army Corps of Engineers (USACE), Lower San Joaquin Levee District (LSJLD), and Central Valley Flood Protection Board (CVFPB), would perform an independent review of physical flow constraints, including potential seepage concerns, to provide channel capacity recommendations for the SJRRP.

2.6.3 Water Supply Concerns

Several comments conveyed a concern over the potential impact to Third-Party water supplies as a result of actions presented in the Draft PEIS/R. Both the Settlement and the Act provide clear language related to effects on contract allocations and measures for reducing water supply and delivery impacts to the Friant Division long-term contractors.

Paragraph 16(a) of the Settlement guides development of a plan for recirculation, recapture, reuse, exchange, or transfer of the Interim and Restoration flows for the purpose of reducing or avoiding impacts to water deliveries to all of the Friant Division long-term contractors caused by the Interim and Restoration flows. Several provisions in this paragraph pertain to Third Parties, including provisions that the plan shall do the following:

> *(1) ensure that any recirculation, recapture, reuse, exchange or transfer of the Interim Flows and Restoration Flows have no adverse impact on the Restoration Goal, downstream water quality or fisheries;*
>
> *(2) be developed and implemented in accordance with all applicable laws, regulations and standards. The Parties agree that this Paragraph 16 shall not be relied upon in connection with any request or proceeding relating to any increase in Delta pumping rates or capacity beyond current criteria existing as of the Effective Date of this Settlement;*
>
> *(3) be developed and implemented in a manner that does not adversely impact the Secretary's ability to meet contractual obligations existing as of the Effective Date of this Settlement; and*
>
> *(4) the plan shall not be inconsistent with agreements between the United States Bureau of Reclamation and the California Department of Water Resources existing on the Effective Date of this Settlement, with regard to operation of the CVP and State Water Project.*

These provisions were used to define actions to recapture Interim and Restoration flows within the Restoration Area and/or the Sacramento-San Joaquin Delta (Delta). Alternatives presented in the PEIS/R include project-level actions for recapture of Interim and Restoration flows using existing facilities in the Restoration Area and the Delta. The alternatives also include program-level actions for recapturing Interim and Restoration flows using existing facilities along the San Joaquin River between the Merced River and the Delta, construction and operation of new infrastructure on the San Joaquin River below the confluence of the Merced River to facilitate recapturing Interim and Restoration flows, and recirculation of up to the full amount of recaptured Interim and Restoration flows to the Friant Division to minimize water supply impacts to Friant Division long-term contractors caused by Interim and Restoration flows.

Commitments consistent with the provisions of Paragraph 16(a) are reiterated frequently throughout the description of action alternatives presented in Chapter 2.0, “Description of Alternatives,” of the Draft PEIS/R. While not a full list, several of these statements are compiled below with page references for ease of reference:

- **Page 2-15** – "Actions to recapture Interim and Restoration flows in the Restoration Area, and Interim and Restoration Flows in the Delta, are constrained by established regulatory and institutional conditions…"

- **Page 2-31** – "Interim and Restoration flows would be recaptured consistent with Federal, State, and local laws, and future agreements with downstream agencies, entities, and landowners."

- **Page 2-31** – "…recirculation would be subject to available capacity and existing operational constraints within CVP/SWP storage and conveyance facilities."

- **Page 2-31** – "Interim and Restoration flows could be diverted from the Mendota Pool… [and] would be made available for delivery to the Friant Division, subject to existing contractual obligations and existing and any future agreements."

- **Page 2-32** – "Interim and Restoration flows reaching the Delta would be recaptured at existing facilities within the Delta consistent with applicable laws, regulations, BOs, and court orders in place at the time the water is recaptured. Alternative A1 includes recapture of Interim and Restoration flows in the Delta at the Jones and Banks pumping plants (Figures 2-2 and 2-4), operated consistent with applicable laws, regulations, BOs, and court orders in place at the time the water is recaptured."

- **Page 2-84** – "Recapture of Interim or Restoration flows at existing facilities would occur only if doing so would not adversely affect downstream water quality or fisheries, consistent with the requirements of Paragraph 16(a)(1) of the Settlement."

- **Page 2-88** – "The conveyance of water would be limited by physical pumping plant capacity, permit limitations for pumping from the San Joaquin River, and available conveyance capacity in the Delta-Mendota Canal (DMC) and the California Aqueduct."

The commitments in the description of alternatives presented in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R ensure consistency with Paragraph 16(a) of the Settlement. The analysis of impacts presented in Chapters 4.0 through 26.0 of the Draft PEIS/R is based on the complete description of alternatives presented in Chapter 2.0 and, therefore, incorporates the provisions of Paragraph 16(a). This includes the incorporation of constraints in the analytical modeling of water supplies to ensure that the impact analyses are subject to contractual obligations and other constraints set forth in Paragraph 16(a).

Additionally, Section 10004(f) of the Act states the following:

> *EFFECT ON CONTRACT WATER ALLOCATIONS.—Except as otherwise provided in this section, the implementation of the Settlement and the reintroduction of California Central Valley Spring*

> *Run Chinook salmon pursuant to the Settlement and section 10011, shall not result in the involuntary reduction in contract water allocations to Central Valley Project long-term contractors, other than Friant Division long-term contractors.*

Section 10004(g) of the Act states the following:

> *EFFECT ON EXISTING WATER CONTRACTS.—Except as provided in the Settlement and this part, nothing in this part shall modify or amend the rights and obligations of the parties to any existing water service, repayment, purchase or exchange contract.*

Reclamation, SLDMWA, and Friant Water Authority (FWA) have been meeting to address concerns expressed in this comment and to develop a recapture and recirculation plan, as called for in Paragraph 16(a) of the Settlement and Section 10004(a)(4) of the Act. Regular and frequent Water Management Technical Feedback Group meetings have been occurring with both Friant and non-Friant contractors. Methods to achieve the Water Management Goal of the Settlement are discussed in these meetings.

2.6.4 Continuing Coordination with Third Parties

Outreach to Third Parties associated with the Settlement has been frequent and ongoing. To clarify, Paragraph 19(b) of the Settlement states the following:

> *The Secretary, with cooperation of the other Parties, shall provide appropriate opportunities for input from third parties who have an interest in measures to be undertaken pursuant to this Settlement, and for coordination with third parties who own or control facilities or property affected by implementation of such measures. Further, the Secretary, with cooperation of the other Parties, shall provide appropriate opportunities for public participation regarding implementation of this Settlement.*

The Implementing Agencies have provided and continue to provide extensive public and stakeholder outreach activities to engage and inform all interested parties of the SJRRP process, specifically Third Parties. These opportunities include processes required under NEPA and CEQA, such as public scoping, notification, and review of the PEIS/R, as well as additional ongoing opportunities such as conducting technical feedback meetings; maintaining the SJRRP Web site (http://www.restoresjr.net); producing annual reports, fact sheets, brochures, and program updates; conducting site-specific landowner meetings; distributing notifications through an e-mail distribution list; and monitoring feedback on potential seepage-related impacts through e-mail (InterimFlows@restoresjr.net) and the Seepage Hotline (916-978-4398). Public involvement processes past and future are further described in the Draft PEIS/R in Section 1.1.3, “Scoping and Public Involvement Process,” and 28.2.3, “Future Public Involvement.” Appendix G, “Plan Formulation,” of the Draft PEIS/R further describes how public input received during the PEIS/R scoping process influenced the formulation of alternatives analyzed in the Draft PEIS/R.

2.7 MCR-7: Adequacy of Conservation Strategy

Several comments questioned the completeness and/or the enforceability of the Conservation Strategy contained in all action alternatives. Comments included requests to expand the Conservation Strategy to include more detail on proposed measures or additional measures to better achieve its purpose, or to include the content of the Conservation Strategy as mitigation measures for specific impacts, rather than as part of the project description. This MCR clarifies the purpose of the Conservation Strategy and explains the rationale for including it as part of the project description.

2.7.1 Purpose of Conservation Strategy

To achieve the Restoration Goal, a number of actions proposed for implementation may substantially alter not only the aquatic ecosystem of the San Joaquin River, but also the river's riparian and wetland ecosystems, and some adjacent upland ecosystems. Riparian, wetland, and upland ecosystems of the Central Valley, such as those along the San Joaquin River, provide habitat for a large number of species, including several Federally listed and State-listed species. Although the program's restoration actions would have substantial beneficial effects on aquatic, wetland, and riparian ecosystems, implementing actions that alter these ecosystems could also result in some potentially significant adverse impacts to these ecosystems, as well as upland ecosystems. The Implementing Agencies therefore elected to consolidate many avoidance, minimization, monitoring, and management measures into a comprehensive, consistent, and integrated strategy to minimize and avoid potential impacts to sensitive species and habitats. Including the Conservation Strategy in the project description is consistent with achieving the Restoration Goal and provides a more holistic, integrated, and potentially successful strategy to minimize and avoid potential impacts to sensitive species and habitats.

2.7.2 Enforceability

Both NEPA and CEQA encourage lead agencies to incorporate measures into project descriptions that would minimize or avoid significant impacts to the environment. Because it is part of the project description associated with all action alternatives, the Conservation Strategy will be implemented as described in the project description of this PEIS/R. The Conservation Strategy was developed during extensive coordination with USFWS, NMFS, and DFG, with each regulatory agency contributing measures, text, and revisions before publication in the Draft PEIS/R. Further, the Conservation Strategy will be implemented in coordination with these agencies. In this manner, the Conservation Strategy is consistent with and enforceable under both NEPA and CEQA.

2.7.3 Adequacy

The Conservation Strategy was developed during extensive coordination with USFWS, NMFS, and DFG, with each regulatory agency contributing measures, text, and revisions before publication in the Draft PEIS/R. Although presented in a simple table format, the Conservation Strategy resulting from this coordination is much more than a list of actions. For potentially affected sensitive species and habitats, it presents a sequence of avoidance, minimization, and compensation measures with if/then relationships. For example, for most sensitive species, if full avoidance is not achievable, then minimization measures would be implemented, and if minimization is determined to not suffice, then

compensation measures would be enacted. The Conservation Strategy includes specific conservation goals and measures for species and communities (including avoidance, minimization, monitoring, and management measures) consistent with adopted recovery plans, and similar or identical to the mitigation measures of numerous other water-related projects affecting the same or similar species. The table format for the Conservation Strategy measures was selected as an organizational tool to provide clarity during subsequent site-specific studies and implementing project- and program-level actions. It allows the reader to quickly identify measures relevant to any given species or habitat type, the level of action to which each measure would apply (project- and/or program-level), and the regulatory agency or agencies that would be involved in developing and/or implementing each measure.

The lead agencies consider the Conservation Strategy, as included in the project description presented in this Final PEIS/R, sufficient to achieve the purposes of avoiding, minimizing, rectifying, reducing, and compensating for potential impacts to sensitive species and habitats. While incorporating the Conservation Measures as mitigation measures rather than as part of the project description would automatically require additional monitoring and reporting responsibilities under CEQA, the Conservation Strategy is enforceable under NEPA and CEQA, as described in the previous subsection. Moreover, the regulatory agencies involved in ensuring that the Conservation Strategy measures are implemented appropriately and successfully, including the resource agencies, are fully empowered and responsible for ensuring that sensitive species and habitats are protected during implementation of the SJRRP, as required under the ESA, CESA, and other regulations.

2.8 MCR-8: Operations and Maintenance Agreement Considerations

Several comments requested that Reclamation develop or seek agreements and assurances for Third Parties with responsibilities for levee operations and maintenance activities, including financial reimbursement agreements, Safe Harbor Agreements, or other commitments. This MCR summarizes commitments in the PEIS/R relating to maintenance activities, and describes related efforts outside the PEIS/R that the Implementing Agencies are currently undertaking. Specifically, this MCR highlights potential increased operations and maintenance activities, change from dry to wet working conditions, costs that could be incurred by LSJLD or others and related information on ESA exemptions and protections.

2.8.1 Potential Changes to Operations and Maintenance Activities

The change in operations at Friant Dam and routing of Interim and Restoration flows could increase operations and maintenance activities regardless of the alternative selected for implementation. Increased operations and maintenance activities could include increased flap gate inspection and debris removal, operation of flow control structures, levee patrols, vegetation control, and sand excavation (these actions are as described in Appendix D of the Draft PEIS/R, "Physical Monitoring and Management Plan"). Additionally, flows would change the nature of operations and maintenance activities; those activities currently performed in a dry channel, would be performed in wet channel conditions. Reclamation would conduct or enter into agreements with others to perform such additional maintenance activities and assist the local maintaining agencies in the transition from dry to wet working conditions, made necessary as a result of implementing the Settlement.

CVFPB and LSJLD are responsible for implementing routine operations and maintenance or capital improvements to the Lower San Joaquin River Flood Control Project (Flood Project). LSJLD operates and maintains the flood management system and is financially supported through landowner assessments. Management actions implemented as part of the Settlement may be similar to the routine maintenance of the Lower San Joaquin River Flood Control Project that LSJLD currently performs. The responsibilities of CVFPB and LSJLD are summarized below, as well as potential effects on operations and maintenance activities.

Central Valley Flood Protection Board

CVFPB was established to accomplish the following:

- Control flooding along the Sacramento and San Joaquin rivers and their tributaries, in cooperation with USACE. This includes working with all permit requests for constructing improvements of any nature within the limits of a Federal project right-of-way, which shall be referred to the USACE District Engineer for review (in accordance with the provisions of Title 33, CFR Section 208.10).

- Cooperate with various Federal, State, and local government agencies in establishing, planning, constructing, operating, and maintaining flood control works.

- Maintain the integrity of the existing flood control system and designated floodways through CVFPB's regulatory authority by issuing permits for encroachments.

Lower San Joaquin Levee District

The Flood Project, authorized by Congress in 1944 to protect irrigated agricultural lands and associated developments, was designed and constructed by DWR between 1959 and 1966. LSJLD was created in 1955 by a special act of the State Legislature to operate, maintain, and repair levees, bypasses, and other facilities built in connection with the Lower San Joaquin Flood Control Project. LSJLD operates and maintains these facilities in accordance with the *Operation and Maintenance Manual for Levee, Irrigation and Drainage Structures, Channels and Miscellaneous Facilities* (Flood Control Manual) (Reclamation Board 1967). The Flood Control Manual states that "the purpose of channel maintenance is to insure that the channel is kept in as good a condition as when the channel was constructed" (Reclamation Board 1967). LSJLD encompasses approximately 468 square miles (300,000 acres) in Fresno, Madera, and Merced counties, of which 94 square miles are in Fresno County.

Reclamation recognizes that continued release and conveyance of Interim and Restoration flows likely would change maintenance activities compared to pre-SJRRP conditions. Currently, Reclamation is working with LSJLD to develop and implement an agreement to provide financial assistance for additional Settlement-related costs incurred by LSJLD. The agreement is intended to assist LSJLD in adapting to Settlement implementation, as needed, to potentially maintain an increased level of flood management under release of Interim and Restoration flows. Such an agreement would likely be similar to the agreement recently completed by Reclamation and LSJLD for Water Year 2011 Interim Flows.

Reducing Potential Impacts of Interim and Restoration Flows

As described on pages 2-22 through 2-28 and pages 2-49 through 2-51 of the Draft PEIS/R, Reclamation would monitor and manage the response of the system during release of Interim and Restoration flows, and would reduce or redirect flows, as necessary, to limit potential for significant flow-related impacts to occur downstream. Although flow schedules in Exhibit B of the Settlement include year-round release and conveyance of Interim or Restoration flows, Reclamation may reduce or stop flows for a portion of the year in response to a variety of potential conditions, including those described in the *Physical Monitoring and Management Plan* (see Appendix D of the Draft PEIS/R). This was recently demonstrated during the release of Interim Flows. During Water Year 2010, Reclamation recaptured all Interim Flows at Sack Dam from September 3, 2010, to October 18, 2010, allowing a local landowner to remove sand accumulated in the Eastside Bypass upstream from El Nido Road. In Water Year 2011, Reclamation rediverted all Interim Flows at Sack Dam from July 16, 2011, to September 30, 2011, in response to elevated groundwater levels in portions of the Eastside Bypass.

At the time of preparation of this Final PEIS/R, Reclamation continues to redivert all Interim Flows at Sack Dam. In addition, Reclamation would also consider modifying Interim Flow releases past Sack Dam for a period of time if LSJLD or individual landowners need to conduct maintenance in the bypass channels requiring dry channels.

Throughout Settlement implementation, the maximum downstream extent and rate of Interim and Restoration flows to be released would be limited to then-existing channel capacities. As channel or structure modifications are completed with additional environmental compliance, Interim and Restoration flow releases would be correspondingly increased in accordance with then-existing channel capacities and with the release schedule. As described in the Draft PEIS/R on page 2-24 starting with line 19, through page 2-28, a Channel Capacity Advisory Group would be established to provide independent review and updates of estimated then-existing channel capacities, monitoring results, and management actions to address vegetation and sediment transport within the system, as identified by Reclamation.

The Channel Capacity Advisory Group would comprise the following:

- One member from the U.S. Bureau of Reclamation
- One member from the California Department of Water Resources
- One member from the U.S. Army Corps of Engineers
- One member from the Lower San Joaquin Levee District
- One member from the Central Valley Flood Protection Board

Reclamation is also committed to implementing erosion monitoring and management, including monitoring potential erosion sites, reducing Interim and Restoration flows as necessary, and reporting ongoing results of monitoring and management actions to the Channel Capacity Advisory Group.

Reclamation is committed to working with LSJLD and other Third Parties to anticipate and schedule modifications in Interim and Restoration flows to allow for maintenance activities, if necessary, at times that would have the least effect on SJRRP activities.

2.8.2 Efforts to Develop New Agreements and Assurances

Reclamation is currently working with LSJLD to develop a financial assistance agreement to offset costs associated with conducting increased maintenance activities and changes from dry to wet working conditions that result from implementing the Settlement. The change in operations at Friant Dam and routing of Interim and Restoration flows and the construction of key projects also could result in the need to revise existing guidelines for the operating flood management and water diversion facilities, including revising guidelines for splitting Interim and Restoration flows at bifurcation structures. Additional discussions with USACE, CVFPB, LSJLD, and Third Parties would need to occur to determine if these changes are necessary. However,

LSJLD would continue to operate the flood management system and, in coordination with CVFPB, would be responsible for developing the necessary agreements and revisions.

2.8.3 Federal and State Special-Status Species Concerns

The Implementing Agencies are examining several potential protections for landowners and agencies who will continue to conduct routine agricultural and operations and maintenance activities in the Restoration Area after protected spring-run Chinook salmon are reintroduced to the San Joaquin River. These protections are specific to Federal and State laws pertaining to reintroducing populations of protected species, as described below.

Federal Law

Under Section 10(j) of the ESA, the Secretary of Commerce can authorize the release of an experimental population outside the species' current range, but within its historical range, which (1) the experimental population is geographically separate from the nonexperimental population, and (2) the designation will further conservation of the listed species. Several comments raised concerns about the potential liability of landowners for harming reintroduced listed species, and the potential placement of restrictions and prohibitions on Federal and private activities to protect the reintroduced fish. NMFS is anticipated to issue a final rule pursuant to Section 10(j) of the ESA in 2012.

The term "take" is defined by the ESA as "to harass, harm, pursue, hunt, shoot, wound, trap, capture, or collect, or attempt to engage in any such conduct." A population designated as experimental is treated as threatened regardless of the species' designation elsewhere in its range. Section 4(d) of the ESA allows NMFS to adopt regulations necessary to provide for conservation of a threatened species. This provides flexibility for NMFS to customize prohibitions and regulate activities to conserve threatened species, potentially without involving many or all restrictions that apply to endangered species. Exact requirements depend on the species' biology and conservation needs, and threats being managed. Under the 4(d) rule for reintroducing spring-run Chinook salmon to the Restoration Area, NMFS would create a set of protective regulations specific to the experimental population. Under the 4(d) rule, NMFS may elect to allow take for the experimental population if the take is incidental to a lawful activity, such as agricultural activities, and is unintentional or not due to negligent conduct. NMFS is currently developing a document describing considerations for issuing a 4(d) rule as part of SJRRP implementation.

California State Law

Under Fish and Game Code Section 2080.4, if a population of spring-run Chinook salmon in the San Joaquin River is designated as an experimental population under Section 10(j) of the ESA, no further authorization or approval is necessary under CESA for any person to incidentally take members of that experimental population if specific requirements are met, including the following:

- The Secretary of Commerce has published regulations in the Federal Register specifying management restrictions, protective measures, prohibitions, and exceptions to the prohibitions for the designated experimental population of spring-run Chinook salmon in the San Joaquin River.

- The action or activity that results in incidental take of the designated experimental population is authorized by the regulations published in the Federal Register.

Additionally, DFG may permit take of endangered, threatened, or candidate species, including spring-run Chinook salmon, if specific requirements are met, including that the take is incidental to otherwise lawful activities, and the impacts of the take comply with Fish and Game Code Section 2081.

2.9 MCR-9: Recreation Impacts and Kings River

Several comments stated that additional mitigation would be needed for impacts to existing cold-water and warm-water fishing opportunities in Reach 1 of the San Joaquin River to preserve these opportunities in the vicinity of Reach 1, while avoiding redirecting anglers to the Kings River. This MCR clarifies the potential impacts and commitments in the PEIS/R relating to cold-water and warm-water sport fishing in Reach 1 of the San Joaquin River, and describes related efforts outside the PEIS/R that the Implementing Agencies are currently undertaking to improve these opportunities in the vicinity of Reach 1.

Chapter 21.0, “Recreation,” of the Draft PEIS/R describes potential impacts to cold-water and warm-water sport fishing opportunities in Reach 1 as a result of implementing program-level actions. These impacts would be potentially significant, and mitigation is proposed to reduce these impacts to less than significant. The impacts and mitigation measures included in the Draft PEIS/R are described and clarified below in response to comments. In addition to mitigation proposed in Chapter 21, “Recreation,” of the Draft PEIS/R, Reclamation and DFG are currently working to identify opportunities to enhance or create warm-water fishing opportunities in the vicinity of Reach 1. In addition, DFG would conduct project-level analyses in compliance with CEQA and in accordance with CEQA Guidelines Section 777.8, et seq., which would evaluate and determine potential impacts and mitigation measures for recreation issues, including those discussed below.

2.9.1 Cold-water Fishing Opportunities

Reintroducing spring-run Chinook salmon could result in DFG ceasing to stock rainbow trout (*Oncorhynchus mykiss*) in Reach 1 in accordance with existing regulatory

requirements. It is expected that implementing the Settlement would result in a greater number of migrating salmon in the river between the Merced River and the Delta, which would in turn result in enhanced fishing opportunities in that area (described as a beneficial impact in the Draft PEIS/R, Impact REC-8). However, new fishing restrictions could also be implemented in Reach 1, and possibly in downstream reaches in the Restoration Area, to prevent disturbing or destroying salmon redds, accidental taking of salmon by anglers, and poaching of reintroduced salmon. This program-level impact is described in the Draft PEIS/R as Impact REC-4, and was determined to be potentially significant. The proposed mitigation for this impact, Mitigation Measure REC-4, would consist of working with the Kings River Conservancy and State and local agencies participating in ongoing park and river access construction and enhancement projects to enhance public fishing access and trout populations on the Kings River below Pine Flat Dam. Comments raised concerns regarding the potential for adverse impacts to occur to the Kings River fisheries if trout anglers are redirected to the Kings River as a result of implementing the Settlement.

Impact REC-4 as described in the Draft PEIS/R incorrectly reported the estimated number of anglers visiting Lost Lake Park annually, located in Reach 1A, as approximately 18,000. The estimated number of anglers is approximately 1,600. The text has been revised in Chapter 4, "Errata," of this Final PEIS/R to clarify that most of the approximately 1,600 anglers visiting the park annually do so multiple times each year, for a total of approximately 18,000 angler days. This estimated number of angler days , based on a survey conducted by Houser and North in 2000, refers to the number of estimated visits to the park made by individuals to fish (angler days). These data represent the best available information on recreational use in Reach 1 and provide a reasonable estimate of angler days for the reach, given that most trout fishing occurs from the riverbank in Lost Lake Park.

Cessation of Trout Stocking

Reach 1A currently has the only cold-water game fish population in the Restoration Area, the result of regular stocking of rainbow trout in the reach by DFG. The fish are planted in the reach year-round, providing a popular and accessible trout fishing opportunity. Nonnative brook trout (*Salvelinus fontinalis*) have also been introduced into the San Joaquin River and can be found in the Lost Lake area. Most of the native fish species that were present in the San Joaquin River before construction of Friant Dam are now uncommon, rare, or extinct and have been largely replaced by warm-water nonnative fish species, such as sunfish (*Lepomis sp.*), crappie (*Pomoxis sp.*), bluegill (*Lepomis macrochirus*), striped bass, largemouth bass (*Micropterus salmoides*), and catfish (*Ictalurus sp.*). Warm-water species tend to be found in slower-moving warmer waters, such as those found in backwater areas and in-channel and floodplain gravel pits in Reach 1, while trout typically remain in the main channel of the river.

The California Fish and Game Commission (CFGC) has developed a set of policies relating to management of salmon in California, one of which states: "Domesticated or nonnative fish species will not be planted, or fisheries based on them will not be developed or maintained, in drainages of salmon waters, where, in the opinion of the Department, they may adversely affect native salmon populations by competing with,

preying upon, or hybridizing with them. Exceptions to this policy may be made for stocking drainages that are not part of a salmon restoration or recovery program" (2009). Consistent with this policy, DFG could cease stocking rainbow trout in Reach 1 after salmon are reintroduced.

Fishing Restrictions

In addition to the potential loss of the stocked trout fishery in Reach 1, DFG may elect to impose new restrictions on fishing on Reach 1 or downstream reaches or close portions of the San Joaquin River to reduce the likelihood of anglers inadvertently catching salmon or intentionally poaching salmon, and to reduce the potential for wading anglers and others to disturb or destroy redds. As a result of a cessation in stocking rainbow trout and potential new restrictions or closures, anglers who currently use Reach 1 would be displaced. Displaced anglers could travel to the Kings River below Pine Flat Dam (approximately 40 miles southeast of Reach 1), choose not to fish, or elect to pursue other fishing opportunities in the vicinity of Reach 1, such as warm-water sport fishing in isolated gravel pits and ponds along Reach 1, or fishing opportunities upstream from Friant Dam. This impact was found to be potentially significant in the Draft PEIS/R, and Mitigation Measure REC-4 was proposed to mitigate the impact to less than significant.

Responding to past declines in fish populations, including salmon, DFG has closed the salmon sport fishery on the San Joaquin River from Friant Dam to Mossdale (and on the San Joaquin River tributaries) since 2008. This closure was extended through February 29, 2012, as a "precautionary" measure (CFGC 2011, DFG 2011a and 2011b). If salmon stocks improve such that DFG reopens the salmon sport fishery on the San Joaquin River above Mossdale, a greater number of migrating salmon in the San Joaquin River between the Merced River and the Delta as a result of implementing the Settlement would enhance fishing opportunities in that area. This potential impact is described as less than significant and beneficial in the Draft PEIS/R (Impact REC-8). As noted in Impact REC-4, DFG may elect to impose new restrictions or close portions of the San Joaquin River to reduce the likelihood of anglers inadvertently catching salmon or intentionally poaching salmon. In these cases, DFG would develop project-level environmental documents to comply with CEQA before implementing new regulations.

Opportunities on the Kings River

Mitigation Measure REC-4 would enhance public fishing access and trout populations on the Kings River below Pine Flat Dam to better accommodate anglers displaced from Reach 1 who choose to travel to the Kings River. Specific actions to enhance public fishing access and trout populations would be determined during subsequent site-specific NEPA/CEQA evaluation of Chinook salmon reintroduction, but could include fish habitat enhancement projects on the river, fish stocking, fish population monitoring, hatchery production of catchable trout, public education, and/or public outreach. Comments on Mitigation Measure REC-4 indicate that current angling pressure on the Kings River is heavy and may be beyond the capacity of the fishery to sustain, and raised concerns that Impact REC-4 could result in increased fishing pressure on the Kings River that would constitute an impact to angling opportunities on the river. The Draft PEIS/R concluded that the actual number of anglers displaced to the Kings River would be

relatively small and, after implementation of Mitigation Measure REC-4, would not impact angling opportunities on the Kings River.

As previously described, the number of anglers who could be displaced as a result of a cessation of trout stocking or imposition of fishing restrictions in Reach 1 would be approximately 1,600. While some displaced anglers could travel to the Kings River below Pine Flat Dam (approximately 40 miles southeast of Reach 1), others may choose not to fish, or could elect to pursue other fishing opportunities in the vicinity of Reach 1, such as warm-water sport fishing in isolated gravel pits and ponds along Reach 1, or angling opportunities upstream from Millerton Lake.

For a number of reasons, it is likely that some portion of the approximately 1,600 anglers displaced from the San Joaquin River would be attracted to sites other than the Kings River. The Kings River is likely farther from home for many of the San Joaquin River anglers (most are likely from Fresno, which is about equidistant from Lost Lake Park and the lower end of what is considered the good trout fishing stretch of the Kings River, at Highway 180). Therefore, some of those anglers may transfer some of their angling activity to nearby ponds/lakes that offer trout fishing (or may switch to other types of fishing). Lakes that also rely on DFG stocking and could also absorb some of the anglers displaced from the San Joaquin River include the Fresno Sports Complex Pond and Woodward Park Lake, both of which are convenient to Fresno residents. Farther away, Eastman Lake (47 miles north of central Fresno) and Hensley Lake (38 miles north of central Fresno) in Madera County are both stocked with trout by DFG.

The Kings River between Pine Flat Dam and Highway 180 provides a substantially greater amount of angling access (with additional improvements planned) than are available on Reach 1A, where anglers are concentrated at Lost Lake Park, and few other public access sites are available. The pattern of trout stocking on the Kings River suggests that the river would offer comparable angling opportunities at multiple locations to displaced San Joaquin River anglers, given that DFG trout stocking occurs at multiple locations on the Kings River versus only near Lost Lake Park on the San Joaquin River. For these reasons, San Joaquin River anglers who may be displaced by the SJRRP to the Kings River would likely be dispersed to several sites, reducing the increase in angling pressure at any one site. Therefore, even if all of the approximately 1,600 San Joaquin River anglers, and their approximately 18,000 days of annual angling activity, were displaced to the Kings River (which is not likely, as described above), meaning there would be 75 additional anglers on an average peak-season day that if dispersed over the six available sites, would result in approximately 12 additional anglers per site per day. It Also, there would be 25 additional anglers on an average nonpeak-season day, that if dispersed over the six sites, would result in approximately 4 additional anglers per site per day.

In addition to on-stream trout angling opportunities at the Kings River, San Joaquin River anglers have the opportunity to fish for trout at 83-acre Avocado Lake (adjacent to the Kings River) because the lake is also stocked with trout by DFG. This could further reduce the additional fishing pressure on the Kings River from displaced San Joaquin River anglers.

It should also be noted that the Kings River and San Joaquin River are stocked with about the same number of catchable rainbow trout by DFG, and trophy that are planted in both, but the Kings River is also stocked with 25,000 subcatchable "put and grow" fish annually (KRFMP 2008). It is not clear from the available sources how many of those fish reach catchable size, but this additional stocking suggests that capacity would exist to absorb some portion of displaced San Joaquin River anglers.

The planned improvements of the Kings River Fisheries Management Program and others to trout habitat at numerous sites on the Kings River are also likely to increase the capacity of the fishery in the long term. Although the Kings River Fisheries Management Program has not yet established a wild trout fishery on the river, that is a primary goal of the program and a number of activities are taking place to accomplish that goal in the long term.

Under Mitigation Measure REC-4, specific actions to enhance fishing access would be developed in cooperation with the Kings River Conservancy and State and local agencies participating in ongoing park and river access construction and enhancement projects. Example projects include construction of the Kings River Access Park or similar facilities to provide anglers and others with amenities such as nonmotorized boat launches, parking areas, restrooms, information kiosks, and picnic tables. In addition, specific actions to enhance trout populations could be developed in cooperation with the Kings River Water Association, Kings River Conservation District, and DFG in support of the Kings River Fisheries Management Program Framework Agreement and Fisheries Management Program. Specific actions to enhance trout populations may include fish habitat enhancement projects in the river, fish stocking, and fish population monitoring. Actions could also include hatchery production of catchable trout, particularly if the San Joaquin Hatchery reduces trout production as a result of producing salmon in support of implementing the Settlement.

In addition to enhanced angling opportunities on the Kings River described above, improvements to warm-water sport fishing opportunities in the vicinity of Reach 1 would also likely decrease the potential for displaced San Joaquin River anglers to impact Kings River angling opportunities, as described below.

2.9.2 Warm-water Fishing Opportunities

A separate potential program-level impact, Impact REC-5, is a reduction in warm-water sport fishing opportunities (such as fishing for largemouth bass, sunfish, and catfish) as a result of filling and/or isolating gravel pits near the river channel to reduce juvenile salmon mortality (potential program-level actions under all action alternatives). This impact was found to be potentially significant. Mitigation Measure REC-5 would enhance remaining warm-water fishing opportunities or create new opportunities in the vicinity in cooperation with agencies participating in management of the San Joaquin River Parkway, as described in Chapter 21, "Recreation," of the Draft PEIS/R.

Sycamore Island Park is owned by the State but administered by the San Joaquin River Conservancy (SJRC) as a park unit of the San Joaquin River Parkway, with day-to-day operation by a private contractor. Visitors pay a fee for access to the park, which includes

about six large ponds (former gravel pits), some with boat ramps for small boats and all accessible to bank anglers. The ponds were stocked with warm-water sportfish such as largemouth bass, sunfish, and catfish in years past and now have self-sustaining populations of these warm-water fish (Sycamore Island Park 2009, SJRPCT 2009). There are a number of other large gravel pit ponds adjacent to Sycamore Island Park and elsewhere near the river in Reach 1, but none are known to provide public fishing opportunities. Program-level actions to modify gravel pits, as described in Chapter 2, "Description of Alternatives," of the Draft PEIS/R, could reduce or eliminate the fishing opportunities provided by the ponds.

Without further detail on this program-level action, such as which or how many ponds would be filled or isolated from the river, it is not possible to determine more precisely the potential impacts of this program-level action. However, because there is potential for substantial impacts on the warm-water fishery, particularly at Sycamore Island Park, this impact was found to be potentially significant. Mitigation Measure REC-5 would mitigate this impact to less than significant.

Mitigation Measure REC-5, described on page 21-36 of the Draft PEIS/R, would enhance remaining warm-water fishing opportunities or create new opportunities in the Reach 1 vicinity. Specific actions to enhance warm-water fishing opportunities would be developed in cooperation with SJRC, the San Joaquin River Parkway and Conservation Trust (SJRPCT), DFG, Fresno County, and other agencies participating in management of the San Joaquin River Parkway, as described in Chapter 21.0 of the Draft PEIS/R. Enhancement actions could include improvements to facilities such as Sycamore Island Park (owned by SJRC and operated by a concessionaire) and Woodward Park (owned and operated by the City of Fresno) where warm-water fishing opportunities exist and will remain. Creation of new opportunities could occur at existing ponds, including enhancing and stocking existing ponds, such as those within the River West – Fresno (Spano River Ranch) and River West – Madera (Proctor-Broadwell-Cobb property) San Joaquin River Parkway sites, for which plans for restoration and recreational access are being developed (City of Fresno 2011, Madera County 2011), or through developing new ponds in the vicinity of the parkway but in locations that would not create potential conflicts with Settlement goals.

2.9.3 Efforts to Improve Recreational Fishing Opportunities in the Reach 1 Vicinity

Mitigation Measure REC-5 would require project proponent(s) for future program-level actions to develop mitigation for potentially significant impacts to warm-water fishing opportunities. Project proponent(s) would be required to work with SJRC, SJRPCT, DFG, Fresno County, and other agencies that manage the San Joaquin River Parkway to enhance the remaining warm-water fishing opportunities or create new opportunities in the vicinity.

In response to comments received on the Draft PEIS/R and through continued coordination with DFG and other agencies participating in management of the San Joaquin River Parkway, Reclamation is currently working to identify opportunities to enhance or create warm-water fishing opportunities in the vicinity of Reach 1. Enhanced

existing or newly created warm-water fishing opportunities would address potential reductions in both trout angling and warm-water fishing opportunities as a result of program-level actions because it is anticipated that some Reach 1 trout anglers would switch to warm-water fishing if more and enhanced warm-water angling opportunities were provided in the vicinity of Reach 1. Enhanced existing or newly created warm-water fishing opportunities in Reach 1would further reduce the potential that displaced trout anglers would shift their angling activities from the Reach 1 vicinity to the Kings River. Reclamation will continue to work with DFG and other agencies to pursue ways to enhance or create warm-water fishing opportunities in the Reach 1 vicinity.

Chapter 3.0 Individual Comments and Responses

This chapter contains the comments received on the Draft PEIS/R, and responses to those comments. More than 80 letters and 1,000 comments were received. Section 3.1 describes the format of the responses to comments. Section 3.2 presents a summary of the comments. Section 3.3 contains a complete list of all agencies, organizations, and individuals who commented on the Draft PEIS/R. Sections 3.4 through 3.11 present the written comment letters and e-mails received on the PEIS/R, as well as the responses, as follows:

- Section 3.4, Comments from Elected Officials and Responses
- Section 3.5, Comments from Federal Agencies and Responses
- Section 3.6, Comments from Tribes and Responses
- Section 3.7, Comments from State Agencies and Responses
- Section 3.8, Comments from Regional and Local Governments and Agencies and Responses
- Section 3.9, Comments from Special Interest Groups and Responses
- Section 3.10, Comments from Individuals and Responses
- Section 3.11, Comments from Public Hearings and Responses

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3.1 Format of Comments and Responses

The order of the comments and responses is as listed above. Each comment in the comment letters was assigned a number, in sequential order (note that some letters may have more than one comment). The numbers were then combined with an abbreviation for each commenting entity. Responses to the comments follow the comment letter, and are also numbered, corresponding to the numbers assigned to comments in the letter.

CEQA Section 21091(d) and State CEQA Guidelines Section 15088 require that the lead agency under CEQA evaluate comments received during the noticed comment period and prepare a written response for each comment relating to any significant environmental issues raised regarding the Draft PEIS/R. Written responses are to describe the disposition of any significant environmental issues raised (e.g., revisions to the proposed project to mitigate anticipated impacts or objections) and provide a good faith, reasoned analysis in response. The range of responses includes clarifying the analysis in the Draft PEIS/R, making factual corrections, explaining why certain comments do not warrant further response, or acknowledging the comment for consideration by the decision-making bodies. Comments that present opinions about the program unrelated to environmental issues or that raise issues unrelated either to the substance of the Draft PEIS/R, or to environmental issues, are generally noted without a response. The NEPA lead agency is directed to "assess and consider comments, both individually and collectively" (40 CFR 1503.4 (a)) and prepare a response to these concerns expressed during the comment period.

No comments were received on the Draft PEIS/R that resulted in a change in significance level of impacts disclosed in the Draft PEIS/R, with two exceptions: two potentially significant fisheries impacts of the No-Action Alternative have been revised to less-than-significant impacts based on additional information. No comments were received on the Draft PEIS/R that resulted in any new impacts, required new mitigation, required consideration of new alternatives, or resulted in any other substantial changes to the Draft PEIS/R. Changes made to the Draft PEIS/R in response to comments were limited to minor corrections of errors and omissions. Recirculation of the PEIS/R is not required when new information added to the Draft PEIS/R merely clarifies or amplifies or makes insignificant modifications to an adequate EIR (State CEQA Guidelines Section 15088.5). This Final PEIS/R meets both CEQA and NEPA requirements for responding to comments.

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3.2 Summary of Comments

Reclamation and DWR received more than 80 letters commenting on the Draft PEIS/R from elected officials, Federal agencies, tribes, State agencies, regional and local governments, special interest groups, and individuals. Comment letters such as those from the Exchange Contractors and RMC represent a group of stakeholders as a collective. Other comment letters such as those from many individuals join in and incorporate the comments of the Exchange Contractors and RMC. The comment letters contain more than 1,000 individual comments. Key issue areas in comments include the following, each of which is addressed in MCRs:

- **Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals** – Several comments raise the topic of feasibility in relation to the PEIS/R, the Settlement, and the Act. Some raised concerns regarding the absence of a feasibility assessment to accompany the PEIS/R. Comments also reflect concern over the ability to achieve the Restoration and Water Management goals by implementing the provisions of the Settlement and the Act.

- **SJRRP Funding Availability, Sources, and Cost Estimates** – Several comments reflect concerns regarding the continued availability of funding to implement the Settlement consistent with the implementation schedule envisioned in the Settlement. Some request that a disclosure of proposed funding sources be included in the PEIS/R.

- **Order and Schedule of Implementing Settlement Actions** – Several comments reflect concerns regarding the order of implementing Settlement actions, as well as the likelihood of implementing the Settlement actions consistent with the milestone dates identified in the Settlement. In particular, several comments raise concerns regarding reintroduction of spring-run Chinook salmon before completing Phase 1 projects.

- **Segmentation Under NEPA and CEQA** – Several comments reflect concerns that the Draft PEIS/R may improperly segment actions that are part of the Settlement. In particular, comments raise concerns over potentially improper segmenting under NEPA and CEQA with respect to actions identified in Paragraphs 11(a) and 11(b) of the Settlement (also known as Phase 1 and Phase 2 actions, respectively), as well as site-specific projects completed or currently in progress.

- **Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA** – Several comments reflect concerns that the purpose and need for action and the alternatives identified in the Draft PEIS/R are not adequate under NEPA or CEQA.

- **Third-Party Concerns and Outreach** – Several comments raised concerns that the Draft PEIS/R may not provide mitigation measures sufficient to reduce

impacts to Third Parties in a manner wholly consistent with the Settlement and the Act.

- **Adequacy of Conservation Strategy** – Several comments question the completeness and/or enforceability of the Conservation Strategy included in all action alternatives. Comments included requests to expand the Conservation Strategy to contain more detail on proposed measures or additional measures to better achieve its purpose, and to include the content of the Conservation Strategy as mitigation measures for specific impacts, rather than as part of the project description.

- **Operations and Maintenance Agreement Considerations** – Several comments request that the lead agencies develop or seek agreements and assurances for Third Parties with responsibilities for levee operations and maintenance activities, including financial reimbursement agreements, Safe Harbor Agreements, or other commitments.

- **Recreation Impacts and Kings River** – Several comments state that additional mitigation would be needed for impacts to existing cold-water angling and warm-water fishing opportunities in Reach 1 of the San Joaquin River, and to preserve these opportunities in the vicinity of Reach 1, while avoiding redirecting anglers and fishermen to the Kings River.

In all cases, the comments and responses have not resulted in new significant environmental impacts or a substantial increase in the severity of an environmental impact, or create a feasible project alternative or mitigation measure that would clearly lessen environmental impacts. The comments and responses also have not changed the analysis or conclusions of the Draft PEIS/R.

3.3 List of Commenters

Table 3-1 lists all agencies, organizations, and individuals who submitted comments on the Draft PEIS/R and who commented on that document during the four public hearings.

Table 3.3-1.
List of Commenters on
Draft Program Environmental Impact Statement/Report

Elected Officials
Congressman Dennis Cardoza
Congressman Dennis Cardoza and Congressman Jim Costa
Federal Agencies
U.S. Army Corps of Engineers – Regulatory
U.S. Army Corps of Engineers – Sacramento
U.S. Environmental Protection Agency
National Marine Fisheries Service
Tribes
North Fork Rancheria
United Auburn Indian Community
State Agencies
California Department of Conservation
California Regional Water Quality Control Board
California State Lands Commission
Central Valley Flood Protection Board
Department of Fish and Game
San Joaquin River Conservancy
State Water Resources Control Board
Regional and Local Governments and Agencies
Arvin-Edison Water Storage District
Contra Costa Water District
East Bay Municipal Utility District
San Joaquin River Exchange Contractors Water Authority and the San Joaquin River Resource Management Coalition
Lower San Joaquin Levee District, San Joaquin River Exchange Contractors Water Authority, San Luis and Delta-Mendota Water Authority
Fresno Metropolitan Flood Control District
Fresno County Board of Supervisors
Friant Water Authority
Kern County Water Agency
Kings River Fisheries Management Program

Table 3.3-1.
List of Commenters on the SJRRP Draft PEIS/R (contd.)

Regional and Local Governments and Agencies (contd.)
Kings River Water Association
Lower San Joaquin Levee District (Reggie Hill)
Lower San Joaquin Levee District (Thomas Keene)
Madera County Department of Engineering and General Services
Semitropic Water Storage District
Stockton East Water District
San Joaquin River Association
San Joaquin Tributaries Association
San Luis Canal Company/Henry Miller Reclamation District #2131
San Luis and Delta-Mendota Water Authority
Stanislaus County Environmental Review Committee
State Water Contractors
Shafter-Wasco Irrigation District
Special Interest Groups
Audubon California
California Water Impact Network, California Sportfishing Protection Alliance, AquAlliance, Pacific Coast Federation of Fishermen's Associations, Planning and Conservation League, Institute for Fisheries Resources
Fresno Fly Fishers for Conservation
Mill Creek Conservancy
Natural Resources Defense Council and The Bay Institute
PRBO Conservation Science
River Partners
San Joaquin River Partnership
San Joaquin River Parkway and Conservation Trust
The Nature Conservancy
Individuals
Andrews, Johnny – Andrews Farms, A Partnership
Michael, Cannon – Bowles Farming Company, Inc
Burns, Daniel
Cardoza, Cecilia
Catania, Roy
Coburn, Shawn
Cotta, Stanley
Diedrich, James and Michael
Fox, Dennis
Daneward T. Locke, Jr. – D.T. Locke Ranch, Inc.
The Forbes, Yore and McGinn Corp.

Table 3.3-1.
List of Commenters on the SJRRP Draft PEIS/R (contd.)

Individuals
Bauer, Barry – Herb Bauer Sporting Goods
Martin, Gary and Mari
Houk, Randall
Iest, Richie – Iest Family Farms
Jaquith, Howard
Lee, G. Fred
Locke-Martin, Mari
Looney, Bowman
Lotkowski, John M.
Maiorino, Brian – Maiorino Farms
McNamara, Dan
Merlic, Edward
Moosios, Louis
Neves, Anthony
Nickel, James
Nicoletti, Cynthia
O'Banion, Mike
Maiorino, Brian – PRMF Almond-1, LLC
Phillimore, William – Paramount Farming Company
Phillimore, William
Fausone, Steve – Redfern Ranches, Inc.
Redfern-West, Suzanne
Salazar, Joseph
Robert Brewer – San Joaquin River Association
Skinner, L. Scott – Wolfsen Family Landowners
Stearns, Mike
Stearns, Brent
Vander Dussen, Michael
Ward, Bill
Willis, Michael
Fresno, California Public Hearing – May 24, 2011
Cameron, John – Comments provided on behalf of Self

Table 3.3-1.
List of Commenters on the SJRRP Draft PEIS/R (contd.)

Los Banos, California Public Hearing – May 25, 2011
D'Adamo, Dee Dee – Comments provided on behalf of Congressman Dennis Cardoza
Schroeder, Ken – Comments provided on behalf of Self
Michael, Cannon – Comments provided on behalf of Self
Hurley, Chase – Comments provided on behalf of San Luis Canal Company
Chedester, Steve – Comments provided on behalf of San Joaquin River Exchange Contractors and the San Joaquin River Resource Management Coalition
White, Chris – Comments provided on behalf of Central California Irrigation District
Hill, Reggie – Comments provided on behalf of Lower San Joaquin Levee District
Sacramento, California Public Hearing – May 26, 2011
Miyamoto, Joe– Comments provided on behalf of East Bay Municipal Utility District
Visalia, California Public Hearing – May 24, 2011
Jacobsma, Ron – Comments provided on behalf of Friant Water Authority
Ishida, Allen – Comments provided on behalf of Tulare Board of Supervisors

3.4 Comments from Elected Officials and Responses

This section contains copies of comment letters (and any attachments) from the elected officials listed in Table 3.4-1. As noted previously, each comment in the comment letters was assigned a number, in sequential order (note that some letters may have more than one comment). The numbers were then combined with an abbreviation for the official (example: CARD-1).

Responses to the comments follow the comment letters, and are also numbered, corresponding to the numbers assigned in the letters. The letters and associated responses are sorted alphabetically by abbreviation and appear in this section in that order.

Table 3.4-1.
Elected Officials Providing Comments on
Draft Program Environmental Impact Statement/Report

Abbreviation	Elected Official
CARD	Congressman Dennis Cardoza
CACO	Congressman Dennis Cardoza and Congressman Jim Costa

3.4.1 Congressman Dennis Cardoza

CARD

DENNIS A. CARDOZA
18TH DISTRICT, CALIFORNIA

COMMITTEE ON RULES

COMMITTEE ON AGRICULTURE
CHAIRMAN, SUBCOMMITTEE ON HORTICULTURE AND ORGANIC AGRICULTURE
SUBCOMMITTEE ON LIVESTOCK, DAIRY AND POULTRY

Congress of the United States
House of Representatives
Washington, DC 20515–0518

WASHINGTON OFFICE:
1224 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-6131

DISTRICT OFFICES:
2222 M STREET, SUITE 305
MERCED, CA 95340
(209) 383-4455

1010 10TH STREET, SUITE 5800
MODESTO, CA 95354
(209) 527-1914

137 EAST WEBER AVENUE
STOCKTON, CA 95202
(209) 946-0361

April 25, 2011

Honorable Jack Lew
Director, Office of Management and Budget

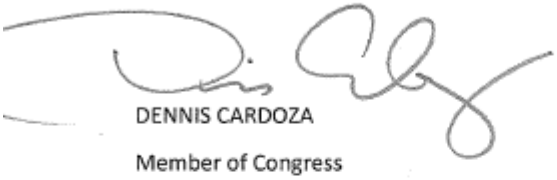
Dear Mr. Lew,

CARD-1 It has come to my attention that there is a significant funding shortfall for the San Joaquin River Restoration Program (SJRRP), a program administered by the U.S. Bureau of Reclamation pursuant to a Settlement Agreement and Public Law 111-11. I have concerns with Reclamation's ability to successfully implement the SJRRP within the schedule contained in the Settlement Agreement. My constituents in the 18th Congressional District will be harmed if flows and fish are released prior to the completion of projects designed to mitigate impacts to downstream landowners. The reality at this time is that there is a gap in funding, and the continued impacts of the recession and budget shortfall make it clear that this situation will not change anytime in the near future. I request that the Office of Management and Budget (OMB) analyze the requirements of the program and provide me with a plan and schedule as to how OMB plans to fund the program.

CARD-2 The attached table, "San Joaquin River Restoration fund- FY10 to FY18 Estimated Cash Flow Analysis ", prepared by Reclamation on October 21, 2010, sets forth necessary expenditures to implement the SJRRP. The table shows total estimated funding needs between FY2010 -FY2018 of over $500 million, with the funding needs for FY2012-FY2014 in excess of $360 million. For FY2015-FY2018, the program will require additional funding amounts in excess of $120 million. Even with projected revenues, the chart still shows a funding shortfall in the 2010-2018 time period of $312 million. Of additional concern is that much of the funding need is front loaded, with $227 million needed for FY2013-FY2014 alone.

CARD-3 The Settlement Agreement includes both a schedule for the release of restoration flows and a schedule for the reintroduction of Chinook salmon once there are sufficient flows to protect the fish. These actions cannot take place, however, until Reclamation has constructed facilities necessary to accommodate the flows, to allow for fish migration and to protect third parties. Significantly, some landowners were already harmed in 2010 by the first "interim" flows released by Reclamation and would likely have sustained additional harm in 2011, except that they made their own investment in measures to protect their lands, at considerable personal cost. Given that funding is unlikely to materialize to implement the Program in accordance with the Settlement Agreement and with Reclamation's attached cash flow analysis, I request that OMB review the program requirements and provide a plan and schedule as to how the program will be funded.

Sincerely,



DENNIS CARDOZA

Member of Congress

Cc: Sally Ericsson, Natural Resources Policy Director, OMB

Senator Feinstein

Senator Boxer

Congressman Jim Costa

Congressman Jeff Denham

Mike Connor, Commissioner, US Bureau of Reclamation

Ron Jacobsma, Friant Water Authority

Monty Schmitt, Natural Resources Defense Council

Responses to Comments from Congressman Dennis Cardoza

CARD-1: The Settling Parties have recently developed a Third-Party working draft *Framework for Implementation* (SJRRP 2012b) for the SJRRP. The *Framework for Implementation* outlines the actions that may be taken to implement the SJRRP and presents a corresponding schedule and budget for these actions. The *Framework for Implementation* schedule is realistic and achievable, and is different from the schedule contained in the Settlement. The *Framework for Implementation* schedule was developed with input from the Settling Parties, and from water agencies/districts and landowners downstream from Friant Dam who may be affected by implementation of the Settlement, and is intended to be protective of Third-Party interests while also being consistent with actions described in the Settlement. The *Framework for Implementation* also provides an outline of future funding needs and the remaining funds available to implement the SJRRP. The *Framework for Implementation* can be found on the SJRRP Web site at www.restoresjr.net.

CARD-2: As described in response to comment CARD-1 above, the Settling Parties have recently developed a Third-Party working draft *Framework for Implementation* (SJRRP 2012b) for the SJRRP. The *Framework for Implementation* includes a revised schedule and budget that identifies a more realistic annual funding need for the SJRRP. Even with this more realistic annual funding need, the Implementing Agencies and Settling Parties recognize that appropriate funding for the SJRRP will remain a critical focus throughout the next several years.

CARD-3: As described in response to comment CARD-1 above, the Settling Parties have recently developed a Third-Party working draft *Framework for Implementation* (SJRRP 2012b) for the SJRRP. The *Framework for Implementation* includes a revised schedule and budget that identifies a more realistic annual funding need for the SJRRP. This schedule was developed with input from water agencies/districts and landowners downstream from Friant Dam who may be affected by implementation of the Settlement, and is intended to be protective of these Third-Party interests while meeting the requirements of the Settlement for expeditious action.

3.4.2 Congressman Dennis Cardoza and Congressman Jim Costa

CACO

Congress of the United States
House of Representatives
Washington, DC 20515

May 5, 2011

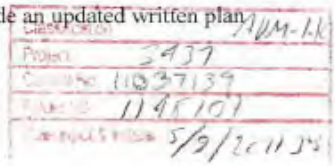
Donald R. Glaser, Regional Director
U.S. Bureau of Reclamation
2800 Cottage Way, MP100
Sacramento CA 95825-1898

Dear Mr. Glaser,

CACO-1 We are writing to follow up on recent conversations in which we expressed our concerns regarding the U.S. Bureau of Reclamation's ability to successfully implement the San Joaquin River Restoration Program (SJRRP) within the agreed upon schedule given the present funding shortfall. As you are aware, once we secured language to protect third parties, among other important provisions, we reintroduced the San Joaquin River Restoration Settlement Act, which later became Public Law 111-11. During our negotiations, the Settling Parties outlined various sources of funding that would have enabled the program to move forward consistent with the schedule outlined in the Settlement Agreement. The reality at this time is that we are confronted with a gap in funding, and the continued impacts of the recession and budget shortfall make it clear that this situation will not change anytime in the near future.

The attached table prepared by Reclamation in October, 2010 sets forth necessary expenditures to implement the SJRRP. The table shows total estimated funding needs between FY2010 - FY2018 of over $500 million, with the funding needs for FY2012-FY2014 in excess of $360 million. For FY2015-FY2018, the program will require an additional amount in excess of $120 million. Even with projected revenues, the chart still shows a funding shortfall in the 2010-2018 time period of $312 million. An additional concern is that much of the funding need is front loaded, with $227 million needed for FY2013-FY2014 alone.

CACO-2 As you are aware, fulfillment of Reclamation's obligations under the Settlement are contingent upon Congressional appropriations. Additionally, the terms of the Settlement provide for the reintroduction of Chinook salmon once there are sufficient flows to protect the fish, yet these flows cannot be released until the infrastructure and mitigation measures are in place. As you are aware, some landowners were harmed in 2010 by the first "interim" flows released by Reclamation and would likely have sustained additional harm in 2011, except that they made their own investment in measures to protect their lands at considerable cost. Given that funding is unlikely to materialize to implement the Program in accordance with the schedule outlined in Reclamation's documents, it is incumbent upon Reclamation to provide an updated written plan



CACO-2 cont'd

that outlines a revised schedule for funding, release of flows and reintroduction of salmon for the program. We realize this is a matter of interest to all the Settling Parties, and understand that Reclamation would need to consult with the Settling Parties regarding proposed changes to the schedule.

CACO-3

We would like to meet with you in Los Banos in mid-May to discuss these concerns, and we look forward to hearing from you what steps Reclamation is taking to make the necessary adjustments to the Plan.

Thank you for your consideration. We look forward to your written response and to meeting with you in mid-May.

Sincerely,

DENNIS CARDOZA
Member of Congress

JIM COSTA
Member of Congress

Cc: Senator Feinstein

Congressman Jeff Denham

Mike Connor, Commissioner, U.S. Bureau of Reclamation

Ron Jacobsma, Friant Water Authority

Monty Schmitt, Natural Resources Defense Council

CACO-1
cont'd

10/21/2010

San Joaquin River Restoration Fund - FY 10 to FY 18 Estimated Cash Flow Analysis
All values in Thousands

	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	Total
Estimated Funding Need	**$17,267**	**$20,485**	**$47,516**	**$169,031**	**$143,965**	**$28,848**	**$39,798**	**$34,743**	**$18,080**	**$519,732**
Funding Source										
Friant Surcharge - Class I Supplies	$5,600	$5,600	$5,600	$5,600	$5,600	$5,600	$5,600	$5,600	$5,600	$50,400
Friant Surcharge - Other Deliveries		$300	$500	$800	$1,000	$1,000	$1,000	$1,000	$1,000	$6,600
Friant Capital Repayment	$10,300	$41,000	$41,000	$41,000	$41,000					$174,300
Friant Capital Repayment Carry Over From FY 09		$5,000								$5,000
CVPIA[1]	$1,000	$1,500	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$16,500
New Appropriations	$5,000									$5,000
Trust Account (DWR Funded)	$2,000	$1,000								$3,000
Estimated Total Federal Funding	**$21,900**	**$54,400**	**$49,100**	**$49,400**	**$49,600**	**$8,600**	**$8,600**	**$8,600**	**$8,600**	**$258,800**
Amount of Federal Funding Subject to $88 M Cap	$15,900	$51,900	$47,100	$47,400	$47,600	$6,600	$6,600	$6,600	$6,600	$236,300
Amount of Receipts Collected Within the $88M Cap	$15,900	$51,900	$20,200							$88,000
Amount of Receipts Collected Above the $88M Cap	$0	$0	$26,900	$47,400	$47,600	$6,600	$6,600	$6,600	$6,600	$148,300
Cash Flow Without Using Receipts Subject to Appropriations										
Available Funding in the Fiscal Year										
Friant Surcharge - Class I Supplies	$5,600	$5,600	$5,600	$5,600	$5,600	$5,600	$5,600	$5,600	$5,600	$50,400
Friant Surcharge - Other Deliveries		$300	$500	$800	$1,000	$1,000	$1,000	$1,000	$1,000	$6,600
Friant Capital Repayment (FY 10 Lags by 1 1/2 yrs)		$41,000	$51,300	$41,000	$41,000					$174,300
Friant Capital Repayment Carry Over From FY 09		$5,000								$5,000
CVPIA[1]	$1,000	$1,500	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$16,500
Carry Over of Funds Not Subject to Appropriations[2]		$0	$42,915	$36,899	$0	$0	$0	$0	$0	$79,814
New Appropriations	$5,000									$5,000
Trust Account (DWR Funded)	$2,000	$1,000								$3,000
State Funding (Estimated)[3]	$9,200	$9,000	$9,000	$20,000	$25,000	$25,000	$2,800			$100,000
Funding Available within $88M Cap	$5,600	$51,900	$30,500							$88,000
Funding Available not subject to $88M Cap (CVPIA thru State Funding)	$17,200	$11,500	$53,915	$58,899	$27,000	$27,000	$4,800	$2,000	$2,000	$204,314
Total Funding Available Within the Fiscal Year	$22,800	$63,400	$84,415	$58,899	$27,000	$27,000	$4,800	$2,000	$2,000	$292,314
Estimated Funding Need	$17,267	$20,485	$47,516	$169,031	$143,965	$28,848	$39,798	$34,743	$18,080	$519,732
Remaining Funding Need	**$0**	**$0**	**$0**	**$110,133**	**$116,965**	**$1,848**	**$34,998**	**$32,743**	**$16,080**	
Remaining Funding Need (Cumulative for Needs Only)	**$0**	**$0**	**$0**	**$110,133**	**$227,098**	**$228,945**	**$263,943**	**$296,685**	**$312,765**	

General Assumptions and Notes:
This is not a reflection of or estimate of future funding requests in the President's budget
Funding Source represents the amount of funding that is accounted for in the budget in a year. However, some funds may not be available until future years.
Cash Flow Without Using Receipts Subject to Appropriations is an accounting of the actual funds available to spend within the year. Assumes that receipts above the $88 million that are subject to appropriations are not used.

Specific Assumptions:
1. Estimated future funding under CVPIA. Does not represent future President's budget requests.
2. Represents the amount of funding collected in a year that is not subject to appropriations, that was in "excess" of the funding need and carried over to the next year.
3. The estimated future State funding amount does not represent future funding requests by the State agencies. This estimate is approximately half of the State's committed $200 million. The estimated future State funding amount does not add to $200 million for the following reasons: some of the State's funding was spent in FY 06, FY 07, FY 08, and FY 09; some will be in-kind services and other activities that are not included in this Federal budget estimate; and some State funding is likely to go to actions not currently in the budget, such as a fish hatchery.

Responses to Comments from Congressman Dennis Cardoza and Congressman Jim Costa

CACO-1: The Settling Parties have recently developed a Third-Party working draft *Framework for Implementation* (SJRRP 2012b) for the SJRRP. The *Framework for Implementation* outlines the actions to be taken to implement the SJRRP and presents a schedule and budget for these actions. The *Framework for Implementation* schedule is realistic and achievable, and is different from the schedule contained in the Settlement. The *Framework for Implementation* schedule was developed with input from water agencies/districts and landowners downstream from Friant Dam who may be affected by implementation of the Settlement and is intended to be protective of these Third-Party interests while meeting the requirements of the Settlement for expeditious action. The *Framework for Implementation* also provides an accounting of future funding needs and the remaining funds available to implement the SJRRP. The *Framework for Implementation* can be found on the SJRRP Web site at www.restoresjr.net. While the *Framework for Implementation* presents a revised schedule for implementation of the Settlement, it does not result in new significant environmental impacts, a substantial increase in the severity of an environmental impact, or create a feasible project alternative or mitigation measure that would clearly lessen environmental impacts.

CACO-2: As described in response to comment CACO-1 above, the Settling Parties have recently developed a Third-Party working draft *Framework for Implementation* (SJRRP 2012b) for the SJRRP. The *Framework for Implementation* includes a revised schedule and budget that identifies a more realistic annual funding need for the SJRRP. This schedule was developed with input from water agencies/districts and landowners downstream from Friant Dam who may be affected by implementation of the Settlement, and is intended to be protective of these Third-Party interests while meeting the requirements of the Settlement for expeditious action. Even with this more realistic annual funding need acknowledged in the *Framework for Implementation*, the Implementing Agencies and Settling Parties recognize that appropriate funding for the SJRRP will remain a critical focus throughout the next several years.

CACO-3: Reclamation met with Congressmen Cardoza and Costa and Third-Party interests on May 18, 2011, to discuss concerns expressed by the congressmen, and developed the Third-Party working draft *Framework for Implementation* (SJRRP 2012b) through a collaborative process during 2011 and 2012.

3.5 Comments from Federal Agencies and Responses

This section contains copies of comment letters from the Federal Government agencies listed in Table 3.5-1. As noted previously, each comment in the comment letters was assigned a number, in sequential order (note that some letters may have more than one comment). The numbers were then combined with an abbreviation for the Federal agency (example: ACER-1). For some comments, letters were added alphabetically to further identify related comments (example: ACER-1a).

Responses to the comments follow the comment letters, and are also numbered, corresponding to the numbers assigned in the letters. The letters and associated responses are sorted alphabetically by abbreviation and appear in the section in that order

Table 3.5-1.
Federal Agencies Providing Comments on
Draft Program Environmental Impact Statement/Report

Abbreviation	Agency
ACER	U.S. Army Corps of Engineers - Regulatory
ACES	U.S. Army Corps of Engineers - Sacramento
EPA1	U.S. Environmental Protection Agency
EPA2	U.S. Environmental Protection Agency
NMFS	National Marine Fisheries Service

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3.5.1 U.S. Army Corps of Engineers – Regulatory

ACER

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

September 20, 2011

Regulatory Division SPK-2007-02288

Michelle Banonis
Bureau of Reclamation
SJRRP
2800 Cottage Way, MP-170
Sacramento, California 95825-1888

Dear Ms. Banonis:

We are responding to your April 2011 Draft Environmental Impact Statement/Report (DEIS/R) request for comments on the San Joaquin River Restoration Program project. The project is located on the San Joaquin River, from Friant Dam (River Mile 267) to the confluence of the Merced River (River Mile 118), within Fresno, Madera, Merced, and Stanislaus Counties, California.

ACER-1a The Corps of Engineers' jurisdiction within the study area is under the authority of Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the United States. Waters of the United States include, but are not limited to, rivers, perennial or intermittent streams, some canals, drains, lakes, ponds, reservoirs, wetlands, vernal pools, marshes, wet meadows, springs, and seeps. Project features that result in the discharge of dredged or fill material into waters of the United States will require Department of the Army authorization prior to starting work. This project is also under the Corps of Engineer's authority under Section 10 of the Rivers and Harbors Act of 1899. For example, the Merced River and the San Joaquin River are regulated under this authority for any work being conducted within, over, or under these navigable waterways.

ACER-1b To ascertain the extent of waters on the project site, the applicant should prepare a wetland delineation, in accordance with our "Minimum Standards for Acceptance of Preliminary Wetland Delineations" prior to the start of project implementation. We recommend that you apply for a preliminary wetland delineation verification for this project. Additionally, we will require a wetland delineation verification for each reach of this project during the early portion of our permitting process for this project.

ACER-2 The range of alternatives considered for this project should include alternatives that avoid impacts to wetlands or other waters of the United States. Every effort should be made to avoid project features which require work or the discharge of dredged or fill material into waters of the United States. In the event it can be clearly demonstrated there are no practicable alternatives to

ACER-2 cont'd filling waters of the United States, mitigation and monitoring plans should be developed to compensate for the unavoidable losses resulting from project implementation. Only the least environmentally damaging practicable alternative will be authorized by our office.

ACER-3 If waters of the United States are going to be impacted, cultural resource sites within the defined federal permit area, will need to be evaluated according to the standards of the National Environmental Policy Act. Additionally, all eligible or potentially eligible cultural resource sites in the permit area will be subject to Section 106 of the National Historic Preservation Act, 1966, as amended. The Corps of Engineers must also comply with the terms and conditions of the Federal Endangered Species Act with regards to our permitting process.

ACER-4 ACER-5 ACER-6 ACER-7 Furthermore, please make the following changes to your DEIS/EIR: 1) expand the discussion of Section 10 of the Rivers and Harbors Act (R&HA) of 1899 in Chapter 5 (page 5-31), and include this law in your discussions of applicable federal laws on page 11-21; 3) page 12-35 seems to be missing two figures (Figure 12-16 and Figure 12-17); and 4) page 28-12 (line 20-23) waters regulated under Section 10 of the R&HA include a greater area than just those portions of these waterways that are influenced by tidal action (For example, the San Joaquin River is regulated under R&HA to river mile 236 and the Merced River is regulated to river mile 20.).

Please refer to identification number SPK-2007-02288 in any correspondence concerning this project. If you have any questions, please contact me at 650 Capitol Mall, Suite 5-200, Sacramento, California 95814-4708, letterhead address, email *Kathy.Norton@usace.army.mil*, or telephone 916-557-5260. For more information regarding our regulatory program including jurisdictional verifications, or to take a survey, please visit our website at *www.spk.usace.army.mil/regulatory.html*. Thank you for allowing us to review this document.

Sincerely,

~~S~~

Kathy Norton
Sr. Project Manager
California South Branch

Responses to Comments from U.S. Army Corps of Engineers – Regulatory

ACER-1a: Comment noted. The lead agencies would implement the SJRRP consistent with applicable laws, regulations, and court orders in place at the time of implementation.

ACER-1b: As stated in Chapter 28.0, "Consultation, Coordination, and Compliance," of the Draft PEIS/R, Reclamation and DWR consulted early in the planning process with USACE regarding Section 404 Clean Water Act (CWA) compliance. It was determined that a Section 404 permit would not be required for actions described at the project level in the Draft PEIS/R. However, Section 404 permits may be required for actions described at a program level.

Before initiating any program-level actions that could result in discharge into jurisdictional features, the project proponents for subsequent site-specific projects would apply for a CWA permit from USACE. USACE will evaluate the proposed action to determine whether it is the least environmentally damaging practicable alternative pursuant to Section 404(b)(1) Guidelines. This PEIS/R evaluates the environmental effects on jurisdictional features resulting from discharge of dredged and fill material to support a Section 404(b)(1) analysis, although details specific to restoration and other actions would need to be submitted at the time of the permitting process, including wetland delineations prepared in accordance with USACE *Minimum Standards for Acceptance of Preliminary Wetland Delineations*, as appropriate (2001). USACE will determine whether the specific proposed action would be authorized under the Nationwide Permit Program or whether an individual permit would be applicable. Early and ongoing coordination with USACE, and the requirement to obtain permits from USACE before initiating any actions, demonstrates that Reclamation and DWR are committed to complying with the CWA. Reclamation, DWR, and USACE have been meeting regularly to discuss Section 404 compliance issues. Text has not been revised.

ACER-2: See response to comment ACER-1b.

ACER-3: Comment noted. The lead agencies would implement the SJRRP consistent with applicable laws, regulations, and court orders in place at the time of implementation. Please refer to Chapter 28.0, "Consultation, Coordination, and Compliance," of the Draft PEIS/R, for a discussion of compliance with the National Historic Preservation Act (beginning on page 28-18). Text has not been revised.

ACER-4: Text of page 5-31, lines 20 through 23, in the Draft PEIS/R has been revised in response to comment to further describe Section 10 of the Rivers and Harbors Act of 1899. See Chapter 4.0, "Errata," of this Final PEIS/R.

ACER-5: Text of page 11-21, lines 31 and 32, in the Draft PEIS/R has been revised as recommended to include discussion of Section 10 of the Rivers and Harbors Act of 1899. See Chapter 4.0, "Errata," of this Final PEIS/R.

ACER-6: Figures 12-16 and 12-17 of the Draft PEIS/R were visible in the electronic version and on the CD provided with all hard copies, but did not print in their entirety in

hard copies. In response to comment, these figures are reproduced below as Figures 3.5-1 and 3.5-2. Text has not been revised.

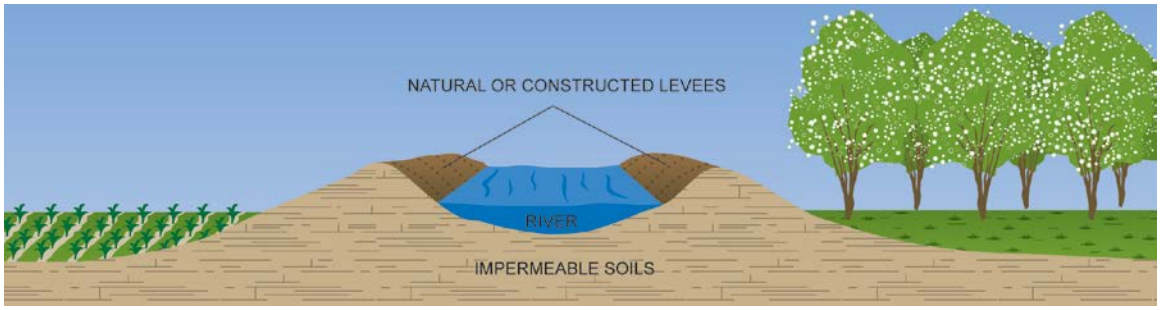

Figure 3.5-1.
Figure 12-16 of the Draft PEIS/R, Physical Barrier to Subsurface Flow Prevents Seepage

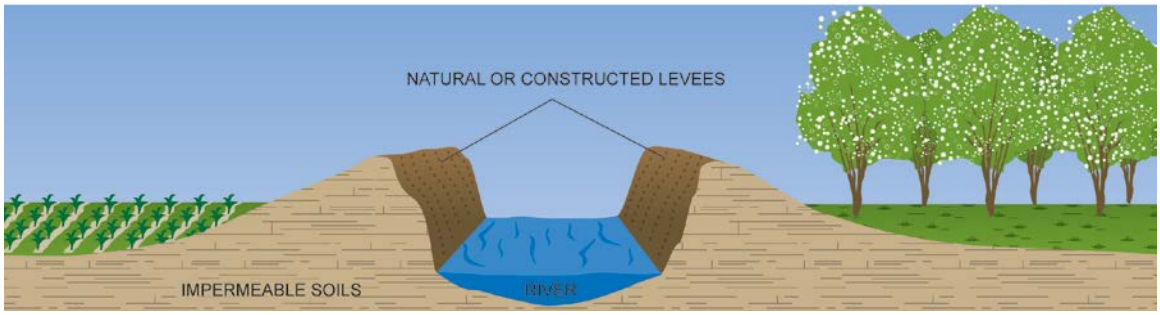

Figure 3.5-2.
Figure 12-17 of the Draft PEIS/R, River Surface Elevation Below Adjacent Land Surface Elevation

ACER-7: Text of page 28-12, lines 20 through 22, of the Draft PEIS/R has been revised as recommended to clarify the description of waterways within the Restoration Area regulated under Section 10 of the Rivers and Harbors Act of 1899. See Chapter 4.0, "Errata," of this Final PEIS/R.

3.5.2 U.S. Army Corps of Engineers – Sacramento

EPA

Banonis, Michelle

From: Johannis, John O SPK [John.O.Johannis@usace.army.mil]
Sent: Tuesday, September 20, 2011 2:30 PM
To: PEISRComments@restoresjr.net
Cc: Johnson, Wayne L SPK; Richardson, Kevin A SPK; Kukas, Gregory A SPK; Norton, Kathy SPK
Subject: USACE Sacramento District Water Management Section Comments on San Joaquin Restoration Program Draft EIS (UNCLASSIFIED)
Attachments: USACE_WM_Comments_SJRRP.pdf
Signed By: john.johannis@us.army.mil

Classification: UNCLASSIFIED
Caveats: NONE

Dear Ms. Forsythe:

This is in response to your request for comments on the Draft Program EIS/EIR (PEIS/R) for the San Joaquin River Restoration Program (SJRRP). The Corps of Engineer's Sacramento District Water Management Section has reviewed the statement and notes that the project may have impacts in the flood operation within the San Joaquin and Kings River basins and offer the following comments (also attached as a PDF Document).

General:

ACES-1 What is the assumed priority of flows through the reaches if there is a conflict in uses/objectives/etc. (ie: flood releases vs. environmental vs. irrigation vs. etc.)? The priority ranking should not adversely affect future flood control operations in any way - which could increase the probability of life loss and/or property damage.

ACES-2 Increasing channel capacities and modifying channel orientation and operation may affect releases to meet flood control requirements. Future operation of the system to send more restoration flow down the San Joaquin River needs to be coordinated with the James Bypass/Fresno Slough (Pine Flat Dam - Kings River) when flood releases are being made from Pine Flat Dam to assure that flow in the San Joaquin River below Mendota Pool does not exceed channel capacity. If flood operation from the San Joaquin River changes from the current scenario, it is critical that the flood operation of Pine Flat Dam not be compromised by limiting the Kings River flow that enters the San Joaquin River basin (at the confluence with the San Joaquin River) to effectively manage the Kings and San Joaquin River flows. Flows from the Kings River (up to 4,750 cubic feet per second (cfs) and possibly greater if total flood releases from Pine Flat Dam exceed 7,950 cfs) and increasing flows from the San Joaquin River (up to 2,500 cfs), though reach 2B will cause flows to exceed channel capacity along Restoration Reaches 3 and 4 (causing damage), if high flows occur simultaneously on both rivers.

ACES-3 Efforts should be made to maintain, or improve, all channels/bypasses to meet the designed flood control flow capacities.

ACES-4 Levees along the channel and bypass systems may be impacted due to the required restoration flows. Seepage and stability along these levees, due to restoration flows occurring for extended periods, should be analyzed for any impacts or changes to the river and bypass system.

Chapter 2

ACES-5 Though it MAY NOT be a major flood control issue; a fish screen should be also installed to minimize the possibility of anadromous fish reaching Mendota Pool and subsequently entering the Fresno Slough, if flowing, during the migration season. The fish screen may have a minor affect on future flood control operation.

Chapter 11

ACES-6 Page 11-6: relating to Figure 11-1 (Friant Dam and Millerton Lake) – Flood control space required for snowmelt runoff may exceed the 170 thousand acre-feet (TAF) rain flood control space, if required due to a large snowpack.

ACES-7 Page 11-6: Lines 17-21 (San Joaquin River from Friant Dam to Merced River) – The Kings River enters the San Joaquin River system via Fresno Slough (which terminates at Mendota Pool). This flow continues through Reaches 3 and 4A of the restoration area. The flow then joins the bypass system at the Eastside Bypass and is routed through Eastside Bypass Reach 2. The Kings River does not contribute flows to the Chowchilla Bypass or Reach 1 of the Eastside Bypass. San Joaquin and Kings River uses of the bypasses need to be clarified.

ACES-8 Page 11-7 & 11-8: (Eastside Bypass and Control Structure) – Brenda Slough is mentioned in Line 21 on Page 11-8 as a contributor to the San Joaquin River but not shown on Figure 11-2. This should be added.

ACES-9 Page 11-10: Line 22 (Pine Flat Dam) – Flood control space required for snowmelt runoff may exceed the 475 TAF rain flood control space, if required due to a large snowpack.

ACES-10 Page 11-10: Lines 28-35 (Army Weir) – During flood periods (flood control releases are being made from Pine Flat Dam) the operation of Army Weir is under jurisdiction of the USACE. During these flood periods, physical operation of the structure is accomplished by the Kings River Conservation District (KRCD). For flows that exceed 4,750 cfs, the excess, up to 3,200 cfs, is diverted to the south (to Tulare Lakebed) at various diversions (including Army Weir). All flows greater than 7,950 cfs are divided equally or as dictated by prevailing conditions

ACES-11 Page 11-10 & 11-11: Lines 36-42 & Lines 1-4 (Crescent Weir) – During flood operation (flood control releases are being made from Pine Flat Dam) the operation of Crescent Weir is under jurisdiction of the USACE. During these flood periods, physical operation of the structure is accomplished by the Kings River Conservation District (KRCD). For Kings River flows reaching Crescent Weir, the first 4,750 cfs is sent north, to the San Joaquin River. For flows higher than 4,750 cfs, up to 3,200 cfs, sent south (to Tulare Lakebed) at various diversions. All flows greater than 7,950 cfs are divided equally or as dictated by prevailing conditions.

ACES-12 Page 11-11: Line 13 (Hidden Dam and Hensley Lake) – downstream objective release is 5,000 cfs.

ACES-13 Page 11-11: Lines 27-29 (Redbank and Fancher Creeks Flood Control Project) – Capacities of each project should be listed (Big Dry Creek Dam 30.3 TAF, Alluvial Drain Detention Basin 9.7 TAF, Fancher Creek Dam – 0.4 TAF, Pup Creek Detention Basin – 0.5 TAF, and Redbank Creek Detention Basin – 0.9 TAF).

ACES 14 Page 11-11: Lines 38-39 (Merced County Streams Group) – Capacities of each project should be listed (Bear Dam – 7.7 TAF, Burns Dam – 6.8 TAF, Owens Dam – 3.6 TAF, Mariposa Dam – 15.0 TAF, and Castle Dam – 7.5 TAF).

ACES-15 Page 11-12: Line 14 (New Exchequer Dam and Lake McClure) – Flood control space required for snowmelt runoff may exceed the 350 TAF rain flood control space, if required due to a large snowpack. The conditional snowmelt flood control space may be up to 400 TAF.

2

ACES-16 Page 11-12: Line 23 (Don Pedro Dam and Lake) - Flood control space required for snowmelt runoff may exceed the 340 TAF rain flood control space, if required due to a large snowpack. The conditional snowmelt flood control space may be up to 1,000 TAF.

ACES-17 Page 11-12: Lines 31-42 (New Melones Dam and Lake) - No mention of Tulloch Dam and Reservoir. Tulloch Dam, which extends about 7 miles downstream of New Melones Dam, was built in 1955-58. Tulloch Dam is a 165-foot-high and 1,902-foot-long concrete gravity dam with a gross pool of 67 TAF and a rain flood management reservation of 10 TAF. The dam is owned, operated and maintained as part of the Tri-Dam Project.

ACES-18 Page 11-16: Lines 23-25 (3rd bullet) - Diverted flood flow should be changed to "up to 700 cfs". Friant outflow is limited to 8,000 cfs less the release from Big Dry Creek Dam down Little Dry Creek and any other local flow below Friant Dam above Little Dry Creek.

ACES-19 Page 11-20: Lines 5-7 (Reservoir Regulation for Flood Control at Friant Dam and Millerton Lake) - Date on Report on Reservoir Regulation for Flood Control is August 1980 not 1955.

We appreciate the opportunity to review and provide comments on the draft Program EIS/EIR. We hope that these comments will prove helpful in the preparation of the final environmental statement.

John Johannis, P.E.
Chief, Water Management Section
Sacramento District
U.S. Army, Corps of Engineers
1325 J Street
Sacramento, CA 95814-2922

Classification: UNCLASSIFIED
Caveats: NONE

Responses to Comments from U.S. Army Corps of Engineers – Sacramento

ACES-1: Flow priority ranking in the Lower San Joaquin Flood Control Project would not change as a result of implementation of the Settlement, and would not adversely affect future flood control operations. As described on page 2-40, lines 10 through 16, in the Draft PEIS/R, Interim and Restoration flows would have a lower priority for downstream channel capacity than flood flows (from Friant Dam or other sources, such as the Kings River, the Fresno River, or the Chowchilla River) or irrigation deliveries to the San Joaquin River Exchange Contractors. If release of water from Friant Dam is required for flood control purposes, concurrent Interim and Restoration flows would be reduced by an amount equivalent to the required flood control release. If flood control releases from Friant exceed the concurrent scheduled Interim and Restoration flows, no additional releases above those required for flood control would be made for SJRRP purposes. Finally, Interim and Restoration flows would be limited to then-existing channel capacities. With these operating principles and constraints in place, Interim and Restoration flows would not contribute to flood flows above project design capacities as defined by the *Operation and Maintenance Manual for Levees, Irrigation and Drainage Structures, Channels and Miscellaneous Facilities* (Reclamation Board 1978) or otherwise adversely affect future flood control operations. Priorities and operations are set in this manual, and would not change with the implementation of the SJRRP. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

ACES-2: Current operations of flood control facilities within the Restoration Area are described in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R. Flood control facilities would continue to be operated as part of the flood management system, and flood operation criteria would supersede operations to convey Interim and Restoration flows, as described briefly in the Draft PEIS/R on page ES-25 and in greater detail on page 2-29, lines 32 through 42. Additionally, all project- and program-level actions would be performed in compliance with USACE requirements, including requirements set forth by USACE as conditions of permits issued for implementing such actions (see Chapter 28.0, "Consultation, Coordination, and Compliance," in the Draft PEIS/R for a description of the permits, petitions, compliance documents, etc., needed for project- and program-level actions). Interim and Restoration flows from Friant Dam would not be released such that flows in downstream reaches would exceed channel capacity. Releases of Interim and Restoration flows from Friant Dam would be made in consideration of flood flows entering the San Joaquin River in downstream reaches. See also response to comment ACES-1.

ACES-3: Comment noted. As stated on page 2-95 of the Draft PEIS/R, the SJRRP is being implemented concurrently with other programs by other agencies that would modify the San Joaquin River and the Lower San Joaquin River Flood Control Project to address flood protection needs. Reclamation and DWR recognize the importance of coordination and communication in planning and implementing projects that affect the flood control system in order to prevent impacts to flood management.

DWR is characterizing the condition of levees along the San Joaquin River and the bypasses in the Restoration Area through the NULE Project as part of the California

FloodSAFE initiative. Initial findings from these evaluations indicate deficiencies at the assessed water surface elevations along evaluated levees in the Restoration Area that were not identified for channel improvements in the Settlement. The NULE Project categorized the majority of San Joaquin River levees in the Restoration Area as hazard level C, which indicates a high likelihood of levee failure or the need to floodfight to prevent levee failure. Channel improvements to address these deficiencies in flood protection have not yet been identified and evaluated, and are not included in the Settlement (and therefore are not part of the action alternatives). As noted on page 62 in the Executive Summary, it is possible that the Settlement could be fully implemented in a manner consistent with the Act, and the purpose of the project thereby achieved, without release of the maximum Restoration Flows. Specific future modifications to the flood control system under the FloodSAFE initiative or other actions are uncertain and speculative, and are not considered reasonably foreseeable or probable future actions at this time. In recognition of these limitations, Reclamation and DWR have included a detailed process in all action alternatives to minimize potential increases in flood risk from Interim and Restoration flows, as specified on pages 2-22 through 2-28 in the Draft PEIS/R. These actions include identifying and monitoring then-existing channel capacity throughout the Restoration Area and maintaining Interim and Restoration flows at or below then-existing channel capacity in accordance with the findings. The potential for cumulative effects associated with implementing the Settlement and FloodSAFE programs and projects is presented in Chapter 26.0, "Cumulative Impacts," of the Draft PEIS/R." Text has not been revised.

ACES-4: As described in the Draft PEIS/R, beginning on page 2-22, actions to minimize increases in flood risk in the Restoration Area due to the release of Interim and Restoration flows, including risk related to through-seepage, underseepage, and landside levee slope stability, are included under all action alternatives. Text in Chapter 2.0, "Description of Alternatives" (page 2-23, lines 33 through 41; page 2-24, lines 3 through 11; page 2-25, lines 36 through 39; page 2-26, lines 15 through 30) and Chapter 11.0, "Hydrology – Flood Management" (page 11-43, lines 20 through 36), in the Draft PEIS/R, has been revised in response to this and other comments. See Chapter 4.0, "Errata," of this Final PEIS/R. Revisions clarify that Reclamation would limit the release of Interim and Restoration flows to flows that would maintain USACE levee performance criteria in accordance with USACE Engineering Manual (EM) 1110-2-1913 (2000) and Engineering Technical Letter (ETL) 1110-2-569 (2005) at all times. These criteria include a levee slope stability Factor of Safety of at least 1.4 and an underseepage Factor of Safety corresponding to an exit gradient of 0.5 or less at the toe of the levee. If levee performance criteria are revised by USACE, such revisions would be considered. Measures included in all action alternatives would limit flows to estimated then-existing channel capacity, which would be determined through several methods, including observation of flows, groundwater and flow monitoring, and application of USACE levee design criteria as well as information provided by local landowners, irrigation districts, and LSJLD. Those measures would minimize increases in flood risk, including risk related to seepage and stability along the levees. Those measures would also include development of the Channel Capacity Advisory Group, which, as described on page 2-25 in the Draft PEIS/R, and would provide timely independent review of data, analytical methodology and results used to estimate then-existing channel capacities, such as

application of the USACE levee performance criteria. Additionally, all project- and program-level actions would be performed in compliance with USACE requirements, including requirements set forth by USACE as conditions of permits issued for implementing such actions (see Chapter 28.0, "Consultation, Coordination, and Compliance," of the Draft PEIS/R for a description of the permits, petitions, compliance documents, etc. needed for the project- and program-level actions).

ACES-5: Comment noted. Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R discusses the potential for flood control bypasses and structures to impede fish passage (see pages 5-15 and 5-16). Because of the periodic flow connection with the San Joaquin River, there is potential for fish straying into the James Bypass and the Kings River system. The Draft PEIS/R assesses the proposed Mendota Pool Bypass as well as the installation of barriers to prevent straying (see page 2-48, lines 8 through 18, of the Draft PEIS/R), at a program level. The Implementing Agencies acknowledge that additional analysis pursuant to NEPA and/or CEQA will be required in the future for activities addressed at a program level in this PEIS/R, after specific project details are identified. Subsequent site-specific project analyses, including the Mendota Pool Bypass and Reach 2B Channel Improvements Project, would consider the necessary modifications for fish passage and fish barriers. Implementing the proposed Mendota Pool Bypass and any associated barriers would reduce the risk of straying. At that time, the Implementing Agencies would require compliance with the mitigation measures set forth in this PEIS/R as conditions for approval of subsequent actions, when appropriate.

If implemented, a fish barrier at Mendota Pool would be designed and operated to minimize any increase in flood risk. As described in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R, redirected flood impacts to Reaches 3 and 4 are considered less than significant; however, because of lack of current information regarding levee conditions within the Restoration Area, this impact is considered potentially significant and Mitigation Measure FLD-1 is proposed. Under Mitigation Measure FLD-1, each site-specific study will include an analysis of the potential of the project to locally impede flow or transfer flood risk to downstream areas as a result of changes in velocity, stage, or cross section. If a future site-specific project identifies the potential for an action analyzed at the program level in the PEIS/R to locally impede flow or transfer flood risk to other areas, project proponents for the site-specific project will incorporate measures into site-specific design of the project to reduce redirected flood flow impacts to a less-than-significant level. Site-specific projects that cannot or do not reduce redirected flood impacts to less than significant levels would not be implemented as part of the SJRRP (stated on page 11-40, line 9-10 in the Draft PEIS/R). Text has not been revised.

ACES-6: Figure 11-1 on page 11-6 in the Draft PEIS/R has been revised to include a note regarding operations in the event of a large snowpack, in response to comment. See Chapter 4.0, "Errata," of this Final PEIS/R.

The release of Interim and Restoration flows under certain hydrologic conditions would result in end-of-year available storage capacity being greater under the action alternatives compared to the No-Action Alternative. Figure 11-18 in the Draft PEIS/R shows how

release of Restoration Flows could result in greater available storage capacity in Millerton Lake during early spring months, thereby reducing, delaying, or avoiding flood releases from Friant Dam in response to peak snowmelt inflow. In most months in all water-year types, Millerton Lake end-of-month storage would be less under the action alternatives than under the No-Action Alternative, thereby increasing available reservoir storage capacity to capture more inflows during snowmelt periods. CalSim-II modeling data showing the difference in Millerton Lake end-of-month storage between the action alternatives and the No-Action Alternative are summarized in Tables 13-61 and 13-62 and Figure 13-33 in the Draft PEIS/R, and shown in detail on pages 1 through 7 and 127 through 150 of the Water Operations Modeling Output-CalSim Attachment to Appendix H, "Modeling," of the Draft PEIS/R.

ACES-7: Text on page 11-6, lines 17 through 21, in the Draft PEIS/R has been revised in response to comment to clarify that the Chowchilla Bypass and the upper portion of the Eastside Bypass of the Lower San Joaquin Flood Control Project do not convey Kings River flood flows. See Chapter 4.0, "Errata," of this Final PEIS/R. Kings River flows into the San Joaquin River and the Kings River priorities in the bypass system are sufficiently described for the purpose of analyses on page 11-8, lines 15 through 16; page 11-9, lines 20 through 23; page 11-10; page 11-18; and Table 11-1. Inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R.

ACES-8: Figure 11-2 on page 11-7 in the Draft PEIS/R has been revised in response to comment to add Berenda Slough. See Chapter 4.0, "Errata," of this Final PEIS/R.

ACES-9: Text on page 11-10, line 22, in the Draft PEIS/R, has been revised in response to comment to clarify that during periods of large snowpack, operations to control snowmelt runoff may exceed the 475 thousand acre-feet (TAF) rain flood control space at Pine Flat Dam, if required because of a large snowpack. See Chapter 4.0, "Errata," of this Final PEIS/R. The comment does not raise issues or concerns specific to the environmental analysis presented in the Draft PEIS/R.

ACES-10: Text on page 11-10, line 28 through 35, in the Draft PEIS/R has been revised in response to comment to clarify that Army Weir is under the jurisdiction of USACE and is operated by Kings River Conservation District. Revisions also describe operations during flood flows. See Chapter 4.0, "Errata," of this Final PEIS/R.

ACES-11: Text on page 11-10, lines 36 through 42, and page 11-11, lines 1 through 4, in the Draft PEIS/R has been revised in response to comment to clarify that Crescent Weir is under the jurisdiction of USACE and is operated by Kings River Conservation District. Revisions also describe operations during flood flows. See Chapter 4.0, "Errata," of this Final PEIS/R.

ACES-12: Text on page 11-11, line 12 in the Draft PEIS/R has been revised in response to comment to describe that Hidden Dam has a downstream release objective of 5,000 cfs. See Chapter 4.0, "Errata," of this Final PEIS/R.

ACES-13: Comment noted. In the interest of managing the size of the PEIS/R, unnecessary detail is not presented. The cited source is provided for the reader seeking additional information. Text has not been revised.

ACES-14: Comment noted. In the interest of managing the size of the PEIS/R, unnecessary detail is not presented. The cited source is provided for the reader seeking additional information. Text has not been revised.

ACES-15: Text on page 11-12, line 15, in the Draft PEIS/R has been revised in response to comment to clarify that flood control space required for snowmelt runoff may exceed the 350 TAF rain flood control space at New Exchequer Dam and Lake McClure, if required because of a large snowpack. See Chapter 4.0, "Errata," of this Final PEIS/R.

ACES-16: Text on page 11-12, line 24, in the Draft PEIS/R has been revised in response to comment to clarify that flood control space required for snowmelt runoff may exceed the 340 TAF rain flood control space at Don Pedro Dam and Lake, if required because of a large snowpack. See Chapter 4.0, "Errata," of this Final PEIS/R.

ACES-17: Text on page 11-12, between lines 42 and 43, in the Draft PEIS/R has been revised in response to comment to add a description of Tulloch Dam and Reservoir. See Chapter 4.0, "Errata," of this Final PEIS/R.

ACES-18: Text on page 11-16, lines 23 through 25, in the Draft PEIS/R has been revised in response to comment to clarify description of flood flow operations of Friant Dam when Big Dry Creek Dam is diverting flood flows. See Chapter 4.0, "Errata," of this Final PEIS/R.

ACES-19: Reference to *Report on Reservoir Regulation for Flood Control, Friant Dam and Millerton Lake, San Joaquin River, California* (USACE 1980) in Chapters 11.0 (page 11-15, line 22), 13.0 (page 13-2, line 5), 19.0 (page 19-14, line 6), and 29.0 (page 29-38, line 4; page 29-45, line 30; page 29-56, lines 2 through 4) in the Draft PEIS/R, has been revised in response to comment. See Chapter 4.0, "Errata," of this Final PEIS/R. The comment does not raise issues or concerns specific to the environmental analysis presented in the Draft PEIS/R.

3.5.3 U.S. Environmental Protection Agency

EPA-1

Banonis, Michelle

From: Banonis, Michelle
Sent: Monday, May 23, 2011 9:39 AM
To: 'Fujii.Laura@epamail.epa.gov'
Cc: Yale.Carolyn@epamail.epa.gov; Herbold.Bruce@EPA.GOV; Yee.Wilson@epamail.epa.gov; Reyes.Deldi@epamail.epa.gov; Hodge.Don@epamail.epa.gov; Brush.Jason@epamail.epa.gov; Ziegler.Sam@epamail.epa.gov; Goforth.Kathleen@epamail.epa.gov; Sachs.Carol@epamail.epa.gov; Forsythe, Alicia E; Gidding, Margaret A
Subject: RE: Region 9 US EPA request for Extension to Comment Deadline date for PDEIS San Joaquin River Restoration Program

Hi Laura,

We have granted the extension request for 30 days to end on COB July 21, 2011. We will also be granting this extension to the public and will post this revised date on the SJRRP web site at www.restoresjr.net.

Thank you again for your assistance. We appreciate EPA's efforts on the SJRRP.

Michelle

Michelle Banonis
Natural Resources Specialist
U.S. Bureau of Reclamation
Office: (916)978-5457
Cell: (916)675-2936
E-mail: Mbanonis@usbr.gov
Program website: www.restoresjr.net

SAN JOAQUIN RIVER RESTORATION PROGRAM

From: Fujii.Laura@epamail.epa.gov [mailto:Fujii.Laura@epamail.epa.gov]
Sent: Friday, May 20, 2011 1:44 PM
To: Banonis, Michelle
Cc: Yale.Carolyn@epamail.epa.gov; Herbold.Bruce@EPA.GOV; Yee.Wilson@epamail.epa.gov; Reyes.Deldi@epamail.epa.gov; Hodge.Don@epamail.epa.gov; Brush.Jason@epamail.epa.gov; Ziegler.Sam@epamail.epa.gov; Goforth.Kathleen@epamail.epa.gov; Sachs.Carol@epamail.epa.gov
Subject: Region 9 US EPA request for Extension to Comment Deadline date for PDEIS San Joaquin River Restoration Program

Hello Michelle,

EPA1-1 As stated in my telephone call today, our current internal workload will make it difficult for Region 9 US EPA to complete a thorough review of the Draft Program EIS for the San Joaquin River Restoration Program by the June 21, 2011 comment deadline date.

As you know, EPA has long been involved with efforts to improve conditions in the San Joaquin River, and we believe the current Program can be a turning point for successful restoration. Additional time to review and evaluate the large Draft

1

EPA1-1 cont'd

Program EIS and complex restoration Program will enable us to better utilize our expertise in assisting with this important effort.

We are requesting an informal, EPA-specific, 30-day extension to the comment period to provide additional time for our review. Your timely consideration of this extension request would be greatly appreciated. Thank you.

Sincerely,

Laura Fujii
Region 9 US Environmental Protection Agency
Environmental Review Office, CED-2
Communities and Ecosystems Division
75 Hawthorne St., San Francisco, CA. USA 94105
phone: 415-972-3852
fax: 415-947-8026
fujii.laura@epa.gov

Response to Comment from U.S. Environmental Protection Agency

EPA-1: Initially, the response period was extended to July 21, 2011, in response to this and other requests. The response period was subsequently extended to September 21, 2011, in response to other requests.

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3.5.4 U.S. Environmental Protection Agency (EPA2)

EPA-2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

SEP 21 2011

Ms. Michelle Banonis
Mid-Pacific Region
Bureau of Reclamation
2800 Cottage Way, MP-170
Sacramento, California 95825

Subject: Draft Programmatic Environmental Impact Statement for the San Joaquin River Restoration Program, San Joaquin Valley, California (CEQ #20110131)

Dear Ms. Banonis:

The U.S. Environmental Protection Agency has reviewed the above referenced document. Our review and comments are provided pursuant to the National Environmental Policy Act, the Council on Environmental Quality Regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The San Joaquin River, one of California's major rivers, is essential to the health of the San Francisco Bay-Delta watershed. Over the years, the federal and State governments, and local entities such as the water and flood control districts downstream of Friant Dam, have invested significant resources to manage the River for water supply and flood control. These actions, in combination with changes in use of adjacent lands, have radically altered San Joaquin Basin hydrology and the River channel. Depleted flows, agricultural return flows, and intensive use of ground and surface water supplies in the Basin contribute to poor water quality that adversely affects aquatic life, wildlife, agriculture, recreation, and other beneficial uses.

EPA2-1a The Draft PEIS examines actions to implement a Settlement providing for restoration of the upper reaches of the San Joaquin River to sustain a native fishery, including salmon, and actions to offset water supply impacts experienced by the Central Valley Project Friant Irrigation District contractors as a result of the restoration flows. The restoration components of the Settlement call for releases from Friant Dam to reestablish flows between the Dam and the confluence with the Merced River, and channel and structural improvements to eliminate impediments to fish migration and reproduction.

EPA strongly supports the Restoration Program. While a number of programs exist to improve San Joaquin River water quality, the Restoration Program is the most important effort underway to revive the River fisheries and ecosystem. The Draft PEIS provides a useful program-level analysis of impacts associated with implementing the Settlement. Based on our review of the Draft PEIS, we have rated the proposed action "Lack of Objections" (LO) (See the enclosed "Summary of Rating Definitions").

EPA2-1b While we respect Reclamation's decision to limit the proposed actions to implementation of the negotiated Settlement, we believe that certain issues not anticipated or explicitly provided for in the Settlement have arisen that will need to be addressed in order for the Restoration effort to be successful.

For example, we observe that the interim flow trials have shed light on impediments that will necessitate monitoring, analysis, and actions in collaboration with other parties to support implementation of the Settlement. In particular, experience with the interim flows indicates that the Restoration Program must address conflicting land and channel uses below Friant Dam that have blocked continuous and full passage of restoration flows. These challenges, which are briefly identified as "new information" regarding channel capacity in the Draft PEIS (Executive Summary, p. 61), appear to be the result of prolonged management of the River channel for agricultural supply deliveries and flood conveyance, and adaptation or alteration of channel and bypass conditions to accommodate these uses, with concomitant curtailment of other beneficial uses.

EPA2-1b (cont'd)

In light of the above issues, EPA believes that defining a corridor that would support a physically and biologically restored River is crucial to the coordination of Restoration actions along the River and to the resolution of impediments to restoration. This will require the participation of downstream land owners and districts, flood system planners and managers, conservation organizations, public and private wetlands agencies, and counties and communities. We recommend that the Final PEIS discuss how the development of such a restoration strategy could be incorporated into the Program. The enclosed Detailed Comments (Enclosure 1) elaborate on the above, as well as other topics that we recommend be discussed in the Final PEIS.

EPA2-2

We recognize that there are significant limitations to available information, and that some topics were intentionally excluded from the Draft PEIS because they were considered to be beyond the specific scope of the Settlement. We wish to take this opportunity, however, to highlight a few topics that are particularly important to the outcome of the overall Restoration effort. In the enclosed U.S. EPA's Recommendations for Future Work (Enclosure 2), we are providing recommendations, beyond the scope of our NEPA review, regarding future work and analyses that we believe will be necessary to ensure the success of the Restoration Program.

EPA commends the effort and dedication of Reclamation and partner agencies. We appreciate the opportunity to provide input on this critical restoration project, and are available to discuss our recommendations. We look forward to continuing work with you in the future. When the Final PEIS is released for public review, please send one hard copy and two CDs to the address above (Mail code: CED-2). If you have any questions, please contact me at (415) 972-3843 or contact Laura Fujii, the lead reviewer for the project. Laura can be reached at (415) 972-3852 or fujii.laura@epa.gov.

Sincerely,

Kathleen Martyn Goforth, Manager
Environmental Review Office (CED-2)

Enclosures: Summary of EPA Rating Definitions
EPA's Detailed Comments

cc: Ms. Fran Schulte, Department of Water Resources

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SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

ENCLOSURE 1

U.S. EPA DETAILED COMMENTS ON DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT FOR THE SAN JOAQUIN RIVER RESTORATION PROGRAM, SAN JOAQUIN VALLEY, CALIFORNIA, SEPTEMBER 19, 2011

River corridor strategy development

EPA recommends that a strategy be developed for evolution of a functioning river corridor for the entire extent of the restoration reaches. The corridor would provide space and suitable conditions for a range of river flows and functions, including reestablishment of floodplains and conveying water to wetlands that are, at present, hydrologically and functionally disconnected from the River. Cooperation across programs and among stakeholders will be important to achieve continuity along the corridor and to resolve issues at the interface between the River and adjacent lands. For example, we support continued outreach to partnering organizations, landowners and other stakeholders in developing programs on seepage response, habitat conservation on adjacent lands, and appropriate impact mitigation. Further details regarding factors that should be considered in the development of such a strategy are provided in "U.S. EPA's Recommendations Regarding Future Work to Maximize the Success of the San Joaquin River Restoration Program", September 2011 (Enclosure 2).

EPA2-3

Recommendation:

The Final PEIS should include a commitment to develop a river corridor strategy and should briefly describe how the development of such a strategy could be incorporated into the Program.

Address conveyance limitations

The Settlement and Draft PEIS recognize the need to deal with constraints on channel capacity, such as in-channel barriers and confining levees; however, the 2011 interim flow period, which was not discussed in the Draft PEIS, shed new light on the issue of channel capacity. Due to a variety of factors--not all addressed in the Settlement-- there has been insufficient continuous channel 'space' to convey test flows through the entirety of the Restoration reaches. In most cases the 'trigger' for curtailment of flows has been potential or alleged impacts, such as seepage, to adjacent lands.

The Exchange Contractors and Reclamation are currently evaluating continuation of a water transfer program that includes actions such as fallowing and water efficiency measures that could help address seepage impacts to adjacent land uses. Operational practices and priorities can also affect channel capacity. We understand that certain flows, such as conveyance of certain agricultural water supplies, can take precedence over Restoration (US Bureau of Reclamation, Supplemental Environmental Assessment, Interim Flows Project, Water Year 2011, p. 2-9). If the need arises to route restoration flows when channel capacity is limited, assuring a continuous flow past the agricultural diversion point may not be feasible. There are several possible ways to resolve this issue of limited channel capacity for cumulative flows. One way would be assuring sufficient channel capacity to accommodate the cumulative flow functions, such as agricultural deliveries as well as a continuous restoration flow. Another would be to require a continuous instream flow, which would ensure sufficient flows occur beyond agricultural delivery points.

EPA2-4

Recommendation:

The Final PEIS should:

- Explain whether opportunities exist to coordinate water transfer actions with the Restoration program.

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EPA2-5

- Briefly explain how water delivery priorities are determined, and whether channel capacity is being examined from the perspective of its ability to carry different 'kinds' of instream and supply flows. For instance, describe whether channel capacity and water delivery decisions will accommodate a range of prescribed restoration flows.

EPA2-6

- Evaluate and discuss whether there are legal mechanisms (for example, State Board actions, judicial actions, or targeted water acquisitions) to protect the instream flows for the full ecologically-critical stretch of the river.

Management of flood water and high flows

EPA2-7

The description in the Draft PEIS of infrastructure, programs and practices for 'flood management' on the River gives the impression of a pieced-together system with inconsistent policies, gaps in agency responsibilities, and limited State oversight. It is not clear whether work is underway, nor which agencies would be best positioned, to plan and implement or oversee flood management that complements the Restoration Program. The Lower San Joaquin Levee District has, for years, had substantial autonomy, and practices for routing high ("flood") flows (including reducing or blocking flows required in the operations manual) have buffered agriculture along the River and diminished the historic channel. The Draft PEIS lacks a thoughtful analysis of the impetus for, and consequences of, the existing flood management situation-- for example, the relationships between bypass routing of high flows and reduced or blocked flows in the River; concomitant adjustment of River channel capacity; and changes in the interface between the River and adjacent land uses.

Recommendations:

- The impacts of flows from the Kings River via Fresno Slough should be examined more closely in the Final PEIS. For example, the community of Firebaugh appears to be vulnerable to flooding attributable to San Joaquin River flows and/or water from the Kings River that is directed into the San Joaquin River to avoid flooding in the Tulare Basin. While this flood risk is not caused by the Restoration Program, it merits attention since restoration flows could affect this risk. We recommend that the Final PEIS explain whether flood risks to local communities, such as Firebaugh, might be addressed through the planned restoration and channel capacity improvements in Reach 2B.

EPA2-8

- The Final PEIS should provide an expanded description of the current flood system, particularly in the area of program responsibilities for oversight, operations, and other aspects of management that have an impact on river functions and adjacent land uses. This should include the flood bypass system, levees, dams and other infrastructure used to manage high flows, and the responsible agencies, including the local levee district, Department of Water Resources, and US Corps of Engineers.

EPA2-9

- Look for opportunities to work with existing flood control programs and local jurisdictions to ensure that flood management programs support flows and land uses (such as floodplains and designated floodways) consistent with the Restoration Program. The Final PEIS should identify any significant conflicts or impediments to working with flood management programs to support the restoration goals.

EPA2-10a **Water quality and water quality monitoring**
On page 14-2, bottom, the reference to Salt and Mud Sloughs seems to place them as 'east side' tributaries, which is incorrect. They enter the River as west side tributaries, in contrast to Bear Creek. This should be corrected in the Final PEIS.

EPA2-10b **Water supply make-up program updates and corrections**
As with the interim implementation of restoration flows and related actions, Reclamation has taken steps to implement the Water Management components listed generically in Settlement paragraph 16. To the extent that the current measures are successful in addressing any supply gaps from the Restoration flows, other more controversial and costly projects may not be needed.

EPA2-11 ***Recommendations***:
The Final PEIS should include the following information:

- A summary of water management measures that have been put in place, such as water transfers, water exchanges under 'relaxed' rules, and transactions enabled by the consolidated State Water Project/Central Valley Project place of use. We recommend that this information be displayed to compare water supply losses due to implementation of restoration flows with the (reported or estimated) water supply gains associated with the interim measures. Explain whether the interim water management measures will be extended for a longer term.

EPA2-12
- Whether release of interim restoration flows from Friant Dam resulted in collateral water supply benefits to diverters downstream that would not have occurred absent the Restoration Program.

EPA2-13
- Clarification regarding whether or not the restoration flow goals (Restoration Administrator recommendations) were met by the release of interim restoration flows.

EPA2-14 The Draft PEIS states that an increase in groundwater pumping prompted by reallocation of water would further exacerbate the overdraft and land subsidence issues in the San Joaquin Valley, and concludes that groundwater overdraft is an "unavoidable" impact (p. 12-121). EPA does not believe that groundwater overdraft is an "unavoidable" impact; rather, the potential for overdraft indicates the need for improved groundwater oversight and management. The Central Valley Project has, in part, provided surface supplies to 'supplement' groundwater in areas with significant groundwater overdraft. Agriculture-caused overdraft was an initial impetus for the Friant Dam project. If overdraft remains a significant impact issue, we recommend reexamining options -- including State and local programs, both required and voluntary -- for groundwater monitoring and moderating groundwater withdrawals and inputs.

EPA2-15 **Environmental Justice**
The Draft PEIS states that many of the program- and project-level effects could have a significant and unavoidable disproportionate adverse effect on minority and low-income populations because more than 50% of the population in the Restoration Area is comprised of minority or low-income farm workers.[1]

[1] see Footnote 1, Table ES-8: Summary of Impacts and Mitigation Measures, and Chapter 9 Environmental Justice.

3

While potential effects are described, possible mitigation measures to work with the minority and low-income communities to offset the effects are not disclosed.

EPA2-15 cont'd

Recommendation:

The Final PEIS should identify possible mitigation measures to reduce and offset potential adverse effects on surrounding minority and low-income populations. For example, consider integrating a local job training and hiring program into the Conservation Strategy and Physical Monitoring and Management Plan. Other measures could include incorporation of parks and recreation opportunities for local communities, educational programs for local schools, etc., into the restoration design.

General Comments

EPA2-16

The U.S. Army Corps of Engineers is currently evaluating a plan to dredge the San Joaquin River Stockton Ship Canal. This project does not appear to be considered in the cumulative impacts analysis presented in Chapter 26 Cumulative Impacts, even though it may contribute reasonably foreseeable effects to water quality in the lower San Joaquin River.

Recommendation:

We recommend that the San Joaquin River Stockton Ship Canal Dredging Project be included in the cumulative impact analysis in the Final PEIS.

ENCLOSURE 2

U.S. EPA'S RECOMMENDATIONS REGARDING FUTURE WORK TO MAXIMIZE THE SUCCESS OF THE SAN JOAQUIN RIVER RESTORATION PROGRAM
September 2011

River Functions Require a 'Corridor'

The Settlement flow release schedule anticipates a range of flows that will affect functions such as riparian and wetland recruitment, sediment transport, chemical cycling, instream and floodplain habitat structure development, and floodplain inundation (Draft PEIS, Appendix A: Stipulation of Settlement in NRDC vs. Rodgers, Appendix B Restoration Hydrographs); however, the proposed program lacks a design or process to guide channel changes needed to accommodate variability of flows on a system-wide scale (Friant to the Merced confluence). Identification and establishment of a riverine corridor should be pursued to provide latitude to manage restoration flows with respect to magnitude, duration, seasonal timing, and routing. We recognize that specific projects included in the Settlement, such as work on River Reach 2B, provide for some channel and flood plain expansion; however, we believe a strategy is needed for establishing a riverine corridor throughout the restoration reaches. The strategy should provide guidance for projects and decisions regarding areas both within and outside the active River corridor, but within its sphere of influence, to ensure compatibility between the River and adjacent land uses.

A riverine corridor provides functions such as habitat for instream, terrestrial, and aquatic organisms; biogeochemical cycling and water quality improvement; physical structure for streambed and bank stability; and sources of beneficial nutrient inputs to the aquatic system. All of these functions serve to support the entire aquatic ecosystem, including fish populations. The riverine corridor would include the channel itself, and should extend laterally to include floodplains, wetlands, and the riparian zone. Such a corridor should integrate wetlands and National Wildlife Refuges (NWRs), which are, at present, largely hydrologically disconnected from the River. Additional factors relevant to corridor planning include:

EPA2-17a

a) The role of the State Lands Commission in developing information that could be used for River corridor planning and in establishing areas subject to public trust oversight. The Draft PEIS indicates that the Commission is now examining the reaches with respect to public trust jurisdiction. It will be important to understand the technical and historical basis for their findings, and the implications for the restoration program.

b) Whether there is a process for coordinating restoration actions along the River. For example, it will be important to ensure that objectives for restoration are factored into remedies for seepage under agricultural lands near the River.

c) How actions with potential to conflict with a river corridor, such as activities on or with respect to private lands along the River, can be addressed.

d) Whether steps are being taken, through Reclamation or with other lead agencies or entities, to expand programs promoting complementary land uses. Adjacent and even 'overlapping' land uses can complement riverine functions – wetlands, recreation areas, and agricultural lands being some of the most adaptable.

5

EPA2-17a con'd

We recommend that the implementing agencies work with other interested parties to develop a strategy for evolution of a functioning river corridor for the entire extent of the restoration reaches. The aim should be to provide and protect suitable conditions for a range of river flows and functions, including conveying water to wetlands. Development of a functioning corridor is expected to be incremental but systematic, using opportunities to 'assemble pieces and practices' in an adaptive manner. The strategy should provide guidance for actions and decisions outside the channel to ensure compatibility between the active River and adjacent land uses.

Limitations to Channel Capacity

EPA2-17b

The Settlement provides for a period of interim flow releases to collect information on flow and channel responses, water temperature, fish needs, seepage issues, and water management actions. With respect to both interim and restoration flows, the Settlement aims for flows extending the entire length of restoration reaches-- from Friant Dam to the confluence with the Merced River – subject to the existing channel capacity. The presumption is that flows could follow the "historic" channel or, alternatively, flood bypasses. Decisions regarding routing flows are important because flow volume, sources, and instream channel conditions all affect suitability of conditions, such as temperature and habitat, for fish. Due to a variety of factors, there has been insufficient continuous channel 'space' to convey test flows through the entirety of the Restoration reaches, as evidenced by the 2011 interim flow period. In most cases the 'trigger' for curtailment of flows has been potential or alleged impacts to adjacent lands.

This issue reflects the cumulative effects of a long history of local land use and flows management, in concert with government programs and decisions benefitting agricultural activities. The issue of channel capacity is a concern for a number of reasons: the variety and complexity of contributing causes, some lodged in law and administrative practice; potential limitations to using alternative routes such as flood bypasses due to conflicting purposes and channel requirements; and the fact that blockages must be dealt with systematically if full, continuous passage is to be ensured.

Important issues affecting the availability of adequate capacity to convey restoration flows are potential or alleged seepage impacts, operational priorities, and risk related to levee instability.

Seepage

EPA2-18a

The Settlement appears to treat seepage from the perspective of channel flow losses that adversely impact restoration flows, leading to a focus on quantifying amounts of water to make up restoration flows [see, for example, Settlement (Appendix A), Section 13 (c)]. The Settlement does constrain flows to the 'existing channel capacity,' but may not have considered – or had information to estimate-- seepage effects on adjacent land uses. Where channel reaches are confined by levees, the Draft PEIS calculates channel capacity with reference to levee height and avoiding overtopping. This calculation over-estimates capacity in areas where alleged damage to agriculture due to under or through levee seepage at lower flows is limiting.

EPA2-18b

At this juncture, the seepage issue has several ramifications: potential curtailment of restoration flows, and potential liabilities or mitigation costs for the restoration program. As work proceeds, we suggest that there be readily accessible information on seepage problems, and on the planning and projects addressing them. Subject to availability, this information might include:

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EPA2-18b con't

a) A short summary of baseline groundwater conditions (e.g., during and outside the season when water conveyance and irrigation are occurring on adjacent lands) against which flow impacts are measured, the loss of restoration flows through channel seepage, seepage effects on adjacent land uses, and the implications of seepage losses and effects on adjacent land on passing adequate restoration flows.

b) Explanation of the processes for investigating seepage issues, the solutions under consideration, and arrangements for funding and implementation. We believe that solutions for these seepage issues should be consistent with the ecological and flow functions of a restored, healthy River corridor.

EPA2-19

Operational practices and priorities

Implementation of restoration flows with suitable timing, magnitude, and continuity to re-establish fisheries and aquatic ecosystems requires channel capacity for these flows. Competing demands for flow capacity, such as to support agricultural operations, may preclude adequate flows for restoration. Future work should evaluate the impacts of 'cumulative' demands on a channel from the perspective of impacts on beneficial uses, such as water quality, not simply as a matter of physical channel capacity.

EPA2-20

Levee stability

Risk of impacts to adjacent lands due to substandard levees is another factor in curtailing restoration flows. With a flood management design on the upper San Joaquin that relies on a flood bypass system, many of the levees along the River are secondary to flood flow management and do not perform well in high flows. Unlike the flood bypasses, these River levees are not facilities within the "State Plan of Flood Control" (Central Valley Flood Management Planning Program, FloodSAFE, California, "State Plan of Flood Control Descriptive Document," November 2011). The short paragraph in the Draft PEIS on nonproject levees suggests that the 'system' is fragmented, has not performed as designed, and in some places has been modified at local landowner discretion (p. 11-13). Neither the PEIS nor the documents such as the recent "State Plan" provide specific information on condition or effective capacity.

The issue of potential flood risk associated with the facilities operated by the Lower San Joaquin Levee District has emerged during interim flow implementation. Flood control activities have a direct relationship to, and impact on, the channel capacity and the corridor space needed to implement a range of River flows. Flood control planning and projects under the Corps of Engineers and State Department of Water Resources (for example, FloodSAFE) should be coordinated with the Restoration Program to support Restoration-friendly solutions, as should those of the local Lower San Joaquin Levee District, with the goal of ensuring oversight and accountability that protects public interests in the River.

EPA2-21a

Water Quality and Water Quality Monitoring

The fisheries chapter of the Draft PEIS includes a good analysis linking water quality parameters to beneficial use effects. We look forward to continuing to 'cross-walk' water quality conditions (understood to include physical, chemical and biological components) with ambient exposure and

potential effects on beneficial uses. Depending on the environmental context in which a constituent occurs, this linkage can require a more nuanced evaluation, e.g., one that accounts for for variability of flow conditions (discharge, temperature, etc), and season, location, and duration of exposure of sensitive species life stages. We appreciate the challenge thisanalysis may present, and have a continued interest in working with the Restoration Program on these topics.

We would like to call your attention to the following, which should be considered in future work:

EPA2-21a cont'd

a) Mercury/methylmercury. Several water bodies, including the Mendota Pool, which is a supply source for the San Joaquin Basin, are on the State's list of impaired waterbodies (State Water Resources Control Board, Clean Water Act 303(d) list, 2010) because of high levels of mercury. Regional Board analysis has identfied the Mud Slough wetland area as a source of methylmercury loading to the River and San Francisco Bay-Delta. Although source characterization for methylmercury in the Basin is limited, generally speaking, wetlands (intermittently wetted) that take in inorganik mercury tend to be high in net methylmercury production.

b) Selenium and agricultural drainage. The Grasslands area bordering a substantial portion of the Restoration area is implementing Total Maximum Daily Loads (TMDLs) for selenium. Success in reducing loading to the River – plus diluton flows on the three main tributaries (Merced, Tuolumne and Stanislaus Rivers) resulted ir removing three River segments from CWA 303 (d) listing. However, the reach immediately abve the Merced is still impaired, as is lower Mud Slough. These impairments are determined on the basis of existing standards. EPA, with the US FWS and USGS, expects to release proposel regulatory criteria for selenium in the Bay-Delta that will likely be more stringent than current values. Subsequently, we may reexamine appropriate standards in the Basin. In prepaation, we are interested in developing more information about threshold effects for senstive species and life stages, which would include juvenile salmon.

c) EPA recently added several segments ofthe mainstem San Joaquin River below the Merced River to the list of impaired waters under CWA Section 303(d) because of the impact of high temperatures on the migratory fishery. See EPA letter, November 12, 2010.

EPA2-21b

d) Analysis of water quality in the lower River (below the Merced River) and the impacts of Restoration actions on the lower River will ze important in interpreting fish condition and success; this information is also relevant to other programs, notably State and Regional Water Board programs. Although the Draft PEIS concludes that the flow impacts are minor, this question should be considered more closely particularly if Friant Dam releases occur during low flow periods. Also, if restoration flow water is subject to the Settlement provisions for storage and back-up uses [Settlement, section 13(i)],the potential benefits of releases that reach the lower River should be considered.

EPA2-22

e) EPA is continuing to support work on a regional integrated monitoring program through the Coalition for Urban Rural Environmental Sewardship. In this process, we are interested in opportunities to coordinate monitoring of the Grasslands drainage area with the Physical Monitoring Program for the Restoration Program. Benefits of coordinated monitoring would be improved data reporting and sharing, enhanced information for assessments, and efficiencies in monitoring requirements.

8

EPA2-23

f) While 'aquatic life' is central to the restoration effort, other beneficial uses, such as recreation, are important to consider, as well. With the exception of the River Parkway and a few discontinuous spots downstream, the River is largely inaccessible, or at least unfamiliar, to the wider community. Providing information about the River, for the benefit of landowners and the general public, should be one of the functions of a monitoring and assessment program.

Responses to Comments from U.S. Environmental Protection Agency (EPA2)

EPA2-1a: Comment noted. This comment does not raise concerns or issues specific to the environmental analysis presented in the Draft PEIS/R. Text has not been revised.

EPA2-1b: The purpose, need, and objectives of the project, as described in Chapter 1.0, "Introduction," of the Draft PEIS/R, establish the basis for developing a range of alternatives consistent with and responsive to the direction provided to the Secretary in the Act, which states, "The Secretary of the Interior is hereby authorized and directed to implement the terms and conditions of the Settlement in cooperation with the State of California." The identification of alternatives that are evaluated in the PEIS/R was the culmination of an extensive process undertaken by Reclamation and DWR and involved the Implementing Agencies in coordination with the Settling Parties, other stakeholders, and interested members of the public.

Recognizing that agencies and stakeholders may have different approaches and objectives that go beyond those described in the Settlement, Act, or PEIS/R, the Implementing Agencies have developed the action alternatives with as much flexibility as possible such that implementation of the Settlement would not preclude any future opportunities to modify or expand the river corridor to meet other goals. As a result, action alternatives evaluated in the Draft PEIS/R address large-scale systemwide variations, with flexibility for different methods of implementation. The river corridor strategy recommended by the commenter could fit with and complement this essential aspect of the action alternatives, and none of the action alternatives preclude development and implementation of a more holistic river corridor strategy in the future. However, the river corridor strategy proposed by the commenter goes beyond the purpose and need, as described on page 1-13 through page 1-14 in the Draft PEIS/R. The lead agencies acknowledge that such a strategy would require participation by a broad range of public and private agencies and individuals. For further information related to this topic, see MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R.

Reclamation, DWR, and other Implementing Agencies acknowledge that implementing the Settlement will involve many challenges, such as those mentioned by the commenter, some of which are not specifically addressed through provisions of the Settlement or the Act. The PEIS/R evaluates the potential impacts of implementing the Settlement consistent with the Act. The PEIS/R does not evaluate the feasibility of the Settlement, the likely efficacy of Settlement actions in achieving the Restoration or Water Management goals, or the interactions of individual Settlement actions with other Settlement actions. Such evaluations could be undertaken in a feasibility study but, as described above, a feasibility study on implementing the Settlement consistent with the Act was not required before, or as a condition of, Settlement implementation.

The Implementing Agencies recognize the unprecedented nature of the SJRRP, and acknowledge that flexibility in implementing the Settlement is necessary to ultimately achieve the Restoration and Water Management goals. In consideration of this necessary and anticipated flexibility, the SJRRP management process involves a broad range of strategies to guide implementation of the Settlement consistent with the Act and

incorporates a continuously growing set of data and scientific information. The Interim Flows program, initiated in 2009, and mentioned by the commenter, will contribute substantially to the set of historical data by facilitating collection of information regarding flow, water temperature, fish behavior and needs, habitat response and other biological effects, geomorphologic effects, seepage, and water recapture, recirculation, and reuse opportunities. The project description presented in the Draft PEIS/R incorporates many tools and strategies to make timely and relevant use of this growing set of data, and to periodically evaluate progress toward achieving the Restoration and Water Management goals. For more information related to this topic, see MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R.

This comment also introduces comments EPA2-3 through EPA2-16 in Enclosure 1 of this EPA2 comment letter. See responses to comments EPA2-3 through EPA2-16.

EPA2-2: As noted by the commenter, in recognition of the data limitations associated with the SJRRP and the need to rely on future monitoring data, action alternatives evaluated in the Draft PEIS/R address large-scale systemwide variations, with flexibility for different methods of implementation. The different methods of implementation represent key decision points, including the ultimate extent of channel modifications and flow routing within the Restoration Area, and the extent and location of long-term water recapture opportunities. The riverine corridor strategy recommended by the commenter provides a practical and well-rounded approach to implementation that would fit with and complement the action alternatives described in the Draft PEIS/R. However, the river corridor strategy proposed by the commenter goes beyond the purpose and need, as described in Chapter 1.0, "Introduction," of the Draft PEIS/R, and the requirements of Settlement implementation. Recognizing these differences, and that agencies and stakeholders may have different approaches and objectives that go beyond those described in the Settlement, Act, or PEIS/R, the Implementing Agencies have developed the action alternatives with as much flexibility as possible such that implementation of the Settlement would not preclude any future opportunities to modify or expand the river corridor to meet other goals. Text has not been revised.

This comment also introduces comments EPA2-17a through EPA2-23 in Enclosure 2 of this EPA2 comment letter. See responses to comments EPA2-17a through EPA2-23.

EPA2-3: The lead agencies acknowledge that establishing a river corridor throughout the Restoration Area along the San Joaquin River, and resolving impediments to develop such a corridor, would require the participation of downstream land owners and districts, flood system planners and managers, conservation organizations, public and private wetlands agencies, and/or counties and communities. The Implementing Agencies have conducted and will continue to conduct extensive public and stakeholder outreach activities to engage and inform interested parties of SJRRP activities early in the scoping process, throughout development of the PEIS/R, and into the future as SJRRP actions are implemented and monitored. While the Implementing Agencies continue to coordinate with related programs, projects, and organizations involved in these programs and

projects, the amount and timing of funding available for implementing the Settlement is limited and may vary considerably on a year-to-year basis. Because of this variability, the Implementing Agencies coordinate activities and budgets closely to minimize or avoid delays in implementation. Public involvement and outreach activities conducted by the Implementing Agencies seek to create an open and transparent process through which the general public, stakeholders, affected Third Parties, and other interested parties can track and participate in SJRRP activities.

The purpose, need, and objectives of the project (described on page 1-13 through page 1-14 in the Draft PEIS/R) establish the basis for developing a range of alternatives to achieve the stated purpose and objectives. The purpose, need, and objectives of the project are consistent with and responsive to the direction provided to the Secretary in the Act, which states, "The Secretary of the Interior is hereby authorized and directed to implement the terms and conditions of the Settlement in cooperation with the State of California." The identification of alternatives that are evaluated in the PEIS/R was the culmination of an extensive process undertaken by Reclamation and DWR and involved the Implementing Agencies in coordination with the Settling Parties, other stakeholders, and interested members of the public. The potential range for each Restoration and Water Management action was represented within the range of Initial Restoration and Water Management alternatives presented in the *Initial Program Alternatives Report* (SJRRP 2008). As the Initial Restoration and Water Management alternatives were developed, the Implementing Agencies also identified data requirements for evaluating those alternatives.

In recognition of the data limitations associated with SJRRP and reliance on future monitoring data, the action alternatives are defined broadly and include provisions for flexibility in implementation. Accordingly, action alternatives evaluated in the Draft PEIS/R address large-scale systemwide variations, with flexibility for different methods of implementation. The different methods of implementation represent key decision points, including the ultimate extent of channel modifications and flow routing within the Restoration Area, and the extent and location of long-term water recapture opportunities. The river corridor strategy recommended by the commenter could fit with and complement this essential aspect of the action alternatives, and none of the action alternatives preclude development and implementation of a more holistic river corridor strategy in the future. Further detail can be found in response to comment EPA2-17a. Text has not been revised.

EPA2-4: The SJRRP will address conveyance limitations as stipulated in the Settlement, consistent with the Act. Actions to increase channel capacity are analyzed at a program level in the Draft PEIS/R, and site-specific studies would evaluate the details of those actions. Specifically, the Reach 4B, Eastside Bypass, and Mariposa Bypass Improvements Project addresses actions that include potential expansion of Reach 4B channel capacity to at least 475 cfs at a project level. The Mendota Pool Bypass and Reach 2B Improvements Project addresses the potential expansion of Reach 2B to at least 4,500 cfs at a project level. The Implementing Agencies recognize that additional constraints may exist regarding channel capacity and are committed to first, as described beginning on page 2-25 in the Draft PEIS/R, maintaining the safe conveyance of Interim

and Restoration flows through limiting flows to a level that would minimize increases in flood risk. As described on page 2-95 in the Draft PEIS/R, potential channel improvements to increase channel capacity for reaches not specified in the Settlement may be implemented by parties other than Reclamation to improve levee integrity for conveying flood flows irrespective of Settlement implementation. Reclamation and DWR recognize the importance of coordination and communication in planning and implementing these projects.

Opportunities do exist to coordinate water transfer actions between the Exchange Contractors and the SJRRP. Reclamation regularly coordinates water transfer activities with downstream water users through a variety of mechanisms, including weekly conference calls and through Reclamation's Central Valley Project Office and South Central California Area Office. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

EPA2-5: Flow priority ranking in the Lower San Joaquin Flood Control Project would not change as a result of implementing the Settlement, and would not adversely affect future flood control operations. As described on page 2-40, lines 10 through 16, in the Draft PEIS/R, Interim and Restoration flows would have a lower priority for downstream channel capacity than flood flows (from Friant Dam or other sources, such as the Kings River, Fresno River, or Chowchilla River) or irrigation deliveries to the San Joaquin River Exchange Contractors. If release of water from Friant Dam is required for flood control purposes, concurrent Interim and Restoration flows would be reduced by an amount equivalent to the required flood control release. If flood control releases from Friant Dam exceed the concurrent scheduled Interim and Restoration flows, no additional releases above those required for flood control would be made for SJRRP purposes. Finally, Interim and Restoration flows would be limited to then-existing channel capacities. With these operating principles and constraints in place, Interim and Restoration flows would not contribute to flood flows above project design capacities as defined by the *Operation and Maintenance Manual for Levees, Irrigation and Drainage Structures, Channels and Miscellaneous Facilities* (Reclamation Board 1978) or otherwise adversely affect future flood control operations. Priorities and operations are set in this manual, and would not change with implementation of the SJRRP.

As described on page 28-6 in the Draft PEIS/R, Section 10004(j) of the Act clarifies that nothing in the Act "…shall modify or amend the rights and obligations under the Purchase Contract between Miller and Lux and the United States and the Second Amended Exchange Contract between the United States, Department of the Interior, Bureau of Reclamation and Central California Irrigation District, San Luis Canal Company, Firebaugh Canal Water District and Columbia Canal Company." As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, implementing the action alternatives would be consistent with existing operating criteria, and prevailing and relevant laws, regulations, biological opinions (BO), and court orders in place at the time of implementation. Specifically, if Reclamation must make deliveries to the San Joaquin River Exchange Contractors via the San Joaquin River, these water deliveries would have a higher priority for channel capacity than Interim or Restoration flows, as described in Chapter 2.0 of the Draft PEIS/R. Therefore, Interim and Restoration flows would be

reduced, if necessary to provide channel capacity for water delivery to the San Joaquin River Exchange Contractors via the San Joaquin River.

Future modifications to increase channel capacity are described at a program level in the Draft PEIS/R. If found necessary through monitoring, as described on pages 2-22 through 2-28 and in Appendix D, "Physical Monitoring and Management Plan," in the Draft PEIS/R, the need for modifications to increase channel capacity would be further analyzed in subsequent site-specific projects, in consideration of a variety of factors including the conveyance capacity needs related to flood flows, irrigation flows, and Restoration flows. Further, as stated on page 62 in the Executive Summary of the Draft PEIS/R, it is possible that the Settlement could be fully implemented in a manner consistent with the Act, and the purpose of the project thereby achieved, without release of the maximum Restoration Flows. Text has not been revised.

EPA2-6: The protection and recapture of Interim and Restoration flows constitute project-level actions that are components of all of the action alternatives. Similar to the Interim Flows project actions, Reclamation has filed petitions with the State Water Resources Control Board (SWRCB) for water right changes pursuant to California Water Code Sections 1700 and 1707 to dedicate water for instream flow, add fish and wildlife preservation and enhancement as a purpose of use, and add the stream channel as a place of use. The petitions have the same purposes of use for all four water rights, and add points of rediversion. The water rights involved in implementing the Act are permitted water right License 1986 and Permits 11885, 11886, and 11887. Text has not been revised.

EPA2-7: The Draft PEIS/R describes in detail the existing flood management system for the San Joaquin River and contributing flood flows in Chapter 11.0, "Hydrology – Flood Management." The level of description presented is appropriate for the scope of the PEIS/R. None of the action alternatives include modifications of flood control operations, either through releases from Friant Dam or the routing of flood flows through the Lower San Joaquin Flood Control Projects. Conveyance of Interim and Restoration flows would not constitute a change in flood control operations.

As stated on page 2-95 in the Draft PEIS/R, the SJRRP is being implemented concurrently with other programs by agencies that would modify the San Joaquin River and Lower San Joaquin River Flood Control Project to address flood protection needs. In particular, DWR is characterizing the condition of levees along the San Joaquin River and the bypasses in the Restoration Area through the NULE Project as part of the California FloodSAFE initiative. Initial findings from these evaluations indicate deficiencies in flood conveyance capacity at several locations in the Restoration Area that were not identified for channel improvements in the Settlement. Channel improvements to address these deficiencies in flood protection have not yet been identified and evaluated, and are not included in the Settlement (and therefore are not part of the action alternatives). Further, as noted on page 62 of the Executive Summary, it is possible that the Settlement could be fully implemented in a manner consistent with the Act, and the purpose of the project thereby achieved, without release of the maximum Restoration Flows.

Potential channel improvements to increase channel capacity for reaches not specified in the Settlement may be implemented by parties other than Reclamation to improve levee integrity for conveying flood flows irrespective of Settlement implementation. Such modifications could include levee setbacks; cutoff/slurry walls; levee strengthening, widening, and raising; and channel dredging or other techniques to increase channel capacity. These types of future projects would provide flood control benefits and would be expected to have independent utility outside implementation of the Settlement. Because these potential future levee and channel modifications are not specified in the Settlement, they are not part of the SJRRP and are not included as part of the alternatives evaluated in the PEIS/R. Specific future modifications to the flood control system under the FloodSAFE initiative are uncertain and speculative, and are not considered reasonably foreseeable or probable future actions at this time. Reclamation and DWR recognize the importance of coordination and communication in planning and implementing projects that affect the flood control system to prevent impacts to flood management. Therefore, the potential for cumulative effects associated with implementation of the Settlement and FloodSAFE programs and projects is presented in Chapter 26.0, "Cumulative Impacts," of the Draft PEIS/R.

The contribution of flood flows from the Kings River to the San Joaquin River is addressed in sufficient detail for the purposes of analysis. As described on page 2-40, lines 10 through 16, in the Draft PEIS/R, Interim and Restoration flows would have a lower priority for downstream channel capacity than flood flows (from Friant Dam or other sources, such as the Kings River, Fresno River, or Chowchilla River) or irrigation deliveries to the San Joaquin River Exchange Contractors. If release of water from Friant Dam is required for flood control purposes, concurrent Interim and Restoration flows would be reduced by an amount equivalent to the required flood control release. If flood control releases from Friant Dam exceed the concurrent scheduled Interim and Restoration flows, no additional releases above those required for flood control would be made for SJRRP purposes. Interim and Restoration flows would be limited to then-existing channel capacities. With these operating principles and constraints in place, Interim and Restoration flows would not contribute to flood flows above project design capacities, as defined by the *Operation and Maintenance Manual for Levees, Irrigation and Drainage Structures, Channels and Miscellaneous Facilities* (Reclamation Board 1978) or otherwise adversely affect future flood control operations. Priorities and operations are set in this manual, and would not change with the implementation of the SJRRP.

Page 11-18, lines 7 through 8, specify that Kings River flood flows have priority for available capacity in the San Joaquin River below Mendota Pool. The potential for increased flood risk as a result of Settlement implementation is assessed in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R. Potential significant impacts would be mitigated for, as described in Chapter 11.0, or avoided, as described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R. Program-level actions to improve channel capacity in Reach 2B may be designed to benefit flood risk management in the vicinity of Reach 3; however, the details of these improvements would be determined during subsequent site-specific studies.

As described in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R, redirected flood impacts to Reach 3, which includes the community of Firebaugh, and Reach 4, are considered less than significant; however, because of lack of current information regarding levee conditions within the Restoration Area, this impact is considered potentially significant and Mitigation Measure FLD-1 was proposed in the Draft PEIS/R. Under Mitigation Measure FLD-1, each site-specific study will include an analysis of the potential of that project to locally impede flow or transfer flood risk to other areas as a result of changes in velocity, stage, or cross section. If a site-specific project identifies the potential for a program-level action to locally impede flow or transfer flood risk to other areas, project proponents for the site-specific project will incorporate actions into site-specific design of the project to reduce identified redirected flood flow impacts to a less-than-significant level. Site-specific projects that cannot or do not reduce identified redirected flood impacts to less than significant levels will not be implemented as part of the SJRRP (stated on page 11-40, line 9-10 in the Draft PEIS/R). Text has not been revised.

EPA2-8: Text throughout Section 11.1, "Environmental Setting," in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R, has been revised in response to this and other comments to expand or provide more detail in descriptions of flood control facilities. Text pertinent to this comment begins on page 11-9, lines 40 through 42, and end on page 11-18, line 38. This text has been revised to include expanded descriptions of reservoirs, dams and flood management infrastructure, and LSJLD responsibilities and facilities. See Chapter 4.0, "Errata," of this Final PEIS/R. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R.

EPA2-9: Reclamation and DWR recognize the importance of and are committed to coordination and communication in planning and implementing projects that affect the flood control system to prevent impacts to flood management, including SJRRP and FloodSAFE, as described on page 2-95 in the Draft PEIS/R. No significant conflicts or impediments to working with flood management programs to support implementing the Settlement have been identified. Text has not been revised.

EPA2-10a: Text on page 14-2, line 29, in the Draft PEIS/R has been revised, as recommended, to indicate that Salt Slough and Mud Slough collect irrigation runoff from the west side of the San Joaquin River Basin. See Chapter 4.0, "Errata," of this Final PEIS/R.

EPA2-10b: Comment noted. Text has not been revised.

EPA2-11: Two provisions exist within the Settlement for reducing or avoiding water supply reductions to Friant Division long-term contractors as a result of Settlement implementation. Provisions for reducing and avoiding these impacts are described by Paragraph 16 of the Settlement, and are consistent with applicable Federal and State laws. Paragraph 16(a) provides for the recapture of flows released for river restoration downstream from the Merced River and the recirculation, recapture, reuse, exchange or transfer of flows for reducing Recovered Water Account (RWA) balances. As of

February 2012, 86,718 acre-feet have been recaptured and have been recirculated, reused, exchanged or transferred by the Friant Division.

To date, Reclamation has credited approximately 680 TAF to Friant Division long-term contractors for assessed reductions in water supply. Paragraph 16(b) allows for the delivery of surplus flows at Friant Dam to the Friant Division long-term contractors who provide water to meet Interim or Restoration flows, in a manner similar to current surpluses under Article 215 but at a discounted rate of $10 per acre-foot. As of February 2012, the Friant Division has received 353 TAF of surplus supplies from Friant Dam at the discounted rate, with a corresponding reduction in RWA balances. The remaining credits held by Friant Division long-term contractors, which approximate losses that have not been recuperated, are approximately 327 TAF.

Records of RWA credits and details surrounding the water supplies developed under Paragraph 16 are published annually in the SJRRP Annual Technical Report (at www.restoresjr.net). Reclamation has authorization for tracking RWA balances and administrating provisions of Paragraph 16 for the duration of the Settlement and the Act. Recirculation is currently described in the Draft PEIS/R on a program level. Project-level analysis of recirculation actions to meet the Water Management Goal will be completed under future site-specific studies.

EPA2-12: The potential for direct and indirect water supply benefits or impacts to occur to non-Friant Division diverters along the San Joaquin River as a result of the release of Interim and Restoration flows is described in the Draft PEIS/R under Impact SWQ-4 (pages 14-24 through 14-27), Impact GRW-2 (pages 12-117 through 12-120), and Impact GRW-13 (page 12-120). During water years 2010 and 2011, all recaptured Interim Flows were recirculated to the Friant Division. Therefore, there was no direct increase in water supply deliveries to non-Friant Division diverters along the San Joaquin River as a result of Interim Flows during water years 2010 and 2011. Indirect benefits may have occurred during this period, but have not been quantified as part of the SJRRP. The quantification of Interim Flows recaptured and recirculated during calendar year 2012 is ongoing and will be published at www.restoresjr.net in the 2012 Annual Technical Report.

As described in the *Final Compliance Report: Order WR 2010-0029-DWR Water Year 2011* (SJRRP 2011a), available at www.restoresjr.net, a total of 42,274 acre-feet of Interim Flows were recaptured during water year 2010, all of which was recirculated to the Friant Division (including recirculation of 35,788 acre-feet in water year 2010 and recirculation of the remaining 6,486 acre-feet during the beginning months of water year 2011). As described in the 2011 *Annual Technical Report* (SJRRP 2012c), available at www.restoresjr.net, a total of 29,602 acre-feet of Interim Flows were recaptured in calendar year 2011, of which 29,603 acre-feet were recirculated. This over-delivery of 1 acre-foot was reconciled by a 1-acre-foot reduction in the availability of recaptured February 2012 Interim Flows. Text has not been revised.

EPA2-13: The purpose of the Interim Flows releases is to provide information regarding temperatures, fish needs, seepage losses, shallow groundwater conditions, recirculation, recapture, and reuse conditions, channel capacity (at high and low flows), and levee

stability. The RA's recommendations are considered in decisions to release Interim flows. Before releasing Water Year 2011 Interim Flows, Reclamation conducted flow bench evaluations to determine if downstream constraints permitted releases according to the RA's recommendations. Constraints on 2011 Interim Flows include channel capacities, groundwater elevations, Mendota Pool water quality, Mendota Pool water user demand, and flood management requirements. Friant Dam flow changes during 2011 Interim Flows are documented in the SJRRP 2011 *Annual Technical Report*, available at http://restoresjr.net. Reclamation will continue to assess the implementation of the RA's recommendations to implement the Settlement actions.

EPA2-14: As the commenter notes, groundwater overdraft in the San Joaquin Valley is an ongoing condition, and groundwater levels are expected to continue in a downward trend under the No-Action Alternative. Implementing the action alternatives would increase overdraft and accelerate the downward groundwater level trend. Although implementing the action alternatives would introduce water to the San Joaquin River and lead to some natural recharge, groundwater levels near the San Joaquin River are not anticipated to have a significant effect on regional groundwater levels in the surrounding CVP/SWP water service areas because of the heterogeneity of the system. As described in Chapter 12.0, "Hydrology – Groundwater," of the Draft PEIS/R, changing management practices in the Friant Division, including applying higher efficiency water, sowing different crops, fallowing land, reducing irrigated acreage, and increasing water purchases and transfers could potentially reduce demand for water supply. However, these changes in management practices are currently at the discretion of the landowners. Three general methods for managing groundwater resources in California include the following:

- Management by local agencies under authority granted in the California Water Code or other applicable State statutes
- Local government groundwater ordinances or joint powers agreements
- Court adjudications

Because no law requires these types of management to be applied, groundwater is often unmanaged or management is instituted after local agencies or landowners recognize a problem.

The SJRRP is being implemented concurrently with other programs initiated by other agencies to address groundwater protection. Numerous groundwater-related projects, ongoing and planned, exist in the region that could contribute to better understanding groundwater conditions in the region and potentially reducing overdraft conditions. Existing and proposed groundwater banking programs could potentially result in additional groundwater recharge in the CVP/SWP water service areas that are not accounted for in this analysis. Although banking programs could potentially result in additional recharge to the aquifer, they may not result in a long-term reduction in groundwater overdraft because many of these programs would extract some or an equivalent volume of recharged water for use at a later time.

DWR has played an active role in coordinating with local agencies and stakeholders to increase water supply reliability through planned and coordinated use of water resources. DWR's efforts include groundwater management support through the Integrated Water Resources Information System, Bulletin 118, California Water Plan, Water Use Efficiency, Conjunctive Water Management, and Drought Assistance activities. DWR's Local Groundwater Assistance Grant Program is an example of a program that provides local public agencies with funding to conduct groundwater studies or carry out groundwater monitoring and management activities to improve understanding of the resource. Also, implementation of the Integrated Regional Water Management program supports the stewardship of California's water resources at the local level through technical and financial assistance, data collection and dissemination, resources evaluation, and coordination. DWR administers grant programs designed to increase efficient use of surface water and groundwater resources and to promote integrated regional water management. DWR does not regulate groundwater use because the California Legislature has held that groundwater management should remain a local responsibility.

Because banking programs and DWR groundwater management activities are not specified in the Settlement, they are not part of the SJRRP and are not included as part of the alternatives evaluated in the PEIS/R. As stated on page 2-3, lines 21-26, in the Draft PEIS/R, pursuant to Part III of Title X of the Omnibus Public Land Management Act of 2009 (Public Law 111-11), the Secretary is developing proposed guidelines for projects designed to reduce, avoid, or offset the quantity of expected water supply impacts to Friant Division long-term contractors caused by Interim and Restoration flows. This process is occurring parallel to and separate from development of this PEIS/R. It is not known if groundwater overdraft would be significant following implementation of Part III projects. Because Reclamation does not have the authority to implement State or local programs to require groundwater monitoring and moderate groundwater withdrawals, no feasible mitigation measures are available to reduce the impact. Two provisions exist within the Settlement for reducing or avoiding water supply reductions to Friant Division long-term contractors as a result of Settlement implementation, which would further reduce groundwater impacts. The reductions in water supply to date, along with an accounting of the reduction in impacts under these provisions, is described in response to comment EPA2-11. For the reasons set forth above, no changes to the PEIS/R are necessary. Text has not been revised.

EPA2-15: Consistent with CEQ (CEQ 1997) and U.S. Department of the Interior (DOI 1995) guidance, the Draft PEIS/R evaluated significant and unavoidable and potentially significant and unavoidable impacts for which disproportionately high and adverse effects on minority and low-income populations could occur. Environmental impacts found to be significant or potentially significant in Chapters 4.0 through 25.0 of the Draft PEIS/R, and potentially having disproportionately high and adverse effects on minority and low-income populations, are listed in section 9.3, "Environmental Consequences and Mitigation Measures," of the Draft PEIS/R. Feasible mitigation measures for those impacts are also provided in Chapter 9.0, "Environmental Justice," of the Draft PEIS/R.

The Conservation Strategy and Physical Monitoring and Management Plan, described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, both provide strategies included in all action alternatives to minimize and avoid potential impacts to sensitive species and habitats, and to attain the management objectives, if necessary, to avoid or reduce the need for mitigation measures to be implemented. As described in Chapter 22.0, "Socioeconomics," and Chapter 27.0, "Other NEPA and CEQA Considerations," of the Draft PEIS/R, the local labor force is anticipated to fill most of the employment opportunities that would be created as a result of implementing the action alternatives. Increased recreation, while not an objective of the program, is a beneficial impact in some portions of the Restoration Area. The Implementing Agencies have conducted and will continue to conduct extensive public and stakeholder outreach activities to engage and inform interested parties of SJRRP activities in the scoping process, throughout development of the PEIS/R, and into the future as SJRRP actions are implemented and monitored. Text has not been revised.

EPA2-16: As described in Chapter 26.0, "Cumulative Impacts," of the Draft PEIS/R (page 26-4, lines 1 through 7), to be included in the analysis of cumulative impacts in the PEIS/R, actions (i.e., projects) must meet three criteria to be considered to be reasonably foreseeable:

- The action has an identified sponsor actively pursuing project development, NEPA and/or CEQA compliance documents such as a Draft EIS or EIR, have been completed or issued for the action and the action appears to be "reasonably foreseeable" given other considerations such as site suitability, funding and economic viability, and regulatory limitations.

- Available information defines the action in sufficient detail to allow meaningful analysis.

- The action could affect resources potentially affected by the SJRRP.

The San Francisco Bay to Stockton Deep Water Ship Channel Project includes modification and associated dredging of the Stockton Deepwater Ship Channel (USACE 2011a). NEPA and/or CEQA compliance documents have not yet been completed or issued for this project, and available information is not sufficiently detailed to allow meaningful analysis. Thus, this project does not meet two of the three criteria for inclusion in the cumulative impact analysis as a reasonably foreseeable probable future action, and has not been included in the cumulative impact analysis in the PEIS/R. Text has not been revised.

EPA2-17a: As discussed in response to comment EPA2-3, the lead agencies acknowledge that establishing a river corridor throughout the Restoration Area along the San Joaquin River and resolving impediments to develop such a corridor would require the participation of downstream landowners and districts, flood system planners and managers, conservation organizations, public and private wetlands agencies, and/or counties and communities. The Implementing Agencies have conducted and will continue to conduct extensive public and stakeholder outreach activities to engage and

inform interested parties of SJRRP activities in the scoping process, throughout the development of the PEIS/R, and into the future as SJRRP actions are implemented and monitored. While the Implementing Agencies continue to coordinate with related programs, projects, and organizations involved in these programs and projects, the amount and timing of funding available for implementing the Settlement is limited and may vary considerably on a year-to-year basis. Because of this variability, the Implementing Agencies coordinate activities and budgets closely to minimize or avoid delays in implementation. Public involvement and outreach activities conducted by the Implementing Agencies seek to create an open and transparent process through which the general public, stakeholders, affected Third Parties, and other interested parties can track and participate in SJRRP activities.

The purpose, need, and objectives of the project (described on page 1-13 through page 1-14 of the Draft PEIS/R) establish the basis for developing a range of alternatives to achieve the stated purpose and objectives. The purpose, need, and objectives of the project are consistent with and responsive to the direction provided to the Secretary in the Act, which states, "The Secretary of the Interior is hereby authorized and directed to implement the terms and conditions of the Settlement in cooperation with the State of California." Identification of alternatives that are evaluated in the PEIS/R was the culmination of an extensive process undertaken by Reclamation and DWR and involved the Implementing Agencies in coordination with Settling Parties, other stakeholders, and interested members of the public. The potential range for each Restoration and Water Management action was represented within the range of Initial Restoration and Water Management alternatives presented in the *Initial Program Alternatives Report* (SJRRP 2008). As the Initial Restoration and Water Management alternatives were developed, the Implementing Agencies also identified data requirements for their evaluation.

In recognition of the data limitations associated with the SJRRP and reliance on future monitoring data, the action alternatives are defined broadly and include provisions for flexibility in implementation. Accordingly, action alternatives evaluated in the Draft PEIS/R address large-scale systemwide variations, with flexibility for different methods of implementation. The action alternatives described in the Draft PEIS/R are generally consistent with the riverine corridor strategy recommended by the commenter. The different methods of implementation represent key decision points, including the ultimate extent of channel modifications and flow routing within the Restoration Area, and the extent and location of long-term water recapture opportunities. The river corridor strategy recommended by the commenter fits with and complements this essential aspect of the action alternatives, and none of the action alternatives preclude development and implementation of a more holistic river corridor strategy in the future.

Similarly, the river corridor strategy complements two key pieces of the project description that are common to all action alternatives: the Conservation Strategy (Section 2.4.4 of the Draft PEIS/R) and the Physical Monitoring and Management Plan (Appendix D to the Draft PEIS/R). As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, all action alternatives include the Conservation Strategy which consists of management actions necessary to provide a net increase in the extent and quality of riparian and wetland habitats in the Restoration Area, to avoid reducing the long-term

viability of sensitive species, and to be consistent with adopted conservation plans. Additionally, as described in Chapter 16.0, "Land Use Planning and Agricultural Resources," of the Draft PEIS/R, through implementing program-level Mitigation Measure LUP-1a, project proponents would design and implement levee setbacks in such a way as to support the continued productive use of Important Farmland in the corridor between proposed levees and at borrow sites.

The river corridor strategy, depending on detailed components of the strategy broadly defined by the commenter, appears implementable in concept under all action alternatives and would be compatible with strategies for implementation identified in Section 2.11.1, "Strategies for Implementation," of the Draft PEIS/R, in the incremental but systematic fashion described by the commenter. The actions described in the Draft PEIS/R are not intended to fulfill a river corridor strategy, but depending on the specific components of that strategy, could be implemented in coordination with a river corridor strategy. The Physical Monitoring and Management Plan, included under all action alternatives, provides guidelines for observing and adjusting to changes in physical conditions within the Restoration Area during implementation of the Settlement. Section 2.11.1 describes several strategies that would be employed incrementally but systematically throughout implementation of the Settlement, including the following:

- Grouping of site-specific projects
- Estimating then-existing channel capacities for implementing Interim and Restoration flows in response to monitoring results and project implementation
- Updating operating guidelines and obtaining biological clearance and other agreements

Developing a corridor would include incorporating habitat to support naturally reproducing and self-sustaining populations of salmon and other fish while accommodating a range of flows. The river corridor strategy, however, goes beyond the Settlement's Restoration and Water Management goals to improve the entire riverine ecosystem, including wetlands, recreation areas, terrestrial habitat, water quality, and floodplains. While there are noteworthy opportunities for further river ecosystem management, they are not called for in the Settlement and would be an expansion and significant change in the Settlement's goals. Planning and implementing a more expanded river corridor strategy would require not only coordination among the Implementing Agencies and proponents of subsequent site-specific projects, but would require the participation of downstream landowners and districts, flood system planners and managers, conservation organizations, public and private wetlands agencies, and/or counties and communities. Development of a river corridor would include coordination with other entities that are currently operating or considering development of refuges, parks, and similar projects.

Program-level actions that require construction activities on the San Joaquin River would require a lease from the State Lands Commission. Project-level actions would not cause substantial adverse effects to natural and cultural resources on lands subject to

jurisdiction of the California State Lands Commission. DWR is coordinating with the State Lands Commission as a Responsible Agency under CEQA in preparing this PEIS/R. The lead agencies continue to work with the California State Lands Commission to disseminate results of recent mapping to determine the proximity of Settlement actions to California State Lands Commission lands and other private ownership interests.

Through coordinating with other agencies, stakeholders, and the public, the Implementing Agencies will seek to develop the SJRRP in a manner that would provide space and suitable conditions for a range of river flows and functions. The Implementing Agencies present information and collect feedback on past and future SJRRP activities through outreach activities, including public meetings of technical feedback work groups focused on technical issues including fisheries management, seepage and conveyance, and water management. These activities inform the development of the Monitoring and Analysis Plan (formerly known as the Agency Plan). The Monitoring and Analysis Plan presents studies, monitoring network changes, and development of analytical tools scheduled for the following year. The Monitoring and Analysis Plan provides a framework for the Implementing Agencies to prioritize and consolidate monitoring and analysis proposals into a coordinated program that best meets SJRRP needs, within funding limits and other constraints.

To summarize, the river corridor strategy proposed by the commenter goes beyond the purpose and need, as described in Chapter 1.0, "Introduction," of the Draft PEIS/R. The river corridor strategy focuses on expanding natural habitats along the San Joaquin River beyond those that may be necessary to achieve the purpose and need. In recognition of these differences, and that agencies and stakeholders may have different approaches and objectives that go beyond those described in the Settlement, Act, or PEIS/R, the Implementing Agencies have developed the action alternatives with as much flexibility as possible so that implementing the Settlement would not preclude any future opportunities to modify or expand the river corridor to meet other goals. Text has not been revised.

EPA2-17b: Comment noted. The SJRRP is being implemented concurrently with other programs by other agencies that would modify the San Joaquin River and the Lower San Joaquin River Flood Control Project to address flood protection needs. In particular, DWR is characterizing the condition of levees along the San Joaquin River and the bypasses in the Restoration Area through the Non-Urban Levee Evaluation Program as part of the California FloodSAFE initiative. Initial findings from these evaluations indicate deficiencies in flood conveyance capacity at several locations in the Restoration Area that were not identified for channel improvements in the Settlement. Channel improvements to address these deficiencies in flood protection have not yet been identified and evaluated, and are not included in the Settlement (and therefore are not part of the action alternatives).

Actions regarding channel capacity, flow routing, and use of bypasses for all action alternatives are described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R. A key component of each alternative is specific flow routing and use of bypasses. The Physical Monitoring and Management Plan (Appendix D of the Draft PEIS/R), included under all action alternatives, provides guidelines for observing and

adjusting to changes in physical conditions within the Restoration Area during implementation of the Settlement. As described on page 2-22 through page 2-28, and page 2-49 through 2-51 in the Draft PEIS/R, Reclamation would monitor and manage the response of the system during the release of Interim and Restoration flows and reduce or redirect flows, as necessary to limit the potential for significant flow-related impacts to occur downstream. A Channel Capacity Advisory Group would be established with one representative each from Reclamation, DWR, USACE, LSJLD, and CVFPB to provide independent review and updates of estimated then-existing channel capacities, monitoring results, and management actions to address vegetation and sediment transport within the system, as identified by Reclamation. Text has not been revised.

EPA2-18a: In addition to the constraints on channel capacity identified in the comment (specifically, constraints related to levee height and overtopping), conditions set forth in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, would limit the release of Interim and Restoration flows based on levee landside slope stability, underseepage, and through-seepage. Additionally, the Seepage Management Plan (included in the Draft PEIS/R as an attachment to Appendix D) also contributes to the definition of existing channel capacity and the set of conditions under which the Settlement would be implemented. Text has not been revised.

EPA2-18b: With reference to the commenter's request for summary information of baseline groundwater conditions against which flow impacts can be measured, the Seepage Management Plan contains a data collection program that includes a series of telemetry and logged and manually measured monitoring well transects and staff gages spaced roughly 8 – 10 miles apart, with additional wells at locations identified by the SJRRP and landowners. Water level measurements in these wells document the hydrologic response to Interim and Restoration Flows, inform analyses and modeling efforts, and identify potential or actual seepage impacts. The *Monitoring Well Atlas* (SJRRP 2012d), available on the SJRRP Web site at www.restoresjr.net, contains details of the monitoring well network and measured groundwater elevations, and will be updated periodically as additional information is gained and wells are installed or modified.

An explanation of the process for investigating seepage issues, the solutions under consideration, and funding and implementation arrangements are included in the Seepage Management Plan (Attachment to Appendix D of the Draft PEIS/R) and the Seepage Project Handbook (SJRRP 2011b). The Seepage Management Plan includes thresholds that are intended to protect adjacent lands considering crop type, groundwater conditions, and topography, and it describes Reclamation's proposal to manage Interim and Restoration flows to not exceed established groundwater thresholds. The plan also identifies short-term management responses to address adverse groundwater seepage impacts, such as redirecting flows away from areas where impacts are anticipated. Long-term management responses are also identified and could include, but would not be limited to, the following: purchasing easements and/or compensation for seepage effects, constructing slurry walls to reduce seepage flows, constructing seepage berms to protect against levee failure, constructing drainage interceptor ditches to protect affected lands,

or installing interceptor lines on affected lands. Funding and implementation arrangements are addressed in the *Seepage Project Handbook* (SJRRP, 2011b).

The Settling Parties have recently developed a Third-Party working draft *Framework for Implementation* for the SJRRP (SJRRP 2012a). The *Framework for Implementation* outlines the actions to be taken to implement the SJRRP and presents a schedule and budget for these actions. The *Framework for Implementation* schedule was developed with input from water agencies/districts and landowners downstream from Friant Dam who may be affected by implementation of the Settlement, and is intended to be protective of these Third-Party interests while meeting the requirements of the Settlement for expeditious action. The *Framework for Implementation* also provides an accounting of future funding needs and the remaining funds available to implement the SJRRP. The *Framework for Implementation* can be found on the SJRRP Web site at www.restoresjr.net. While the *Framework for Implementation* presents a revised schedule for implementation of the Settlement, it does not result in new significant environmental impacts, a substantial increase in the severity of an environmental impact, or create a feasible project alternative or mitigation measure that would clearly lessen environmental impacts. For more information related to the *Framework for Implementation* and funding for SJRRP actions, see MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R. Text has not been revised.

EPA2-19: The potential for the program alternatives to impact water quality is analyzed in Chapter 14.0, "Hydrology – Surface Water Quality," of the Draft PEIS/R. Cumulative impacts of the action alternatives are addressed in Chapter 26.0, "Cumulative Impacts," of the Draft PEIS/R. Reclamation and DWR are moving forward with implementation of the Phase 1 projects, some of which would change channel capacities in the San Joaquin River. These Phase 1 projects would consider the cumulative demands on channel capacity (including conveyance of flood flows, irrigation flows, and Interim and Restoration flows) and impacts to beneficial uses as part of the planning, design, and environmental compliance efforts for these projects. Text has not been revised.

EPA2-20: As stated on page 2-95 in the Draft PEIS/R, the SJRRP is being implemented concurrently with other programs by other agencies that would modify the San Joaquin River and the Lower San Joaquin River Flood Control Project to address flood protection needs. In particular, DWR is characterizing the condition of levees along the San Joaquin River and the bypasses in the Restoration Area through initial findings from these evaluations, which indicate deficiencies in flood conveyance capacity at several locations in the Restoration Area that were not identified for channel improvements in the Settlement.

Because these potential future levee and channel modifications to address limited flood conveyance capacity and levee conditions are not specified in the Settlement, they are not part of the SJRRP and are not included as part of the alternatives evaluated in the PEIS/R. As noted on page 62 of the Executive Summary, it is possible that the Settlement could be fully implemented in a manner consistent with the Act, and the purpose of the project thereby achieved, without release of maximum Restoration Flows. Specific future modifications to the flood control system under the FloodSAFE initiative are uncertain

and speculative, and are not considered reasonably foreseeable or probable future actions at this time.

Despite these limitations, Reclamation and DWR have included actions to minimize increases in flood risk from Interim and Restoration flows as specified on pages 2-22 through 2-28 of the Draft PEIS/R. The actions include limiting the release of Interim and Restoration flows, to then-existing channel capacities which correspond to flows that would not significantly increase flood risk from Interim and Restoration flows in the Restoration Area. The action to release Interim and Restoration flows includes measures that would achieve the following objectives: (1) commit Reclamation to implementing actions that would meet performance standards that minimize increases in flood risk as a result of Interim or Restoration flows, (2) limit the release and conveyance of Interim and Restoration flows to flows that would remain in-channel until adequate data are available to apply the performance standards and until the performance standards are satisfied, and (3) enable the Settlement to be implemented in coordination with other ongoing and future actions outside the Settlement that could address channel capacity issues identified in the Settlement or through the SJRRP or other programs. The *Physical Monitoring and Management Plan*, included under all action alternatives, provides guidelines for observing and adjusting to changes in physical conditions within the Restoration Area during implementation of the Settlement. As described on page 2-24 starting with line 19, through page 2-28, in the Draft PEIS/R, a Channel Capacity Advisory Group would be established with one representative each from Reclamation, DWR, USACE, LSJLD, and CVFPB to provide independent review and updates of estimated then-existing channel capacities, monitoring results, and management actions to address vegetation and sediment transport within the system, as identified by Reclamation.

Reclamation and DWR recognize the importance of coordination and communication in planning and implementing projects that affect the flood control system, including SJRRP and FloodSAFE, to prevent impacts to flood management. Consistent with an MOU between the Settling Parties and the State, the California Natural Resources Agency will play a major role in funding and implementing actions called for in the Settlement and the Act. DWR, as an Implementing Agency, intends to assist in planning, designing, and constructing the physical improvements identified in the Settlement, including projects related to flood protection, levee relocation, and modifications to and maintenance of channel facilities. DFG, USFWS, and NMFS, as Implementing Agencies, intend to provide technical assistance on actions related to the releasing Interim and Restoration flows, reintroducing and monitoring fish, and planning, designing, and constructing facilities to provide fish passage. Text has not been revised.

EPA2-21a: Potential impacts and benefits to water quality within the study area are analyzed in Chapter 14.0, “Hydrology – Surface Water Quality,” of the Draft PEIS/R. Analysis of potential impacts to water quality presented in Chapter 14.0 includes analysis of many actions at a program level of detail; subsequent site-specific studies of these actions would include project-level analyses of potential impacts to water quality. As appropriate, these subsequent analyses would consider mercury methylation within the study area, selenium and agricultural drainage (including then-current regulatory criteria

and thresholds for sensitive species), and then-current CWA Section 303(d) listings within the study area.

The discussion of existing water quality conditions in Chapter 14.0 includes CWA Section 303(d) listings for the San Joaquin River from Millerton Lake to the Delta based on the *Clean Water Act Sections 305(b) and 303(d) Integrated Report for the Central Valley Region, Draft Final Staff Report* (Central Valley RWQCB 2009) (as described on page 2-11 in the Draft PEIS/R, existing conditions are defined throughout the PEIS/R as the conditions in place when the Notice of Preparation (NOP) was published in August 2007). As noted in the comment, these listings have been updated since 2007. Table 3.5-2 provides updated 303(d) listings for Millerton Lake, the Restoration Area, and San Joaquin River from the Merced River to the Delta.

Table 3.5-2.
2010 Clean Water Act Section 303(d) List of Water Quality Limited Segments, Millerton Lake, Restoration Area and San Joaquin River from Merced River to Delta

Segment	Pollutant/Stressor	Affected Area/ Reach Length
Millerton Lake	Mercury	4,366 acres
San Joaquin River, Friant Dam to Mendota Pool (Reaches 1 and 2)	Invasive Species	70 miles
Mendota Pool (Reach 2)	Mercury	3,045 acres
	Selenium	
San Joaquin River, Mendota Pool to Bear Creek (Reaches 3 and 4)	Boron	13 miles
	Chlorpyrifos	
	DDT	
	Diazinon	
	Group A Pesticides	
	Unknown Toxicity	
San Joaquin River, Bear Creek to Mud Slough (Reach 5)	Arsenic	14 miles
	Boron	
	Chlorpyrifos	
	DDT	
	Electrical Conductivity	
	Escherichia coli (E. coli)	
	Group A Pesticides	
	Mercury	
	Unknown Toxicity	

Table 3.5-2.
2010 Clean Water Act Section 303(d) List of Water Quality Limited Segments, Millerton Lake, Restoration Area and San Joaquin River from Merced River to Delta (contd.)

Segment	Pollutant/Stressor	Affected Area/ Reach Length
San Joaquin River, Mud Slough to Merced River (Reach 5)	Boron	3 miles
	Chlorpyrifos	
	DDT	
	Diazinon	
	Electrical Conductivity	
	Escherichia coli (E. coli)	
	Group A Pesticides	
	Mercury	
	Selenium	
	Unknown Toxicity	
Bear Creek, from Bear Valley to San Joaquin River	*Escherichia coli* (E. coli)	43 miles
	Unknown Toxicity	
Mud Slough (downstream from San Luis Drain)	Boron	13 miles
	Electrical Conductivity	
	Pesticides	
	Selenium	
	Unknown Toxicity	
Mud Slough (upstream from San Luis Drain)	Boron	22 miles
	Electrical Conductivity	
	Escherichia coli (E. coli)	
	Pesticides	
	Unknown Toxicity	
Salt Slough	Boron	10 miles
	Chlorpyrifos	
	Electrical Conductivity	
	Escherichia coli (E. coli)	
	Mercury	
	Prometryn	
	Unknown Toxicity	
San Joaquin River, Merced River to Tuolumne River	alpha-BHC	29 miles
	Boron	
	Chlorpyrifos	
	DDE	
	DDT	
	Electrical Conductivity	
	Group A Pesticides	
	Mercury	
	Temperature, Water	
	Unknown Toxicity	

Table 3.5-2.
2010 Clean Water Act Section 303(d) List of Water Quality Limited Segments, Millerton Lake, Restoration Area and San Joaquin River from Merced River to Delta (contd.)

Segment	Pollutant/Stressor	Affected Area/ Reach Length
San Joaquin River, Tuolumne River to Stanislaus River	Chlorpyrifos	8.4 miles
	DDT	
	Diazinon	
	Electrical Conductivity	
	Group A Pesticides	
	Mercury	
	Temperature, Water	
	Unknown Toxicity	
San Joaquin River, Stanislaus River to Delta	Chlorpyrifos	3 miles
	DDE	
	DDT	
	Diuron	
	Electrical Conductivity	
	Escherichia coli (E. coli)	
	Group A Pesticides	
	Mercury	
	Temperature, Water	
	Toxaphene	
	Unknown Toxicity	

Source: SWRCB 2010.

Key:
alpha-BHC= alpha-benzene hexachloride
DDE = dichloro-diphenyl-dichloroethylene
DDT = dichloro-diphenyl-trichloroethane
Delta = Sacramento-San Joaquin Delta

Delta waterways fall within the jurisdiction of both the Central Valley Regional Water Quality Control Board (RWQCB) and the San Francisco Bay RWQCB. Various Delta waterways in the areas under jurisdiction of the Central Valley RWQCB are listed under CWA Section 303(d) as impaired for chlordane, chlorpyrifos, dichloro-diphenyl-trichloroethane (DDT), diazinon, dieldrin, electrical conductivity, Group A pesticides, invasive species, mercury, polychlorinated biphenyls (PCB), and unknown toxicity (SWRCB 2010). Delta waterways in the area under jurisdiction of the San Francisco Bay RWQCB are listed under CWA Section 303(d) as impaired for chlordane, DDT, dieldrin, dioxin, furan compounds, invasive species, mercury, PCBs, and selenium (SWRCB 2010). The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

EPA2-21b: The release of Restoration Flows is subject to the provisions of Paragraph 13(i) of the Settlement, as noted in the comment and described on page 2-21 in the Draft PEIS/R. Paragraph 13(i) states that the RA is responsible for recommending to the Secretary the date for commencing full Restoration Flows in consideration of then-

existing channel capacity and the completing of Phase 1 improvements. In addition, Paragraph 13(i) of the Settlement provides guidance on how to manage any unreleased Restoration Flows starting in 2014, including, but not limited to, options to enter into mutually acceptable agreements with Friant Division long-term contractors or Third Parties "…to (A) bank, store, or exchange such water for future use to supplement future Restoration Flows, or (B) transfer or sell such water and deposit the proceeds of such transfer or sale into the Restoration Fund created by this Settlement." Paragraph 13(i) also specifies the release of water from Friant Dam during times of the year other than those specified in the applicable hydrograph (as described on page 2-36 in the Draft PEIS/R).

In consideration of these and other provisions described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, the potential impacts and benefits to water quality within the study area are analyzed at a project level of detail in Chapter 14.0, "Hydrology – Surface Water Quality," of the Draft PEIS/R. The specific project-level impacts on water quality between the Merced River and the Delta are described as Impact SWQ-5 on page 14-27 in the Draft PEIS/R. Impact SWQ-5 particularly focuses on changes in salinity and temperature within the San Joaquin River between the Merced River and the Delta. The finding of less-than-significant impact for Impact SWQ-5 accounts for the potential changes in this reach in all water year types, including low-flow periods, as noted in the comment. As shown in Section 13.3.4, "Changes to Restoration Area Flows and CVP and SWP Operations," in the Draft PEIS/R, beginning on page 13-92, changes in flow between the Merced River and the Delta, particularly in low-flow years (Dry and Critical water years; see Figure 13-71), would be minimal. For the reasons set forth above, no changes to the PEIS/R are necessary. Text has not been revised.

EPA2-22: Reclamation and DWR recognize the importance of coordination and communication in planning and implementing the SJRRP. Reclamation has been coordinating and will continue to coordinate with the U.S. Environmental Protection Agency (EPA) on implementation of the SJRRP, including implementation of monitoring activities under the *Physical Monitoring and Management Plan* (Appendix D of the Draft PEIS/R). Text has not been revised.

EPA2-23: As described in Chapter 21.0, "Recreation," of the Draft PEIS/R, Reclamation is committed to implementing measures to mitigate project-level impacts to recreation, including coordinating with agencies and organizations that provide recreation access, facilities, and services in each reach. Specifically, this would include the following public and nonprofit agencies and organizations: the SJRPCT, SJRC, Fresno County, City of Fresno Parks, After School, Recreation, and Community Service (PARCS) Department, and DFG. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

3.5.5 National Marine Fisheries Service

NMFS

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814-4700

SEP 21 2011

Alicia Forsythe
Program Manager
San Joaquin River Restoration Program
Bureau of Reclamation
2800 Cottage Way, MP–170
Sacramento, California 95825

Dear Ms. Forsythe:

This letter is in response to the April 22, 2011, public draft of the U.S. Bureau of Reclamation (Reclamation) and the California Department of Water Resources Draft Program Environmental Impact Statement/Environmental Impact Report (PEIS/R) for the San Joaquin River Restoration Program (Program), California. NOAA's National Marine Fisheries Service (NMFS) has reviewed the relevant portions of this draft and we are providing comments on the analysis as it relates to anadromous fishes under our jurisdiction. As a Cooperating Agency under the National Environmental Policy Act (NEPA), we propose to work closely with you to evaluate key sections of the Final PEIS/R prior to release and to advise whether these additional analyses suggest a difference in the impacts to anadromous fish and/or their habitats. We view the analysis presented in the PEIS/R as foundational for additional analyses necessary to support the Endangered Species Act (ESA) consultation for the Program.

NMFS-1a

The overarching issues with the analysis are:

NMFS-1b

- The analysis does not rely on the most current hydrologic modeling, specifically the inclusion of the Reasonable and Prudent Alternatives from the Central Valley Project and State Water Project Long-term Operations Plan (OCAP) NMFS Biological Opinion (BO).

NMFS-2

- The PEIS/R does not describe the impacts of the Chinook salmon reintroduction to an appropriate level for a Program-level action.

NMFS-3

- No biological modeling has been used in this evaluation other than a spawning/production model for black bass. How does the Program intend to use biological modeling to represent the short and long-term impacts of project and program-level implementation on anadromous fish, evaluate alternatives, and measure the success of reintroduction and meeting the Restoration Goal? Population and habitat modeling should be used to accurately define anticipated Program benefits and the impacts to anadromous fishes from Program implementation.

NMFS-4
- Many of the "Existing Conditions" projects no longer exist or have changed considerably. For example, the Vernalis Adaptive Management Plan (VAMP) experiment was completed before this document was released. While the long-term Central Valley Project (CVP) operations plan includes VAMP-like flows, they do not meet the definitions and assumptions of VAMP as modeled. Also, the 2-gates project was postponed indefinately, and the status of the South Delta Improvements Program is very different than what is portrayed in this document.

NMFS-5
- The conservation benefits of the restoration actions (e.g. re-watering or reconnecting riverine habitat, restoration/re-creation of floodplain habitats) are not fully developed both in the alternatives descriptions and in the conservation measures. Performance standards should be defined to ensure that the restoration actions are implemented to optimize benefits to species and habitats. For example, restoration of flows is important and potentially beneficial for fish, but water operations should be managed to control abrupt increases and/or decreases in flows that would adversely affect fish in the river.

NMFS-6
- The relationship between the high flow decision in Reach 4B and the alternatives development process is not described. This important decision is required under the Settlement and thus should be described and evaluated in this document. Clarifying language as to how the Program alternatives and the reach-specific alternatives (*i.e.*, for Reach 4B) conflict or support each other is needed.

NMFS-7
- The interaction between the Program and the operations of the Lower San Joaquin River Flood Control Project and the Friant Division of the CVP and not fully developed or analyzed. These relationships need more thorough explanation, especially with regard to the effects on anadromous fish species for consistency with the Program ESA consultation and to determine the appropriate scope of that consultation.

NMFS-8
- Groundwater and surface water interactions are not clear throughout the analysis, especially with regards to the varying potential impacts on fish habitat and the ability to meet the Restoration Goal.

In addition to these general concerns, we also offer the attached specific comments and suggestions.

Thank you for the opportunity to comment on this important document. If you have any questions regarding our input, please contact Ms. Erin Strange at erin.strange@noaa.gov, or (916) 930-3653.

Sincerely,

for Maria Rea
Supervisor, Central Valley Office

Enclosure

cc: Copy to file: ARN 151422SWR2009SA00275
NOAA Fisheries-PRD, Long Beach, CA
Shelby Mendez, NEPA Coordinator, NMFS, Long Beach, CA
Jeff Single and Gerald Hatler, California Department of Fish and Game, 1234 East Shaw Avenue, Fresno, California, 93710
Dan Castleberry and Robert Clarke, U.S. Fish and Wildlife Service, 2800 Cottage Way, Room W-2605, Sacramento, California, 95825
Kevin Faulkenberry and Paul Romero, California Department of Water Resources, 3374 East Shields Avenue, Room A7, Fresno, California, 93726

Enclosure 1

Executive Summary –

NMFS-9
- Page 25, Routing of Interim and Restoration Flows; It is stated here that all action alternatives would modify operation of the Lower San Joaquin River Flood Control Project to convey Interim and Restoration flows. But, the analysis does not appear to look at exactly how operations would occur, what current operations are, or how the flood operations interact with the restoration flows, etc. This is an important aspect of the program especially as it relates to anadromous fish migration.

NMFS-10
- Page 45, EFH (b); How will Hills Ferry Barrier be operated if Chinook salmon reintroduction occurs prior to the completion of Phase I projects? It's important to note that suitable habitat does exist upstream of Hills Ferry Barrier, but is inaccessible due to truncated flows. The long-term plan for Hills Ferry Barrier and how its operation relates to the Program is unclear.

Chapter 1.0 – Introduction

NMFS-11
- Page 1-5, Table 1-2; Will the assessment of environmental impacts from the Program change if the Phase I improvements do not occur by December 2013, but Chinook salmon reintroduction does occur on or before December 2012?

NMFS-12
- Page 1-7, line 21; It is more difficult to assess the appropriateness and level of analysis of the alternatives when a preferred alternative has not been identified.

NMFS-13
- Page 1-15, line 33-43; It is implied here but not specifically described that the PEIR/S does not cover the National Environmental Policy Act (NEPA) responsibilities of the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service with regard to the reintroduction of spring-run Chinook salmon, as well as respective authorities for fall-run Chinook salmon. This should be clearly articulated so that the reader isn't left wondering why this document does not evaluate the project specific impacts of reintroduction. In general, we believe that this document should include a greater level of consideration for the programmatic impacts of the reintroduction of salmon.

NMFS-14
- Page 1-16, line 11; Is modeling available to show that the Program does not have any effect downstream of the Delta in relationship to the OCAP and Program recapture activities? Operating the Delta facilities within the BO's for OCAP may cover impacts to ESA listed species but it doesn't necessarily cover all NEPA and California Environmental Quality Act related issues or impacts.

Chapter 2.0 - Description of Alternatives

NMFS-15
- Page 2-8, whole page; Will floodplain habitat in the bypasses be discussed?

NMFS-16
- Page 2-14, Section 2.4.1; Friant Dam operations are not currently considered in the 2009 NMFS OCAP BO. NMFS needs resolution from Reclamation as to the ESA consultation strategy for Friant operations.

NMFS-17
- Page 2-20, line 14; Water Year 2010, 2011, and 2012 Interim Flows have been handled as single-year projects. This NEPA document should reference those and also describe WY 2013 Interim Flows (and possibly 2014) as project-level components of this NEPA document.

NMFS-18
- Page 2-21, lines 31-31; If, "…flow targets could be met partially or entirely by flood control releases or by local runoff or return flows," why are flood flows considered outside the scope of the Program in other instances (*i.e.*, in terms of fisheries impacts)?

NMFS-19
- Page 2-22, line 38-42: The accounting for flood control water versus restoration water is not described here; it needs to be described in this document.

NMFS-20
- Page 2-23, line 17; It doesn't appear that impacts to fish and fish habitat are evaluated in the process of establishing channel capacity and subsequently limiting flows. This needs to be taken into account during the decision making process especially after Chinook salmon reintroduction has occurred.

NMFS-21
- Page 2-25, lines 5-9; How will the other implementing agencies be informed of new data and/or decisions made in this group? Will the first report influence flows in WY 2013? When will the report be released?

NMFS-22
- Page 2-27, line 17; Will erosion control methods include bioengineering, vegetation planting, and the creation of other fish habitat features? Please be specific about the erosion control methods intended for use, because the impacts are different.

NMFS-23
- Page 2-27, lines 37-39, It is not clear what criteria will be used for setting the Reach 2B flow targets in relation to bypass flows. Fish in the system will be conveyed down the bypasses during flood flows, but the impacts to the fish would be very different, depending on the amount of flow released to the bypass. For example, if the capacity of Reach 2B is 2500 cfs, and 2600 cfs must be released for flood management at Friant, Reach 2B could hold 2500 cfs, and 100 cfs would go down the bypass. Given the sandy nature of the bypasses, that flow likely would quickly dissipate and strand any fish

2

NMFS-23 con't

conveyed with it. Alternatively, if the total 2600 cfs were split evenly between Reach 2B and the bypass, fish routed either direction would be more likely to survive. If the Reach 2B flow criteria are set at any flow up to the channel capacity, and the remainder goes into the bypasses, it will have a very different consequence to fish life than flow criteria that are set to optimize fish survival and passage, regardless of the route. The specific operational strategy for these flow splits is more detail than warranted in a programmatic document, but the need for a specific operational strategy and the basis for the routing decisions should be discussed. This comment also applies to routing decisions related to Reach 4.

NMFS-24

- Page 2-31, lines 20-22; "No change in operational requirements…" This may not be true. Salmonids will have access to the Restoration Area when water is recaptured; therefore, there could be operational/regulatory requirements due to potential presence of ESA-listed species.

NMFS-25

- Page 2-39, lines 20-30; There is also an option to move Mendota Pool off-channel into Fresno Slough.

NMFS-26

- Page 2-55, Table 2-7; The abbreviations under "Conservation Measure and Identifier" make it hard to follow what species or habitat type is being referenced. Please spell out.

NMFS-27

- Page 2-77, Table 2-7, CVS-2f; This measure should include revegetation in addition to having material that would support revegetation.

NMFS-28

- Page 2-77, Table 2-7, SRCS; Please add all of the items used above in the CVS section.

NMFS-29

- Page 2-77, Table 2-7, CVS and SRCS; Need to add conservation measures that flow schedules will be managed to control ramping rates for flow fluctuations to prevent impacts to fish, such as stranding and/or dewatering of redds.

Chapter 5.0 – Biological Resources ~ Fisheries

NMFS-30

- Page 5-1, line 29-34; Will NMFS have the opportunity to review and comment on the additional simulations being prepared to determine impacts of the program alternatives under the current OCAP BO's if this information is only being released in the final PEIS/R?

NMFS-31

- Page 5-10, Chapter 5.2 – Environmental Setting; climate change impacts to fish habitat should be described somewhere. This is briefly described in Chapter 7 – Climate Change, but not to the degree necessary to evaluate potential long-term effects to fish habitat.

NMFS-32
- Page 5-10, Chapter 5.2.1- General Environmental Conditions Affecting Fish: there are a few environmental factors that are missing from this assessment in order to be consistent with the Program Fisheries Management Plan. They are as follows; redd superimposition, entrainment, pesticides and other contaminants (water quality), degraded in-river physical habitat (gravel recruitment, lack of large woody debris, levees, bank revetment and channel encroachment), and recreational fishing.

NMFS-33
- Page 5-50, Table 5-7; The "Environmental Conditions" affecting fall-run Chinook and steelhead are not accurately represented in this table. Please add the following for fall-run Chinook: Adult Migration- Water temperature, Diversions, River flow, Delta flow and Disease = Black circle; Spawning/Incubation – Water temperature = Black circle; Juvenile Rearing – Water Temperature, Turbidity, Aquatic, Riparian, and floodplain habitat, River Flow = Black Circle, Competition and Disease = White Circle; Juvenile Migration – Turbidity, River Flow = Black Circle, Competition, Disease = White Circle. Please add the following for Steelhead: Adult Migration – Water Temperature, Aquatic Habitat Connectivity, Disease, Food Resources and Food Web = Black Circle, River Flow, Delta Flow, Diversions, Turbidity = White Circle; Spawning/Incubation- Water Temperature = Black Circle; Juvenile Rearing – Water Temperature, River Flow = Black Circle, Competition, Disease, Food Resources and Food Web = White Circle; Juvenile Migration - Water Temperature, River Flow = Black Circle, Competition, Disease = White Circle.

NMFS-34
- Page 5-53, line 19-21; It should not be assumed that the Restoration Flows would provide contiguous flows year round, when in fact they likely won't in the driest of years. Current information on seepage losses should be considered in this analysis.

NMFS-35
- Page 5-60, line 36; delete "were identified by NMFS based on several sources" and "(Erin Strange, pers.com 2011)". The sources themselves should be cited and referred to in the text and in Table 5-11.

NMFS-36
- Page 5-64, Table 5-12; All the environmental conditions identified for Chinook salmon/steelhead "Juvenile Migration" should also be identified for Chinook salmon/steelhead "Juvenile Rearing".

NMFS-37
- Page 5-74, line 36-37; How does SRCS-1 reduce the potential impact from disease? Need to add specifics about egg sterilization, quarantine practices, etc.

NMFS-38
- Page 5-76, line 4; Does the modeling support this conclusion?

4

NMFS-39
- Page 5-83, line 24; Water temperatures in the San Joaquin River are expected to increase due to climate change. Given that fact, it is unclear in this analysis why there would be a significant impact from increased water temperatures under the No Action alternative versus a less than significant impact under the other alternatives.

NMFS-40
- Page 5-96, line 11; This entire section is very confusing. Where is the change in flow in the tributaries under each scenario represented? Should refer to Figure 5-7 and 5-8 in this section. The flow "targets" are not referenced or represented here either. In addition, this analysis may not be relevant, in its current form, given that the VAMP experiment is completed, and the next version is not clear.

NMFS-41
- Page 5-97, line 14; Appendix K doesn't contain an analysis of flows on the San Joaquin tributaries.

NMFS-42
- Page 5-97, line 17; What is meant by "target flows"? Is this referring to the information presented in Table 5-11?

NMFS-43
- Page 5-97, line 31; This discussion is confusing. Is the 2,000 cfs flow standard for the Stanislaus or for Vernalis? And if this flow standard is almost never met, how is that not significant? Why is there no reference to the minimum flow requirement for steelhead protection on the Stanislaus under the 2009 NMFS OCAP BO?

NMFS-44
- Page 5-101, line 40; This argument is not valid. The analysis used in the Water Year 2012 Interim Flows Project Biological Assessment regarding impacts to steelhead from reverse flows in Old and Middle River should be used here.

NMFS-45
- Figures 5-7 through 5-16 are very difficult to understand even with the text. Where is the actual data presented?

Chapter 12.0 - Chapter 12 – Hydrology – Groundwater

NMFS-46
- Page 12-25, lines 1-19; The background discussing the status of past land subsidence is presented however, the assumptions underlying the analysis underestimate the potential effects of land subsidence from interim and restoration flows.

NMFS-47
- Page 12-67, lines 1, 30, 34; Define successful and/or full return, 100% 80% 50%, how much water loss will still result in a low effect. It may not be reasonable to expect no loss of surface water when recovering from ground water.

NMFS-48
- Page 12-67, lines 13-15; The Schmidt Tool is insufficient for assessing groundwater impacts.

Chapter 13. Hydrology - Surface Water Supplies and Facilities Operations

NMFS-49 • Page 13-1, lines 11-18; The analysis does not appear to integrate ground water and surface water interaction instead treating ground water and surface water separately. This is further exacerbated by the modeling assumption that political boundaries are hydrologically sufficient and the aquifer is homogeneous: this may not be the most recent best science. See: USGS PP 1766, Faunt, C.C., ed., 2009, Groundwater Availability of the Central Valley Aquifer, California: U.S. Geological Survey Professional Paper 1766, 225 p.

Chapter 14 – Hydrology – Surface Water Quality

NMFS-50 • Interim and Restoration flows have the potential to remobilize selenium, a constituent that is highly toxic to anadromous fishes. This should be evaluated for all alternatives.

NMFS-51 • Page 14-16, lines 1-10; The current analysis includes SDIP actions, yet the final PEIR/S would not include SDIP pursuant to the OCAP BO's. It seems like this could change the evaluation significantly. NMFS would like to opportunity to evaluate this analysis before the Final PEIR/3 is released.

Chapter 19.0 – Power and Energy

NMFS-52 • Page 19-18, line 17; Why is it assumed that Friant contractors will have to pump groundwater to make up for lost water? Friant users should recoup some water from recapture, etc. It appears that this approach overestimates the increase in energy use within the area of consideration.

NMFS-53 • Page 19-24, Table 19-15; Why would there be less energy generation at Friant Dam under Alternatives A1 and A2? This is not clear.

Chapter 26.0 – Cumulative Impacts

NMFS-54 • Page 26-6, Table 26-1; The OCAP should be considered as an integral part of the project, especially as it relates to the CVP Friant Division. It doesn't seem appropriate to only consider this as a cumulative impact.

NMFS-55 • Page 26-40, line 31-41; Potential disease impacts to wild fall-run Chinook salmon from introduced salmon can be managed through egg sterilization, hatchery quarantine, etc. These actions should be included as conservation measures to reduce this impact.

Chapter 27.0 – Other NEPA and CEQA Considerations

NMFS-56
- Page 27-16, line 23; Water committed to restoration purposes is identified at the project level. Should this be program and project level? Seems inconsistent with how water for restoration purposes is depicted in earlier sections.

NMFS-57
- Page 27-21, lines 21-35; This section describes the logic selecting Alternative B2 as the alternative that provides the greatest benefits and least adverse impacts to fisheries. The explanation seems very simplistic. Is there more information on how this selection was determined?

NMFS-58
- Section 27.5.3, Biological Resources – Vegetation and Wildlife; This section describes how Alternative B2 would provide the greatest benefits and least adverse impacts to vegetation and wildlife. Vegetation provides many benefits to fish including food, cover, and shade. How was this considered in selecting Alternative B2 for fisheries in the comment above? Also, sections 27.5.7, 27.5.8, 27.5.9, 27.5.10 relate to fisheries. How were these sections considered in selecting an alternative for fisheries?

Appendix D - Physical Monitoring and Management Plan

NMFS-59
- Page 3-11, line 16; How are biological impacts factored into these actions, especially concerning fisheries?

NMFS-60
- Page 4-2, lines 5-10 and 11-15; Much of the same language is repeated in these two paragraphs.

NMFS-61
- Page 6-1, lines 14-15; Should note that the Fisheries Management Plan has identified a goal of 78,000 m^3 of quality functioning spawning gravel.

NMFS-62
- Page 7-4, Chapter 7.6 – Spawning Gravel Surveys; The monitoring proposed here only addresses quantity not quality of the spawning gravels. Additional monitoring is needed to assess gravel function for successful Chinook salmon spawning, ie, intergravel water quality monitoring, artificial redd placement (hyporheic pots), etc.

Appendix H Modeling

NMFS-63
- No biological modeling is represented in this section. How does the Program intend to use biological modeling to represent the short and long-term impacts of project and program-level implementation on anadromous fish, evaluate preferred alternatives, and measure the success of reintroduction and meeting the Restoration Goal?

NMFS-64a
NMFS-64b
NMFS-64c

- Page 5-12, lines 25-26; There are three issues with regard to groundwater interaction that do not appear to be accounted for in this analysis: 1) When surface water is transferred to groundwater and subsequently pumped out of the groundwater, there will be a net loss of water. It appears that the analysis assumes 100% retention of the original surface water quantity; 2) The predicted depth to groundwater and subsequent requirements of ground water pumping are not addressed, 3) The changes resultant from interaction of ground water as it relates to surface water are not addressed, such as when tile drains are installed at a lower elevation than the surface water elevation, this will impact the gradient of the river, which in turn causes additional affects to ground water, surface water, and the geomorphology of the river.

NMFS-65

- Page 5-16, lines 3-6; The land subsidence and drainage may have been covered adequately, however they are described as being expressed qualitatively, not quantitatively, and the expression is not given? This is overly abbreviated. No determination can be made without representation of the analysis.

Appendix K – Biological Resources – Fisheries

NMFS-66

- Page Table 1; The way the temperatures are represented in this table is confusing between "suitable" "preferred" and "optimal". In addition, the temperatures represented here for Chinook salmon do not coincide with the temperatures in Exhibit A, Table 3-1 of the Fisheries Management Plan. For instance the temperatures cited for the juvenile and adult life stages are actually critical temperatures.

Responses to Comments from National Marine Fisheries Service

NMFS-1a: Comment noted. NMFS was provided administrative drafts of the Final PEIS/R and otherwise engaged in development and review of both the Draft PEIS/R and Final PEIS/R before public release. Assuming that the "additional analyses" referenced in the comment refer to the sensitivity analyses in Appendix C of this Final PEIS/R, as an Implementing Agency, NMFS reviewed methodology and results of the sensitivity analyses as part of the administrative review process for development of the *Programmatic Biological Assessment* and this Final PEIS/R. NMFS provided comments and met with the lead agencies to discuss the results and presentation of impacts and effects analyses. All feedback was incorporated into subsequent administrative versions of these documents. Appendix C, "CVP/SWP Long-Term Operations Sensitivity Analyses," of this Final PEIS/R reflects this process. See also response to comment NMFS-1b. Text has not been revised.

NMFS-1b: The analyses and impact assessment presented in the Draft PEIS/R were completed using the best available modeling tools and information. The modeling tools used in the Draft PEIS/R analyses were selected because they are publicly available, have a knowledgeable user community, and are widely accepted for use in similar systemwide analysis of resources in the California Central Valley. The modeling assumptions, and baseline conditions used to support the environmental analysis in the Draft PEIS/R were based on the best available information and modeling tools at the time the Draft PEIS/R was prepared. The sensitivity analyses contained in Appendix C of this Final PEIS/R were completed using the same set of tools and information, as modified only to reflect an interim representation of the RPAs set forth in the 2008 USFWS CVP/SWP Operations BO and the 2009 NMFS CVP/SWP Operations BO (2009a).

The analyses presented in the Draft PEIS/R were based, in part, on a water supply operations modeling tool, CalSim-II. The CalSim-II model is widely accepted as the standard for simulating the long-term effects of operational changes to CVP and SWP facilities. At the time evaluations were completed in support of the Draft PEIS/R, there was no representation of the full set of RPAs was set forth in the 2008 USFWS CVP/SWP Operations BO and 2009 NMFS CVP/SWP Operations BO (2009a) for use in the CalSim-II model. Therefore, the baseline for analyses presented in the Draft PEIS/R was developed using the best available information, remains the most defensible baseline, and has not been revised in the Final PEIS/R.

At the time the sensitivity analyses were completed in support of the Final PEIS/R, Reclamation and NMFS continued to discuss and work toward representation of the 2008 and 2009 RPAs into a single CalSim-II baseline. However, a representation that sufficiently captures the range of potential RPA implementation scenarios was available at the time the sensitivity analyses were developed. This representation was used in the sensitivity analyses presented in Appendix C of this Final PEIS/R.

The sensitivity analyses presented in Appendix C of this Final PEIS/R represent a comprehensive range of RPA implementation scenarios and were performed to evaluate the potential for the 2008 and 2009 RPAs to change the anticipated effects of the program alternatives compared to those presented in the Draft PEIS/R, which are based on the

conditions evaluated in the 2005 USFWS and 2004 NMFS BOs. The CalSim-II simulations for the sensitivity analyses presented in Appendix C to the Final PEIS/R were developed to identify the range of potential operation changes that could occur under any RPA implementation scenario. CalSim-II output from these simulations was used in analyzing the potential for the RPAs to change the anticipated effects to related resources using the same set of tools and information used in the Draft PEIS/R, including Delta hydrodynamics (using the Delta Simulation Model 2 (DSM2)), groundwater (using the Schmidt Tool and mass balance method), agricultural economics (using CVPM), regional economics (using the Regional Economics Model (IMPLAN)), and long-term power system power generation to reflect the updated surface water model. The sensitivity analyses results demonstrate that the overall impact mechanisms and significance determinations presented in the Draft PEIS/R would not change under a baseline that includes the RPAs set forth in the 2008 USFWS CVP/SWP Operations BO and 2009 NMFS CVP/SWP Operations BO (2009a).

In comparison to the results presented in the Draft PEIS/R, the results of the sensitivity analyses presented in Appendix C to the Final PEIS/R do not identify new significant environmental impacts or a substantial increase in the severity of an environmental impact, and do not create a feasible project alternative or mitigation measure that would clearly lessen environmental impacts of the action alternatives (including the proposed project). Therefore, inclusion of the sensitivity analyses in the Final PEIS/R does not prompt a need to recirculate a revised Draft PEIS/R under either NEPA or CEQA. Rather, the sensitivity analyses demonstrate that the overall impact mechanisms and significance determinations presented in the Draft PEIS/R would not change under a baseline that includes the RPAs set forth in the 2008 USFWS CVP/SWP Operations BO and 2009 NMFS CVP/SWP Operations BO (2009a), confirming that the analyses and conclusions presented in the Draft PEIS/R are thorough, accurate, and unlikely to change in light of the RPAs. For the reasons set forth above, Reclamation and DWR believe that the PEIS/R provides a thorough, appropriate analysis of all relevant impacts of the action alternatives (including the proposed project) and the alternatives, as required by NEPA and CEQA.

Text has not been revised.

NMFS-2: As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, the reintroduction of Chinook salmon was included in all of the action alternatives, and the impacts of reintroduction of Chinook salmon were evaluated at a program level of detail. This assessment was based on the best available information at the time the Draft PEIS/R was prepared, and analyzes impacts of reintroducing Chinook salmon on all resource areas included in the Draft PEIS/R (see Chapters 4.0 through 26.0 of the Draft PEIS/R). The commenter provides no specific documentation of the concern raised nor does the commenter provide the basis for their comment or data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts to support their comment.

Text has not been revised.

NMFS-3: As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, the PEIS/R does not evaluate the likely efficacy of Settlement actions in achieving the Restoration or Water Management goals. It also does not evaluate the feasibility of the Settlement or the interactions of individual Settlement actions with other Settlement actions. Accordingly, the PEIS/R does not present benefits or impacts of the SJRRP to reintroduced Chinook salmon. The Implementing Agencies recognize the unprecedented nature of the SJRRP, and acknowledge that flexibility in implementing the Settlement is necessary to ultimately achieve the Restoration and Water Management goals. In consideration of this necessary and anticipated flexibility, the SJRRP management process involves a broad range of strategies to guide implementation of the Settlement consistent with the Act, and incorporates a continuously growing set of data and scientific information. Appendix E, "Fisheries Management Plan," of the Draft PEIS/R describes the framework for addressing specific actions related to fisheries, including application of the Ecosystem Diagnosis and Treatment (EDT) modeling framework. EDT was developed to help the Fisheries Management Work Group (FMWG) evaluate potential impacts of the project; however, it was not fully revised at the time of the PEIS/R evaluation. It is currently undergoing modifications under the direction of the FMWG to be used for subsequent site-specific evaluations. Not included in the Fisheries Management Plan, the Emigrating Salmonid Habitat Estimation (ESHE) model will be used for site-specific evaluations to enumerate the amount of rearing habitat required to support management goal estimates of fish abundance. See also MCR-1 in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

NMFS is an Implementing Agency and an active participant in SJRRP activities and work groups, including the FMWG. The lead agencies recommend that NMFS continue to provide meaningful feedback related to monitoring proposals so that the SJRRP can work to implement actions that contribute to achieving the Restoration Goal.

Text has not been revised.

NMFS-4: The analyses and impact assessment presented in the Draft PEIS/R were completed using the best available modeling tools and information. The modeling tools used in the Draft PEIS/R analyses were selected because they are publicly available, have a knowledgeable user community, and are widely accepted for use in systemwide analysis of resources in the California Central Valley. The modeling assumptions, modeling analyses and results, and baseline conditions used to support the environmental analysis in the Draft PEIS/R, including assumptions regarding actions like the Vernalis Adaptive Management Program (VAMP) and the South Delta Improvements Program (SDIP), were based on the best available information and modeling tools at the time the Draft PEIS/R was prepared. Although VAMP expired in 2011, a VAMP-like condition is expected to continue to be in place. SWRCB indicates that VAMP experimental data will be used to create permanent objectives for the pulse flow period. It is anticipated that new SWRCB objectives will maintain the same level of protection for fisheries as the current program or increase the level of protection, and that such protections will remain in place through 2030. Because considerable uncertainty remains as to the flows that will occur under future flow requirements in the San Joaquin River, the analyses include the

continuation of VAMP as a surrogate for these requirements. Other recent changes in the regulations governing CVP and SWP operations in the Delta are assessed in Appendix C, "CVP/SWP Long-Term Operations Sensitivity Analysis," of this Final PEIS/R. Text has not been revised.

NMFS-5: The SJRRP includes a management process that uses monitoring results to help guide implementation consistent with the Act to attain the Restoration and Water Management goals. Although the restoration actions included in the alternatives would have substantial beneficial effects on aquatic, wetland, and riparian ecosystems (as discussed in Chapter 5.0, "Biological Resources – Fisheries," and Chapter 6.0, "Biological Resources – Vegetation and Wildlife," of the Draft PEIS/R, in particular), implementation of actions that alter these ecosystems could also result in some potentially significant adverse impacts to these and upland ecosystems. The Conservation Strategy of the SJRRP addresses these potential adverse effects. As discussed in detail in MCR-7, "Adequacy of Conservation Strategy," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, the Conservation Strategy was developed during extensive coordination with USFWS, NMFS, and DFG, with each regulatory agency contributing measures, text, and revisions before publication in the Draft PEIS/R. The PEIS/R contains an analysis of implementing the Settlement consistent with the Act at a program level, and a set of actions, including release, conveyance, and recapture of Interim and Restoration flows, at the project level (see pages 1-9 through 1-11 in the Draft PEIS/R). The PEIS/R identifies mitigation measures and performance standards that would apply to actions evaluated at the project level and mitigation measures and performance standards that would apply to subsequent, future site-specific actions evaluated at a program level in the PEIS/R, implemented as part of the Settlement (as conditions of approval). The Draft PEIS/R states that the Implementing Agencies acknowledge that additional analysis pursuant to NEPA and/or CEQA will be required in the future for activities addressed at a program level in this Draft PEIS/R, after specific project details are sufficiently known to conduct such project-level analyses. For the reasons set forth above, no changes are necessary to the PEIS/R related to the Conservation Strategy and performance standards. Text has not been revised.

NMFS-6: As described in MCR-4, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, the PEIS/R analyzes the potential program-level impacts of actions pursuant to Paragraphs 11(a)(4) and 11(b)(1) concerning the flow routing between Reach 4B1 and the Eastside Bypass at a program level of detail. Reclamation and DWR are currently conducting a separate site-specific study, the Reach 4B, Eastside Bypass and Mariposa Bypass Improvements Project, to identify the potential impacts of implementing actions for conveying Interim and Restoration flows and incorporating fish habitat through Reach 4B1 and the bypasses at a project level of detail, consistent with the Settlement and the Act. The flow-routing decision and implementation of actions under Paragraphs 11(a)(4) and 11(b)(1) are also the subject of Section 10009(f) of the Act. Section 10009(f) of the Act directs the Secretary to conduct a study of the costs, impacts, and mitigation measures of undertaking work to increase the capacity of Reach 4B1 to at least 4,500 cfs, "…prior to restoration of any flows other than Interim Flows." Further, this section states that the Secretary shall file a report with Congress providing the basis for the Secretary's

determination as to whether the expansion of Reach 4B would be the preferred means to achieve the Restoration Goal, as provided in the Settlement, including how different factors were assessed such as comparative biological and habitat benefits, comparative costs, relative availability of State cost-sharing funds, and comparative benefits and impacts on water temperature, water supply, private property, and local and downstream flood control. These studies are currently under development.

The PEIS/R identifies and discloses the potential combined environmental effects of the flow routing decision in combination with all other actions that are included in the action alternatives. The subsequent environmental review for site-specific projects will address localized effects of project elements, and will rely on information presented in the PEIS/R supplemented with site-specific information. In this manner, the PEIS/R supports development of the site-specific studies of actions related to Reach 4B, including decisions related to flow routing. See MCR-4 in Chapter 2.0 of this Final PEIS/R for additional information related to this comment.

Text has not been revised.

NMFS-7: Potential interties between operations of the Lower San Joaquin River Flood Control Project and the Friant Division of the CVP are described at a level of detail sufficient for the purposes of analyses and disclosure for the PEIS/R. Potential impacts to fish species and habitat are described in Chapter 5.0 "Biological Resources – Fisheries," of the Draft PEIS/R. See also MCR-6, "Third-Party Concerns and Outreach," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for further information related to the ESA and Third-Party concerns. Text has not been revised.

NMFS-8: Groundwater and surface water interactions and potential impacts are described throughout Chapter 12.0, "Hydrology – Groundwater," of the Draft PEIS/R. In the interest of managing redundancy and size of the PEIS/R, groundwater and surface water interactions are not repeated in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R. However, the potential impacts of water level and water quality changes due to groundwater and surface water interactions on fisheries are described in Chapter 5.0 of the Draft PEIS/R. As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, the PEIS/R does not evaluate the feasibility of the Settlement, the likely efficacy of Settlement actions in achieving the Restoration or Water Management goals, or the interactions of individual Settlement actions with other Settlement actions. Accordingly, the PEIS/R does not evaluate the impacts of groundwater and surface water interactions on the ability to meet the Restoration Goal. The Implementing Agencies recognize the unprecedented nature of the SJRRP, and acknowledge that flexibility in implementing the Settlement is necessary to ultimately achieve the Restoration and Water Management goals. In consideration of this necessary and anticipated flexibility, the SJRRP management process involves a broad range of strategies to guide implementation of the Settlement consistent with the Act, and incorporates a continuously growing set of data and scientific information. In particular, Appendix E, "Fisheries Management Plan," of the Draft PEIS/R describes the framework for addressing specific actions related to fisheries, including actions to address habitat

conditions for reintroduced spring- and fall-run Chinook salmon. Text has not been revised.

NMFS-9: This comment refers to text on page 25 in the Executive Summary of the Draft PEIS/R, which states that "All action alternatives would modify the operation of the Lower San Joaquin Flood Control Project (flood management system) to convey Interim and Restoration flows. Modifications would include reoperation of the Chowchilla Bypass Bifurcation Structure, the San Joaquin River Headgate Structure, and the Eastside and Mariposa bypass bifurcation structures." This statement comes under the master bullet on page 22 in the Executive Summary, which states that one project-level action common to all action alternatives is to "Reoperate Friant Dam and downstream flow control structures." These statements are intended to refer to modifications to the operations of Friant Dam and downstream flow control structures to convey Interim and Restoration flows during nonflood periods. Revisions have been made to text throughout the Draft PEIS/R, removing the term "reoperate" (when referring to Friant Dam and downstream flow control structures) and clarifying that Friant Dam and downstream flow control structures would be operated to convey Interim and Restoration flows during nonflood periods, to reflect this intent. The above cited instance on page 22, master bullet 1, in the Executive Summary of the Draft PEIS/R, has been revised to "Operate Friant Dam and downstream flow control structures," and the above cited instance on page 25 in the Executive Summary has been revised to state that "Modifications would include operation of the Chowchilla Bypass Bifurcation Structure, the San Joaquin River Headgate Structure, and the Eastside and Mariposa bypass bifurcation structures." See Chapter 4.0, "Errata," of this Final PEIS/R.

Flood control facilities would continue to be operated as part of the flood management system, and flood operation criteria would supersede operations to convey Interim and Restoration flows, as described briefly in the Draft PEIS/R on page ES-25 and in greater detail on page 2-29, lines 32 through 42. Current operations of flood control facilities within the Restoration Area are described in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R. Interim flows and Restoration flows from Friant Dam would not be released such that flows in downstream reaches would exceed channel capacity. As described on page 2-40, lines 10 through 16, in the Draft PEIS/R, Interim and Restoration flows would have a lower priority for downstream channel capacity than flood flows (from Friant Dam or other sources, such as the Kings River, the Fresno River, or the Chowchilla River) or irrigation deliveries to the San Joaquin River Exchange Contractors. If release of water from Friant Dam is required for flood control purposes, concurrent Interim and Restoration flows would be reduced by an amount equivalent to the required flood control release. If flood control releases from Friant Dam exceed the concurrent scheduled Interim and Restoration flows, no additional releases above those required for flood control would be made for SJRRP purposes. Finally, Interim and Restoration flows would be limited to then-existing channel capacities. With these operating principles and constraints in place, Interim and Restoration flows would not contribute to flood flows above project design capacities, as defined by the *Operation and Maintenance Manual for Levees, Irrigation and Drainage Structures, Channels and Miscellaneous Facilities* (Reclamation Board 1978) or otherwise adversely affect future

flood control operations. Priorities and operations are set in this manual, and would not change with implementation of the SJRRP.

Several actions are described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, to prevent or minimize the effects of stranding reintroduced fish in the bypass system, including modifications to the Chowchilla Bypass Bifurcation Structure (page 2-42 in the Draft PEIS/R), implementation of a trap-and-haul program (page 2-47 in the Draft PEIS/R), and installation of barriers to prevent straying in flood bypasses (page 2-48 in the Draft PEIS/R). Additionally, Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R, discusses the potential fish impediments caused by the flood control bypasses and structures (see pages 5-15 and 5-16). Because of the periodic flow connection, there is potential for straying into the James Bypass and the Kings River system. However, with the proposed Mendota Bypass, identified in Paragraph 11 of the Settlement, flow from the Kings River would continue to enter the Mendota Pool, which could result in a reduced risk of straying if barriers or fish screens are installed with the bypass. This option is being analyzed in the Mendota Pool Bypass and Reach 2B Channel Improvements Project. Finally, the Settlement also identifies that false migration pathways would contain some form of fish barrier to reduce straying into unsuitable habitat. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

NMFS-10: The long-term use of the Hills Ferry Barrier is unknown; however, it will continue to be used to block upstream migration of Chinook salmon until the Restoration Area is ready for anadromous fish reintroduction. After salmon reintroduction, it may be necessary to continue to use the Hills Ferry Barrier for salmon and steelhead management; the barrier may potentially be operated as a control structure to minimize interactions between spring- and fall-run Chinook salmon upstream after their populations become established. Text has not been revised.

NMFS-11: The assessment of environmental impacts would not change if Phase 1 improvements do not occur by December 2013 but Chinook salmon are reintroduced on or before December 2012. As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, the PEIS/R does not evaluate the feasibility of the Settlement, the likely efficacy of Settlement actions in achieving the Restoration or Water Management goals, or the interactions of individual Settlement actions with other Settlement actions. However, as described in MCR-3, "Order and Schedule of Implementing Settlement Actions," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, the Settling Parties and Implementing Agencies, including NMFS, have recently developed a Third-Party working draft *Framework for Implementation* for the SJRRP (SJRRP 2012b). The *Framework for Implementation* outlines the actions to be taken to implement the SJRRP, including the Phase 1 improvements and Chinook salmon reintroduction timeline, along with a schedule and budget for these actions. The *Framework for Implementation* can be found on the SJRRP Web site at www.restoresjr.net. While the *Framework for Implementation* presents a revised schedule for implementing the SJRRP, it does not result in new significant environmental impacts or a substantial increase in the severity of an environmental impact, or create a

feasible project alternative or mitigation measure that would clearly lessen environmental impacts. Text has not been revised.

NMFS-12: Consistent with the requirements of NEPA, all alternatives are analyzed at an equal level of detail in the PEIS/R, regardless of the selection of a preferred alternative. Identification of a preferred alternative will not change the level of detail of the analyses. Text has not been revised.

NMFS-13: The Draft PEIS/R states that for all actions evaluated at a program level of detail, subsequent NEPA and/or CEQA analysis would be required (see page 1-10, lines 3 through 20, in the Draft PEIS/R). Reintroduction of fall- and spring-run Chinook salmon is described at a program level of detail in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R. Table 2-2 identifies that the action to reintroduce fall- and spring-run Chinook salmon is evaluated at a program level, and the description is located on page 2-43, with additional measures described on pages 2-44 through 2-48 that would provide more benefits to the success of the reintroduction. The level of detail presented in the Draft PEIS/R regarding reintroduction of fall- and spring-run Chinook salmon is appropriate for the purposes of the PEIS/R. See also response to comment NMFS-2. Text has not been revised.

NMFS-14: As described in Chapter 1.0, "Introduction," of the Draft PEIS/R Interim and Restoration flows would contribute a relatively small amount of water to the Delta compared to contributions of the San Joaquin and Sacramento rivers and other tributaries. Therefore, implementation of the SJRRP would have negligible effects on flow and water quality at locations downstream from the Delta (in Suisun, San Pablo, or San Francisco bays, or in the Pacific Ocean). For this reason, the Delta was identified as the downstream extent of the study area. No modeling was performed to evaluate impacts downstream from the Delta. The PEIS/R evaluates potential impacts to all potentially affected resource areas, as described in Chapters 4.0 – 25.0 of the Draft PEIS/R, and addresses other NEPA- and CEQA-related issues and considerations in the remaining chapters of the Draft PEIS/R. Text has not been revised.

NMFS-15: Floodplain habitat in the bypasses is discussed in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, on pages 2-45 and 2-46. Text has not been revised.

NMFS-16: Comment noted. Operation of Friant Dam for the release of Interim and Restoration flows is described as a project-level action in the Draft PEIS/R and in the Programmatic Biological Assessment provided to NMFS on November 23, 2011. Flood control operations of Friant Dam would not be modified as part of the action alternatives and therefore are not assessed in either document. The comment does not raise issues or concerns specific to the environmental analysis presented in the Draft PEIS/R. Text has not been revised.

NMFS-17: The release of Interim Flows during Water Years 2010 through 2012 constitutes a complete project under NEPA, and is discussed in Chapter 1.0, "Introduction," of the Draft PEIS/R. The release, conveyance, and recapture of all Interim and Restoration flows, including releases in Water Years 2013 and 2014, were

analyzed at a project level of detail in the Draft PEIS/R. Reclamation and DWR agree that Water Year 2010, 2011, and 2012 Interim Flows have been treated as single-year projects. As stated on page 2-20, line 2, in the Draft PEIS/R, "Interim Flows during Water Year 2010 (October 1, 2009, through September 30, 2010) are described in the *Water Year 2010 Interim Flows Project Environmental Assessment/Initial Study* released by Reclamation and DWR in September 2009. Interim Flows during Water Year 2011 (October 1, 2010, through September 30, 2011) are described in the *Water Year 2011 Interim Flows Project Supplemental Environmental Assessment* released by Reclamation in September 2010." Page 1-13 in the Draft PEIS/R lists the Interim Flow projects for which separate environmental documents have already been prepared. Table 2-2 (page 2-9 in the Draft PEIS/R) shows that the release of all Interim Flows, including releases in Water Year 2013, are evaluated at a project level in the Draft PEIS/R. The actions undertaken before completion of this Final PEIS/R and associated decision documents have independent utility while also potentially serving as essential first steps that contribute to implementation of the Settlement. None of the actions taken to date, such as release of Interim Flows, data collection, monitoring, or other related actions, commit the Implementing Agencies to undertaking any other part of the SJRRP; all of these actions have independent utility to benefit the SJRRP as well as benefiting other programs and projects such as DWR's NULE Project. See also MCR-4, "Segmentation Under NEPA and CEQA," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, for additional information relevant to this comment. For the reasons set forth above and in MCR-4, no changes to the PEIS/R are necessary. Text has not been revised.

NMFS-18: The sentence cited in the comment, page 2-21, lines 30 through 31 in the Draft PEIS/R, refers to when flood flow releases would take precedence over Interim or Restoration flows in the river channel and bypasses, and does not describe any SJRRP action. Flood flows are considered outside the scope the PEIS/R because none of the action alternatives include modifications of flood control operations, either through releases from Friant Dam or routing of flood flows through the Lower San Joaquin Flood Control Project. Conveyance of Interim and Restoration flows would not constitute a change in flood control operations. Because release and conveyance of flood flows is not part of the project description, as described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, the impacts of flood flows are not evaluated in the PEIS/R for any resource, including fisheries. This comment does not raise issues or concerns specific to the environmental analysis presented in the Draft PEIS/R. Text has not been revised.

NMFS-19: As described on page 2-40, lines 10 through 16, in the Draft PEIS/R, Interim and Restoration flows would have a lower priority for downstream channel capacity than flood flows (from Friant Dam or other sources, such as the Kings River, the Fresno River, or the Chowchilla River) or irrigation deliveries to the San Joaquin River Exchange Contractors. If release of water from Friant Dam is required for flood control purposes, concurrent Interim and Restoration flows would be reduced by an amount equivalent to the required flood control release. If flood control releases from Friant Dam exceed the concurrent scheduled Interim and Restoration flows, no additional releases above those required for flood control would be made for SJRRP purposes. Finally, Interim and Restoration flows would be limited to then-existing channel capacities. With these operating principles and constraints in place, Interim and Restoration flows would not

contribute to flood flows above project design capacities, as defined by the *Operation and Maintenance Manual for Levees, Irrigation and Drainage Structures, Channels and Miscellaneous Facilities* (Reclamation Board 1978) or otherwise adversely affect future flood control operations. Priorities and operations are set in this manual, and would not change with implementation of the SJRRP. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. See also response to comment NMFS-18. Text has not been revised.

NMFS-20: The commenter refers to the description of the Channel Capacity Advisory Group in Chapter 2.0, "Description of the Alternatives," of the Draft PEIS/R. The purpose of the Channel Capacity Advisory Group would be to provide independent review of estimated then-existing channel capacities in accordance with USACE levee performance criteria, monitoring results, and management actions identified by Reclamation to address vegetation and sediment transport within the system. The process for determining channel capacity to minimize increases in flood risk is described in Chapter 2.0, pages 2-22 through 2-28, and does not consider effects on reintroduced Chinook salmon. Additionally, all project- and program-level actions would be performed in compliance with USACE requirements, including requirements set forth by USACE as conditions of permits issued for implementing such actions (see Chapter 28.0, "Consultation, Coordination, and Compliance," of the Draft PEIS/R for a description of the permits, petitions, compliance documents, etc., needed for the project- and program-level actions).

As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, the PEIS/R does not evaluate the feasibility of the Settlement, the likely efficacy of Settlement actions in achieving the Restoration or Water Management goals, or the interactions of individual Settlement actions with other Settlement actions. Accordingly, the effect of project-level actions on the ability of reintroduced salmonids to successfully migrate through the Restoration Area is not addressed in the PEIS/R. The Implementing Agencies recognize the unprecedented nature of the SJRRP, and acknowledge that flexibility in implementing the Settlement is necessary to ultimately achieve the Restoration and Water Management goals. In consideration of this necessary and anticipated flexibility, the SJRRP management process involves a broad range of strategies to guide implementation of the Settlement consistent with the Act and incorporates a continuously growing set of data and scientific information.

The RA is responsible for making recommendations to the Secretary on the release of Interim and Restoration flows. The RA's recommendations would be taken into consideration by the Secretary in making decisions or implementing specific actions under the Settlement, including actions to limit the release of Interim and Restoration flows as part of the actions to minimize increases in flood risk. See MCR-1 for additional information relevant to this comment. Text has not been revised.

NMFS-21: As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, Reclamation would prepare a report annually or whenever Reclamation

contemplates increasing the upper limit of releases for Interim or Restoration flows. The report would include data and methods used to develop estimates of then-existing channel capacities. A draft report would be provided to the Channel Capacity Advisory Group for review and comment for a period of 60 days. If comments or recommendations are received from the Channel Capacity Advisory Group within 60 days, Reclamation would be required to consider and respond to such comments and prepare a final report for distribution to the Channel Capacity Advisory Group within 60 days of the close of the draft report review period. Reclamation would not increase Interim or Restoration flows above the previously determined then-existing channel capacities until 10 days after the final report is prepared and distributed to the Channel Capacity Advisory Group. The first draft report shall be completed within 1 year of signing the PEIS/R ROD. The first report is therefore not anticipated to be completed before release of Interim Flows in Water Year 2013. Draft reports would include data, methods, and estimated channel capacities; flow limits and any maintenance activities; and monitoring efforts and management actions, as described in the PEIS/R. Draft and final reports would be made available to the public, including the Implementing Agencies, concurrent with their distribution to the Channel Capacity Advisory Group. Text has not been revised.

NMFS-22: Management actions to trap sediment, regrade land, install or modify grade control structures, remove sediment, or other sediment management actions for managing channel capacity would apply to erosion control. These management actions are described in Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R. Text has not been revised.

NMFS-23: As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, routing Interim and/or Restoration flows through the Chowchilla Bypass instead of through the San Joaquin River on a permanent basis would not be consistent with the Restoration Goal, which is to "restore and maintain fish populations in good condition in the main stem of the San Joaquin River." This action was considered, but not retained for inclusion in the action alternatives because as a complete alternative to conveying flows in the river channel, it would prevent achieving the SJRRP purpose and need, consistent with the Settlement. As a partial alternative, where Interim or Restoration flows could be split between the bypass system and the river channel, this action would conflict with achieving the SJRRP purpose and need by potentially stranding reintroduced fish in the bypass system. However, in consideration of downstream conditions, Interim or Restoration flows could be temporarily diverted to the bypass system, and flood flows would continue to be routed through the bypass system in accordance with established operations of the Lower San Joaquin River Flood Control Project.

Several actions are described in Chapter 2.0 to prevent or minimize the effects of stranding reintroduced fish in the bypass system, including modifying the Chowchilla Bypass Bifurcation Structure (page 2-42 in the Draft PEIS/R), implementing a trap-and-haul program (page 2-47 of the Draft PEIS/R), and installing barriers to prevent straying in flood bypasses (page 2-48 in the Draft PEIS/R). The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

NMFS-24: The text referenced in the comment ("No change in operational requirements would be required to recapture Interim and Restoration flows in the Restoration Area or in the Delta under the regulatory compliance standards in place at the time water is recaptured") describes project-level actions, which would not necessitate a change in operational requirements because anadromous salmonids or any listed species are not anticipated to occur within the Restoration Area solely as a result of project-level actions. Project-level actions include implementing monitoring and management activities to exclude salmonids from the Restoration Area during the release of flows "until sufficient habitat and channel improvements to support salmonids are complete," as stated on page 2-47 and in Table 2-7 of the Draft PEIS/R. Recapture of Interim and Restoration flows at existing facilities would be subject to regulatory compliance standards in place at the time water is recaptured, and would include any operational/regulatory requirements (current or future) for ESA-listed species that may be imposed at these diversion points.

The reintroduction of Chinook salmon, a program-level action included under all action alternatives, may lead to changes in operations. As described in MCR-6, "Third-Party Concerns and Outreach" in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, Section 4(d) of the ESA allows NMFS to adopt regulations necessary to provide for conservation of a threatened species. This provides the flexibility for NMFS to customize prohibitions and regulate activities to conserve threatened species, potentially without involving many or all restrictions that apply to endangered species. The exact requirements depend on the species' biology, conservation needs, and threats being managed. Under the 4(d) rule for reintroduction of spring-run Chinook salmon to the Restoration Area, NMFS would develop a set of protective regulations specific to the experimental population. Under the 4(d) rule, NMFS may elect to allow take for the experimental population if the take is incidental to a lawful activity, such as agricultural activities, and is unintentional or not due to negligent conduct. NMFS is currently developing a document describing considerations for issuing a 4(d) rule as part of Settlement implementation. Text has not been revised.

NMFS-25: The discussion of potential actions included in the action alternatives would not preclude the alternative referred to in the comment as "move Mendota Pool off-channel into Fresno Slough." See also additional information regarding the site-specific study Mendota Pool Bypass and Reach 2B Channel Improvements Project at www.restoresjr.net. Text has not been revised.

NMFS-26: The organizational approach applied in the PEIS/R was selected in the interest of managing the size of the document. No more than three conservation measures follow each fully defined title for any habitat or species; the lead agencies consider this structure sufficient for clarity. Text has not been revised.

NMFS-27: The measure as described already includes revegetation at a ratio determined in coordination with NMFS, as specified in Conservation Strategy measure CVS2-d. Text has not been revised.

NMFS-28: Conservation Measure SRCS-1, developed in coordination with NMFS, USFWS, and DFG, clarifies the commitment of the lead agencies to ensure compliance

with existing operating criteria of the CVP and SWP, and prevailing and relevant laws, regulations, BOs, and court orders in place at the time the actions are performed, and in accordance with the Experimental Population 4(d) rule, as it is developed, and where applicable. Additional actions to avoid and minimize loss of habitat and individuals are not necessary as part of the Conservation Strategy because actions included in the project description are anticipated to improve habitat and conditions for individuals in the Restoration Area and throughout the San Joaquin River. Implementation of Conservation Measures CVS-1 and CVS-2 could provide additional incidental benefits to Chinook salmon habitat and individuals. Text has not been revised.

NMFS-29: The potential to modify Restoration Flows based on the need to control ramping rates (to prevent stranding or dewatering of redds, and for temperature management, fish passage, adult attraction, floodplain inundation, or other considerations) is addressed through the description of project-level actions to release Interim or Restoration flows, and the analysis of potential impacts of these actions. The RA would make recommendations to the Secretary on the release of Restoration flows, and may consider a variety of factors (potentially including, but not limited to, the need for ramping rates, temperature management, fish passage, adult attraction, or floodplain inundation) in making recommendations. Text has not been revised.

NMFS-30: As an Implementing Agency, NMFS reviewed methodology, results, and analyses of the sensitivity analyses as part of the administrative review process for development of the *Programmatic Biological Assessment* (SJRRP 2011d) and this Final PEIS/R. NMFS provided comments, and the lead agencies met with NMFS to discuss the results and presentation of impacts and effects analyses. All feedback was incorporated into subsequent administrative versions of these documents. Appendix C, "CVP/SWP Long-Term Operations Sensitivity Analyses," of this Final PEIS/R, reflects this process. See also response to comment NMFS-1b. Text has not been revised.

NMFS-31: Chapter 7.0, "Climate Change," of the Draft PEIS/R, focuses on the contribution of the program alternatives to greenhouse gases (GHG) in the atmosphere. Potential implications of projected regional climate change and sea level rise for future CVP/SWP operations are separately described in detail in an attachment to Appendix I, "Supplemental Hydrologic and Water Operations Analyses," of the Draft PEIS/R. The PEIS/R describes analysis of projected conditions up to 2030; further analysis of the potential long-term impacts of climate change on fish habitat is beyond the scope of the PEIS/R. Text has not been revised.

NMFS-32: Section 5.2.1 in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R, discusses general environmental factors, whereas the conditions/factors identified by the commenter are tied to those general environmental factors. Redd superimposition is included by implication under competition, which explains that changes in flow regime may alter the available prey base, and may also result in increased interspecific and intraspecific competition for suitable rearing feeding, spawning, and refuge habitats, with one individual or population becoming more proficient at exploiting a particular resource (page 5-13, lines 4 through 4 of the Draft PEIS/R).

Entrainment is included under Hybridization (page 5-12, line 27 of the Draft PEIS/R); however, entrainment at fish screens, which is likely what the commenter meant, is not included because it is not directly tied to an environmental factor, but a result of impacts caused by infrastructure.

Pesticides and other contaminants are included in the descriptions for Food Web Support on page 5-12, lines 15 through 18, which explains that changes in other environmental conditions, such as riparian vegetation, flow, channel morphology, water quality, instream habitat components, pollution inputs, and floodplain and off-channel habitat access, can impact nutrient cycling, food availability, and food web dynamics.

Pesticides and other contaminants are also included under Disease on page 5-13, lines 15 through 17, which explains that other factors, such as dissolved oxygen levels, pollution, population density, and species and life stage, also influence the likelihood of a fish becoming infected with a certain disease.

Degraded in-river physical habitat, such as gravel recruitment, lack of large woody debris, levees, bank revetment, and channel encroachment, are discussed indirectly under Predation. As described on page 5-12, lines 1 through 7, infrastructure or operational elements of the water conveyance system may also lead to behavioral changes, metabolic disruption, or other biological and ecological outcomes that increase prey vulnerability to predators. Increased water temperatures or other environmental conditions may place increased metabolic demands on susceptible groups of fish and hinder their flight response or capability to take refuge from threats by predation (Spence et al. 1996). Reductions in shaded riverine aquatic cover will potentially expose fish to increased risk of capture by avian or terrestrial predators.

Degraded in-river physical habitat is also discussed indirectly under Food Web Support on page 5-12, lines 15-18, which explains changes in other environmental conditions, such as riparian vegetation, flow, channel morphology, water quality, instream habitat components, pollution inputs, and floodplain and off-channel habitat access, can impact nutrient cycling, food availability, and food web dynamics (Murphy and Meehan 1991, Spence et al. 1996).

Degraded in-river physical habitat is discussed indirectly under Competition, on page 5-12, lines 37 to 40, and on page 5-13, lines 1 through 4, which explains that changes in temperature, flow, habitat elements, and food availability can all impact the level of interspecific (between species) and intraspecific (within a species) competition (Spence et al. 1996). Water diversions that may introduce nonnative species to a given habitat may increase the potential for competition in aquatic systems. Changes in flow regime may alter the available prey base, and may also result in increased interspecific and intraspecific competition for suitable rearing feeding, spawning, and refuge habitats, with one individual or population becoming more proficient at exploiting a particular resource.

Finally, degraded in-river physical habitat is discussed indirectly under Disease, on page 5-13, lines 18 and 19, which explains that changes in flow or riparian vegetation that

trigger large increases in water temperature may decrease the resistance of a fish or species to a particular disease.

Recreational fishing is referenced indirectly under Predation on page 5-11, lines 36 through 39, which explains that increased prey vulnerability may also be associated with other environmental conditions, including water temperature conditions, flow diversions, change in water surface level, increased pollutant concentration, and fishing (Spence et al. 1996). These mechanisms generally alter predator-prey relationships by disrupting or reducing cover, space, and refuge.

Text has not been revised.

NMFS-33: Table 5-7 on page 5-50 in the Draft PEIS/R has been revised in response to this comment. See revision in Chapter 4.0, "Errata," of this Final PEIS/R. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R.

NMFS-34: The assumption that Restoration Flows could provide contiguous flows year-round in above-normal water years was made to bracket the potential upper limit of changes in habitat quantity and quality compared to the No-Action Alternative, as described in Chapter 5.0, “Biological Resources – Fisheries,” of the Draft PEIS/R. It is likely, but not certain, that in some years, release of Restoration Flows would not result in a contiguously wetted channel from Friant Dam to the Merced River. The Interim and Restoration flow schedule presented in Exhibit B of the Settlement accounts for potential seepage losses. Text has not been revised.

NMFS-35: Text on page 5-60, lines 11 through 20, and Table 5-11 in the Draft PEIS/R have been revised in response to this comment to remove the personal communication reference and cite all original sources used in developing the information presented in Table 5-11. See revision in Chapter 4.0, "Errata,” of this Final PEIS/R.

NMFS-36: Table 5-12 in Chapter 5.0, “Biological Resources – Fisheries,” of the Draft PEIS/R, has been revised in response to this comment. See revision in Chapter 4.0, "Errata,” of this Final PEIS/R.

NMFS-37: This comment refers to program-level discussion of the potential for reintroduced spring-run Chinook salmon to serve as disease sources and result in a disease outbreak among wild fall-run Chinook salmon in the major San Joaquin River tributaries, and reliance on Conservation Measure SRCS-1 to keep this impact to less than significant. Conservation Measure SRCS-1 states, in part, that SJRRP actions shall be performed in accordance with the Experimental Population 4(d) rule, as it is developed, and where applicable (see page 2-77 in the Draft PEIS/R), and the measure requires the involvement of NMFS and DFG in development and/or implementation of SRCS-1. Spring-run reintroduction activities would be regulated by a NMFS 10(a)1(A) Enhancement of the Species Permit with concurrence, if appropriate, by DFG through its authority in Fish and Game Code Section 2080.3. A component of the 10(a)1(A) Enhancement of the Species Permit is the *Hatchery and Genetics Management Plan*, which would guide management of the genetic diversity of the spring-run hatchery

population (SJRRP 2010a). Consistent with the Act, spring-run Chinook salmon would be reintroduced under a Section 10(j) ESA experimental population designation and would be managed by 4(d) regulations. DFG has the ability to issue concurrences on the 10(j) designation and 4(d) rule if certain conditions are met (Fish and Game Code Section 2080.4). The proposed action described in the *Draft Environmental Assessment for 10(a)(1)(A), Enhancement of the Species Permit Application for the collection and transport of Spring-Run Chinook for the San Joaquin River Restoration Program* (NMFS 2012) includes specifics, such as those suggested by the commenter, presented at a project level that is more detailed than the program-level discussions of reintroduction presented in the Draft PEIS/R. The *Draft Environmental Assessment for 10(a)(1)(A), Enhancement of the Species Permit Application for the collection and transport of Spring-Run Chinook for the San Joaquin River Restoration Program* concludes on page 4-7 that "…potential effects related to the introduction of disease to the existing populations would not be significant." This is consistent with the analyses presented in the Draft PEIS/R. See also MCR-7, "Adequacy of Conservation Strategy," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for further information. For the reasons set forth above and in MCR-7, Reclamation and DWR do not believe that any changes to the Conservation Strategy related to potential disease impacts are necessary. Text has not been revised.

NMFS-38: The commenter asks whether modeling supports the conclusion that changes in water temperatures in the San Joaquin River between the Merced River and the Delta as a result of program-level actions would be less than significant. Changes in water temperatures in the San Joaquin River between the Merced River and the Delta would be most likely to occur as a result of project-level actions rather than program-level actions, including the release and conveyance of Interim and Restoration Flows. However, program-level actions to divert flows between the Merced River and the Delta under Alternatives B1, B2, C1, and C2 could also affect water quality conditions, including temperatures, in this portion of the San Joaquin River. The potential for changes in water temperatures to occur in the San Joaquin River between the Merced River and the Delta as a result of program- and project-level actions was qualitatively assessed, as discussed below.

Application of the temperature model was limited to the extent of the Restoration Area to limit uncertainty for the analyses these simulations support. The analysis of potential water temperature impacts in the San Joaquin River downstream from the Merced River confluence was based on simulated water temperatures from Friant Dam to the Merced River confluence and measured water temperatures at downstream locations.

Application of the water temperature model requires identification or assumption of daily reservoir operations and resulting river flows for the controlling reservoir(s) for the geographic portion of the model being applied. Within the Restoration Area, where water temperatures are most directly affected by implementation of the Settlement, monthly water operations from CalSim-II were disaggregated into daily water operations that are still bound by overall monthly limits. The Millerton Daily Operations Model was used to simulate daily water operations of Millerton Lake. This model, developed in Excel, interpolates between monthly CalSim-II boundary conditions (including inflow,

diversions, and long-term snowmelt flood releases) to generate a potential set of daily values that are consistent with the CalSim-II monthly values to assure mass balance. Daily operation data were then used with a simplified flood routing procedure to generate a set of simulated daily releases from Millerton Lake to the San Joaquin River. Resulting daily Millerton Lake operations were used in the Millerton Lake and San Joaquin River temperature models to simulate water temperatures within the Restoration Area.

This process of disaggregation, described in Appendix H, "Modeling," of the Draft PEIS/R necessarily introduces some uncertainty into the water temperature results. This level of uncertainty was deemed acceptable within the Restoration Area because Friant Dam operations are limited to the relatively simple condition of a single, independently operated reservoir. Running the temperature model for the San Joaquin River and tributaries downstream from the Merced River would require disaggregating monthly operations of the jointly operated system of reservoirs located on the tributary rivers to obtain daily values suitable for use in the temperature model. The uncertainty associated with defining operations of the system of reservoirs located on the tributary rivers, compounded by the uncertainty introduced through the disaggregation process, was deemed unacceptable for use in evaluating potential impacts in the Draft PEIS/R. Instead, use of the temperature model for impact evaluation was constrained to the Restoration Area. Downstream from the Restoration Area, the analyses presented in the Draft PEIS/R compared simulated water temperatures from Friant Dam to the Merced River confluence and measured water temperatures at downstream locations to evaluate water temperature impacts. Text has not been revised.

NMFS-39: Under the No-Action Alternative, fish habitat conditions such as water temperatures are anticipated to continue to deteriorate for a variety of reasons, including climate change. Climate change is included under both the No-Action Alternative and the action alternatives. Under all action alternatives, increased and continuous flow and habitat restoration (particularly with respect to shading provided by riparian vegetation) would help reduce the severity of increased water temperatures compared to the No-Action Alternative. Therefore, the impact of the action alternatives on water temperatures would be less than the impact of the No-Action Alternative on water temperatures. Text has not been revised.

NMFS-40: This comment refers to discussion of Impact FSH-30, "Changes in Chinook Salmon and Steelhead Habitat in the Merced, Tuolumne, and Stanislaus Rivers," and states that Figures 5-7 and 5-8 should be referenced in the impact discussion. Figures 5-7 and 5-8 of the Draft PEIS/R are referenced in the subsequent impact analysis, FSH-31, as part of the evaluation of potential impacts in the Delta, and are not relevant to the discussion under Impact FSH-30. Changes in tributary flows are available in Appendix H, "Modeling," of the Draft PEIS/R, for comparison with the target flows in Table 5-11 of the Draft PEIS/R. The target flows are discussed under Impact FSH-30 on page 5-97, lines 14 through 37. As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, although VAMP expired in 2011, the No-Action Alternative includes a continuation of a VAMP-like condition. SWRCB indicates that VAMP experimental data will be used to create permanent objectives for the pulse flow period. It is anticipated that new SWRCB objectives will maintain the same level of protection for fisheries as the

current program or increase the level of protection, and that such protections will remain in place through 2030. Because considerable uncertainty remains as to the flows that will occur under future flow requirements in the San Joaquin River, the analyses include the continuation of VAMP as a surrogate for these requirements. Text has not been revised.

NMFS-41: This reference to Appendix K and the flow analysis on the San Joaquin tributaries in page 5-97, line 14, of the Draft PEIS/R was removed in response to this comment. See revision in Chapter 4.0, "Errata," of this Final PEIS/R.

NMFS-42: Text on page 5-97, line 17, in the Draft PEIS/R has been revised to clarify that target flows for tributaries to the San Joaquin River are identified in Table 5-11 in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R. Text has not been revised.

NMFS-43: This comment references a discussion of the potential impacts to fisheries on the tributaries, which considers target flows for the Stanislaus River, not the San Joaquin River at Vernalis. The flows at Vernalis under the action alternatives would be no lower than, and typically higher than, flows under existing conditions and the No Action Alternative. Therefore, the impact of the action alternatives compared to existing conditions and the No Action Alternative is less than significant. The cited text and Table 5-11 of the Draft PEIS/R specify target flows for the Stanislaus River for steelhead protection based on an instream flow incremental methodology study (USFWS 1993), as well as the 2009 NMFS CVP/SWP Operations BO (2009a) for a below-normal year, and both documents are included as sources in the table. Text has not been revised.

NMFS-44: As stated in the *Water Year 2012 Interim Flows Project Biological Assessment* (SJRRP 2011c), reverse flows in the Old and Middle rivers may adversely affect juvenile steelhead migrating through the Delta because they may stray from the Sacramento River to the San Joaquin River (Brandes and McLain 2001). Reverse flows in Old and Middle rivers are believed to affect steelhead from the San Joaquin River by altering the environmental cues used by the migrating fish (Mesick 2001). As a result, juvenile steelhead are more vulnerable to being entrained by the export pumps, and migrations of both adult and juvenile steelhead can be delayed. Reverse flows also are likely to cause increased straying of migrating adult steelhead into the south Delta, where their progress may be impeded by barriers and irregular flow patterns (Mesick 2001). High inflows likely reduce impacts to all life stages in the San Joaquin River channels leading toward the south Delta pumps by directing the fish towards the central Delta and farther from the Delta pumps. Higher San Joaquin River inflow results in an increased number of fish migrating around the south Delta, thus reducing the risk to the fish caused by the conditions in the south Delta. Higher inflows also likely reduce the transit time of smolts through the Delta, thus reducing their time of exposure to predators, poor water quality, low food supply, and other mortality factors. Higher inflows also may provide stronger environmental cues for adult fish migrating upstream and smolts and other juveniles migrating downstream (Mesick 2001). Additionally, higher ratios of inflow to reverse flow may lead to reductions in straying, reductions in transit times, and lowered exposure to mortality factors such as predation, entrainment, and increased competition.

The explanation provided in the *Water Year 2012 Interim Flows Project Biological Assessment* (SJRRP, 2011c) is consistent with that of the PEIS/R, which explains that increased San Joaquin River inflow would potentially improve conditions for emigrating steelhead in spring. However, increased reverse flows in the upper Old and Middle rivers and higher levels of pumping required to recapture the increased inflow would potentially increase rates of straying by smolts. Straying of smolts into the south Delta would likely increase entrainment and predation risks and delay migrations. When such conditions threaten to exceed the limits set by the BO RPAs or regulations in effect at the time, Reclamation would implement actions to reduce pumping and/or inflow for compliance and to maintain conditions that have been determined in the operation BOs to avoid adverse effects to listed fishes. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

NMFS-45: The commenter references Figures 5-7 through 5-16 on pages 5-99, 5-100, 5-103, 5-105, 5-110, and 5-111 in the Draft PEIS/R, which present in pairs of figures modeling output relevant to the analysis of impacts to fisheries. The data used to develop these figures are provided in Appendix H, "Modeling," and Appendix I, "Supplemental Hydrologic and Water Operations Analyses," of the Draft PEIS/R. Each pair of figures presents an output parameter, such as mean percent changes in San Joaquin River flow at Vernalis, at both the 2005 level of development (Figure 5-7) and the 2030 level of development (Figure 5-8). Simplified figures of output at the 2005 level of development were prepared subsequent to release of the Draft PEIS/R for inclusion in the SJRRP *Final Programmatic Biological Assessment* (SJRRP 2011d). The simplified figures are presented below as Figure 3.5-3 through Figure 3.5-7. The difference between the new figures relative to the figures presented in the Draft PEIS/R is the removal of the second y-axis, titled "Percent of Years…" depending on which environmental factor was graphed (e.g., X2, San Joaquin River inflow). The inclusion of these figures does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

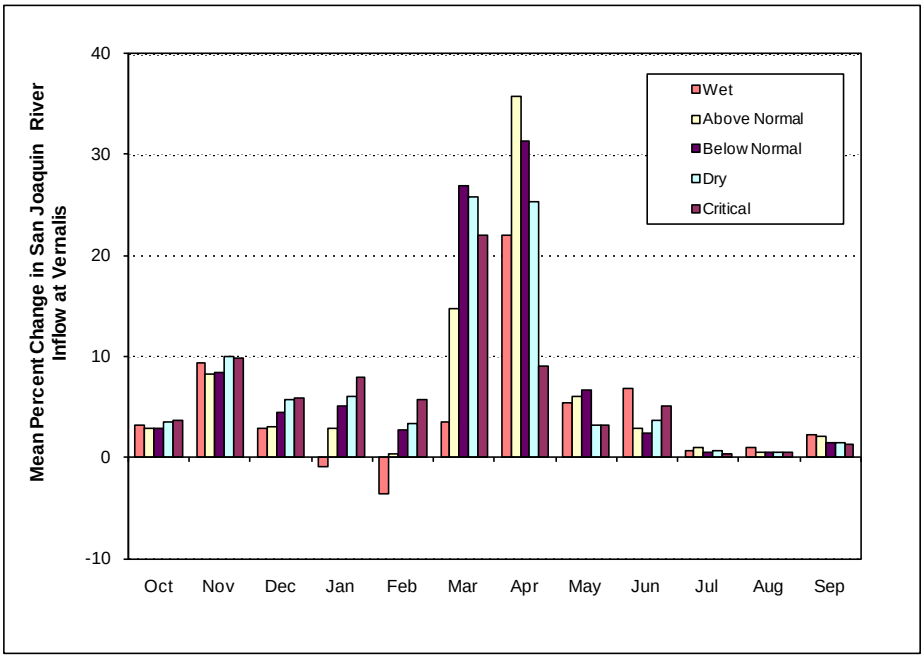

Figure 3.5-3.
Simplified Version of Figure 5-7 of Draft PEIS/R:
Mean Percent Changes in San Joaquin River Flow at Vernalis

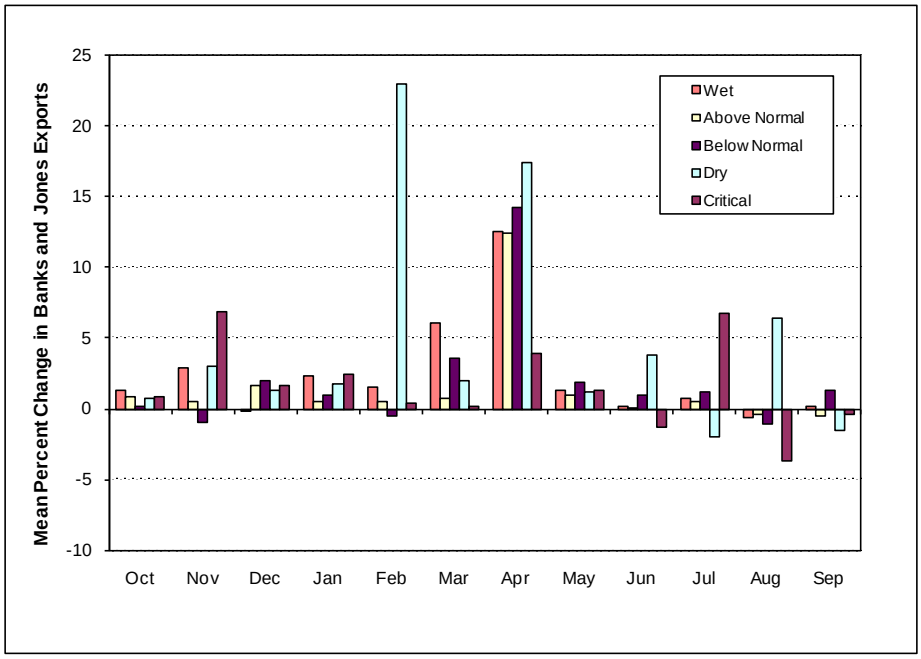

Figure 3.5-4.
Simplified Version of Figure 5-9 of Draft PEIS/R:
Mean Percent Changes in Diversions at Banks and Jones Facilities

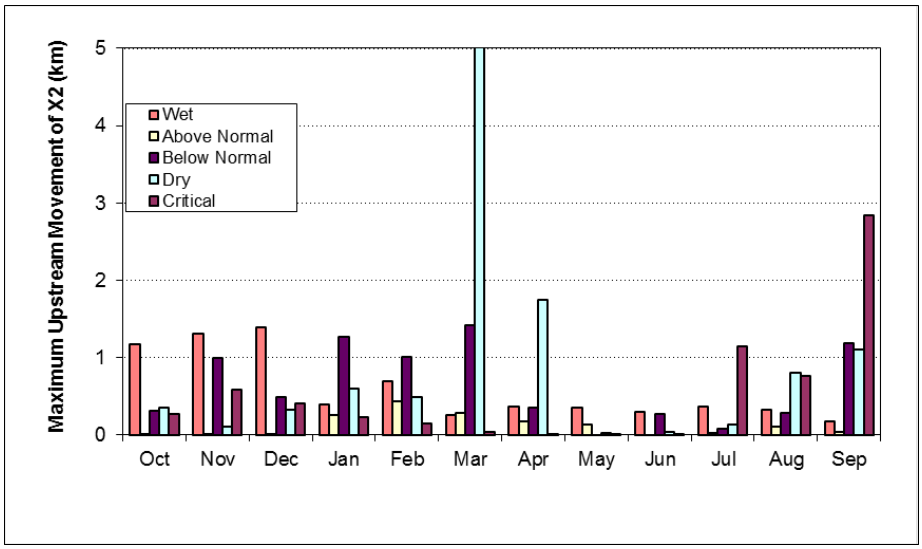

Figure 3.5-5.
Simplified Version of Figure 5-11 of Draft PEIS/R:
Maximum Mean Monthly Upstream Shifts in X2

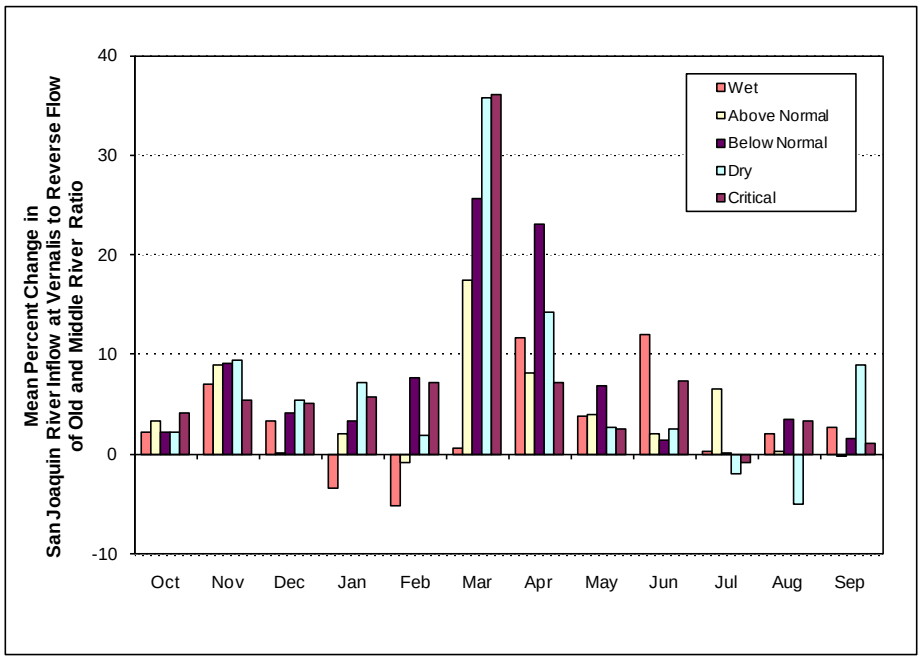

Figure 3.5-6.
Simplified Version of Figure 5-13 of Draft PEIS/R:
Mean Percent Changes in Ratio of San Joaquin River at Vernalis Flow to Reverse Flow of Old and Middle Rivers Combined

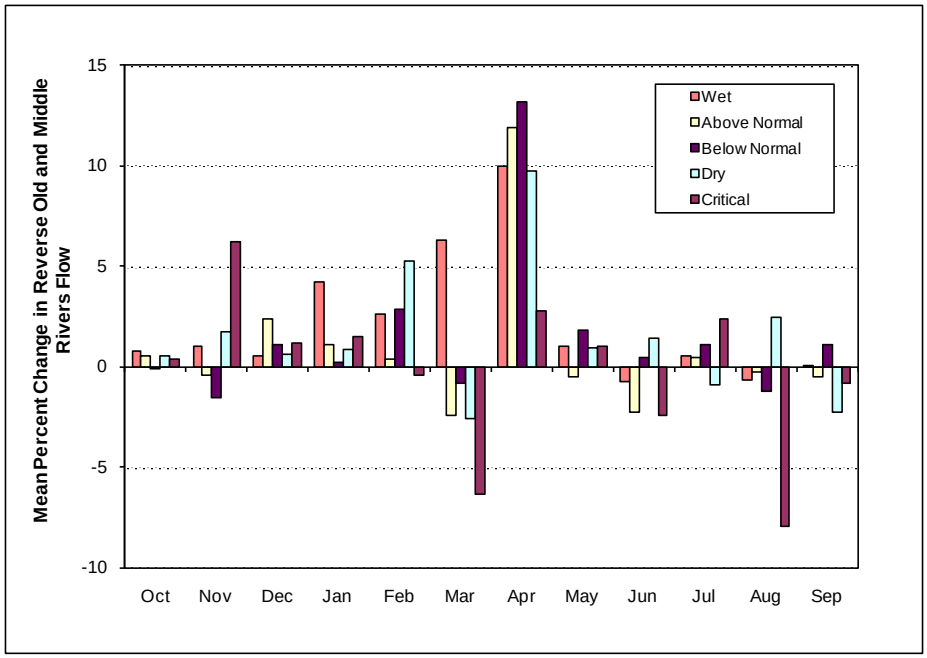

Figure 3.5-7.
Simplified Version of Figure 5-15 of Draft PEIS/R:
Mean Percent Changes in Reverse Flow of Old and Middle Rivers Combined

NMFS-46: Land subsidence occurred in the San Joaquin Valley beginning approximately in the 1920s, and was induced in drought periods from 1976 through 1977 and 1987 through 1992. Concerns have been raised in recent years that declining groundwater levels have resulted in reactivation of subsidence in parts of the San Joaquin Valley. Subsidence due to groundwater level decline is typically measured using leveling surveys for geodetic monitoring or Interferometric Synthetic Aperture Radar (INSAR) techniques, or simulated as a component in a groundwater model. Subsidence was not a component available in the near-river model MODFLOW used to evaluate shallow groundwater conditions along the San Joaquin River. No other calibrated groundwater models that included a quantitative representation of subsidence were publicly available at the time the analysis for the Draft PEIS/R was conducted. Therefore, a qualitative evaluation was performed to determine the potential for changes in groundwater levels to induce subsidence.

The qualitative evaluation of land subsidence in the Friant Division consisted of evaluating historical water level data from more than 850 wells in the DWR Water Data Library (DWR 2010) to identify the historical maximum depth to groundwater within each district of the Friant Division. Historical well data provided the best publicly available information to support the qualitative evaluation. The historical maximum depth to groundwater within each district was used as an indicator of when subsidence could potentially be reactivated in areas that had previously experienced subsidence. Potential effects of continual groundwater level decline due to pumping include costs of lowering pumps or installing larger pumps in wells, installation of new wells, higher lift costs, loss of groundwater in storage, potential subsidence, potential loss of aquifer

storage capacity, and potential adverse impacts to groundwater quality. The economic effects of potential groundwater level decline are described in Chapter 22.0, “Socioeconomics,” of the Draft PEIS/R.

The commenter provides no specific documentation of the concern raised nor does the commenter provide the basis for their comment or data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts to support their comment. Text has not been revised.

NMFS-47: Successful or full return indicates recirculation of the full quantity of recaptured Interim or Restoration Flows. The change in surface water supplies to Friant Division long-term contractors resulting in the "low" effect is described in Chapter 13.0, "Surface Water Supplies," and Appendix J, “Surface Water Supplies and Facilities Operations,” of the Draft PEIS/R. Text has not been revised.

NMFS-48: As described in Chapter 12.0, “Hydrology – Groundwater,” of the Draft PEIS/R, a process was conducted to select the best available tools for the technical analysis of groundwater in the Friant Division. This tool selection process involved evaluating the suitability of the following numerical groundwater simulation models to evaluate the potential regional effects of SJRRP implementation: the Central Valley Groundwater and Surface Water Model (CVGSM), Westside Simulation Model (WESTSIM), Kings Groundwater Basin Model (KingIGSM), Central Valley Hydrologic Model (CVHM), California Central Valley Groundwater-Surface Water Simulation Model (C2VSIM), and HydroGeoSphere. CVGSM was considered outdated and too coarse to complete the analysis. WESTSIM and KingIGSM were found geographically incomplete in the Friant Division, and HydroGeoSphere was still in early stages of development. Although CVHM and C2VSIM were identified as the best candidates for the regional focus of the groundwater analyses presented in the Draft PEIS/R, neither was ready and available for application when the groundwater analysis was initiated.

In light of these limitations, an existing numerical tool (Schmidt Tool) was selected and supplemented with the Mass Balance Tool to evaluate regional groundwater conditions in the Friant Division. The Schmidt Tool is a numerical tool developed by Schmidt (2005a, 2005b) in support of San Joaquin River litigation and estimates changes in groundwater levels on an annual basis at a district scale in the Friant Division. Because the Schmidt Tool has no input data available for all of the Friant Division long-term contractors, only a subset of Friant Division long-term contractors is represented using the Schmidt Tool analysis. In response to comments received from Friant Water Authority during development of the Draft PEIS/R that groundwater conditions in the remaining Friant Division long-term contractor areas needed to be evaluated similarly, the Mass Balance Tool was developed and applied for the remaining Friant Division long-term contractors not represented in the Schmidt Tool. It is recognized that these two methods were developed independent of each other and do not directly correlate. However, the Schmidt Tool was selected as the best available tool for analyzing groundwater conditions within the areas where it applies, and the Mass Balance Tool was developed as the best available approach for the remaining areas. This approach is sufficient because it applies the best

tools available at the time the analysis was conducted for analyzing groundwater conditions within the Friant Division.

The commenter provides no specific documentation of the concern raised, nor does the commenter provide the basis for their comment or data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts to support their comment. Neither does the commenter suggest an alternative tool or set of assumptions to use in place of the tools and assumptions applied in support of the PEIS/R. For the reasons set forth above, no changes to the PEIS/R are necessary. Text has not been revised.

NMFS-49: Potential impacts to groundwater within the Restoration Area are described in Chapter 12.0, "Hydrology – Groundwater," of the Draft PEIS/R. As described in Chapter 12.0, a suite of modeling tools was used to evaluate potential adverse and beneficial impacts of program alternatives under consideration for groundwater resources in the study area, as described in response to comment NMFS-48. A MODFLOW and the Hydraulic Engineering Center – River Analysis System (HEC-RAS) of the near-river riparian zone and surrounding areas of the lower San Joaquin River (SSP&A 2005, MEI 2002a, b) were used to evaluate potential local effects of Settlement implementation (e.g., river seepage). See also response to comment NMFS-48.

The paper recommended by the commenter was used in preparation of the Draft PEIS/R, as cited in Chapter 12.0. Text has not been revised.

NMFS-50: The potential to mobilize pollutants as a result of releasing Interim and Restoration flows is described for all alternatives in Chapter 14.0, "Hydrology – Surface Water Quality," of the Draft PEIS/R. Short-term surface water quality impacts would occur under the action alternatives because constituents that may have accumulated in dry segments of the river would be flushed from sediments within the river channel. On a long-term basis, action alternatives would improve San Joaquin River water quality conditions through decreased concentrations of constituents in San Joaquin River flows. Text on page 5-100, lines 13 through 16, in the Draft PEIS/R, has been revised to reflect the potential for short-term mobilization of pollutants to affect existing anadromous fishes. See Chapter 4.0, "Errata," of this Final PEIS/R.

NMFS-51: The analyses and impact assessment presented in the Draft PEIS/R were completed using the best available modeling tools and information. The sensitivity analyses contained in Appendix C of this Final PEIS/R were completed using the same set of tools and information, as modified only to reflect an interim representation of the RPAs set forth in the 2008 USFWS CVP/SWP Operations BO and 2009 NMFS CVP/SWP Operations BO (2009a). The sensitivity analyses include the 2009 NMFS BO action to end the SDIP, as cited in the comment. The sensitivity analyses results demonstrate that the overall impact mechanisms and significance determinations presented in the Draft PEIS/R would not change under a baseline that includes the RPAs set forth in the 2008 USFWS CVP/SWP Operations BO and 2009 NMFS CVP/SWP Operations BO, and includes the SDIP. See also response to comment NMFS-1b. Text has not been revised.

NMFS-52: It is assumed that Friant Division long-term contractors with access to affordable groundwater would pump groundwater to make up for water released as Interim and Restoration flows that is not returned through recirculation or replaced through delivery of water pursuant to Paragraph 16(b) of the Settlement. This assumption is consistent with current agricultural practices in the Friant Division and throughout the Central Valley.

Energy consumption analyses for the Friant Division in Chapter 19.0, "Power and Energy," of the Draft PEIS/R, assume no recapture of Interim and Restoration flows and that the contractors make up that loss of water through increased groundwater pumping. This approach identifies the full range of potential impacts. Text has not been revised.

NMFS-53: As described in Chapter 19.0, "Power and Energy," of the Draft PEIS/R, the Friant Power Project (FPP) includes three powerhouses located on the downstream side of Friant Dam: Friant-Kern, Madera, and River Outlet powerhouses. Generation capacity of these three facilities is 18.4 megawatts (MW), 9.8 MW, and 2.4 MW, respectively. Energy generation at the FPP under Alternatives B1 through C2 would be the same as that described for Alternatives A1 and A2. Energy generation at the FPP would be reduced, compared to the No Action Alternative, because the action alternatives would redirect flows from the powerhouses located on Friant-Kern and Madera canals, which have a combined generation capacity of 28.2 MW, to the river outlets, which have a much smaller capacity of 2.4 MW. While the head at the River Outlet plant is greater than at the Friant-Kern or Madera powerhouses, the River Outlet was sized for much smaller pre-Settlement releases to satisfy riparian and contacts along the river. Text has not been revised.

NMFS-54: Coordinated Long-Term CVP and SWP Operations (referred to as Operations Criteria and Plan (OCAP) in the comment) is not part of the action alternatives. Coordinated Long-Term CVP and SWP Operations is an ongoing action independent of the SJRRP or purpose and need of the project, and is therefore appropriately considered in the cumulative impacts discussion in Chapter 26.0, "Cumulative Impacts," of the Draft PEIS/R. See also response to comment NMFS-1b. Text has not been revised.

NMFS-55: The actions suggested by the commenter ("egg sterilization, hatchery quarantine, etc.") are included as project-level components of the proposed action described in the *Draft Environmental Assessment for 10(a)(1)(A), Enhancement of the Species Permit Application for the Collection and Transport of Spring-Run Chinook for the San Joaquin River Restoration Program* (NMFS 2012). Project-level details presented in that document are more detailed than the program-level discussions of reintroduction in the Draft PEIS/R. However, while these components of the reintroduction would reduce the potential to cause impacts to wild fall-run Chinook salmon through transmission of disease, the potential for a cumulative impact to occur remains, as described on page 26-40 in the Draft PEIS/R. This comment is substantially similar to NMFS-37; see also response to NMFS-37. For the reasons set forth above and in MCR-7, "Adequacy of Conservation Strategy," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, Reclamation and DWR do not believe that any changes

to the Conservation Strategy related to potential disease impacts are necessary. Text has not been revised.

NMFS-56: It is assumed that the comment refers to commitment of water for release as Interim and Restoration flows, which is evaluated at a project level throughout the PEIS/R. Text has not been revised.

NMFS-57: As described on page 27-20 in the Draft PEIS/R, each of the program alternatives was evaluated based on significance thresholds and potential adverse impacts to identify the environmentally preferable/superior alternative. The relative potential for each action alternative to benefit the resource areas was also identified. The action alternative(s) with the fewest adverse impacts and greatest benefits (where applicable) was identified for each resource area, as summarized in Chapter 27.0, "Other NEPA and CEQA Considerations," of the Draft PEIS/R. The summary presented in Chapter 27.0 describing the identification of the environmentally preferable alternative is based on the complete impacts analyses presented in Chapters 4.0 through 26.0 of the Draft PEIS/R. This approach is similar to the approaches used to identify the environmentally preferable/superior alternative in other recent EISs and EIRs, and is consistent with the requirements of NEPA and CEQA, as described in Section 1505.2(b) of the CEQ Regulations and in Sections 15120 and 15126.6(e)(2) of the CEQA Guidelines, and summarized in Section 27.4, "Environmentally Preferable/Superior Alternative," of the Draft PEIS/R.

Project-level impacts to fisheries identified in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R would be the same under all action alternatives (see Section 5.4.4, Impacts FSH-15 through FSH-39, on pages 5-77 through 5-111). The differences discussed in Chapter 27.0, "Other NEPA and CEQA Considerations," of the Draft PEIS/R, are based primarily on program-level impacts. Program-level impacts under Alternatives A1 and A2 are discussed in Section 5.4.3, Impacts FSH-1 through FSH-11, on pages 5-69 through 5-74. Program-level impacts under Alternatives B1 and B2 are discussed in Section 5.4.3. Impacts FSH-1 through FSH-11 are the same for Alternatives A1, A2, B1, and B2; however. Impacts FSH-12 and FSH-13 differ for Alternatives A1 and A2 versus Alternatives B1 and B2, and are described on pages 5-74 through 5-76. Program-level impacts under Alternatives C1 and C2 are discussed in Section 5.4.3. Impacts FSH-1 through FSH-11 are the same for Alternatives A1, A2, B1, and B2; however, impacts FSH-12 through FSH-14 differ for Alternatives A1 and A2 versus Alternatives C1 and C2, and are described on pages 5-76 through 5-77. Text has not been revised.

NMFS-58: The sections referenced by the commenter are from Chapter 27.0, "Other NEPA and CEQA Considerations," of the Draft PEIS/R and describe the greatest adverse impacts and benefits (where applicable) for individual resource categories. Direct and indirect impacts and benefits to fish are summarized in Section 27.5.2, "Biological Resources – Fisheries," and are based on the complete analysis of potential impacts and benefits to fisheries, as presented in Chapter 5.0 "Biological Resources – Fisheries" and Chapter 26.0, "Cumulative Impacts" of the Draft PEIS/R. The complete analyses of potential impacts and benefits to fisheries presented in Chapters 5.0 and 26.0 include

consideration of the combined effects of potential changes in related resource areas, including changes in hydrology (summarized in the sections identified by the commenter), vegetation, and other habitat conditions. Text has not been revised.

NMFS-59: The commenter is asking how biological impacts (particularly fisheries) are factored into the immediate actions that could be taken to attain the seepage management objective identified in Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R. All action alternatives include immediate actions to reduce or avoid adverse groundwater seepage impacts to Third Parties resulting from Interim or Restoration flows. Potential conditions that might trigger actions depend on site-specific concerns, and include the conditions listed on page 3-9, lines 11-17 of Appendix D. These conditions include the following:

- Reductions of Interim or Restoration flow releases at Friant Dam
- Redirection of Interim or Restoration flows at Chowchilla Bypass Bifurcation Structure
- Delivery of Interim or Restoration flows at Mendota Pool
- Delivery of Interim or Restoration flows at Arroyo Canal

These actions are not based on biological considerations; however, potential impacts of these actions (and all actions included in the alternatives) to existing fisheries or vegetation and wildlife are described in Chapters 5.0, "Biological Resources – Fisheries," and Chapter 6.0, "Biological Resources – Vegetation and Wildlife," of the Draft PEIS/R. Text has not been revised.

NMFS-60: Text on page 4-2, lines 5 through 15 in Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R, has been revised in response to comment. See Chapter 4.0, "Errata," of this Final PEIS/R.

NMFS-61: Text on page 6-1, lines 14 and 15 in Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R, has been revised to include the goal for the volume of spawning gravel, based on information provided in Appendix E, "Fisheries Management Plan," of the Draft PEIS/R in response to this comment. See revision in Chapter 4.0, "Errata," of this Final PEIS/R. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R.

NMFS-62: Comment noted. As described on page 7-2 of Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R, the monitoring methods described within the plan could be modified and updated as needed. The Physical Monitoring and Management Plan provides guidelines for observing and adjusting to changes in physical conditions within the Restoration Area during Settlement implementation. In addition to the monitoring activities identified in Appendix E, "Fisheries Management Plan," of the Draft PEIS/R, describes the framework for addressing specific actions related to fisheries, including actions to address conditions

associated with the gravel mining pits in Reach 1. See Action D4 on page 5-25 and Action Q5 on page 5-52 of Appendix E of the Draft PEIS/R. Text has not been revised.

NMFS-63: This comment is substantially similar to NMFS-3. See response to comment NMFS-3.

NMFS-64a: Assuming this commenter is referring to Paragraph 16(b) water, it was assumed in the analysis that the 16(b) supplies were allocated to Friant Division long-term contractors using percentages established as equitable among the Friant Division long-term contractors during mediation (page 12-63, lines 23 through 28, in the Draft PEIS/R). Additional details regarding how the allocations were made among the Friant Division long-term contractors are available in Appendix H, "Modeling." Analysis beyond the distribution of 16(b) water assumed that the water would be directly delivered as surface water or recharged to groundwater, but did not go further to analyze the fraction of delivered 16(b) water that could be pumped back out of groundwater recharge areas. Because of the uncertainty of how 16(b) water would actually be delivered and distributed, and the potential for Friant Division contractors to use 16(b) water, specific details of the recharge and potential for subsequent pumping of 16(b) water are considered too speculative and not reasonably foreseeable or probable at this time. Recharge and pumping of 16(b) water would be considered in at a project-level of detail when appropriate in future site-specific studies for SJRRP recirculation actions.

The commenter provides no specific documentation of the concern raised, nor does the commenter provide the basis for their comment or data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts to support their comment. Neither does the commenter suggest an alternative tool or set of assumptions to use in place of the tools and assumptions applied in support of the PEIS/R. For the reasons set forth above, no changes to the PEIS/R are necessary. See also responses to comments NMFS-48 and NFMS-49.

NMFS-64b: Assuming the commenter is referring to increased power and energy needs to pump groundwater if groundwater depth is increased, this issue is addressed in Chapter 19.0, "Power and Energy," of the Draft PEIS/R. Table 19-16 shows the change for each action alternative of Friant Division energy consumption for groundwater pumping from the existing condition/No Action Alternatives, accounting for changes in groundwater depth. The change in groundwater depth is described in Chapter 13.0, "Hydrology – Groundwater," of the Draft PEIS/R.

The commenter provides no specific documentation of the concern raised, nor does the commenter provide the basis for their comment or data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts to support their comment. Neither does the commenter suggest an alternative tool or set of assumptions to use in place of the tools and assumptions applied in support of the PEIS/R. For the reasons set forth above, no changes to the PEIS/R are necessary.

Text has not been revised.

NMFS-64c: The commenter states "[t]he changes resultant from interaction of ground water as it relates to surface water are not addressed, such as when tile drains are installed at a lower elevation than the surface water elevation, this will impact the gradient of the river, which in turn causes additional affects to ground water, surface water, and the geomorphology of the river." The interactions of shallow groundwater and surface water are described in Chapter 12.0, "Hydrology – Groundwater," of the Draft PEIS/R. The interaction of groundwater and surface water impacts is described in Chapter 26.0, "Cumulative Impacts," of the Draft PEIS/R. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R.

Installation of tile drains is included in all action alternatives as a potential long-term management action (see the description of the Physical Monitoring and Management Plan long-term management actions on page 2-52 and Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R). Because the site-specific designs and locations of potential tile drains are not known at this time, this action is described and evaluated at a program level of detail in the Draft PEIS/R. It is anticipated that any tile drains would be installed using known and accepted engineering design standards and features. It would be speculative therefore to assume that tile drains installed as part of the SJRRP would result in changes to the gradient of the San Joaquin River and, indirectly, to the geomorphology of the channel.

Text has not been revised.

NMFS-65: Potential changes in groundwater quality and land subsidence were expressed qualitatively in Chapter 12.0, "Hydrology – Groundwater," of the Draft PEIS/R, specifically on page 12-116, lines 17 through 36. Potential changes in drainage were expressed qualitatively in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R under Impacts FLD-3 and FLD-8. Text has not been revised.

NMFS-66: Table 1 of Appendix K, "Biological Resources – Fisheries," of the Draft PEIS/R presents ranges of water temperatures based on the suitability of those temperatures for various life stages of special-status fish species, including fall-, winter-, and spring-run Chinook salmon. The ranges are Suitable, Preferred, and Optimal in the notes below the referenced table, as follows:

- **Suitable** – The range of temperatures at which a given life stage has been documented occurring under natural conditions

- **Preferred** – The range that a given life stage most frequently inhabits when allowed to freely select temperatures in a thermal gradient.

- **Optimal** – The optimum temperature range for normal feeding activity, physiological response, and behavior. Some values are specifically optimums for growth.

The water temperature ranges defined in Table 1 are different from the water temperature categories presented in Table 3-1, Exhibit A of Appendix E, "Fisheries Management Plan," of the Draft PEIS/R. The water temperature categories presented in Table 3-1

pertain to spring-run and fall-run Chinook salmon, and are categorized as Optimal, Critical, and Lethal, as follows:

- **Optimal** – The upper threshold of water temperatures believed to provide optimum growth and survival under natural ecological conditions, including the existence of predation pressure, competition, and variability in food availability, etc.

- **Critical** – A range of stress-inducing water temperatures between lethal and optimal thresholds.

- **Lethal** – The upper threshold of water temperatures above which mortality may ensure, if such temperatures are sustained.

Based on the definitions presented above, and on the values presented in Table 1 of Appendix K and Table 3-1 of Appendix E, Exhibit A, the temperature ranges presented in Table 1 are below the lethal temperature threshold shown in Table 3-1, but include some temperatures within the critical temperature range identified in Table 3-1. Both sets of temperature standards are based on peer-reviewed sources. Text has not been revised.

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