Responses to Comments from San Joaquin River Exchange Contractors Water Authority and the San Joaquin River Resource Management Coalition

EC1-1: As described in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, 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 2012). 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.

As described in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, 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 Settlement implementation. The Settling Parties have also 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 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.

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.

For the reasons set forth above and in MCR-2, no changes to the Draft PEIS/R are necessary. See MCR-2 for additional information relevant to this comment.

EC1-2: 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. The Settlement resolves 18 years of litigation, and the Act both authorizes and directs the Secretary to implement the Settlement. Changes to the Settlement and/or the Act are outside of the scope of this PEIS/R.

EC1-3: Paragraph 11 of the Settlement includes a series of channel and structural improvement projects. Paragraph 9 of the Settlement states that "the Parties [to the Settlement] agree that the channel and structural improvements listed in Paragraph 11 are necessary to fully achieve the Restoration Goal." The Settlement calls for the initial projects, Phase 1, to be completed by December 31, 2013, and for the Phase 2 projects to be completed by December 31, 2016. The Settlement does not specify that the Phase 1 projects need to be completed prior to the reintroduction of Chinook salmon. Rather, the Settlement envisioned that both spring-run and fall-run Chinook would be reintroduced prior to the completion of the Phase 1 and Phase 2 projects, as presented in the Settlement's milestone dates.

As described in more detail in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," 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 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.

Reclamation has submitted a petition to the State Water Resources Control Board to change its water rights at Friant Dam to implement the Settlement. SWRCB has a well-established process for considering such changes, including whether such changes are consistent with the California Water Code. 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. These data will inform future decisions regarding implementation of the program-level actions, including the need for additional Paragraph 12 actions to further enhance success of achieving the Restoration Goal.

Paragraph 13(j) of the Settlement states that "the Parties ***intend*** that the Secretary, in cooperation with the Plaintiffs and Friant Parties, shall, to the extent permitted by applicable law and to meet the Restoration Goal and Water Management Goal, retain, acquire, or perfect all rights to manage and control all Restoration Flows and all Interim Flows (as provided in Paragraph 15) from Friant Dam to the Sacramento-San Joaquin Delta" (emphasis added). The Settlement does not require that the Secretary retain, acquire, or perfect all rights to manage and control all Restoration Flows and all Interim Flows.

EC1-4: An 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. See MCR-6, "Third-Party Concerns and Outreach," for further information regarding this comment.

As described in more detail in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, 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 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.

EC1-5: The funds spent and remaining funds currently available to implement the Settlement are outside of the scope of this PEIS/R. However, the SJRRP has recently

published an accounting of funds spent as of the end of Fiscal Year 2011 along with a detailed description of what has been accomplished thus far. This document can be found at: http://www.restoresjr.net./program_library/02-Program_Docs/index.html. The Settling Parties have also 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 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. See also MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," and MCR-3, "Order and Schedule of Implementing Settlement Actions," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-6: Paragraph 11 of the Settlement includes a series of channel and structural improvement projects. Paragraph 9 of the Settlement states that "the Parties [to the Settlement] agree that the channel and structural improvements listed in Paragraph 11 are necessary to fully achieve the Restoration Goal." The Settlement calls for the initial projects, Phase 1, to be completed by December 31, 2013, and for the Phase 2 projects to be completed by December 31, 2016. The Settlement does not specify that the Phase 1 projects need to be completed prior to the reintroduction of Chinook salmon. Rather, the Settlement envisioned that both spring-run and fall-run Chinook would be reintroduced prior to the completion of the Phase 1 and Phase 2 projects, as presented in the Settlement's milestone dates. The Settlement was a negotiated agreement among parties after 18 years of litigation. Reclamation does not have the ability to make unilateral changes to the Settlement. See response to comment EC1-3 and MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R for a discussion of the recently developed Third-Party working draft *Framework for Implementation* (SJRRP 2012b) that outlines the conditions that will be in place prior to reintroduction of spring-run Chinook salmon.

EC1-7: See MCR-6, "Third-Party Concerns and Outreach," in Chapter 2.0 of this Final PEIS/R, and response to comment EC1-4 for additional information relevant to this comment.

EC1-8: See response to comment EC1-4 for additional information relevant to this comment. Consistent with the description of project-level actions presented in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, Reclamation has filed petitions with 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, have the same purposes of use for all four water rights and add points of rediversion. The water rights involved in implementing the Settlement and Act are licensed water right Application 23, and permitted water right Applications 234, 1465, and 5638. SWRCB has approved temporary transfer petitions as part of the Interim Flows program to date. SWRCB would use data obtained during release of Interim Flows to determine appropriate water right conditions for the continued release of Interim and Restoration flows. However, in granting changes to water rights, SWRCB has established a process to ensure that there would be no legal injury to other legal water users. Concerns regarding potential injury to legal water rights should be addressed to SWRCB as part of SWRCB's process. If SWRCB finds that legal injury may occur, it will set conditions on Reclamation's permits to reduce or avoid this harm. SWRCB also monitors compliance with these conditions to ensure that they are being met and has the authority to enforce compliance under State law and through clear processes established by SWRCB. Text has not been revised.

EC1-9: The comment requests several specific agreements, lettered (a) through (f). These agreements are individually addressed, below:

a. Currently, Reclamation is working with LSJLD to develop and implement an agreement to provide financial assistance for Settlement-related costs incurred by LSJLD. The agreement is intended to assist LSJLD in adapting to changes in operations and maintenance activities, as needed, to potentially undertake additional flood management activities related to the release of Interim and Restoration flows. For more information, see MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0 of this Final PEIS/R.

b. Reclamation would continue to coordinate with CCID for the operations of Mendota Dam and Mendota Pool, consistent with existing agreements and established practices. A separate agreement regarding coordination of these operations is not necessary at this time.

c. Reclamation would continue to coordinate with SLCC for the operations of Sack Dam, consistent with existing agreements and established practices. A separate agreement regarding coordination of these operations is not necessary at this time.

d. Reclamation is in the process of developing the Recapture and Recirculation Plan, which will describe the specific procedures necessary to accomplish recirculation consistent with the provisions of Paragraph 16(a) of the Settlement and with Section 10004(a)(4) of the Act. A separate agreement is not necessary at this time.

e. Reclamation is in the process of identifying the necessary agreements needed for operation of the Hills Ferry Barrier as described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, and would work with the appropriate entities to develop and enter into such agreements, as appropriate.

f. As described on page 2-28 of the Draft PEIS/R, Reclamation would conduct or enter into an agreement with others to conduct additional maintenance activities, as necessary.

For additional information relevant to this comment, see MCR-6, "Third-Party Concerns and Outreach," in Chapter 2.0 of this Final PEIS/R. Additionally, the commenter refers to "consensus discussions." It is assumed that this refers to discussions suggested by commenter under comment EC1-4. Regarding the need for such discussions, see response to comment EC1-4.

EC1-10: The *Seepage Management Plan* (an attachment to Appendix D of the Draft PEIS/R) includes actions to reduce Interim and Restoration flows to the extent necessary to address any material adverse impacts to Third Parties. 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. Establishing a claims-processing mechanism to pay damage claims is outside of the scope of the NEPA and CEQA processes, and is therefore not included in the PEIS/R. Text has not been revised.

EC1-11: The *Seepage Management Plan* (an attachment to Appendix D of the Draft PEIS/R) includes actions to reduce Interim and Restoration flows to the extent necessary to address any material adverse impacts to Third Parties. 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. Entering into a cooperative agreement with CCID and other Exchange Contractor members for the installation of seepage mitigation facilities is outside of the scope of the NEPA and CEQA processes, and is therefore not included in the PEIS/R. Text has not been revised.

EC1-12a: Comment noted.

EC1-12b: The commenter states that "[t]he settlement was agreed to without consultation with affected third patties located downstream of Friant Dam… The Third Parties were not consulted on the proposed legislation prior to its issuance in conjunction with the Settlement." The commenter defines Third Parties in a footnote to include "the Exchange Contractors and its members, the San Joaquin Tributary Agencies and its members, and the San Luis-Delta Mendota Water Authority and its members."

Prior to execution of the Settlement documents, draft documents were made available in Sacramento, San Francisco, and Fresno for review by interested Third Parties, subject to confidentiality agreements. The Third Parties took advantage of this opportunity to review the Settlement documents and provide comments to the Settling Parties. In response to these comments, the Settling Parties made modifications to the Settlement and included language in the legislation prior to introduction to strengthen protections for Third Parties. The legislation was subsequently modified through a process that included Reclamation and other Federal agencies, the Settling Parties, and the Third Parties. Specifically, as noted by the commenter in comment EC1-12d, the involvement of the

Third Parties resulted in the inclusion in the Act of "significant protections" for the rights and interests of the Third Parties. At the same time that the legislation was under development, the Third Parties named by the commenter signed an MOU with Reclamation and other Third Parties regarding planning, designing, and implementing appropriate aspects of the Settlement. The MOU 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, while the Third Parties intend to assist the Implementing Agencies in implementing the Settlement.

EC1-12c: Comment noted. In light of the length of time and investments that have been made by agencies and stakeholders to achieve the Act and 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 since alternatives that failed to achieve the provisions of the Settlement would be neither legal nor feasible. See MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R.

EC1-12d: This comment is substantially similar to comment EC1-12b. See response to comment EC1-12b.

EC1-12e: The following funding sources are available to the SJRRP: funds deposited into the San Joaquin River Restoration Fund, funds from the Central Valley Project Restoration Fund created as part of the Central Valley Project Improvement Act, Federal appropriations, and funds from the State of California. These funding sources are described in more detail in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R.

As described in response to comment EC1-5, the SJRRP has recently published an accounting of funds spent as of the end of Fiscal Year 2011 along with a detailed description of what has been accomplished this far. This document can be found at: http://www.restoresjr.net./program_library/02-Program_Docs/index.html. The commenter assumes that $40 million has been expended from the $88 million made available from the San Joaquin River Restoration Fund. However, as of the end of Federal Fiscal Year 2011, $9.8 million has been expended from the San Joaquin River Restoration Fund. The commenter states that the State has made available $110 million to implement the SJRRP. As of the end of State Fiscal Year 2011, the State has made available approximately $100 million and has expended about $32.5 million of this amount.

The commenter assumes that no additional funding would be made available to implement the SJRRP from the State and that limited additional funding may be made available by the Federal government. 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. As described in response to comment EC1-5 and in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, 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 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.

EC1-13a: The commenter implies that by signing the Settlement, Reclamation and DWR made an impermissible commitment to implement the Settlement prior to conducting environmental review. At the outset, it should be noted that DWR was not a party to the litigation, and is not a signatory to the Settlement. Until NEPA/CEQA review is completed and the appropriate approvals are received, including a Record of Decision and Notice of Determination, Reclamation and DWR have not made Irretrievable Commitments of Resources. As the commenter notes, the purpose of the project is stated on page 1-13 of the Draft PEIS/R as "to implement the Settlement consistent with the Act." The need is stated on page 1-13 and is specified in the Settlement, "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. As described in more detail in MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA and CEQA," in Chapter 2.0 of this Final PEIS/R, 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 commenter also states that the implementation of individual projects necessary for implementation of the Settlement prior to completion of the PEIS/R is impermissible under NEPA and CEQA. As described in greater detail in MCR-4, "Segmentation Under NEPA and CEQA," in Chapter 2.0 of this Final PEIS/R, 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. 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 MOU between the State and Settling Parties only sets forth a framework to establish a process for the implementation of the Settlement, and does not commit the State to undertake any specific action(s) to assist with the implementation of the Settlement. Further, Paragraph 4(a) of the MOU clearly states that while DWR intends to assist in various aspects of the implementation of the program, specific projects and the nature and level of assistance will be identified and set forth in future agreements. No such agreements have or will be entered into prior to certification of the Final PEIS/R.

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 NULE Project. 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. Text has not been revised.

See MCR-4 and MCR-5 for additional information relevant to this comment.

EC1-13b: The commenter states that by signing the Settlement, Reclamation and DWR made an impermissible commitment to implement the Settlement prior to conducting environmental review. Until NEPA/CEQA review is completed and the appropriate approvals are received, including a Record of Decision and Notice of Determination, Reclamation and DWR have not made Irretrievable Commitments of Resources. The

purpose of the project is stated on page 1-13 of the Draft PEIS/R as "to implement the Settlement consistent with the Act." The need is stated on page 1-13 and is specified in the Settlement, "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. As described in more detail in MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA and CEQA," in Chapter 2.0 of this Final PEIS/R, 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, "[t]he 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 commenter also states "[a]t the latest, upon release of the Interim Flows, those resources in fact were utilized, in clear violation of NEPA's timing requirements." As described in greater detail in MCR-4, "Segmentation Under NEPA and CEQA," in Chapter 2.0 of this Final PEIS/R, 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. 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 NULE Project. 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. Text has not been revised.

See MCR-4 and MCR-5 for additional information relevant to this comment.

EC1-13c: The commenter asserts that through certain acts, DWR made an impermissible and irretrievable commitment of resources. In support of this assertion, the commenter lists acts by DWR including by signing an MOU with other State agencies, the Settling Parties, the Department of the Interior, and the Department of Commerce; signing a Program Management Plan as an Implementing Agency for implementation of the Settlement; and committing to provide funding for Settlement implementation. At the outset, it should be noted that this comment contains a basic factual error – DWR was not a party to the litigation, and is not a signatory to the Settlement. The MOU between the State and Settling Parties only sets forth a framework to establish a process for the implementation of the Settlement, and does not commit the State to undertake any specific action(s) to assist with the implementation of the Settlement. Further, Paragraph 4(a) of the MOU clearly states that while DWR intends to assist in various aspects of the implementation of the program, specific projects and the nature and level of assistance will be identified and set forth in future agreements. No such agreements have or will be entered into prior to the certification of the final EIS/R.

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 provision of the Settlement; they are independent actions that benefit SJRRP if it is approved through a ROD and NOD, as well as benefiting other programs, such as DWR's NULE Project.

See MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA and CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. More specifically, the comment refers to and quotes the California Supreme Court decision addressing the required timing of CEQA analysis in *Save Tara v. City of West Hollywood 45 Cal. 4th 116 (2008).* In that case, the Court found that the City of West Hollywood had, in fact, committed itself to a future action prior to the completion of CEQA documentation. Nevertheless, a full read of the Court's opinion reflects recognition on the part of the Court that the question of the appropriate timing of CEQA analysis is not based on a clear bright line that can be applied in every case, but is based on the facts of the specific situation. In as much as the Court noted that a lead agency must not commit itself to a project prior to CEQA documentation and that CEQA must be undertaken at the earliest time feasible, it also recognized that CEQA analysis must not be undertaken prematurely, prior to the necessary and proper definition of the project. In *Save Tara*, the Supreme Court stated that "[t]o be consistent with CEQA's purposes, the line must be drawn neither so early that the burden of environmental review impedes the exploration and formulation of potentially meritorious projects, nor so late

that such review loses its power to influence key public decisions about those projects." The Court further stated "[d]esirable, then, as a bright-line rule defining when an approval occurs might be, neither of those proposed – the execution of an unconditional agreement irrevocably vesting development rights, or of any agreement for development concerning a well-defined project – is consistent with CEQA's interpretation and policy foundation."

In recognizing that the undertaking of CEQA documentation can and should be appropriately deferred until the project is adequately and properly defined, the Court stated "[o]ur analysis does not require CEQA analysis before a definite project has been formulated and proposed to the agency. An agency cannot be deemed to have approved a project, within the meaning of sections 21100 and 21151, unless the proposal before it is well enough defined "to provide meaningful information for environmental assessment." (Cal. Code Regs., tit. 14, §15004, subd. (b).) Moreover, when the prospect of agency commitment mandates environmental analysis of a large-scale project at a relatively early planning stage, before all the project parameters and alternatives are reasonably foreseeable, the agency may assess the project's potential effects with corresponding generality." Summarizing its conclusion, the Court stated that "CEQA review was not intended to be only an afterthought to project approval, but neither was it intended to place unneeded obstacles in the path of project formulation and development."

The Court has also recognized that certain early actions do not reflect commitment to later environmental consequences. By adopting PRC Section 21102 (and codified as Section 15262 of the State CEQA Guidelines), the Legislature recognized that agencies should be able to undertaken early planning and feasibility studies and that the conduct of such studies does not require compliance with CEQA.

In *Save Tara*, the Court, citing State CEQA Guidelines Section 15004(b)(2)(B), established the general principle that before conducting CEQA review, agencies must not "take any action" that significantly furthers a project "in a manner that forecloses alternatives or mitigation measures that would ordinarily be part of CEQA review of that public project." The adoption of hydrographs, the conduct of pilot studies, and other initial steps noted by the commenter are initial steps intended to assist the State in further defining and assessing the nature of actions that could be included in the SJRRP, despite the fact that, as noted above, these actions have independent utility, have been addressed in project-specific CEQA documents, and do not constitute actions that foreclose any alternatives or mitigation measures.

EC1-14a: Segmentation of the SJRRP has not occurred, because Phase 1 and Phase 2 of the SJRRP are fully considered as part of "the whole of the action" that has been analyzed in the PEIS/R. 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 as common Restoration actions in all action alternatives. Common Restoration actions are described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R beginning on page 2-37. Phase 2 actions not included in all action alternatives as common Restoration actions include improvements to provide at least 4,500 cfs in Reach 4B1 (consistent with Paragraph 11(b)(1)). These actions are

included in Alternatives A2, B2, and C2 only, as described beginning on page 2-80 of the Draft PEIS/R. See MCR-4, "Segmentation Under NEPA and CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. For the reasons set forth above and as described in MCR-4, the analysis has not been segmented, and no changes to it are necessary.

EC1-14b: Phase 1 and Phase 2 have not been included in the environmental baseline in the PEIS/R. Consistent with the requirements of both NEPA and CEQA, the PEIS/R environmental baseline includes the conditions present in the study area before the implementation of the Settlement. This is proper under both NEPA and CEQA, and 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." See MCR-4, "Segmentation Under NEPA and CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. For the reasons set forth above and in MCR-4, Reclamation and DWR do not believe that segmentation of the analysis has occurred, and no changes to the analysis in the PEIS/R are necessary.

EC1-14c: The comment references comments EC1-14a and EC1-14b regarding segmentation under NEPA, referencing additional case law in support of the proposition that segmentation of a project is also impermissible under CEQA. See responses to comments EC1-14a and EC1-14b, and MCR-4, "Segmentation Under NEPA and CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. For the reasons set forth in response to comments EC1-14a and EC1-14b, and in MCR-4, the analysis has not been segmented, and no changes to it are necessary.

EC1-15a: Reclamation and DWR have stated in Chapter 1.0, "Introduction," of the Draft PEIS/R that the purpose and need of the SJRRP 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."

NEPA regulations 40 CFR 1502.13 states 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 Section 15124(b) states: "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." Thus, the purpose and need allow for the identification of project objectives as required under CEQA and the identification and evaluation of a reasonable range of feasible alternatives. The purpose and need and

project objectives identified in the Draft PEIS/R 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 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." Therefore, contrary to the claims put forth by the commenter, there is no reason for the PEIS/R to develop and analyze alternatives that would not entail implementation of the Settlement and the Act.

The comment also claims that Reclamation violated the timing requirements related to environmental analyses that are contained in NEPA by releasing Interim Flows in 2009. During the preparation of the PEIS/R, several agencies have undertaken actions that have independent utility from the SJRRP, but 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 prior to the completion of this Final PEIS/R and associated decision documents have independent utility while also potentially serving as essential first steps that contribute to the implementation of the Settlement. None of the actions taken to date, such as release of Interim Flows, data collection, and monitoring, 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 NULE Project. The data collection and monitoring activities are studies that 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 prior to completion of the Final PEIS/R were discussed in detail in the environmental compliance documents completed and certified prior to implementation of these selected actions. 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 they could be without undue speculation, as well as cumulatively with past, present, and reasonably foreseeable future projects. All actions that can be reasonably considered to be part of the SJRRP are included in the Project Description and are considered in the environmental analysis. Thus, no parts of the SJRRP have been left out of the analyses presented in the PEIS/R and no environmental effects with the potential to cause significant environmental effects have gone unexamined.

See MCR-4, "Segmentation Under NEPA and CEQA," and MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-15b: 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, modeling analyses and results, 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, "CVP/SWP Long-Term Operations Sensitivity Analyses," to this Final PEIS/R were completed using the same set of tools and information, as modified only to reflect an interim representation of the Reasonable and Prudent Alternatives (RPA) set forth in the 2008 USFWS CVP/SWP Operations BO and 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 set forth in the 2008 USFWS CVP/SWP Operations BO and 2009 NMFS CVP/SWP Operations BO (2009a) available 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 the representation of the 2008 and 2009 RPAs into a singular 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, allowing for an evaluation of the potential for the 2008 and 2009 RPAs to change the anticipated effects of the program alternatives from those presented in the Draft PEIS/R.

The sensitivity analyses presented in Appendix C of this Final PEIS/R were performed to represent a comprehensive range of RPA implementation scenarios and evaluate the potential for the 2008 and 2009 RPAs to change the anticipated effects of the program alternatives from those presented in the Draft PEIS/R. The analyses of effects presented in the Draft PEIS/R 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 then 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 DSM2), groundwater (using the Schmidt Tool and mass balance method), agricultural economics

(using CVPM), regional economics (using 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 trigger 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.

EC1-15c: The commenter states that "the flow hydrographs must be analyzed at their given level *and* at lower levels - an assessment that Reclamation concedes will take several studies and several years to complete…" The commenter references pages 61 and 62 of the Executive Summary of the Draft PEIS/R. The text referenced states that "Additional information is needed to better understand the integrity of banks and levees throughout the Restoration Area. Collecting and analyzing this information may take years to complete." This text notes that thorough understanding of the integrity of banks and levees throughout the Restoration Area may take years to complete; it does not imply that assessing the full Restoration Flows and a series of lower flow "hydrographs" is necessary. In fact, alternatives to the flow schedules set forth in Exhibit B of the Settlement would not be consistent with the terms of the Settlement. 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 prior to July 1, 2026. Potential alternatives to the Restoration Flows under Paragraph 20(d)(6), therefore, would be speculative and would not be consistent with 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 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, alternatives to the Interim and Restoration flow schedules included in the Settlement were not presented or evaluated in the PEIS/R, as they would be highly speculative and inconsistent with the terms and conditions of the Settlement.

Although alternatives to the Interim and Restoration flow schedules included in the Settlement were not presented or evaluated in the PEIS/R, the release of Interim Flows or a reduction in Restoration Flows below the full releases identified in the Exhibit B hydrographs for specific purposes is consistent with the Settlement and the Act. Paragraph 13(i) states that "… If, for any reason, full Restoration Flows are not released in any year beginning in 2014, the Secretary shall release as much of the Restoration Flows as possible, in consultation with the Restoration Administrator, in light of then-existing channel capacity and without delaying completion of the Phase 1 improvements." Section 10004(h)(3) of the Act states "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." Thus, reductions of flows in light of then-existing channel capacity and/or potential seepage impacts is included under all action alternatives and does not represent a separate alternative. As described 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. Consequently, while the PEIS/R evaluates the potential to reduce Interim and Restoration flows, these evaluations do not represent a separate alternative.

See MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. For the reasons set forth above and in MCR-5, Reclamation and DWR do not believe that any changes to the alternatives contained in the PEIS/R are necessary.

EC1-15d: Reclamation and DWR have stated in Chapter 1.0, "Introduction," of the Draft PEIS/R that the purpose and need of the SJRRP 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."

NEPA regulations 40 CFR 1502.13 states 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 Section 15124(b) states: "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." Thus, the purpose and need allow for the identification of project objectives as required under CEQA and the identification and evaluation of a reasonable range of feasible alternatives. The purpose and need and project objectives identified in the Draft PEIS/R 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 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." Therefore, there is no reason for the PEIS/R to develop and analyze alternatives that would not entail implementation of the Settlement and the Act.

See MCR-4, "Segmentation Under NEPA and CEQA," and MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-15e: The commenter states that DWR is not a party to the Settlement and, therefore, is not bound like Reclamation, and should "consider alternatives to the Phase 1 and Phase 2 projects, as well as the hydrographs." DWR disagrees with this statement and believes that a reasonable range of feasible alternatives were evaluated in the Draft PEIS/R, as required under CEQA.

The Act authorizes and directs the Secretary to implement the terms and conditions of the Settlement in cooperation with the State of California. In this case, the Act and the Settlement have come after 18 years of legal dispute and negotiation. In light of the length of time and investments that have been made by agencies and stakeholders in achieving the Act and 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 since 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 prior to July 1, 2026. Potential alternatives to the Restoration Flows under Paragraph 20(d)(6), therefore, would be speculative and in violation of 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, as they would be highly speculative and in violation of the terms and conditions of the Settlement.

See MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," Section 2.1.2, "Range of Alternatives," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-16a: Comment noted.

EC1-16b: The Draft PEIS/R acknowledges that the Settlement milestone dates may change. For example, the Executive Summary of the Draft PEIS/R states the following: "Table ES-2 shows milestone dates anticipated in the Settlement. The Implementing Agencies are committed to attaining these milestones, as demonstrated by the release of Interim Flows beginning in October 2009; however, these dates may change, pending completion of compliance, coordination, consultation, data collection, and related efforts." As described in more detail in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R the Settling Parties and Implementing Agencies 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 Settlement and presents a schedule and budget for these actions.

EC1-17: The commenter states that the Draft PEIS/R fails to analyze a sufficient range of alternatives, but does not provide a basis for this statement. 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 unreasonable, in this case the Act and the Settlement have come after 18 years of legal dispute and negotiation. In light of the length of time and investments that have been made by agencies and stakeholders in achieving the Act and 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 since alternatives that failed to achieve the provisions of the Settlement would be neither legal nor feasible.

As on page 2-5 of the Draft PEIS/R, common restoration actions are physical actions to achieve the Restoration Goal that are common to all six action alternatives. The common Restoration actions are analyzed at a program level of detail throughout the PEIS/R. See MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-18: Under Paragraph 13(i) of the Settlement, the Secretary, in consultation with the RA, would take the steps outlined in the Paragraph that best achieves the Restoration Goal. All provisions of Paragraph 13(i) are included under all action alternatives. 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. Accordingly, the PEIS/R does not evaluate alternatives to the provisions of Paragraph 13(i).

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. Evaluation of the efficacy of these or other Settlement provisions is beyond the scope of the PEIS/R. See MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

Consistent with the description of project-level actions presented in Chapter 2.0, " Description of Alternatives," of the Draft PEIS/R, Reclamation has filed petitions with 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, have the same purposes of use for all four water rights, and add points of rediversion. The water rights involved in implementing the Settlement and Act are licensed water right Application 23, and permitted water right Applications 234, 1465, and 5638.

EC1-19: The alternative suggested by the commenter asserts that the PEIS/R should analyze an alternative that relies on naturally occurring high flows to provide attraction, outmigration, and gravel mobilization flows. The alternatives described in the PEIS/R are consistent with this comment and with the Settlement. All action alternatives described in the PEIS/R include the release of Interim and Restoration flows according to the six flow schedules specified in Exhibit B of the Settlement, and which are based on six hydrologic year types determined according to the annual unimpaired runoff at Friant Dam. Exhibit B of the Settlement also includes provisions for developing more continuous flow schedules between year types and ramping flow transitions. These provisions are reflected in the alternatives described in the PEIS/R. As described in Exhibit B, the flow schedules were designed to accommodate various types of flow objectives that would provide for natural processes, including attraction, outmigration, and gravel mobilization. The flow schedules identify specific objectives, including Fall Base and Spring-Run Incubation Flow, Fall-Run Attraction Flow, Fall-Run Spawning and Incubation Flow, Winter Base Flows, Spring Rise and Pulse Flows, Summer Base Flows, Spring-Run Spawning Flows, Flushing Flows, and Riparian Recruitment Flows.

The flow schedules also allow implementation variation during the year, through the application of flexible flow periods and pulse flows, as described in Exhibit B of the Settlement and summarized on pages 2-20 through 2-22 of the Draft PEIS/R. In this way, the alternatives described in the Draft PEIS/R reflect the naturally occurring high flows to provide attraction, outmigration, and gravel mobilization flows.

Alternatives to the flow schedules set forth in Exhibit B of the Settlement would not be consistent with the terms of the Settlement. 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 prior to July 1, 2026. Potential alternatives to the Restoration Flows under Paragraph 20(d)(6), therefore, would be speculative and would not be consistent with 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 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, alternatives to the Interim and Restoration flow schedules included in the Settlement were not presented or evaluated in the PEIS/R, as they would be highly speculative and inconsistent with the terms and conditions of the Settlement. See MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. For the reasons set forth above and in MCR-5, Reclamation and DWR do not believe that any changes to the alternatives contained in the PEIS/R are necessary.

EC1-20: The section of the Act to which the commenter refers states, "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." Section 10004(h) requires several elements be included in the PEIS/R, including an evaluation of possible impacts associated with release of Interim Flows and mitigation measures for impacts determined to be significant. As provided by the Settlement and required by the Act, all action alternatives include actions to reduce Interim and Restoration flows as necessary to avoid or reduce adverse or potential seepage impacts.

EC1-21: Reclamation will consult with the regulatory agencies who oversee the conservation of sensitive species and habitats on actions related to both the program- and project-level actions identified in the Draft PEIS/R, as appropriate. Both CESA and ESA regulations currently apply to both public and private lands within the Restoration Area. These species protections are not expected to change either with or without the implementation of the SJRRP. 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 in detail in MCR-6, "Third-Party Concerns and

Outreach," in Chapter 2.0 of this Final PEIS/R. See MCR-6 for additional information relevant to this comment.

EC1-22: The brief overview of the study area provided in the Executive Summary is merely intended to orient the reader to the physical setting of the SJRRP and does not provide the same level of detail presented in the main body of the Draft PEIS/R. Contribution of flood water from the Kings River and other major tributaries is described in detail in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R. The contribution of other tributary watersheds, such as Panoche-Silver Creek watershed, is not explicitly identified in the Draft PEIS/R. However, historical contributions from these watersheds are accounted for in the operations of the flood control features described in Chapter 11.0 and the hydrology used to model changes in flows in the San Joaquin River under the action alternatives. The brief overview of the study area provided in the Executive Summary provides a sufficient level of detail for the purpose of the Executive Summary. Text has not been revised.

EC1-23: The removal of sediment would apply to sediment accumulation that would otherwise cause Interim or Restoration flows to exceed channel capacity, as summarized in the Executive Summary and described in greater detail in Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R. Additional sediment removal could be recommended by the RA to the Secretary for implementation as part of the SJRRP, pursuant to Paragraph 12 of the Settlement. Text has not been revised.

EC1-24: Entries in Table ES-3 are consistent with the descriptions of actions in the site-specific NEPA/CEQA compliance documents for SJRRP actions completed or in progress. Water quality monitoring in wells is not excluded by the text presented in Table ES-3. Text has not been revised.

EC1-25: Table ES-4 on page 4 of the Executive Summary of the draft PEIS/R has been revised in response to the comment to include compliance with the Porter-Cologne Act, consistent with the description in on page 28-28 of the Draft PEIS/R. See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-26: The brief overview of the study area provided in the Executive Summary is merely intended to orient the reader to the physical setting of the SJRRP. Contribution of flood water from the Kings River and other major tributaries is described in detail in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R. See Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R, for discussion of flood flows and levee conditions throughout the Restoration Area, including the conveyance of Kings River flood flows through Reaches 3 and 4A of the San Joaquin River. See Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, for discussion of the provisions included under all action alternatives to minimize increases in flood risk. The Mendota Pool Bypass is considered at a program level of detail in the PEIS/R, and further evaluation of flood effects on the Mendota Pool and in Reach 2B will be included in the site-specific Mendota Pool Bypass and Reach 2B Improvements Project. Text has not been revised.

EC1-27: Preceding text on the same page identifies that the PEIS/R is prepared consistent with authorities, including the NEPA, CEQA, and the Act. Text has not been revised.

EC1-28: Preceding text on page 1-1 of the Draft PEIS/R identifies that the PEIS/R is prepared consistent with authorities including the Act, and that the PEIS/R identifies mitigation measures consistent with this and other authorities. Text has not been revised.

EC1-29: Paragraph 11 of the Settlement includes a series of channel and structural improvement projects. Paragraph 9 of the Settlement states that "the Parties [to the Settlement] agree that the channel and structural improvements listed in Paragraph 11 are necessary to fully achieve the Restoration Goal." The Settlement calls for the initial projects, Phase 1, to be completed by December 31, 2013, and for the Phase 2 projects to be completed by December 31, 2016. The Settlement does not specify that the Phase 1 projects need to be completed or nearly completed prior to the reintroduction of Chinook salmon. Rather, the Settlement envisioned that both spring-run and fall-run Chinook would be reintroduced prior to the completion of the Phase 1 and Phase 2 projects, as presented in the Settlement's milestone dates. The Settlement does not state that these projects are necessary for the protection of salmon.

Paragraph 12 of the Settlement states that "the Parties [to the Settlement] acknowledge that there are likely additional channel or structural improvements (including, for example, additional fish screening, restoration of side channel habitat and augmentation of spawning gravel) that may further enhance the success of achieving the Restoration Goal." The Settlement does not specify that any Paragraph 12 actions are to be completed prior to reintroduction. Rather, the Settlement states that these projects "may further enhance the success of achieving the Restoration Goal." The Settlement does not state that these projects are necessary for the protection of salmon.

The Draft PEIS/R evaluates the SJRRP as described in the Settlement, consistent with the requirements in the Act. Consistent with NEPA and CEQA, the Draft PEIS/R evaluates the direct, indirect, and cumulative impacts of implementing the Settlement consistent with the Act. The commenter suggests that additional analysis will be necessary, but 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.

As described in more detail in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, 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 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.

EC1-30: The Settlement was agreed to by both plaintiffs and defendants in *NRDC, et al., v. Rodgers, et al.* Reclamation does not have the unilateral authority to make changes to the Settlement. Paragraph 11(a) of the Settlement states "The Parties anticipate that the highest priority improvements as described in Paragraphs 11(a)(1) through (10) can be developed and implemented in accordance with the milestone dates in the timeline set forth in Exhibit C. The Secretary, however, agrees that such highest priority improvements ***shall*** be completed no later than December 31, 2013, subject to Paragraphs 21(c), 24, and 36 of this Settlement" (emphasis added). Similar language can be found in Paragraph 11(b) of the Settlement relative to the Phase 2 projects and in Paragraph 14 relative to salmon reintroduction. As described in response to comment EC1-5, 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 Settlement and presents a schedule and budget for these actions.

Availability of funding has been added to the discussion of items that may change the Implementing Agencies' ability to attain the milestone dates on page 1-4, line 11, of the Draft PEIS/R. See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-31: The commenter refers to Table 1-2 of the Draft PEIS/R, which identifies Key Settlement Milestones, including that the "Secretary of the Interior, in consultation with NRDC and FWA, develops operational guidelines" by December 2013. The guidelines referred to in the text are not guidelines for Phase 1 improvements, but rather the stipulation set forth in Settlement paragraph 13(j) for the Secretary and Settling Parties to develop procedures for several items, including but not limited to the following:

- Determining water-year type and timing of Restoration Flow releases
- Measuring, monitoring, and reporting of daily releases of Restoration Flows
- Accounting for reductions in deliveries to the Friant Division due to Interim and Restoration flows
- Determining increases in seepage losses or downstream diversions beyond those assumed in Exhibit B
- Making real-time changes to Friant Dam releases
- Determining the extent to which flood releases meet the Restoration Flow targets set in Exhibit B

- Making amendments to said guidelines

Guidelines for these topics will be included in the SJRRP Restoration Flow Guidelines. The Restoration Flow Guidelines will be completed and made public before the release of Restoration Flows in 2014. Since 2009, Reclamation has been leading the development of the Restoration Flow Guidelines in consultation with the Settling Parties. To test and refine the language in the Restoration Flow Guidelines in advance of 2014, Reclamation has been implementing draft versions of the Restoration Flow Guidelines since 2010. These versions are incomplete and contain language that requires further refinement. As such, the draft documents have not been made public for comment as they do not reflect consensus between Reclamation and the Settling Parties.

These draft guidelines are being continuously refined by Reclamation in consultation with the Settling Parties, and are scheduled for completion before March 1, 2014. When the Restoration Flow Guidelines are completed, they will be posted publically. Reclamation would also brief the Third Parties on the Restoration Guidelines, and discuss and answer questions. The Implementing Agencies are conducting and will continue to conduct extensive public and stakeholder outreach activities to engage and inform interested parties of SJRRP activities.

The commenter also references the "4(d) rule." NMFS is in the process of developing a proposed rule for designating the SJRRP experimental spring-run Chinook population as a Non-Essential Population through Section 4(d) of the ESA, as a requirement of the Act. Reintroduction of spring-run Chinook as an experimental population provides regulatory relief. The experimental population always receives "Threatened" status, which under Section 9 of ESA prohibits take. Section 4(d) allows exceptions to the Section 9 prohibition for conservation purposes, only for threatened species. This would ensure a *de minimus* impact on Third Parties. The 4(d) rule provides relief from liability for landowners and helps ensure that a population will develop regardless of take. The proposed 4(d) rule would be subject to public review through notice and publication of a draft in the Federal Register and a Draft Environmental Assessment. Further discussion relevant to this topic is included in MCR-6, "Third-Party Concerns and Outreach," in Chapter 2.0 of this Final PEIS/R.

EC1-32: As cited in the comment, the purpose of the Draft PEIS/R is "…to disclose the potential direct, indirect, and cumulative impacts of implementing the Settlement, as directed by the Act…" Further, the purpose for action is stated in Chapter 1.0, "Introduction," of the Draft PEIS/R as "…to implement the Settlement consistent with the Act." The Act includes all sections, including Section 10004(d), thus the text already includes the specific requirements suggested by the commenter. Text has not been revised. See MCR-6, "Third-Party Concerns and Outreach," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-33: CEQA requires that an EIR evaluate the environmental impacts of a proposed project, rather than the financial feasibility of the proposed project or the ability of the project proponent to pay for it. This concept was discussed by the court in *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (1st

Dist. 2002) 102 Cal.App.4th 656, which stated "As is self-evident from its name, an EIR is an *environmental* impact report. As such, it is an informational document, not one that must include ultimate determinations of economic feasibility. CEQA explicitly states that the purpose of an EIR is simply 'to *identify* the significant effects on the environment of a project, to *identify* alternatives to the project, and to *indicate* the manner in which those significant effects can be mitigated or avoided.'" *Id* at 689-690 (emphasis in original).

EC1-34: All six action alternatives include the use of the Eastside Bypass, and, potentially, the Mariposa Bypass to convey Interim and/or Restoration flows, as described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R. Under Alternatives A1, B1, and C1, Reach 4B1 would convey at least 475 cfs, and the Eastside and Mariposa bypasses would convey any remaining Interim and Restoration flows. Under Alternatives A2, B2, and C2, Reach 4B1 would convey at least 4,500 cfs, and the Eastside and Mariposa bypasses would not convey Interim or Restoration flows after completion of Reach 4B1 channel modifications. The permanent use of the bypasses for implementing the Settlement would be determined as part of the Reach 4B, Eastside Bypass, and Mariposa Bypass Channel and Structural Improvements Project.

Reclamation and DWR have been coordinating and will continue to coordinate with the CVFPB for project-level actions to determine if easements are required and the appropriate measures to address potential changes to the existing systems. Reclamation continues to investigate the potential need for agreements with landowners in the bypasses to route Interim and Restoration flows through the bypasses. While this analysis of the need for agreements is still underway, the PEIS/R addresses the environmental impacts and identifies mitigation measures, where necessary, for use of the bypass to convey Interim and Restoration flows. The PEIS/R provides project-level analyses of the release and conveyance of Interim and Restoration flows and of conducting increased operations and maintenance activities associated with implementing the Settlement. Project-level operations and maintenance activities would include the removal of vegetation that would cause Interim or Restoration flows to exceed channel capacity or lead to an increase in water surface elevation during flood events (as described in Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R, and on page 2-51, lines 28 through 35, of the Draft PEIS/R, as modified in Chapter 4.0, "Errata," of this Final PEIS/R). Project-level impacts and mitigation measures associated with these actions are described in Chapters 4.0 through 26.0 of the Draft PEIS/R.

The PEIS/R provides program-level analyses of increased habitat and other modifications within the Restoration Area (as part of program-level actions described beginning on page 2-37 of the Draft PEIS/R). Program-level impacts and mitigation measures associated with these actions are described in Chapters 4.0 through 26.0 of the Draft PEIS/R. Reclamation and DWR are currently evaluating the potential to create and/or enhance habitat within the bypasses as part of the Reach 4B, Eastside Bypass, and Mariposa Bypass Channel and Structural Improvements Project. NEPA/CEQA analyses for this site-specific project will include the specific impacts and mitigation measures necessary to address the creation or enhancement of habitat for threatened or endangered species in the Eastside and Mariposa bypasses, and will evaluate the need to compensate

underlying fee owners for this permanent use. Most program-level actions described in Chapter 2.0 of the Draft PEIS/R include a wide range of possible future actions. For example, actions to modify floodplain and side-channel habitat outside described on page 2-45 include "no modifications; creating and/or enhancing additional floodplain habitat; creating, enhancing, or isolating side channels; and/or reducing sand transport." This broad range of potential future actions allows flexibility to respond to changing needs and conditions.

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.

As discussed in MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA and CEQA," in Chapter 2.0 of this Final PEIS/R, 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. For the reasons set forth above and in MCR-5, Reclamation and DWR do not believe that the alternatives suggested by the comment should be included in the PEIS/R, nor are they necessary to satisfy NEPA and CEQA. See MCR-5 for additional information relevant to this comment.

EC1-35: The "preestablished rate" refers to the monetary rate of $10 per acre-foot specified in Paragraph 16(b)(3) of the Settlement, and does not apply to a rate or amount of water recapture pursuant to Paragraph 16(a) of the Settlement. Text has not been revised.

EC1-36: 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 spent as of the end of Fiscal Year 2011 along with a detailed description of what has been accomplished this far. This document can be found at: http://www.restoresjr.net./program_library/02-Program_Docs/index.html. The commenter assumes that $40 million is remaining for Settlement implementation, but does not provide the basis for this statement. However, as of the end of Federal Fiscal Year 2011, $9.8 million has been expended from the $88 million made available from the San Joaquin River Restoration Fund. As of the end of State Fiscal Year 2011, the State

has made available approximately $100 million and has expended about $32.5 million of this amount.

See also response to comment EC1-12 and MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R.

EC1-37: The comment identifies several relevant locations in the Draft PEIS/R where details of the removal of sediment and vegetation are located. How and when such actions would be implemented is subject to the growth of vegetation and sediment deposition in the study area in the future, as well as to agreements for the operations and maintenance of the system, as described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R (including on page 2-28, lines 12 through 26, and page 2-95, lines 1 through 40). The Draft PEIS/R provides evaluation of the potential impacts of these actions. Text has not been revised.

EC1-38: Table 1-3 of the Draft PEIS/R has been revised to include reference to Section 4(d) of the Federal ESA. See Chapter 4.0, "Errata," of this Final PEIS/R. Text presented in Table 1-3 does not exclude referenced sections of the California Water Code, thus the addition of Sections 1707 and 1735 to the table are not necessary.

EC1-39: Text in Executive Summary Table ES-3 and on page 1-13, lines 19 through 24, of the Draft PEIS/R is revised to include additional documents as recommended. See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-40: 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 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." The purpose and need as stated in Chapter 1.0, "Introduction," of the Draft PEIS/R allow for the identification of project objectives as required under CEQA and the identification and evaluation of 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 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." 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."

The description of alternatives presented in 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 provide a full disclosure of the potential impacts of implementing the action alternatives, and identify feasible mitigation measures, where available, for all significant and potentially significant impacts. Although CEQ has indicated that under NEPA there are conditions in which compliance with the law does not necessarily make an alternative unreasonable, in this case the Act and the Settlement have come after 18 years of legal dispute and negotiation. In light of the length of time and investments that have been made by agencies and stakeholders in achieving the Act and the Settlement, the Implementing Agencies have determined that alternatives that do not comply with the Act and the Settlement are neither reasonable nor feasible.

See MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. For the reasons stated above and in MCR-5, Reclamation and DWR believe that changes to the project purpose are not warranted.

EC1-41: In combination with comment EC1-42, the commenter suggests revising the statement of need to include a requirement of the Act. Compliance with the Act is identified in the statement of Purpose. Additionally, compliance with the Act and all other applicable laws, regulations, BOs, and court orders will be required during implementation of the Settlement, as described in Chapter 28.0, "Consultation, Coordination, and Compliance," of the Draft PEIS/R. Text has not been revised.

EC1-42: In combination with comment EC1-41, the commenter suggests revising the statement of need to include a requirement of the Act. Compliance with the Act is identified in the statement of Purpose. Additionally, compliance with the Act and all other applicable laws, regulations, BOs, and court orders will be required during implementation of the Settlement, as described in Chapter 28.0, "Consultation, Coordination, and Compliance," of the Draft PEIS/R. Text has not been revised.

EC1-43: This comment is substantially similar to comment EC1-42. See response to comment EC1-42.

EC1-44: This comment is substantially similar to comment EC1-42. See response to comment EC1-42.

EC1-45: The PEIS/R demonstrates that, while adverse impacts would occur to various resources with implementation of 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 term

"material adverse effect" used in Paragraph 7 of the Settlement can be interpreted through case law as an adverse effect that, had the Settling Parties anticipated it, would likely have had a bearing on the outcome of the settlement process. The Act subsequently described, in Section 10004, specific provisions for mitigation of potential impacts on adjacent and downstream water users and landowners, as follows:

> *(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.*

The completion of 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. Further, the Draft PEIS/R calls out specific mitigation measures to reduce or avoid impacts as defined by CEQA. Therefore, the identification and implementation of these measures fulfills commitments under CEQA to disclose and minimize impacts, when appropriate.

EC1-46a: 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 as common Restoration actions in all action alternatives. Common Restoration actions are described in Chapter 2.0 of the Draft PEIS/R, "Description of Alternatives," beginning on page 2-37. Phase 2 actions not included in all action alternatives as common Restoration actions include improvements to provide at least 4,500 cfs in Reach 4B1 (consistent with Paragraph 11(b)(1)). These actions are included in Alternatives A2, B2, and C2 only, as described beginning on page 2-80 of the Draft PEIS/R. During the preparation of the PEIS/R, several agencies have undertaken actions that have independent utility from the SJRRP, but 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 prior to the completion of this Final PEIS/R and associated decision documents, have independent utility while also potentially serving as essential first steps that contribute to the implementation of the Settlement. None of the actions taken to date, such as release of Interim Flows, data collection, and monitoring, 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 NULE Project. All actions that can be reasonably considered to be part of the SJRRP are included in the Project Description and are considered in the environmental analysis. Thus, no parts of the SJRRP have been left out of the analyses presented in the PEIS/R and no environmental effects with the potential to cause significant environmental effects have gone unexamined.

Further, all actions completed prior to the completion of the Final PEIS/R, 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 implementation of the Settlement. The program-level analysis presented in the PEIS/R addresses the full range of effects of implementing the Settlement, including the program-level and project-level actions, as well as cumulative impacts. See MCR-4, "Segmentation Under NEPA/CEQA," and MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. For the reasons stated above and in MCR-4 and MCR-5, Reclamation and DWR do not believe that any additional analysis in the PEIS/R is required.

EC1-46b: Section 1502.21 of the CEQ Regulations states that, "Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment." State CEQA guidelines, Section 15148, states, "Preparation of EIRs is dependent upon information from many sources, including engineering project reports and many scientific documents relating to environmental features. These documents should be cited but not included in the EIR." Development of the PEIS/R required use of information from many sources, some of which were publicly available prior to the publication of the Draft PEIS/R. The IPAR is described in the Draft PEIS/R on pages 2-1 through 2-3. The IPAR is published and available in its entirety online at www.restoresjr.net. Appendix G, "Plan Formulation," of the Draft PEIS/R was not published separate from the Draft PEIS/R and is therefore included for informational purposes. Text has not been revised.

EC1-47: See Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, for a description of actions to operate Friant Dam for the release of Interim and Restoration flows (pages 2-17 through 2-22) and reintroduction of salmon (page 2-43). These actions are included under all action alternatives.

EC1-48: Reclamation acknowledges the process to develop a Temporary Access Permit has been more complex than was initially anticipated. However, Reclamation continues efforts to obtain access through mutually acceptable agreements with landowners. The statement referred to in the comment is not intended as "hostile," and reflects the ongoing status that several studies and efforts to collect detailed information regarding site conditions have and continue to be delayed because land access has not been granted to the Implementing Agencies for many key locations in the Restoration Area. Text has not been revised.

EC1-49: Revision of the Draft PEIS/R to incorporate Section 10004(d) of the Act is unnecessary, as compliance with the Act is identified in the statement of Purpose. The identification of alternatives that are evaluated in the Draft 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 process is documented in the IPAR (SJRRP 2008), which evaluated numerous actions, and ultimately described eight initial alternatives for the Restoration Goal and eight initial alternatives for the Water Management Goal, all with a primary emphasis on implementation ranges of physical actions presented in the Settlement. This approach was chosen to identify the possible range of physical actions that could be implemented through subsequent site-specific projects. 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 IPAR. As the Initial Restoration and Water Management alternatives were developed, the Implementing Agencies also identified data requirements for their evaluation. It was found that evaluation and comparison of initial program alternatives presented in the IPAR would have required a greater level of project specificity than could be achieved in a reasonable time frame because of limited available information and limited ability to collect sufficient additional data in a timely manner.

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 provide a full disclosure of the potential impacts of implementing the action alternatives, and identify feasible mitigation measures, where available, for all significant and potentially significant impacts.

Although CEQ has indicated that under NEPA there are conditions in which compliance with the law does not necessarily make an alternative unreasonable, in this case the Act and the Settlement have come after 18 years of legal dispute and negotiation. In light of the length of time and investments that have been made by agencies and stakeholders in achieving the Act and the Settlement, the Implementing Agencies have determined that alternatives that do not comply with the Act and the Settlement are neither reasonable nor feasible. See also MCR-5, “Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA,” in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. For the reasons stated above and in MCR-5, Reclamation and DWR do not believe that any alternatives other than those already included in the Draft PEIS/R are required to represent a reasonable range of feasible alternatives under NEPA and CEQA, and that the impacts from implementing any of the range of alternatives are fully disclosed in sufficient detail for program- and project-level analysis.

EC1-50a: Table 2-1 of the Draft PEIS/R includes all Phase 1 and Phase 2 actions, though it does not call these actions out as such. Phase 1 and Phase 2 actions are appropriately included in the action alternatives and are evaluated at a program level in the Draft PEIS/R. All Phase 1 actions and most Phase 2 actions are included in all action alternatives, and are described in Chapter 2.0 of the Draft PEIS/R, “Description of Alternatives,” beginning on page 2-37. Phase 2 actions not included 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 included in Alternatives A2, B2, and C2 only, as described beginning on page 2-80 of the Draft PEIS/R.

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 unreasonable, in this case the Act and the Settlement have come after 18 years of legal dispute and negotiation. In light of the length of time and investments that have been made by agencies and stakeholders in achieving the Act and 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 since alternatives that failed to achieve the provisions of the Settlement would be neither legal nor feasible.

See MCR-4, "Segmentation Under NEPA/CEQA," and MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-50b: Phase 1 and Phase 2 actions are appropriately included in the action alternatives and are evaluated at a program level in the Draft PEIS/R. All Phase 1 actions and most Phase 2 actions are included in all action alternatives, and are described in Chapter 2.0 of the Draft PEIS/R, "Description of Alternatives," beginning on page 2-37. Phase 2 actions not included 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 included in Alternatives A2, B2, and C2 only, as described beginning on page 2-80 of the Draft PEIS/R. The components of the SJRRP listed by the commenter are analyzed in Draft PEIS/R in Chapters 4.0 through 26.0 (including reintroduction of spring-run Chinook salmon, construction of Phase 1 and Phase 2 actions, and recirculation of recaptured Interim and Restoration flows). See pages 2-7 through 2-10 of the Draft PEIS/R for a summary of each alternative. See MCR-4, "Segmentation Under NEPA/CEQA," and MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-51: The Draft PEIS/R does not compare the "utility" or feasibility of using Reach 4B1 against using the bypasses for conveying Restoration Flows but does evaluate the potential impacts of the differences in flow routing among Alternatives A1, B1, and C1 against Alternatives A2, B2, and C2. The Draft PEIS/R evaluates the potential for all impacts to occur against the existing conditions, defined as the conditions in place when the Notice of Preparation was published in August 2007, and includes the potential impacts that could occur as a result of the release of Interim Flows during Water Years 2010, 2011, and 2012. The identification of alternatives that are evaluated in the Draft PEIS/R was the culmination of an extensive process undertaken by Reclamation and DWR and involving the Implementing Agencies in coordination with Settling Parties, other stakeholders, and interested members of the public. The process is documented in the IPAR (SJRRP 2008), which evaluated numerous actions and ultimately described eight initial alternatives for the Restoration Goal and eight initial alternatives for the Water Management Goal, all with a primary emphasis on implementation ranges of physical actions presented in the Settlement. This approach was chosen to identify the possible range of physical actions that could be implemented through subsequent site-specific projects. 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 IPAR. As the Initial Restoration and Water Management alternatives were developed, the Implementing Agencies also identified data requirements for their evaluation. It was found that evaluation and comparison of initial program alternatives presented in the IPAR would have required a greater level of project specificity than could be achieved in a reasonable time frame because of limited available information and limited ability to collect sufficient additional data in a timely manner. See also MCR-4, "Segmentation Under NEPA/CEQA," and MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

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. See MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. Further, as described in MCR-2, 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 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.

EC1-52: The description of alternatives presented in 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. Chapter 2.0 describes how all Phase 1 actions and most Phase 2 actions are included in all action alternatives; subsequent sections of Chapter 2.0 describe the range of potential implementation of these actions. Phase 2 actions not included in all action alternatives 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. 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. 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 provide a full disclosure of the potential impacts of implementing the action alternatives. See MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

The commenter provides several examples of the concern raised; these examples are addressed individually, below.

- **San Joaquin River Headgate Structure** – The commenter asks, "What environmental issues are raised by the modification of the San Joaquin River Headgate Structure to enable fish passage and flow routing?" The project-specific details of potential modifications to the San Joaquin River Headgate Structure were not available at the time of preparation of analyses for the Draft PEIS/R. For this and other actions evaluated at a program-level of detail, a potential range of future construction and management actions is included in the alternatives to bracket the probable range of effects. As described on page 1-9 of the Draft PEIS/R, this bracketed range of potential effects allowed for an informed analysis of systemwide and cumulative impacts resulting from implementing the entirety of the Settlement. Construction-related impacts for many actions evaluated at a program level of detail would be similar; thus, construction-related impacts are described generally in Chapters 4.0 through 26.0 of the Draft PEIS/R, rather than for each individual potential action. Impacts associated with modifications to the San Joaquin River Headgate Structure are unique to Alternatives A2, B2, and C2, and are therefore included in the discussion of the potential impacts of these alternatives. Reclamation and DWR are currently evaluating modifications to the San Joaquin River Headgate Structure at a project level of detail as part of the Reach 4B, Eastside Bypass and Mariposa Bypass Channel and Structural Improvements Project.

- **Sack Dam and Arroyo Canal** – The commenter states, "current plans for Sack Dam and the Arroyo Canal have escalated from initial considerations," and asks, "Where is the discussion of these changes and alternatives?" The project-specific

details of potential modifications to Sack Dam and the Arroyo Canal were not available at the time of preparation of analyses for the Draft PEIS/R. Reclamation and Henry Miller Reclamation District are currently studying alternatives to these actions as part of the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project. As part of this project, Reclamation and Henry Miller Reclamation District are evaluating alternative ways to implement the provisions of Paragraphs 11(a)(6) and 11(a)(7) of the Settlement at a project-level of detail. As previously mentioned, based on the program-level analysis presented in the Draft PEIS/R, program-level mitigation measures and performance standards are identified that would apply to subsequent, future project components implemented as part of the Settlement (as conditions of approval). These performance standards will be incorporated into the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project to avoid or reduce impacts, as appropriate. In this way, the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project and Draft PEIS/R analyses are consistent with each other, the Act, and with NEPA and CEQA.

- **Eastside and Mariposa Bypasses** – The commenter asks, "Where is the discussion for modification of the Eastside and Mariposa bypasses to either use those bypasses in their current condition, create low-flow channels within them, create low flow channels adjacent to them, control the vegetation within the canals if they are used for fish passage, and other issues raised by the use of these bypasses for non-flood purposes?" Potential actions to modify the Eastside and Mariposa bypasses to enable fish passage (including construction of low-flow channels) are described on pages 2-41 and 2-42 of the Draft PEIS/R. Specific actions to control vegetation to maintain channel capacity are described in the Draft PEIS/R at both the project level (pages 2-23, lines17 through 22, and page 2-51, lines 24 through 27) and the program level (page 2-52, lines 18 through 22). Other potential impacts associated with implementation of these and other program-level actions are described in Chapters 4.0 through 26.0 of the Draft PEIS/R.

- **Seasonal Barriers at Mud and Salt Sloughs** – The commenter also states, "There is no discussion regarding the deployment of seasonal barriers at Mud and Salt Sloughs." All action alternatives include actions to enable deployment of seasonal barriers at Mud and Salt sloughs, consistent with Paragraph 11(a)(10) of the Settlement. These actions are described on page 2-42, lines 14 through 19, of the Draft PEIS/R. Appendix G, "Plan Formulation," of the Draft PEIS/R provides additional detail in a preliminary assessment of these actions (see Option 10, page 3-17, in the Restoration and Water Management Actions in Program Alternatives – Attachment to Appendix G of the Draft PEIS/R).

- **Chowchilla Bypass Bifurcation Structure** – The commenter also states, "There is no discussion regarding the modification of the Chowchilla Bypass Bifurcation Structure." All action alternatives include actions to modify the Chowchilla Bypass Bifurcation Structure to provide fish passage and prevent fish entrainment, consistent with Paragraph 11(b)(2) of the Settlement. These actions are described on page 2-42, lines 20 through 34, of the Draft PEIS/R. Appendix

G, "Plan Formulation," of the Draft PEIS/R provides additional detail in a preliminary assessment of these actions (see Option 12, page 3-21, in the Restoration and Water Management Actions in Program Alternatives – Attachment to Appendix G of the Draft PEIS/R).

- **Gravel Pits** – The commenter also states, "There is no discussion regarding the filling or isolating of gravel pits and the alternatives available." All action alternatives include actions to fill or isolate gravel pits in Reach 1, consistent with Paragraph 11(b)(3) of the Settlement, as described on pages 2-42 and 2-43 of the Draft PEIS/R. The range of potential actions associated described includes no modifications, filling or isolating some or all pits, and regrading the floodplain to fill pits.

- **Spawning Gravel** – The commenter states, "There is no discussion of the issues associated with the enhancing of spawning gravel," and asks, "Will injection methods be used? Mechanical means? Where might the gravel come from? Since fish will already be in the river, how often will gravel be reintroduced? Under what conditions?" All action alternatives include actions to enhance spawning gravel pursuant to Paragraph 12 of the Settlement, as described on page 2-44 of the Draft PEIS/R. Project-specific details, such as what specific methods would be used to enhance spawning gravels, sources of any new gravel, or specific introduction conditions were not available at the time of preparation of analyses for the Draft PEIS/R. For this and other actions evaluated at a program-level of detail, a potential range of future construction and management actions is included in the alternatives to bracket the probable range of effects. As described on page 1-9 of the Draft PEIS/R, this bracketed range of potential effects allowed for an informed analysis of systemwide and cumulative impacts resulting from implementing the entirety of the Settlement. The specific details requested by the commenter would be developed as part of subsequent site-specific studies.

- **Redd Superimposition and Hybridization** – With regards to the risk of redd superimposition or hybridization between (it is assumed) reintroduced spring-run and fall-run Chinook salmon, the commenter asks, "Is Reclamation proposing some sort of separation weir, other method? Is it expected that fall-run and spring-run will naturally stay separate?" As described on page 2-44 of the Draft PEIS/R, the range of potential actions to reduce redd superimposition or hybridization includes no modifications, the deployment of seasonal barriers, and separate runs of salmon, and also could include potential operation and monitoring of the Hills Ferry Barrier on a seasonal basis. The ability to control run timing via additional structures to separate spring-run and fall-run Chinook salmon (such as weirs), as well as the ability to manage flows to prevent run overlap and hybridization, is unknown. The location and design of barriers has yet to be determined; evaluation of spawning habitat availability and quality would likely guide this decision.

- **Floodplain and Side-Channel Habitat** – With regards to floodplain and side-channel habitat, the commenter asks, "Where will this habitat be located? How many miles or acres of flood plain will be created? Will there be levees or dikes?

> Will additional vegetation be required? Will land be taken out of production? What are the implications of creating additional flood plain habitat to flow and seepage impacts? Will additional levees and slurry walls be necessary?" Project-specific details, such as what the exact locations for habitat improvements, acreages associated with improvements, and the potential need for use of levees or dikes, were not available at the time of preparation of analyses for the Draft PEIS/R. As previously discussed, for this and other actions evaluated at a program-level of detail, a potential range of future construction and management actions is included in the alternatives to bracket the probable range of effects. The range of potential actions includes no modifications; creating and/or enhancing additional floodplain habitat; creating, enhancing, or isolating side channels; and/or reducing sand transport (see page 2-45 of the Draft PEIS/R). As described on page 1-9 of the Draft PEIS/R, this bracketed range of potential effects allowed for an informed analysis of systemwide and cumulative impacts resulting from implementing the entirety of the Settlement. The specific details requested by the commenter would be developed as part of subsequent site-specific studies.

EC1-53: Comment noted. Chapter 2.0, "Master Comment Responses," and Chapter 3.0, "Individual Comments and Responses," of this Final PEIS/R address all comments received on the Draft PEIS/R.

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EC1-56: The rationale to use 2030 as the year for which future conditions are projected is described on page 10 of the Executive Summary of the Draft PEIS/R. The planning horizon chosen is consistent with the duration of court jurisdiction of the Settlement; available planning tools; long-term operations modeling data, tools, and assumptions; acceptable levels of uncertainty and speculation; climate change considerations; and the range of available hydrologic data. Text has not been revised.

EC1-57: This comment is substantially similar to comment EC1-15b. See response to comment EC1-15b.

EC1-58: The comment correctly notes that the Bay Delta Conservation Plan (BDCP) is not included as a project under the No-Action Alternative. The BDCP does not meet the criteria for inclusion as described in page 2-11, lines 4 through 9, of the Draft PEIS/R. However, as described in Chapter 26.0, "Cumulative Impacts," of the Draft PEIS/R the BDCP is considered a reasonably foreseeable action for the purposes of evaluating potential cumulative impacts of implementing the settlement consistent with the Act. Chapter 26.0 includes a discussion of the potential cumulative impacts of implementing the Settlement consistent with the Act in addition to the BDCP. Consistent with the State

CEQA Guidelines (14 CCR Section 15130(a)), the discussion of cumulative impacts in Chapter 26.0 focuses on significant and potentially significant cumulative impacts. Text has not been revised.

EC1-59: Common Restoration actions shown in Table 2-2 of the Draft PEIS/R, are described at a program level only in the Draft PEIS/R, as described in Chapter 2.0 and noted in the far right column of Table 2-2. Subsequent site-specific studies would evaluate these actions at a project level of detail. Actions under Alternative A1 that are described at a project level are described in Section 2.4.1, "Project-Level Actions," Section 2.4.3, "Physical Monitoring and Management Plan," and Section 2.4.4, "Conservation Strategy." Text has not been revised.

EC1-60: Conditions set forth in the Seepage Management Plan (included in the Draft PEIS/R as an attachment to Appendix D, "Physical Monitoring and Management Plan") and SWRCB permits provide information that will be used in the definition of existing channel capacity and conditions under which the Settlement would be implemented. To implement the Settlement consistent with the Act, Reclamation will initially petition the SWRCB for approval of project-level water right changes pursuant to applicable provision of the California Water Code to accomplish these project-level actions. The water rights involved in implementing the Act are licensed water right Application 23, and permitted water right Applications 234, 1465, and 5638, which presently authorize storage, direct diversion, and rediversion at Friant Dam. The water right petitions are discussed in further detail on page 28-26 of the Draft PEIS/R. Concurrent with issuance of authorization of these changes, the SWRCB may apply additional constraints or limitations on the release of Interim or Restoration flows. Reclamation would comply with conditions set by the SWRCB as part of the water right changes. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

EC1-61: As described in MCR-3, "Order and Schedule of Implementing Settlement Actions," in Chapter 2.0 of this Final PEIS/R, the timing of reintroducing salmon related to other Settlement actions, including completing Phase 1 and Phase 2 improvements and releasing 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. 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 action itself.

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 change based on when compliance, coordination, consultation, data collection, and related efforts are completed, and based on the availability of funds. 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 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 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. The *Framework for Implementation* outlines the timeline for the expected increase in channel capacity along with the flows needed to minimally move fish up and down river, maintain suitable water temperatures for fish, and provide sufficient habitat for the expected number of juveniles and adults.

For the reasons set forth above and in MCR-3, no changes to the Draft PEIS/R are necessary. See MCR-3 for additional information relevant to this comment.

EC1-62: Beginning on page 2-22 of the Draft PEIS/R, the project description includes actions to minimize increases in flood risk associated with the release of Interim and Restoration flows. These actions 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 those 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 of the Settlement that could address channel capacity issues identified in the Settlement or through the SJRRP or other programs. Reclamation would reduce Interim and Restoration flows below the flow targets identified in Exhibit B of the Settlement, if channel capacity is insufficient to convey full Restoration Flows. Additionally, as summarized on page 2-51 and described in Appendix D, “Physical Monitoring and Management Plan,” of the Draft PEIS/R, all of the action alternatives include actions to reduce, redirect, or redivert Interim or Restoration flows to reduce flow in downstream

reaches, if necessary. 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 implementation of 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). Text has not been revised.

EC1-63: The Seepage Management Plan Attachment to Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R is summarized in the Draft PEIS/R beginning on page 2-49 of the Draft PEIS/R. Chapter 16.0, "Land Use Planning and Agricultural Resources," of the Draft PEIS/R also discusses the actions included in the Physical Monitoring and Management Plan and Seepage Management Plan as potential actions to respond to nonattainment of seepage management objectives. Elements of the Physical Monitoring and Management Plan (including the Seepage Management Plan) are described at either the program or project level, as appropriate. Text has not been revised.

EC1-64: On a probabilistic basis, an increase in frequency, stage, or flow of water present in any river could result in an increase, however small, in flood risk. Thus the language "minimizing increases in flood risk" was selected as appropriate terminology for the actions referenced in the comment. As described in Chapter 11.0 "Hydrology – Flood Management," of the Draft PEIS/R, all impacts of implementing the Settlement on flood management would be less than significant. Under Alternatives A1 through C2, Reclamation would implement three integrated measures that would collectively avoid a potentially significant increase in the risk of flood damage or levee failure due to underseepage, through-seepage, erosion, or landside slope stability issues (as described in Chapter 2.0, "Description of Alternatives," in the section describing actions to minimize flood risk). These three measures include: (1) establishing a Channel Capacity Advisory Group and determining and updating estimates of then-existing channel capacities as needed; (2) maintaining Interim and Restoration flows below estimates of then-existing channel capacities; and (3) closely monitoring erosion and performing maintenance and/or reducing Interim and Restoration flows as necessary to avoid erosion-related impacts. 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 implementation of such actions (see Chapter 28.0, "Consultation, Coordination, and Compliance," for a description of the permits, petitions, compliance documents, etc., needed for the project- and program-level actions). Text has not been revised.

EC1-65: Potential water supply impacts to Friant Division long-term contractors, including impacts of no recirculation, are evaluated in Chapter 13.0, "Hydrology – Surface Water Supply Facilities and Operations," of the Draft PEIS/R. As described in Chapter 13.0, water delivery impacts to Friant Division long-term contractors are presented under two scenarios: one where all recaptured water is recirculated to the Friant Division (representing a lower bound of impacts), and a second where no recaptured water would be recirculated to the Friant Division (representing an upper bound of impacts). Also, as described in Chapter 12.0, "Hydrology – Groundwater," of the Draft

PEIS/R, if no water released as Interim and Restoration flows is recirculated to Friant Division long-term contractors, the increase in groundwater pumping under the action alternatives would be relatively high. Changes in groundwater pumping and groundwater levels associated with the high level of pumping increase are shown in Tables 12-18, 12-19, 12-22, and 12-23. Other potential indirect impacts would also occur to other resources in the Friant Division, as described in Chapters 4.0 through 26.0 of the Draft PEIS/R. Text has not been revised.

EC1-66: The information referenced in the comment and shown in Table 2-4 in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, is the maximum potential quantity of water available for transfer. The minimum potential quantity available for recapture would be zero acre-feet, as stated on page 2-15 of the Draft PEIS/R. The exact quantity recaptured would depend on the timing of flow releases, timing of all other CVP/SWP operations, and the regulatory conditions affecting CVP and SWP operations. The Draft PEIS/R evaluates the full range of potential water recapture at existing Delta facilities, existing diversion facilities in the Restoration Area, and through existing and potentially expanded diversion capacity on the San Joaquin River downstream from the Merced River. These evaluations, which were completed using the CalSim-II water operations model, are based on simulations using the hydrologic record of October 1921 through September 2003, and are not based on the highest or lowest potential recapture quantity alone (which would provide a false impression of impacts, as noted in the comment). In this way, the Draft PEIS/R provides a realistic analysis of the full range of potential impacts of the program alternatives. Text has not been revised.

EC1-67: As described in the Draft PEIS/R (beginning at page 2-25, line 33) both Interim and Restoration flows would be released up to then-existing channel capacities. The determination of then-existing channel capacity considers both levee stability and seepage management. Text on page 2-51 of the Draft PEIS/R summarizes the Physical Monitoring and Management Plan (Appendix D of the Draft PEIS/R), which includes the Seepage Management Plan Attachment. Consistent with the Act and with the discussion on page 2-51 of the Draft PEIS/R, Interim Flows would be reduced, redirected, or rediverted as needed to address material seepage impacts, as identified through the monitoring program. In addition, and as described on page 28-1 of the Draft PEIS/R, all Interim and Restoration flows would be released consistent with the permits, petitions, compliance documents, etc., needed for the project- and program-level actions. This requirement is also included in Paragraph 18 of the Settlement, which states "the Secretary shall consider and implement these recommendations to the extent consistent with applicable law, operational criteria (including flood control, safety of dams, and operations and maintenance), and the terms of this Settlement." Text has not been revised as the Draft PEIS/R already acknowledges that Interim and Restoration flows would be released to then-existing channel capacities, consistent with all applicable permits and approvals.

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.

See response to comment EC1-60 for discussion of the conditions of approval for SWRCB water rights permits associated with SJRRP.

EC1-68: As described throughout the Draft PEIS/R, many limitations exist to channel capacity within the Restoration Area. Some of these limitations are known and are specified in the Settlement, such as increasing channel capacity in Reaches 2B and 4B1. The lead agencies anticipate that as additional data on the conditions of the system are collected, other channel capacity limitations will be identified.

As described on page 2-95, lines 22 through 40, of 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 conveyance of 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 of the 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 Draft PEIS/R. 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.

DWR is evaluating levee conditions along the San Joaquin River and the bypasses in the Restoration Area through the NULE Project as part of the California FloodSAFE initiative. 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 in order 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.

EC1-69: As described on page 2-21 of the Draft PEIS/R, the schedule for release of flows pursuant to Paragraph 13(i)(3) would be recommended to the Secretary by the RA. The RA would make recommendations to the Secretary on the release of Restoration Flows, and may consider a variety of topics (potentially including, but not limited to, the need for temperature management, fish passage, adult attraction, or floodplain inundation) in making recommendations. Text has not been revised.

EC1-70: Any water travelling from Friant Dam to Mendota Pool has the potential to provide benefits to fish within that portion of the river, and thereby contribute to the Restoration Goal. As cited in the comment, Interim and Restoration flows would be reduced, as necessary, to provide channel capacity for water delivery to the San Joaquin River Exchange Contractors via the San Joaquin River. Releases from Friant Dam for

delivery to the San Joaquin River Exchange Contractors via the San Joaquin River in accordance with Article 4.b. of the San Joaquin River Exchange Contract may help satisfy Restoration Flow targets in some portions of the river, but would not be categorized as Interim or Restoration flows under the provisions of the Settlement. Text has not been revised.

EC1-71: In the event that recapture within the Restoration Area would prevent the flow targets from being met within then-existing channel capacity, recapture at Mendota Pool as described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R would occur only if necessary to avoid interfering with in-channel construction activities associated with the Restoration Goal, minimize increases in flood risk, or to avoid potential material adverse impacts from groundwater seepage (as described in Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R), or for other emergency actions to avoid immediate adverse impacts. As provided in Article 3(o) of the Friant Division long-term water service contracts, recapture at Mendota Pool would occur as follows:

> *(o) Pursuant to and consistent with Section 10004 of SJRRSA and Paragraph 16 of the Settlement, the Contracting Officer is required to develop and implement a plan for recirculation, recapture, reuse, exchange or transfer of water released for restoration flows or interim flows, as those terms are defined in the Settlement, to reduce or avoid impacts to water deliveries caused by said restoration flows or interim flows and water developed through such activities may be made available (i) to the Contractor without the need of an additional contract, and/or (ii) to other on behalf of the Contractor under terms mutually acceptable to the Contractor and the Contracting Officer that are consistent with the Water Management Goal.*

Text has not been revised.

EC1-72: The project description includes multiple provisions to avoid impacts from flows in light of then-existing channel capacities, including actions to minimize flood risk (beginning on page 2-22 of the Draft PEIS/R) and the Physical Monitoring and Management Plan (described beginning on page 2-49 of the Draft PEIS/R and in Appendix D). Under these actions, Reclamation would establish a Channel Capacity Advisory Group to provide independent review of then-existing channel capacities estimated by Reclamation in accordance with standard USACE levee performance criteria. Reclamation would prepare a report for review by the Channel Capacity Advisory Group annually or whenever Reclamation contemplates increasing the upper limit of releases for Interim or Restoration flows. The report would include the data, methods, and estimated channel capacities; flow limits and any maintenance activities; and monitoring efforts and management actions as described in Chapter 2.0 (including actions under Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R).

As described in more detail in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, 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 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. The *Framework for Implementation* outlines the expected increases in channel capacity over time.

EC1-73: The comment cites page 2-23, line 1, of the Draft PEIS/R, which states "[t]hen-existing channel capacities within the Restoration Area correspond to flows that would not significantly increase flood risk from Interim and Restoration flows in the Restoration Area." This definition, along with further measures identified in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R would constrain Interim and Restoration flows to minimize increases in flood risk due to implementing the SJRRP. Other constraints are identified in Chapter 2.0 to minimize increase in seepage impacts due to implementation of the SJRRP. All action alternatives include measures to avoid seepage impacts through the Seepage Management Plan Attachment to the Physical Monitoring and Management Plan (Appendix D of the Draft PEIS/R). Potential immediate management actions to respond to nonattainment of seepage objectives include reducing, redirecting, or rediverting Interim or Restoration flows to reduce flow in downstream reaches. Seepage, as referenced in the comment, is considered a land-use impact addressed separately from flood risk, and is discussed in more detail in Chapter 16.0 "Land Use Planning and Agricultural Resources," of the Draft PEIS/R.

EC1-74: This comment is substantially similar to comment EC1-64. See response to comment EC1-64.

EC1-75: This comment refers to text introducing actions to maintain Interim and Restoration flows below estimates of then-existing channel capacities, and states "see prior comment." It is assumed the comment is referring to comment EC1-64 and/or comment EC1-73. See response to comments EC1-64 and EC1-73.

EC1-76: As described on page 2-25 of the Draft PEIS/R, a staff member from USACE would participate in the Channel Capacity Advisory Group, which would provide timely independent review of data, analytical methodology, and results used to estimate then-existing channel capacities, including application of the USACE levee performance criteria. 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), of the Draft PEIS/R has been revised to clarify that Reclamation would limit the release of Interim and Restoration flows to those flows that would maintain standard USACE levee performance criteria (i.e., a levee slope stability Factor of Safety of at least 1.4 and an underseepage Factor of Safety corresponding to an exit gradient at the toe of the levee of 0.5 or less). See Chapter 4.0, "Errata," of this Final PEIS/R. Levee performance criteria are cited in accordance with USACE Engineering Manual 1110-2-1913 (USACE 2000) and Engineering Technical Letter 1110-2-569 (USACE 2005) (developed by the USACE Sacramento District). In the event the levee performance criteria are revised by USACE, such revisions would be considered. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R.

EC1-77: As described on page 2-25 of the Draft PEIS/R, a staff member from USACE would participate in the Channel Capacity Advisory Group, which would provide timely independent review of data, analytical methodology, and results used to estimate then-existing channel capacities, including application of the USACE levee performance criteria. 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), of the Draft PEIS/R has been revised to clarify that Reclamation would limit the release of Interim and Restoration flows to those flows that would maintain standard USACE levee performance criteria (i.e., a levee slope stability Factor of Safety of at least 1.4 and an underseepage Factor of Safety corresponding to an exit gradient at the toe of the levee of 0.5 or less) at all times. See Chapter 4.0, "Errata," of this Final PEIS/R. Levee performance criteria are cited in accordance with USACE Engineering Manual 1110-2-1913 (USACE 2000) and Engineering Technical Letter 1110-2-569 (USACE 2005) (developed by the USACE Sacramento District). In the event the levee performance criteria are revised by USACE, such revisions would be considered. Further, 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 implementation of 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). The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R.

EC1-78: Comment noted. As stated on page 2-25, line 8, of the Draft PEIS/R, the Channel Capacity Advisory Group would include one member of LSJLD to provide knowledge of San Joaquin River channels and local flood operations. As stated on page 2-25, lines 10 through 25, of the Draft PEIS/R, Reclamation would provide draft and final channel capacity reports to the Channel Capacity Advisory Group and to the public, including CCID. Text has not been revised.

EC1-79: Comment noted. The purpose of the Channel Capacity Advisory Group would be to provide independent review of and feedback on estimated then-existing channel capacities, monitoring results, and planned, ongoing, and completed management actions

to address vegetation and sediment transport within the system as identified by Reclamation. Reclamation will consider input received through this process when making flow and management decisions. The group, once convened, and Reclamation would establish any additional procedures necessary within the context of the structure set forth in the PEIS/R. Text has not been revised.

EC1-80: Comment noted. The Channel Capacity Advisory Group would include one member from LSJLD to provide knowledge of San Joaquin River channels and local flood operations. As stated on page 2-25, lines 10 through 25, of the Draft PEIS/R, Reclamation would provide draft and final channel capacity reports to the Channel Capacity Advisory Group and to the public, including the Exchange Contractors. Text has not been revised. See also response to comment EC1-78.

EC1-81: The purpose of the Channel Capacity Advisory Group would be to provide independent review of and feedback on estimated then-existing channel capacities, monitoring results, and planned, ongoing, and completed management actions to address vegetation and sediment transport within the system as identified by Reclamation. Reclamation will consider input received through this process when making flow and management decisions. Text has not been revised.

EC1-82: See response to comment EC1-77.

EC1-83: As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, the actions to release Interim and Restoration flows includes measures that would commit Reclamation to implementing actions that would meet performance standards that minimize increases in flood risk as a result of Interim or Restoration flows. Detailed descriptions of levee evaluation standards, criteria, and recommendations used to determine the performance standards described in Chapter 2.0 are provided in the cited USACE documents. 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), of the Draft PEIS/R has been revised to clarify that Reclamation would limit the release of Interim and Restoration flows to those flows that would maintain standard USACE levee performance criteria (i.e., a levee slope stability Factor of Safety of at least 1.4 and an underseepage Factor of Safety corresponding to an exit gradient at the toe of the levee of 0.5 or less) at all times. Levee performance criteria are cited in accordance with USACE Engineering Manual 1110-2-1913 (USACE 2000) and Engineering Technical Letter 1110-2-569 (USACE 2005) (developed by the USACE Sacramento District). See Chapter 4.0, "Errata," of this Final PEIS/R. Levee evaluation standards in these documents include detailed assessment of surface and subsurface soil and hydrologic conditions, topography, past and future flow conditions, and flood history. In the event the levee performance criteria are revised by USACE, such revisions would be considered. Further, 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 implementation of 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).

The commenter states "[a] more detailed description of the process to evaluate levees should be provided." In the interest of managing the size of the PEIS/R, unnecessary detail is not presented. Rather, the cited source is provided for the reader seeking additional information. The Channel Capacity Advisory Group, described on page 2-25 of the Draft PEIS/R, would provide timely independent review of data, analytical methodology, and results used to estimate then-existing channel capacities, including application of the USACE levee performance criteria. The Physical Monitoring and Management Plan, described on pages 2-49 through 2-51, also contains provisions for incorporating new information on the conditions of flow and adjacent lands.

EC1-84: Use of the HEC-RAS hydraulic modeling to determine those flows that would remain in-channel currently relies on 2-foot contour mapping developed as part of the Sacramento and San Joaquin River Basins Comprehensive Study in 1998 and 1999, as updated with LiDAR mapping and bathymetry conducted in 2008. This information is the most current and comprehensive information available with which to evaluate in-channel capacity at a system level, and the HEC-RAS tool is the best available tool with which to conduct this evaluation. The HEC-RAS model has been updated and calibrated since 2008 using flow and water surface elevation data collected during flood and Interim Flows and represent channel and flow characteristics that currently exist. Newer information on the physical condition of the system, including improvements to HEC-RAS, tools that supersede HEC-RAS, or data such as observations, that provide better localized information would be incorporated during implementation, as appropriate. Other factors relevant to flood risk are addressed through both project- and program-level actions described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R.

The commenter states "[t]he Draft PEIS/R should also reference the Seepage Management Plan and supporting groundwater thresholds identified in Appendix H of the plan." This comment is substantially similar to comment EC1-63. See response to comment EC1-63.

EC1-85: This comment is substantially similar to comment EC1-77. See response to comment EC1-77.

EC1-86: As described on page 2-25 of the Draft PEIS/R, Reclamation would consider and respond to comments or recommendations made by the Channel Capacity Advisory Group. Text has not been revised.

EC1-87: The change in operations at Friant Dam and the routing of Interim and Restoration flows could affect operations and maintenance activities regardless of the alternative selected for implementation, including 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, "Physical Monitoring and Management Plan," of the Draft PEIS/R). Additionally, flows would change the basic 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. For more information please see MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0 of this Final PEIS/R.

EC1-88: Text in several locations within the Draft PEIS/R has been revised to clarify that the Lower San Joaquin Flood Control Project would not be reoperated, but that all action alternatives include modifications to operations of the flood control facilities to convey Interim and Restoration flows during non-flood periods (see Chapter 4.0, "Errata," of the 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 25 of the Executive Summary and in greater detail on page 2-29, lines 32 through 42. At this time, it is uncertain whether the Chowchilla Bypass Bifurcation Structure would need to be operated to convey Interim and Restoration flows into Reach 2B. This action was addressed in the Draft PEIS/R in the event that operation of the structure is necessary. Reclamation does not have the authority to operate the Chowchilla Bypass Bifurcation Structure. The Chowchilla Bypass Bifurcation Structure is operated by LSJLD consistent with the *Operation and Maintenance Manual for Levees, Irrigation and Drainage Structures, Channels and Miscellaneous Facilities* (Reclamation Board 1978). In the event that the structure would need to be operated to convey Interim and Restoration flows into Reach 2B, Reclamation would seek the appropriate permits and approvals for this from LSJLD, CVFPB and/or USACE.

EC1-89: The description of alternatives presented in 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. Alternatives that include flow routings not addressed in the Settlement, such as conveying no Interim or Restoration flows through Reach 4B1, were eliminated from further consideration because these alternatives would not meet the purpose, need, and objectives of the Settlement. See MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-90: Reclamation and DWR are currently studying the effectiveness of the Hills Ferry Barrier; however, it will continue to be used to block upstream migration of Chinook salmon until sufficient habitat and channel improvements to support salmonids are complete. 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-run and fall-run Chinook salmon upstream after their populations become established, to reduce redd superimposition and/or hybridization between spring-run and fall-run Chinook salmon (page 2-44, lines 12 through 26). Alternatives to the use of the Hills Ferry Barrier for this specific purpose are described on page 2-44 of the Draft PEIS/R, and include the deployment of seasonal barriers. As further discussed in Appendix E, "Fisheries

Management Plan," of the Draft PEIS/R, other actions included in all action alternatives could contribute to preventing excessive redd superimposition, such as actions to enhance spawning gravel (see page 2-44 of the Draft PEIS/R, and pages 5-43 and 5-44 of Appendix E of the Draft PEIS/R). Additionally, the use of the flexibility for release of Interim and Restoration flows described on page 2-22 of the Draft PEIS/R to minimize overlap of runs and reduce hybridization (see page 5-44 of Appendix E of the Draft PEIS/R). In addition, the action alternatives include the potential for continued operation of the Hills Ferry Barrier to seasonally restrict access by fall-run Chinook to the San Joaquin River in the Restoration Area, in the event that reintroduction of spring-run Chinook salmon is identified as a higher priority than reintroduction of fall-run Chinook salmon.

EC1-91: It is anticipated that Friant Division long-term contractors and non-Friant Division water users could develop additional local conveyance and storage capacity to increase their ability to receive Paragraph 16(b) water supplies. This is anticipated primarily on the basis of the expressed intentions of the Friant Division to develop such projects, and the authority provided to the Secretary in the Act to provide financial assistance to local agencies within the CVP for the planning, design, environmental compliance, and construction of local facilities to bank water underground or to recharge groundwater. As stated on page 2-3, lines 21-26 of 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. As described in Appendix G, "Plan Formulation," of the Draft PEIS/R, potential projects that could help meet the Water Management Goal were identified in the report, *Recirculation and Recapture of Restoration Flows and Mitigation of Water Supply Reductions Potential Programs & Projects* (FWUA 2007), and consist of structural and nonstructural actions to use 16(b) water. These projects are at different stages of development, ranging from concepts to "shovel-ready" projects with completed feasibility studies. Text has not been revised.

EC1-92: This comment is substantially similar to comment EC1-71. See response to comment EC1-71.

EC1-93: The potential impacts of recapturing Interim and Restoration flows in the Delta are evaluated in Chapters 4.0 through 26.0 of the Draft PEIS/R. As described in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R, no increase in take at Delta pumping facilities is anticipated as a result of implementing the Settlement; therefore, no indirect impacts to other water users related to increased take would be anticipated to occur as a result of implementing the Settlement. Recirculation of recaptured water would be subject to available capacity and existing operational constraints within CVP/SWP storage and conveyance facilities, consistent with the Act. Any mutual agreements negotiated to facilitate delivery of water to Friant Division contractors using CVP/SWP facilities would be negotiated so as not to impact CVP/SWP deliveries or operations consistent with the requirements of the Act; such agreements may require additional environmental documentation. Text has not been revised.

EC1-94: Text referenced in the comment states that recirculation of recaptured water to the Friant Division could require subsequent agreements among Reclamation, DWR, Friant Division long-term contractors, and other south-of-Delta CVP/SWP contractors to facilitate the accounting, management, and conveyance of recaptured water. The need for and nature of such agreements has not been identified at this time, and is not necessary for the program-level description and evaluation of recirculation of recaptured water. During subsequent site-specific studies of actions to recirculate flows, if a need for specific agreements is identified, the potential impacts of those agreements would be analyzed in compliance with NEPA and/or CEQA, as appropriate, as described on page 2-36 of the Draft PEIS/R. Text has not been revised.

EC1-95: Mitigation measures for project- and program-level actions are identified for all potentially significant impacts identified in the analysis of potential impacts presented in Chapters 4.0 through 26.0, and are summarized in Table ES-8 of the Draft PEIS/R Executive Summary. Under the Seepage Monitoring and Management Plan (included in the Draft PEIS/R as an attachment to Appendix D, "Physical Monitoring and Management Plan"), Reclamation or other project proponents may conduct additional studies and develop site-specific NEPA and/or CEQA analysis for installation of interceptor lines, slurry walls, or other measures. The 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. Reclamation would not release Interim and Restoration flows in excess of then-current channel capacity.

EC1-96: No additional agreements beyond those stated in the Draft PEIS/R would be required for the recapture of Interim and Restoration flows within the Restoration Area. Potential agreements already identified in the Draft PEIS/R include operations and maintenance agreements or a comparable funding mechanism that accounts for an increase in operations and maintenance activities as a result of implementing the Settlement. Relevant text is found on page 2-28, lines 12 through 26, and page 2-96, lines 1 through 31.

SWRCB Water Rights Order 2010-0029-DWR applies to Water Year 2010 Interim Flows and not to the whole of the SJRRP. To implement the Settlement consistent with the Act, Reclamation will initially petition the SWRCB for approval of project-level water right changes pursuant to applicable provision of the California Water Code to accomplish these project-level actions. The water rights involved in implementing the Act are licensed water right Application 23, and permitted water right Applications 234, 1465, and 5638, which presently authorize storage, direct diversion, and rediversion at Friant Dam. The water right petitions are discussed in further detail on page 28-26 of the Draft PEIS/R. Concurrent with issuance of authorization of these changes, the SWRCB may apply additional constraints or limitations on the release of Interim or Restoration flows. Reclamation would comply with conditions set by the SWRCB as part of the water right changes.

Text has not been revised. See MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-97a: 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.

As described in more detail in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, 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 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.

See MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," for additional discussion of funding sources and the budget for completion of activities. Text has not been revised.

EC1-97b: The programmatic analysis, mitigation measures, and performance standards described in the Draft PEIS/R pertaining to actions to screen Arroyo Canal and provide fish passage at Sack Dam are based on the description provided on page 2-41, lines 18 through 28, of the Draft PEIS/R and are consistent with Paragraph 11(a)(6) and 11(a) (7) of the Settlement. The extent of environmental review for future actions, including actions at Sack Dam, 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. Text has not been revised.

EC1-98: Comment noted. As summarized in Chapter 28.0, "Consultation, Coordination, and Compliance," of the Draft PEIS/R, Section 10009 of the Act describes and limits sources of funds to implement the Settlement, authorizes appropriation of funds to implement the Settlement, establishes the San Joaquin River Restoration Fund, and directs the Secretary to conduct a study of modifications to Reach 4B1, as described in the Settlement. Pursuant to the Act, the Secretary shall complete this study prior to restoration of any flows other than Interim Flows, and shall file a report with Congress

not later than 90 days after issuing a determination, as required by the Settlement, on whether to expand channel conveyance capacity to 4,500 cfs in Reach 4B1. Text has not been revised.

EC1-99: As described in response to comment EC1-5, 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 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. See also response to comment EC1-29, MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," and MCR-3, "Order and Schedule of Implementing Settlement Actions," for a discussion of funding sources and the schedule and budget for completion of activities.

EC1-100: Comment noted. As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, LSJLD would be included in a Channel Capacity Advisory Group. The appropriate level of involvement by LSJLD and other stakeholders for implementation of program-level actions would be determined during subsequent site-specific studies. Text has not been revised.

EC1-101: The programmatic analysis, mitigation measures, and performance standards described in the Draft PEIS/R pertaining to actions to the Mendota Pool Bypass are based on the description provided in page 2-39, lines 20 through 30, of the Draft PEIS/R. The extent of environmental review for future actions, including actions to construct a Mendota Pool Bypass, 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. Text has not been revised.

EC1-102: Comment noted.

EC1-103: "Substantial construction" as phrased on page 2-40 of the Draft PEIS/R, is used consistent with the Act. As described on page 2-40, "substantial construction" would not include changes to the existing levees in Reach 4B1, but could include modifications to road crossings and removing in-channel vegetation. Construction activities necessary for modifications in Reach 4B1 are being identified in a separate site-specific study.

The description on page 2-40 is not intended to imply that a capacity of at least 475 cfs could be achieved without actions that would constitute substantial construction. The sentence has been revised to clarify that actions taken to provide a low-flow channel would not include substantial construction actions prior to a decision being made on the conveyance of at least 4,500 cfs through Reach 4B1. This constraint is applied throughout Chapters 4.0 through 26.0 of the Draft PEIS/R to determine the potential impacts of implementing the Settlement. Modifications requiring substantial construction are evaluated under Alternatives A2, B2, and C2, which include the potential for substantial construction, and are anticipated to require a larger construction footprint as well as greater material quantities. The distinction between the level of construction that could occur in Reach 4B1 as part of Alternatives A1, B1, and C1, compared to Alternatives A2, B2, and C2, is made for the purposes of alternatives formulation and evaluation. Text on page 2-40, lines 18 through 22, of the Draft PEIS/R has been revised in response to comment to remove the text. See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-104: As described in Chapter 2.0 of the Draft PEIS/R, "Description of Alternatives," page 2-41, lines 32 through 36, of the Draft PEIS/R, modifications to establish a low-flow channel are also included in the action alternatives as a program-level action. Constructing a low-flow channel in or adjacent to the bypass system and routing Interim and/or Restoration flows through the bypass system 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." Text has not been revised.

EC1-105: This comment is substantially similar to comment EC1-103. See response to comment EC1-103.

EC1-106: With boards in place to divert flows to Reach 4B1, the Sand Slough Control Structure would present a barrier to fish passage under low-flow conditions (particularly at flows of 475 cfs or less); however, when 475 cfs is diverted to Reach 4B1 and sufficient additional flow is diverted to the Eastside Bypass, the boards may not represent a fish barrier. The Draft PEIS/R does not evaluate the potential for the Sand Slough Control Structure to act as a barrier to fish passage, and therefore does not identify a corresponding need for physical and operational modifications to the San Joaquin River Headgate and Sand Slough Control Structure. Modifications to the Sand Slough Control Structure consistent with Paragraph 11(a)(5) of the Settlement are included under all action alternatives as a program-level action. As described on page 2-43 of the Draft PEIS/R, modifications to this structure are closely related to Restoration actions in Reach 4B1. Reclamation and DWR are currently studying the need for physical and operational modifications to the San Joaquin River Headgate and Sand Slough Control Structure as part of the site-specific Reach 4B, Eastside Bypass, and Mariposa Bypass Channel and Structural Improvements Project. Text has not been revised.

EC1-107: Alternatives A1, B1, and C1 would convey flows and fish through both Reach 4B1 and the Eastside and Mariposa bypasses. In consideration of the full range of Interim and Restoration flows, the total flow in some periods of would result in low flows

in both Reach 4B1 and the bypasses. This condition was anticipated in the Settlement and is one of the reasons the Settlement specifies modifications in the Eastside and Mariposa bypasses to establish a low-flow channel, if the Secretary in consultation with the RA determines that such modifications are necessary to support anadromous fish migration, as stated on pages 2-40 and 2-41 of the Draft PEIS/R. The need for modifications to provide fish passage in Reach 4B1 and the bypasses is being identified in a separate site-specific study.

EC1-108: As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 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 present benefits or impacts of the SJRRP to reintroduced Chinook salmon and does not assess the efficacy of the Settlement actions to provide suitable water temperatures for 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. 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 water temperatures for reintroduced spring-run and fall-run Chinook salmon. This includes all actions described in Section 5.2.5, "Unsuitable Water Temperatures," of Appendix E of the Draft PEIS/R, beginning on page 5-33. See MCR-1 in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

The potential for changes in water temperatures to occur in the San Joaquin River and bypasses in the Restoration Area as a result of project-level actions was quantitatively evaluated using the San Joaquin River Temperature Model (SJR5Q). SJR5Q represents the San Joaquin River from Friant Dam to the confluence with the Merced River as a network of discrete segments (reaches and/or layers, respectively) for application of HEC-5 for flow simulation, and HEC-5Q for temperature simulation. Within this network, control points are designated to represent selected stream locations where flow, elevations, and volumes are computed. In HEC-5, flows and other hydraulic information are computed at each control point. A schematic of the HEC-5 representation of the San Joaquin River from Millerton Lake to the confluence with the Merced River is presented in Figure 4-1 in Appendix H, "Modeling," of the Draft PEIS/R.

SJR5Q output is presented in the Temperature Modeling Output – SJR5Q Attachment to Appendix H, "Modeling," of the Draft PEIS/R at the head of Reaches 1, 2A, 4A, 4B2, and 5. As described in on pages 14-24 through 14-27 of the Draft PEIS/R, under the action alternatives, long-term average simulated water temperatures in the San Joaquin River downstream from Reach 2 and in the Eastside and Mariposa bypasses would be

similar to or lower than under the No-Action Alternatives, resulting in less-than-significant or less-than-significant and beneficial impacts to water quality.

For the reasons set forth above and in MCR-1, no changes to the Draft PEIS/R are necessary. See MCR-1 in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-109: Text on page 2-42, lines 14 through 19, of the Draft PEIS/R has been revised to clarify that there are false migration pathways under current conditions in the Restoration Area at both Mud and Salt sloughs. See revision in Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-110: While it is likely that gravel pits would contribute to juvenile salmon mortality, it is not certain. The extent to which gravel pits contribute to juvenile salmonid mortality would be evaluated at a project level of detail during a subsequent site-specific study to identify priority actions consistent with Paragraph 11(b)(3) of the Settlement. Accordingly, program-level actions, such as those described on pages 2-42 to 2-43 of the Draft PEIS/R are included in all action alternatives and are intended to address issues associated with gravel pits, including the potential for these gravel pits to act as habitat for predator fish species. Text has not been revised.

EC1-111: Paragraph 11 of the Settlement includes a series of channel and structural improvement projects. Paragraph 9 of the Settlement states that "the Parties [to the Settlement] agree that the channel and structural improvements listed in Paragraph 11 are necessary to fully achieve the Restoration Goal." The Settlement calls for the initial projects, Phase 1, to be completed by December 31, 2013, and for the Phase 2 projects to be completed by December 31, 2016. The Settlement does not specify that the Phase 1 projects need to be completed or nearly completed prior to the reintroduction of Chinook salmon. Rather, the Settlement envisioned that both spring-run and fall-run Chinook would be reintroduced prior to the completion of the Phase 1 and Phase 2 projects, as presented in the Settlement's milestone dates. The Settlement does not state that these projects are necessary for the protection of salmon.

Paragraph 12 of the Settlement states that "the Parties [to the Settlement] acknowledge that there are likely additional channel or structural improvements (including, for example, additional fish screening, restoration of side channel habitat and augmentation of spawning gravel) that may further enhance the success of achieving the Restoration Goal." The Settlement does not specify that any Paragraph 12 actions are to be completed prior to reintroduction. Rather, the Settlement states that these projects "may further enhance the success of achieving the Restoration Goal." The Settlement does not state that these projects are necessary for the protection of salmon.

The Draft PEIS/R evaluates the SJRRP as described in the Settlement, consistent with the requirements in the Act. Consistent with NEPA and CEQA, the Draft PEIS/R evaluates the direct, indirect, and cumulative impacts of implementing the Settlement consistent with the Act. All of the action alternatives include several actions to provide flows, habitat, and passage for reintroduced Chinook salmon, as well as actions to address

potential impacts to Third Parties, as described on pages 2-14 through 2-29, and on pages 2-37 through 2-71 of the Draft PEIS/R. Alternatives A2, B2, and C2 include additional actions that would provide habitat and passage, as described in Section 2.5.1, "Additional Restoration Actions," of the Draft PEIS/R.

As described in more detail in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, 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 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

See MCR-3 for additional information relevant to this comment.

EC1-112: The potential impacts of actions to reintroduce salmon, including potential use or construction of a fish hatchery are evaluated at a program level in Chapters 4.0 through 26.0 of the Draft PEIS/R. Throughout these chapters, construction-related impacts for many actions evaluated at a program level of detail would be similar; thus, construction-related impacts are described generally rather than for each individual potential action. Relatively unique impacts associated with construction of a new hatchery are described when appropriate, including on pages 24-20 and 24-21 of the Draft PEIS/R under Impact UTL-2, "Potential Reduction in Ability of Facilities in the Restoration Area to Meet Wastewater Treatment Requirements." Identification of the number of returning salmon beyond which use of a hatchery would be phased out is not necessary to complete the program-level analyses presented in the Draft PEIS/R. More specific evaluations of hatchery use and potential related impacts will be evaluated during the NEPA and CEQA processes currently being conducted by NMFS and DFG, respectively, for the reintroduction of Chinook salmon. Text has not been revised.

EC1-113: A major program such as the SJRRP is made up of numerous actions to be implemented over a long period of time. The Draft PEIS/R represents a good faith effort to reasonably evaluate and disclose the environmental effects of the whole of the SJRRP. The Draft 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 Draft 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. The Draft PEIS/R contains a program-level of analysis of all impacts associated with the SJRRP in Chapters 4.0 through 26.0, which includes potential impacts associated with salmon reintroduction. However, the terms and conditions of the Enhancement of Species Permit Application were not available at the time the Draft PEIS/R was developed, in part because the terms and conditions were under development by a separate agency (i.e., NMFS). NMFS released a separate Draft Environmental Assessment in April 2012 containing a project-level analysis of the 10(a)(1)(A), Enhancement of the Species Permit application for the collection and transport of spring-run Chinook salmon, in compliance with NEPA. The limited level of detail available when the Draft PEIS/R was prepared regarding salmon reintroduction efforts required an impact analysis commensurate with the level of detail available. A more detailed, project-level analysis on the part of Reclamation and DWR at the time the Draft PEIS/R was prepared would have been too speculative for meaningful consideration. As the commenter has stated, any separate analysis required by NMFS for issuance of its permit is being conducted by NMFS, not by Reclamation or DWR. See also MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," and MCR-4, "Segmentation Under NEPA and CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. For the reasons set forth above and in MCR-1 and MCR-4, the Draft PEIS/R appropriately includes a program-level evaluation of the potential impacts associated with reintroduction of salmon, and no further analysis is warranted or possible at stage.

EC1-114: The description on page 2-45, lines 14 through 33 of the Draft PEIS/R is intended to convey that modifications to levee alignments outside of Reaches 2B and 4B1 would not be made solely for the purpose of creating and/or enhancing floodplain habitat. Modifications to create and/or enhance floodplain habitat could occur outside of the existing levee alignments if levee alignments are modified for other purposes and designed to accommodate that habitat. Text on page 2-45, lines 29 through 30, of the Draft PEIS/R is revised in response to comment to remove the text. See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-115: Many actions described in the Settlement and included under all the action alternatives would provide multiple benefits to Chinook salmon related to predation in the Restoration Area (including beneficial effects from reduced water temperatures, increased habitat complexity, and reduced predator populations). The potential for various actions to address predation are included in the descriptions of those actions, including modifications to gravel pits (page 2-42, lines 35 through 42, and page 2-43, lines 1 and 2, of the Draft PEIS/R), modifications to floodplain and side-channel habitat (page 2-45, lines 14 through 40, and page 2-46, lines 1 through 21, of the Draft PEIS/R), and actions to enhance in-channel habitat (page 2-46, lines 22 through 33, of the Draft PEIS/R). These actions may provide beneficial effects to water temperature and predator numbers and behavior. The text referenced by the commenter (page 2-46, line 34, of the Draft PEIS/R) describes the range of actions that could be taken in addition to those described elsewhere in the Draft PEIS/R, and would be undertaken specifically to further enhance the success of achieving the Restoration Goal.

The commenter cites a study by Vogel (2010) which, along with Vogel (2011), evaluated the potential level of predation on juvenile salmonids in the San Joaquin River downstream from Banta Carbona Irrigation District and in the Delta. Predation of reintroduced Chinook salmon downstream from the Restoration Area is not included under the action alternatives or described in the Draft PEIS/R. The level of predation that would occur downstream from the Restoration Area after reintroduction of spring-run Chinook salmon is unknown and speculative.

As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 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 efficacy of the actions described above to address predation of 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. 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 predation of reintroduced Chinook salmon and other native fishes (see page 5-56 of Appendix E). See MCR-1 in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. Text has not been revised.

EC1-116: The potential need to screen unscreened and poorly screened diversions within the Restoration Area is acknowledged in Paragraph 12 in the Settlement. Screening of poorly screened or unscreened diversions is included as a program-level action under all action alternatives, as described on page 2-46, lines38 through 42, and page 2-47, lines 1 and 2, of the Draft PEIS/R. A list of known diversions in the Restoration Area is included as an attachment to Appendix J, "Surface Water Supplies and Facilities Operations," of the Draft PEIS/R. Additional screening of Restoration Area diversions and false migration pathways is included under all action alternatives and described on pages 2-39, 2-41, 2-42, and 2-48 of the Draft PEIS/R. Text has not been revised.

EC1-117: Potential actions to address migration and other habitat modifications to support reintroduced Chinook salmon and other native fishes are described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R at a program level of detail. These potential actions include actions set forth in Paragraph 11 of the Settlement (pages 2-39 through 2-43 of the Draft PEIS/R), and additional structural or channel improvements that may further enhance the success of achieving the Restoration Goal, pursuant to Paragraph 12 of the Settlement (pages 2-45 through 2-49 of the Draft PEIS/R). The text referenced by the commenter (page 2-47, line 3 of the Draft PEIS/R) describes the range of actions that could be taken to address fish passage in addition to those described elsewhere in 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 of this Final 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. 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 fish passage or other habitat modifications, and evaluating their merits in an action routing process to maximize the success of the Chinook salmon reintroduction program. See MCR-1 in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. Text has not been revised.

EC1-118: Trap-and-haul operations are not envisioned as a long-term management strategy, and would only be used as a temporary measure if protective features are not completed in time to reintroduce fish, if it is determined that entrainment and physical barriers exist that could hinder reintroducing and managing fish populations, or if river connectivity is disrupted (see page 2-47 of the Draft PEIS/R). This action is analyzed at a program level in the Draft PEIS/R.

See response to comment EC1-111 for a discussion of the schedule for implementation of Phase 1 and Phase 2 actions with relation to reintroduction of Chinook salmon, as well as the schedule and budget for these actions. See also MCR-3, "Order and Schedule of Implementing Settlement Actions," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-119: See page 2-47 of the Draft PEIS/R for a discussion of trap-and-haul operations, and Chapters 4.0 through 26.0 for an evaluation of impacts of this and all other actions that could be implemented as part of the SJRRP. As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, trap-and-haul operations are addressed at a program-level of detail in the Draft PEIS/R. Additional details on a trap-and-haul action, including future site-specific NEPA and/or CEQA analysis, would need to be developed prior to implementing such an action. As described in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, 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 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. The activities envisioned within the *Framework for Implementation* are included in the Draft PEIS/R. See also MCR-2 and response to comments EC1-5 and EC1-12 for a discussion of funding and funding sources for the SJRRP.

EC1-120: As described on page 2-48 of the Draft PEIS/R, modifications to roads in reaches outside of Reach 2B and Reach 4B1 to provide fish passage could include installing culverts, restructuring the channel, and/or constructing clear span bridges to enable the crossings to be used during Restoration Flows while providing fish passage. Appendix G, "Plan Formulation," of the Draft PEIS/R provides additional detail in a preliminary assessment of the roads that may require modification for fish passage in Reach 1. The preliminary assessment describes installing culverts to the approaches to the North Fork Road bridge, Ledger Island bridge, and Crossland bridge (see Option 22 in the Options Forms for Restoration and Water Management Actions in Program Alternatives Exhibit to the Restoration and Water Management Actions in Program Alternatives Attachment to Appendix G of the Draft PEIS/R). Appendix E, "Fisheries Management Plan," of the Draft PEIS/R describes the framework for addressing specific actions related to fisheries, including actions to address fish passage, and evaluating their merits in an action-routing process to maximize the success of the Chinook salmon reintroduction program. Specific road crossings requiring modifications would be refined through the collection of data as the SJRRP moves forward, but modifications at any road crossing in the Restoration Area may be further studied for modification. Text has not been revised.

EC1-121: Potential types of barriers are described in text at the location referenced in the comment on page 2-48, lines 11 and 12, which state that the primary categories of permanent fish barrier structures are picket barriers, velocity barriers, and vertical drop structures. This action is analyzed at a program level in the Draft PEIS/R. Site-specific details regarding locations and types of barriers has not been determined outside of those modifications identified in Paragraph 12. Information collected during the release of Interim Flows would be used, as appropriate, to identify appropriate locations and types of barriers during subsequent studies. Appendix E, "Fisheries Management Plan," of the Draft PEIS/R describes the framework for addressing specific actions related to fisheries, including actions to address straying, and evaluating their effectiveness in an action-routing process to maximize the success of the Chinook salmon reintroduction program. For information collected during the release of Interim Flows to date, please refer to www.restoresjr.net. Text has not been revised.

EC1-122: This comment is substantially similar to comment EC1-20. See response to comment EC1-20.

EC1-123: Installation of interceptor lines, slurry walls, or other such measures as identified in the comment are not evaluated at a project level of detail in the Draft PEIS/R. For a description of project-level management actions related to seepage,

including actions to reduce, redirect, or divert Interim or Restoration flows to minimize or avoid seepage impacts downstream, please refer to page 2-51, lines 7 through 27, of the Draft PEIS/R. Reclamation will implement the Seepage Monitoring and Management Plan to avoid impacts. The plan includes flow reductions in response to groundwater levels observed in the buffer or threat zones as part of the implementation of the Seepage Management Plan. 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. Implementation of the Seepage Management Plan, and 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 the Act.

EC1-124: As described on page 2-51, of the Draft PEIS/R, and in Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R, immediate management actions (management actions addressed at the project level in the Draft PEIS/R) to contribute to achieving the spawning gravel management objectives would be implemented if monitoring reports and recommendations of spawning gravel conditions indicate that the spawning gravel management objectives are not being met through other actions. The pulse flows, part of the flexible flow management provisions in Exhibit B to the Settlement, are intended to cleanse gravels and provide mobilization. If large flood flows are sufficient to achieve the spawning gravel management objective, implementation of immediate management actions to achieve the objective would not be necessary and would therefore not be implemented. Text has not been revised.

EC1-125: The long-term management actions to contribute to achieving the seepage management objective would require a determination of need, identification for funding additional action, and site-specific environmental compliance documentation, as described in Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R before they could be implemented. Accordingly, these actions are described and analyzed at a program level of detail in the Draft PEIS/R.

EC1-126: Vegetation management actions have not been identified to achieve the native vegetation management objective, which is to establish and maintain native riparian habitat. The long-term vegetation management actions are described and analyzed at a program level of detail in the Draft PEIS/R. Vegetation management, as it pertains to channel capacity and flows conveyance, are addressed in Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R through the immediate and long-term management actions to achieve the channel capacity management objective. Impacts of actions included in the action alternatives are analyzed in Chapters 4.0 through 26.0 of the Draft PEIS/R.

EC1-127: The commenter states "[t]he conservation strategy must not interfere with agricultural and water management on the part of any Third Parties." The commenter provides no specific documentation of any requirements to prevent 'interference,' however it is interpreted that the commenter is referring to requirements pertaining to Third Parties under the Settlement or the Act. As described in MCR-6, "Third-Party Concerns and Outreach," in Chapter 2.0 of this Final PEIS/R, the Settlement and the Act

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.

As described in Chapter 13.0, "Hydrology – Surface Water Supplies and Facilities Operations," of the Draft PEIS/R, Reclamation does not anticipate any significant and unavoidable impacts to surface water supplies and facilities operations. However, potential impacts on existing land uses within the Restoration Area could remain significant and unavoidable.

As described in Chapter 16.0, "Land Use Planning and Agricultural Resources," of the Draft PEIS/R, construction of modifications within the Restoration Area under all action alternatives would convert Important Farmland to nonagricultural uses and require cancellation of lands under Williamson Act and Super Williamson Act contracts. Mitigation measures described in the Draft PEIS/R would reduce this program-level impact; however, because some amount of Important Farmland would still be converted, and any cancellation of Williamson Act contracts is considered significant, this impact would be significant and unavoidable. Construction of modifications within the Restoration Area would be inconsistent with land uses in the adopted general plan and zoning ordinances of Fresno and Madera counties. Because the general plan designations are intended to maintain an important resource in the counties (i.e., agricultural land), inconsistency in this case would indicate a significant impact under CEQA because the resulting loss of the agricultural land resources would be an environmental effect. No feasible mitigation is available for these impacts; therefore, this program-level impact would be significant and unavoidable. Additionally, Interim and Restoration flows could change the duration and seasonality of inundation, or soil saturation, which could potentially affect the quality of land in some locations as an agricultural resource. Mitigation described in the Draft PEIS/R would reduce this program-level impact, but not to a less-than-significant level; therefore, this impact would be significant and unavoidable.

As further described in MCR-6, during subsequent studies, site-specific mitigation based on the mitigation measures identified in the Draft PEIS/R would be developed by the project proponent with the objective of reducing any significant or potentially significant impact to less than significant. However, without additional site-specific information, it cannot be determined whether mitigation would reduce these impacts to a less-than-significant level. Coordination with landowners and water users will continue throughout project-level implementation of projects to avoid or minimize potential impacts during implementation of site-specific actions. See MCR-6 in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-128: The Conservation Strategy is part of the SJRRP strategy for restoring and conserving sensitive habitats and species. The SJRRP has a Restoration Goal and a management strategy that applies monitoring results to guide program implementation to

attain that goal, and common Restoration actions included under all action alternatives would have substantial beneficial effects on aquatic, wetland, and riparian ecosystems. However, 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 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 Conservation Strategy resulting from this coordination is much more than a list of actions. It presents conservation goals and the measures to attain the goals. For potentially affected sensitive species and habitat types, the Conservation Strategy provides 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 the minimization measures would be implemented, and if minimization is determined to not suffice, then the 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 measures of the Conservation Strategy 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 each measure would apply to (i.e., project- and/or program-level), and the regulatory agency or agencies that would be involved in developing and/or implementing each measure. For the reasons set forth above and as described in MCR-7, no changes to the Draft PEIS/R related to the Conservation Strategy are necessary.

EC1-129: The Conservation Strategy presented in Table 2-7 on page 2-55 of the Draft PEIS/R 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. Though 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 the minimization measures would be implemented, and if minimization is determined to not suffice, then the 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 projects affecting the same or similar species. The table format for the measures of the Conservation Strategy 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 each measure would apply to (project- and/or program-level), and the regulatory agency or agencies that would be involved in the development and/or implementation of each measure.

See MCR-7 in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-130: The commenter states "[t]he SJRRP must not create wetlands that interfere with agricultural or water operations." The commenter provides no specific documentation of any requirements to prevent 'interference,' however it is interpreted that the commenter is referring to requirements pertaining to Third Parties under the Settlement or the Act. As described in MCR-6, "Third-Party Concerns and Outreach," in Chapter 2.0 of this Final PEIS/R, the Settlement and the Act 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.

EC1-131: Implementation of the Conservation Strategy and the Settlement will require continued coordination with appropriate landowners, water agencies, regulatory agencies, and other key stakeholders to properly identify and compensate potential loss of habitat, fund continued and perpetual mitigation for listed species, and avoid or minimize potential land-use conflicts. See also response to comment EC1-127.

EC1-132: This comment is substantially similar to comment EC1-131. See response to comment EC1-131.

EC1-133: Comment noted. The Implementing Agencies do not contemplate modifications to ESA prohibitions or regulations, as amended, besides the 4(d) rule. Implementing Agencies would continue to examine potential protections and exemptions to private landowners who continue to conduct routine operations and maintenance activities in the Restoration Area. Reclamation will consult with the regulatory agencies who oversee the conservation of sensitive species and habitats on actions related to both the program- and project-level actions identified in the Draft PEIS/R, as appropriate. Both ESA and CESA regulations currently apply to both public and private lands within the Restoration Area. These species protections are not expected to change either with or without Settlement implementation. See MCR-6, "Third-Party Concerns and Outreach," for additional information relevant to this comment.

EC1-134: According to Beamesderfer et al. (2004), there is no documentation of occurrence of green sturgeon in the San Joaquin River upstream from the Delta. Appendix E, "Fisheries Management Plan," of the Draft PEIS/R states: "Other fishes not documented historically or assumed extirpated from the San Joaquin River include North American green sturgeon (*Acipenser medirostris*), Sacramento perch, western brook lamprey, river lamprey (*Lampetra ayersi*), and speckled dace (*Rhinichthys osculus*). These fishes may be present in the San Joaquin River upstream from the confluence with

the Merced River following the implementation of the SJRRP, but would likely be uncommon." Text has not been revised.

EC1-135: Under Section 4(d) of the ESA, NMFS will adopt regulations necessary to provide for the conservation of threatened species in the Restoration Area. To this end, NMFS will develop a document describing considerations for issuing a 4(d) rule as part of Settlement implementation. At this time, NMFS does not envision including steelhead in its 4(d) rule. However, pursuant to Section 10004(h)(4) of the Act, "if Third Parties along the San Joaquin River south of its confluence with the Merced River are required to install fish screens or fish bypass facilities due to the release of Interim Flows in order to comply with the Endangered Species act of 1973, the Secretary shall bear the costs of the installation of such screens or facilities if such costs would be borne by the Federal Government under section 10009(a)(3), except to the extent that such costs are already or are further willingly borne by the State of California or by the Third Parties."

A plan for monitoring steelhead is currently being undertaken in association with the release of Water Year 2012 Interim Flows. As of the preparation of this Final EIS/R, there has been no evidence to indicate that Central Valley steelhead have entered the Restoration Area. Page 5-10 of the Draft PEIS/R states that steelhead were present historically in the San Joaquin River upstream from the Merced River, but the population has since been extirpated. However, there is a potential for steelhead and other fish to move into the Restoration Area as flows are increased and habitat becomes available that would be conducive to the survival of the species. The existing NMFS rule for Central Valley steelhead prohibits actions that kill or injure the species except in cases where the take is associated with an approved program, such as a Habitat Conservation Plan. This rule applies to ocean and inland areas and to any authority, agency, or private individual subject to U.S. jurisdiction. Legal activities or development not likely to kill or harm protected species would not require any special authorization. Central Valley steelhead entering the Restoration Area would be subject to the same regulations as other listed species and no special rules would be developed specific to the San Joaquin River between the Merced River confluence and Friant Dam.

Reclamation and DWR are currently studying the effectiveness of the Hills Ferry Barrier; however, it will continue to be used to block upstream migration of Chinook salmon until sufficient habitat and channel improvements to support salmonids are complete. 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-run and fall-run Chinook salmon upstream after their populations become established. The Hills Ferry Barrier can incidentally block Central Valley steelhead upstream migration. DFG will work with Reclamation and DWR to explore other methods of exclusion as necessary.

The SJRRP acknowledges that isolation or filling of gravel pits in Reach 1 would decrease or eliminate predator holding habitat and would benefit most life stages of each of the representative special-status fish species in the Restoration Area, including steelhead. Consideration of the commenter's request to expedite gravel pit remediation is

noted by Reclamation and DWR, and this will be taken into consideration when future project-level actions are implemented.

The historical fish communities, including Central Valley steelhead, 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 of this Final PEIS/R.

EC1-136: Table 2-7 refers to Sacramento River winter-run Chinook salmon habitat in the Delta that could be affected by the SJRRP. There are no Sacramento River winter-run Chinook salmon in the San Joaquin system, nor are they expected or targeted for reestablishment in the San Joaquin River. Text has not been revised.

EC1-137: Table 2-7 of the Draft PEIS/R presents the Conservation Strategy for the SJRRP. As described in Section 2.4.4, "Conservation Strategy," of the Draft PEIS/R, the strategy is intended to avoid and minimize potential impacts to sensitive species and habitats from implementing the action alternatives. The strategy guides development and implementation of specific conservation measures for project- and program-level actions. These actions would be implemented by Reclamation for actions described at a project level in the Draft PEIS/R and by the future lead agency for actions described at a program level of detail in the Draft PEIS/R.

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 (see Table 1-1, Table 2-2, and page 2-43 of the Draft PEIS/R). This assessment was based on best available information when the Draft PEIS/R was prepared and analyzes impacts of the reintroduction of Chinook salmon on all resource areas included in the Draft PEIS/R (see Chapters 4.0 through 26.0 of the Draft PEIS/R). Chapter 5, "Biological Resources – Fisheries," of the Draft PEIS/R discusses fish reintroduction in the following areas: under Federal Regulatory Setting regarding ESA on page 5-31; in the Impact Assessment Methodology under food resources and food web support on page 5-58, under hybridization on page 5-62, and under competition on page 5-63; and in Impacts FSH-9 on page 5-73 and FSH-10 on page 5-74.

EC1-138: Preceding text in the same chapter identifies that the Draft PEIS/R was prepared consistent with authorities including the NEPA, CEQA, and the Act. The specific requirement of the Act referenced by the commenter is Section 10009. As described on page 28-7 of the Draft PEIS/R, Section 10009 describes and limits sources of funds to implement the Settlement, authorizes appropriation of funds to implement the Settlement, establishes the San Joaquin River Restoration Fund, and directs the Secretary to conduct a study of modifications to Reach 4B, as described in the Settlement. Section 10009(f)(2) of the Act requires that the Secretary file a report with Congress no later than 90 days after issuing a determination on whether to expand the channel conveyance capacity to 4,500 cfs in Reach 4B or use an alternative route. Section 10009(f)(2) goes on to identify specific requirements of the study, which generally include the basis for the Secretary's determination, including how different factors were assessed, the final cost estimate as well as alterative cost estimates provided by others, and the Secretary's plan

for funding the cost of expanding Reach 4B. In the interest of managing redundancy and size of the PEIS/R, unnecessary detail is not presented.

As required by the Settlement and the Act, Reclamation and DWR are currently conducting a site-specific study on the potential effects of implementing actions for the conveyance of Interim and Restoration flows and incorporation of fish habitat through Reach 4B and the bypasses, consistent with the Settlement and the Act. Text has not been revised.

EC1-139: Paragraph 11(b)(1) of the Settlement states "Modifications in the San Joaquin River channel capacity (incorporating new floodplain and related riparian habitat) to ensure conveyance of at least 4,500 cfs through Reach 4B, unless the Secretary, in consultation with the Restoration Administrator and with the concurrence of the National Marine Fisheries Service . . . and the Fish and Wildlife Service . . determines that such modifications would not substantially enhance achievement of the Restoration Goal."

Section 10009(f)(2) of the Act requires that the Secretary file a report with Congress no later than 90 days after issuing a determination on whether to expand the channel conveyance capacity to 4,500 cfs in Reach 4B or use an alternative route. Section 10009(f)(2) goes on to identify specific requirements of the study, which generally include the basis for the Secretary's determination including how different factors were assessed, the final cost estimate as well as alterative cost estimates provided by others, and the Secretary's plan for funding the cost of expanding Reach 4B. As required by the Settlement and the Act, Reclamation and DWR are currently conducting a site-specific study on the potential effects of implementing actions for the conveyance of Interim and Restoration flows and incorporation of fish habitat through Reach 4B and the bypasses, consistent with the Settlement and the Act. The justification for the decision made, whether to expand the Reach 4B channel or use an alternative route, along with the fishery benefits and the costs, will be developed and provided as part of this separate, project-level study.

As described in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, 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 Settlement implementation. The Settling Parties have also 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 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.

EC1-140: As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 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 present benefits or impacts of the SJRRP to reintroduced Chinook salmon and does not assess the efficacy of the Settlement actions to provide suitable rearing habitat for 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. In particular, Appendix E, "Fisheries Management Plan," of the Draft PEIS/R describes the framework for addressing specific actions related to fisheries.

The potential impacts and benefits of modifications in Reach 4B1 on existing fisheries are described in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R. The need for and appropriate types of modifications in Reach 4B1 are being evaluated as part of a separate site-specific study, but are intended to provide benefits to reintroduced salmon and other native fishes. Text has not been revised. See MCR-1 in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-141: Chapter 1.0, "Introduction," of the Draft PEIS/R identifies the purpose and need of the SJRRP, which are consistent with and responsive to the direction provided to the Secretary in the Act that states, "[t]he 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 description of alternatives presented in 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. The Interim and Restoration flows, described beginning on page 2-17 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, and because the Act directs 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 Draft PEIS/R, as they would be highly speculative and in violation of the terms and conditions of the Settlement. See MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. For the reasons set forth above and in MCR-5, Reclamation and DWR believe that the Interim and Restoration flows considered in the Draft PEIS/R are consistent with the purpose and objectives of implementing the Settlement.

EC1-142: Alternatives that include flow routings not addressed in the Settlement, such as conveying some or all of the Interim and Restoration flows through the Chowchilla Bypass, Mariposa Bypass, and Eastside Bypass on a long-term basis, were eliminated from further consideration because these alternatives would not meet the purpose, need, and objectives of the Settlement. For the reasons set forth above and in MCR-5, Reclamation and DWR believe that the range of alternatives considered in the Draft PEIS/R are consistent with the purpose and objectives of implementing the Settlement. 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 the standard operations of the system.

See response to comment EC1-141 and MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-143: Preceding text in the same chapter identifies that the Draft PEIS/R was prepared consistent with authorities, including the NEPA, CEQA, and the Act. Individual subsections of the Act are described in detail in Chapter 28.0, "Consultation, Coordination, and Compliance," of the Draft PEIS/R. The discussion in Chapter 28.0 identifies how the each subsection of the Act relates to the action alternatives and/or to the analyses presented in the Draft PEIS/R; where subsections do not relate to the action alternatives or the Draft PEIS/R, this is identified in Chapter 28.0. In the interest of managing redundancy and size of the PEIS/R, unnecessary detail is not presented. Text has not been revised.

EC1-144: Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, Table 2-8 summarizes environmental compliance documents that have been completed or that are in progress. It does not list environmental compliance processes such as scoping that are in progress or that are being contemplated. Current information on the status of all site-specific NEPA processes related to the SJRRP is available at www.restoresjr.net. This comment does not raise issues or concerns specific to the environmental analysis presented in the Draft PEIS/R. Text has not been revised.

EC1-145: The cited lines identify actions to be taken by Reclamation before and during the release of Interim and Restoration flows. Chapters 4.0 through 26.0 of the Draft PEIS/R identify all feasible mitigation measures for potentially significant impacts. These mitigation measures would be implemented as described in those chapters. Text has not been revised.

EC1-146: As described in response to comment EC1-5, 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 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. See MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," for additional information on funding sources and the *Framework for Implementation.*

EC1-147: Text referred to in the comment states that "[a]s channel capacity limitations and other factors are addressed, the SJRRP would implement additional actions (such as Paragraph 11(b) and Paragraph 12 actions) and/or increase Interim and Restoration flows up to the amounts specified in the Settlement." In this context, "channel capacity limitations and other factors are addressed" includes Paragraph 11(a) actions. Paragraph 11(a) actions are described in greater detail on page 2-37 of the Draft PEIS/R.

As described in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, 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 Settlement implementation. The Settling Parties have also 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 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. See MCR-2 for additional information relevant to this comment.

EC1-148: Identified deficiencies in flood conveyance capacity are not being overlooked or ignored. To the contrary, evaluations in support of the NEPA and CEQA processes have further identified the flood conveyance capacity issues at a program level, and the lead agencies have included measures as part of all action alternatives to avoid, minimize, and reduce seepage and flood-related environmental impacts from releases of both Interim and Restoration flows. Pages 2-22 through 2-28 in the Draft PEIS/R describe detailed measures included in all action alternatives that would minimize flood risk resulting from Interim and Restoration flows, including limiting Interim and Restoration flows to then-current channel capacity. The Draft PEIS/R also describes channel

improvements that may be made to increase channel capacity, but Interim and Restoration flows would not exceed then-current channel capacity under any scenarios.

The Implementing Agencies recognize the need for additional erosion, seepage, and flood-related monitoring and maintenance, and have included measures to meet these needs in all action alternatives (pages 2-22 through 2-28 of the Draft PEIS/R). In addition, the Physical Monitoring and Management Plan, outlined on pages 2-49 through 2-52 of the Draft PEIS/R, and described in detail in Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R, includes monitoring activities, immediate management actions, and long-term management actions. Flows, channel capacity, vegetation establishment, and sediment mobilization are among the conditions that would be monitored and managed through the Physical Monitoring and Management Plan.

Additional actions in all action alternatives would address erosion, specifically described on page 2-26 of the Draft PEIS/R, beginning at line 31, to closely monitor erosion and perform maintenance and/or reduce Interim or Restoration flows as necessary to avoid erosion-related impacts. Measures included in all action alternatives to avoid, minimize, or reduce impacts, including the Physical Monitoring and Management Plan, are therefore not included or necessary to include as mitigation measures. The lead agencies have a strong commitment to monitoring as reflected in the Physical Monitoring and Management Plan, which will be implemented as part of the SJRRP. Furthermore, with implementation of measures included under all action alternatives to avoid, minimize, and reduce specific environmental impacts, including the Physical Monitoring and Management Plan, those impacts would not occur or would be less than significant, and thus do not require mitigation. Text has not been revised.

EC1-149: The action alternatives do not propose a revised plan of flood control. All action alternatives include modifications to operations of the flood control facilities to convey Interim and Restoration flows during non-flood periods. Analysis of this change in operations is not deferred, and is presented in the Draft PEIS/R as an evaluation of the potential for increasing flood risk under the action alternatives through operation of the flood control facilities to convey Interim and Restoration flows during non-flood periods as well as the potential for increasing flood risk through continued application of the flood control plan during flood periods concurrent with the Settlement implementation. 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 25 of the Executive Summary, 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 then-existing channel capacity. As described on page 2-40, lines 10 through 16, of 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 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. 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 implementation of 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).

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. Text has not been revised.

EC1-150: The change in operations at Friant Dam and the routing of Interim and Restoration flows through the Restoration Area could affect operations and maintenance activities regardless of the alternative selected for implementation. Effects 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, "Physical Monitoring and Management Plan," of the Draft PEIS/R). Additionally, flows would change the basic 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. See MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-151a: As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 of this Final PEIS/R, the PEIS/R does not evaluate the feasiility 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 present an assessment of the overall probability of success of the SJRRP, but does incorporate the actions identified in Appendix E, "Fisheries Management Plan," of the Draft 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. In particular, Appendix E, "Fisheries Management Plan," of the Draft PEIS/R describes the framework for addressing specific actions related to fisheries.

Paragraph 11 of the Settlement includes a series of channel and structural improvement projects. Paragraph 9 of the Settlement states that "the Parties [to the Settlement] agree that the channel and structural improvements listed in Paragraph 11 are necessary to fully achieve the Restoration Goal." The Settlement calls for the initial projects, Phase 1, to be completed by December 31, 2013, and for the Phase 2 projects to be completed by December 31, 2016. The Settlement does not specify that the Phase 1 projects need to be completed prior to the reintroduction of Chinook salmon. Rather, the Settlement envisioned that both spring-run and fall-run Chinook would be reintroduced prior to the completion of the Phase 1 and Phase 2 projects, as presented in the Settlement's milestone dates.

As described in more detail in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, 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 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 the reasons set forth above and in responses to MCR-1, MCR-2, and responses to comments EC1-151b through EC1-151g, no changes to the Draft PEIS/R are necessary. See MCR-1 and MCR-2, as well as responses to comments EC1-151b through EC1-151g for additional information relevant to this comment.

EC1-151b: As discussed in MCR-3, "Order and Schedule of Implementing Settlement Actions," in Chapter 2.0 of this Final PEIS/R, 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 spring-run and fall-run Chinook salmon reintroduced by December 31, 2012; Paragraph 11(a) actions (Phase 1 improvements) completed by December 31, 2013; initiation of full Restoration Flows by January 1, 2014; and Paragraph 11(b) actions (Phase 2 improvements) completed by December 31, 2016. The dates for completing Phase 1 and potentially Phase 2 improvements may change pending completion of compliance, coordination, consultation, data collection, and related efforts, and in compliance with the

provisions of the Settlement and the Act. Neither the Settlement nor the Act links the progress in completing Phase1 and Phase 2 improvements to Chinook salmon reintroduction. The Settlement envisioned that both spring-run and fall-run Chinook would be reintroduced prior to the completion of the Phase 1 and Phase 2 projects, as presented in the Settlement's milestone dates, but does not specify that the Phase 1 projects must be completed prior to the reintroduction of Chinook salmon.

Paragraph 14 of the Settlement states that the Secretary, through USFWS, and in consultation with the Secretary of Commerce, DFG, and the RA, will reintroduce spring-run 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 in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 of this Final PEIS/R, 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 for identifying and recommending additional actions under Paragraph 12 of the Settlement. The RA's recommendations would be taken into consideration 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. Appendix E, "Fisheries Management Plan," of the Draft PEIS/R describes the framework for addressing specific actions related to fisheries and evaluates their effectiveness in an action routing process.

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 a 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 Improvements Project, would consider the necessary modifications for fish passage and fish barriers. Implementation of the proposed Mendota 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 the Draft PEIS/R as conditions for approval of subsequent actions, when appropriate.

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. As described on page 2-47 of the Draft PEIS/R, trap-and-haul operations are not envisioned as a long-term management strategy, and would only be used as a temporary measure if protective features, such as fish screens, passage facilities, and river channel conditions suitable for fish migration, are not completed in time to reintroduce fish, if it is determined that entrainment and physical barriers exist that could hinder reintroducing and managing fish populations, or if river connectivity is disrupted.

See MCR-1 and MCR-3 in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. For the reasons set forth above and in MCR-1 and MCR-3, no revisions to the Draft PEIS/R are necessary.

EC1-151c: Reclamation, DWR, and other Implementing Agencies acknowledge that implementing the Settlement will involve many challenges. Many, though not all, potential challenges are addressed through provisions of the Settlement or the Act. The commenter raises concerns regarding how challenges related to spawning and incubation are addressed in the Fisheries Management Plan (Appendix E of the Draft PEIS/R) and the 10(a)(1)(A) Enhancement of the Species Permit Application. As stated in the Fisheries Management Plan on page ES-2, the Fisheries Management Plan is a first step in the Restoration Goal planning process and lays out a structured approach to adaptively manage the reintroduction of Chinook salmon and other fishes. The Fisheries Management Plan provides a roadmap to adaptively manage efforts to restore and maintain naturally reproducing and self-sustaining populations of Chinook salmon and other fish in the Restoration Area. The Fisheries Management Plan will be revised as needed, reflecting changes in implementation strategy as a result of the adaptive management approach. Given the uncertainty associated with reintroduction of Chinook salmon and native fish to the San Joaquin River, and the complexity of the SJRRP, an adaptive management program is needed to ensure the SJRRP can be flexible, adjusting as new information becomes available. The responses of reestablished Chinook salmon and other fishes to physical factors, such as temperature, streamflow, climate change, and other various limiting factors, are subject to further study.

The Fisheries Management Plan discusses the likelihood that the majority, if not all, of the spawning activity is expected to occur in Reach 1A (see Exhibit A, page 4-36 of Appendix E of the Draft PEIS/R). Production goals identified in the Fisheries Management Plan were defined by the Technical Advisory Committee and the Fisheries Management Work Group. The production goals are not based on Reach 1A being the sole location for spawning activity, because until fish are introduced, it is unknown how much and which parts of the river will be used for each life stage. Production goals proposed in various sources, as noted by the commenter, vary according to the information used and groups involved in identifying those goals. It is expected that production goals set forth to date will continue to evolve as described in the Fisheries Management Plan.

The Draft PEIS/R evaluates the potential impacts of implementing the Settlement consistent with the Act, including a program-level analysis of spring-run Chinook salmon

reintroduction. The potential impacts of this action on each resource topic are addressed in Chapters 4.0 through 26.0 of the Draft PEIS/R, where appropriate, as part of the discussion of program-level impacts presented in those chapters. 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 a project description and project-level analysis of the potential impacts of reintroduction that is, appropriately, more detailed than the program-level discussions of reintroduction in the Draft 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. Therefore, a detailed discussion of production goals or anticipated survival rates is not needed to evaluate program-level effects. This comment does not raise issues or concerns specific to the environmental analysis presented in the Draft PEIS/R.

EC1-151d: The Implementing Agencies acknowledge that implementing the Settlement will involve many challenges. Many, though not all, potential challenges are addressed through provisions of the Settlement or the Act. The commenter raises concerns regarding how challenges related to downstream migration and rearing are addressed in the Draft PEIS/R and in the *Reintroduction Strategies Report* (SJRRP 2011f).

The commenter states that "…any passive or active methods to collect juvenile Chinook should not be contemplated… Effective and safe collection of juveniles could only be accomplished with a criteria screen and collection facility…" The commenter does not 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, yet concludes that "Therefore, all of the Phase 1 flow routing and screening facilities must be completed and operation prior to the introduction of fish." Paragraph 11 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 spring-run and fall-run Chinook salmon reintroduced by December 31, 2012; Paragraph 11(a) actions (Phase 1 improvements) completed by December 31, 2013; initiation of full Restoration Flows by January 1, 2014; and Paragraph 11(b) actions (Phase 2 improvements) completed by December 31, 2016. As described in MCR-3, "Order and Schedule of Implementing Settlement Actions," in Chapter 2.0 of this Final PEIS/R, the dates for completing Phase 1 and potentially Phase 2 improvements may change pending completion of compliance, coordination, consultation, data collection, and related efforts, and in compliance with the provisions of the Settlement and the Act. Neither the Settlement nor the Act links the progress in completing Phase 1 and Phase 2 improvements to Chinook salmon reintroduction. The Settlement envisioned that both spring-run and fall-run Chinook would be reintroduced prior to the completion of the Phase 1 and Phase 2 projects, as presented in the Settlement's milestone dates, but does not specify that the Phase 1 projects must be completed prior to the reintroduction of Chinook salmon.

Paragraph 14 of the Settlement states that the Secretary, through USFWS, and in consultation with the Secretary of Commerce, DFG, and the RA, will reintroduce spring-

run 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 in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 of this Final PEIS/R, 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 for identifying and recommending additional actions under Paragraph 12 of the Settlement. The RA's recommendations would be taken into consideration 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. Appendix E, "Fisheries Management Plan," of the Draft PEIS/R describes the framework for addressing specific actions related to fisheries and evaluates their effectiveness in an action routing process.

Specific environmental effects related to the reintroduction of spring-run Chinook salmon would be addressed in the subsequent project-specific analysis under NEPA and CEQA, as appropriate, and in compliance with an associated Special Rule authorizing the designation of an experimental population. The timing of Chinook salmon reintroduction in relation to other Settlement actions, including the completion of Phase 1 and Phase 2 improvements and the release of full Restoration Flows, may be considered during the development of alternatives for evaluation in the future NEPA and CEQA analyses, but is not determined in the this PEIS/R as it would be too speculative for meaningful consideration without the availability of additional details and information on potential project-level actions. As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 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 on other Settlement actions. Accordingly, the potential effects of reintroduction (or other Settlement actions) on the reintroduced population itself are not presented in the PEIS/R.

As described on page 2-47 of the Draft PEIS/R, trap-and-haul operations are not envisioned as a long-term management strategy, and would only be used as a temporary measure if protective features are not completed in time to reintroduce fish, if it is determined that entrainment and physical barriers exist that could hinder reintroducing and managing fish populations, or if river connectivity is disrupted. Under the guidance of the Fisheries Management Work Group, and based on information presented in the Fisheries Management Plan (see Action A5 on page 5-20 of Appendix E, "Fisheries Management Plan: A Framework for Adaptive Management in the San Joaquin River Restoration Program," of the Draft PEIS/R), various monitoring programs are, or will be, in place to assess annually whether trap-and-haul of either juvenile or adult Chinook salmon will be needed.

The commenter also references and questions the estimates of survival rates put forth in the *Reintroduction Strategies Report* (SJRRP 2011f). As described on pages 1 and 2 of the *Reintroduction Strategies Report*, the report was developed in 2011 to support the development of the 10(a)(1)(A) Enhancement of the Species Permit Application. USFWS completed the 10(a)(1)(A) Enhancement of the Species Permit Application and submitted the application to NMFS in 2011. NMFS subsequently developed 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), which includes a project description and project-level analysis of the potential impacts of reintroduction that is, appropriately, more detailed than the program-level discussions of reintroduction in the Draft PEIS/R. As mentioned above and discussed in MCR-1, 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 on other Settlement actions. Therefore, a detailed discussion of downstream migration and rearing is not presented in the PEIS/R.

EC1-151e: The comment concerns the content of the *Hatchery and Genetics Management Plan* (SJRRP 2010a). The *Hatchery and Genetics Management Plan* provides guidance on the management and operation of a conservation facility in support of reintroduction of Chinook salmon. The Draft PEIS/R includes a program-level description and analysis of the use of such a facility (see page 2-43, lines 21 through 30). The impacts of reintroduction, including use of a conservation facility, would be evaluated at a project level of detail pursuant to NEPA and/or CEQA, as appropriate. The selection of the Feather River Fish Hatchery as a source for collection of broodstock for use at such a facility is evaluated at a project-level of detail 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). The project description and project -level analysis of the potential impacts of reintroduction 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* is, appropriately, more detailed than and consistent with the program-level discussions of reintroduction in the Draft PEIS/R. This comment does not raise issues or concerns specific to the environmental analysis presented in the Draft PEIS/R.

EC1-151f: It is inferred that the commenter is referring to predation of salmonids or other native fishes within the Restoration Area. As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 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 on other Settlement actions. Accordingly, evaluation of the potential for predation of reintroduced fish within the Restoration Area is not evaluated in the PEIS/R. However, it is anticipated that with reintroduction, predation of spring-run Chinook salmon within the Restoration Area would increase because currently there are no spring-run Chinook salmon in the Restoration Area; therefore, current predation is nonexistent.

Impacts FSH-8 and FSH-27 on pages 5-72 and 5-94, respectively, in the Draft PEIS/R address potential increases in predation on representative special-status fish. In particular, discussion on pages 5-72 and 5-73 of the Draft PEIS/R notes that Interim and Restoration flows would improve instream and floodplain habitat conditions, which would benefit most life stages of the fish species evaluated in the Draft PEIS/R in the Restoration Area. The release of Interim and Restoration flows would result in increases in the quantity, quality, and velocity of water downstream from Friant Dam, and generally reduce water temperatures, especially in Reach 1. This would shift habitat conditions away from the warmer and slower water habitat favored by nonnative predators and increase habitat suitability for native species, and would likely move nonnative predatory fish farther downstream. These effects would be less than significant and beneficial for representative special-status species, and would substantially reduce predation risk for reintroduced salmon. Moreover, implementing conservation measures CVS-1, CVS-2, EFH-1, and EFH-2 would reduce the effects of this impact.

EC1-151g: The commenter states that "[t]he SJRRP has forged ahead with the development of the PEIS/R without first conducting a comprehensive evaluation of the biological feasibility of this program as set forth in the original terms of the settlement." As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 of this Final PEIS/R, 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.

The commenter also states that "[t]he very fact that Chinook salmon were excluded from the evaluation of impacts of the restoration alternatives in the PEIS/R (between Friant Dam and the confluence with the Merced River) highlights an implicit assumption that the Restoration Program is feasible without the benefit of a comprehensive feasibility study." The Draft PEIS/R evaluates the potential impacts of implementing the Settlement consistent with the Act, including the potential impacts on the affected environment of reintroducing Chinook salmon. However, 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 present benefits or impacts of the SJRRP to reintroduced Chinook salmon. 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. In particular, Appendix E, "Fisheries Management Plan," of the Draft PEIS/R describes the framework for addressing specific actions related to fisheries.

For the reasons set forth above and in MCR-1, no changes to the Draft PEIS/R are necessary.

EC1-152: The commenter states that there is "…an overall bias in the PEIS/R towards minimizing impacts and embellishing positive impacts (benefits)…" In support of this assertion, the commenter refers to "detailed Draft PEIS/R fisheries comments…" It is inferred that this refers to comments EC1-165 through EC1-223b. Please refer to responses to comments EC1-165 through EC1-223b for additional information relevant to this comment.

The commenter also raises concerns with discussions in the Draft PEIS/R which cite Zimmerman et al. 2008. The commenter states that the source is in fact Zimmerman et al. 2009. The same article was submitted to the American Fisheries Society in 2008, before subsequent publication in 2009. The 2008 version is referenced and cited in the Draft PEIS/R, however, the analysis and conclusion of both articles is comparable. The full citation is located on page 29-19 of the Draft PEIS/R.

Hybridization between steelhead and rainbow trout was not called out explicitly as an impact statement in the Draft PEIS/R, but discussions of how hybridization could occur, and why it was not considered a significant issue for steelhead in the tributaries can be found starting on page 5-61, line 3, through page 5-63, line 6, of the Draft PEIS/R. It is expected that the resident (hatchery progeny) rainbow trout in Reach 1 would not, even with continuous San Joaquin River flow, migrate upstream into the steelhead spawning sections of the tributary rivers because resident rainbow trout do not typically make migrations of that distance. Additionally, steelhead do not spawn in the lower reaches of the San Joaquin River, so the risk of hybridization is further reduced. There would remain, however, a risk of hybridization for steelhead that would recolonize the Restoration Area. Those steelhead expected to recolonize the Restoration Area are from the San Joaquin River tributaries, which are known to have hybridized already with hatchery progeny rainbow trout. The Draft PEIS/R does indicate that there could be hybridization between steelhead and resident rainbow trout, but did not state that the hybridization was unimportant. Rainbow trout progeny from hatchery rainbow trout do occupy the river and could hybridize with anadromous steelhead. A quantification of the degree to which this could occur is speculative. However, given the current genetic mix

between steelhead and rainbow trout in the tributaries and the fact that resident rainbow trout currently occur in the tributaries, hybridization between steelhead and rainbow trout is not considered a significant issue for steelhead in the tributaries. Additionally, the Fisheries Management Work Group developed the *Stock Selection Strategy: Spring-Run Chinook Salmon* (SJRRP 2010b), along with the *Hatchery and Genetics Management Plan* (SJRRP 2010a), to help minimize potential genetic impacts to salmonids in the San Joaquin River and its tributaries.

Text has not been revised.

EC1-153: As noted by the commenter, by focusing on the more sensitive species (Atlantic salmon) than those targeted for impact assessment (including Sacramento splittail, black bass, striped bass, fall-run Chinook salmon, and steelhead), the impact assessment presented in Impacts FSH-2 and FSH-3 on page 5-70 of the Draft PEIS/R addresses the potential maximum adverse effect of pesticides and turbidity to the targeted species. Use of surrogate species is common among scientists, even if the surrogate does not always represent other species (Caro and O'Doherty 1998). The use of a more sensitive species as a surrogate and the cited literature is appropriate for the analyses in the Draft PEIS/R, because effects to Atlantic salmon would be similar or worse than for splittail, black bass and striped bass, and likely similar for fall-run Chinook salmon and steelhead. Text has not been revised.

EC1-154: The commenter states that there is "…a common theme within the PEIS/R to play up the negative impacts under the No-Action Alternative," and asserts that two sources are incorrectly used in the Draft PEIS/R to support this theme. The sources referred to in the comment are Newcombe and Jensen (1996) and Bash et al. (2001). 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. Reclamation and DWR disagree with this assertion. The sources cited are correctly used to support the discussion of the potential impacts of turbidity and suspended sediment on fish. However, the potential impact in which these sources are referenced, Impact FSH-3 on page 5-69, mischaracterized the contribution of the Grassland Bypass Extension Project (a reasonably foreseeable action under the No-Action Alternative) to Impact FSH-3 of the No-Action Alternative. The correction of this discussion revises the text on page 5-69, lines 1 through 26, to clarify that Future conditions for the No-Action Alternative include the Westside Regional Drainage Plan (SJRECWA et al. 2003), which is anticipated to eliminate salt discharges to the San Joaquin River from the Grasslands Drainage Area and improve water quality conditions within Reach 5 and the San Joaquin River from the Merced River to the Delta. See revision in Chapter 4.0, "Errata," of this Final PEIS/R. The level of significance of this impact is accordingly changed from potentially significant to less than significant.

EC1-155: Reclamation and DWR disagree that the Conservation Strategy lists only general actions that vaguely apply to a variety of impacts, or that it is used as a "catch-all solution." As discussed in detail in MCR-7, "Adequacy of Conservation Strategy," in Chapter 2.0 of this Final PEIS/R, although the restoration actions included in the action

alternatives would substantially benefit aquatic, wetland, and riparian habitats and species, the SJRRP could also have some adverse effects on these ecosystems and on upland ecosystems. The Conservation Strategy was developed to reduce these potential adverse effects to less-than-significant levels, and has been included in the project description of all alternatives to support attainment of the Restoration Goal. 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 Conservation Strategy resulting from this coordination is much more than a list of actions. It presents a sequence of avoidance, minimization, and compensation measures for specific species and habitat types with if/then relationships. For example, for most sensitive species, if full avoidance is not achievable, then the 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 measures of the Conservation Strategy was selected as an organizational tool to provide clarity during subsequent site-specific studies and implementation of 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 each measure would apply to (project- and/or program-level), and the regulatory agency or agencies that would be involved in the development and/or implementation of each measure.

The Implementing Agencies 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. Because it is part of the project description associated with all action alternatives, the Conservation Strategy will be implemented as described in this PEIS/R. Further, the Conservation Strategy will be implemented in coordination with the Implementing Agencies. In this manner, the Conservation Strategy is consistent with and enforceable under both NEPA and CEQA.

The commenter does not provide any explanation in this comment as to how the identified impact discussions are supposedly found lacking; this explanation is provided in comments EC1-201, EC1-202, EC1-203, EC1-204, EC1-206a, and EC1-206b. Please see response to comments EC1-201, EC1-202, EC1-203, EC1-204, EC1-206a, and EC1-206b for specific discussion of the identified impacts.

Conservation Strategy measures and additional feasible mitigation measures will be applied as necessary during subsequent site-specific analyses to reduce potentially significant impacts to less-than-significant levels. For more detailed discussions, see MCR-7, “Adequacy of Conservation Strategy,” in Chapter 2.0 of this Final PEIS/R. For the reasons set forth above and in MCR-7, no changes to the Draft PEIS/R related to the Conservation Strategy are necessary.

EC1-156: As discussed in detail in MCR-7, "Adequacy of Conservation Strategy," in Chapter 2.0 of this Final PEIS/R, although the restoration actions included in the alternatives would have substantial beneficial effects on aquatic, wetland, and riparian ecosystems, implementation of 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 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. Because it is part of the project description associated with all action alternatives, the Conservation Strategy will be implemented as described in 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.

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 the minimization measures would be implemented. If minimization is determined to not suffice, then the 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 measures of the Conservation Strategy was selected as an organizational tool to provide clarity during subsequent site-specific studies and implementation of 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 each measure would apply to (project- and/or program-level), and the regulatory agency or agencies that would be involved in the development and/or implementation of each measure. As discussed in additional detail in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 of this Final PEIS/R, the Settlement and the Act include provisions for accommodating implementation flexibility and mechanisms for evaluating success of the Restoration and Water Management goals.

As discussed in detail in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, the Draft PEIS/R evaluates the environmental effects of implementing the Settlement within the planning horizon of 2030. The Settlement 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, Settling Parties, and RA will remain cognizant of funding availability and the need to prioritize individual actions in recognition of their estimated

costs and anticipated effectiveness. Refer to MCR-2 for a more detailed discussion of current sources of funding for implementation of the SJRRP.

For more detailed discussions, see MCR-1, MCR-2, and MCR-7, "Adequacy of Conservation Strategy," in Chapter 2.0 of this Final PEIS/R. For the reasons set forth above and in MCR-1, MCR-2, and MCR-7, no changes to the Draft PEIS/R related to the Conservation Strategy are necessary.

EC1-157: See response to comment EC1-5 and MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R for a discussion of funding and funding sources for the SJRRP. In addition, the Draft PEIS/R does not assume that the Phase 1 channel and structural improvements projects would be completed and operational prior to the reintroduction of Chinook salmon. Rather the Draft PEIS/R assumes that salmon would be reintroduced prior to the completion of these projects (see for example, Table 1-2 in Chapter 1 of the Draft PEIS/R). This assumption is consistent with the Settlement, which calls for the completion of the Phase 1 channel and structural improvements projects in 2013 and salmon reintroduction a full year earlier (2012). Further, as described in response to comment EC1-5, 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 Settlement, including fish reintroduction actions. See also MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R for additional information on the *Framework for Implementation*.

EC1-158: See response to comment EC1-5 and MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R for a discussion of funding and funding sources for the SJRRP. As described in response to comment EC1-5, 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 Settlement, including fish reintroduction actions. See also MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R for additional information on the *Framework for Implementation*.

EC1-159: Feasibility studies 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. As described in the Principles and Guidelines, the purpose of a feasibility study is to ensure proper and consistent planning by Federal agencies in the formulation and evaluation of water and related land resource studies. As described in Reclamation's Directive and Standards, CMP-05-02, "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 Stat. 217)." Section 10201 authorizes and directs the Secretary of the Interior to conduct feasibility studies for specific improvements and facilities in the Friant Division. However, the Act does not

authorize or direct the Secretary to conduct a feasibility study to assess the SJRRP. In addition, and 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." The Settlement was a negotiated agreement among parties after 18 years of litigation.

See response to comment EC1-5 and MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R for a discussion of funding and funding sources for the SJRRP. As described in response to comment EC1-5, 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 Settlement, including fish reintroduction actions. See also MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R for additional information on the *Framework for Implementation*.

EC1-160: The commenter states that there is "…an overall bias in the PEIS/R towards minimizing the negative impacts and embellishing the positive impacts, at least as they pertain to the spring Chinook restoration goal…" In support of this assertion, the commenter states that if "a component of the Proposed Action results in an impact (e.g., increase predatory fish populations) that in turn adversely impacts the species for which the overall program is intended to benefit, these impacts should be clearly identified as such." As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 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 present an assessment of the potential for Settlement actions to adversely impact reintroduced spring-run 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. In particular, many program-level actions intended to address predatory fish species in the Restoration Area are included in all action alternatives (see page 2-42, line 35, through page 2-43, line 2; page 2-45, line 34, through page 2-46, line 6; page 2-46, lines 22 through 37; Conservation Measure CVS-1 on page 2-76; Conservation Measure CVS-2 on page 2-77; Conservation Measure EFH-1 on page 2-78; and Conservation Measure EFH-2 on page 2-79). Additionally, Appendix E, "Fisheries Management Plan," of the Draft PEIS/R describes the framework for addressing specific actions related to fisheries, including actions to address predation of reintroduced Chinook salmon and other native fishes (see page 5-56 of Appendix E).

The commenter also refers to subsequent detailed comments on fisheries. Please see detailed responses to these comments, including the following:

- Page 5-44, lines 5 through 37, and page 5-45, lines 1 through 18 – see response to comment EC1-181
- Page 5-70, lines 3 through 9 – see response to comments EC1-200a through EC1-200e
- Page 5-74, lines 38 through 40, and page 5-76, lines 5 through 7 – see response to comment EC1-202
- Pages 5-70 through 5-76 – see response to comment EC1-201
- Page 5-91 – see response to comments EC1-216, EC1-217, EC1-218a, and EC1-218b
- Page 5-94, lines 38 through 42, and page 5-95, lines 1 through 14 – see response to comment EC1-223a

EC1-161: As discussed in detail in MCR-7, "Adequacy of Conservation Strategy," in Chapter 2.0 of this Final PEIS/R, although the restoration actions included in the alternatives would have substantial beneficial effects on aquatic, wetland, and riparian ecosystems, implementation of 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 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. Because it is part of the project description associated with all action alternatives, the Conservation Strategy will be implemented as described in 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. As discussed in additional detail in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 of this Final PEIS/R, the Settlement and the Act include provisions for accommodating implementation flexibility and mechanisms for evaluating success of the Restoration and Water Management goals.

As discussed in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, the PEIS/R evaluates the environmental effects of implementing the Settlement within the planning horizon of 2030. The Settlement 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, Settling Parties, and RA will remain cognizant of funding availability and the need to prioritize individual actions in recognition of their estimated costs and anticipated

effectiveness. Refer to MCR-2 for a more detailed discussion of current sources of funding for implementation of the SJRRP.

See response to comment EC1-5 and MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R for a discussion of funding and funding sources for the SJRRP. In addition, the Draft PEIS/R does not assume that the Phase 1 channel and structural improvements projects would be completed and operational prior to the reintroduction of Chinook salmon. Rather the Draft PEIS/R assumes that salmon would be reintroduced prior to the completion of these projects (see for example, Table 1-2 in Chapter 1 of the Draft PEIS/R). This assumption is consistent with the Settlement, which calls for the completion of the Phase 1 channel and structural improvements projects in 2013 and salmon reintroduction a full year earlier (2012). Further, as described in response to comment EC1-5, 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 Settlement, including fish reintroduction actions. See also MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R for additional information on the *Framework for Implementation.*

EC1-162: See page 2-47 of the Draft PEIS/R for a discussion of trap-and-haul operations, and Chapters 4.0 through 26.0 for an evaluation of impacts of this and all other actions that could be implemented as part of the SJRRP. As described in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R 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 Settlement and presents a schedule and budget for these actions. The activities envisioned within the *Framework for Implementation* are included in this PEIS/R. See also MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R and response to comment EC1-5 for a discussion of funding and funding sources for the SJRRP.

EC1-163: Generally, effects, consequences, and impacts are similar in meaning, but one is often more appropriate than another for specific contexts. Without specific comments regarding contexts that may be unclear, the reader is asked to rely on common definitions and uses of these terms, as for other common terms not otherwise defined in Appendix C, "Glossary and Reader's Guide." The term "impacts" is consistently used whenever drawing a conclusion under NEPA/CEQA. Text has not been revised.

EC1-164: As described in more detail in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R the Settling Parties and Implementing Agencies 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 Settlement, including the Phase 1 and Phase 2 improvements, including actions to isolate and fill gravel pits, and presents 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 Settlement implementation, 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.

EC1-165: Comment noted. These sources were reviewed during preparation of the Draft PEIS/R and are part of the existing data sources, but did not constitute primary documents and are therefore not explicitly mentioned in the text. Text has not been revised.

EC1-166: As described in response to comment EC1-15b, inclusion of the sensitivity analyses in the Final PEIS/R does not trigger a need to recirculate a revised Draft PEIS/R under either NEPA or CEQA. See response to comment EC1-15b for additional information relevant to this comment.

EC1-167: The referenced text in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R states: "[t]he San Joaquin River historically supported large runs of spring-run Chinook salmon; DFG (1990, as cited in Yoshiyama et al. 1996) suggested that this run was one of the largest Chinook salmon runs in any river on the Pacific Coast, with an annual escapement possibly ranging from 200,000 to 500,000."

The Lackey 2000 report defines populations in the Columbia River Basin as a whole, including all the tributaries, at 11 million to 15 million fish, while California, as a whole has 5 million to 6 million wild salmon. Additionally, the text in Chapter 5.0 of the Draft PEIS/R states that the spring-run Chinook on the San Joaquin River was one of the largest runs, while the Lackey report refers only to wild salmon, which includes five species and multiple runs. The text was meant to convey that for a single river, the San Joaquin River population was one of the largest. Yoshiyama et al. 1996 is a key source of information available regarding historic populations of Chinook salmon in the San Joaquin River, and has been peer reviewed. Text has not been revised.

EC1-168: Preliminary data, including surveys of the overall habitat categories present in the Restoration Area and their abundance, are described in the 2010 Annual Technical Report (SJRRP 2011g). These preliminary results provide an indication of the potential quantity of fish habitat, but do not indicate the quality of habitat for fish. The collection and analysis of data indicating the quality of habitat for fish is upcoming and will be presented in future Annual Technical Reports, which will be made available to the public.

EC1-169: The text on page 2-29, lines 19 through 31, of the Draft PEIS/R describes potential use of the Hills Ferry Barrier for the purpose of redirecting Chinook salmon and, incidentally, Central Valley steelhead until sufficient habitat and channel improvements to support salmonids are complete. With implementation of this action, it is anticipated that fall-run Chinook salmon would not migrate upstream from the Hills Ferry Barrier prior to reintroduction without intervention such as that conducted by DFG in 2010 (see response to comment EC1-90). Reintroduction of Chinook salmon is evaluated at a program level of detail in 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 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, and does not evaluate the feasibility of the Settlement or the interactions of individual Settlement actions on 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. However, Section 10004(h) of the Act states that the Secretary, in consultation with DFG, shall evaluate the effectiveness of the Hills Ferry Barrier in preventing unintended upstream migration of anadromous fish in the San Joaquin River and any false migratory pathways. Section 10004(h) of the Act also authorizes the Secretary to assist DFG in making any improvements to the Hills Ferry Barrier, if necessary to avoid imposing additional regulatory actions against Third Parties. Reclamation and DWR have consulted with DFG and NMFS on the use of the Hills Ferry Barrier, and are currently evaluating the effectiveness of the Hills Ferry Barrier.

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 false migration pathways and entrainment of reintroduced spring-run and fall-run Chinook salmon. This includes all actions described in Section 5.2.3, "Excessive Straying," of Appendix E of the Draft PEIS/R, beginning on page 5-28.

EC1-170: Table 5-1 of the Draft PEIS/R is a summary of previous spawning gravel surveys, and identifies criteria used by those studies. It is not intended to set standards for the SJRRP. Further studies on spawning gravel will be conducted and presented in the SJRRP Annual Technical Reports. Text has not been revised.

EC1-171: The referenced text is based on surveys conducted by DFG in 2002 describing existing habitat conditions. As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 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 quantity or quality of anticipated holding habitat.

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 holding and spawning habitat, and evaluating their merits in an action routing process to maximize the success of the Chinook salmon reintroduction program. Specifically, Goal N (page 5-45 of Appendix E) is to "Ensure sufficient quantity and quality of holding pool habitat to meet Restoration Goal." To achieve holding pool habitat quality to meet the Restoration Goal, the spawning gravel will be augmented near potentially suitable holding pool habitat. Additionally, Goal O (page 5-46 of Appendix E), "Provide sufficient quantity and quality of spawning habitat for Chinook salmon," states:

> *Spawning habitat in Reach 1 is considered of high importance as Reach 1 is expected to provide all suitable spawning habitat. Spawning habitat in Reaches 2 through 5 are considered to have a low importance as no spawning is expected to occur in these reaches.*

Because holding habitat and rearing habitat must be in close proximity to each other, spring-run Chinook salmon are not expected to hold downstream from Reach 1. Text has not been revised.

EC1-172: The section referenced by the commenter describes existing conditions, and does not reflect anticipated conditions following implementation of the action alternatives. The anticipated changes in habitat that would occur in Reaches 2 through 5 as a result of program-level actions, including changes in invertebrate populations, are described in Impact FSH-9 on pages 5-73 and 5-74 of the Draft PEIS/R. Many program-level actions would lead to increased abundance and diversity of aquatic and riparian vegetation through restoration and reconnection of floodplains with the river channel, which would in turn lead to increased secondary aquatic production. These changes would provide invertebrate food resources relied on by most life stages of representative fish species evaluated in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R, as well as by juvenile Chinook salmon. In particular, all action alternatives include incorporation of new floodplain habitat and related riparian habitat in Reach 2B, pursuant to Paragraph 11(a)(2) of the Settlement, and potential actions to create and/or enhance additional floodplain habitat outside Reaches 2B and 4B1, pursuant to Paragraph 12. Alternatives A2, B2, and C2 include incorporation of new floodplain habitat and related riparian habitat in Reach 4B1, pursuant to Paragraph 11(b)(1).

The anticipated changes in habitat that would occur in Reaches 2 through 5 as a result of project-level actions, including changes in invertebrate populations, are described in Impact FSH-28 on page 5-95 of the Draft PEIS/R. Interim and Restoration flows would lead to improved food resources and food web support conditions for all representative fish species, as well as for juvenile Chinook salmon. The improved conditions would result from improved riparian and channel habitat for benthic and terrestrial food organism production; increased abundance and diversity of aquatic and riparian vegetation leading to increased primary and secondary aquatic production; enhanced perennial streamflow flushing of fine sediment from substrate, thereby increasing benthic macroinvertebrate production; inundation of floodplains improving feeding opportunities

for fish outside the main channel; and increased nutrient input from salmon carcasses, which would improve marine-origin nutrient load and in-river food web support.

Insufficient floodplain and riparian habitat, including food sources such as invertebrates, is identified in Appendix E, "Fisheries Management Plan," of the Draft PEIS/R, as a potential limiting factor for successful reintroduction of Chinook salmon. Accordingly, DWR and DFG are conducting a 3-year benthic macroinvertebrate bioassessment throughout the Restoration Area, as described in the 2011 Annual Technical Report (SJRRP 2012c).

EC1-173: The discussion regarding needs and effects to habitat resulting from the SJRRP are described starting on page 5-42 of the Draft PEIS/R. The section cited in the comment describes existing conditions in place in place when the NOP for the PEIS/R was published (August 22, 2007 (Reclamation)), which do not include anadromous salmonids or habitat modified by Interim and Restoration flows. Appendix E, "Fisheries Management Plan," and Appendix K, "Biological Resources – Fisheries," of the Draft PEIS/R contains additional and substantial information on environmental conditions in the Restoration Area that would affect salmonids.

The FMWG, with members from NMFS, USFWS, DFG, and DWR, prepared Exhibit A, "Conceptual Models of Stressors and Limiting Factors for San Joaquin River Chinook Salmon" to Appendix E, "Fisheries Management Plan," of the Draft PEIS/R to describe the life history requirements and the environmental factors that will most likely affect the abundance of San Joaquin River spring-run and fall-run Chinook salmon (*Oncorhynchus tshawytscha*) in the Restoration Area and downstream from the Restoration Area, including the San Joaquin River from the Merced River to the Delta, Delta, San Francisco Estuary, and Pacific Ocean. Included are Chinook salmon conceptual models and supporting information intended to serve as key components of the Fisheries Management Plan (Appendix E of the Draft PEIS/R). The models assume that all restoration actions prescribed in the Settlement will be implemented. The information provided in Appendices E and K of the Draft PEIS/R contain more than 600 pages of text on all aspects of salmon reintroduction, with a particular emphasis on describing potential limiting factors to successful reintroduction. Text has not been revised.

EC1-174: As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 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 present the potential impacts to reintroduced Chinook salmon associated with actions that benefit predatory species. However, the potential impacts of the action alternatives on representative fish species, including changes in predation, are described in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R.

Program-level actions would provide some benefits and some impacts to predators. As described under Impact FSH-8 on page 5-73, for example, restoration of side channels and backwaters could also increase predation risk for representative special-status species

and some game fish species (e.g., rainbow trout) by increasing the amount or quality of habitat for piscivorous fish such as black bass. These quiet water habitats provide preferred habitat for predatory fish species and could increase their populations. Conversely, improved instream and floodplain habitat conditions and isolating or filling gravel pits in Reach 1 would likely reduce largemouth bass populations and subsequently decrease predation on representative special-status fish species. Restored floodplain habitat would increase spawning opportunities for Sacramento splittail, which would help that species withstand predation pressure. In particular, hardhead and Sacramento splittail would be expected to benefit from these actions. The overall impact conclusion for changes in predation levels in the San Joaquin River within the Restoration Area (FSH-8) is less than significant and beneficial.

As described in Impact FSH-27 on page 5-94 and page 5-95 of the Draft PEIS/R, Interim and Restoration flows are likely to improve instream and floodplain habitat conditions, increasing the quantity, quality, and velocity of water downstream from Friant Dam, and generally reducing water temperatures. These changes would occur throughout the Restoration Area, but particularly in Reach 1. Impact FSH-27 concludes that these changes would shift habitat conditions away from the warmer and slower water habitat favored by nonnative predators and increase habitat suitability for native species, including native predators.

While the impacts related to changes in predation are anticipated to be less than significant and beneficial as described under Impacts FSH-8 and FSH-27, the Implementing Agencies nevertheless 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 predation of reintroduced Chinook salmon and other native fishes. Specifically, see Actions S1, S2, S3, S4, S5, and S6 (pages 5-56 through 5-60 of Appendix E).

While actions described in Appendix E of the Draft PEIS/R would reduce the risk of predation of reintroduced Chinook salmon, the actions are not anticipated to eliminate predatory fish species from the Restoration Area. Native predatory fish found within the Restoration Area species (including Sacramento pikeminnow, prickly sculpin, and riffle sculpin) are also commonly found on Central Valley rivers supporting Chinook salmon populations, demonstrating the potential for these species to coexist.

Text has not been revised.

EC1-175: As described in Chapter 2.0, “Description of Alternatives,” of the Draft PEIS/R routing of 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 not retained for inclusion in the action alternatives because it would prevent achieving the SJRRP purpose and need, consistent with the Settlement. However, in response to downstream conditions, Interim or Restoration flows could be temporarily diverted to the bypass system, and flood flows would continue to be routed through Chowchilla Bypass according to the standard operations of the system.

Several actions are described in Chapter 2.0 of the Draft PEIS/R to prevent or minimize the effects of stranding of reintroduced fish in the bypass system, including modifying the Chowchilla Bypass Bifurcation Structure (page 2-42 of the Draft PEIS/R), implementation of 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 of the Draft PEIS/R). The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text on page 5-24, lines 38 through 40, of the Draft PEIS/R has been revised in response to the comment to clarify that that any species present near the diversion points could be routed or entrained into the bypasses along with flood flows. See Chapter 4.0, "Errata," in this Final PEIS/R.

EC1-176: As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 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 efficacy of the SJRRP to meet production goals or to establish a self-sustaining population of Chinook salmon.

As noted by the commenter, suitable spawning habitat within the Restoration Area is largely limited to Reach 1. As described on page 5-46 of Appendix E, "Fisheries Management Plan," of the Draft PEIS/R, spawning habitat in Reach 1 is considered of high importance as Reach 1 is expected to provide all suitable spawning habitat. Spawning habitat in Reaches 2 through 5 is considered to have a low importance as no spawning is expected to occur in these reaches. As described in the *2012 Monitoring and Analysis Plan* (SJRRP 2011h), the Implementing Agencies, in consultation with the RA and Technical Advisory Committee, developed and are currently implementing studies to evaluate habitat conditions for spawning and egg incubation within the Restoration Area.

EC1-177: Compliance with the Act is identified in the statement of purpose set forth in Chapter 1.0, "Introduction," of the Draft PEIS/R. The Act is not called out in each chapter as it applies to all resource categories. The Act is thoroughly described in Chapter 28.0 of the Draft PEIS/R, "Consultation, Coordination, and Compliance," including how sections of the Act relate to the content of the Draft PEIS/R. This content is not repeated in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R. Text has not been revised.

EC1-178: See Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R for a more detailed list of the actions included in the action alternatives, including Phase 1 and 2 projects. Text has not been revised.

EC1-179: As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 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 present a "comprehensive discussion… that identifies how changes in the [Restoration Area] will benefit or prove to be detrimental to salmonids," as suggested by the commenter. This comment is substantially similar to comment EC1-171. See response to comment EC1-171.

EC1-180: The commenter implies that hybridization of reintroduced spring-run Chinook salmon with fall-run Chinook salmon (it is inferred that the commenter refers to existing fall-run Chinook salmon populations) must be prevented to conclude that Impact FSH-10 would be less than significant, and asks what measures will be taken to prevent hybridization. As described in Impact FSH-10 on page 5-74, lines 16 through 18 of the Draft PEIS/R, hybridization may occur under the action alternatives. However, because the overlap in spawn timing is minimal, there would likely be less hybridization occurring between the two runs. Additionally, if spring-run Chinook salmon do spawn in the tributaries, their earlier spawning period means that their redds in the tributaries could be destroyed through superimposition by spawning fall-run Chinook salmon, further reducing the likelihood of returning adult spring-run Chinook salmon to the tributaries in following years. Additionally, fall-run Chinook salmon on the tributaries are genetically compromised. Because the impact is identified as less than significant, no mitigation is identified, consistent with the approach to describing environmental consequences in Chapter 3.0, "Considerations for Describing the Affected Environment and Environmental Consequences," of the Draft PEIS/R. Appendix E, "Fisheries Management Plan," of the Draft PEIS/R, describes the framework for addressing specific actions related to fisheries, including actions to address segregation between fall-run and spring-run Chinook salmon in the Restoration Area. This includes Action I3 (page 5-38), Action L2 (page 5-43), and Action M1 (page 5-44). Additionally, the Fisheries Management Work Group developed the *Stock Selection Strategy: Spring-Run Chinook Salmon* (SJRRP 2010b), along with the *Hatchery and Genetics Management Plan* (SJRRP 2010a), to minimize potential genetic impacts to salmonids in the San Joaquin River and its tributaries.

EC1-181: As described in greater detail in response to comment EC1-174, the impacts related to changes in predation are anticipated to be less than significant and beneficial as analyzed under Impacts FSH-8 and FSH-27. The Implementing Agencies nevertheless 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 predation of reintroduced Chinook salmon and other native fishes. Specifically, see Actions S1, S2, S3, S4, S5, and S6 (pages 5-56 through 5-60 of Appendix E).

While actions described in Appendix E of the Draft PEIS/R would reduce the risk of predation of reintroduced Chinook salmon, the actions are not anticipated to eliminate predatory fish species from the Restoration Area. Native predatory fish found within the Restoration Area species (including Sacramento pikeminnow, prickly sculpin, and riffle sculpin) are also commonly found on Central Valley rivers supporting Chinook salmon populations, demonstrating the potential for these species to coexist. See response to comment EC1-174 for additional information relevant to this comment.

EC1-182: As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 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 address the potential benefits or impacts of the action alternatives on reintroduced spring-run and fall-run Chinook salmon. The PEIS/R evaluates the potential impacts of implementing the Settlement on existing populations of Chinook salmon in the study area, including fall-run Chinook salmon in the San Joaquin River below the Merced River confluence, and all runs of Chinook salmon within the Delta.

EC1-183: While the Implementing Agencies have made significant progress in identifying details and preparation of the permits required for the reintroduction process since the Settlement was reached, uncertainty remains regarding the details of this process. Remaining uncertainty to be resolved includes the source population(s) from which individuals could be collected for reintroduction; the life stage or stages and number of individuals that would be collected; and the frequency, method, and timing of collection. The Draft PEIS/R does not evaluate the potential impacts to source population(s) because impacts to those source population(s) would be too speculative for meaningful consideration at this time. These impacts will be discussed in future NEPA and CEQA documents as required and when appropriately detailed information is available.

USFWS completed the 10(a)(1)(A) Enhancement of the Species Permit Application and submitted the application to NMFS in 2011. NMFS subsequently developed 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), which includes a project description and project-level analysis of the potential impacts of reintroduction that is, appropriately, more detailed than the program-level discussions of reintroduction in the Draft PEIS/R. More information on these efforts can be found at swr.nmfs.noaa.gov/sjrrestorationprogram/salmonreintroduction.htm

State CEQA Guidelines Section 15145 states, "If, after thorough investigation, a lead agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact." In consideration of this guidance, text on page 5-43, lines 13 through 15, of the Draft PEIS/R has been revised to present this conclusion as discussed above. 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. As further detail on source populations is determined through the Chinook salmon reintroduction process, separate analyses will be conducted consistent with NEPA and CEQA, as appropriate, and in compliance with an associated Special Rule authorizing the experimental population.

EC1-184: As the commenter notes, the indirect effects of water temperature on other ecosystem components such as feeding, disease, oxygen solubility, and the chemical equilibriums and activity of pollutants known to affect fish and other aquatic organisms were not assessed in detail in the Draft PEIS/R, because of a lack of data on these complex interactions. The assessment in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R, focused on the direct effects of temperatures on fish survival and mortality. Impacts FSH-2, FSH-3, and FSH-5 through FSH-9 discuss impacts resulting from factors such as predation and water quality. Impacts FSH-1, FSH-13, FSH-22, and FSH-31 separately address impacts resulting from changes in water temperature downstream from Friant Dam. As more data on the changes in temperature, water quality, and biological conditions are collected through the Interim Flows program, initiated in 2009, components of the Conservation Strategy may be implemented to address adverse impacts to special-status fish. The Conservation Strategy includes several best management practices to avoid and minimize direct and indirect effects to special-status fish, including PL-1, CVS-1, CVS-2, EFH-1, and EFH-2. These are common best management practices included in many EISs and EIRs with similar potential effects. Implementing special-status fish conservation measures PL-1, CVS-1, CVS-2, EFH-1, and EFH-2 of the Conservation Strategy would minimize or prevent potential adverse effects on special-status fish species related to Impacts FSH-1, FSH-2, FSH-3, FSH-5, FSH-8, and FSH-14. Text has not been revised.

EC1-185: As described in greater detail in response to comment EC1-174, the impacts related to changes in predation are anticipated to be less than significant and beneficial as analyzed under Impacts FSH-8 and FSH-27. The Implementing Agencies nevertheless 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 predation of reintroduced Chinook salmon and other native fishes. Specifically, see Actions S1, S2, S3, S4, S5, and S6 (pages 5-56 through 5-60 of Appendix E).

While actions described in Appendix E of the Draft PEIS/R would reduce the risk of predation of reintroduced Chinook salmon, the actions are not anticipated to eliminate predatory fish species from the Restoration Area. Native predatory fish found within the Restoration Area species (including Sacramento pikeminnow, prickly sculpin, and riffle sculpin) are also commonly found on Central Valley rivers supporting Chinook salmon populations, demonstrating the potential for these species to coexist. See response to comment EC1-174 for additional information relevant to this comment.

EC1-186: As described on page 5-43, lines 4 through 14, of the Draft PEIS/R, the program- and project-level impacts assessments are based on evaluations ranging from quantitative simulations (e.g., modeled spawning production of largemouth bass in Millerton Lake) to qualitative and general evaluations of probable scenarios (e.g., potential changes in environmental conditions that would render an environment unsuitable relative to the environmental tolerance or requirements of a fish species). Site-specific information on most of the program-level actions has not yet been sufficiently developed to allow meaningful and accurate descriptions that would support more than a qualitative assessment. Therefore, the program-level impacts assessment is qualitative. Environmental impacts of implementing the program-level actions would be evaluated in greater detail, as necessary, in project-specific environmental compliance documents. Information currently available for project-level actions is sufficient to support a more detailed, project-level impacts assessment.

As described in MCR-4, "Segmentation Under NEPA and CEQA," in Chapter 2.0 of this Final PEIS/R, 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.

The best available information was used to develop Appendix E, "Fisheries Management Plan," and Appendix K, "Biological Resources – Fisheries," of the Draft PEIS/R. The Fisheries Management Work Group, with members from NMFS, USFWS, DFG, and DWR, prepared Exhibit A, "Conceptual Models of Stressors and Limiting Factors for San Joaquin River Chinook Salmon" to Appendix E, "Fisheries Management Plan," of the Draft PEIS/R to describe the life history requirements and the environmental factors that will most likely affect the abundance of San Joaquin River spring-run and fall-run Chinook salmon in the Restoration Area and downstream from the Restoration Area, including the lower San Joaquin River, Sacramento-San Joaquin Delta (Delta), San Francisco Estuary, and Pacific Ocean. Included are Chinook salmon conceptual models and supporting information intended to serve as key components of the Fisheries Management Plan (Appendix E of the Draft PEIS/R). The models assume that all restoration actions prescribed in the Settlement will be implemented. The information provided in Appendices E and K of the Draft PEIS/R contain more than 600 pages of text

on all aspects of salmon reintroduction, with a particular emphasis on describing potential limiting factors to successful reintroduction.

The uncertainties related to an undertaking of this magnitude, i.e., restoration of a salmon population to an entire river, are duly identified and discussed in numerous places in the Draft PEIS/R. Describing levels of confidence, as requested by the commenter, would be highly speculative and is not deemed appropriate or necessary. Starting on page E9-2 of Appendix E, "Fisheries Management Plan," of the Draft PEIS/R, however, the issue of uncertainty is addressed as follows, "Given the uncertainty associated with reintroduction of Chinook salmon and native fish to the San Joaquin River, and the complexity of the SJRRP, an adaptive management program is needed to ensure the SJRRP can be flexible, adjusting as new information becomes available. The responses of reestablished Chinook salmon and other fishes to physical factors, such as temperature, streamflow, climate change, and the impacts of various limiting factors, are unknown. Adaptive management is an approach allowing decision makers to take advantage of a variety of strategies and techniques that are adjusted, refined, and/or modified based on an improved understanding of system dynamics." The Implementing Agencies recognize the uncertainties associated with salmon reintroduction and have incorporated adaptive management and monitoring processes into the salmon reintroduction process, as provided in Appendix E.

EC1-187: Impact FSH-3 ("Changes in Sediment Discharge and Turbidity in the San Joaquin River Between Friant Dam and the Merced River") on page 5-69 and Impact FSH-17 ("Changes in Sediment Discharge and Turbidity in the San Joaquin River Upstream from Friant Dam") on page 5-84 of the Draft PEIS/R discuss impacts to fish resulting from turbidity. Text has not been revised.

EC1-188a: Text quoted in the comment refers to the modeling results discussed in the sentences following the quoted text, including projected increases in mean annual and summer (June to August) air temperatures for the Restoration Area. These projected increases were developed using downscaled data and General Circulation Model (GCM) ensemble predictions, as described on page 5-51 and pages 5-67 through 5-68 of the Draft PEIS/R. Text on page 5-51, lines 12 through 14, of the Draft PEIS/R has been revised in response to comment by removing the sentence quoted in the comment. See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-188b: As discussed in greater detail in response to comment EC1-152, it is expected that the resident (hatchery progeny) rainbow trout in Reach 1 would not, even with continuous San Joaquin River flow, migrate upstream into the steelhead spawning sections of the tributary rivers because resident rainbow trout do not typically make migrations of that distance. Additionally, steelhead do not spawn in the lower reaches of the San Joaquin River, so the risk of hybridization is further reduced. There would remain, however, a risk of hybridization for steelhead that would recolonize the Restoration Area. A quantification of the degree to which this could occur is speculative but given the current genetic mix between steelhead and rainbow trout in the tributaries and the fact that resident rainbow trout currently occur in the tributaries, hybridization between steelhead and rainbow trout is not considered a significant issue for steelhead in

the tributaries. Additionally, the Fisheries Management Work Group developed the *Stock Selection Strategy: Spring-Run Chinook Salmon* (SJRRP 2010b), along with the *Hatchery and Genetics Management Plan* (SJRRP 2010a), to help minimize potential genetic impacts to salmonids in the San Joaquin River and its tributaries. Text has not been revised. See also response to comment EC1-152 for additional information relevant to this comment.

EC1-189: The Draft PEIS/R presents a complete and thorough analysis of the potential impacts of the No-Action Alternative and action alternatives in Chapters 4.0 through 28.0. Supporting information, including detailed modeling output showing simulated changes in water temperature and water quality, is presented in appendices to the Draft PEIS/R. This information is summarized and discussed in the main body of the Draft PEIS/R only to the level of detail necessary to support the analyses. Similarly, and consistent with *San Joaquin Raptor Center v. County of Merced* (2007) 149 Cal. App. 4th 645, the fundamental baseline assumptions used for purposes of the environmental analyses presented in the Draft PEIS/R, are presented in Chapter 2.0, "Description of Alternatives," Chapter 3.0, "Considerations for Describing the Affected Environment and Environmental Consequences," and the methodology sections or related sections of each resource-specific chapter of the Draft PEIS/R.

The commenter particularly refers to discussions of water temperature and quality presented in Section 5.4.1, "Impact Assessment Methodology," of the Draft PEIS/R. This section summarizes the approach used to assess the potential for changes in water temperatures and quality within the Restoration Area to impact fisheries. The potential for changes in water temperature and quality to result in water quality impacts are described separately in Chapter 14.0, "Hydrology – Surface Water Quality," of the Draft PEIS/R. The commenter also states that "[t]he draft contains no meaningful information regarding water temperatures in the Restoration Area." A reach-specific discussion of the potential changes in water temperatures in the Restoration Area to occur under the action alternatives as compared with the No-Action Alternative is provided on pages 14-24 through 14-27 of the Draft PEIS/R. Generally, the analyses conclude that long-term average water temperatures within the Restoration Area under the action alternatives would be similar to or lower than water temperatures under the No-Action Alternative in all reaches of the San Joaquin River. Text has not been revised.

EC1-190: As stated on page 5-42 of the Draft PEIS/R:

> *The fisheries resource impact assessment describes the potential beneficial and adverse impacts of each program alternative on fishes and their habitat in the study area. The assessment was based largely on qualitative evaluations of the response of representative fish species to changes in environmental conditions projected to occur as a result of the implementation, operation, and maintenance of actions associated with each program alternative. … Information on most of the program-level actions has not yet been sufficiently developed to allow meaningful and accurate descriptions that would support more than a general qualitative assessment. Therefore, the program-level*

> *impacts assessment is qualitative. Environmental impacts of implementing the program-level actions would be evaluated in greater detail, as necessary, in project-specific environmental compliance documents.*

Pages 5-54 and 5-55 of the Draft PEIS/R provide a list of the "Program-level actions to improve or provide fish passage at existing or potential physical structures…" Additional information regarding barriers to fish passage, diversions, and scientific studies conducted on the effects of these structures is presented on page 5-55 through 5-57.

The analysis contained on pages 5-67 through 5-111 of the Draft PEIS/R does in fact discuss potential impacts from all of the structures listed in Table 5-9 (page 5-55), as well the potential actions listed on pages 5-54 and 5-55 at a program level. See, for example, Construction-Related Changes in Habitat Conditions in Impact FSH-4 (Alternatives A1 and A2) on page 5-70; and Change in Diversions and Entrainment in Impact FSH-7 (Alternatives A1 and A2) page 5-72, Impact FSH-12 (Alternatives B1 and B2) page 5-75, and Impact FSH-12 (Alternatives C1 and C2) page 5-76. The analysis was conducted at a program level because project-level site-specific information, such as the information requested by the commenter (i.e., where exactly will fish screens be necessary, what false migration pathways will need to be blocked, which road crossings provide passage impediments, how will trap and haul occur), is not yet available. See also MCR-4, "Segmentation Under NEPA and CEQA," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment. Therefore, for the reasons set forth above and in MCR-4, no changes to the Draft PEIS/R are necessary.

EC1-191: While the conditions created by habitat improvement and/or restoration could benefit the bass fishery, many others would be to the detriment of the bass fishery. Quantification of the level of predation cannot be made because it is too speculative; however, a qualitative assessment of potential changes in predation as a result of habitat modifications made under program-level actions is presented on pages 5-72, 5-73, 5-88, and 5-89 of the Draft PEIS/R. Qualitative assessment of potential changes in predation as a result of habitat modifications made under project-level actions is presented on pages 5-94 and 5-95 of the Draft PEIS/R. The assessment of impacts to fisheries presented in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R does not break out impacts to individual species, but rather presents the overall anticipated effects to nonnative predator species as a group. This is then compared to native species as a group rather than by individual species. This approach is considered sufficient and appropriate to determine the anticipated changes in predation of native species because it allows a focused assessment while representing fish community responses to the full range of environmental conditions that are likely to be affected by the Interim and Restoration flows (as described on page 5-44 of the Draft PEIS/R).

As described under Impact FSH-8 (on pages 5-72 and 5-73 of the Draft PEIS/R) program-level actions within the Restoration Area, such as construction of fish passage structures and restoration of side channels and backwater habitat, could increase predation risk for representative special-status fish, especially juvenile life stages. However, implementing special-status fish conservation measures of the Conservation

Strategy would offset potential adverse effects on special-status fish species. Restoration actions implemented under all action alternatives, including isolating or filling gravel pits in Reach 1 and restoring floodplain habitat would benefit most life stages of each of the representative special-status fish species in the Restoration Area. This impact would be less than significant and beneficial. Many program-level actions are included in all action alternatives and are intended to address predatory fish species in the Restoration Area (see page 2-42, line 35, through page 2-43, line 2; page 2-45, line 34, through page 2-46, line 6; page 2-46, lines 22 through 37; Conservation Measure CVS-1 on page 2-76; Conservation Measure CVS-2 on page 2-77; Conservation Measure EFH-1 on page 2-78; and Conservation Measure EFH-2 on page 2-79).

Project-level actions would also affect predatory fish species within the Restoration Area. As described in Impact FSH-27 on page 5-94 and page 5-95 of the Draft PEIS/R, Interim and Restoration flows are likely to improve instream and floodplain habitat conditions, increasing the quantity, quality, and velocity of water downstream from Friant Dam, and generally reduce water temperatures. These changes would occur throughout the Restoration Area, but particularly in Reach 1. Impact FSH-27 concludes that these changes would shift habitat conditions away from the warmer and slower water habitat favored by nonnative predators and increase habitat suitability for native species, providing the basis for a conclusion of less than significant and beneficial.

While the program- and project-level impacts related to changes in predation are anticipated to be less than significant and beneficial as described above, the Implementing Agencies nevertheless 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 predation of reintroduced Chinook salmon and other native fishes (see page 5-56 of Appendix E). Text has not been revised.

EC1-192: As discussed in greater detail in response to comment EC1-152, it is expected that the resident (hatchery progeny) rainbow trout in Reach 1 would not, even with continuous San Joaquin River flow, migrate upstream into the steelhead spawning sections of the tributary rivers because resident rainbow trout do not typically make migrations of that distance. Additionally, steelhead do not spawn in the lower reaches of the San Joaquin River, so the risk of hybridization is further reduced. There would remain, however, a risk of hybridization for steelhead that would recolonize the Restoration Area. A quantification of the degree to which this could occur is speculative but given the current genetic mix between steelhead and rainbow trout in the tributaries and the fact that resident rainbow trout currently occur in the tributaries, hybridization between steelhead and rainbow trout is not considered a significant issue for steelhead in the tributaries. Additionally, the Fisheries Management Work Group developed the *Stock Selection Strategy: Spring-Run Chinook Salmon* (SJRRP 2010b), along with the

Hatchery and Genetics Management Plan (SJRRP 2010a), to help minimize potential genetic impacts to salmonids in the San Joaquin River and its tributaries. Text has not been revised. See response to comment EC1-152 for additional information relevant to this comment.

EC1-193: Paragraph 14 of the Settlement states that, "in the event that competition, inadequate spatial or temporal segregation, or other factors beyond the control of the Settling Parties make restoring 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 decision to prioritize spring-run Chinook salmon over fall-run Chinook salmon is not evaluated in the Draft PEIS/R. This decision would be made by the Secretary, through USFWS, and in consultation with the Secretary of Commerce, DFG, and the RA, as part of subsequent actions to reintroduce Chinook salmon.

Reclamation and DWR are currently studying the effectiveness of the Hills Ferry Barrier; however, it will continue to be used to block upstream migration of Chinook salmon until sufficient habitat and channel improvements to support salmonids are complete. 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-run and fall-run Chinook salmon upstream after their populations become established, to reduce redd superimposition and/or hybridization between spring-run and fall-run Chinook salmon (page 2-44, lines 12 through 26). In addition, the action alternatives include the potential for continued operation of the Hills Ferry Barrier to seasonally restrict access by fall-run Chinook to the San Joaquin River in the Restoration Area, in the event that reintroduction of spring-run Chinook salmon is identified as a higher priority than reintroduction of fall-run Chinook salmon.

It was assumed for the impacts assessment that reintroduction of fall-run Chinook salmon would likely occur passively as a result of "straying" by fall-run Chinook salmon from the major San Joaquin River tributaries into the San Joaquin River upstream from the Merced River confluence, as passage and flows permitted. Because the reestablished fall-run Chinook salmon would likely be from existing San Joaquin River Basin populations, it was assumed that no hybridization of distinct fall-run Chinook salmon populations would occur. Impact FSH-10 on page 5-74 of the Draft PEIS/R addresses the potential impacts of hybridization resulting from interactions between reintroduced spring-run Chinook salmon and wild fall-run Chinook salmon stock in the major San Joaquin River tributaries.

EC1-194: The commenter notes that the authors of Zimmerman et al. (2009) qualified the findings of their study pertaining to the effect of steelhead and rainbow trout hybridization on the emigration of rainbow trout progeny as smolts and the fate of these fish as compared with smolts of steelhead origin. This finding of Zimmerman et al. was not referenced in the Draft PEIS/R, and is not utilized in the analyses presented in the Draft PEIS/R. Rather, the Draft PEIS/R uses Zimmerman et al. to support the statement on page 5-62 that "the lower Tuolumne and Stanislaus rivers are already dominated by resident rainbow trout progeny." The authors do not appear to qualify their findings that

the lower Tuolumne and Stanislaus rivers are already dominated by resident rainbow trout progeny, therefore the use of this study in the Draft PEIS/R (cited as Zimmerman et al. 2008, as discussed in response to comment EC1-152) is appropriate and has not been revised.

Recent literature supports the findings in the Draft PEIS/R. Wilzbach et al. (2012) indicates that resident rainbow trout often co-occur with migratory individuals within the same watershed, a phenomenon referred to as partial migration, and that partial migration may represent phenotypic plasticity within a common gene pool. Some amount of gene flow between coexisting resident rainbow trout and steelhead is likely, and that unambiguous genetic differentiation between the two life history types are likely to be difficult or impossible to establish. Zimmerman et al. reported that smolts from the San Joaquin River were originated from both steelhead and rainbow trout maternal origin (2009). Additionally, Good et al. 2005 indicates that if resident forms contribute to populations of anadromous adults, these fish could play a potential role in reestablishing or maintaining depressed or extirpated steelhead populations. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R.

As discussed in greater detail in response to comment EC1-152, it is expected that the resident (hatchery progeny) rainbow trout in Reach 1 would not, even with continuous San Joaquin River flow, migrate upstream into the steelhead spawning sections of the tributary rivers because resident rainbow trout do not typically make migrations of that distance. Additionally, steelhead do not spawn in the lower reaches of the San Joaquin River, so the risk of hybridization is further reduced. There would remain, however, a risk of hybridization for steelhead that would recolonize the Restoration Area. A quantification of the degree to which this could occur is speculative but given the current genetic mix between steelhead and rainbow trout in the tributaries and the fact that resident rainbow trout currently occur in the tributaries, hybridization between steelhead and rainbow trout is not considered a significant issue for steelhead in the tributaries. Additionally, the Fisheries Management Work Group developed the *Stock Selection Strategy: Spring-Run Chinook Salmon* (SJRRP 2010b), along with the *Hatchery and Genetics Management Plan* (SJRRP 2010a), to help minimize potential genetic impacts to salmonids in the San Joaquin River and its tributaries. Text has not been revised.

See response to comment EC1-152 for additional information relevant to this comment.

EC1-195: The anecdotal knowledge presented by the commenter of bass population increases below the Hills Ferry Barrier and the correlation between Interim Flows and these bass populations is not supported by data or specific references. Interim Flows for Water Year 2011 were held at 50 cfs past Sack Dam from February 1, 2011, to March 20, 2011, to address downstream seepage concerns from neighboring landowners. Because of these low flows, a connection through the San Joaquin River system to the Merced River confluence was not established. On March 21, 2011, flood flows began and Interim Flows ceased. Because Water Year 2011 Interim Flows did not create a connection to the lower San Joaquin River, it is unlikely that any change in fisheries downstream from the Hills Ferry Barrier, including increases in bass populations, is a direct result of the

Interim Flows Project. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

EC1-196: The commenter states that "It seems like Reclamation tossed in global warming and the Grasslands Bypass Project… in order to create the conclusion that the No Action Alternative will have a significant impact." Reclamation and DWR disagree with this assertion. As noted by the commenter, the No-Action Alternative includes projected conditions as they would exist in the study area at the end of the PEIS/R planning horizon (2030), including those projects and programs considered reasonably foreseeable by that time. Specifically, climate change was included under the No-Action Alternative consistent with the *Final Report: Progress on Incorporating Climate Change into Management of California's Water Resources* (DWR 2006) and with representations of climate change included in the Common Assumptions Common Modeling Package (CACMP) Version 9B, developed jointly by Reclamation and DWR as the basis for operational modeling using CalSim-II. Version 9B presented the most appropriate depiction of system facilities and operations available at the time the Draft PEIS/R was prepared (as described in Appendix H, "Modeling," of the Draft PEIS/R).

As described on page 2-11 of the Draft PEIS/R, reasonably foreseeable actions include actions with current authorization, complete funding for design and construction, and complete environmental permitting and compliance in place when the NOP for the PEIS/R was published (August 22, 2007 (Reclamation)). The Grassland Bypass Project became officially operational for a 5-year period beginning September 23, 1996, and an extension of the project through 2019 was anticipated when the NOP for the PEIS/R was published. The Grassland Bypass Project, as well as the Westside Regional Drainage Plan (which is anticipated to eliminate salt discharges to the San Joaquin River from the Grasslands Drainage Area and improve water quality conditions within the San Joaquin River), is therefore anticipated as part of future conditions under the No-Action Alternative and the action alternatives.

Under the No-Action Alternative, fish habitat conditions, such as water temperatures, are anticipated to continue to deteriorate in response to several factors, including climate change. Climate change (and reasonably foreseeable actions) is included under both the No-Action Alternative and the action alternatives. However, under the action alternatives, continuous flow and habitat restoration (particularly with respect to riparian vegetation) would reduce the severity of increased water temperatures as compared to the No-Action Alternative. Therefore, the impact of the action alternatives as compared to the No-Action Alternative would be less than significant.

The Grassland Bypass Extension Project is anticipated to reduce sediment discharge and turbidity in the San Joaquin River between Friant Dam and the Merced River. As described in response to comment EC1-154, Impact FSH-3 on page 5-69 of the Draft PEIS/R (identified by the commenter) incorrectly assessed the contribution of the Grassland Bypass Extension Project to Impact FSH-3 of the No-Action Alternative. The text is revised to reflect the potential changes in sediment discharge and turbidity in the San Joaquin River between Friant Dam and the Merced River under the No-Action Alternative to impact fisheries; the level of significance of this impact (and the

corresponding project-level impact, Impact FSH-24, on page 5-82 of the Draft PEIS/R) has accordingly been changed from potentially significant to less than significant. See revision in Chapter 4.0, "Errata," of this Final PEIS/R.

The commenter correctly cites language on page 5-66 of the Draft PEIS/R, which identifies significance criteria against which "…program actions included in alternatives…" are evaluated to determine significance. This language correctly implies that the significance criteria identified on page 5-66 are applied to determine the significance of potential impacts of the action alternatives on fisheries. However, the significance criteria identified on page 5-66 are also applied to determine the significance of potential impacts of the No-Action Alternative on fisheries, consistent with NEPA and CEQA. Therefore, no changes to the significance conclusions of the impacts of the No-Action Alternative on fisheries is necessary, other than as noted above for Impact FSH-3. Text on page 5-66 of the Draft PEIS/R (and similar language in Chapters 8.0 and 23.0) has been revised to clarify that the significance criteria apply to all program alternatives (including the No-Action Alternative and action alternatives). See revisions in Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-197: The commenter refers to comment EC1-210, and applies comment EC1-210 regarding Impact FSH-22 to Impact FSH-1 of the Draft PEIS/R. Comment EC1-210 references a GCM ensemble described in TNC 2009, as cited on page 5-82 of the Draft PEIS/R, and states that "some rationale needs to be provided on the choice of this GCM ensemble and its relative advantages over other applicable GCM ensembles that could be used to predict future climates for the region." Climate change projections into the future look at many possible time-series from different GCMs run with a range of carbon dioxide emissions scenarios. Ensemble analysis allows the combination of multiple GCMs to quantify the range of possibilities for future climates under different emissions scenarios as well as reduce uncertainty. The ensemble referenced in the Draft PEIS/R is a set of three coupled atmospheric-oceanic GCMs (AOGCM), which combine the two general circulation models, atmosphere and ocean. AOGCMs are the only tools currently available that can provide detailed regional predictions of future climate change. The study is cited because it demonstrates the likelihood that air temperatures would increase in the future within the Restoration Area due to climate change. As described in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R, an increase in air temperatures above that experienced historically is anticipated to contribute to an increase in water temperatures over those experienced historically; increases in water temperatures in an area where temperatures already commonly exceed suitable ranges for fish species would adversely affect fish. Text has not been revised.

EC1-198: Text in page 5-68, lines 24 through 43, of the Draft PEIS/R, has been revised in response to this comment to clarify that future conditions for the No-Action Alternative include the Westside Regional Drainage Plan (SJRECWA et al. 2003), which is anticipated to eliminate salt discharges to the San Joaquin River from the Grassland Drainage Area and improve water quality conditions within Reach 5 and the San Joaquin River from the Merced River to the Delta. The significance conclusion for this impact is revised from potentially significant to less than significant and beneficial. See Chapter 4.0, "Errata," of this Final PEIS/R.

This comment also refers to comment EC1-199; see response to comment EC1-199 for additional information relevant to this comment.

EC1-199: The commenter refers to comment EC1-213, and applies comment EC1-213 on Impact FSH-24 to Impact FSH-3 of the Draft PEIS/R. As noted by the commenter in comment EC1-213, by focusing on the more sensitive species (Atlantic salmon) than those targeted for impact assessment (including Sacramento splittail, black bass, striped bass, fall-run Chinook salmon, and steelhead), the impact assessment presented in Impacts FSH-2 and FSH-3 on page 5-70 of the Draft PEIS/R addresses the potential maximum adverse effect of pesticides and turbidity to the targeted species. Use of surrogate species is common among scientists, even if the surrogate does not always represent other species (Caro and O'Doherty 1998). The use of a more sensitive species as a surrogate and the cited literature is appropriate for the analyses in the Draft PEIS/R, because effects to Atlantic salmon would be similar or worse than for splittail, black bass and striped bass, and likely similar for fall-run Chinook salmon and steelhead. Text has not been revised.

EC1-200a: The commenter requests a "targeted and expanded discussion of specific conservation measures that would be implemented" to minimize or avoid program-level impacts. Because the project-specific details of the program-level actions were not available at the time of preparation of analyses for the Draft PEIS/R, the detailed information requested by the commenter is not provided in the Draft PEIS/R. This information would be developed during subsequent site-specific studies.

As discussed in detail in MCR-7, "Adequacy of Conservation Strategy," in Chapter 2.0 of this Final PEIS/R, although the restoration actions included in the alternatives would have substantial beneficial effects on aquatic, wetland, and riparian ecosystems, implementation of 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 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. Because it is part of the project description associated with all action alternatives, the Conservation Strategy will be implemented as described in 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.

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 the minimization measures would be implemented. If minimization is determined to not suffice, then the 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 measures of the Conservation Strategy was selected as an organizational tool to provide clarity during subsequent site-specific studies and implementation of 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 each measure would apply to (project- and/or program-level), and the regulatory agency or agencies that would be involved in the development and/or implementation of each measure. As discussed in additional detail in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 of this Final PEIS/R, the Settlement and the Act include provisions for accommodating implementation flexibility and mechanisms for evaluating success of the Restoration and Water Management goals.

As discussed in detail in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, the Draft PEIS/R evaluates the environmental effects of implementing the Settlement within the planning horizon of 2030. The Settlement 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, Settling Parties, and RA will remain cognizant of funding availability and the need to prioritize individual actions in recognition of their estimated costs and anticipated effectiveness. Refer to MCR-2 for a more detailed discussion of current sources of funding for implementation of the SJRRP.

For more detailed discussions, see MCR-1, MCR-2, and MCR-7, "Adequacy of Conservation Strategy," in Chapter 2.0 of this Final PEIS/R. For the reasons set forth above and in MCR-1, MCR-2, and MCR-7, Reclamation and DWR do not believe that any changes to the Draft PEIS/R related to the Conservation Strategy are necessary.

This comment introduces EC1-200b through EC1-200e. See responses to comments EC1-200b through EC1-200e.

EC1-200b: The commenter asks how consultation with NMFS could "in and of itself" qualify as a conservation measure. Consultation with NMFS is not set forth as a stand-alone conservation measure, but rather is included as part (a) of parts (a) through (i) of Conservation Measure CVS-1 and Conservation Measure EFH-1. When considered in their entirety, the conservation measures contribute to the avoidance or minimization of potential impacts. See also response to comment EC1-200a.

EC1-200c: Maintenance of conservation measures is not set forth as a stand-alone conservation measure, but rather is included as part (c) of parts (a) through (i) of Conservation Measure CVS-1 and Conservation Measure EFH-1. In this context, the maintenance of conservation measures refers to the implementation of Conservation Measure CVS-1 or EFH-1, as appropriate, as part of individual site-specific projects. See also response to comment EC1-200a.

EC1-200d: Conservation measures are listed separately for Central Valley steelhead and essential fish habitat primarily because Central Valley steelhead and Essential Fish Habitat are regulated and studied separately, and separation of these measures would allow for easier determination of their applicability during subsequent site-specific studies.

EC1-200e: Reclamation and DWR disagree that the Conservation Strategy is applied as a "blanket cure-all" in Impact FSH-1. This comment summarizes EC1-200a through EC1-200d, and is substantially similar to EC1-200a. See response to comment EC1-200a.

EC1-201: Comment EC1-201 introduces comments EC1-202 through EC1-208 that are focused on specific potential impacts and conservation measures related to sensitive aquatic species and habitats. This response to comment EC1-201 describes how implementation of the SJRPP would be managed to support attainment of the Restoration Goal; beneficially affect aquatic species and habitats; and avoid, minimize, and/or compensate for adverse effects on sensitive species and habitats. The commenter does not provide explanation in this comment as to how the identified impact discussions are found lacking; this explanation is provided in comments EC1-202 through EC1-208. Please see response to comments EC1-202 through EC1-208 for specific discussion of the identified impacts.

As discussed in detail in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 of this Final PEIS/R, the 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. The Settlement and the Act include provisions for accommodating implementation flexibility and mechanisms for evaluating success of the Restoration and Water Management goals.

The SJRRP management process involves a broad range of strategies to guide implementation of the Settlement consistent with the Act and incorporate a continuously growing set of historical data, specifically through the Interim Flows Program, which facilitates collection of information, including water temperature. Data collected during the release and recapture of Interim Flows will be compiled annually into the Annual Technical Report, which presents the results of analyses performed using those data, and identifies information needs. These data help to provide more specific information on the scope and magnitude of water temperature changes, and informs adaptive management of implementation that would include reducing adverse effects on aquatic habitats and species, if any.

As discussed in detail in MCR-7, "Adequacy of Conservation Strategy," in Chapter 2.0 of this Final PEIS/R, although the restoration actions included in the alternatives would have substantial beneficial effects on aquatic, wetland, and riparian ecosystems, implementation of 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 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. Because it is part of the project description associated with all action alternatives, the Conservation Strategy will be implemented as described in 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.

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 the minimization measures would be implemented. If minimization is determined to not suffice, then the 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 measures of the Conservation Strategy was selected as an organizational tool to provide clarity during subsequent site-specific studies and implementation of 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 each measure would apply to (project- and/or program-level), and the regulatory agency or agencies that would be involved in the development and/or implementation of each measure.

For the reasons set forth above and in MCR-7, Reclamation and DWR do not believe that any changes to the Draft PEIS/R related to the Conservation Strategy are necessary.

EC1-202: Reclamation and DWR disagree that the conservation measures mentioned are applied as a “blanket cure-all” in Impact FSH-2. As discussed in detail in MCR-7, “Adequacy of Conservation Strategy,” in Chapter 2.0 of this Final PEIS/R, although the restoration actions included in the alternatives would have substantial beneficial effects on aquatic, wetland, and riparian ecosystems, implementation of 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 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. Because it is part of the project description associated with all action alternatives, the Conservation Strategy will be implemented as described in 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.

The Conservation Strategy includes several best management practices to avoid and minimize effects related to displacement from habitat, injury, and mortality, including restricting fish from areas of construction and/or limiting construction to periods when fish are less likely to occur (PL-1, CVS-1, CVS-2, EFH-1, and EFH-2), maintaining existing habitat (CVS-1 and EFH-1), and compensating for habitat effects (CVS-2, and EFH-2). These are common best management practices included in most EISs and EIRs with construction-related effects, and must be somewhat general at a program level of analysis. For the reasons set forth above and in MCR-7, Reclamation and DWR do not believe that any changes to the Draft PEIS/R related to the Conservation Strategy or Impact FSH-2 are necessary.

EC1-203: Reclamation and DWR disagree that the conservation measures mentioned are applied as a "blanket cure-all" in Impact FSH-3. This comment is substantially similar to comment EC1-202. See response to comment EC1-202.

EC1-204: Reclamation and DWR disagree that the conservation measures mentioned are applied as a "blanket cure-all" in Impact FSH-5. This comment is substantially similar to comment EC1-202. See response to comment EC1-202.

EC1-205: While the conditions created by habitat improvement and/or restoration could benefit the bass fishery, many others would be to the detriment of the bass fishery. Quantification of the level of predation cannot be made because it is too speculative; however, a qualitative assessment of potential changes in predation as a result of habitat modifications made under program-level actions is presented on pages 5-72, 5-73, 5-88, and 5-89 of the Draft PEIS/R. Qualitative assessment of potential changes in predation as a result of habitat modifications made under project-level actions is presented on pages 5-94, and 5-95 of the Draft PEIS/R. The assessment of impacts to fisheries presented in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R does not break out impacts to individual species, but rather presents the overall anticipated effects to nonnative predator species as a group. This is then compared to native species as a group rather than by individual species. This approach is considered sufficient and appropriate to determine the anticipated changes in predation of native species because it allows a focused assessment while representing fish community responses to the full range of environmental conditions that are likely to be affected by the Interim and Restoration flows (as described on page 5-44 of the Draft PEIS/R).

As described under Impact FSH-8 (on pages 5-72 and 5-73 of the Draft PEIS/R) program-level actions within the Restoration Area, such as construction of fish passage structures and restoration of side channels and backwater habitat, could increase predation risk for representative special-status fish, especially juvenile life stages. However, implementing special-status fish conservation measures of the Conservation Strategy would offset potential adverse effects on special-status fish species. Restoration actions implemented under all action alternatives, including isolating or filling gravel pits in Reach 1 and restoring floodplain habitat would benefit most life stages of each of the representative special-status fish species in the Restoration Area. This impact would be less than significant and beneficial. Many program-level actions are included in all action alternatives and are intended to address predatory fish species in the Restoration Area

(see page 2-42, line 35, through page 2-43, line 2; page 2-45, line 34, through page 2-46, line 6; page 2-46, lines 22 through 37; Conservation Measure CVS-1 on page 2-76; Conservation Measure CVS-2 on page 2-77; Conservation Measure EFH-1 on page 2-78; and Conservation Measure EFH-2 on page 2-79).

Project-level actions would also affect predatory fish species within the Restoration Area. As described in Impact FSH-27 on page 5-94 and page 5-95 of the Draft PEIS/R, Interim and Restoration flows are likely to improve instream and floodplain habitat conditions, increasing the quantity, quality, and velocity of water downstream from Friant Dam, and generally reduce water temperatures. These changes would occur throughout the Restoration Area, but particularly in Reach 1. Impact FSH-27 concludes that these changes would shift habitat conditions away from the warmer and slower water habitat favored by nonnative predators and increase habitat suitability for native species, providing the basis for a conclusion of less than significant and beneficial.

While the program- and project-level impacts related to changes in predation are anticipated to be less than significant and beneficial as described above, the Implementing Agencies nevertheless 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 predation of reintroduced Chinook salmon and other native fishes (see page 5-56 of Appendix E). Text has not been revised.

EC1-206a: Reclamation and DWR disagree that the conservation measures mentioned are applied as a "cure-all" in Impact FSH-8. While the conditions created by habitat improvements could benefit predator species, such as bass, many others would be to the detriment of the bass fishery. Quantification of the level of predation cannot be made because it is too speculative; however, a qualitative assessment was performed as presented in the referenced text.

The Conservation Strategy includes several best management practices to avoid and minimize effects related to displacement from habitat, injury, and mortality, including restricting fish from areas of construction and/or limiting construction to periods when fish are less likely to occur (PL-1, CVS-1, CVS-2, EFH-1, EFH-2), maintaining existing habitat (CVS-1 and EFH-1), and compensating for habitat effects (CVS-2, and EFH-2). These are common best management practices included in most EISs and EIRs with construction-related effects, and must be somewhat general at a program level of analysis. For the reasons set forth above and in MCR-7, Reclamation and DWR do not believe that any changes to the Draft PEIS/R related to the Conservation Strategy or Impact FSH-8 are necessary.

EC1-206b: The commenter requests additional detail regarding the phasing and prioritization of specific conservation measures that would be applied to minimize or avoid program-level impacts. Because the project-specific details of the program-level actions were not available at the time of preparation of analyses for the Draft PEIS/R, the detailed information requested by the commenter is not provided in the Draft PEIS/R. This information would be developed during subsequent site-specific studies.

As discussed in detail in MCR-7, "Adequacy of Conservation Strategy," in Chapter 2.0 of this Final PEIS/R, although the restoration actions included in the alternatives would have substantial beneficial effects on aquatic, wetland, and riparian ecosystems, implementation of 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 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. Because it is part of the project description associated with all action alternatives, the Conservation Strategy will be implemented as described in 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.

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 the minimization measures would be implemented. If minimization is determined to not suffice, then the 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 measures of the Conservation Strategy was selected as an organizational tool to provide clarity during subsequent site-specific studies and implementation of 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 each measure would apply to (project- and/or program-level), and the regulatory agency or agencies that would be involved in the development and/or implementation of each measure.

For the reasons set forth above and in MCR-7, Reclamation and DWR do not believe that any changes to the Draft PEIS/R related to the Conservation Strategy are necessary.

EC1-207: While the conditions created by habitat improvements could benefit predator species, such as bass, many others would be to the detriment of the bass fishery. Quantification of the level of predation cannot be made because it is too speculative; however, a qualitative assessment was performed as presented in the referenced text. The

conservation measures referenced by the comment are in the main document of the Draft PEIS/R, not in an appendix. These measures are part of the Conservation Strategy that can be found in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R and an assessment of the impacts of all alternatives is provided in Chapters 4.0 through 26.0 of the Draft PEIS/R main document. It is unclear from the comment which appendix is referenced.

EC1-208: As discussed in detail in MCR-7, "Adequacy of Conservation Strategy," in Chapter 2.0 of this Final PEIS/R, although the restoration actions included in the alternatives would have substantial beneficial effects on aquatic, wetland, and riparian ecosystems, implementation of 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 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. Because it is part of the project description associated with all action alternatives, the Conservation Strategy will be implemented as described in 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.

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 the minimization measures would be implemented. If minimization is determined to not suffice, then the 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 measures of the Conservation Strategy was selected as an organizational tool to provide clarity during subsequent site-specific studies and implementation of 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 each measure would apply to (project- and/or program-level), and the regulatory agency or agencies that would be involved in the development and/or implementation of each measure.

The changes to instream/floodplain habitats that could occur as a result of the release of Interim and Restoration flows are anticipated to benefit native fishes more than game fishes, thus providing an overall benefit to native fish. For the reasons set forth above and discussed in detail in MCR-7, Reclamation and DWR do not believe that any changes to the Draft PEIS/R related to the Conservation Strategy are necessary.

EC1-209: As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 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 present the potential for climate change to affect the likelihood of achieving 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 water temperatures for reintroduced spring-run and fall-run Chinook salmon. This includes all actions described in Section 5.2.5, "Unsuitable Water Temperatures," of Appendix E of the Draft PEIS/R, beginning on page 5-33.

Under the No-Action Alternative, fish habitat conditions, such as water temperatures, are anticipated to continue to deteriorate in response to several factors, including climate change. Climate change is included under both the No-Action Alternative and the action alternatives. However, under the action alternatives, continuous flow and habitat restoration (particularly with respect to riparian vegetation) would reduce the severity of increased water temperatures as compared to the No-Action Alternative. Therefore, the impact of the action alternatives as compared to the No-Action Alternative would be less than significant.

See MCR-1 in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-210: This comment is substantially similar to, and referenced in, comment EC1-197. Please see response to comment EC1-197.

EC1-211: Air temperature increases predicted by the referenced GCM ensemble were related qualitatively to assess the potential for climate change to cause changes in water temperatures and corresponding affects to existing fisheries. As described in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R, an increase in air temperatures above that experienced historically is anticipated to contribute to an increase in water temperatures over those experienced historically; increases in water temperatures in an area where temperatures already commonly exceed suitable ranges for fish species would adversely affect fish. See also response to comment EC1-197 for additional information relevant to this comment.

EC1-212: This comment is substantially similar to comment EC1-153. See response to comment EC1-153.

EC1-213: This comment is substantially similar to, and referenced in, Comment EC1-199. Please see response to comment EC1-199.

EC1-214: The commenter makes two separate points in this comment. First is that the concept of contaminant sorption on suspended sediments is a contaminant issue, not sediment or turbidity issue, and as such should be described under Impact FSH-2. Impacts FSH-2 and FSH-3 have different mechanisms for creating the toxicity to fish in the river. Impact FSH-2 describes the potential for impacts to fish to occur from direct discharge and nonpoint source runoff of agricultural pollutants to the San Joaquin River. Impact FSH-3 evaluates the potential impacts of sediment discharge and turbidity. As described on page 5-69 of the Draft PEIS/R, the effects of sediment discharge and turbidity on fish include direct effects (such as reduced avoidance or alarm reactions, displacement from key habitats, physiological stress and respiratory impairment, gill damage, reduced tolerance to disease and toxicants, and direct mortality), as well as indirect effects related to contaminants that may be sorbed onto suspended sediment (which can cause a range of impacts ranging from olfactory and neurological impairment to direct toxicity). While the potential effects to fish of contaminants sorbed to suspended sediment may be correctly characterized as both a pollutant issue and a turbidity issue, because existing water quality impairments (Central Valley RWQCB 2009) may be related to contaminant sorption on suspended sediments, this impact mechanism is analyzed in the Draft PEIS/R as a turbidity issue and presented under Impact FSH-3. Text has not been revised.

The second point made by the commenter is that using Atlantic salmon as a surrogate for evaluating contaminant effects on non-salmonids in the San Joaquin River is an inadequate approach for evaluating impacts to non-salmonid species. This point is substantially similar to comment EC1-153. See response to comment EC1-153.

EC1-215: Reclamation and DWR disagree that there "is no discussion of temperature impacts on salmonids" and that "…temperature is cut off at Year 2030 and fails to take into account the substantial warming predicted to occur by Year 2041." As described on page 10 of the Executive Summary of the Draft PEIS/R, the planning horizon for assessment of impacts in the PEIS/R is through 2030. The 2030 planning horizon is primarily used to determine impacts because it is consistent with available planning tools; consistent with long-term operations modeling data, tools, and assumptions; provides acceptable levels of uncertainty; includes climate change considerations; and is consistent with the range of available hydrologic data. The Draft PEIS/R considers changes in water temperatures, as well as potential changes in habitat, in evaluating potential impacts to fisheries through the 2030 planning horizon. However, discussion in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R also includes discussion of projected increases in air temperatures over the period from 2041 to 2060 and the associated impacts to fish in the study area (see Impacts FSH-1 on page 5-70, FSH-15 on page 5-47, and FSH-31 on page 5-98 of the Draft PEIS/R).

As mentioned in the comment, Impact FSH-22 describes the potential for water temperatures within the Restoration Area to change under the action alternatives, and the potential for such changes to affect representative special-status fish species. As

identified in Table 5-4 on page 5-45 of the Draft PEIS/R, representative fish species in the Restoration Area include Kern brook lamprey, hardhead, Sacramento splittail, black bass species, striped bass, and rainbow trout. Anadromous salmonids are not included in this reach because anadromous salmonids are not anticipated to occur within the Restoration Area solely as a result of project-level actions. Project-level actions include implementation of 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 Table 2-7 of the Draft PEIS/R. The "habitat and channel improvements" referenced in this excerpt are program-level actions. Therefore, project-level actions are not expected to result in anadromous salmonid presence in the Restoration Area. Suitable habitat includes, by definition, habitat with suitable water temperatures (as described on page 5-10 of the Draft PEIS/R).

The Draft PEIS/R, however, includes project-level evaluation of potential effects of changes in temperature on anadromous salmonids downstream from the Restoration Area. Impacts FSH-1, FSH-13, FSH-22, and FSH-31 in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R, address temperature impacts on anadromous salmonids. In fact, Chapter 5.0 contains several discussions of the direct and indirect effects of water temperatures on anadromous salmonids specifically and fish in general. Potential impacts were assessed with available information on existing and projected future conditions that influence fish distribution, abundance, and habitat suitability for key life stages.

The Draft PEIS/R acknowledges that projected air and water temperature increases due to global climate change would occur beyond the 2030 planning horizon, with implications for anadromous salmonids. This is discussed in Impacts FSH-1, FSH-13, FSH-22, and FSH-31, including projected increases in air temperatures in the Restoration Area over the period from 2041 to 2060 (modeled using available downscaled data and reported in TNC 2009), as described on page 5-67 of the Draft PEIS/R. As stated on page 5-51 of the Draft PEIS/R, the SJR5Q water temperature model was used to provide simulated water temperature for the San Joaquin River in the Restoration Area (Draft PEIS/R, Appendix H, "Modeling"). Although climate change impacts have not yet been included in the SJR5Q model, projected increases in air temperatures over the period from 2041 to 2060 were modeled using available downscaled data and indicate a 2 to 4°F increase in annual mean air temperature for the Restoration Area.

As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 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 efficacy of the actions described above to address predation of 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. 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 predation of reintroduced Chinook salmon and other native fishes (see page 5-56 of Appendix E). See MCR-1 in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

Pages 5-72 and 5-73 of the Draft PEIS/R describe the potential for Interim and Restoration flows would improve instream and floodplain habitat conditions, which would benefit most life stages of the representative fish species in the Restoration Area. The release of Interim and Restoration flows would result in increases in the quantity, quality, and velocity of water downstream from Friant Dam, and generally reduce water temperatures, especially in Reach 1. This would shift habitat conditions away from the warmer and slower water habitat favored by nonnative predators and increase habitat suitability for native species, in effect, moving nonnative predatory fish farther downstream. These effects would be less than significant and beneficial for representative special-status species. Consequently, based on the best available data, habitat conditions under the SJRRP would substantially reduce potential predation on salmon. Moreover, implementing conservation measures CVS-1, CVS-2, EFH-1, and EFH-2 would reduce the effects of this impact.

EC1-216: As described in the Draft PEIS/R, Interim and Restoration flows would have a less-than-significant impact on surface water quality conditions at Mendota Pool. EC and water temperature conditions at the Mendota Pool would be similar to the No-Action Alternative during the irrigation season and higher during other periods because the proposed Mendota Pool Bypass would convey San Joaquin River flows around the Mendota Pool, increasing the proportion of DMC contributions to Mendota Pool inflow. From April 22 through April 28, 2010, Water Year 2010 Interim Flows recapture at Mendota Pool and low irrigation demands at Mendota Pool reduced Delta deliveries via the DMC. Seepage drainage water returned to the DMC resulted in EC levels that would not permit the Mendota Pool pump-in program to operate. The water delivered to the Mendota Pool from the DMC did not thoroughly mix with low-salinity releases from Friant Dam and resulted in water in Fresno Slough and the irrigation canal headworks in the Mendota Pool containing higher salinity levels than those desired by irrigators that divert from Mendota Pool. Reclamation, SLDMWA, and the Exchange Contractors adjusted operations to close the DMC at Check 21, meet Arroyo Canal demands through the Firebaugh Wasteway, and dilute the high-salinity water in the Mendota Pool/Fresno Slough with low-salinity San Joaquin River water. Reclamation met demands at Mendota Pool with deliveries from Friant Dam. The situation that occurred in Water Year 2010 was not unique and has occurred historically (prior to Interim Flows). The situation was a result, in part, of the low demands at that time by the irrigators in the Mendota Pool, likely due to cooler and wetter weather conditions.

Reclamation, SLDMWA, and the Exchange Contractors currently monitor surface water quality conditions in the San Joaquin River, DMC, and Mendota Pool, and groundwater quality conditions in the region under various programs using existing water quality

sensors and water quality monitoring data in the DMC at Check 21, upstream from the Mendota Pool (San Joaquin River below Bifurcation gage), and downstream (San Joaquin River near Dos Palos gage). The existing water quality sensors and water quality monitoring data are adequate to monitor water quality and address this unique situation, if it were to occur again in the future. Under the action alternatives, water quality criteria established to meet suitability requirements for irrigation and wetland deliveries would continue to be met through coordinated activities by Reclamation, SLDMWA, and the Exchange Contractors, including the Mendota Pool Water Quality Response Plan (SJRRP 2011).

Section 1502.21 of the CEQ Regulations states that, "Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment." State CEQA Guidelines, Section 15148, states, "Preparation of EIRs is dependent upon information from many sources, including engineering project reports and many scientific documents relating to environmental features. These documents should be cited but not included in the EIR." The Mendota Pool Water Quality Response Plan was not used to develop the Draft PEIS/R, and is therefore not cited, but is publicly available online at www.restoresjr.net. Text has not been revised.

EC1-217: While the dilution described in Impact FSH-23 on page 5-91 of the Draft PEIS/R may not provide a significant benefit to the fishes, it will still provide a benefit as compared to existing conditions, and therefore is correctly acknowledged as a beneficial impact. This is consistent with the definition of beneficial impacts provided on page 3-11 of the Draft PEIS/R that a beneficial impact "is one that would result in a beneficial change in the physical environment." Text has not been revised.

EC1-218a: As described under Impact SWQ-4, on pages 14-24 to 14-27 of the Draft PEIS/R, short-term surface water quality impacts could 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 in page 5-91, lines 25-26, of the Draft PEIS/R, has been revised to clarify these impact mechanisms, which would occur regardless of the recapture of Interim or Restoration flows at the East Bear Creek Unit. The discussion of the East Bear Creek Unit separately discusses the potential to mobilize pollutants located outside the river channel as a result of recapture at the East Bear Creek Unit. See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-218b: For the reasons set forth in response to comment EC1-218a, no changes to the Draft PEIS/R are necessary. Text has not been revised.

EC1-219: The changes to fish habitat conditions as a result of program-level actions, as described under Impact FSH-23 on page 5-92 through 5-94 of the Draft PEIS/R, are

anticipated to benefit the fish species targeted for analysis, including predator species, such as bass. The analysis of potential impacts related to a corresponding increase in predation of native fishes is described under Impact FSH-27 on page 5-94 to 5-95 of the Draft PEIS/R. Impact FSH-27 concludes that changes in predation levels within the Restoration Area would be less than significant and beneficial. For discussion of the potential for predation of reintroduced Chinook salmon within the Restoration Area, see also response to comment EC1-151f.

EC1-220: The changes to fish habitat conditions as a result of program-level actions, as described under Impact FSH-23 on page 5-92 through 5-94 of the Draft PEIS/R, are anticipated to benefit the fish species targeted for analysis, including predator species, such as bass. The analysis of potential impacts related to a corresponding increase in predation of native fishes is described under Impact FSH-27 on page 5-94 to 5-95 of the Draft PEIS/R. Impact FSH-27 concludes that changes in predation levels within the Restoration Area would be less than significant and beneficial. For discussion of the potential for predation of reintroduced Chinook salmon within the Restoration Area, see also response to comment EC1-151f.

EC1-221: This comment is substantially similar to comment EC1-71. See response to comment EC1-71.

EC1-222: The analysis of potential impacts related to a corresponding increase in predation of native fishes is described under Impact FSH-27 on page 5-94 to 5-95 of the Draft PEIS/R. Impact FSH-27 concludes that changes in predation levels within the Restoration Area would be less than significant and beneficial based on a qualitative analysis of the potential for this impact to occur. As described under Impact FSH-27 on page 5-95, the release of Interim and Restoration flows would result in increases in the quantity, quality, and velocity of water downstream from Friant Dam, and generally reduce water temperatures, especially in Reach 1. This would shift habitat conditions away from the warmer and slower water habitat favored by nonnative predators and increase habitat suitability for native species, in effect, moving nonnative predatory fish farther downstream. The commenter asserts that the project-level actions "could simply increase the bass population." The commenter provides no specific documentation of the concern raised nor does the commenter provide the basis for this statement or data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts to support this statement.

Additionally, the commenter states that the project-level actions would relocate piscivorous species "exactly into the location where salmonids must migrate in order to move up and down the San Joaquin River." As described in MCR-1, "Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals," in Chapter 2.0 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. 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 predation of reintroduced Chinook salmon and other native fishes (see page 5-56 of Appendix E). See MCR-1 in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-223a: The commenter asserts that establishing Interim and Restoration flows would benefit native and nonnative predator fish species alike. As described in Impact FSH-27 on pages 5-94 and 5-95 of the Draft PEIS/R, Interim and Restoration flows are likely to improve instream and floodplain habitat conditions, increasing the quantity, quality, and velocity of water downstream from Friant Dam, and generally reduce water temperatures. These changes would occur throughout the Restoration Area, but particularly in Reach 1. Impact FSH-27 concludes that these changes would shift habitat conditions away from the warmer and slower water habitat favored by nonnative predators and increase habitat suitability for native species, providing the basis for a conclusion of less than significant and beneficial. Impact FSH-27 is not intended to imply that these changes would "shift the balance from a fish community dominated by nonnative predators to native fish," as the commenter describes, but rather that these changes would benefit native species more so than nonnative species. Both the commenter and Impact FSH-27 note that these changes in habitat conditions could result in moving nonnative predatory fish farther downstream.

In support of the concern raised that the "smallmouth bass… could potentially become more abundant in Reach 1 with implementation of the Interim and Restoration flows," the commenter cites comments provided by Fishbio Environmental on the *USFWS 10(a)(1)(A) Enhancement of the Species Permit Application for the Collection and Transport of Spring-Run Chinook for the SJRRP* (Fishbio Environmental 2011). Review of the comments provided by Fishbio Environmental on the *USFWS 10(a)(1)(A) Enhancement of the Species Permit Application for the Collection and Transport of Spring-Run Chinook for the SJRRP* found a single assertion that, because smallmouth bass prefer cooler waters than most other nonnative species (citing Brown 2000), this species "may be more common in Reach 1 with the summer restoration flows." While smallmouth bass do tolerate cooler water temperatures than largemouth and spotted bass, they still prefer warmer water temperatures than Chinook salmon. Smallmouth bass typically occur where water temperatures in the summer are between 69.8°F and 71.6°F (21°C to 22°C), while optimal adult growth occurs between 77°F and 81°F (25°C and 27°C). Water temperatures in the upper portion of Reach 1A, where the Chinook salmon are expected to remain except when migrating, average between 46°F and 58°F (7.8°C and 14.4°C) year round. While the water warms to temperatures more suitable for smallmouth bass as it flows downstream toward Gravelly Ford, there is no indication that smallmouth bass occur in the Restoration Area (DFG 2007).

Impact FSH-27 does not break out impacts to individual species, but rather presents the overall anticipated effects to nonnative predator species as a group. This is then compared to native species as a group rather than by individual species. This approach is considered sufficient and appropriate to determine the anticipated changes in predation of native species because it allows a focused assessment while representing fish community responses to the full range of environmental conditions that are likely to be affected by the Interim and Restoration flows (as described on page 5-44 of the Draft PEIS/R).

While the project-level impacts related to changes in predation are anticipated to be less than significant and beneficial as described under Impact FSH-27, the Implementing Agencies nevertheless 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 predation of reintroduced Chinook salmon and other native fishes (see page 5-56 of Appendix E). The Interim Flow 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 recirculation, recapture, and reuse opportunities.

The commenter also notes that largemouth bass could persist in Reach 1 by inhabiting gravel mining pits in this Reach. Program-level actions, such as those described on pages 2-42 to 2-43, are included in all action alternatives and are intended to address issues associated with gravel pits, including potential for these gravel pits to act as habitat for predator fish species. Other program-level actions included under all action alternatives address predatory fish species in other areas (see pages 2-45, line 34, through page 2-46, line 6; page 2-46, lines 22 through 37; Conservation Measure CVS-1 on page 2-76; Conservation Measure CVS-2 on page 2-77; Conservation Measure EFH-1 on page 2-78; and Conservation Measure EFH-2 on page 2-79). The management process described above would also contribute to the management of predation on reintroduced Chinook salmon and other native fishes.

EC1-223b: References noted. Text has not been revised.

EC1-224: If the USACE policy regarding vegetation on levees (as described in Engineering Technical Letter (ETL) 1110-2-571 (USACE 2009)) were to be fully implemented without variances, then existing riparian vegetation would be removed from project levees within the Restoration Area. Project levees are present along one or both banks of Reaches 2A, 4B2, and 5, the Chowchilla Bypass, the Eastside Bypass, the Mariposa Bypass, and portions of Reaches 4A and 4B1. Woody vegetation would be removed from the levee's crown, riverside, and landside, and within 15 feet of the levee toe (or to edge of ordinary high water if less). This action would result in a significant

impact under the No-Action Alternative, but would have a much smaller effect on potential benefits of the action alternatives because along most reaches only a small portion of the additional riparian vegetation that may develop from conveyance of Interim and Restoration flows would be on or within 15 feet of project levees. This finding is supported by review of the location and width of existing riparian vegetation between levees (see Exhibits in Appendix L, "Biological Resources – Vegetation and Wildlife," of the Draft PEIS/R, and the results of the vegetation modeling (using SRH-1DV), presented in Appendix N, "Geomorphology, Sediment Transport, and Vegetation Assessment" of the Draft PEIS/R). The effects of the action alternatives, including implementation of the Physical Monitoring and Management Plan (Appendix D of the Draft PEIS/R), on riparian habitat would be less than significant and beneficial.

However, there is considerable uncertainty regarding implementation of this USACE policy, including the effects of NEPA and ESA compliance, financial burdens on maintaining agencies, and the use of a Systemwide Improvement Framework (USACE 2011) on implementation. Moreover, application of the USACE levee vegetation policy following adoption of the completed Central Valley Flood Protection Plan (CVFPP) in 2012 could be a continuation of the Systemwide Improvement Framework, full compliance with vegetation management guidelines in ETL 1110-2-571, or another approach. Therefore, evaluation of the effects of implementation of this policy on riparian vegetation remains too speculative for meaningful consideration, as described in Chapter 6.0, "Biological Resources – Vegetation and Wildlife," of the Draft PEIS/R. The lead agencies would implement the Settlement consistent with applicable laws, regulations, and court orders in place at the time of implementation. Text has not been revised.

EC1-225: Comment noted. The lead agencies anticipate that the Riparian Habitat Mitigation and Monitoring Plan (RHMMP) would document a net benefit in the acreage and/or ecological function of riparian and wetland habitats, and that this benefit would be applied to mitigation requirements resulting from site-specific impacts of some SJRRP actions. Because the RHMMP would be developed in coordination with DFG, the lead agencies cannot commit to any specific plan content at this time. However, access limitations on private land, availability of public land for mitigation purposes, and the potential need for acquisition of private land from willing sellers would be major considerations in the development and implementation of this plan. Text has not been revised.

EC1-226: The comment states the concern that sensitive resources may develop outside of the Restoration Area due to restoration actions, and that these resources may be subsequently impacted during the implementation of otherwise lawful activities on adjacent lands. It stated this concern with reference to the statement in Chapter 6.0 of the Draft PEIS/R, "Biological Resources – Vegetation and Wildlife" (page 6-62, lines 4 and 5), that 35 sensitive plant species occur or have the potential to occur in the Restoration Area. It also stated that this concern also applies to sensitive wildlife species. The comment does not identify any specific impacts or activities potentially causing impacts. It is assumed that these activities are associated with the irrigated cropland and grazing land that accounts for most land adjacent to the San Joaquin River and the bypass system. Below, responses are provided separately for sensitive plant and wildlife species.

With regard to sensitive plants, such effects could occur by sensitive plants spreading to adjacent lands from a project site or mitigation sites, or conceivably because the presence of sensitive plants at a site could interfere with activities at another nearby or immediately adjacent site. If such an event were to occur, it could result in a significant environmental effect if it caused a substantial diminishment of agricultural land resource quality (or importance) or conversion of Important Farmland to nonagricultural use, which are significance criteria for agricultural resources as described in Chapter 16.0, "Land Use Planning and Agricultural Resources," of the Draft PEIS/R (page 16-30, lines 1 through 3).

As analyzed in the discussion of Impact VEG-19 in Chapter 6.0, "Biological Resources – Vegetation and Wildlife," of the Draft PEIS/R (pages 6-90 to 6-94), as a consequence of altering releases of water from Friant Dam (i.e., project-level actions), the distribution or abundance of six plant species could be increased along the San Joaquin River or the bypasses: Delta button-celery, four-angled spikerush, California satintail, slender-leaved pondweed, Sanford's arrowhead, and Wright's trichoronis. (Of these species, only Delta button-celery is State-listed and none are federally listed species.) These are species of riverine, marsh, or riparian habitat, and would not spread into adjacent uplands or croplands. Although Sanford's arrowhead or slender-leaved pondweed could potentially spread along adjacent waterways including canals and drains, this has not been documented as occurring at Mendota Pool, where Sanford's arrowhead grows. Furthermore, the lead agencies are not aware of any instances of Sanford's arrowhead or slender-leaved pondweed conflicting with operations and maintenance of the Mendota Pool, the bypass system, or adjacent lands; nor does the comment provide any evidence of such conflicts. Therefore, it is unlikely that any effects on adjacent lands will occur as a result of the Interim or Restoration flows potentially facilitating the establishment of these six species at new locations.

The action alternatives could also adversely affect additional sensitive plant species as discussed in Impact VEG-4 in Chapter 6.0 of the Draft PEIS/R (page 6-16 to 6-62) (the impact discussion referenced in the comment). These effects would be avoided, minimized, and/or mitigated by several of the conservation measures that are listed in Table 2-7 of the Draft PEIS/R, including PALM-1 and -2; PLANTS-1 and -2; and VP-1, -2, and -3. If an impact to one of these species were unavoidable, in addition to preserving occupied habitat, the impact could be mitigated by enhancing, restoring, or creating additional habitat. Irrigated agricultural land does not provide habitat for any of these species, but for several of these species it is possible that they could spread from mitigation sites where habitat was created onto adjacent rangeland. This possibility is not likely, and the comment provides no evidence that such an effect on adjacent land has occurred as the result of habitat creation or restoration for any of these sensitive plant species at a mitigation site. If such an event were to occur, the area affected would likely be very small, and the persistence of these species is compatible with sustainable grazing practices (e.g., see Marty 2005), and thus would not result in a diminishment of the agricultural productivity of these sites.

Finally, because plants are not mobile, in general activities on adjacent properties do not affect conserved areas. An exception to this is the use of herbicides. Drift from herbicide

applications could potentially affect plants in adjacent areas. EPA voluntary guidelines for the study area issued in 2000 (EPA 2000a, 2000b, and 2000c) recommended that ground and aerial herbicide applications be limited within 40 and 200 yards, respectively, of occupied habitat when air currents were moving toward occupied habitat and there was no intervening windbreak. However, EPA has not issued any herbicide use limitations for Fresno, Madera, or Merced counties related to endangered species protection.

Similar to sensitive plants, sensitive wildlife also could affect adjacent lands by their spread from a project site or mitigation site, or because their presence at a site could interfere with activities at another nearby or immediately adjacent site. If such an event were to occur, it could result in a significant environmental effect if it caused a substantial diminishment of agricultural land resource quality (or importance) or conversion of Important Farmland to nonagricultural use, which significance criteria for agricultural resources as described in Chapter 16.0, "Land Use Planning and Agricultural Resources," of the Draft PEIS/R (page 16-30, lines 1 through 3).

As analyzed in the discussion of Impact VEG-20 in Chapter 6.0 of the Draft PEIS/R (pages 6-94 to 6-102), Interim and Restoration flows could benefit sensitive bats, which forage over open water, and in the long term, valley elderberry longhorn beetle (VELB). Also, if additional riparian vegetation along the San Joaquin River, resulting from Interim and Restoration flows, was allowed to develop into mature riparian forest, it could provide roosting and nesting opportunities at additional locations along the river for sensitive raptors, colonial nesting wading birds, and bats. (VELB and sensitive species of raptors, wading birds, and bats potentially affected are listed in Table 2 of Appendix L, "Biological Resources – Vegetation and Wildlife," of the Draft PEIS/R, which also provides accounts of the ecology of these species.) VELB is restricted to mature elderberries growing in riparian vegetation. Wading birds, bats, and raptors would nest and roost in riparian vegetation but would forage in adjacent lands. In general, agricultural activities do not physically harm these species while they are foraging or disrupt their foraging activities; rather, agricultural activities sustain foraging habitat and create specific foraging opportunities (such as the displacement of prey that occurs during harvest and tillage). The compatibility of agricultural activities with these foraging activities is evidenced by the widespread use of agricultural land as mitigation for effects on these species (e.g., DFG 1994). Therefore, agricultural activities would not be impacted, and there would not be a substantial diminishment of agricultural land resource quality (or importance) or conversion of Important Farmland to nonagricultural use.

As discussed by Impact VEG-20 in Chapter 6.0 of the Draft PEIS/R (pages 6-94 to 6-102), altering releases of water from Friant Dam could adversely affect other wildlife species. Also, as discussed by Impact VEG-5 (pages 6-62 to 6-69) other program-level actions could adversely affect sensitive wildlife species, including those species potentially benefiting from the alteration of water releases from Friant Dam. Although these effects would be avoided and/or minimized by the conservation measures in Table 2-7 of the Draft PEIS/R, unavoidable impacts would be mitigated, which could involve the enhancement or creation of habitat (as per conservation measures in Table 2-7).

Wildlife species belong to one of three groups with regard to their potential use of land adjacent to mitigation sites: (1) unlikely to move onto adjacent grazing land or cropland, (2) potentially moving onto adjacent grassland but compatible with grazing activities, or (3) likely foraging on adjacent grassland and/or cropland and compatible with agricultural activities. Examples of wildlife species unlikely to move into adjacent agricultural lands include western pond turtle, riparian-associated mammals, and animals associated with vernal pools. Examples of species potentially moving into adjacent grassland but compatible with grazing activities include burrowing owl, blunt-nosed leopard lizard, and Nelson's antelope squirrel. Raptors are examples of species likely to forage on adjacent land and their compatibility with agricultural activities was described above. All three of these groups would not impact agricultural activities, or cause a substantial diminishment of agricultural land resource quality (or importance) or conversion of Important Farmland to nonagricultural use.

Finally, the presence of sensitive wildlife species at a project or mitigation site could interfere with agricultural activities at an adjacent site if those agricultural activities were incompatible with wildlife use of the project or mitigation site. The two main instances where such an effect could occur are pesticide use affecting wildlife on adjacent land and agricultural activities involving machinery and humans disrupting nesting on adjacent lands.

Use of pesticides, particularly rodenticides, could affect sensitive wildlife in adjacent areas. EPA voluntary guidelines for the study area issued in 2000 (EPA 2000a, 2000b, and 2000c) recommended that rodenticide applications be supervised by a person trained to distinguish the dens and burrows of sensitive species from target species. However, EPA has not issued any pesticide use limitations in Fresno, Madera, or Merced counties related to endangered species protection.

Nesting is an activity that is particularly vulnerable to disruption, and whose disruption could have significant consequences for a sensitive wildlife species. This combination of vulnerability and significance has led to the development and widespread use of seasonal restrictions and buffers between some construction activities and raptor nests (such as those included in Table 2-7). However, agricultural activities are generally compatible with bird nesting on adjacent lands. This is indicated by the documented distribution of many of these sensitive bird species nesting in close proximity to agricultural land in the Restoration Area. See Exhibit CNDDB Occurrences in the Project Vicinity in Appendix L, "Biological Resources – Vegetation and Wildlife," of the Draft PEIS/R, pages 214 through 229.

For the reasons discussed above, potential changes in the distribution of sensitive plants and wildlife would not cause a substantial reduction in the productivity or quality of a considerable area of agricultural land, convert agricultural land to a nonagricultural use, or otherwise result in a significant environmental effect. This additional analysis does not alter any conclusion in the Draft PEIS/R.

See also MCR-6, "Third-Party Concerns and Outreach," in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-227: Implementation of the Settlement would cause both beneficial and adverse effects to birds nesting in emergent wetlands. Analysis of these impacts is included in Chapter 6.0, "Biological Resources – Vegetation and Wildlife," of the Draft PEIS/R, under Impacts VEG-5 and VEG-20, and relevant analysis of the effects of altered water releases to the San Joaquin River on riparian and wetland vegetation is included under Impact VEG-16. Table 6-6 is part of the discussion of Impact VEG-5, which addresses impacts of program-level actions on habitat or populations of special-status species in the Restoration Area. This impact discussion describes both adverse and beneficial effects to birds breeding in emergent marsh, and concludes that effects of program-level actions on these species would be less than significant. Impact VEG-20 addresses the effects of project-level actions on birds nesting in emergent wetlands. This discussion focuses on potential adverse effects on the nests of these species, and does not conclude that there would be a substantial benefit to birds breeding in emergent marsh. As described by the discussion of Impact VEG-16, altered water releases to the San Joaquin River could substantially increase the extent of riparian and wetland vegetation. However, most of this would likely be riparian vegetation, and, to a lesser extent, seasonal wetland. Because of its requirement for inundated or saturated soils throughout spring, summer, and fall, emergent wetland would be restricted to a relatively narrow band along the low-flow channel where conditions are suitable for this vegetation type but not for riparian vegetation. This additional emergent wetland would not represent a substantial increase in potential habitat for birds nesting in emergent wetlands (e.g., blackbirds), and thus would not result in a substantial increase in their populations and as a consequence crop depredation.

EC1-228: Discussion of selenium in Chapter 10.0, "Geology and Soils," of the Draft PEIS/R, is supported by the sources mentioned in the comment, including SJVDP 1990 and *Element Associations in Soils of the San Joaquin Valley, California*, a United States Geological Survey (USGS) Open File Report (No. 86-583) (Tidball et al. 1986). The cited concentrations of soil selenium do not distinguish between soluble forms and relatively insoluble forms, and do not suggest that local runoff would have comparable concentrations of selenium. The commenter correctly notes that irrigation tends to remove soluble sources of selenium, such as those typically found in the western side of the San Joaquin Valley. Soil testing to determine selenium concentrations may support the commenter's assertion that vestiges of selenium have been removed from the soil profile through irrigation practices and the uncertainty regarding current concentrations of selenium in soils within the Restoration Area is recognized. However, the additional detail that would be gained from these analyses would be beyond that needed to support the analyses presented in the PEIS/R.

The lead agencies are currently conducting water quality and bed sediment analyses, including analysis of selenium concentrations in San Joaquin River water and bed sediment samples, although this information is not needed for the discussion presented in the PEIS/R. Additional information is provided in the SJRRP 2011 Annual Technical Report (SJRRP 2012c). The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R.

EC1-229: This comment is substantially similar to comment EC1-228. See response to comment EC1-228.

EC1-230: Text of page 11-23, lines 11 through 16, of the Draft PEIS/R has been revised in response to this and other comments, to expand the description of LSJLD responsibilities, facilities, and operations. Other revisions to descriptions of flood operations and facilities have been made as appropriate in response to other comments. See Chapter 4.0, “Errata,” of this Final PEIS/R.

EC1-231: Text of page 11-23, lines 11 through 16, of the Draft PEIS/R has been revised in response to this and other comments, to expand the description of LSJLD responsibilities, facilities, and operations. See Chapter 4.0, “Errata,” of this Final PEIS/R.

EC1-232: Appendix C, "Glossary & Reader’s Guide," of the Draft PEIS/R, defines “reservoir” as an “Artificially impounded body of water.” The use of the term "reservoir" in reference to Mendota Pool is consistent with this definition. Text has not been revised.

EC1-233: The discussion of sediment accumulation and potential for flushing of accumulated sediment during flood or high flows does not claim that Mendota Pool fills with sediment, as stated in the comment, but is rather consistent with EC1-23 provided by the same commenter. Text has not been revised. See also response to EC1-23.

EC1-234: Text on page 11-9, lines 40 through 42 of the Draft PEIS/R has been revised in response to this and other comments to clarify that Sack Dam is a 5-foot-high low-head structure used to divert water from Reach 3 of the San Joaquin River into Arroyo Canal. See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-235: Text on page 11-9, lines 40 through 42, of the Draft PEIS/R has been revised in response to this and other comments to clarify that diversions to Arroyo Canal range from zero to 800 cfs and typically do not exceed 600 cfs, consistent with text on page 2-41, lines 23 through 24, of the Draft PEIS/R. See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-236: Text on page 11-10, lines 1 and 2, of the Draft PEIS/R has been revised in response to this and other comments to clarify that flood flows generally pass the canal and continue downstream to San Joaquin River Reach 4A. See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-237: “Excess water” in this context refers to water exceeding demands for diversion at Mendota Pool. As described on page 2-40, lines 10 through 16, of 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 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 USACE *Operation and Maintenance Manual for Levees, Irrigation and Drainage Structures, Channels and Miscellaneous Facilities* (Reclamation Board) or otherwise adversely affect future flood control operations. Priorities and operations are set in the USACE *Operation and Maintenance Manual for the Lower San Joaquin River Flood Control Project*, and would not change with the implementation of the SJRRP. Text has not been revised.

EC1-238: As described on page 11-18, lines 1 through 22, of the Draft PEIS/R, the operations of the Chowchilla Bypass Bifurcation Structure are coordinated with flood flows entering the San Joaquin River from Fresno Slough when San Joaquin River flood flows are being released at Friant Dam. Operation of flood control structures on the Kings River, including Pine Flat Dam, Army Weir, and Crescent Weir, are described beginning on page 11-10. Cited sources are provided for the reader seeking additional information regarding coordination of flood management operations on the Kings and San Joaquin rivers. Text on page 11-10, lines 28 through 35, and on page 11-10, line 36, to page 11-11, line 4, of the Draft PEIS/R has been revised in response to this and other comments. See Chapter 4.0, "Errata," of this Final PEIS/R.

As described on page 2-40, lines 10 through 16, of 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 the implementation of the SJRRP.

EC1-239: Text of page 11-13, line 17, of the Draft PEIS/R has been revised in response to this and other comments to clarify that the levees in the Study Area were constructed by the State in coordination with USACE. See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-240: Occurrences of seepage on adjacent lands during high flows are cited in the Draft PEIS/R on pages 11-8, 11-9, 11-13 and 11-16. Loss of design capacity is also discussed at appropriate locations throughout the document. In particular, the historical

operation of Reach 2B at 1,300 cfs or less due to seepage issues at higher flows as well as historical direction of flows away from Reach 4B1 and into the Eastside Bypass and current estimated capacity of less than 100 cfs are acknowledged on page 11-18 as well as in Chapter 7.0, “Hydraulics,” of Appendix H, “Modeling,” of the Draft PEIS/R. Text has not been revised.

EC1-241: The referenced text on page 11-16, lines 37 and 38, of the Draft PEIS/R already notes that Table 11-1 shows design capacities. Table 11-1 is revised in response to the comment to include a citation of the source of the reported design capacities. See Chapter 4.0, "Errata," of this Final PEIS/R. Chapter 11.0, “Hydrology – Flood Management,” of the Draft PEIS/R acknowledges that some capacities have decreased from the design capacity. Reach 2B capacity is discussed further on page 11-18 and in Appendix H, "Modeling," of the Draft PEIS/R on page 7-11.

EC1-242: Page 11-18 of the Draft PEIS/R notes that LSJLD historical operations typically route 1,300 cfs to Reach 2B. Historical operations are further discussed on page 7-11 of Appendix H, “Modeling,” of the Draft PEIS/R. Text of page 11-17, Table 11-1, of the Draft PEIS/R has been revised in response to clarify that the design capacities for reaches of the San Joaquin River and bypass system are cited from the *San Joaquin River Mainstem, California, Reconnaissance Report* (USACE 1993) rather than HEC-RAS hydraulic modeling. See Chapter 4.0, “Errata,” of this Final PEIS/R. Table 11-1 in Chapter 11.0, “Hydrology – Flood Management,” of the Draft PEIS/R, lists design capacities of the San Joaquin River and Bypasses within the Restoration Area, and does not present current capacities.

EC1-243: Historical operations related to flows in Reach 4B1 are discussed on page 11-9 and page 11-18 of the Draft PEIS/R. Further information on estimated current capacity of Reach 4B1 is given in Table 7-1 of Appendix H, "Modeling," of the Draft PEIS/R, which reports that the capacity is equal to or less than 100 cfs. Text of page 11-17, Table 11-1, of the Draft PEIS/R has been revised in response to clarify that the design capacities for reaches of the San Joaquin River and bypass system are cited from *the San Joaquin River Mainstem, California, Reconnaissance Report* (USACE 1993) rather than HEC-RAS hydraulic modeling. See Chapter 4.0, “Errata,” of this Final PEIS/R. Table 11-1 in Chapter 11.0, “Hydrology – Flood Management,” of the Draft PEIS/R, lists design capacities of the San Joaquin River and bypasses within the Restoration Area, and does not present current capacities.

EC1-244: Text of page 11-17, Table 11-1, of the Draft PEIS/R has been revised in response to comment to clarify that the design capacities for reaches of the San Joaquin River and bypass system are cited from the *San Joaquin River Mainstem, California, Reconnaissance Report* (USACE 1993) rather than HEC-RAS hydraulic modeling. See Chapter 4.0, “Errata,” of this Final PEIS/R.

EC1-245: Text of page 11-18, line 38, of the Draft PEIS/R has been revised in response to comment. See Chapter 4.0, “Errata,” of this Final PEIS/R.

EC1-246: Text of page 11-23, lines 11 through 16, of the Draft PEIS/R has been revised in response to this and other comments, to expand the description of LSJLD responsibilities, facilities, and operations. See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-247: The action alternatives do not propose changes to flood control operations. Flood control operations are described at sufficient level of detail to allow impact assessment. See Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, page 2-28, line 27, through page 2-29, line 31, for a description of modifications to the existing operation of the Lower San Joaquin River Flood Control Project during nonflood operations. As described on page 2-40, lines 10 through 16, of 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 USACE *Operation and Maintenance Manual for the Lower San Joaquin River Flood Control Project* (USCAE 1980) or otherwise adversely affect future flood control operations. The proposed Mendota Pool Bypass would be designed to convey at least 4,500 cfs around Mendota Pool from Reach 2B to Reach 3, and would be implemented in such a way as to not interfere with flood control operations and maintenance. Text has not been revised.

EC1-248: The best available modeling tools were used to evaluate the potential effects of the no-action and action alternatives on flood management including the impacts of increased flow frequency and flow levels, and are described in more detail in Appendix H, "Modeling," of the Draft PEIS/R.

CalSim-II was used to evaluate expected reservoir levels during the flood season for all alternatives. The unsteady flow model, UNET, and the Hydraulic Engineering Center – Flood Damage Assessment model (HEC-FDA) were used to model systemwide hydraulics and flood damage reduction impacts. In particular, UNET and HEC-FDA were used to estimate the economic changes in flood damages associated with physical configuration assumptions in the action alternatives, such as levee setbacks in Reach 2B. This is referred to in the Draft PEIS/R as potential redirected impacts.

These models were not used to assess the potential for more frequent flows to saturate levees and thereby compromise levee integrity over time. Rather, provisions to minimize increases in flood risk through this and related mechanisms, including through-seepage, underseepage, and landside slope stability, are included in the project description as part of all action alternatives, as described on pages 2-22 to 2-28 of the Draft PEIS/R. As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, the action to

release Interim and Restoration flows includes measures that would commit Reclamation to implementing actions that would meet performance standards that minimize increases in flood risk as a result of Interim or Restoration flows.

As described in greater detail in responses to comments EC1-77 and EC1-83, with the implementation of the project-level actions described on pages 2-22 to 2-28 of the Draft PEIS/R, the action alternatives would not significantly increase risk of levee failure due to underseepage, through-seepage, associated landside slope stability, or levee erosion mechanisms. Underseepage, through-seepage, associated landside slope stability, and levee erosion are all failure mechanisms associated with prolonged high flows and saturation, the specific concerns raised by the commenter. This is further discussed in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R, in Impact FLD-6. Because measures to minimize flood risk by not significantly increasing risk of levee failure are included in all action alternatives, impact FLD-6 is found to be less than significant. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R.

EC1-249: The best available modeling tools were used to evaluate the potential effects of the no-action and action alternatives on flood management, including the impacts of increased flow frequency and flow levels. Model descriptions, including applicability, prior usage, assumptions, and calibration, or references to documents where this information can be found, are provided in Appendix H, "Modeling," of the Draft PEIS/R. Text has not been revised.

EC1-250: Comment noted. Limitations of the Sacramento and San Joaquin River Basins Comprehensive Study UNET Model are discussed on pages 7-6 and 7-7 of Appendix H, "Modeling," of the Draft PEIS/R. See also responses to comments EC1-77 and EC1-248.

EC1-251: The best available tools were applied to the greatest extent possible. For physical parameters that could not be modeled due to data or model limitations, measures are provided in Chapter 2.0, "Description of Alternatives," and Chapter 11.0 "Hydrology – Flood Management," of the Draft PEIS/R, to avoid or mitigate potential impacts of increased flood risk to the less-than-significant level. Chapter 7.0, "Hydraulics," of Appendix H, "Modeling," of the Draft PEIS/R, discusses application of the Sacramento and San Joaquin River Basins Comprehensive Study UNET Model in the San Joaquin River system. UNET is physically based and includes the flood operations criteria. Limitations of the UNET model are discussed on page 7-6 and 7-7 of Appendix H of the Draft PEIS/R. The UNET model of the San Joaquin River system used for the analyses presented in the Draft PEIS/R was built on a previous UNET model of the Sacramento and San Joaquin River systems, with updated data and integrated flood management operations. It is a sufficiently comprehensive representation of the entire San Joaquin River Basin, capable of simulating the complex interaction of multiple stream systems and waterways for the purposes of the PEIS/R.

EC1-252: With the implementation of the project-level actions described on pages 2-22 to 2-28 of the Draft PEIS/R, the action alternatives would not significantly increase risk of levee failure due to underseepage, through-seepage, associated landside slope stability,

or levee erosion mechanisms. This is further discussed in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R, in Impact FLD-6. Because measures to minimize flood risk by not significantly increasing risk of levee failure due to underseepage, through-seepage, or associated landside slope stability mechanisms are included in all action alternatives, impact FLD-6 is found to be less than significant.

The impact assessment provides a comparative evaluation of flood risk based on available information on flood stage, flood frequency, levee failure probability, and damages between the No-Action and action alternatives. The assessment allows the determination of the potential for increases in flood risk due to program alternatives that would have an effect on underseepage, through-seepage, or associated landside slope stability mechanisms. The flood damage and flood hydraulics modeling approaches used in this assessment are discussed in Sections 6.5 and 7.2, respectively, in Appendix H, "Modeling," of the Draft PEIS/R. The analyses provided in Appendix H describe the amount of damage that might occur given certain floodplain stages. Actions were included in the project description to avoid increasing the potential for flood risk due to release of Interim and Restoration flows, and therefore the impact FLD-6 is found to be less than significant. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. See also response to comment EC1-77.

EC1-253: This comment is substantially similar to comment EC1-252. Erosion and landside slope stability are also discussed in Impact FLD-6, address in response to comment EC1-252. See responses to comments EC1-77 and EC1-252.

EC1-254: The comment refers to the statement that there is a lack of recent and consistent information regarding channel and levee conditions. As described beginning on page 11-16 of the Draft PEIS/R, information on dimensions of estimated channel capacities for locally constructed levees are difficult to obtain and, in some cases, currently unavailable. Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R provides estimates of current channel and levee conditions, and on design capacities, based on best available information, in Section 11.1, "Environmental Setting."

As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, the Implementing Agencies recognize the need for a robust monitoring program to collect information on physical and ecological responses to actions to guide site-specific project requirements. In recognition of the data limitations, and reliance on future monitoring data, final program alternatives are defined more broadly and include provisions for flexibility in implementation. Similarly, until sufficient data are available to determine Factors of Safety, Reclamation would limit initial Interim and Restoration flow releases to those flows that would remain in-channel, as described on pages 2-22 to 2-28. The Channel Capacity Advisory Group, described on page 2-25, would provide timely independent review of data, analytical methodology, and results used to estimate then-existing channel capacities, including application of the USACE levee performance criteria. Further, 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 implementation of 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). Text has not been revised.

EC1-255: 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, due to 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 that 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 site-specific project identifies the potential for a program-level action to locally impede flow or transfer flood risk to other areas, the project proponents for the site-specific project will incorporate actions 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, lines 9 and10 of the Draft PEIS/R). Text has not been revised.

EC1-256: Comment noted. Site-specific studies will include outreach to potentially affected landowners and operators, including LSJLD. 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. See response to comment EC1-255 for additional information relevant to this comment.

EC1-257: Site-specific studies will include outreach to potentially affected landowners and operators, including LSJLD. Vegetation management actions are described on as part of the Physical Monitoring and Management Plan on pages 2-49 through 2-52 and in Appendix D, "Physical Monitoring and Management Plan," 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 that the document does not adequately describe vegetation management response actions. See also MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, and response to comments EC1-5 and EC1-12 for a discussion of funding and funding sources for the SJRRP.

The change in operations at Friant Dam and the routing of Interim and Restoration flows could affect operations and maintenance activities regardless of the alternative selected for implementation, including 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, "Physical Monitoring and Management Plan," of the Draft PEIS/R). Additionally, flows would change the basic 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. For more information please

see MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0 of this Final PEIS/R.

Additionally, 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. These opportunities include processes required under NEPA and CEQA, such as public scoping, notification, and review of the Draft and Final PEIS/R, as well as additional ongoing opportunities, such as conducting technical feedback meetings; maintaining the SJRRP Web site (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 for past and future project-specific actions are further described in Section 1.1.3, "Scoping and Public Involvement Process," and 28.2.3, "Future Public Involvement," of the Draft PEIS/R. 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.

EC1-258: The change in operations at Friant Dam and the routing of Interim and Restoration flows could affect operations and maintenance activities regardless of the alternative selected for implementation, including 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, "Physical Monitoring and Management Plan," of the Draft PEIS/R). Additionally, flows would change the basic 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. See MCR-8, "Operations and Maintenance Agreement Considerations," for additional information relevant to this comment.

EC1-259: The maximum flows for Reach 3 specified in Exhibit B of the Settlement is 3,655 cfs, which would occur during the spring pulse period in normal-wet and wet years. During non-flood periods, when these Restoration Flows in Reach 3 are combined with the typical range of irrigation delivery flows, the maximum flow in this reach would be in the range of 4,000 to 4,200 cfs. The City of Mendota obtains its water via wells within Reach 2B. Reclamation and DWR have been coordinating with the City of Mendota to address reliability of water resources in association with program-level actions, such as the Mendota Pool Bypass and Reach 2B Improvements Project. Additionally, the commenter states that the City of Firebaugh monitors levees during San Joaquin River flows above 4,000 cfs and needs to sandbag if flows approach 4,200 cfs. The maximum flow releases from Friant Dam provided by Exhibit B of the Settlement for a wet year type would be a maximum of 4,500 cfs between April 16 and 30. Due to losses and diversions along the river channel, Exhibit B also states that this flow would equate to 3,655 cfs at the head of Reach 3, near the City of Firebaugh. This is below the flows

addressed by the commenter as potentially having impacts to public facilities. However, pages 2-22 through 2-28 in the Draft PEIS/R describe detailed measures included in all action alternatives that would minimize flood risk resulting from Interim and Restoration flows, including limiting Interim and Restoration flows to then-current channel capacity. The Draft PEIS/R also describes channel improvements that may be made to increase channel capacity, but Interim and Restoration flows would not exceed then-current channel capacity under any scenarios.

EC1-260: On a probabilistic basis, an increase in frequency, stage, or flow of water present in any river could result in an increase, however small, in flood risk. As described in Chapter 11.0 "Hydrology – Flood Management," of the Draft PEIS/R, all impacts of implementing the Settlement on flood management would be less than significant. Beginning on page 2-22 of the Draft PEIS/R, the project description includes actions to minimize increases in flood risk associated with the release of Interim and Restoration flows. These actions 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 those 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 of the Settlement that could address channel capacity issues identified in the Settlement or through the SJRRP or other programs. Reclamation would reduce Interim and Restoration flows below the flow targets identified in Exhibit B of the Settlement, if channel capacity is insufficient to convey full Restoration flows. Additionally, as summarize on page 2-51 and described in Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R, all of the action alternatives include actions to reduce, redirect, or redivert Interim or Restoration flows to reduce flow in downstream reaches, if necessary. 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 implementation of 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). Text has not been revised.

EC1-261: The process for Reclamation to respond to comments provided by the Channel Capacity Advisory Committee is described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R. See also response to comment EC1-81.

EC1-262: This comment is substantially similar to comment EC1-84. See response to comment EC1-84.

EC1-263: 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 implementation of 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). See response to comment EC1-77 for additional information relevant to this comment.

EC1-264: As defined on page 2-24 of the Draft PEIS/R, in-channel flows are flows that maintain a water surface elevation at or below the elevation of the landside levee toe. As stated in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R Interim and Restoration flows would be limited to then-existing channel capacities. Current model data do not indicate there are any areas where channel invert elevations are higher than outside levee toe elevations. In the case that the channel invert elevation is higher than the landside levee toe, flows would not be conveyed in the channel until adequate Factors of Safety can be determined in accordance with USACE guidelines. As part of monitoring and management being done concurrent with release of Interim and Restoration flows, the lead agencies will continue to collect information on the current state of the system. Information collected through monitoring would be used to update the analytical tools to better reflect the conditions of the system. See also response to comment EC1-77.

EC1-265: This comment is substantially similar to comment EC1-77. See response to comment EC1-77.

EC1-266: This comment is substantially similar to comment EC1-77. See response to comment EC1-77.

EC1-267: As noted in the comment and in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R, Figure 11-18 shows a particular hydrologic sequence when peak snow melt releases would have been avoided as a result of Settlement implementation. This figure is shown, along with several others, to demonstrate how implementation of Alternatives A1 through C2 would change flow patterns in the San Joaquin River downstream from the Merced River. Consideration of this and other scenarios in FLD-6 found this impact would be less than significant.

As described in Impact FLD-6, provisions in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, would minimize contribution of Interim and Restoration flows to levee erosion or seepage and minimize interruptions in maintenance. This would be the case regardless of whether release of Interim or Restoration flows preceded or followed flood flows, or occur in years without flood releases. Reclamation is 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. Additionally, the Physical Monitoring and Management Plan (Appendix D of the Draft PEIS/R) includes provisions for monitoring and immediate management actions to respond to nonattainment of seepage objectives.

The Implementing Agencies recognize that Interim and Restoration 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 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 the SJRRP's activities. These commitments are further described in MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0 of this Final PEIS/R. Text has not been revised.

EC1-268: This comment is substantially similar to comment EC1-267. See response to comment EC1-267.

EC1-269: The Physical Monitoring and Management Plan (Section 2.4.3 and Appendix D of the Draft PEIS/R) includes measures that could be taken to further enhance the achievement of the objectives listed on page 2-49, lines 28 through 33, of the Draft PEIS/R. Monitoring activities include past, present, and future physical and nonphysical activities within the Restoration Area, and site-specific documentation has been completed for those actions completed or currently underway, as described in Table 2-2 and on page 2-50 of the Draft PEIS/R. Immediate project-level responses would be implemented, as needed, to attain the seepage, channel capacity, and spawning gravel management objectives. Long-term program-level responses could be implemented to attain the flow, groundwater seepage, channel capacity, native vegetation, and spawning gravel management objectives, if necessary. Additional information at this point would be highly speculative as further monitoring, evaluations, and the continuation of the process and measures identified on pages 2-22 through 2-28 in the Draft PEIS/R must be conducted to further inform and define the process. Text has not been revised.

EC1-270: Control of invasive species is addressed through the Conservation Strategy, described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R. Invasive plants are of concern in almost all ecosystems in California and throughout the western United States. It is unclear what analysis the commenter is requesting in terms of the "feasibility of implementing an invasive plant monitoring and control program." Management of invasive species is common in restoration actions and management efforts and techniques are well established (NISC 2012). As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, invasive species management is a component of all action alternatives by its inclusion in the Conservation Strategy, which would be implemented under all action alternatives. The request by the commenter to consider the potential impacts on vegetation and wildlife and the SJRRP success within the context of ongoing control measures or diminished habitat functions is outside of the scope of the Draft PEIS/R as both NEPA and CEQA require an analysis of the impacts of the project, not of unknown or speculative other conditions that may exist if only portions of the project are implemented (in part or not at all).

EC1-271: Under Alternatives A1 through C2, Reclamation would implement three integrated measures that would collectively avoid a potentially significant increase in the risk of flood damage or levee failure due to underseepage, through-seepage, erosion, or landside slope stability issues (as described in Chapter 2.0, "Description of Alternatives," in the section describing actions to minimize flood risk). These three measures include: (1) establishing a Channel Capacity Advisory Group and determining and updating estimates of then-existing channel capacities as needed, (2) maintaining Interim and Restoration flows below estimates of then-existing channel capacities, and (3) closely

monitoring erosion and performing maintenance and/or reducing Interim and Restoration flows as necessary to avoid erosion-related impacts.

Levee performance criteria are cited in accordance with USACE Engineering Manual 1110-2-1913 (USACE 2000) and Engineering Technical Letter 1110-2-569 (USACE 2005) (developed by the USACE Sacramento District). Levee evaluation standards in these documents include detailed assessment of surface and subsurface soil and hydrologic conditions, topography, past and future flow conditions, and flood history. In the event the levee performance criteria are revised by USACE, such revisions would be considered. Further, 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 implementation of 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). See also responses to comments EC1-77 and EC1-83 for additional information relevant to this comment.

EC1-272: The change in operations at Friant Dam and the routing of Interim and Restoration flows could affect operations and maintenance activities regardless of the alternative selected for implementation, including 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, "Physical Monitoring and Management Plan," of the Draft PEIS/R). Additionally, flows would change the nature of operations and maintenance activities; those activities currently performed in adry 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.

The commenter states that "there needs to be financial compensation for lost tax assessment revenue caused by purchase of private lands by Reclamation for restoration purposes." All of the action alternatives would include the potential to convert privately held agricultural land to non-agricultural uses. For the purposes of the program-level analyses, the potential impacts of converting current uses of privately held land from agricultural to non-agricultural uses is evaluated as a land uses and agricultural resources topic in Chapter 16.0, "Land Use and Agricultural Resources," of the Draft PEIS/R and as a socioeconomic effect to landowners and agricultural employment in Chapter 22.0, "Socioeconomics," of the Draft PEIS/R. Chapter 16.0 describes the conversion of agricultural land to non-agricultural land, including the conversion of Important Farmland, cancellation of Williamson Act Contracts, and substantial diminishment of agricultural land resource quality and importance due to altered inundation and/or soil saturation as potentially significant or significant, and identifies all available mitigation measures to reduce or avoid significant impacts. These conclusions are summarized in Table ES-8 of the Executive Summary of the Draft PEIS/R. No potentially significant impacts to socioeconomics were identified. As described in MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0 of this Final PEIS/R, Reclamation is currently 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. See MCR-8 for additional information relevant to this comment.

EC1-273: The change in operations at Friant Dam and the routing of Interim and Restoration flows could affect operations and maintenance activities regardless of the alternative selected for implementation, including 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 basic 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. As described in MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0 of this Final PEIS/R, 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, but the term of such an agreement is not yet known. See MCR-8 for additional information relevant to this comment.

EC1-274: Figures 12-16 and 12-17 of the Draft PEIS/R were visible in the electronic version and on the CD provided with all hardcopies, but did not print in their entirety in all hardcopies. In response to the comment, these figures are reproduced below as Figures 3.8-1 and 3.8-2. Text has not been revised.

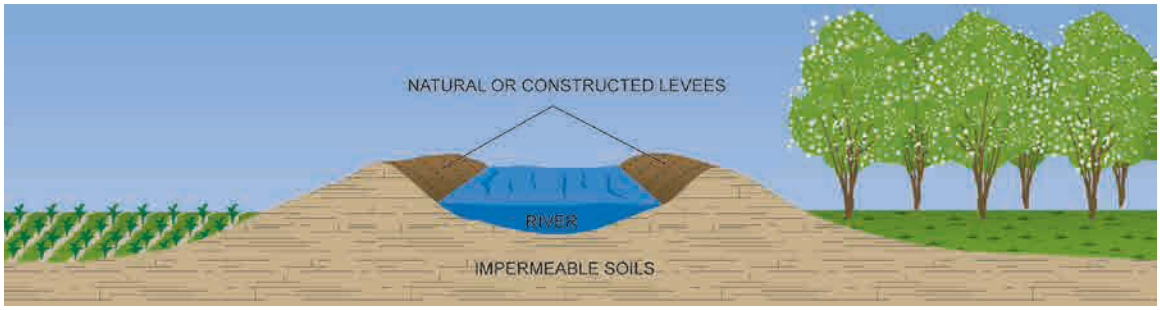

Figure 3.8-1.
Figure 12-16 of the Draft PEIS/R, Physical Barrier to Subsurface Flow Prevents Seepage

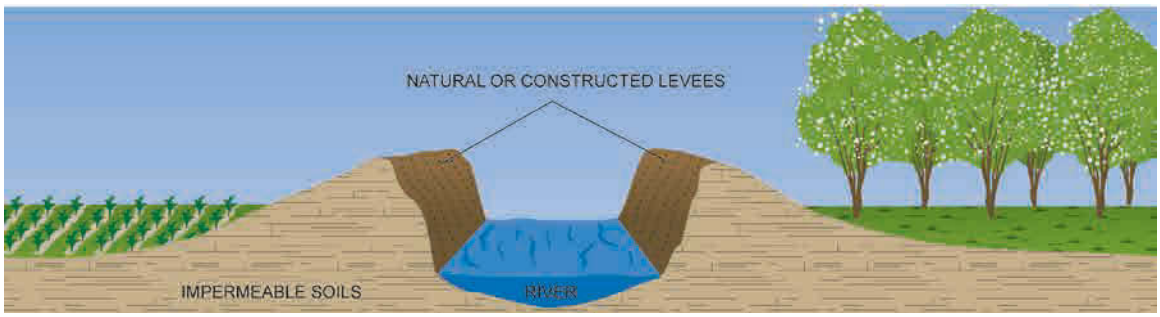

Figure 3.8-2.
Figure 12-16 of the Draft PEIS/R, River Surface Elevation Below Adjacent Land Surface Elevation

EC1-275: This discussion presents a general description of the sources of recharge to the semiconfined aquifer in the Tulare Lake Hydrologic Region. The permeabilities of the unconfined, semiconfined, and confined sediments are variable across the hydrologic region and are not further characterized for the Draft PEIS/R. Text has not been revised.

EC1-276: Text on page 12-46, line 13 of the Draft PEIS/R, has been revised in response to the comment to clarify that uranium is naturally occurring in the eastern San Joaquin Valley, having been derived from granitic rocks of the Sierra Nevada. Uranium concentrations have been reported above the maximum contaminant level (MCL) in Bakersfield (Jurgens et al. 2009). See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-277a: The potential locations and quantity of land that could be utilized as part of the modifications to increase the capacity of Reach 4B1 to at least 4,500 cfs, with integrated floodplain habitat is currently under evaluation as part of a separate site-specific study. This would include the potential to convert privately held agricultural land to nonagricultural uses. For the purposes of the program-level analyses, the potential impacts of converting current uses of privately held land from agricultural to nonagricultural uses is evaluated as a land uses and agricultural resources topic in Chapter 16.0, “Land Use and Agricultural Resources,” of the Draft PEIS/R and as a socioeconomic effect to landowners and agricultural employment in Chapter 22.0, “Socioeconomics,” of the Draft PEIS/R. Chapter 16.0 describes the conversion of agricultural land to on agricultural land, including the conversion of Important Farmland, cancellation of Williamson Act Contracts, and substantial diminishment of agricultural land resource quality and importance due to altered inundation and/or soil saturation as potentially significant or significant, and identifies all available mitigation measures to reduce or avoid significant impacts. These conclusions are summarized in the Executive Summary of the Draft PEIS/R in Table ES-8. No potentially significant impacts to socioeconomics were identified. Text has not been revised.

EC1-277b: The potential locations and quantity of land that could be utilized as part of the modifications to increase the capacity of Reach 4B1 to at least 4,500 cfs, with integrated floodplain habitat is currently under evaluation as part of a separate site-specific study. This would include the potential to convert privately held agricultural land to nonagricultural uses. For the purposes of the program-level analyses, the potential

impacts of converting current uses of privately held land from agricultural to non-agricultural uses is evaluated as a land uses and agricultural resources topic in Chapter 16.0, "Land Use and Agricultural Resources," of the Draft PEIS/R and as a socioeconomic effect to landowners and agricultural employment in Chapter 22.0, "Socioeconomics," of the Draft PEIS/R. See also response to comment EC1-277a. Text has not been revised.

EC1-278: This comment is substantially similar to comment EC1-277a. See response to comment EC1-277a.

EC1-279: The width of the Restoration Area is approximate and varies in several locations to encompass physical actions as well as areas where impacts could occur as a result of implementing the Settlement. Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R including the Seepage Management Plan attachment, identifies areas that are or could be monitored for potential effects to shallow groundwater. The identified area or "supplemental seepage buffer" includes lands with elevated potential for groundwater seepage effects based on past seepage. The supplemental seepage buffer was developed using parcel information identified by the RMC during the public review period for the *Draft Water Year 2010 Interim Flows Project Environmental Assessment/Initial Study* (SJRRP 2009), as having been previously affected by seepage associated with San Joaquin River flows between 475 and 1,300 cfs; and by identifying parcels affected by flooding in 2006 as identified in the 2006 Flood Video developed by LSJLD. Text has not been revised.

EC1-280: Comment noted. The location of the City of Firebaugh's urban land uses and associated population and infrastructure in close proximity to the San Joaquin River is an important feature of the affected environment with regard to environmental consequences. Flood risk management along the San Joaquin River is extremely important to local communities and landowners. Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R, addresses potential changes in flood risk related to Settlement implementation, and mitigation measures are proposed to reduce all potential impacts to less-than-significant levels.

Flow priority ranking in the Lower San Joaquin Flood Control Project would not change as a result of Settlement implementation, and would not adversely affect future flood control operations. As described on page 2-40, lines 10 through 16, of 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.

Under Alternatives A1 through C2, Reclamation would implement three integrated measures that would collectively avoid a potentially significant increase in the risk of flood damage or levee failure due to underseepage, through-seepage, erosion, or landside slope stability issues (as described in Chapter 2.0, "Description of Alternatives," in the section describing actions to minimize flood risk). These three measures include: (1) establishing a Channel Capacity Advisory Group and determining and updating estimates of then-existing channel capacities as needed; (2) maintaining Interim and Restoration flows below estimates of then-existing channel capacities; and (3) closely monitoring erosion and performing maintenance and/or reducing Interim and Restoration flows as necessary to avoid erosion-related impacts. The Channel Capacity Advisory Group, described on page 2-25 of the Draft PEIS/R, would provide timely independent review of data, analytical methodology, and results used to estimate then-existing channel capacities, including application of the USACE levee performance criteria. The Seepage Management Plan Attachment to Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R includes responses to non-attainment of seepage objectives. Text has not been revised.

EC1-281: Text on page 16-2, lines 7 and 8, of the Draft PEIS/R are revised in response to the comment to clarify that a lease is required for projects on State-owned lands under the jurisdiction of the California State Lands Commission with the exception of lands held under Spanish or Mexican land grants or where a private party acquires a right to use former trust property free of trust restrictions. See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-282: Comment noted. The information provided in the Draft PEIS/R was the best available information at the time the Draft PEIS/R was prepared. When the land ownership analysis was conducted, detailed parcel information for the counties involved (Fresno, Madera, Merced, and Stanislaus) was not available. Instead, a more generalized California Spatial Information Library (CaSIL) data layer called "PCTL05_2" was used, which was developed for the California Resources Agency's Legacy Project to depict ownership features as submitted by major public, trust, and nonprofit groups. According to this layer, Reach 3 did not include any parcels owned by cities.

Since the time the analysis was conducted, the "PCTL05_2" layer has not been updated. A comparable CaSIL data layer (California Protected Areas Database (CPAD)) was released in 2008 and contains data on lands owned in fee by governments or nonprofit groups that are protected for open space purposes. The most recent version of CPAD was released in September 2011 (GIN 2011). There is one publicly owned park in Reach 2 and three small urban parks located within Reach 3 of the study area (i.e., within 1,500 feet of the centerline of the river).

In the interest of making the PEIS/R as informative as possible, the most recent CaSIL data are provided in this response. This information does not change the Draft PEIS/R

analyses, conclusions, or text and tables. Table 3.8-50 provides the of the parks' names, ownership, and acreages within the study area. Text has not been revised.

Table 3.8-50.
Park Ownership Acreage

Park	County/City	Acres
Mendota Pool Park	Fresno County	65.2
Lake/pond feature adjoining Mendota Pool Park	Fresno County	7.0
Andrew Firebaugh Historical Park	City of Firebaugh	16.6
Dunkle Park	City of Firebaugh	12.9
Library Park	City of Firebaugh	0.8

Source: Green Info Network 2011

EC1-283: Comment noted. The referenced section of text regards "Existing Land Uses in and Adjacent to the Restoration Area," beginning on page 16-2 of the Draft PEIS/R. Text specific to Reach 4 is on page 16-7, lines 16 through 36, and describes land uses surrounding Reach 4. The suggested information is not necessary to describe land use surrounding Reach 4. Text has not been revised.

EC1-284: The commenter states that "The Chowchilla Bypass is not a permissible route for restoration flows." This comment is in direct opposition to comment EC1-142, which states, "using the Chowchilla Bypass, Mariposa Bypass and/or Eastside Bypass is the best and least environmentally damaging alternative to achieving salmon restoration." See response to comment EC1-142 and MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0 of this Final PEIS/R, for additional information relevant to this comment.

EC1-285: Preceding text in Chapter 1.0, "Introduction," of the Draft PEIS/R explains that the Draft PEIS/R was prepared consistent with authorities, including the NEPA, CEQA, and the Act, and that the Draft PEIS/R identifies mitigation measures. All efforts will be made to mitigate impacts appropriately, consistent with these authorities. Individual subsections of the Act are described in detail in Chapter 28.0, "Consultation, Coordination, and Compliance," of the Draft PEIS/R. The discussion in Chapter 28.0 identifies how the each subsection of the Act relates to the action alternatives and/or to the analyses presented in the Draft PEIS/R; where subsections do not relate to the action alternatives or the Draft PEIS/R, this is identified in Chapter 28.0. In the interest of managing redundancy and size of the PEIS/R, unnecessary detail is not presented. Text has not been revised.

EC1-286a: Section 3.2.3, "Impact Comparisons and Definitions," of the Draft PEIS/R describes the baseline condition for both the CEQA and NEPA analysis (on page 3-9). Evaluations of the effects of the No-Action/No-Project Alternative (referred to in the Draft PEIS/R as the No-Action Alternative) compare expected future conditions without the project to existing conditions (i.e., the baseline for analysis of the No-Action Alternative). Existing conditions are those at the time when the NOP was published (August 22, 2007). Expected future conditions include existing facilities, conditions, land

uses, and reasonably foreseeable actions expected to occur in the study area by 2030. Reasonably foreseeable actions include those listed in Table 2-3 of the Draft PEIS/R, and other reasonably foreseeable actions listed in Table 26-1 of the Draft PEIS/R.

Section 26.2, "Methods and Assumptions," of the Draft PEIS/R describes the methods and assumptions of the cumulative effects analysis. The cumulative effects analysis evaluates the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Because existing conditions include the effects of past and present actions, the incremental impact of reasonably foreseeable projects described in the cumulative effects discussions of Chapter 26, "Cumulative Impacts," of the Draft PEIS/R represent the cumulative effects of the No-Action Alternative. Section 26.2.2 lists and describes the reasonably foreseeable projects included in the cumulative effects analysis. Text has not been revised.

EC1-286b: The commenter refers to the analysis of conversion of riparian forest to non-forest uses under the No-Project Alternative (Impact LUP-2 on page 16-31 of the Draft PEIS/R) and states that "using the same logic as was used for likely impacts to important farmland, it is unclear how the conclusion was reached that conversion of riparian forest to non-forest uses will not likely occur." The discussion of Impact LUP-2 did not conclude that conversion of riparian forest to non-forest uses would not occur; rather, it concluded that the conversion of riparian forest to non-forest uses would not be substantial, and thus, a less-than-significant impact. Also, the logic for analyzing potential effects of reasonably foreseeable actions on Important Farmland is not entirely applicable to potential effects to riparian forests. As described on page 16-31, lines 24 through 27, of the Draft PEIS/R, an important distinction between potential effects of reasonably foreseeable actions on Important Farmland and on riparian forest is that there are no feasible mitigation measures to fully mitigate the loss of Important Farmland, whereas there are feasible mitigation measures to fully mitigate the loss of riparian forest. Text has not been revised.

EC1-287: Comment noted. All levee setbacks would be studied prior to implementation, and such studies would include outreach to potentially affected landowners. Text has not been revised.

EC1-288: Comment noted. All levee setbacks would be studied prior to implementation, and such studies would include outreach to potentially affected landowners. Text has not been revised.

EC1-289: Comment noted. All levee setbacks would be studied prior to implementation, and such studies would include outreach to potentially affected landowners. Text has not been revised.

EC1-290: Comment noted. All levee setbacks would be studied prior to implementation, and such studies would include outreach to potentially affected landowners. Text has not been revised.

EC1-291: Comment noted. All levee setbacks would be studied prior to implementation, and such studies would include outreach to potentially affected landowners. Text has not been revised.

EC1-292: Comment noted. All levee setbacks would be studied prior to implementation, and such studies would include outreach to potentially affected landowners. Text has not been revised.

EC1-293: This comment is substantially similar to comment EC1-259. See response to comment EC1-259.

EC1-294: Page 16-40, lines 24 through 25, of the Draft PEIS/R are part of the discussion of Impact LUP-4, Physically Divide or Disrupt an Established Community – Project-Level. This impact discussion concludes that without mitigation, Interim and Restoration flows would result in a potentially significant impact because of intermittent local road and bridge closures disrupting access for residents and business operators. However, this impact is considered less than significant with implementation of Mitigation Measure TRN-7, Implement Traffic Detour Planning (page 23-26 of the Draft PEIS/R beginning at line 1). Implementation of the long-term detour plan would provide "convenient and parallel vehicular traffic detours for routes closed because of inundation by Interim and Restoration flows." Because detours would be provided, communities would not be divided nor significantly disrupted. Regarding changes in vehicle miles travelled, it is stated that the detour plan should prioritize paved roads to reduce potential emissions of particles less than 10 microns in diameter (PM_{10}), but the mitigation measure allows Reclamation to select unpaved roads for detour purposes to ensure that the detour is convenient and parallel. (Mitigation Measure TRN-7 also includes requirements for dust suppression to ensure that air quality impacts would be less than significant.) With implementation of Mitigation Measure TRN-7, Interim and Restoration flows that cause inundation of local road crossings would not significantly physically divide nor disrupt an established community because the potential impacts of maintaining convenient and parallel vehicular traffic detours would have been adequately mitigated.

Text under LUP-4 on page 16-40, lines 24 through 35, is revised in response to the comment. See Chapter 4.0, "Errata," in Chapter 4.0 of this Final PEIS/R for revisions to Impact LUP-4. These revisions do not change the analysis or conclusions presented in the Draft PEIS/R.

EC1-295: The comment contains four points: (1) impact discussions must include an estimated total acreage of impacts, (2) Impact LUP-5 lacks an acreage estimate, (3) acreage estimates for the proposed modifications of Reach 2B and for the bypass channel around Mendota Dam were included in the expert testimony of Dr. Michael D. Harvey; and (4) Impact LUP-8 states that irrigated acreages would be reduced less than 1,000 acres and requests the basis for this estimate. These four points are addressed individually below:

- The Draft PEIS/R analysis of potential impacts to agricultural resources is supported by substantial evidence that includes potential acreages temporarily or

permanently affected by the construction of SJRRP actions (Chapter 16.0, "Land Use Planning and Agricultural Resources," Impact LUP-1, page 16-32, lines 28 through 34; and in Chapter 26.0, "Cumulative Impacts," page 26-53, lines 29 through 35, of the Draft PEIS/R) and by reduced water deliveries to Friant Division long-term contractors (Impact LUP-8, page 16-45, lines 19 through 27, of the Draft PEIS/R). A total acreage of potentially affected farmland cannot be precisely estimated at this time, because the following factors are unknown and cannot be reasonably estimated: extent of agricultural conversion to riparian vegetation within the footprint of restoration actions, extent to which additional inundation and soil saturation would be avoided or substantially reduced by taking the appropriate actions identified in the Physical Monitoring and Management Plan (in Appendix D of the Draft PEIS/R), and the size and location of borrow areas and the extent of their reclamation to agricultural use. Future project-level and site-specific design would provide a basis for estimating the amount of farmland potentially affected by restoration actions, including borrow activities. The Draft PEIS/R analysis provides sufficient substantial evidence to conclude that impacts to agricultural resources would be significant, to identify feasible program-level mitigation measures to substantially reduce those impacts, and to conclude that these impacts would remain significant and unavoidable after implementation of the mitigation (see impacts LUP-1, LUP-5, and LUP-8). Conducting additional analysis to determine the specific locations of effects and their total acreages would not alter these conclusions and would require substantial speculation at this program level of analysis.

- Impact LUP-5 discusses the potential effect of altered inundation and soil saturation along the San Joaquin River on agricultural productivity. Areas potentially affected by increased inundation and soil saturation would overlap extensively with the areas temporarily or permanently impacted by construction of restoration actions; this impact would also be avoided or substantially reduced by taking the actions identified in the Physical Monitoring and Management Plan (in Appendix D of the Draft PEIS/R). Therefore, these areas cannot be specifically located or their acreage estimated at this time, similar to (1) immediately above. However, the conclusions in the Draft PEIS/R are based on substantial evidence (as discussed by Impact LUP-5), which indicates that this effect is potentially significant.

- As noted in the comment, the discussion of Impact LUP-8 does discuss the estimated acreage of potentially affected farmland (on page 16-45 of the Draft PEIS/R, lines 19 through 27). It is not, however, the only reference to the amount of potentially affected farmland as asserted by the comment. Rather, Impact LUP-1 discusses the area that could be affected by the Reach 2B modification and the bypass around Mendota Pool (on page 16-32, lines 28 through 34); Chapter 22.0, "Cumulative Effects," of the Draft PEIS/R provides acreages for the potential area affected by these modifications (on page 26-53, lines 29 through 35); and in Appendix G, Tables 3-5 and 3-6 provide estimates of real estate requirements (for both agricultural and nonagricultural land) for restoration and water management actions. The Draft PEIS/R also discusses the potential amount of farmland

affected by borrow activities (see Impact LUP-1 on page 16-33, lines 6 through 35). However, because the extent of agricultural conversion to riparian vegetation within the footprint of restoration actions, and the location of borrow areas and the extent of their reclamation to productive farmland, are not yet known, a potentially affected acreage cannot be estimated at this time. (Future project-level and site-specific design would provide a basis for estimating the amount of farmland potentially affected by borrow activities.) The discussion of cumulative effects on agricultural resources provides an integrated discussion of the amount of farmland potentially affected by each of these mechanisms.

- The 1,000 acres identified in Impact LUP-8 in Chapter 16.0, "Land Use Planning and Agricultural Resources," of the Draft PEIS/R are based on an analysis using the Central Valley Production Model (CVPM), as summarized in the impact discussion on page 16-45 of the Draft PEIS/R, lines 15 through 27, and refers to acres of land within the Friant Division. This conclusion is based in part on the integrated modeling of changes in deliveries of surface water, change in groundwater levels, agricultural production, and regional socioeconomics that is described in Appendix H, "Modeling," of the Draft PEIS/R. As part of this integrated modeling, simulations using CVPM were conducted to assess the effects of the program alternatives on agricultural crop production. In these simulations, if the cost of accessing groundwater is too large to generate positive net returns to crop production, even after considering changes in irrigation technology and crop types, then agricultural land would be assumed to be idled (see Appendix H, pages 6-2 to 6-15). Thus, simulated agricultural production could be impacted by a reduction in deliveries of surface water, despite the potential availability of additional groundwater. Furthermore, the discussion of Impact LUP-8 notes that these CVPM simulations do not address all issues affecting the replacement of some water deliveries with additional groundwater pumping, including limited access to adequate quality groundwater. It also notes that these issues could affect agricultural productivity, and that irrigated acreages could be reduced by more than 1,000 acres. In part for this reason, the Draft PEIS/R concludes that this impact would be significant and unavoidable. Text has not been revised. See response to comment EC1-304 for additional information relevant to this comment.

EC1-296: Text on page 16-41, lines 34 through 36, of the Draft PEIS/R has been revised in response to comment to clarify that Reclamation continues to work with water districts and participating landowners as part of the Seepage and Conveyance Technical Feedback Group to address potential seepage-related impacts due to implementation of the SJRRP in the short and long term. See Chapter 4.0, "Errata," in Chapter 2.0 of this Draft PEIS/R.

EC1-297: The referenced sentence, page 16-41, line 41, of the Draft PEIS/R, "Seepage impacts to agricultural land may be avoided by keeping groundwater levels below thresholds above which agricultural practices are affected," is sufficiently stated for the purposes of the Draft PEIS/R, which evaluates the potential for impacts based on reasonably foreseeable future conditions. As described in the Draft Seepage Management Plan Attachment to Appendix D, "Physical Monitoring and Management

Plan," of the Draft PEIS/R, page H-1, lines 20 through 23, Reclamation will adjust thresholds when notified about conversion to permanent crops. Landowners should call the Seepage Hotline at 916-978-4398 to notify Reclamation about conversion to permanent crops or submit comments to interimflows@restoresjr.net. Text has not been revised.

EC1-298: The comment refers to discussion of project-level impacts, and states that slurry walls or cutoff walls should be included. The potential to install slurry or cutoff walls as a method of limiting seepage impacts is described as a program-level action in Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R. Further project-level evaluation of these actions would be conducted in subsequent site-specific studies prior to their implementation. Text has not been revised.

EC1-299: The relationship of Mitigation Measure LUP-5 and the Physical Monitoring and Management Plan (Appendix D of the Draft PEIS/R) is described on page 16-42, lines 11 through 19. Text has not been revised.

EC1-300: Text of page 16-42, lines 11 through 19, of the Draft PEIS/R, has been revised in response to comment to clarify that acreage of affected Important Farmland would be determined through monitoring and modeling as well as through consideration of feedback provided by landowners through the Seepage and Conveyance Technical Feedback Work Group or similar mechanism. See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-301: This comment is substantially similar to Comment EC1-295. See response to comment EC1-295.

EC1-302: The potential effects of flooding on sewer facilities in the cities of Mendota and Firebaugh is encompassed by the evaluation presented in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R, which evaluates the potential to expose people and structures to the risk of loss, injury, or death from flooding (Impacts FLD-1 and FLD-6 for program-level and project-level analyses, respectively). Based on the evaluation of program-level actions, Impact FLD-1 concludes that some program-level actions would have a potentially significant impact without mitigation and a less-than-significant impact with mitigation.

Evaluation of project-level actions under Impact FLD-6 concludes that the exposure of people and structures to flood risks as a result of project-level actions would be less than significant. This finding is based in part on the inclusion of the following three measures as part of the SJRRP: (1) establishing a Channel Capacity Advisory Group and determining and updating estimates of then-existing channel capacities as needed; (2) maintaining Interim and Restoration flows below estimates of then-existing channel capacities; and (3) closely monitoring erosion and performing maintenance and/or reducing Interim and Restoration flows as necessary to avoid erosion-related impacts. With the inclusion of these three measures, the action alternatives would not appreciably increase the potential to expose people and structures to the risk of loss, injury, or death from flooding.

In addition, Chapter 12.0, "Hydrology – Groundwater," of the Draft PEIS/R, evaluates changes in groundwater levels near the San Joaquin River by reach. This evaluation found that implementation of the Physical Monitoring and Management Plan (Appendix D of the Draft PEIS/R) would ensure that potential changes in groundwater levels would have a less-than-significant impact. This finding was based on the results of simulations using the near-river groundwater model, MODFLOW. The reach-by-reach discussion of groundwater impacts begins on page 12-117, line 29 and ends on page 12-120, line 24. The results of MODFLOW simulations are found in Appendix H "Modeling," of the Draft PEIS/R. Because substantial increases in groundwater levels would be avoided or substantially reduced, additional adverse impacts to septic tanks would be less than significant. Text has not been revised.

EC1-303: As described in Chapter 1.0, "Introduction," of the Draft PEIS/R, 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 the Draft PEIS/R, after specific project details are identified. The project proponent for subsequent site-specific studies would provide the requested information in the associated NEPA or CEQA environmental documentation as appropriate to the purposes of those documents, and in compliance with NEPA and CEQA. The project proponents for site-specific projects would be responsible for identifying the appropriate methodology and types of data for use in the impact analyses of environmental review documents for future Settlement actions. For discussion of acreages associated with actions evaluated at a project level of detail in the Draft PEIS/R, see response to comment EC1-304. Text has not been revised.

EC1-304: The 1,000 acres identified in Impact LUP-8 in Chapter 16.0, "Land Use Planning and Agricultural Resources," of the Draft PEIS/R are based on an analysis using the CVPM, as summarized in the impact discussion on page 16-45 of the Draft PEIS/R, lines 15 through 27, and refers to acres of land within the Friant Division. This conclusion is based in part on the integrated modeling of changes in deliveries of surface water, change in groundwater levels, agricultural production, and regional socioeconomics that is described in Appendix H, "Modeling," of the Draft PEIS/R. As part of this integrated modeling, simulations using CVPM were conducted to assess the effects of the program alternatives on agricultural crop production. In these simulations, if the cost of accessing groundwater is too large to generate positive net returns to crop production, even after considering changes in irrigation technology and crop types, then agricultural land would be assumed to be idled (see Appendix H, pages 6-2 to 6-15). Thus, simulated agricultural production could be impacted by a reduction in deliveries of surface water, despite the potential availability of additional groundwater. Furthermore, the discussion of Impact LUP-8 notes that these CVPM simulations do not address all issues affecting the replacement of some water deliveries with additional groundwater pumping, including limited access to adequate quality groundwater. It also notes that these issues could affect agricultural productivity, and that irrigated acreages could be reduced by more than 1,000 acres. In part for this reason, the Draft PEIS/R concludes that this impact would be significant and unavoidable.

Tables 3-5 and 3-6 in Appendix G, "Plan Formulation," of the Draft PEIS/R provide additional estimates of potential real estate requirements for implementing restoration and water management actions. In the Restoration Area, these include 400 acres for the bypass of the Mendota Pool; 550 to 2,100 acres for Reach 2B modifications; and either 1,200 acres for modifications to Reach 4B to convey at least 475 cfs (Alternatives A2, B2, and C2) or 5,100 to 6,300 acres for modifications to Reach 4B to convey at least 4,500 cfs (Alternatives A2, B2, and C2). Outside of the Restoration Area, between the Merced River and the Delta, Table 3-6 also identifies a potential 190 acres for the San Joaquin River pump station and intertie pipes (Alternatives C1 and C2). Thus, the total acreage within the construction footprint of these restoration and water management actions could be 2,150 to 8,800 acres for Alternatives A1, A2, B1, or B2; and 2,340 to 8,990 acres for Alternatives C1 or C2. It is likely that a portion of but not all borrow material would be obtained from within these areas. Therefore, additional agricultural land could be affected by borrow activities. As discussed on page 16-33, lines 6 through 24, of the Draft PEIS/R, because of the large quantity of soil borrow required by construction activities, more than 960 acres of land could be affected. Assuming that in addition to the acreages identified in Tables 3-5 and 3-6, 0 to 960 acres of land could be affected by borrow activities, the total acreage of land affected by construction of these restoration and water management actions would be between 2,150 and 9,760 acres for Alternatives A1, A2, B1, or B2; and between 2,340 and 9,950 acres for Alternatives C1 or C2.

Most but not all of the land included in these acre estimates would comprise Important Farmland, but not all of this agricultural land would be converted to nonagricultural uses. The extent of borrow areas and their locations would be determined during site-specific project design. These areas would be generally reclaimed to agricultural use. Also, not all agricultural land within the potential footprints identified for restoration and water management actions would be converted to nonagricultural use: only a portion of these areas might be converted to riverine and riparian habitats.

Areas potentially affected by increased inundation and soil saturation would overlap extensively with the areas impacted by construction of restoration and water management actions. These impacts would also be avoided or substantially reduced by taking the actions identified in the Physical Monitoring and Management Plan (in Appendix D of the Draft PEIS/R). Therefore, this impact may not add substantially to the total acreage of impacted farmland. However, this acreage cannot be reasonably estimated at this time.

Cropland in districts in the Friant Division potentially idled as a result of reduced water deliveries (estimated to be approximately 1,000 acres and discussed in Impact LUP-8, pages 16-44 and 16-45 of the Draft PEIS/R) could be outside of the Restoration Area. Thus, this acreage could be in addition to the farmland affected by construction of restoration actions and by increased inundation and soil saturation.

Other mechanisms identified as potentially impacting agricultural resources would not substantially diminish agricultural land resource quality or importance, or result in the conversion of Important Farmland to nonagricultural use. As discussed by Impact LUP-6 (on pages 16-42 and 16-43 of the Draft PEIS/R), agricultural productivity would not be

substantially diminished as a result of an increase in orchard and vineyard diseases. Similarly, as discussed on page 6-85 of the Draft PEIS/R under Impact VEG-16, altered water releases to the San Joaquin River could substantially increase the extent of riparian and wetland vegetation. Much of this would likely be riparian vegetation, and to a lesser extent seasonal wetland. Because of its requirement for inundated or saturated soils throughout spring, summer, and fall, emergent wetland would be restricted to a relatively narrow band along the low-flow channel where conditions are suitable for this vegetation type but not for riparian vegetation. This additional emergent wetland would not represent a substantial increase in potential habitat for birds nesting in emergent wetlands (e.g., blackbirds), and thus would not result in a substantial increase in their populations and as a consequence crop depredation.

See also response to comments EC1-295 for additional information relevant to this comment.

EC1-305: The analysis presented in Chapter 24.0, "Utilities and Service Systems," of the Draft PEIS/R acknowledges that there would be an increase in demand for emergency services from fire and sheriff's departments, and the California Highway Patrol with implementation of the Settlement (see Impact UTL-5) and Interim and Restoration Flow releases (see Impact UTL-13). However, as stated on page 24-15 beginning with line 24, an impact to emergency services was considered significant if it would result in substantial adverse physical effects associated with the provision of new or altered government facilities in order to maintain acceptable services ratios. The emergency service providers already provide emergency services for the entire 153-mile length of the Restoration Area. Based on likely changes in types and locations of recreational uses, including people attempting to access the river from private properties, it was found that new facilities would not need to be constructed solely as a result of implementation of the action alternatives. Furthermore, it was found that action alternatives would not likely require construction to modify existing facilities. Therefore, this impact would be less than significant. Text has not been revised.

EC1-306: Opportunities for stakeholder involvement with SJRRP efforts will continue, including permitting efforts through existing forums, as well as any appropriate permit-specific forums. Additional involvement would be determined appropriate to specific compliance efforts, and it is beyond the scope of the PEIS/R to anticipate all potential forums. The suggested involvement in the identified compliance processes will be considered during those processes. Text has not been revised.

EC1-307: As stated in the first section of Mitigation Measure AIR-1 on page 4-27 of the Draft PEIS/R, the proposed project would comply with San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 9510, as required by law. The bullets under the headline "Reduction of Ozone Precursor Emissions during Construction" on page 4-27 would all be applicable in demonstrating the proposed project's compliance with Rule 9510. In order for the project to receive a permit from the SJVAPCD, the project contractor must demonstrate that the construction equipment fleet meets the reductions necessary to operate within the San Joaquin Valley Air Basin (SJVAB) and meet Rule 9510. A "significant permitting discussion" of the SJVAPCD and ISR is not required or

necessary under CEQA. Mitigation Measure AIR-1 has been appropriately developed to meet CEQA requirements for mitigation and will reduce impacts as specified on pages 4-27 through 4-30 in the Draft PEIS/R. Because the permitting process would be required by law and would reduce nitrogen oxide (NO_X) emissions by 20 percent and PM_{10} emissions by 45 percent, its requirement as mitigation for project emissions would not be dependent on costs or challenges associated with implementation (i.e., the permitting process and performance standards are legally required and will be implemented as such for all applicable actions). See MCR-2, "SJJRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R for a detailed discussion of general funding and funding sources for the SJRRP.

EC1-308: The description of the State Lands Commission is sufficient for the purpose of the PEIS/R. For additional information concerning the State Lands Commission, please visit www.slc.ca.gov. As stated in Chapter 28.0, the San Joaquin River is defined as "navigable in fact" from its mouth upstream to approximately 8 miles downstream from SR 99, and is therefore subject to the jurisdiction of the California State Lands Commission. The State Lands Commission is a CEQA Responsible Agency for the implementation of the SJRRP. Program-level actions that require work on the San Joaquin River would require a lease from the State Lands Commission. DWR is coordinating with the State Lands Commission as a Responsible Agency under CEQA in preparing this PEIS/R. See also response to comment EC1-306 for additional information relevant to this comment.

EC1-309: As discussed in detail in MCR-7, "Adequacy of Conservation Strategy," in Chapter 2.0 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 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 the minimization measures would be implemented. If minimization is determined to not suffice, then the 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 measures of the Conservation Strategy was selected as an organizational tool to provide clarity during subsequent site-specific studies and implementation of 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 each measure would apply to (project- and/or program-level), and the regulatory agency or agencies that would be involved in the development and/or implementation of each measure. When taken all together, many of the conservation measures would appear to overlap in timing; however, selected measures would be implemented depending on the species, habitat, timing, and nature of activity and constraining overlap would be minimized.

The party or parties responsible for obtaining project-specific take permits or for paying mitigation and obtaining mitigation credits for program-level actions would be determined during site-specific studies. Mitigation banks and other mitigation options would be determined prior to obtaining project-specific take permits. Options for mitigation, where habitat compensation is identified as a conservation measures, would follow agency guidelines (e.g., see VP-3(a) and consistency with the USACE and EPA 2008 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources).

For the reasons set forth above and in MCR-7, no changes to the Draft PEIS/R related to the Conservation Strategy are necessary.

EC1-310: The final range of actions, alternatives, site design options, environmental resources, and mitigation measures that are analyzed in the Draft PEIS/R include consideration of comments received that pertained to both project- and program-level actions. Further details and concerns for program-level actions would be addressed at the project-level during subsequent site-specific studies. Text has not been revised.

EC1-311: Data collected during the release and recapture of Interim Flows in Water Years 2010, 2011, and 2012 are available at www.restoresjr.net. SJRRP annual planning and reporting documents, including the Monitoring and Analysis Plan and the Annual Technical Report, present the data collected during the previous calendar year. The Annual Technical Report describes data collected during the preceding year, presents the results of analyses performed using those data, and identifies information needs. The Monitoring and Analysis Plan uses those data to identify needed studies, monitoring network changes and analytical tool development for the following year. Together, these documents form a scientific basis for San Joaquin River operations downstream from Friant Dam.

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. The RA, in consultation with the Technical Advisory Committee, developed recommendations for the monitoring and assessment actions for 2012. The Implementing Agencies modified monitoring and analysis activities in response to the RA recommendations to the greatest extent possible within the 2013 Monitoring and Analysis Plan process and will continue to develop new plans based on the recommendations as part of the next SJRRP planning cycle.

The Annual Technical Report tracks long-term strategies for Settlement implementation in problem statements and identifies information needs as uncertainties to be resolved in order to implement the Settlement. The Annual Technical Report allows the Implementing Agencies to present to stakeholders the status and results of technical work to address SJRRP needs and solicit feedback.

EC1-312: Table 1-3 of the Draft PEIS/R describes the compliance, consultation, and coordination supported by the Draft PEIS/R, including permit applications that are supported by the Draft PEIS/R. In many cases, additional efforts are required at a project

level before a project proponent may apply for that permit or before a regulatory agency will grant a permit. For these permits, the Draft PEIS/R provides program-level support only. This is consistent with the purpose of program-level analyses presented in the Draft PEIS/R. Text has not been revised.

EC1-313: The commenter correctly notes that the Draft PEIS/R does not identify a least environmentally damaging practicable alternative. 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 the Section 404 CWA compliance. It was determined that a Section 404 permit will 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 will 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. The Draft PEIS/R evaluates the environmental effects on jurisdictional features resulting from the 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. 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.

EC1-314: Comment noted. Section 51295 of the California Government Code is not limited to acquisition through eminent domain, and states: "When any action in eminent domain for the condemnation of the fee title of an entire parcel of land subject to a contract is filed, or when that land is acquired in lieu of eminent domain for a public improvement by a public agency or person, or whenever there is any such action or acquisition by the federal government or any person, instrumentality, or agency acting under the authority or power of the federal government, the contract shall be deemed null and void as to the land actually being condemned, or so acquired as of the date the action is filed, and for the purposes of establishing the value of the land, the contract shall be deemed never to have existed." As stated in Chapter 28.0, "Consultation, Coordination, and Compliance," of the Draft PEIS/R, the agency or agencies responsible for acquiring lands under Williamson Act contracts due to implementation of actions evaluated at a program level in the Draft PEIS/R would follow the applicable cancellation process as part of the site-specific process, including notification. Text has not been revised.

EC1-315: Text on page 28-19, line 7, of the Draft PEIS/R, "Compliance, Coordination, and Consultation," has been revised in response to the comment to include the statutory

requirement for complying with the Farmland Protection Policy Act (7 CFR Part 685.1). See Chapter 4.0, "Errata," of this Final PEIS/R.

EC1-316: Comment noted. Compliance with regulatory requirements can be a basis for mitigation, and Mitigation Measure LUP-1a and LUP-1b do not just contain regulatory requirements. They are coupled and must be considered together when evaluating the mitigation and resulting impacts after mitigation. As part of Mitigation Measure LUP-1a, the types of measures suggested by the Department of Conservation would be required for all projects implemented under the SJRRP. The establishment of agricultural conservation easements is identified on page 16-34, line 19, of the Draft PEIS/R and the funding of agricultural land trusts is identified on page 16-34, line 23. In addition to the Department of Conservation's suggestions, Mitigation Measure LUP-1a also requires the redistribution of salvaged topsoil from Important Farmland (not used in restoring that land) to other agricultural land (page 16-34, line 36). Mitigation Measure LUP-1b includes procedures for complying with the Williamson Act contracts that may not be required, but are included to offer disclosure, convenience for future agencies using this Draft PEIS/R in supporting project-specific environmental documents, and the greatest feasible amount of mitigation monitoring and reporting. It is understood that lands that are under a Williamson Act Contract would be Important Farmlands; therefore, Mitigation Measure LUP-1a would also apply. Text has not been revised.

EC1-317: The comment reiterates concerns regarding reported soil selenium concentrations previously expressed in comment EC1-228, and states a need for water quality monitoring; see response to comment EC1-228 for information regarding reported soil selenium concentrations and current efforts to monitor selenium concentrations in water as part of the SJRRP monitoring efforts. Text has not been revised.

EC1-318: Chapter 1.0, "Introduction," of the Draft PEIS/R, identifies the purpose and need of the SJRRP, which are consistent with and responsive to the direction provided to the Secretary in the Act that 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 description of alternatives presented in 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. The Act and the Settlement have come after 18 years of legal dispute and negotiation and in light of the length of time and investments that have been made by agencies and stakeholders in achieving the Act and 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. See MCR-1 in Chapter 2.0 of this Final PEIS/R for additional information relevant to this comment.

EC1-319: Preceding text in Chapter 2.0 of Appendix G, "Plan Formulation," of the Draft PEIS/R describes the conveyance of irrigation flows within portions of the Restoration Area; therefore, the addition of specific language recommended in the comment that

would identify a portion of the Restoration Area ("along the San Joaquin River and Mendota Pool") would be redundant to the existing text. Recapture and recirculation at existing facilities in the Restoration Area is contemplated as a temporary measure only; improvements to or expansion of facilities in the Restoration Area solely for this purpose are not considered in the Draft PEIS/R. For the reasons stated above, the text has not been revised.

EC1-320: The CalSim-II simulated monthly average flows may not be appropriate for direct analysis of events that occur on weekly or daily time steps such as Restoration Flow recapture at Mendota Pool and flood control operations, as noted in the comment. As described on page 2-6 of Appendix H, "Modeling," of the Draft PEIS/R, an adequate evaluation of many resource areas required data at a finer time step than the monthly output provided by CalSim-II. To meet this need, monthly water operations from CalSim-II were disaggregated into daily water operations that are still bound by overall monthly volumes. The Millerton Daily Operations Model was used to simulate daily water operations of Millerton Lake. This model, developed in Excel, interpolated between the monthly CalSim-II boundary water operations of Millerton Lake (inflow, diversions, and long-term snowmelt flood releases) to generate a potential set of daily values that still meets the monthly operations boundaries. These daily operations were then used with a simplified flood routing procedure to generate a set of daily releases from Millerton Lake to the San Joaquin River. Daily flows were used in the analysis of potential impacts to the flood management system, as described in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R. In particular, please refer to the discussion of Impact FLD-6 beginning on page 11-43 of the Draft PEIS/R. Text has not been revised.

EC1-321: The differences between the CalSim-II results and historical records of Millerton Lake operations referred to in the referenced text are influenced by the monthly time step of CalSim-II versus the shorter time steps inherent in real-time operations. The information is included to illustrate that there are differences between CalSim-II simulation results and historical operations that result from the time step and other assumptions and approximations required in the CalSim-II model. The information also demonstrates that the overall operational results are generally similar. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. See also response to comment EC1-320.

EC1-322: As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, Interim and Restoration flows would be recaptured at existing facilities within the Restoration Area or the Delta consistent with applicable laws, regulations, BOs, and court orders in place at the time the water is recaptured under all action alternatives. Recapture of Interim and Restoration flows at existing facilities within the Restoration Area or in the Delta is analyzed at a project level of detail in the Draft PEIS/R. Additional recapture on the San Joaquin River between the Merced River and the Delta, including recapture at existing facilities (under Alternatives B1, B2, C1, and C2) or new facilities (under Alternatives C1 and C2), is analyzed at a program level of detail in the Draft PEIS/R.

Reclamation is in the process of developing a Recapture and Recirculation Plan, pursuant to Paragraph 16 of the Settlement, in consultation with the Settling Parties, Third Parties, and the State and will conduct a subsequent site-specific evaluation of implementation of the Recapture and Recirculation Plan, in compliance with NEPA and CEQA as appropriate. Because sufficient details to support project-level evaluation were not available at the time the Draft PEIS/R was prepared, the Draft PEIS/R presents a program-level evaluation of recirculation.

For all action alternatives, the Draft PEIS/R identifies the volume of water recaptured pursuant to Paragraph 16(a) as the amount of additional water that would be exported under action alternatives in comparison to total exports under the No-Action Alternative (under identical regulatory constraints). This approach meets all south-of-Delta contractual obligations that otherwise would be met under the No-Action Alternative before recaptured water would be considered available for recirculation. This analytical approach is consistent with the provisions of Paragraph 16(a) of the Settlement and with Section 10004(a)(4). Under Paragraph 16(a), the Recirculation Plan shall:

> 1) *ensure that any recirculation, recapture, reuse, exchange or transfer of the Interim Flows and Restoration Flows shall 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.*

Section 10004(a)(4) authorizes and directs the Secretary, in cooperation with the State, to implement the terms and conditions of Paragraph 16 subject to the following:

> *(A) applicable provisions of California water law;*
>
> *(B) the Secretary's use of Central Valley Project facilities to make Project water (other than water released from Friant Dam pursuant to the Settlement) and water acquired through*

> *transfers available to existing south-of-Delta Central Valley Project contractors; and*
>
> *(C) the Secretary's performance of the Agreement of November 24, 1986, between the United States of America and the Department of Water Resources of the State of California for the coordinated operation of the Central Valley Project and the State Water Project as authorized by Congress in section 2(d) of the Act of August 26, 1937 (50 Stat. 850, 100 Stat. 3051), including any agreement to resolve conflicts arising from said Agreement.*

Reclamation is committed to completing the Recapture and Recirculation Plan consistent with the provisions of Paragraph 16(a) of the Settlement and Section 10004(a)(4), as described above. All actions evaluated at a program level of detail in the Draft PEIS/R, including recirculation, would require separate analysis pursuant to NEPA and CEQA as appropriate at a project level of detail prior to implementation. Several possible causes of CVP and SWP surface water supply impacts are evaluated in the Draft PEIS/R, including the following:

1. **Reduced deliveries to Friant Division long-term contractors** – As described in Chapter 13.0, "Hydrology – Surface Water Supply Facilities and Operations," of the Draft PEIS/R, changes in surface water supply deliveries to Friant Division long-term contractors are presented in two scenarios to account for the uncertainty in the specific formulation of the Recapture and Recirculation Plan. One scenario would recirculate all recaptured water, estimated using the approach described above, to the Friant Division (representing a lower bound of surface water supply impacts to Friant Division long-term contractors). A second scenario would recirculate no recaptured water to the Friant Division (representing an upper bound of surface water supply impacts to Friant Division long-term contractors). Results of these scenarios are summarized on page 13-187 of the Draft PEIS/R. The results of these scenarios were post-processed to provide information to support quantitative analyses of impacts to groundwater, power and energy, and socioeconomics in the Draft PEIS/R.

2. **Changes in Delta Hydrodynamics and Water Quality that Affect CVP/SWP Operations** – Potential impacts to CVP/SWP surface water supplies and facilities operations are evaluated in Chapter 13.0, "Hydrology – Surface Water Supplies and Facilities Operations," of the Draft PEIS/R. These potential impacts include the following:

    a. Several potential impacts to surface water supplies and facilities operations in the south Delta are evaluated relative to criteria identified in the *Response Plan for Water Level Concerns in the South Delta Under Water Rights Decision 1641* (Water Level Response Plan) (Reclamation and DWR 2004). The analyses in the Draft PEIS/R compared water surface elevations simulated using DSM2 with the criteria identified in the Water Level

Response Plan to determine the potential for surface water supply impacts to occur as an indirect effect of Interim and Restoration flows from the San Joaquin River affecting water levels in the south Delta (see pages 13-82 through 13-86 of the Draft PEIS/R). The results of the analyses provided in Chapter 13.0 of the Draft PEIS/R indicate that project-level actions would not invoke real-time adjustments to Jones and Banks pumping plant operations based on the Water Level Response Plan criteria. Therefore, impacts related to these criteria were found to be less than significant.

b. Changes in Delta conditions can affect CCWD's potential to fill Los Vaqueros Reservoir, if such changes cause the Delta to be in balanced conditions when it would otherwise have been under excess conditions at any time from November 1 to June 30. As shown in Table 13-58 of the Draft PEIS/R, the action alternatives would cause very few changes from excess to balanced conditions compared to the No-Action Alternative during the critical months of November through June, such that CCWD's ability to fill Los Vaqueros Reservoir would not be substantially affected. This impact was found to be less than significant.

c. Changes in San Joaquin River flows at Vernalis can invoke changes in operations of storage facilities on San Joaquin River tributaries between the Merced River confluence and Vernalis, which can in turn affect water users using diversions in the south Delta. For example, when water quality conditions at Vernalis improve due to relatively large spring Restoration Flows, as indicated by reductions in estimated concentrations of salinity, less water would be released from New Melones Reservoir to meet San Joaquin River water quality targets, resulting in less water being released from the reservoir. As discussed on pages 13-154 through 13-174 of the Draft PEIS/R, this affect would result in average increases in storage at tributary facilities of less than 5 percent.

3. **Changes in exports from existing San Joaquin River or Delta facilities** – Paragraph 16(a) requires that the Recapture and Recirculation Plan be "implemented in a manner that does not adversely impact the Secretary's ability to meet statutory and contractual obligations existing as of the Effective Date of this Settlement." Results of surface water operational modeling conducted in support of the analyses in the Draft PEIS/R show that the average annual volume of water exported from existing San Joaquin River and Delta facilities would be greater under all action alternatives than under the No-Action Alternative. This finding demonstrates that all or portions of the recaptured water volume would be available for recirculation without causing adverse effects to water supply allocations. Recirculation of recaptured water would be conducted consistent with Paragraph 16(a) of the Settlement and Section 10004(a)(4) of the Act, including provisions that recirculation shall not cause adverse impacts to any non-Friant Division south-of-Delta water service contractors. All water supply analyses and follow-on analyses (including groundwater, power and energy, and socioeconomics) presented in the Draft PEIS/R are based on these findings. As

described above, Reclamation is in the process of developing a Recapture and Recirculation Plan in consultation with the Settling Parties, Third Parties, and the State, and will conduct a subsequent site-specific evaluation of implementation of the Recapture and Recirculation Plan, in compliance with NEPA and CEQA as appropriate.

4. **Changes in flood releases from Friant Dam to the San Joaquin River and resulting impacts on water supply allocations to CVP/SWP contractors** – Settlement implementation would result in reduced frequency and volume of flood releases from Millerton Lake, potentially reducing the annual average diversion of flood flows at downstream locations, including Mendota Pool and the Delta. Historically, portions of these flood releases have been diverted at Mendota Pool to satisfy CVP demands. San Joaquin River flood flows diverted at Mendota Pool provide deliveries in lieu of CVP water supplies from the DMC. This increases the portion of CVP water exported from the Delta that is available for delivery to other south-of-Delta water service contractors. Because Reclamation considers diversions of San Joaquin River flood flows at Mendota Pool in the contract water allocations for south-of-Delta water service contractors, a reduction in the availability of San Joaquin River flood flows at Mendota Pool could result in an involuntary reduction in water contract allocations for south-of-Delta water service contractors. Similarly, Reclamation considers availability of flood flows entering the Delta from the San Joaquin River and other rivers in water contract allocations for south-of-Delta water service contractors. Reclamation is in the process of developing the Recapture and Recirculation Plan, which will describe the specific procedures necessary to accomplish recirculation consistent with the provisions of Paragraph 16(a) of the Settlement and with Section 10004(a)(4). Reclamation is developing the Recapture and Recirculation Plan in consultation with the Settling Parties, Third Parties, and DWR, and will conduct a subsequent site-specific evaluation of any changes to existing recirculation, from implementation of the Recapture and Recirculation Plan, in compliance with NEPA and CEQA, as appropriate.

For additional information relevant to this comment, see MCR-6, “Third-Party Concerns and Outreach,” in Chapter 2.0 of this Final PEIS/R.

EC1-323: The daily flow values were developed following a procedure documented in Section 3.2.2 of Appendix H, “Modeling,” of the Draft PEIS/R. The procedure uses a modified linear interpolation between the CalSim-II monthly mean values to develop daily estimates of Millerton Reservoir boundary conditions such as inflow, evaporation, canal diversions, and snowmelt release. These data are then used in a daily reservoir routing to obtain an estimate of potential Millerton releases to the San Joaquin River. Section 3.2.4 of Appendix H contains a comparison of the results of the daily flow development process with recent historical data, which shows a good correlation between the range of the magnitude of the simulated daily flows and recent historical flows. The specific text referenced in the comment refers to the fact that while the absolute value of any specific day could be somewhat different from an actual real-time operation with the same boundary conditions, the overall results are comparable and are appropriate for use

for alternatives evaluations and comparisons. For additional information relevant to this comment, see response to EC1-320. Text has not been revised.

EC1-324: The interpolation procedure questioned in the comment was used to convert "boundary" reservoir operations from the CalSim-II monthly to daily values. It was not used to determine the final Millerton Lake release to the San Joaquin River. A daily reservoir routing procedure was used with these boundary conditions to develop the simulated daily releases from Millerton Lake. Analyses based on the simulated daily releases from Millerton Lake represent the full range of hydrologic conditions that could occur under any of the action alternatives. The accuracy and precision of the hydrologic information developed for the Draft PEIS/R is sufficient, and provides substantial evidence upon which to conduct impact analyses, determine potential impacts, and recommend feasible mitigation measures, as necessary. See also response to comment EC1-323.

EC1-325: The assertion that the method to compute composite roughness values is "non-standard" is incorrect. The Manning roughness coefficient is an empirical parameter, and the validity of any method for estimating its value can only be confirmed by comparing computational results with measured data. The HEC-RAS model includes two methods to automatically compute composite roughness values, based on assumptions that cross section characteristics are the sum of characteristics of the subdivisions on which the composite is based, or that cross-section characteristics have the same average value as the subdivisions on which the composite roughness is based. Generally, the selection of one method or the other is based on the shape and vegetation characteristics of the cross section. As has been clearly demonstrated in other applications of the HEC-RAS model for a wide range of conditions that occur in the San Joaquin River, and many other river systems where vegetation is present within the main channel, use of either of the two procedures that are available in HEC-RAS independently often produces physically unreasonable results.

The procedure used in MEI (2008a) is a simple combination of the two methods that are available in HEC-RAS to estimate the composite n-value, applying each method to the portion of the cross section to which it is applicable. Off-line calculations are necessary because HEC-RAS only provides the option to use one or the other procedure. The method used in MEI (2008a) is an objective, physically based procedure that accounts for the effects of vegetation and sinuosity on the main channel roughness, and it uses standard computational methods. As demonstrated in MEI (2008a) and several subsequent analyses, model results using this procedure calibrate very well to measured water-surface elevations over a broad range of flows. Although, the method was not subjected to a formal peer review process, it has been well documented, presented at technical conferences, has been informally peer reviewed by a number of experts in hydraulic modeling, including Ron Copeland (while employed at the USACE Waterways Experiment Station), Joe Countryman (MBK Consultants), engineers from Reclamation, and, DWR, and other recognized experts in the consulting community. The USACE Hydrologic Engineering Center develops and maintains the HEC-RAS modeling engine; it does not review and/or approve data development procedures for specific applications.

The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

EC1-326: This comment is substantially similar to comment EC1-325. See response to comment EC1-325.

EC1-327: As described in the referenced document MEI (2008b), the definition of the extent of the zone types was based on evaluation of aerial photography of the physical cross section locations to locate the extent of each of the seven zones based on the definition of the physical characteristics defined for each zone. The Manning's n values, or roughness coefficients, were assigned according to each zones' physical characteristics based on previous experience, field observations of the study reach and information from several technical references cited in the MEI (2008b). Model results using the defined zones calibrate well with measured water-surface elevations. Sensitivity testing has been also performed to assess the effects of higher n values in areas with very thick vegetation (described on page 7-4 of Appendix H, "Modeling," of the Draft PEIS/R). As the vegetation evolves, increasing in roughness and density, it is possible that values higher than 0.1 may be necessary to achieve model calibration in areas with very thick riparian vegetation. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

EC1-328: This comment is substantially similar to comment EC1-325. See response to comment EC1-325.

EC1-329: The statement is intended to imply that, as in any model development and calibration effort, the model can only be calibrated to the limits of available data. Model calibration to the available data, including the gage rating curves and available water-surface elevations, are provided in Figures 3.1 through 3.5 of MEI 2008b, the document referenced in the text. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

EC1-330: The text of Appendix H, "Modeling," of the Draft PEIS/R, page 7-3, lines 26 through 29, defines the non-damaging flow capacity "as the flow that remains within the river corridor at an elevation of at least 3 feet below the crest of the relevant dominant or interior levee (i.e., 3-foot freeboard elevation) and does not flood adjacent agriculture or urban land (MEI 2008c)."

With the implementation of the project-level actions described on pages 2-22 to 2-28 of the Draft PEIS/R, the action alternatives would not significantly increase risk of levee failure due to underseepage, through-seepage, associated landside slope stability, or levee erosion mechanisms. This is further discussed in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R, in Impact FLD-6. Under Alternatives A1 through C2, Reclamation would implement three integrated measures that would collectively avoid a potentially significant increase in the risk of flood damage or levee failure due to underseepage, through-seepage, erosion, or landside slope stability issues (as described in Chapter 2.0, "Description of Alternatives," in the section describing actions to minimize flood risk). These three measures include: (1) establishing a Channel Capacity Advisory

Group and determining and updating estimates of then-existing channel capacities as needed; (2) maintaining Interim and Restoration flows below estimates of then-existing channel capacities; and (3) closely monitoring erosion and performing maintenance and/or reducing Interim and Restoration flows as necessary to avoid erosion-related impacts. Because measures to minimize flood risk by not significantly increasing risk of levee failure due to underseepage, through-seepage, or associated landside slope stability mechanisms are included in all action alternatives, impact FLD-6 is found to be less than significant. See also responses to comments EC1-77 and EC1-252 for additional information relevant to this comment.

EC1-331: The analysis was designed to evaluate the physical flow capacity of the channels based on freeboard limitations (3 feet in the historical San Joaquin River and 4 feet along the bypasses, except along the left side of the Eastside Bypass, which has 3 feet of design freeboard, as described on page 11-16 of the Draft PEIS/R) with and without various levee setback options. The analysis did not attempt to define the stage of the maximum anticipated Interim and Restoration flows but rather used a range of potential flows because of the uncertainty of future operations and losses. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

EC1-332: Table 7-1 on page 7-2 in Appendix H, "Modeling," of the Draft PEIS/R presents a summary of estimated flow capacities based on dominant levee freeboard, interior levee freeboard, and approximate non-damaging flows. The text of Appendix H, page 7-3, lines 26 through 29, defines the non-damaging flow capacity "as the flow that remains within the river corridor at an elevation of at least 3 feet below the crest of the relevant dominant or interior levee (i.e., 3-foot freeboard elevation) and does not flood adjacent agriculture or urban land (MEI 2008c)." These values differ from the estimated capacities of each reach as described in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R. Discussion on page 11-8 of the Draft PEIS/R notes that significant seepage has been observed in Reach 2B at flows above 1,300 cfs, and historical operations typically route up to 1,300 cfs to the Reach 2B, with the remaining flow going to the Chowchilla Bypass.

With the implementation of the project-level actions described on pages 2-22 to 2-28 of the Draft PEIS/R, the action alternatives would not significantly increase risk of levee failure due to underseepage, through-seepage, associated landside slope stability, or levee erosion mechanisms. This is further discussed in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R, in Impact FLD-6. Under Alternatives A1 through C2, Reclamation would implement three integrated measures that would collectively avoid a potentially significant increase in the risk of flood damage or levee failure due to underseepage, through-seepage, erosion, or landside slope stability issues (as described in Chapter 2.0, "Description of Alternatives," in the section describing actions to minimize flood risk). These three measures include: (1) establishing a Channel Capacity Advisory Group and determining and updating estimates of then-existing channel capacities as needed; (2) maintaining Interim and Restoration flows below estimates of then-existing channel capacities; and (3) closely monitoring erosion and performing maintenance and/or reducing Interim and Restoration flows as necessary to avoid erosion-related

impacts. Because measures to minimize flood risk by not significantly increasing risk of levee failure due to underseepage, through-seepage, or associated landside slope stability mechanisms are included in all action alternatives, impact FLD-6 is found to be less than significant. See also responses to comments EC1-77 and EC1-252 for additional information relevant to this comment.

EC1-333: The results of the sensitivity study are included in an attachment to Appendix G, "Restoration Area Channel Capacity Evaluations," of the Draft PEIS/R. The analysis was used for program-level planning during development of the Draft PEIS/R, and may or may not reflect currently site-specific evaluations of potential modifications in Reaches 2B and 4B. Text has not been revised.

EC1-334: The flow routing operation rules for the San Joaquin River, the bypasses, and Mendota Pool, as described in Section 4.2.2 of Appendix H "Modeling," of the Draft PEIS/R, take Kings River flows into account when determining the flow in Reach 3 below Mendota Pool. See also response to comment EC1-237.

EC1-335: All action alternatives include operation of flood control facilities to convey Interim and Restoration flows during non-flood periods, as described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R. The action alternatives do not propose to change operations for flood control. The flow routing operation rules for the San Joaquin River, the bypasses, and Mendota Pool, as described in Section 4.2.2 of Appendix H "Modeling," of the Draft PEIS/R, take Kings River flows into account when determining the flow in Reach 3 below Mendota Pool. See also response to comment EC1-237.

EC1-336: The UNET model was used to develop water surface profiles for the Flood Damage Assessment, as described in Appendix H, "Modeling," of the Draft PEIS/R to perform a program-level assessment of potential damages that could occur if levees in Reach 2B and Reach 4B1 are strengthened, potentially transferring flood damages to other reaches. The model was not used to evaluate particular levee failure modes. Levee failure is addressed through project-level measures in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, which include maintaining Interim and Restoration flows in-channel until data are available to show that the levees have Factors of Safety equal to or greater than the USACE levee performance criteria. Levee saturation, seepage, piping and underflow are included within the USACE guidance on use of Factors of Safety for landside slope stability and underseepage. See also response to comment EC1-77.

EC1-337: Levee stability will be evaluated according to USACE levee performance criteria, which includes detailed study as discussed on pages 2-23 through 2-26 of the Draft PEIS/R, and in response to comment EC1-77. See also responses to comments EC1-83 and EC1-336.

EC1-338: The roughness values in the Sacramento and San Joaquin River Basins Comprehensive Study UNET Model for the San Joaquin River system were not modified from their original values, except for the modifications to reflect the setback levees and

different overbank roughness under project conditions in Reaches 2B and 4B. The default procedure in UNET for computing n-values was applied. See also response to comment EC1-325.

EC1-339: The UNET model was used to develop water surface profiles for the Flood Damage Assessment, as described in Appendix H, "Modeling," of the Draft PEIS/R to perform a program-level assessment of potential damages that could occur if levees in Reach 2B and Reach 4B1 are strengthened, potentially transferring flood damages to other reaches. The UNET model is the best available tool with which to conduct this evaluation. The model was not used to evaluate particular levee failure modes. Levee failure is addressed through project-level measures in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, which include maintaining Interim and Restoration flows in-channel until data are available to show that the levees have Factors of Safety equal to or greater than the USACE levee performance criteria. Levee saturation, seepage, piping and underflow are included within the USACE guidance on use of Factors of Safety for landside slope stability and underseepage. See also response to comment EC1-77.

EC1-340: This comment is substantially similar to comment EC1-247. See response to comments EC1-247.

EC1-341a: As described in MCR-1, “Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals,” in Chapter 2.0 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 feasibility of the Invasive Vegetation Monitoring and Management Plan. Potential impacts related to the spread of invasive species are described in Chapter 6.0, “Biological Resources – Vegetation and Wildlife,” of the Draft PEIS/R. The California Department of Food and Agriculture received a copy of the Draft PEIS/R, but did not comment on the treatment of invasive species within the document.

As described on page 6-90 of the Draft PEIS/R, Conservation Measure INV-1 requires the lead agencies to implement the Invasive Vegetation Monitoring and Management Plan before the release of Interim and Restoration flows to control the spread and introduction of invasive plants in the Restoration Area. Conservation Measure INV-1 mandates comprehensive surveys to identify, map, and quantify invasive plant infestations on the mainstem of the San Joaquin River in the Restoration Area before reoperation of Friant Dam commences. As specified under Conservation Measure INV-1, the Invasive Vegetation Monitoring and Management Plan also includes measures to monitor, control, and eradicate, where possible, invasive plant infestations. The Invasive Vegetation Monitoring and Management Plan includes monitoring procedures, success criteria, and adaptive management measures for controlling invasive plant species.

As the commenter notes, access to private lands within the Restoration Area may be important to the success of the Invasive Vegetation Monitoring and Management Plan. Several studies and efforts to collect detailed information regarding site conditions have

and continue to be delayed because land access has not been granted to the Implementing Agencies for many key locations in the Restoration Area. However, Reclamation continues efforts to obtain access through mutually acceptable agreements with landowners. Text has not been revised.

EC1-341b: The commenter refers to recent findings regarding the presence of sponge plant within the Restoration Area. The potential for project-level actions to facilitate an increase in the abundance or distribution of sponge plant within the Restoration Area is described on pages 6-89 through 6-90 of the Draft PEIS/R. The potential for program-level actions to facilitate an increase in the abundance or distribution of invasive plants within the Restoration Area is described on page 6-73 of the Draft PEIS/R. These impacts were found to be less than significant.

The Invasive Vegetation Monitoring and Management Plan Attachment to Appendix L, "Biological Resources – Vegetation and Wildlife," of the Draft PEIS/R includes a strategy to update its monitoring components through adaptive management, and public outreach components associated with the monitoring activities. As discussed on page 2-2 of the Invasive Vegetation Monitoring and Management Plan, monitoring would target four priority species. Other nonnative plants may locally become invasive in riparian areas, but they are currently not considered species that have the potential to compromise the successful implementation of the SJRRP, or are species that are not expected to increase significantly as the result of the SJRRP operations. However, any obvious significant new infestations of these species would be noted during the surveys, because they could potentially become a greater problem in the future. Text has not been revised.

EC1-341c: The potential for project-level actions to facilitate an increase in the abundance or distribution of invasive plants within the Restoration Area is described on pages 6-89 through 6-90 of the Draft PEIS/R. These impacts were found to be less than significant.

The Invasive Vegetation Monitoring and Management Plan Attachment to Appendix L, "Biological Resources – Vegetation and Wildlife," of the Draft PEIS/R includes a strategy to update its monitoring components through adaptive management, and public outreach components associated with the monitoring activities. As discussed on page 2-2 of the Invasive Vegetation Monitoring and Management Plan, monitoring would target four priority species. Other nonnative plants may locally become invasive in riparian areas, but they are currently not considered species that have the potential to compromise the successful implementation of the SJRRP, or are species that are not expected to increase significantly as the result of the SJRRP operations. However, any obvious significant new infestations of these species would be noted during the surveys, because they could potentially become a greater problem in the future. Text has not been revised.

EC1-341d: As stated in response to comments EC1-41a through EC1-41c, the lead agencies determined that the potential impacts of Settlement implementation on the abundance and distribution of invasive vegetation were found to be less than significant. Measures to control invasive species (including Conservation Measure INV-1 and Invasive Vegetation Monitoring and Management Plan Attachment to Appendix L,

"Biological Resources – Vegetation and Wildlife," of the Draft PEIS/R) would not rely on CCID or others for implementation. Therefore, Reclamation has not identified a need to compensate CCID for invasive species management actions.

EC1-342: As described on page 1-1 of Appendix N, "Geomorphology, Sediment Transport, and Vegetation Assessment," of the Draft PEIS/R, SRH-1D modeling was performed to support the Draft PEIS/R. This assessment compared geomorphic, sediment transport and vegetation response changes between Baseline conditions (conditions that would persist into the future without the implementation of the SJRRP) and Project Conditions (conditions under implementation of the SJRRP). The results of this modeling supported the need to include actions within the project description to manage sediment transport and vegetation. Those actions are described in Appendix D, "Physical Monitoring and Management Plan," and summarized in Section 2.4.3, "Physical Monitoring and Management Plan," of the Draft PEIS/R.

The change in operations at Friant Dam and the routing of Interim and Restoration flows could affect operations and maintenance activities regardless of the alternative selected for implementation, including 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, "Physical Monitoring and Management Plan," and summarized in Section 2.4.3, "Physical Monitoring and Management Plan," of the Draft PEIS/R). Additionally, flows would change the basic 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. For more information please see MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0 of this Final PEIS/R.

EC1-343: As described on page 1-1 of Appendix N, "Geomorphology, Sediment Transport, and Vegetation Assessment," of the Draft PEIS/R, SRH-1D modeling was performed to support the Draft PEIS/R. This assessment compared geomorphic, sediment transport and vegetation response changes between Baseline conditions (conditions that would persist into the future without the implementation of the Settlement) and Project Conditions (conditions under implementation of the Settlement). The results of this and other modeling described in the Draft PEIS/R, including the results cited in the comment, supported the decision to include actions within all action alternatives to minimize increases in flood risk due to Interim and Restoration flows as well as actions to manage sediment transport and vegetation. Those actions are described in Section 2.4.1, "Project-Level Actions," and Section 2.4.3, "Physical Monitoring and Management Plan," of the Draft PEIS/R. Because those actions would be implemented as part of the project, impacts from flood, sediment transport, or vegetation due to the action alternatives would not be expected to occur and therefore mitigation measures would not be necessary. As discussed in Chapter 10.0, "Geology and Soils," of the Draft PEIS/R, potential impacts of sediment transport are expected to be less than significant.

EC1-344: This comment is substantially similar to comment EC1-343. See response to comment EC1-343.

EC1-345: This comment is substantially similar to comment EC1-343. See response to comment EC1-343.

EC1-346: Comment noted. Detailed study of potential actions in Reach 4B1 is underway as part of the Reach 4B, Eastside Bypass, and Mariposa Bypass Channel and Structural Improvements Project. As a site-specific study with project-level compliance for actions addressed at a program level in the Draft PEIS/R, this study has its own NEPA/CEQA documentation, design process, public engagement, and scoping. The Implementing Agencies appreciate landowner interest and input in site-specific studies. More information can be found on the SJRRP Web site at www.restoresjr.net. Text has not been revised.

EC1-347: Comment noted. Detailed study of potential actions in Reach 4B1 is underway as part of the Reach 4B, Eastside Bypass, and Mariposa Bypass Channel and Structural Improvements Project. As a site-specific study with project-level compliance for actions addressed at a program-level in the Draft PEIS/R, this study has its own NEPA/CEQA documentation, design process, public engagement, and scoping. The Implementing Agencies appreciate landowner interest and input in site-specific studies. More information can be found on the SJRRP Web site at www.restoresjr.net. Text has not been revised.

EC1-348: This comment is substantially similar to comment EC1-343. See response to comment EC1-343.

EC1-349: See Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R for a discussion of measures included in all action alternatives to minimize increases in flood risk. See also response to comment EC1-343.

EC1-350: This comment is substantially similar to comment EC1-343. See response to comment EC1-343.

EC1-351: As described on page 1-1 of Appendix N, "Geomorphology, Sediment Transport, and Vegetation Assessment," of the Draft PEIS/R, SRH-1D modeling was performed to support the Draft PEIS/R. This assessment compared geomorphic, sediment transport and vegetation response changes between Baseline conditions (conditions that would persist into the future without the implementation of the Settlement) and Project Conditions (conditions under implementation of the Settlement). The results of this and other modeling described in the Draft PEIS/R supported the decision to include actions within all action alternatives to minimize increases in flood risk due to Interim and Restoration flows as well as actions to manage sediment transport and vegetation. Those actions are described in Section 2.4.1, "Project-Level Actions," and Section 2.4.3, "Physical Monitoring and Management Plan," of the Draft PEIS/R. Because those actions would be implemented as part of the project, impacts from flood, sediment transport or vegetation due to the action alternatives would not be expected to

occur and therefore mitigation measures would not be necessary. As discussed in Chapter 10.0, "Geology and Soils," of the Draft PEIS/R, potential impacts of sediment transport are expected to be less than significant. Text has not been revised.

EC1-352a: The commenter states that Reclamation must restructure the development of the SJRRP to reflect the funding realities. 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.

As described in response to comment EC1-5, 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 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. The *Framework for Implementation* was developed with input and information from the Exchange Contractors and a variety of Third-Party interests.

See also MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," and MCR-3, "Order and Schedule of Implementing Settlement Actions," in Chapter 2.0 of this Final PEIS/R, for additional information on funding and the revised schedule of activities.

The lead agencies recognize and appreciate the careful consideration of the SJRRP and future of the San Joaquin River, as well as the valuable knowledge of the Restoration Area that the San Joaquin River Exchange Contractors have provided in their comments and suggestions. The Draft PEIS/R meets programmatic requirements of NEPA and CEQA for evaluating and developing mitigation for environmental impacts of the SJRRP.

EC1-352b: As described in response to comment EC1-5, 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 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. The *Framework for Implementation* was developed with input and information from the Exchange Contractors and a variety of Third-Party interests.

See also MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," and MCR-3, "Order and Schedule of Implementing Settlement Actions," in Chapter 2.0 of this Final PEIS/R, for additional information on funding and the revised schedule of activities.

EC1-352c: Subsequent site-specific projects would document project-level regulatory compliance, detailed design, and operations and maintenance required for those actions. Levee and channel constraints will be determined according to measures set forth under all action alternatives and described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R.

As described in response to comment EC1-5, 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 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. The *Framework for Implementation* was developed with input and information from the Exchange Contractors and a variety of Third-Party interests.

See also MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," and MCR-3, "Order and Schedule of Implementing Settlement Actions," in Chapter 2.0 of this Final PEIS/R, for additional information on funding and the revised schedule of activities.

EC1-352d: The commenter presents a proposed approach to prioritization for implementation of Phase 1 projects and mitigation projects. As described in more detail in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0

of this Final PEIS/R, the Settling Parties and Implementing Agencies 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 Settlement, including the Phase 1 and Phase 2 improvements and spring-run reintroduction activities, and presents a schedule and budget for these actions. The *Framework for Implementation* can be found on the SJRRP Web site at www.restoresjr.net. This *Framework for Implementation* outlines the conditions that will be in place prior to fish reintroduction activities. While the *Framework for Implementation* presents a revised schedule for Settlement implementation, 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.

EC1-352e: This comment identifies concerns with funding, operations and maintenance agreements, Third-Party impacts, implementation schedule, levee stability and channel capacity, water supply priority in the San Joaquin River channel, flood risks and priority of flood flows in the Lower San Joaquin River Flood Control Project, fish passage and screening, and redesign of the flood control system. These concerns are addressed individually below.

- **Funding** – 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. Further detail on budget and identified sources of funding for the SJRRP can be found in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R.

- **Operations and Maintenance Agreements** – Reclamation continues to work with Third Parties to identify potential operations and maintenance agreement needs. While the length of time these agreements would be in place is still being analyzed, the intent is to assist with the transition from mostly dry maintenance practices to a project where maintenance activities are conducted in a wet channel. Reclamation will continue to work with other Third Parties to understand the nature of maintenance activities currently performed by these entities, and how these maintenance requirements could increase under implementation of the Settlement. Further details on commitments within the PEIS/R relating to maintenance activities and related efforts currently being made by the Implementing Agencies outside the PEIS/R are described in MCR-8.

- **Third-Party Impacts** – As described in MCR-6, "Third-Party Concerns and Outreach," in Chapter 2.0 of this Final PEIS/R, the Settlement and the Act present separate and distinct requirements 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. The Draft PEIS/R demonstrates that,

while adverse impacts would occur to various resources with implementation of 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 term "material adverse effect" used in Paragraph 7 of the Settlement can be interpreted through case law as an adverse effect that, had the Settling Parties anticipated it, would likely have had a bearing on the outcome of the settlement process. The Act describes, in Section 10004, specific provisions for mitigation of potential impacts on adjacent and downstream water users and landowners, including that the Secretary shall identify the impacts associated with actions to implement the Settlement as well as the measures which shall be implemented to mitigate impacts on adjacent and downstream water users and landowners. The completion of 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.

- **Implementation Schedule** – As described in MCR-3, "Order and Schedule of Implementing Settlement Actions," in Chapter 2.0 of this Final PEIS/R, the Settling Parties and Implementing Agencies, including DFG, 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 Settlement, including the Phase 1 improvements (Paragraph 11 activities) and when the agencies expect to achieve full Restoration Flows, and presents 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 Settlement implementation, 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. See MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R.

- **Levee Stability and Channel Capacity** – All action alternatives include measures to minimize increases in flood risk from Interim and Restoration flows. As described in Chapter 2.0, "Description of Alternatives," page 2-22 through 2-28, of the Draft PEIS/R, measures to minimize increases in flood risk include establishing a Channel Capacity Advisory Group to provide independent review of then-existing channel capacities, maintaining Interim and Restoration flows below estimates of then-existing channel capacities, and closely monitoring erosion and performing maintenance or reducing Interim and Restoration flows as necessary to avoid erosion-related impacts. Text in Chapter 2.0, "Description of Alternatives," and Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R has been revised to clarify that Reclamation would limit the release of Interim and Restoration flows to flows that would maintain standard USACE levee performance criteria (i.e., a levee slope stability Factor of Safety of at least 1.4 and an underseepage Factor of Safety corresponding to an exit gradient at the toe of the levee of 0.5 or less) at all times. Levee performance criteria are cited in accordance with USACE Engineering Manual 1110-2-1913 (USACE 2000) and

Engineering Technical Letter 1110-2-569 (USACE 2005). See Chapter 4.0, "Errata." The Seepage Management Plan, an attachment to the Physical Monitoring and Management Plan (Appendix D of the Draft PEIS/R), provides further actions that would be taken to avoid, minimize or mitigate seepage impacts due to Interim and Restoration flows. These measures, and the combined actions and mitigation measures of the SJRRP, would monitor levee stability, channel capacity, and seepage, and avoid an increase in flood risk due to Interim and Restoration flows.

- **Water Supply Priorities to Channel Capacity** – As the commenter notes, the San Joaquin River Reaches 2B and 3 provide water supply conveyance to deliver water under existing water rights. Restoration actions prioritize the use of the river channel for water supply deliveries for existing water rights over the conveyance of Interim and Restoration flows, and include flexibility in water supply operations through opportunities for recapture and recirculation.

- **Flood Risks and Priority of Flood Flows** – Beginning on Chapter 2.0, "Description of Alternatives," page 2-22 of the Draft PEIS/R, the project description includes actions to minimize flood risk associated with the release of Interim and Restoration flows. These actions 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 those 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 of the Settlement that could address channel capacity issues identified in the Settlement or through the SJRRP or other programs. Proposed restoration actions would not reduce the channel design capacity or the system's overall ability to convey flood flows. Additionally, as described in Chapter 2.0,"Description of Alternatives," of 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.

- **Fish Passage and Screening** – Fish passage and screening facilities are evaluated at a program level in the Draft PEIS/R (Common Restoration Actions, page 2-37 through 2-48). Subsequent site-specific projects would document project-level regulatory compliance, detailed design, and operations and maintenance required for those actions.

- **Redesign of the Flood Control System** – Riparian habitat creation is evaluated at a program level in the Draft PEIS/R. Subsequent site-specific projects would document project-level regulatory compliance, detailed design, and operations and maintenance required for increasing riparian habitat. The SJRRP does not include actions for redesigning the flood control system either as a whole or in

part. Channel improvements would be made as needed to further enhance the success of achieving the Restoration Goal (Draft PEIS/R, page 2-38 line 7, through 2-39, line 12).

EC1-352f: This comment is a table referenced in comment EC1-352d. See response to comment EC1-352d.

EC1-352g: The Conservation Strategy presented in Table 2-7 of the Draft PEIS/R would serve as a tool built into the project description to minimize and avoid potential impacts to sensitive species and habitats. The Conservation Strategy guides development and implementation of specific conservation measures for project- and program-level actions. The Conservation Strategy includes conservation goals and measures for species and communities (such as avoidance, minimization, monitoring, and management measures) consistent with adopted recovery plans, as described below. The Conservation Strategy would be implemented would be implemented in coordination with USFWS, NMFS, and DFG. The commenter states that given restrictions on construction periods for various resources identified within the Conservation Strategy, "it is highly probable that there is no available time for construction during a calendar year." If avoidance and minimization measures are impractical or infeasible, then further consultation actions and mitigation measures will be pursued and developed in coordination with the appropriate regulatory agency. While not all Conservation Measures will apply to all projects (based on the location, timing, and nature of construction), the strategy includes coordination with appropriate regulatory agencies to provide mitigation or compensation to avoid or minimize effects when actions would result in a net loss of habitat or other substantial adverse effects, if the implementation of avoidance and minimization measures is found to be infeasible or impractical during future site-specific studies (as the commenter suggests).

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 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. See MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, for additional information relevant to this comment.

EC1-352h: The lead agencies recognize and appreciate the careful consideration of the SJRRP and future of the San Joaquin River, as well as the valuable knowledge of the Restoration Area that the San Joaquin River Exchange Contractors have provided in their comments and suggestions. The Draft PEIS/R meets programmatic requirements of NEPA and CEQA for evaluating and developing mitigation for environmental impacts of the SJRRP.

In addition, and as described in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0 of this Final PEIS/R, 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 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. Implementation schedules specific to each Phase 1 or Phase 2 project would be developed in future site-specific studies. Text has not been revised.

EC1-352i: See response to comment EC1-352h.

EC1-352j: References noted. Text has not been revised.

EC1-352k: References noted. Text has not been revised.

EC1-352l: References noted. Text has not been revised.

EC1-352m: References noted. Text has not been revised.

EC1-352n: References noted. Text has not been revised.

3.8.5 San Joaquin River Exchange Contractors Water Authority and the San Joaquin River Resource Management Coalition

EC-2

Lower San Joaquin Levee District
San Joaquin River Exchange Contractors Water Authority
San Luis & Delta-Mendota Water Authority

May 26, 2011

Ms. Alicia Forsythe
SJRRP Program Manager
Bureau of Reclamation
2800 Cottage Way, MP-170
Sacramento, CA 95825

Ms. Paula Landis
Department of Water Resources
3374 East Shields Avenue
Fresno, CA 93726
kdulik@water.ca.gov

RE: **Request for Extension of Time to Respond to Draft PEIS/EIR for the San Joaquin River Restoration Program**

Dear Ms. Forsythe and Ms. Landis:

The Lower San Joaquin Levee District, San Joaquin River Exchange Contractors Water Authority and San Luis & Delta-Mendota Water Authority and their respective member agencies request that the Bureau of Reclamation and the Department of Water Resources extend the comment period for the draft PEIS/EIR for the San Joaquin River Restoration Program from July 21, 2011 to September 21, 2011.

As you are aware, the approximately 8000 pages of the draft PEIS/EIR contain considerable technical material related to the San Joaquin River Restoration Program, including fishery management, water flow, structural changes to the San Joaquin River, and other actions. We have conferred with our technical consultants charged with reviewing the extensive documentation. This additional time is essential for their review as well as to permit out respective boards the opportunity to review their comments prior to transmittal to your agencies. Given the importance of this program, a thorough review is in everyone's interest.

EC2-1

We are mindful that Reclamation desires to file a long term water transfer application at the SWRCB so that the SJRRP may be permitted by water year 2013. We do not believe the additional six weeks to review the documents will jeopardize that schedule. Further, given the length of time it has taken to get to this point in the program, an extension of six weeks does not harm anyone's interests.

EC2-1 cont'd

Thank you for your consideration of this request. We are aware that the comment period has already been extended on your own volition by one month and that additional 60 days was factored into this request.

If you have any questions, please contact any of the undersigned.

Sincerely yours,

Reggie Hill
Lower San Joaquin Levee District

Steve Chedester
San Joaquin River Exchange Contractors Water Authority

Dan Nelson
San Luis & Delta Mendota Water Authority

Response to Comment from San Joaquin River Exchange Contractors Water Authority and the San Joaquin River Resource Management Coalition

EC2-1: 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 this and other responses.

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3.8.6 Duane Morris LLP

EC-3

Banonis, Michelle

From: Banonis, Michelle
Sent: Tuesday, May 03, 2011 10:21 AM
To: 'Ansley, Jolie-Anne S.'
Subject: RE: San Joaquin River Restoration Project draft PEIS
Attachments: NOC_Stamped_2011_04_22.pdf; 20110422 Final Public NOA.PDF

Dear Ms. Ansley,

Thank you for your e-mail. The comment period for the San Joaquin River Restoration Program Draft PEIS/R ends on June 21, 2011. For reference, I have attached both the Federal NOA and the State NOC, both which reference the June 21, 2011 comment deadline.

Feel free to contact me with any additional questions.

Sincerely,

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: Ansley, Jolie-Anne S. [mailto:JSAnsley@duanemorris.com]
Sent: Monday, May 02, 2011 10:14 AM
To: Banonis, Michelle
Subject: San Joaquin River Restoration Project draft PEIS

Dear Ms. Banonis:

EC3-1 On Friday, April 29, 2011, the EPA published a Notice of Availability for Environmental Impact Statements in the Federal Register that included the draft PEIS/EIR for the San Joaquin River Restoration Project. The notice stated that the comment period for the draft PEIS/EIR ends June 13, 2011 as opposed to June 21, 2011, the date given by the Bureau of Reclamation. Can you please confirm that June 21, 2011 is the correct end date of the comment period?

Thank you,
Jolie-Anne Ansley

Jolie-Anne S. Ansley

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Associate

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Response to Comments from Duane Morris LLP

EC3-1: A response to this comment was provided Tuesday, May 3, 2011, confirming that the comment response period was scheduled to end on June 21, 2011. The response period was subsequently extended to September 21, 2011, in response to requests.

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