3.8.7 Lower San Joaquin Levee District, San Joaquin River Exchange Contractors Water Authority, San Luis and Delta-Mendota Water Authority

EC-4

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:

EC4-1 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.

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.

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

EC4-1: A response to this comment was provided Tuesday, May 31, 2011, extending the comment period to September 21, 2011, in response to requests.

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3.8.8 Fresno Metropolitan Flood Control District

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FRESNO METROPOLITAN FLOOD CONTROL DISTRICT

File 550.30

May 23, 2011

MAY 25 '11

Ms. Michelle Banonis
SJRRP Natural Resources Specialist
Bureau of Reclamation Office
2800 Cottage Way, MP-170
Sacramento, CA 95825-1898

Dear Ms. Banonis,

San Joaquin River Restoration Program
Draft Program Environment Impact Statement
SCH #2007081125

FMFCD-1 The District has reviewed the information provided for the proposed Restoration Program. There are no District comments at this time that would be applicable to the report and statement.

Thank you for the opportunity to comment. Please keep our office informed on the development of this project. If you should you have any questions or comments, please contact the District at (559) 456-3292.

Very truly yours,

Mark Will
Engineer III, R.C.E.

MW/lrl

Classification ENV-6.00
Project 214
Control No. 1104 3876
Folder I.D. 147647
Date Input & Initials 5-25-2011 IN

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Response to Comment from Fresno Metropolitan Flood Control District

FMFCD-1: Comment noted. Text has not been revised.

3.8.9 Fresno County Board of Supervisors

FRES

County of Fresno

BOARD OF SUPERVISORS
SUPERVISOR PHIL LARSON – DISTRICT ONE
CHAIRMAN

September 16, 2011

Michelle Banonis
United States Department of Interior
Bureau of Reclamation
2800 Cottage Way
MP170
Sacramento CA 95825

Re: Response to San Joaquin River Restoration Program's Draft Program EIA/EIR Report

Dear Ms. Banonis:

This letter represents my concerns related to the San Joaquin River Restoration Program (SJRRP) EIS/R Report – Chapter 21.0 Recreation. It is my opinion that the details of the Program and Project EIS/R's relative to REC-4, REC-5, REC-11 and REC-12 have not been satisfactorily mitigated within Reach 1.

FRES-1a The basic premise that the SJRRP will impact only Friant Division contractors and their water users is flawed because this Report frequently redirects recreational users to the Kings River. The proposed Program and Project mitigations will negatively impact all recreational users in Fresno County including fisherman, boaters, swimmers and waders on the Kings River and the San Joaquin River.

FRES-1b I offer the following comments to the San Joaquin River Restoration Program's draft Program EIS/EIR Report:

1. Strongly oppose shutting down cold water trout planting and fishing in the San Joaquin River as proposed in the April 2011 Program EIS/EIR Report.

FRES-2 2. In Figure 21-2, page 21-6, SJR Parkway and Surrounding Areas, Recreational Features of the Parkway, element 11, the Spano River Ranch property owned by the San Joaquin River Conservancy (SJRC), which as initiated the CEQA process, has not been included in the mitigations discussed in this report. The River West Plan proposals include a Multi-Use Trail, the Lewis S. Eaton Trail Extension, "near and along the river. This plan could be enhanced by Warm Water gravel pit mitigations and minor channel reconfigurations by the SJRRP in coordination with the City of Fresno and the SJRC. The Spano River Ranch within the San Joaquin River Parkway has not been discussed in the April 2011 EIR/S and needs to be included.

Classification
Project
Control No.
Folder I.D.

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FRES-3

3. Unsatisfactory program mitigations include: REC-4 pages 21-33 to 21-35. Cessation of rainbow trout stocking in the San Joaquin River (SJR) and closing it to recreational fishing during any portion of the year is unsatisfactory. As pointed out on page 21-34 lines 4-12, Fresno County Park – Lost Lake is primarily used for river access and cold water trout fishing. This is the primary SJR access point for residents of Fresno County and recreational fishermen. Relocating SJR cold water recreational fishing to the Kings River is unsatisfactory since the Kings River can not support an additional 18,000 fisherman a year. If cold water fishing must be impacted during the first two years of Chinook re-introduction then alternate warm water fishing opportunities must be developed. It is suggested that the California Department of Fish and Game Commission set size and/or take limits on Chinook salmon during the Spring and Fall Chinook runs and maintain all existing fishing regulations on the SJR.

FRES-4

4. Unsatisfactory project mitigations include: REC-11 pages 21-49 to 21-50. Swimming and wading usage within Reach 1 and specifically at Skaggs Bridge and Lost Lake Park can not be mitigated by moving the participants to the Kings River. The cold water on the Kings River during March and April make it unsafe because they also have increased cold water flows during this period and their flows are unregulated as compared to the San Joaquin River. The current Kings River flow plan may cause public safety issues as evidenced by the rescues and loss of life incidents during 2011. It is well established that a flow of 4,5000cfs is dangerous for swimmers and waders.

FRES-5

5. REC-12 pages 21-50 to 21-53. Boating, including kayak and canoe usage within Reach 1 can not be safely mitigated by moving participants to the Kings River. The diversion structures within the Kings River could be a hazard to boaters unaware of their presence. Simply suggesting that a kayaker could replace their San Joaquin River experience on the Kings River would result in a public safety issue. A flow rate of 4,500csf is dangerous for boaters on either river.

The San Joaquin River is an important recreational resource in Fresno County and these concerns must be addressed in the Final Program EIS/R and future Program EIS/R.

Thank you for your consideration.

Sincerely,

Phil Larson

C: Sonke Mastup - California Department of Fish and Game
Chad Dibble, Sr. - California Department of Fish and Game Commission
Melinda Marks - California San Joaquin River Conservancy

Responses to Comments from Fresno County Board of Supervisors

FRES-1a: The PEIS/R does not claim that impacts would be limited to Friant Division contractors and their water users. Potential impacts are described throughout the study area, including the San Joaquin River upstream from Friant Dam, the San Joaquin River from Friant Dam to the Delta, the Delta, and the CVP and SWP water service areas, as shown in Figure 1-1 of the Draft PEIS/R. The commenter states that mitigation measures proposed in the Draft PEIS/R would negatively impact all recreational users in Fresno County, including fisherman, boaters, swimmers, and waders on the Kings River and the San Joaquin River. Mitigation measures are measures to mitigate for impacts that were determined to be potentially significant or significant. Mitigation measures for potentially significant and significant impacts to recreational use of the San Joaquin River are discussed in Chapter 21.0, "Recreation," of the Draft PEIS/R, including Mitigation Measure REC-3, REC-4, REC-5, REC-9, and REC-12. Based on commented FRES-3 and FRES-5, it is assumed that the commenter is concerned about mitigation measures REC-4 and REC-12. These measures are discussed below.

Mitigation Measure REC-4 (page 21-35 of the Draft PEIS/R) would enhance public fishing access and trout populations on the Kings River below Pine Flat Dam to better accommodate anglers displaced from Reach 1 who choose to travel to the Kings River. Specific actions to enhance public fishing access and trout populations would be determined during subsequent site-specific NEPA/CEQA evaluation of Chinook salmon reintroduction, but could include fish habitat enhancement projects in the river, fish stocking, fish population monitoring, hatchery production of catchable trout, public education, and/or public outreach. The Draft PEIS/R concluded that the actual number of anglers displaced to the Kings River would be relatively small and, after implementation of Mitigation Measure REC-4, would not impact angling opportunities on the Kings River.

While some displaced anglers could travel to the Kings River below Pine Flat Dam (approximately 40 miles southeast of Reach 1), others may choose not to fish, or could elect to pursue other fishing opportunities in the vicinity of Reach 1, such as warm-water sport fishing in isolated gravel pits and ponds along Reach 1, or angling opportunities upstream from Millerton Lake. For a number of reasons, it is likely that some portion of the approximately 1,600 anglers displaced from the San Joaquin River would be attracted to sites other than the Kings River. Also, San Joaquin River anglers who may be displaced by the SJRRP to the Kings River would likely be dispersed to the several park sites providing fishing access, reducing the increase in angling pressure at any one site. Therefore, even if all of the approximately 1,600 San Joaquin River anglers, and their approximately 18,000 days of annual angling activity, were displaced to the Kings River (which is highly unlikely as described above), it would represent only about 12 additional anglers per site per day during the peak season. In addition to on-stream trout angling opportunities at the Kings River, San Joaquin River anglers have the opportunity to fish for trout at 83-acre Avocado Lake (adjacent to the Kings River), as the lake is also stocked with trout by DFG. This could further reduce the additional fishing pressure on the Kings River from displaced San Joaquin River anglers.

It should also be noted that the Kings River receives 25,000 sub-catchable "put and grow" fish annually (KRFMP 2008), which the San Joaquin River does not receive. Additionally, the planned improvements of the Kings River Fisheries Management Program and others to trout habitat at numerous sites on the Kings River are also likely to increase the capacity of the fishery in the long term. These considerations contribute to the capacity of the Kings River trout fishery to absorb additional angling pressure.

Under Mitigation Measure REC-4, specific actions to enhance fishing access would be developed in cooperation with the Kings River Conservancy and State and local agencies participating in ongoing park and river access construction and enhancement projects. Example projects include construction of the Kings River Access Park or similar facilities to provide anglers and others with amenities such as nonmotorized boat launches, parking areas, restrooms, information kiosks, and picnic tables. In addition, specific actions to enhance trout populations could be developed in cooperation with the Kings River Water Association, Kings River Conservation District, and DFG in support of the Kings River Fisheries Management Program Framework Agreement and Fisheries Management Program. Specific actions to enhance trout populations may include fish habitat enhancement projects in the river, fish stocking, and fish population monitoring. Actions could also include hatchery production of catchable trout, particularly if the San Joaquin Hatchery reduces trout production as a result of producing salmon in support of implementing the Settlement. In addition to enhanced angling opportunities on the Kings River described above, improvements to warm-water sport fishing opportunities in the vicinity of Reach 1 would also likely decrease the potential for displaced San Joaquin River anglers to impact Kings River angling opportunities.

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

Under Mitigation Measure REC-12 (pages 21-52 and 21-53 of the Draft PEIS/R), Reclamation will develop and implement a recreation outreach program to inform the recreating public as well as agencies and organizations that serve the recreating public and protect public safety, of changes in river flows that would occur as a result of the Restoration Flows, and of the potential effects associated with those changes, including recreational boating hazards, particularly in Reach 1. The program will also inform the public of similar alternative boating opportunities in the area, such as those available on the lower Kings River below Pine Flat Reservoir. As described under Impact REC-12 (pages 21-50 through 21-52 of the Draft PEIS/R), adverse impacts on boating would primarily occur during a 4- to 6-week period in March and April of some years, well before the warmer late spring and summer period when most boating activity on the river occurs. (Increased flow would have beneficial effects on boating during late spring and summer in most years.) Therefore, the number of potentially affected boaters would be small. Also, during most years the mean flows in the Kings River below Pine Flat Reservoir during March and April are between 500 and 1,500 cfs (and considerably less

below Fresno Weir). Published paddling guides indicate that flows below 2,500 cfs are suitable for boating on the Kings River, including for novices (American Whitewater Association 2007). Although the diversion structures (weirs) may pose a hazard to boaters, the same guides also indicate that all are easily portaged, and that boaters may bypass Gould Weir by using a side channel. The paddling guides also suggest that the Kings River presents fewer hazards from trees and brush than Reach 1 of the San Joaquin River, which is characterized in many areas by narrow, braided channels, with trees and other vegetation in the channels, as a result of the historically low flows. This analysis supports the analysis and conclusions presented in the Draft PEIS/R.

See also MCR-9, "Recreation Impacts and Kings River," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, for additional information relevant to this comment.

FRES-1b: Comment noted. The CFGC has developed a set of policies relating to management of salmon in the State, one of which states: "Domesticated or nonnative fish species will not be planted, or fisheries based on them will not be developed or maintained, in drainages of salmon waters, where, in the opinion of the Department, they may adversely affect native salmon populations by competing with, preying upon, or hybridizing with them. Exceptions to this policy may be made for stocking drainages that are not part of a salmon restoration or recovery program" (2009). Consistent with this policy, DFG could cease stocking of rainbow trout in Reach 1 after salmon are reintroduced. See also MCR-9, "Recreation Impacts and Kings River," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment.

FRES-2: In addition to the enhancements to existing facilities and development of new ponds described in Chapter 21.0, "Recreation," of the Draft PEIS/R, Mitigation Measure REC-5, creation of new warm-water fishing opportunities could also occur at existing ponds within the River West – Fresno (Spano River Ranch) and River West – Madera (Proctor-Broadwell-Cobb property) planned San Joaquin River Parkway facilities, where plans for restoration and recreational access are being developed (City of Fresno 2011, Madera County 2011). See also MCR-9, "Recreation Impacts and Kings River," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment.

FRES-3: Regarding cessation of trout stocking, the CFGC has developed a set of policies relating to management of salmon in the State, one of which states: "Domesticated or nonnative fish species will not be planted, or fisheries based on them will not be developed or maintained, in drainages of salmon waters, where, in the opinion of the Department, they may adversely affect native salmon populations by competing with, preying upon, or hybridizing with them. Exceptions to this policy may be made for stocking drainages that are not part of a salmon restoration or recovery program" (2009). Consistent with this policy, DFG could cease stocking of rainbow trout in Reach 1 after salmon are reintroduced. As noted in Impact REC-4, DFG may elect to impose new restrictions or close portions of the San Joaquin River to reduce the likelihood of anglers inadvertently catching salmon or intentionally poaching salmon. In these cases, DFG

would develop project-level environmental documents as necessary to comply with CEQA before implementing new regulations. Regarding Mitigation Measure REC-4, see response to comment FRES-1a. See also MCR-9, "Recreation Impacts and Kings River," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment.

FRES-4: The commenter refers to Mitigation Measure REC-11; as REC-11 is not a mitigation measure described in the PEIS/R, it is assumed that the commenter is referring to text under Impact REC-11 on page 2-49. Impact REC-11 finds that because the scheduled Interim and Restoration flows of 1,500 cfs and greater would occur only during March and April in most years, and because similar swimming and fishing would remain available in the vicinity of Reach 1, as well as on the Kings River and at Millerton Lake, significant adverse effects on these activities are not likely. Therefore, this impact would be less than significant.

The impacts on swimming and wading in the San Joaquin River from increased flows would primarily occur during March and April. Although hot weather occasionally occurs in the Fresno area during these months, the average daily high temperature is 68ºF in March and 75ºF in April. This period is before the onset of consistently hot days (greater than 80ºF to 85ºF) that draw the public to the river to swim or wade. Water temperatures in the river are also low (55ºF to 60ºF) during April and May. Given these moderate air temperatures and cold water temperatures, the number of potentially affected swimmers and waders would be small. Regarding public safety issues on the Kings River, during most years mean flows below Pine Flat Reservoir during March and April are between 500 and 2,000 cfs (and considerably less below Fresno Weir). The much greater flows that occurred during much of March and April 2011 are typical only of periods when very high inflow into Pine Flat Reservoir results in large dam releases. It should also be noted that similar swimming opportunities would remain available at Millerton Lake during March and April. The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R, and supports the conclusion presented in the Draft PEIS/R that Impact REC-11 would be less than significant. Text has not been revised.

FRES-5: Regarding Mitigation Measure REC-12, see response to comment FRES-1a. See also MCR-9, "Recreation Impacts and Kings River," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment. Text has not been revised.

3.8.10 Friant Water Authority

FRIANT
WATER AUTHORITY

FWA

September 21, 2011

VIA ELECTRONIC MAIL

Ms. Michele Banonis
SJRRP Natural Resources Specialist
U. S. Bureau of Reclamation
2800 Cottage Way, MP-170
Sacramento, CA 95825-1898
Email to: peisrcomments@restoresjr.net

Ms. Fran Schulte
SJRRP Program Office
Department of Water Resources South Central Region Office
3374 E. Shields Avenue
Fresno, CA 93726
Email to: fschulte@water.ca.gov

Re: Comments on Draft Program Environmental Impact Statement/Environmental Impact Report (DPEIS/R) for the San Joaquin River Restoration Program (SJRRP)

Dear Ms. Banonis and Ms. Schulte:

FWA-1a

The Friant Water Authority has reviewed the DPEIS/R for the SJRRP and is submitting the attached comments. As one of the Settling Parties, the primary focus of our review was for accuracy, consistency with the Settlement and supporting documentation for the conclusions reached in the document. Based on this review and as reflected in the attached detailed comments, we have some significant concerns regarding the analysis of impacts from reduced surface water supplies to Friant long-term contractors (LTC), notwithstanding the conclusions that various impacts caused by reduced deliveries are significant and unavoidable.

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854 N. Harvard Avenue
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FWA-1b The primary problem with the analysis of reduced water supplies is that the use of CalSIM and some of the assumptions derived from Dan Steiner's model related to availability and use of Class 2, Section 215 and "other" water result in a significant understatement of the reduced deliveries to Friant LTC. Although the results of modeling shown in Appendix J are difficult to follow and the characterization of reductions in Class 2 deliveries in Dry years is meaningless, the conclusion that the long term average reduction Class 2 deliveries is only 72 TAF is understated by at least a factor of two. Since this information is foundational for subsequent analysis of groundwater and economic impacts in the Friant service area, all of the subsequent analyses that rely on this information become suspect.

FWA-2 We are also concerned that the determination of impacts to groundwater is based on two different types of analysis ("Schmitt Tool" and "Mass Balance Tool") with no correlation between the two. More importantly, the assumption that groundwater is always available to make up for reduced surface water supplies and the only impact becomes the economic cost of pumping from deeper depths is both incorrect and flawed. Many Friant districts do not have adequate groundwater to make up supplies. In addition, in an overdrafted groundwater basin, any increase in the overdraft should be considered a long term loss of water with the value of that water being the replacement cost to obtain that water from other sources. Because much of the economic and socio-economic analysis depends on the conclusions regarding availablility and cost of water supplies to maintain agricultural production, we believe that the socio-economic impacts are similarly understated.

FWA-3a Finally, we do not understand how the PEISR can reach the conclusion that water quality impacts from recirculation and introduction of more Delta water into the lower end of the Friant Kern Canal will not be significant. The PEISR does not evaluate the recirculation at a Project level and we see no water quality impact analysis that would support such a conclusion.

FWA-3b We look forward to working with Reclamation and the other Settling Parties to ensure that the environmental documentation for the SJRRP is complete and legally defensible and that it will adequately inform those who must make the final determinations about the documents have properly disclosed all potential impacts of the project.

Sincerely,

Ronald D. Jacobsma
General Manager

Attachment

SJRRP Draft Programmatic EIS/R
Friant Water Authority Comments

	FWA Comment No.	PEIS/R Section	Page #	Line(s)	FWA Comment
FWA-4	1	Exec Sum	64	Table ES-7	The numbers presented in the table do not appear to reflect numbers presented elsewhere in the document or the appendices. In addition, they do not appear to reflect either the Settlement or reality. 250 TAF has never been identified as the average releases of IF and RF in any prior document or in Appendix I or J. The 59 TAF is identified in Appendix J, but it implies that all increased diversions from the Delta as calculated by CalSIM would be considered "recaptured" water that could be recirculated to Friant, which has not been demonstrated anywhere because there has b een no project level analysis on recirculation. We have been unable to determine the derivation of the "Non-Paragraph 16(b) Diversions", the "Maximum Deliveries to Friant", or the "Range of Potential Reduction" numbers. Based on every analysis done by Friant, the potential reduction in water supplies is severely understated to the point that it puts in doubt the analyses in other sections regarding groundwater and socio-economic impacts.
FWA-5	2	1.2.3	1-11	11-20	The document states under "Project-Level Analysis" that, in addition to the program-level analysis described, the Draft PEIS/R also includes a more detailed project-level analysis of actions that include performing any additional operations and maintenance needed on flap gates in the Eastside and Mariposa bypasses, at the Chowchilla Bypass Bifurcation Structure, at the Eastside Bypass Bifurcation Structure, or at the Mariposa Bypass Bifurcation Structure to facilitate routing Interim and Restoration flows; and removing vegetation and sediment by mechanical or chemical means that would cause Interim or Restoration flows to exceed channel capacity. These actions are described as Reclamation actions. These sound more like DWR actions or Lower San Joaquin Levee District actions. In the Final Water Year 2010 Interim Flows Project Environmental Assessment/Initial Study – September 2009, at page 2-22, installing water seals on the Chowchilla Bypass Bifurcation Structure to minimize leakage to the Chowchilla Bypass, operation of the Chowchilla Bypass Bifurcation Structure to route WY 2010 Interim Flows to Reach 2B, and implementing physical parameters monitoring program actions (including the Seepage Monitoring and Management Plan and the Flow Monitoring and Management Plan), in coordination with Reclamation to monitor the response of the physical system to the release of WY 2010 Interim Flows are described as "State Actions." This discrepancy must be explained.
FWA-6	3	1.5	1-15	4-8	The document states the project-level actions addressed in the PEIS/R include actions to be undertaken by Reclamation, and the effects of these actions are the sole responsibility of Reclamation. DWR serves as the CEQA lead agency for the entire SJRRP, although DWR is not taking any discretionary action for the project-level actions analyzed in this Draft PEIS/R. In accordance with the above comment on Section 1.2.3 on page 1-11 of the document, this statement should be revised.
FWA-7	4	1.5	1-16	5-7	The document states DWR will assist in planning, designing, and constructing the physical improvements identified in the Settlement, including projects related to flood protection, levee relocation, and modifications to and maintenance of channel facilities. As noted in a previous comment, section 1.2.3 of the document describes additional operations and maintenance needed on flap gates in the Eastside and Mariposa bypasses, at the Chowchilla Bypass Bifurcation Structure, at the Eastside Bypass Bifurcation Structure, or at the Mariposa Bypass Bifurcation Structure to facilitate routing Interim and Restoration flows; and removing vegetation and sediment by mechanical or chemical means as a Reclamation action, yet the language on page 1-16, lines 5 to 7 state it's a DWR action.

SJRRP Draft Programmatic EIS/R
Friant Water Authority Comments

	FWA Comment No.	PEIS/R Section	Page #	Line(s)	FWA Comment
FWA-8	5	2.1 (and 1.2.3)	2-2 (and 1-11)		The document states: "...this Draft PEIS/R also includes a more detailed project-level analysis of the following actions: • Reoperate Friant Dam and downstream flow-control structures to release interim and Restoration flows, as constrained by then-existing channel capacities, to the San Joaquin River, and make water supplies available to Friant Division long-term contractors at a preestablished rate (Reclamation action)" (page 1-11). On page 2-2, Figure 2-1 shows that the Restoration Flow Guidelines feed into the development of Final Program Alternatives regarding the Reoperation of Friant Dam. However, the Restoration Flow Guidelines (RFG) are not finalized to date. It should be explained how there can be a project-level analysis done on the reoperation of Friant Dam without the final RFG.
FWA-9	6	2.4.1	2-21	7-9	The document states that "According to Paragraph 13(i), the RA is responsible for recommending to the Secretary the date for commencing full Restoration Flows in consideration of the completion of Phase 1 improvements (as subsequently described for common Restoration actions)." This is incorrect. Paragraph 13(i) states "the Restoration Administrator shall recommend to the Secretary the date for commencement of the Restoration Flows." It does not say "full Restoration Flows."
FWA-10	7	2.4.1	2-21	4-6	The document states "Paragraph 13(c) of the Settlement identifies procedures to address unexpected seepage losses, including acquiring water or options on water from willing sellers to be utilized for additional releases from Friant Dam." While this is correct, why that statement is in this place of the document is not clear.
FWA-11	8	2.4.1	2-21	13-15	The document states that "release and conveyance of full Restoration Flows is defined as meeting Restoration Flow targets at six locations in the Restoration Area identified in Exhibit B of the Settlement..." There are two problems with that statement. First, "full Restoration Flows" are not defined in the Settlement or the Act. Therefore, this document should not define that term unilaterally. That definition is something the Settling Parties must agree on. Second, the target flow at Gravelly Ford must be met with the release of Restoration Flows; however, if the release of Restoration Flows fails to meet any of the remainder of the downstream targets, those targets must be met in accordance with Paragraph 13(c) of the Settlement. Paragraph 13(c) prescribes the steps to be taken, and those steps do not necessarily involve the release of Restoration Flows as defined in Exhibit B.
FWA-12	9	2.4.1	2-22	5-8	The document states that the "Settlement also includes the following provisions to modify Restoration Flows, in consideration of recommendations to be made by the RA...the use of a 10 percent buffer flow to help meet the Restoration Goal..." It should be noted in the document that the Buffer Flows are up to an additional 10 percent and only under certain conditions specified in the Settlement.
FWA-13	10	2.4.1	2-22	12-15	The document states, with respect to the San Joaquin River Exchange Contract: "Under the terms and conditions of that contract, Reclamation is obligated to make available required deliveries from the Delta-Mendota Canal (DMC) or releases from Millerton Reservoir." This statement should be revised to state: "Under the terms and conditions of that contract, Reclamation is obligated to deliver to the San Joaquin River Exchange Contractors water from the Delta-Mendota Canal (DMC) or other sources. If Reclamation is temporarily unable to do so, water is to be delivered from the San Joaquin River in accordance with Article 4.b. of the San Joaquin River Exchange Contract. If Reclamation is permanently unable to deliver water from the DMC or other sources, the San Joaquin River Exchange Contractors shall receive water from the San Joaquin River in accordance with Article 4.c. of the San Joaquin River Exchange Contract."
FWA-14	11	2.4.1	2-23	1-3	The document states: "Then-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." While this may be true, since the Settlement does not define "then existing channel capacity" and since there may be conditions other than flood risk that could impact existing channel capacity, suggest this sentence be modified to account for that fact.

SJRRP Draft Programmatic EIS/R
Friant Water Authority Comments

	FWA Comment No.	PEIS/R Section	Page #	Line(s)	FWA Comment
FWA-15	12	2.4.2	2-38	6	Add "consistent with all applicable law" at the end of the sentence to be in conformance with the language in the Settlement.
FWA-16	13	2.4.2	2-39	20-30	The discussion of the Mendota Pool Bypass does not include a discussion of one option that is apparently being considered, currently called the Fresno Slough Dam option, which would in effect move the location of Mendota Pool to the south. It should be included here.
FWA-17	14	2.4.2	2-40	18-27	The document correctly notes that the Act (Section 10009(f)(2)(B)) requires that a determination be made on increasing the channel capacity to 4,500 cfs before undertaking any "substantial construction" in Reach 4B1. The document goes on to state that therefore "modifications in Reach 4B1 to convey at least 475 cfs would not include substantial construction, such as changes to existing levees in Reach 4B1. Based on preliminary studies, these modifications are anticipated to include removing in-channel vegetation and modifying road crossings within Reach 4B1. Modifying Reach 4B1 could also include modifications to establish a low-flow channel to support fish migration, ranging from a single low-flow channel to a series of terraced channels to convey incremental low flows of up to 475 cfs or more." The Act does not define the term "substantial construction." Apparently the author(s) of the document have concluded the modification of road crossings and establishment of a low-flow channel to support fish migration in the 21.3 mile length of Reach 4B1 do not constitute substantial construction. The document should provide any standards, justifications, or rationale that were used to come to that conclusion.
FWA-18	15	2.4.2	2-48	36-40	The document notes that during the release of Interim and Restoration flows, the loss of water from the main stem San Joaquin River through the closed gates to the bypass channel could inhibit success of the Restoration Goal by reducing the amount of water flowing to downstream reaches. Such losses would also inhibit the success of the Water Management Goal. The document should be revised accordingly.
FWA-19	16	2.4.3	2-51	13-16	The document discusses an immediate response to attain the seepage management objective is the redirection of Interim or Restoration Flows at Chowchilla Bypass Bifurcation Structure, noting directing flow into the bypass system at the Chowchilla Bypass Bifurcation Structure would reduce flow in Reach 2B and downstream reaches. It should be made clear this would be done only for the purposes of providing an immediate response to a seepage problem.
FWA-20	17	3.1.2	3-2	23-25	The sentence on page 3-2, beginning on line 23, should be modified to state: "Reclamation makes releases from Friant Dam to maintain continuous flows past Gravelly Ford, providing deliveries to "holding contracts" in Reach 1." To our knowledge, Reclamation has not made any determination regarding who may or may not have riparian water rights.
FWA-21	18	3.1.2	3-2	28	The sentence beginning on line 28 is incomplete.
FWA-22	19	3.1.5	3-5	10-21	This paragraph contains several factual errors and should be revised to read as follows: "Reclamation purchased some of the water rights on the San Joaquin River, and through exchange arrangements with entities holding other rights on the San Joaquin River (the most significant of these exchange arrangements is the San Joaquin River Exchange Contract), diverts water at Friant Dam. With the exception of flood control operations, water released from Friant Dam to the San Joaquin River is limited to that necessary to meet the requirements of the holding contracts along the San Joaquin River between Friant Dam and Gravelly Ford. Under the terms and conditions of the San Joaquin River Exchange Contract, Reclamation is obligated to deliver to the San Joaquin River Exchange Contractors water from the Delta-Mendota Canal (DMC) or other sources. If Reclamation is temporarily unable to do so, water is to be delivered from the San Joaquin River in accordance with Article 4.b. of the San Joaquin River Exchange Contract. If Reclamation is permanently unable to deliver water from the DMC or other sources, the San Joaquin River Exchange Contractors shall receive water from the San Joaquin River in accordance with Article 4.c. of the San Joaquin River Exchange Contract."
FWA-23	20	5.1	5-2	8-10	The sentence beginning on line 8 seems to be missing some words.

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	FWA Comment No.	PEIS/R Section	Page #	Line(s)	FWA Comment
FWA-24	21	5.1.1	5-5	1-12	This section seems to compare post-Friant Dam construction to historic conditions, without taking into account the extensive network of dams and powerplants constructed upstream prior to the construction of Friant Dam, and the conditions associated with the State flood control project downstream.
FWA-25	22	5.2.3	5-24	8-9	The document states "fish populations are confined to the upper part of Reach 2 upstream from Gravelly Ford." Reach 2 does not extend upstream of Gravelly Ford.
FWA-26	23	5.2.3	5-24	38-40	The document states "...it is assumed that any species present near the diversion points could be routed into the bypasses along with flood flows." The word "routed" implies an action taken deliberately. Since deliberately routing fish into the Chowchilla Bypass is not part of the SJRRP, this sentence should be modified to remove the implication.
FWA-27	24	5.2.6	5-29	10-14	The document states: "As part of VAMP, in years when spring flow in the San Joaquin River is less than 7,000 cfs, a temporary barrier is placed at the Head of Old River to prevent outmigrating San Joaquin River basin salmon from migrating directly down the Old River channel toward the pumps. " This section is supposed to be describing the aquatic habitat and fish presently found in the Delta. However, a couple of things should be noted. The VAMP is no longer in existence, as 2011 was its final year, with the pulse flows and fish monitoring having ended earlier this year. Second, a physical temporary barrier at the head of Old River has not been installed in several years due to a judicial prohibition. While a VAMP-like program may occur, it's not a certainty.
FWA-28	25	5.4.1	5-45	15	This section is to describe "the potential beneficial and adverse impacts of each program alternative on fishes and their habitat in the study area." However, Table 5-4 indicates impacts on spring run and fall run Chinook salmon are not going to be assessed in the Restoration Area. Since the Restoration Goal is to reintroduce spring run and fall run Chinook salmon, the table should reflect that.
FWA-29	26	5.4.1	5-51	22	Change "plan" to "play"
FWA-30	27	5.4.1	5-60	11-20 and 29-31	The discussion of VAMP implies it is an active program, but as noted above VAMP is no longer in existence.
FWA-31	28	5.4.1	5-62	27-30	The document states: "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." That assumption is no longer valid, as the SJRRP has already been actively introducing fall run (from the Feather River hatchery) into the Restoration Area for experimental purposes, and all indications are that fall run will continue to be actively reintroduced for both experimental purposes and to help achieve the Restoration Goal. Therefore, the impacts assessment must be revised accordingly.
FWA-32	29	5.4.3	5-71	6-18	As noted above, the discussion of the Mendota Pool Bypass does not include a discussion of one option that is apparently being considered, currently called the Fresno Slough Dam option, which would in effect move the location of Mendota Pool to the south. It should be included here as well.

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	FWA Comment No.	PEIS/R Section	Page #	Line(s)	FWA Comment
FWA-33	30	5.4.4	5-96	5-10	The document, in describing Impact FSH-29 states: "Transmission of this or other diseases borne by the resident hatchery rainbow trout to fall-run Chinook salmon and steelhead in the lower San Joaquin River could also occur if infected rainbow trout move downstream following the release of Interim and Restoration flows. The resulting effects on wild populations of fall-run Chinook salmon and steelhead in the lower San Joaquin River and tributaries would be **potentially significant**." (emphasis added) However, the last paragraph on page 5-95 states the Impact FSH-29 would be "**less than significant.**" (emphasis in original text) Additionally, Table 5-3 at page 5-41 shows LTS (less than significant) for all alternatives. The proposed mitigation measures for this potentially significant impact must be provided.
FWA-34	31	5.4.4	5-96 to 5-97	29 to 29 and 1 to 40	The discussion beginning with the second bullet on page 5-96, beginning with "VAMP Flow Requirements" should be deleted. There is no more VAMP. And if there is a replacement for VAMP, the role that the Interim and Restoration flows would take would be subject to negotiation.
FWA-35	32	9.2.3	9-25	18	The document states "There are no known regional or local plans or policies related to environmental justice." That is not correct. For example, Fresno County's plan can be found at: http://www.fresnocog.org/document.php?pid=175. Other counties or cities in the geographic areas potentially impacted by implementation of the SJRRP may also have local plans.
FWA-36	33	11.1.2	11-11	16	Use of the term "highly developed" in the context of agricultural lands only occurs in the description of Buchanan dam and Estman Lake. We agree that all agricultural lands in the San Joaquin Valley probably deserve that characterization, but it is unclear why only one area is described that way in these descriptions.
FWA-37	34	11.3.4	11-31	29-41	There does not appear to be any analysis of the potential additional flood risk in Reach 2A from adding vegetation in the channel.
FWA-38	35	12.1.2	12-42	Table 12-8	Lindsay-Strathmore ID has indicated that the numbers are not representative of actual pumping levels based on known wells and capacities. Pumping levels are estimated at 2000 AF per year. In general, use of this table is potentially misleading since it was developed for the purpose of calculating general increases in energy use and estimates were based on a calculated crop demand using assumed cropping patterns that may no longer be valid. The information was used as an intermediate calculating tool.
FWA-39	36	12.2.3	12-52	39	There appears to be an error in the number shown as "140,5"
FWA-40	37	12.2.3	12-55	19	San Luis is a Water District, not an Irrigation District
FWA-41	38	12.3.1	12-60		The use of two different methodologies to evaluate potential groundwater level changes is problemmatic for a couple of key reasons. The Schmidt Model and Mass Balance Method are generally described, but no specific details are given in this section or any appendix. The specific relationships used in the Schmidt Model are not given, and actual calculations and a list of parameters used in the Mass Balance are also lacking. It is also not possible to compare the relative reliability of either method. It may have been preferable to use the Mass Balance Method for all districts with the Schmidt Model used as a verification for those district that have the information derived by Schmidt.
FWA-42	39	12.3.1	12-63	6-10	For reasons described elsewhere in these comments, use of the CalSIM output as reductions in Class 1, Class 2 and 215 water likely resulted in a significant understatement of impacts to groundwater levels, since the CalSIM results shown in Appendix J significantly understate the probable reductions in surface water supply. As a result, the validity of Tables 12-16 through 12-23 and Figures 12-19 through 12-46 is highly questionable.
FWA-43	40	12.3.2	12-67	1-3	The document states that increased groundwater pumping in the Friant District to make up for lost water supplies would be 'relatively low'. Increased groundwater pumping is estimated to range from 24,000 AF to 100,000 AF (Table ES-7), which is significant, even when understated for the reasons described in prior comments.

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	FWA Comment No.	PEIS/R Section	Page #	Line(s)	FWA Comment
FWA-44	41	12.3.3	12-70	Table 12-17	The table shows groundwater levels increasing in Lindsay-Strathmore Irrigation District and Orange Cove Irrigation District. The reasons for this are not clear since both will experience reductions in water supplies. The table shows that groundwater levels will rise above the surface and inundate Orange Cove Irrigation District with 39 to 71 feet of water.
FWA-45	42	12.3.3	12-68 thru 12-97	Table 12-16 to 12-23	The groundwater levels under Existing Conditions and Future - No Action are the same. Shouldn't the future groundwater levels be lower to reflect the existing groundwater overdraft in the area?
FWA-46	43	12.3.3	12-68 thru 12-97	Table 12-19 to 12-46	The tables in this section do not show all of the data displayed in the graphs. The graphs show 16(a) + 16(b) flows and 16(b) Only flows. It is not clear, but it appears that the tables only show 16(a) + 16(b) flows.
FWA-47	44	12.3.3	12-121	6-13	Potential impacts such as those described in No Action Impact GRW-4 such as well abandonment, well deepening, etc. should be described in this section with the comment that they will occur to a greater degree and earlier in time.
FWA-48	45	13.1.2	13-18	6-7	The document states: "Flood flows in the San Joaquin and/or Kings rivers occurred at the Mendota Pool in 1997, 2001, 2005, and 2006." While this is accurate, it may lead someone to conclude that prior to 1997 there were no flood flows, which is incorrect. The sentence should be modified.
FWA-49	46	13.1.2	13-18	26-27	The document states: "Gravelly Ford has high percolation losses, and flow is less than 50 cfs approximately 50 percent of the time..." It's not clear what is meant by using the term Gravelly Ford in this context when the term Gravelly Ford is usually used as one location in the river.
FWA-50	47	13.1.3	13-44	21-23	The document states: "Though VAMP flows were discontinued in 2010, the recent NMFS 2009 BOs included continuation of VAMP-like flows in the reasonable and prudent alternatives." VAMP flows were discontinued in 2011. And while the NMFS BO included a continuation of "VAMP-like flows," such flows would have to be acquired from willing sellers, and to date that has not occurred.
FWA-51	48	13.1.5	n/a	n/a	The section that describes other CVP facilities does not seem to mention the San Luis Canal, a joint CVP/SWP facility. The section should be revised to include it, as well as the description of the SWP facilities.
FWA-52	49	13.2.1	13-67	11-13	The document states: "CVPIA Section 3406(c)(1) mandated development of a comprehensive plan that is reasonably prudent and feasible to be presented to Congress to address fish, wildlife, and habitat concerns on the San Joaquin River." 3406(c)(1) states the plan is to be "reasonable, prudent, and feasible," not "reasonably prudent."
FWA-53	50	13.2.1	13-67	23-25	The document states: "In accordance with CVPIA Section 3404(c), Reclamation is renegotiating long-term water service contracts. As many as 113 CVP water service contracts located within the Central Valley of California may be renewed during this process." To date, many if not most of those contracts have been negotiated. See http://www.usbr.gov/mp/cvpia/3404c/lt_contracts/2005_exec_cts_water_serv/index.html and http://www.usbr.gov/mp/cvpia/3404c/lt_contracts/2010_friant9a/index.html
FWA-54	51	13.2.1	13-67	33	The paragraph under the heading "San Joaquin River Agreement" should note that the SJRA expires December 31, 2011.

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	FWA Comment No.	PEIS/R Section	Page #	Line(s)	FWA Comment
FWA-55	52	13.3.4	13-187	9-15	The information provided in Appendix J is both deficient and incorrect based on water supply impact assessments both before the effective date of the Settlement and by both FWA and USBR since that time. Appendix J is confusing and does not clearly show reductions in surface water supplies (nor does it appear to support Table ES-7), but based on the numbers provided, it shows Class 1 supply reductions in Dry and Critical years of 140 TAF and in all years of 39 TAF. Pre settlement and recent analysis puts those numbers in the 160 TAF and 50 TAF, respective. The analysis for Class 2 is entirely deficient because it shows only long term average impacts of 72 TAF compared to other analyses of more than twice that number. Showing Class 2 impacts in Dry nd Critical years is meaningless, since there is no Class 2 water in those years without Restoration. Given these deficiencies, it is not clear how any of the analysis of impacts to ag production, groundwater levels or socio-economics can be correct, notwithstanding the determination that impacts will be significant in all of those areas.
FWA-56	53	14.3.3	14-20	11-15	Since there is not a project level analysis of water quality impacts to districts that will receive Delta supplies instead of Friant supplies, particularly Arvin Edison WSD, it is unclear how the conclusion can be reached that impacts will be less than significant. Such a statement is unsubstantiated by the facts or analysis.
FWA-57	54	14.3.3	14-21	8-13	Since there is not a project level analysis of water quality impacts to districts that will receive Delta supplies instead of Friant supplies, particularly Arvin Edison WSD, it is unclear how the conclusion can be reached that impacts will be less than significant. Such a statement is unsubstantiated by the facts or analysis.
FWA-58	55	14.3.3	14-22	8-13	Since there is not a project level analysis of water quality impacts to districts that will receive Delta supplies instead of Friant supplies, particularly Arvin Edison WSD, it is unclear how the conclusion can be reached that impacts will be less than significant. Such a statement is unsubstantiated by the facts or analysis.
FWA-59	56	16.3.4	16-44	27-31	The document states that Friant Division long-term contractors would have a "shortfall of surface water supplies during some dry years". After project implementation, the Friant division contractors will have reduced water supplies and shortages in almost **all** hydrologic year types except the very wettest years. In addition, although water supply reductions in some Wet and Normal Wet years may not result in increased groundwater pumping, they will result in reduced groundwater recharge, which has a direct impact on groundwater levels.
FWA-60	57	16.3.4	16-45	19-21	The analysis assumes that groundwater pumping will be used to make up for surface water shortages, but the CVPM simulations result in only 1,000 acres being fallowed. The projected drawdowns in the the aquifer are not sustainable in some contractor areas within the Friant Division, but the modeling description in Appendix H does not appear to acknowledge that fact. The analysis should not merely assume that replacement pumping is infinitely sustainable, but should look at a worst case scenario where groundwater pumping is not used to make up for all of the water reductions. It is possible, and perhaps likely, that the local groundwater basins will be adjudicated and taken under State Control in the next few decades. If this occurs, groundwater pumping will be restricted, and the assumption that surface water shortages are made up with groundwater pumping would be invalid. A worst case scenario should look at the impacts of the River Restoration with limits on groundwater pumping.
FWA-61	58	19.3.4	19-24	18-22	The assessment of impacts are only identified as percentage of reduction in overall energy generation. Presenting the impacts in financial terms would be more meaningful to the reader. The lost income may be substantial to the local irrigation and water districts that own and operate the powerplants. Also, the hydropower projects at Friant Dam are all owned and operated by water and irrigation districts that will also be impacted by water supply reductions. This assessment should identify whether impacts to the owners of the power plants would be significant.

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	FWA Comment No.	PEIS/R Section	Page #	Line(s)	FWA Comment
FWA-62	59	19.3.4	19-25	1-12	The conclusion that the impact of increased energy use groundwater pumping would not be significant is questionable for two key reasons: 1) the analysis of reductions in water supply understates the increased groundwater pumping significantly, which could affect the total increased energy demand and 2) the determination of significance should be based on increased energy use in the affected area, not the total energy consumption in the agricultural sector.
FWA-63	60	21.2.1	21-17	10-12	The document states: "Reclamation and State Parks are developing a joint resource management plan and general plan (Reclamation and State Parks 2008) that will offer guidance on how to manage the area as a whole." The RMP has been completed.
FWA-64	61	22.3.3	22-67	24-29	The document states that gross revenue would decline in the Friant Division by $2.1 million, and net revenue would decline by $25.9 million. Are 'net' and 'gross' switched?
FWA-65	62	22.36.3	22-68; 22-72; 22-76	Tables 22-36, 22-38 & 22-39	There is no explanation for potential increases in Retail Trade and Accommodation & Food Services that offsets other impacts to such a significant extant that it appears that is the only reason for the determination that impacts are less than significant. Since it is counterintuitive that those two factors would offset all other negative factors in the Friant service area, there needs to be an explanation regarding both the model logic and the reason for the results. If the offset is related to construction in the Restoration Area, it is unreasonable to allow a short term positive impact to offset a long term negative impact in the area most impacted by SJRRP.
FWA-66	63	26.2.2	26-17	13-16	The document states: "Several interim documents, including an Initial Alternatives Information Report (Reclamation and DWR 2005a) and a Plan Formulation Report (Reclamation and DWR 2008), have been or will be prepared before completion of a Feasibility Report and EIS/R, which are anticipated for publication in summer 2010 (DWR 2009d)." Since it's now mid-2011, this sentence should be revised to reflect the current situation.
FWA-67	64	26.6	26-35	24-25	The document states: "Table 26-3 presents a summary of impacts where the impact was determined to make a considerable incremental contribution to an overall significant cumulative impact." There is no Table 26-3, either in Chapter 26 or listed in the Table of Contents.
FWA-68	65	26.6.2	26-40	27-41	The document states: "Reintroducing spring-run Chinook salmon to the San Joaquin River in the Restoration Area could result in compromised genetic integrity and fitness of wild stocks in the major San Joaquin River tributaries (the Merced, Tuolumne, and Stanislaus rivers) if reintroduction includes hatchery stock and hybridization between wild and hatchery fish occurs. Disease organisms could also be carried by brood stock from sources in the Sacramento River basin or by hatchery fish used to supplement the reintroduced spring-run Chinook salmon population. Such a disease outbreak could lead to direct mortality or reduced fecundity among wild fall-run Chinook salmon in the major San Joaquin River tributaries. Wild fall-run chinook salmon in the major San Joaquin River tributaries have already experienced a significant cumulative impact from past and present projects alone. Direct mortality or reduced fecundity resulting from such an outbreak would be considered a potentially cumulatively considerable incremental contribution to this overall significant cumulative impact on wild fall-run Chinook salmon in the San Joaquin River tributaries. This potential cumulative impact would be potentially significant and unavoidable." Yet on page 5-1, lines 11-14, the document states "The Conservation Strategy (fully described in Chapter 2.0, "Description of Alternatives"), which is included in the action alternatives, reduces each potentially significant impact to fisheries to a less-than-significant level, and precludes the need for mitigation measures." And in Chapter 27, section 27.1 ("Significant and Unavoidable Impacts") there is no mention of this potentially significant and unavoidable impact.

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	FWA Comment No.	PEIS/R Section	Page #	Line(s)	FWA Comment
FWA-69	66	26.6.8	n/a	n/a	The cumulative impacts on groundwater levels and the potential to hasten groundwater pumping limitations, such as ordinances or adjudication, are not discussed. Conflicts over groundwater may become more prevalent in the future, especially with the increased groundwater pumping. These types of conflicts can lead to legal battles and the eventual restrictions on groundwater pumping, possibly leading to the fallowing of even more land. This can also require more extensive and costly groundwater monitoring. This impact will depend on the assumption regarding groundwater pumping used to make up for surface water shortfalls.
FWA-70	67	Appendix G - Paragraph 16(b) Actions - Sec 2.1.3	2-6	15-16	Page 2-6 states that 16(b) water flows would average 147,000 AF/year, which is not consistent with Table 3.2.1, which shows 98,000 AF/year.
FWA-71	68	Appendix G - Attachment - Paragraph 16(b) Actions - Se2.2.2	2-16	Table 2-4	The infiltration rates in WMA 5N recharge basins should be zero when the Tule Wetness Index is greater than 41, consistent with the assumptions stated in the text on page 2-14.
FWA-72	69	Appendix G - Attachment - Paragraph 16(b) Actions - Sec 2.2.3	2-24	2-10	The analysis assumes that land spreading on permanent crops will be performed to recharge 16(b) water. It is assumed that 50% of permanent cropland will participate. No basis is provided for the 50%. It is also the consensus of district managers that this is overly optimistic. Many permanent crops could not participate because the local soils have low permeability, slopes are steep, the irrigation system cannot easily accommodate spreading without major modifications, the trees do not go dormant (i.e. citrus), or the trees are susceptible to root rot (i.e. walnuts). In fact, few growers perform land spreading at the present. The land spreading capacity will likely be much less than assumed, with most of the recharge being dependent on dedicated recharge basins. If this assumption materially affects the modeling results for use of 16(b) water, it should be modified or not used at all.
FWA-73	70	Appendix G - Attachment - Paragraph 16(b) Actions - Sec 3.2	3-1	23-28	This section does not specifically state how much additional recharge capacity is needed or was assumed in the Friant Division to accommodate the 16(b) water. It only states that the model accounts for 'an estimate for the availability of end-use facilities', but no details are given.
FWA-74	71	Appendix I - Attachment - Water Operations Action Simulation Results - CalSim	131, 135, 139		Values in some of the tables appear erroneous. For instance, on pages 131, 135, and 139 the percent change in Madera Canal Diversions in some cases is 3,000,000%.

Responses to Comments from Friant Water Authority

FWA-1a: Comment noted. The commenter alludes to "significant concerns," which are detailed in comments FWA-1b through FWA-74. See responses to comments FWA-1b through FWA-74.

FWA-1b: CalSim-II was used in the Draft PEIS/R for modeling changes in CVP/SWP water supply operations because it is the best available tool for this purpose. As a publicly available tool, CalSim-II has a broad and knowledgeable user community, and is widely accepted as the standard for systemwide analysis of surface water operations in the California Central Valley. CalSim-II assigns a classification to surface water supplies delivered via the Friant-Kern and Madera canals (including Class 1, Class 2, Section 215, and Paragraph 16(b) water). The process used to determine classification of these supplies historically is based on highly variable, real-time decisions difficult to capture within an operational model, such as CalSim-II. Because of this uncertainty, the CalSim-II model is designed to simulate the total delivery as accurately as possible, with the classification of these supplies as a secondary priority. Therefore, the CalSim-II simulated quantities of Class 1, Class 2, Section 215, and Paragraph 16(b) may not be a true representation of the classification that would have occurred in any given year. The results were post-processed (as described in Appendix H, "Modeling," of the Draft PEIS/R) to maintain the total CalSim-II simulated deliveries and provide a reasonable distribution of the total deliveries into water allocation categories. The post-processed results were presented in Chapter 13.0, "Hydrology – Surface Water Supplies and Facilities Operations," and Appendix H, "Modeling," Appendix I, "Supplemental Hydrologic and Water Operations Analysis," and Appendix J, "Surface Water Supplies and Facilities Operations," of the Draft PEIS/R.

In recognition of the uncertainty associated with modeling allocations among these categories, subsequent groundwater and economic impact analyses were performed by first allocating the total CalSim-II volumes to the various water management areas using a procedure jointly developed with the Friant Division long-term contractors to produce a more representative analysis. This process is documented in Appendix H, "Modeling," of the Draft PEIS/R.

The comment refers to 72 TAF as the "long-term average reduction" in Class 2 deliveries, and contends that this is an understatement in long-term Class 2 deliveries "by at least a factor of two." It is unclear to what information the comment is referring. Table ES-7 of the Draft PEIS/R shows 72 TAF as the maximum long-term average annual water supply (not reduction in supply) that would be available for recirculation to Friant Division long-term contractors as a result of program-level recapture under Paragraph 16(a), including diversions along the San Joaquin River between the Merced River confluence and in the Delta. Table ES-7 has been revised in response to this and other comments to clarify that this number represents the maximum long-term average annual water supply that would be available for recirculation to Friant Division long-term contractors as a result of program-level recapture under Paragraph 16(a), and is shown as total increase in diversions at existing or new facilities in the San Joaquin River with implementation of program-level actions, in addition to the increase in CVP/SWP exports

at existing Delta facilities with implementation of the project-level actions. See Chapter 4.0, "Errata," of this Final PEIS/R.

The revisions to Table ES-7 presented in Chapter 4.0 of this Final PEIS/R further clarify that the range of potential long-term annual average water supply reduction is calculated as the difference between the long-term average annual water supply deliveries under the action alternatives as compared with the No-Action Alternative. The term "minimal potential reduction" is based on the recirculation pursuant to Paragraph 16(a) of all recaptured water to Friant Division long-term contractors using values shown in the table for program-level evaluation; the term "maximum potential reduction" assumes no recirculation under Paragraph 16(a).

FWA-2: As described in Chapter 12.0, "Hydrology – Groundwater," of the Draft PEIS/R, a process was conducted to select the best available tools for the technical analysis of groundwater in the Friant Division. This tool selection process involved evaluating the following numerical groundwater simulation models for understanding potential regional effects of SJRRP implementation: the CVGSM, WESTSIM, KingIGSM, CVHM, C2VSIM, and HydroGeoSphere. CVGSM was considered outdated and too coarse to complete the analysis. WESTSIM and KingIGSM were found geographically incomplete in the Friant Division, while HydroGeoSphere was still in early stages of development. Although CVHM and C2VSIM were identified as the best candidates for the regional focus of the groundwater analyses presented in the Draft PEIS/R, neither was ready and available for application when the groundwater analysis was initiated.

In light of these limitations, an existing numerical tool (Schmidt Tool) was selected and supplemented with the Mass Balance Tool to evaluate regional groundwater conditions in the Friant Division. The Schmidt Tool is a numerical tool developed by Schmidt (2005a, 2005b) during San Joaquin River litigation that estimates changes in groundwater levels on an annual basis at a district scale in the Friant Division. Because the Schmidt Tool does not have input data available for all of the Friant Division long-term contractors, only a subset of Friant Division long-term contractors is represented using the Schmidt Tool analysis. In response to comments received from Friant Water Authority during development of the Draft PEIS/R that the groundwater conditions in the remaining Friant Division long-term contractor areas needed to be evaluated similarly, the Mass Balance Tool was developed and applied for the remaining Friant Division long-term contractors not represented by the Schmidt Tool. It is recognized that these two methods were developed independent of each other and do not directly correlate. However, the Schmidt Tool was selected as the best available tool for analyzing groundwater conditions within the areas to which it applies, and the Mass Balance Tool was developed as the best available approach for the remaining areas. Together, these tools are the most recently developed and available tools for evaluating groundwater levels specifically in the Friant Division. This approach is sufficient because it applies the best tools available at the time the analysis was conducted for analyzing groundwater conditions within the Friant Division.

The heterogeneous hydrogeology in the Friant Division is influenced by both local and regional conditions that affect aquifer response. Local and regional conditions have combined over the last several decades, leading to drawdown and even overdraft in many areas, as defined by DWR Bulletin 118-03. The Friant Division overlies several groundwater basins, and the boundaries of these groundwater basins do not directly coincide with the boundaries of overlying water districts. For these reasons, the Schmidt Tool and Mass Balance Tool are designed to reflect conditions at a regional resolution (though output from both tools is provided at the district level). Both tools include relationships that provide estimated annual changes in groundwater level in response to estimated changes in groundwater pumping.

The Schmidt Tool uses a relationship that correlates historical changes in groundwater pumping with changes in groundwater levels, effectively accounting for complex characteristics of the aquifer. The Mass Balance Tool incorporates assumptions regarding aquifer characteristics, such as specific yield (or drainable porosity), to estimate changes in groundwater levels in response to changes in groundwater pumping. The aquifer parameters used in the Mass Balance Tool for each of the Friant Division long-term contractor areas are based on available information provided in DWR Bulletin 118-03 subbasin descriptions for each of the underlying groundwater subbasins. DWR Bulletin 118-03 groundwater subbasin descriptions referenced for this analysis include Chowchilla, Delta-Mendota, Kings, Madera, Merced, Tulare Lake, Westside, Tule, Kaweah, Kern County, and Pleasant Valley. The groundwater level for each of the Friant Division long-term contractor areas for the existing condition is based upon values presented by Schmidt for the existing condition or when unavailable, the groundwater level is estimated as the average of all measurements from wells collected in 2005 from within the respective groundwater subbasin reported on the DWR Water Data Library. Many of these subbasins are in a state of overdraft, as defined in DWR Bulletin 118-03. Under the No Action Alternative, the groundwater basins are anticipated to continue to experience a decline in regional groundwater levels.

If all Friant Division long-term contractor areas were evaluated using the Mass Balance Tool, results of the analysis would indicate changes in groundwater levels less than those predicted by the Schmidt Tool in some areas, and greater than those predicted by the Schmidt Tool in other areas. This is a result of assuming a homogeneous system across the areas of investigation and using a single value to represent specific yield across an area. Regardless of the selection of analytical tools, the results would still result in a finding of potentially significant and unavoidable impacts to groundwater levels. Without the availability of a full numerical groundwater model, it is difficult to estimate the influence of pumping spatially across the entire project area. However, for the purposes of evaluating changes in groundwater conditions for each Friant District, these analytical tools provide a sufficient means for making a significance determination for the PEIS/R by incorporating information about historical groundwater conditions in the region to estimate future conditions in response to SJRRP implementation. Historical practice indicates that groundwater use in the region has been limited only by economic considerations and that no evident actions are reasonably foreseeable that would limit groundwater use through regulatory or legal actions. Therefore, the assumed continuation of this practice is reasonable for NEPA and CEQA purposes.

As described in Chapter 16.0, "Land Use Planning and Agricultural Resources," of the Draft PEIS/R, the analysis of Impact LUP-8, Substantial Diminishment of Agricultural Land Resource Quality and Importance Because of Altered Water Deliveries, does not assume that groundwater pumping will be used to make up for all of the water reductions. Rather, it concludes that even with additional groundwater pumping, reduced water deliveries would cause a substantial effect on agricultural land resource quality and importance. 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 described in Appendix H, "Modeling," of the Draft PEIS/R. As part of this integrated modeling, simulations using the 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, "Modeling," of the Draft PEIS/R, pages 6-2 to 6-15). Thus, simulated agricultural production could be impacted by reduced deliveries of surface water, despite the potential availability of additional groundwater. Furthermore, 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.

CVPM evaluates grower response to reduced surface water deliveries by attempting to change cropping patterns or other agricultural practices, additional groundwater pumping, or idling of cropland, through economic analysis. CVPM does not consider infrastructure modifications, such as modifying existing wells or drilling new wells to increase groundwater pumping.

CVPM analyses (which were based on existing irrigated acreage and crop mix) indicate that implementing any of the action alternatives would, on average, reduce irrigated acreages by less than 1,000 acres. This finding is based solely on assumptions and inputs to CVPM regarding surface water availability and cost. Those assumptions include future changes in land and water management practices in the Friant Division, such as higher efficiency water application, sowing different crops, land fallowing, and a reduction in irrigated acreage. CVPM assumptions and inputs did not include issues resulting from replacing some water deliveries with additional groundwater pumping that could affect agricultural productivity. These issues could include the need to install or modify wells at some sites, and limited access to adequate quality groundwater at other sites. Thus, some reduction in irrigated acreage in addition to CVPM estimates could occur. An increase in groundwater pumping for a prolonged period, such as would occur under the No-Action Alternative or the action alternatives, would not only decrease groundwater levels but in some areas could potentially result in upwelling of poorer quality groundwater. Therefore, in the case that additional groundwater pumping is required, irrigated acreages could be reduced by more than 1,000 acres. In part for this reason, the Draft PEIS/R concludes that Impact LUP-8 would be significant and unavoidable.

These potential impacts related to groundwater availability and pumping costs are recognized and evaluated as part of the socioeconomic analysis presented in Chapter

22.0, "Socioeconomics," of the Draft PEIS/R. Conversely, changes in land and water management practices in the Friant Division, as well as water purchases and transfers, could potentially reduce demand for water supply.

For the reasons set forth above, no changes to the PEIS/R are necessary.

FWA-3a: The PEIS/R provides a program-level evaluation of the potential impacts to water quality associated with the recirculation of recaptured Interim and Restoration flows through a regional evaluation of the potential water quality impacts within the Friant Division. As such, the Draft PEIS/R does not explicitly evaluate potential effects of introducing more Delta water into the lower end of the Friant-Kern Canal. Introducing recirculation water into the Friant-Kern Canal would require a site-specific, project-level analysis once additional information is known. During subsequent site-specific analyses of recirculation, the project proponent would work with Friant Division long-term water contractors to formulate alternatives that would avoid, minimize, or reduce adverse impacts to environmental resources, including water quality. Reclamation understands that AEWSD is concerned that the introduction of Delta water into the Friant-Kern Canal would degrade water quality due to high salinity of Delta water and that the buildup of such salts and other constituents of concern in AEWSD's groundwater basin could result in substantial water quality changes that could adversely affect beneficial uses.

Recirculation of recaptured Interim and Restoration flows either at existing facilities or at new infrastructure on the San Joaquin River between the Merced River and the Delta, and associated impacts to water quality, are addressed at a program level in the Draft PEIS/R. The specific locations for delivery of recaptured water in the Friant Division are not known at this time, and 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. At that time, the Implementing Agencies would require compliance with the applicable mitigation measures set forth in the PEIS/R, as well as any new project-level mitigation measures and conditions for approval of subsequent actions.

Based on the significance criteria in the Draft PEIS/R for surface water and/or groundwater quality and anticipated continuation of water exchanges within the Friant Division of the CVP, program-level recapture of Interim and Restoration flows either at existing facilities or at new infrastructure on the San Joaquin River between the Merced River and the Delta are expected to have a less-than-significant impact on water quality.

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. Any action to introduce recirculation water into the Friant-Kern Canal as a component of the Recapture and Recirculation Plan would require additional analysis at a project level of detail.

In response to this comment, text on page 2-36, line 16, of the Draft PEIS/R has been revised to clarify that the Draft PEIS/R does not evaluate the direct discharge of water from south-of-Delta facilities into the Friant-Kern Canal at a project level of detail. If discharge of water from south-of-Delta facilities into the Friant-Kern Canal is proposed as part of the Recapture and Recirculation Plan, it would require further review pursuant to NEPA and/or CEQA.

FWA-3b: Comment noted.

FWA-4: The comment raises several concerns regarding Table ES-7, including (1) the basis of the 250 TAF value; (2) the validity of identifying 59 TAF as a quantity of water available for recirculation, specifically because there has been no project-level analysis on recirculation; (3) the basis of the "Non-Paragraph 16(b) Diversions" value; (4) the basis of the "Maximum Deliveries to Friant" value; and (5) the basis of the "Range of Potential Reduction" value. These points are addressed individually in the numbered responses below:

1. The 250 TAF reported in Table ES-7 as the long-term annual average releases for Interim and Restoration flows is computed from CalSim-II output as the difference between the minimum No-Action Alternative releases from Millerton Lake to the San Joaquin River less releases for flood control (nonflood releases under the No-Action Alternative), and the releases to the San Joaquin River with implementation of the action alternatives less releases for flood control (nonflood releases under the action alternatives).

2. The 59 TAF value referred to in the comment is the maximum long-term average annual water supply that would be available for recirculation to Friant Division long-term contractors as a result of existing Delta diversions only. It is computed in CalSim-II as the total increase in CVP/SWP exports at existing Delta facilities with implementation of the project-level actions in comparison to total CVP/SWP exports at these same facilities and under the same regulatory operating criteria in the No-Action Alternative. The impact analyses in Chapters 4.0 through 26.0 of the Draft PEIS/R evaluate the full range of potential recirculation of Interim and Restoration flows, from recirculation of no Interim and Restoration flows to recirculation of all recaptured Interim and Restoration flows.

3. The category presented in Table ES-7 of the Draft PEIS/R as "Non-Paragraph 16(b) Diversions" has been revised in Chapter 4.0, "Errata," of this Final PEIS/R to provide greater clarity. Instead of combining all Non-Paragraph 16(b) Diversions, Table ES-7 now identifies several specific categories, including "Diversions under Class 1 and Class 2 Contracts," "Diversions for Flood Management," "Diversions for Canal Losses," and "Other Non-Paragraph 16(b) Diversions." The values reported as "Diversions under Class 1 and Class 2 Contracts" are the long-term average annual Class 1 and Class 2 contract deliveries as simulated using CalSim-II. Values reported as "Diversions for Flood Management" are releases from Millerton Lake into Friant-Kern and Madera canals as simulated using CalSim-II. Values reported as "Diversions for Canal

Losses" are releases from Millerton Lake to Friant-Kern and Madera canals to overcome in-canal losses assumed in CalSim-II. Values reported as "Other Non-Paragraph 16(b) Diversions" include 215 delivery as simulated using CalSim-II, and may include some Class 2 delivery that could not be separated out from 215 delivery using CalSim-II.

4. The category presented in Table ES-7 of the Draft PEIS/R as "Maximum Deliveries to Friant" has been revised in Chapter 4.0, "Errata," of this Final PEIS/R to clarify that the values presented are the total delivery from canal diversion and recirculation identified elsewhere in the table. Values shown under this category were incorrectly reported in the Draft PEIS/R and have been revised accordingly.

5. The category presented in Table ES-7 of the Draft PEIS/R as "Range of Potential Reduction" has been revised in Chapter 4.0, "Errata," of this Final PEIS/R to clarify that the values presented are calculated as the difference between the long-term average annual water supply delivery under the action alternatives as compared with the No-Action Alternative. Minimal potential reduction assumes recirculation under Paragraph 16(a) (using values shown for program-level evaluation); maximum potential reduction assumes no recirculation under Paragraph 16(a). Values shown under this category were incorrectly derived in the Draft PEIS/R and have been revised to reflect accurate derivation.

The revisions to Table ES-7 described above are intended to provide clarity, but do not change the analysis or conclusions of the Draft PEIS/R. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-5: All project-level actions described in the PEIS/R are related to the release, conveyance, and recapture of Interim and Restoration flows, and are the sole responsibility of Reclamation, the lead agency under NEPA, with the exception of the action to grant an order by the SWRCB for the downstream protection and rediversion of Interim and Restoration flows (this action is the responsibility of SWRCB, serving as CEQA Responsible Agency). The action referenced in this comment to be taken by Reclamation is to "provide additional funding" to support additional maintenance activities. Whether Reclamation, DWR, or another agency or entity ultimately performs the physical maintenance activities, Reclamation provides the project-level NEPA compliance documentation for the implementation of these activities as a result of the funding provided by Reclamation. As shown in Table ES-3 of the Draft PEIS/R Executive Summary, Reclamation and DWR completed project-level NEPA and CEQA compliance for some activities, including installing seals on the gates of the Chowchilla Bypass Bifurcation Structure and implementing provisions of the Settlement related to Water Year 2010 Interim Flows, before the release of the Draft PEIS/R. As explained in Section 2.1.2, "Phase 1 and Phase 2 Actions" in MCR-4, "Segmentation Under NEPA and CEQA," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, 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. Text has not been revised.

FWA-6: This comment is substantially similar to comment FWA-5. See response to comment FWA-5.

FWA-7: All project-level actions described in the PEIS/R are related to the release, conveyance, and recapture of Interim and Restoration flows, and are the sole responsibility of Reclamation, the lead agency under NEPA, with the exception of the action to grant an order by the SWRCB for the downstream protection and rediversion of Interim and Restoration flows (this action is the responsibility of SWRCB, serving as CEQA Responsible Agency). As states in response to comment FWA-5, whether Reclamation, DWR, or another agency or entity ultimately performs physical maintenance activities related to the project-level actions, Reclamation provides the project-level NEPA compliance documentation for the implementation of these activities as a result of funding provided by Reclamation. Consistent with an MOU between the Settling Parties and the State, the California Natural Resources Agency will play a major role in funding and implementing actions called for in the Settlement and in the Act. DWR will assist in planning, designing, and constructing the physical improvements identified in the Settlement, including projects related to flood protection, levee relocation, and modifications to and maintenance of channel facilities. This includes participation in the actions described at a project level of detail in the Draft PEIS/R. See response to comment FWA-5 for additional information relevant to this comment.

FWA-8: The potential impacts of the release of Interim and Restoration flows are analyzed at a project level in the PEIS/R. The Restoration Flow Guidelines, when finalized, would add specificity to the timing and magnitude of flows. Because implementing the final Restoration Flow Guidelines would not require operations outside of those described in the PEIS/R, the precise details of the final Restoration Flow Guidelines are not required to conduct and complete the project-level analysis in the PEIS/R. Text has not been revised.

FWA-9: The definition of some terminology is necessary to complete an analysis of the potential impacts of implementing the Settlement consistent with NEPA and CEQA. The term “full Restoration Flows” has been consistently applied in SJRRP documents since 2008, and was provided to the Settling Parties for review as part of the project description for the PEIS/R before the release of the Draft PEIS/R. The application of the term as defined is relevant to the description of the alternatives, interpretation of the purpose and need of the project, and analysis of potential impacts. Therefore, the revision to the text in response to this comment does not remove this definition, but clarifies that the definition is made solely for the purposes of the document. It is not intended to reflect agreement among the Settling Parties as to the definition of the term. As stated in the sentence preceding the definition, the release of full Restoration Flows is subject to the provisions for purchased water (including Paragraph 13(c)). Text on page 2-21, lines 13 through 16, has been revised to clarify that the definition of the term “full Restoration Flows” is specific to the PEIS/R. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-10: The section of text referenced summarizes provisions of the Settlement that would affect the implementation of project-level actions described in the PEIS/R, including Paragraph 13 of the Settlement. Paragraph 13(c) is discussed in this section of the PEIS/R as one of the stipulations for releasing full Restoration Flows. Text has not been revised.

FWA-11: This comment is substantially similar to comment FWA-9. See response to comment FWA-9.

FWA-12: Text on page 2-22, line 6, of the Draft PEIS/R has been revised in response to the comment to clarify that the release of Buffer Flows is up to an additional 10 percent. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-13: Text on page 2-22, lines 12 through 14, of the Draft PEIS/R has been revised to include the requested content. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-14: The definition of some terminology is necessary to complete an analysis of the potential impacts of implementing the Settlement consistent with NEPA and CEQA. The text cited in the comment, from Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, contributes to the definition of channel capacity identified for use in the PEIS/R, and does not require interpretation of Settlement language. Other conditions, including those set forth in the Seepage Management Plan (included in the Draft PEIS/R as an attachment to Appendix D) and SWRCB permits, contribute to the definition of existing channel capacity and the set of conditions under which the Settlement would be implemented, as described throughout the Draft PEIS/R. Text has not been revised.

FWA-15: All actions included in the action alternatives would be implemented in a manner consistent with all applicable laws, regardless of whether this is explicitly stated in the Settlement. Therefore, it is not necessary to reiterate this for every action in the action alternatives. Text has not been revised.

FWA-16: A description of the potential Fresno Slough Dam alternative to the Mendota Pool Bypass was not available at the time of preparation of analyses for the Draft PEIS/R. For the Mendota Pool Bypass (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. Reclamation and DWR are currently in the process of developing alternatives for the Mendota Pool Bypass and Reach 2B Channel Improvements Project, consistent with the Settlement. While the Mendota Pool Bypass and Reach 2B Channel Improvements Project describes alternative ways to implement the provisions of Paragraphs 11(a)(1) and 11(a)(2) of the Settlement at a project-level of detail, the Draft PEIS/R describes a broad range of potential implementation without identifying project-level details. As described on page 1-9 of the Draft PEIS/R, 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 Mendota Pool Bypass and Reach 2B Channel Improvements Project to avoid or reduce

impacts, as appropriate. In this way, the Mendota Pool Bypass and Reach 2B Channel Improvements Project and PEIS/R analyses are consistent with each other, the Act, and with NEPA and CEQA.

FWA-17: "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 before 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 as compared with Alternatives A2, B2, and C2 is made for the purposes of alternatives formulation and evaluation. Text in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, revised in response to comment. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-18: While the recommended text revision would be factually correct, the revision is not necessary for clarification of the discussion, description of the alternative, or relevant to the evaluation of potential impacts in subsequent chapters. In the interest of managing the size of the PEIS/R, unnecessary detail is not presented. Text has not been revised.

FWA-19: The action cited on page 2-51, lines 13 through 16, of the Draft PEIS/R, to redirect Interim or Restoration flows into Chowchilla Bypass to reduce flow in Reach 2B and downstream reaches, would only occur as an immediate response in consideration of downstream conditions. This action applies only to Interim and Restoration flows and does not refer to the use of Chowchilla Bypass for the routing of flood flows; for example, when Kings River flood flows are routed to the San Joaquin River through James Bypass. As stated on page 2-91 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." The inclusion of this discussion does not change the analysis or conclusions of the Draft PEIS/R. Text has not been revised.

FWA-20: Text on page 3-2, lines 23 through 25, of the Draft PEIS/R has been revised to reflect the comment. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-21: Text on page 3-2, lines 24 and 25, of the Draft PEIS/R has been revised as suggested by the commenter. See Chapter 4.0, “Errata,” of this Final PEIS/R.

FWA-22: Text on page 3-5, lines 10 through 21, of the Draft PEIS/R has been revised to clarify that Reclamation holds many of the water rights on the San Joaquin River, and through exchange agreements with entities holding other rights on the San Joaquin River (the most significant of these exchange agreements is the San Joaquin River Exchange Contract), diverts water at Friant Dam. With the exception of flood control operations, water released from Friant Dam to the San Joaquin River is limited to that necessary to meet the requirements of the holding contracts along the San Joaquin River between Friant Dam and Gravelly Ford. Under the terms and conditions of the San Joaquin River Exchange Contract, Reclamation is obligated to deliver to the San Joaquin River Exchange Contractors water from the DMC or other sources. If Reclamation is temporarily unable to do so, water is to be diverted from the San Joaquin River in accordance with Article 4.4. of the San Joaquin River Exchange Contract. If Reclamation is permanently unable to deliver water from the DMC or other sources, the San Joaquin River Exchange Contractors shall receive water from the San Joaquin River in accordance with Article 4.c. of the San Joaquin River Exchange Contract. See revision in Chapter 4.0, “Errata,” of this Final PEIS/R.

FWA-23: Text on page 5-2, lines 8 through 10, of the Draft PEIS/R, revised in response to comment. See Chapter 4.0, “Errata,” of this Final PEIS/R.

FWA-24: Text on page 5-5, lines 2 through 4, of the Draft PEIS/R has been revised in response to comment to include acknowledgement of additional hydropower facilities upstream from Friant Dam. See Chapter 4.0, "Errata,” of this Final PEIS/R.

FWA-25: Text on page 5-24, lines 8 through 10, of the Draft PEIS/R, has been revised in response to the comment by removing “upstream from Gravelly Ford.” See Chapter 4.0, "Errata,” of this Final PEIS/R.

FWA-26: Text on page 5-24, lines 38 through 40, of the Draft PEIS/R has been revised in response to the comment by adding “or entrained.” See Chapter 4.0, "Errata,” of this Final PEIS/R.

FWA-27: Text on page 5-60, lines 11 through 20, of the Draft PEIS/R has been revised in response to this comment to clarify that VAMP expired in 2011. The SWRCB indicates that VAMP experimental data will be used to create permanent objectives for the pulse flow period. It is anticipated that new SWRCB objectives will maintain the same level of protection for fisheries as the current program or increase the level of protection, and that such protections will remain in place through 2030. Because considerable uncertainty remains as to the flows that will occur under future flow requirements in the San Joaquin River, the analyses include the continuation of VAMP as a surrogate for these requirements. See Chapter 4.0, "Errata,” of this Final PEIS/R.

FWA-28: As described in MCR-1, “Analysis of Program Feasibility, Potential to Achieve Restoration and Water Management Goals,” in Chapter 2.0, “Master Comment

Responses," of this Final PEIS/R, the PEIS/R does not evaluate the likely efficacy of Settlement actions in achieving the Restoration or Water Management goals, and does not evaluate the feasibility of the Settlement or the interactions of individual Settlement actions on other Settlement actions. Accordingly, the potential impacts of reintroduced Chinook salmon in the study area are not evaluated in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R. However, populations of fall-run Chinook salmon currently exist in the San Joaquin River and its tributaries downstream from the Restoration Area. Accordingly, potential impacts to fall-run Chinook salmon downstream from the Merced River confluence are evaluated in Chapter 5.0 of the Draft PEIS/R. Text has not been revised.

FWA-29: Text on page 5-51, lines 22 through 24, of the Draft PEIS/R has been revised in response to comment. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-30: Text on page 5-60 lines 11 through 20, of the Draft PEIS/R has been revised in response to this comment to clarify that VAMP expired in 2011. The SWRCB indicates that VAMP experimental data will be used to create permanent objectives for the pulse flow period. It is anticipated that new SWRCB objectives will maintain the same level of protection for fisheries as the current program or increase the level of protection, and that such protections will remain in place through 2030. Because considerable uncertainty remains as to the flows that will occur under future flow requirements in the San Joaquin River, the analyses include the continuation of VAMP as a surrogate for these requirements. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-31: Releases of fall-run Chinook salmon conducted to date were designed to provide information on survival of juvenile Chinook salmon during their spring downstream migration through the Restoration Area, as described in the Draft 2011 Juvenile Salmonid Survival and Migration Study (SJRRP 2011j) available at www.restoresjr.net. This study used acoustic telemetry to identify and characterize three limiting factors for juvenile Chinook survival through the Restoration Area: predation, entrainment, and physical habitat. Knowledge of these limiting factors will determine the best approach for initial reintroduction efforts; assist in developing habitat enhancement projects; and help prioritize actions for the reduction or elimination of predation, entrainment, and habitat impacts to survival. These releases were not conducted with the expectation that fall-run would establish a self-sustaining population within the Restoration Area, and therefore do not constitute a reintroduction.

The assumption that reintroduction would occur through passive straying established, for the purposes of impacts assessment, that fall-run Chinook salmon entering the Restoration Area would not pose a risk of comprising genetic integrity of fall-run Chinook salmon populations already established on San Joaquin River tributaries. Active reintroduction of fall-run Chinook salmon, provided reintroduced individuals are selected from an existing San Joaquin River tributary population, would not change the impact assessment (see Impacts FSH-1 through FSH-9, FSH-12 through FSH-14, FSH-22 through FSH-29, and FSH-31 through FSH-39). Active reintroduction of fall-run Chinook salmon from a different river basin was not assessed in the Draft PEIS/R, and

would require additional analyses to determine potential impacts of such an action. Text has not been revised.

FWA-32: This comment is substantially similar to comment FWA-16. See response to comment FWA-16.

FWA-33: Text on page 5-96, lines 1 through 10, of the Draft PEIS/R has been revised in response to the comment and in response to additional information provided by DFG. The revised text clarifies that rainbow trout from the Stanislaus River have been previously detected with *Myxobolus cerebralis* (Modin 1998). *Myxobolus cerebralis* is a parasite that causes whirling disease in salmonids which is transmitted by the oligochaete host tubifex worm (*Tubifex tubifex)* (Wagner 2002). The tubifex worm has been identified as the only known host of *Myxobolus cerebralis*; other genera of oligochaetes have been tested, but did not produce infectivity for whirling disease (Markiw and Wolf 1983). Noteworthy is an aquatic worm harvesting operation at San Joaquin Fish Hatchery. The aquatic worms feed on the solid waste from the hatchery's effluent. DFG conducted preliminary investigations on the species composition at the site in 2009. Findings indicated that the dominant oligochaete harvested at the site is from the Family Lumbriculidae, though a small percentage of tubifex worms were observed (Adelizi pers. comm. 2011).

Although *Myxobolus cerebralis* is present in several watersheds in California, no adverse effects on salmon or trout populations have been observed in California (Modin 1998). In general, rainbow trout are more susceptible to the disease than steelhead (O'Grodnick 1979, Hoffman 1990). Furthermore, susceptibility to infection varies among stocks and individual fish (Markiw 1992). Therefore, the impact would be less than significant. See revisions in Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-34: As described on page 2-13 and in Appendix H, 'Modeling," of the Draft PEIS/R, although VAMP expired in 2011, a VAMP-like condition is expected to continue to be in place. The SWRCB indicates that VAMP experimental data will be used to create permanent objectives for the pulse flow period. It is anticipated that new SWRCB objectives will maintain the same level of protection for fisheries as the current program or increase the level of protection, and that such protections will remain in place through 2030. Because considerable uncertainty remains as to the flows that will occur under future flow requirements in the San Joaquin River, the analyses include the continuation of VAMP as a surrogate for these requirements. Text has not been revised.

FWA-35: Comment noted. Since the NOP was issued (August 22, 2007) and the environmental justice analysis in Chapter 9.0, "Environmental Justice," of the Draft PEIS/R was prepared, environmental justice planning efforts have been initiated by the California Central Valley Tribal Transportation Environmental Justice Collaborative Project and, as the commenter notes, the Fresno Council of Governments. The *Fresno Council of Governments Environmental Justice Plan* was issued in May 2009 (Fresno County Council of Governments 2009) and the *California Central Valley Tribal Transportation Environmental Justice Collaborative Project Final Report* was issued in November 2011 (Miranda-Begay 2010). Both reports were partially funded with grants

from the Federal Highways Administration administered through the California Department of Transportation. Both plans seek to ensure that spending on capital improvement projects equitably deliver accessibility and mobility to minority and low-income populations and Native American Tribes as compared with the general population. These plans inform councils of governments (San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Kern) in the preparation of regional transportation plans and land-use blueprints. This information is provided to inform the public and decision makers about trends in implementing environmental justice; the action alternatives would have no effect on regional transportation planning and no part of the SJRRP would impede the preparation and implementation of the regional plans. The information in these two plans would not change the analysis or conclusions in the PEIS/R; therefore, the text has not been revised.

FWA-36: Text on page 11-11, line 16, of the Draft PEIS/R has been revised in response to the comment to remove reference to the land as “highly developed.” See revisions in Chapter 4.0, "Errata,” of this Final PEIS/R.

FWA-37: Increased vegetation in any portion of the Restoration Area would be monitored in accordance with the Physical Monitoring and Management Plan, and results reviewed in coordination with the Channel Capacity Advisory Committee, as described on page 2-23, lines 17 through 22, of the Draft PEIS/R. Vegetation management actions would follow the measures set forth in Appendix D, "Physical Monitoring and Management Plan,” of the Draft PEIS/R. Through implementation of these measures, in-channel vegetation would not significantly increase flood risk within the Restoration Area.

Additionally, Impact FLD-1 (page 11-31 of the Draft PEIS/R) is potentially significant due to the lack of recent and consistent data regarding channel and levee conditions in the Restoration Area. Implementation of Mitigation Measure FLD-1 (page 11-40 of the Draft PEIS/R) would reduce potential impacts of subsequent site-specific projects to flood management to the less-than-significant level, including vegetation-related flood risk.

FWA-38: Page 12-15, lines 19 through 21, of the Draft PEIS/R states that the pumping estimates are not equivalent to the net groundwater extraction volumes due to inefficiencies associated with pumping. Text was included in the Draft PEIS/R on page 12-16, lines 7 through 9, in response comments received from the Friant Water Authority during development of the document, stating that estimates of gross groundwater pumping for Friant Division long-term contractors presented in tables in the document potentially overestimates the actual groundwater pumping, but historical pumping records are not publically available to validate the estimates. In addition, text was also included in the document in response to comments received from the Friant Water Authority during development of the Draft PEIS/R to indicate that cropping patterns could have changed in recent years, resulting in changes in gross pumping on page 12-16, lines 9 through 11. Text has not been revised.

FWA-39: Text on page 12-52, line 39, of the Draft PEIS/R has been revised in response to the comment to refer to 140.5 TAF. See revision in Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-40: Text on page 12-55, line 19, of the Draft PEIS/R has been revised in response to comment. See revision in Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-41: Text on page 5-15 in Appendix H, "Modeling," of the Draft PEIS/R has been revised in response to comment to include Table 5-6, Mass Balance Tool Parameters, which identifies the parameters used for each district in the Mass Balance calculations. See Chapter 4.0, "Errata," of this Final PEIS/R. Table 5-9 in Appendix H, "Modeling," of the Draft PEIS/R presents the reported changes in groundwater levels and groundwater pumping by the Friant District as presented by Schmidt (2005a, 2005b). This table presents the two points that were used by Schmidt and in this analysis to develop the linear relationships between pumping and change in groundwater levels. The specific equations that were used in the analysis presented in the PEIS/R can be derived by drawing a straight line between the change in pumping and the change in groundwater level to find the slope of the line, and the x- and y-intercepts.

Historical practice indicates that groundwater use in the region has been limited only by economic considerations and that no evident actions are reasonably foreseeable that would limit groundwater use through regulatory or legal actions. Therefore, the assumed continuation of this practice is reasonable for NEPA and CEQA purposes. As described in Chapter 16.0, "Land Use Planning and Agricultural Resources," of the Draft PEIS/R the analysis of Impact LUP-8, Substantial Diminishment of Agricultural Land Resource Quality and Importance Because of Altered Water Deliveries, does not "assume that groundwater pumping will be used to make up for all of the water reductions." Rather, it concludes that even with additional groundwater pumping, reduced water deliveries would cause a substantial effect on agricultural land resource quality and importance.

This comment regarding the use of groundwater tools is substantially addressed in response to comment FWA-2; see response to comment FWA-2 for additional information. The Draft PEIS/R concludes that this impact would be significant and unavoidable.

For the reasons set forth above and in response to comment FWA-2, no further changes to the PEIS/R are necessary.

FWA-42: CalSim-II was used in the Draft PEIS/R for modeling changes in CVP/SWP water supply operations because it is the best available tool for this purpose. As a publicly available tool, CalSim-II has a broad and knowledgeable user community, and is widely accepted as the standard for systemwide analysis of surface water operations in California's Central Valley. CalSim-II assigns a classification to surface water supplies delivered via the Friant-Kern and Madera canals (including Class 1, Class 2, Section 215, and Paragraph 16(b) water). The process used to determine classification of these supplies historically is based on highly variable, real-time decisions difficult to capture within an operational model, such as CalSim-II. Because of this uncertainty, the CalSim-

II model is designed to simulate the total delivery as accurately as possible, with the classification of these supplies as a secondary priority. Therefore, the CalSim-II simulated quantities of Class 1, Class 2, Section 215, and Paragraph 16(b) water may not be a true representation of the classification that would have occurred in any given year. The results were post-processed (as described in Appendix H, "Modeling," of the Draft PEIS/R) to maintain the total CalSim-II simulated deliveries and provide a reasonable distribution of the total deliveries into water allocation categories. The post-processed results were presented in Chapter 13.0, "Hydrology – Surface Water Supplies and Facilities Operations," Appendix H, "Modeling," Appendix I, "Supplemental Hydrologic and Water Operations Analysis," and Appendix J, "Surface Water Supplies and Facilities Operations," of the Draft PEIS/R.

In recognition of the uncertainty associated with modeling allocations among these categories, subsequent groundwater and economic impact analyses were performed by first allocating the total CalSim-II volumes to the various water management areas using a procedure jointly developed with the Friant Contractors to produce a more representative analysis. This process is documented in Appendix H, "Modeling," of the Draft PEIS/R.

The commenter provides no specific documentation of the statement that water supply reductions are underestimated, nor does the commenter provide the basis for their comment or data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts to support their comment. Neither does the commenter suggest an alternative tool or set of assumptions to use in place of those tools and assumptions applied in support of the PEIS/R. The PEIS/R evaluates a range of potential reduction in surface water deliveries to the Friant Division, as presented in Table ES-7 of the Draft PEIS/R. Table ES-7 has been revised in response to this and other comments to provide clarity on the basis for the results presented. See Chapter 4.0, "Errata," of this Final PEIS/R. As revised, Table ES-7 subdivides the simulated long-term average annual Friant-Kern and Madera Canal Diversions at Friant Dam into four categories, including diversions under Class 1 and Class 2 contracts, diversions for flood management, diversions for canal losses, other non-Paragraph 16(b) diversions, and diversions made under Paragraph 16(b) (these categories were presented in the Draft PEIS/R in two categories: non-Paragraph 16(b) diversions and diversions made under Paragraph 16(b)). As shown in the revised table, the simulated long-term average annual water supply deliveries to the Friant Division would change with implementation of the action alternatives, and would be reduced by up to 150 TAF.

For the reasons set forth above, no changes to the PEIS/R are necessary.

FWA-43: As described in Chapter 13.0, "Hydrology – Surface Water Supplies and Facilities 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 final Recapture and Recirculation Plan. One scenario would recirculate all recaptured water, estimated using the approach described above, to the Friant Division, using supplies available after all other south-of-Delta contractual obligations are fulfilled (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. Under the first scenario, the amount of groundwater pumping that could potentially take place to replace surface water supplies would be less than under the second scenario. The text referenced by the commenter, therefore, refers to groundwater pumping under the first scenario as "relatively low," because this scenario would result in a lower impact *relative* to groundwater pumping that could take place under the second scenario (in which groundwater pumping would be expected to be "relatively high"). This terminology is used consistently throughout Chapter 12.0, "Hydrology – Groundwater," of the Draft PEIS/R to distinguish between the maximum and minimum range of potential impacts. Regardless of the amount of water recirculated back to the Friant Division, the resulting impacts to groundwater are found to be potentially significant and unavoidable, as described on page 12-121. The commenter states that these impacts are understated and refers to "prior comments" for the supporting rationale. See responses to comments FWA-41 and FWA-42 for additional information relevant to this comment. Text has not been revised.

FWA-44: As described in Chapter 12.0, "Hydrology – Groundwater," of the Draft PEIS/R, a process was conducted to select the best available tools for the technical analysis of groundwater in the Friant Division. This tool selection process involved evaluating the following numerical groundwater simulation models for understanding potential regional effects of SJRRP implementation: CVGSM, WESTSIM, KingIGSM, CVHM, C2VSIM, and HydroGeoSphere. CVGSM was considered outdated and too coarse to complete the analysis. WESTSIM and KingIGSM were found geographically incomplete in the Friant Division, while HydroGeoSphere was still in early stages of development. Although CVHM and C2VSIM were identified as the best candidates for the regional focus of the groundwater analyses presented in the Draft PEIS/R, neither was ready and available for application when the groundwater analysis was initiated.

In light of these limitations, an existing numerical tool (Schmidt Tool) was selected and supplemented with the Mass Balance Tool to evaluate regional groundwater conditions in the Friant Division. The Schmidt Tool is a numerical tool developed by Schmidt (2005a, 2005b) during San Joaquin River litigation that estimates changes in groundwater levels on an annual basis at a district scale in the Friant Division. Because the Schmidt Tool does not have input data available for all of the Friant Division long-term contractors, only a subset of Friant Division long-term contractors is represented using the Schmidt Tool analysis. In response to comments received from Friant Water Authority during development of the Draft PEIS/R that the groundwater conditions in the remaining Friant Division long-term contractor areas needed to be evaluated similarly, the Mass Balance Tool was developed and applied for the remaining Friant Division long-term contractors not represented by the Schmidt Tool. It is recognized that these two methods were developed independent of each other and do not directly correlate. However, the Schmidt Tool was selected as the best available tool for analyzing groundwater conditions within

the areas to which it applies, and the Mass Balance Tool was developed as the best available approach for the remaining areas. Together, these tools are the most recently developed and available tools for evaluating groundwater levels specifically in the Friant Division. This approach is sufficient because it applies the best tools available at the time the analysis was conducted for analyzing groundwater conditions within the Friant Division.

Lindsay-Strathmore Irrigation District (ID) and Orange Cove ID are located at the eastern boundary of the aquifer, at the base of the Sierra foothills. Rapid thinning of the aquifer formation underlying these specific districts occurs moving toward the base of the Sierra foothills. As a result, associated groundwater levels show dramatic responses to changes in groundwater pumping. The Schmidt Tool does not provide the sensitivity to capture the localized responses across the district areas. Within the Schmidt Tool, annual changes in groundwater levels are calculated as a result of changes in groundwater pumping. Because the regional resolution of the model assumptions is not fully reflective of the unique groundwater conditions within Lindsay-Strathmore Irrigation District ID and Orange Cove ID, small increases to surface water supply deliveries within the Schmidt Tool results in small decreases in groundwater pumping in those districts (as shown in Table 12-16 of the Draft PEIS/R) and create large increases in groundwater levels (as shown in Table 12-17 of the Draft PEIS/R). Although the analyses provide output categorized by district, this output should not be construed as a precise forecast of conditions that would occur at the district level. The Schmidt Tool analyses provide an estimate of trends in groundwater conditions in the region, at a level of detail sufficient for evaluating and comparing alternatives in the PEIS/R. Footnotes to Tables 12-16 through 12-19 on pages 12-72 through 12-75 of the Draft PEIS/R have been revised to reflect this discussion. See Chapter 4.0, “Errata,” of this Final PEIS/R.

For the reasons set forth above, no changes to the PEIS/R are necessary.

FWA-45: The basis of comparison used to determine the potential impacts of implementing the action alternatives includes the conditions in place when the NOP was published in August 2007 (i.e., existing conditions) as well as the reasonably foreseeable actions expected to occur in the study area by 2030 (the No-Action Alternative), consistent with NEPA and CEQA requirements. The 2030 planning horizon for assessment of impacts in the PEIS/R is consistent with long-term operations modeling data, tools, and assumptions; acceptable levels of uncertainty and speculation; and the range of available hydrologic data. Simulations of existing conditions reflect 2005 land-use assumptions governing water supply demand in the Sacramento and San Joaquin valleys.

The results from the analysis indicate that groundwater levels under Existing Conditions and Future-No Action are similar as presented in Tables 12-17, 12-19, 12-21, and 12-23 of the Draft PEIS/R. The output from the Schmidt Tool analysis estimates drawdown (changes in groundwater levels) per year as a function of the change in pumping or in the case of this analysis, the change in surface water deliveries, which is assumed to be supplemented by groundwater pumping. To estimate long-term aquifer drawdown for the PEIS/R, annual drawdown within each district region, estimated from the Schmidt Tool

or the Mass Balance Tool, was applied for a 25-year period (the planning horizon from 2005 to 2030) to estimate the effect at 2030 conditions. Because the results from the CalSim-II analysis show that surface water deliveries under the 2005 level of demand (Existing Condition) and the 2030 level of demand (Future No-Action condition) are virtually the same, there is no change in the long-term aquifer drawdown. The relationships used in the Schmidt Tool for this analysis, and key assumptions associated with using these relationships, are described in Appendix H, "Modeling," of the Draft PEIS/R. Text has not been revised.

FWA-46: Page 12-67 of the Draft PEIS/R describes the data presented in Figures 12-19 through 12-46. The tables in the impact analysis discussion (Tables 12-16 through 12-23) present the same data as presented within the figures with the addition of the results from Alternatives B1 and B2. The figures present results from the No Project (Existing) Condition and No Action (Future) Condition, 16 (a) + 16 (b) Condition (Alternatives C1 and C2), and 16 (b) Only Condition (Alternatives A1 and A2). Text has not been revised.

FWA-47: Text on page 12-121, line 14, of the Draft PEIS/R has been revised in response to the comment to clarify that the potential for accelerated overdraft under the action alternatives could lead to private well owners abandoning or deepening groundwater wells sooner than would occur under the No-Action Alternative if groundwater levels are drawn below existing well screens. Changes in land and water management practices in the Friant Division, including applying higher efficiency water, sowing different crops, fallowing land, reducing irrigated acreage, and increasing water purchases and transfers could potentially reduce demand for water supply. Costs for deepening groundwater wells, lowering pumps in the wells, constructing new groundwater wells, or abandoning wells would be the responsibility of private well owners. See revision in Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-48: Text on page 13-18, lines 6 through 7, of the Draft PEIS/R, has been revised in response to comment to clarify that the flood flows listed are the flood flows that have occurred most recently, and to avoid indicating that there were no flood flows before 1997. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-49: Text on page 13-18, lines 26 through 28, of the Draft PEIS/R has been revised in response to the comment to clarify that Reach 2A has high percolation losses. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-50: Text on page 13-44, lines 21 through 23, of the Draft PEIS/R has been revised in response to this comment to clarify that although VAMP was discontinued in 2011, the No-Action Alternative includes a continuation of a VAMP-like condition. The SWRCB indicates that VAMP experimental data will be used to create permanent objectives for the pulse flow period. It is anticipated that new SWRCB objectives will maintain the same level of protection for fisheries as the current program or increase the level of protection, and that such protections will remain in place through 2030. Because considerable uncertainty remains as to the flows that will occur under future flow requirements in the San Joaquin River, the analyses include the continuation of VAMP as a surrogate for these requirements. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-51: San Luis Canal is not mentioned in the referenced section, because it is not necessary to do so for the purposes of the chapter. Only facilities particularly relevant to discussions in this chapter are described. However, the referenced section acknowledges that other facilities beyond those described do exist. Text has not been revised.

FWA-52: Text on page 13-67, line 12, of the Draft PEIS/R has been revised in response to this comment to clarify that CVPIA Section 3406(c)(1) mandated development of a comprehensive plan that is reasonable, prudent, and feasible. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-53: Comment noted.

FWA-54: Text on page 13-67, line 33, of the Draft PEIS/R has been revised in response to the comment to clarify that the San Joaquin River Agreement expired in 2011. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-55: This comment is substantially similar to comment FWA-1b. See response to comment FWA-1b.

FWA-56: A project-level analysis of water quality impacts to districts that would receive water supplies diverted from the Delta instead of water supplies from Millerton Lake is not included in the PEIS/R because project-level details of the recirculation plan are not available at this time. Instead, recirculation of recaptured Interim and Restoration flows is analyzed at a program level in the PEIS/R. See response to comment FWA-3a for additional information related to this comment, including discussion of the basis for concluding that this program-level impact would be less than significant.

FWA-57: A project-level analysis of water quality impacts to districts that would receive water supplies diverted from the Delta instead of water supplies from Millerton Lake is not included in the PEIS/R because project-level details of the recirculation plan are not available at this time. Instead, recirculation of recaptured Interim and Restoration flows is analyzed at a program level in the PEIS/R. See response to comment FWA-3a for additional information related to this comment, including discussion of the basis for concluding that this program-level impact would be less than significant.

FWA-58: A project-level analysis of water quality impacts to districts that would receive water supplies diverted from the Delta instead of water supplies from Millerton Lake is not included in the PEIS/R because project-level details of the recirculation plan are not available at this time. Instead, recirculation of recaptured Interim and Restoration flows is analyzed at a program level in the PEIS/R. See response to comment FWA-3a for additional information related to this comment, including discussion of the basis for concluding that this program-level impact would be less than significant.

FWA-59: The full sentence in the summary of Impact LUP-8 that the comment refers to is as follows: "On average, however, water deliveries to Friant Division long-term contractors would be reduced, which would result in a shortfall of surface water supplies during some dry years and, thus, would result in additional groundwater pumping, changes in agricultural practices (e.g., crop selection), and idling of cropland."

This statement does not assert that water supplies would only be reduced in dry years, but rather that in some years the reduced water deliveries would result in additional groundwater pumping, changes in agricultural practices, and potential idling of cropland. However, this statement is inconsistent with the text of the full discussion, which does not limit the effects of reduced water deliveries to "some dry years." Therefore, in response to this comment, text on page 16-44, lines 23 through 32, has been revised. See Chapter 4.0, "Errata," of this Final PEIS/R. This revision does not change the analysis or conclusions presented in the Draft PEIS/R.

This comment also makes statements about effects on groundwater levels resulting from reduced water deliveries in all water year types. For discussion of effects of reduced water deliveries to Friant Division long-term contractors on groundwater levels, please see Impact GRW-4. (For the action alternatives, this discussion begins on page 12-121 of the Draft PEIS/R.) Impact GRW-4 discusses the effects of the alternatives on groundwater pumping in Friant Division long-term contractor districts, and uses two different approaches to estimate these effects. Based on these estimates, Impact GRW-4 concluded that groundwater overdraft would increase and the impact would be potentially significant and unavoidable.

FWA-60: As described in Chapter 16.0, "Land Use Planning and Agricultural Resources," of the Draft PEIS/R, the analysis of Impact LUP-8, Substantial Diminishment of Agricultural Land Resource Quality and Importance Because of Altered Water Deliveries, does not assume that groundwater pumping will be used to make up for all of the water reductions. Rather, it concludes that even with additional groundwater pumping, reduced water deliveries would cause a substantial effect on agricultural land resource quality and importance. 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 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, "Modeling," of the Draft PEIS/R, pages 6-2 to 6-15). Thus, simulated agricultural production could be impacted by reduced deliveries of surface water, despite the potential availability of additional groundwater. Furthermore, 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.

Potential changes to ordinances, adjudication, or other plausible changes in regulatory restrictions to groundwater pumping are speculative. Thus, scenarios based on potential future regulatory restrictions have not been modeled or analyzed. Text has not been revised.

FWA-61: Chapter 19.0, “Power and Energy,” of the Draft PEIS/R presents impacts to power and energy. Socioeconomic impacts are evaluated separately in Chapter 22.0, “Socioeconomics.” Sector and regional evaluations of energy availability are appropriate for this resource topic because of the connected nature of power grids within the study area, which provide the ability to redistribute energy in response to demand. Text has not been revised.

FWA-62: The commenter states that, “the analysis of reductions in water supply understates the increased groundwater pumping significantly.” As described in response to comment FWA-42, potential changes in groundwater pumping are accurately assessed in the Draft PEIS/R. See response to comment FWA-24 for additional information relevant to this comment.

The commenter also states that, “the determination of significance should be based on increased energy use in the affected area, not the total energy consumption in the agricultural sector.” The determination of significance for changes in energy consumption within the Friant Division is based on relative percentage of consumption by the agricultural sector for the regional utility providers Pacific Gas and Electric Company (PG&E) and Southern California Edison (SCE). These figures are a valid basis of comparison because they are both region- and agriculture-specific.

FWA-63: Text on page 21-17, lines 10 through 17, of the Draft PEIS/R has been revised in response to this comment to clarify that the resource management plan is complete. See Chapter 4.0, “Errata,” of this Final PEIS/R.

FWA-64: Net and gross are not inadvertently reversed: the simulated reduction of net revenues is greater than the simulated reduction in gross revenues. These results are also summarized in Appendix H, "Modeling," of the Draft PEIS/R, Tables 6-8 and 6-9. Text has not been revised.

FWA-65: Tables 22-36, 22-38, and 22-39 in Chapter 22.0, “Socioeconomics,” of the Draft PEIS/R summarize results of IMPLAN simulations of the effects of operational changes on total industry output and employment. The methodology of these simulations is provided in Appendix H, “Modeling,” of the Draft PEIS/R. Table 22-39 provides this summary for the effects of the project-level action of operating Friant Dam for the release of Interim and Restoration flows. Tables 22-36 and 22-38 provide this summary for Alternatives B1 and B2, and C1 and C2, respectively. Additional results are provided for Alternatives B1, B2, C1, and C2 because program-level actions of these alternatives would alter the operational effects of the action to release Interim and Restoration flows from Friant Dam.

The effects summarized in Tables 22-36, 22-38, and 22-39 are the result of long-term changes in both recreation and water deliveries to the Friant Division long-term contractors. The simulations summarized in these tables did not include short-term effects of construction activities (i.e., program-level actions); and thus, the evaluation of long-term changes as a result of operating Friant Dam for the release of Interim and Restoration flows was not confounded by treating short-term construction-related effects

as long-term effects. The increases in Retail Trade and in Accommodation and Food Services are largely the result of changes in recreational activities.

Text on page 22-67, lines 30 and 31, of the Draft PEIS/R has been revised in response to this comment to clarify that these changes are associated with long-term operations, rather than construction. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-66: Information pertaining to compliance documentation on projects described in Chapter 26.0, "Cumulative Impacts," of the Draft PEIS/R are not updated, as this information would not change the impacts assessment or the inclusion of these projects in the assessment. The Upper San Joaquin River Basin Storage Investigation Feasibility Report and EIS/R has not been released to date. At the time of development of this Final PEIS/R, a revised date of anticipated release was not available. Text on page 26-17, line 16, of the Draft PEIS/R has been revised in response to this comment to remove reference to an anticipated date of release. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-67: Text on page 26-35, lines 24 and 25, of the Draft PEIS/R has been revised in response to this comment to remove reference to Table 26-3. See Chapter 4.0, "Errata," of this Final PEIS/R.

FWA-68: Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R describes the potential for the action alternatives to impact existing populations of fall-run Chinook salmon through hybridization or disease resulting from reintroduction of spring-run Chinook salmon to the Restoration Area (see page 5-74 of the Draft PEIS/R). Overall, these impacts are considered less than significant, but not beneficial. When considered together with the impacts of other past and present projects, these less-than-significant impacts would contribute to an overall significant cumulative impact, as discussed in the text referenced by the commenter. Section 27.1, "Significant and Unavoidable Impacts," of the Draft PEIS/R includes only those impacts that could occur as a result of implementing the Settlement alone; it does not include cumulative impacts.

FWA-69: Potential changes to ordinances, adjudication, or other plausible changes in regulatory restrictions to groundwater pumping are speculative. Thus, scenarios based on potential future regulatory restrictions have not been modeled or analyzed. Text has not been revised.

FWA-70: The references on page 2-6 of Appendix G, "Plan Formulation," of the Draft PEIS/R identify the average annual volume of water available for diversion as 16(b) supplies to be 147 TAF. Table 3.2.1 identifies the average simulated quantity delivered as 16(b) supplies over the contract year to be 98 TAF. The average simulated quantity delivered as 16(b) is less than the total available volume because of constraints in the ability of the Friant-Kern and Madera canals to divert the full available supplies at the time that they are present and, to a lesser degree, modeled limitations in the ability of the Friant-Division to receive and use the supplies when available. Text has not been revised.

FWA-71: As stated on page 2-14 of the Paragraph 16(b) Actions Considered in Program Alternatives Attachment to Appendix G of the Draft PEIS/R, when the Tule Wetness

Index exceeds 41 TAF, it is assumed in CalSim-II that the valley floor has received sufficient precipitation to reduce local demands for typical surface water applications. For the purposes of the PEIS/R, it was assumed that the exceedence of the Tule Wetness Index would remove participation in permanent crop recharge activities, corresponding to an infiltration capacity of zero in Water Management Areas 5-North, 5-South, 6, and 7. This assumption does not apply to groundwater banking facilities which could be developed under Part III of Title X of the Omnibus Public Land Management Act of 2009 (Public Law 111-11) to receive 16(b) supplies, which are assumed to maintain infiltration capacity regardless of the Tule Wetness Index. This is reflected in Table 2-4 for options under Water Management Area 5N, including groundwater banking facilities (options 39, 103, 104) with an infiltration rate above zero when the Tule Wetness Index exceeds 41 TAF, and one non-groundwater banking facility (option 98) with an infiltration rate of zero when the Tule Wetness Index exceeds 41 TAF, which could all take advantage of 16(b) supplies. Text has not been revised.

FWA-72: The analysis assumes participation of half of the permanent crop acreage in the Friant Division in order to bracket an upper boundary of potential recharge within the Friant Division. This assumption is based on the expectation that no more than half of the permanent cropland would participate. The lower boundary is zero participation. Text has not been revised.

FWA-73: The estimate for the availability of end-use facilities refers to the assumption that end-use facilities, such as direct recharge, in-lieu, and permanent crop flooding operations, have full availability to accommodate or use available supplies. This is described in Section 2.2 of Paragraph 16(b) Actions Considered in Program Alternatives Attachment to Appendix G, "Plan Formulation," of the Draft PEIS/R as theoretical instantaneous recharge capacities developed based on data provided by CVP Friant Division long-term contractors and existing reports. Text has not been revised.

FWA-74: The large percent changes occur when a value under the supplemental analysis is compared with a relatively small value under Alternatives A1 and A2 (referred to collectively in the Water Operations Action Simulation Results – CalSim Attachment to Appendix I, "Supplemental Hydrologic and Water Operations Analyses," of the Draft PEIS/R). Large positive percent changes result from increases under the supplemental analysis as compared with Alternative A where the Alternative A values are effectively zero. Similarly, large negative percent changes result from decreases under the supplemental analyses as compared with Alternative A where Alternative A values are effectively zero. Because the Alternative A values are nearly zero, these are rounded to and reported as zero in the corresponding value tables.

Note that similar tables are presented in the Water Operations Modeling Output – CalSim Attachment to Appendix G, "Plan Formulation," of the Draft PEIS/R. In these tables, large percent changes such as those noted in Appendix I by the commenter are adjusted to report 0 percent (for large negative values) to avoid confusion. Text has not been revised.

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3.8.11 Kern County Water Agency

KCWA

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150.3 Environmental

September 16, 2011

Michelle Banonis
U.S. Bureau of Reclamation
2800 Cottage Way, MP-170
Sacramento, CA 95825

RE: San Joaquin River Restoration Program Draft Program Environmental Impact Statement/Environmental Impact Report

Dear Ms. Banonis:

The Kern County Water Agency (Agency) would like to thank you for the opportunity to review and comment on the San Joaquin River Restoration Program Draft Program (Program) Environmental Impact Statement/Environmental Impact Report (DPEIS/R).

The Agency was created by the California State Legislature in 1961 to contract with the California Department of Water Resources for State Water Project (SWP) water. The Agency has contracts with water districts throughout Kern County to deliver SWP water. The Agency also manages and/or is a participant in multiple groundwater banking projects, including the Kern Water Bank, Pioneer Property and Berrenda Mesa banking projects. Therefore, the Agency is uniquely qualified to provide comments on the Program.

Comment 1: Reduction in the availability of Central Valley Project (CVP) water, including Section 215 water, will significantly impact groundwater resources in Kern County.

KCWA-1

The Program requires a substantial increase in the both the rate and volume of water in the San Joaquin River below Friant Dam. As a result, Central Valley Project (CVP) contractors will see a reduction in the availability of surface water supplies over the life of the Program. The reduction in surface water supplies will affect Class I, Class II and Section 215 water availability. On average in Kern County, CVP water from the San Joaquin River accounts for approximately 11 percent of total water supplies. In years when the availability of surface water supplies, including CVP water, is reduced, local water purveyors increase their reliance on groundwater. The DPEIS/R acknowledges that groundwater pumping is likely to significantly increase. Further, the DPEIS/R states that the impacts to groundwater are potentially significant. As a result of increased

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groundwater pumping, the DPEIS/R indicates there will likely be impacts to air quality. Additionally, the DPEIS/R indicates that an environmental justice analysis revealed that this impact would disproportionately affect minority and/or low income populations in the region.

KCWA-1 cont'd

Despite stating that the Program will significantly impact groundwater resources in Kern County, the DPEIS/R does not identify mitigation measures to reduce regional impacts to groundwater resources, or the subsequent air quality impacts from increased groundwater pumping. Therefore, the DPEIS/R should be amended to include mitigation measures to reduce impacts to groundwater resources.

Comment 2: The increase in San Joaquin River flows into the Sacramento-San Joaquin Delta (Delta) may result in additional restrictions on CVP and SWP operations that are not contemplated in the DPEIS/R.

KCWA-2

The DPEIS/R acknowledges that the increase in flows to the Delta will alter flow rates and water quality in the Delta. Additionally, the DPEIS/R indicates that the Program will have less than significant impacts on the SWP and CVP operations in the Delta, with the primary impacts being changes to the timing and rate of pumping. However, the DPEIS/R fails to analyze the potential for new regulations as a result of the Program's potential to alter the hydrology of the Delta. Therefore, the DPEIS/R should be amended to include an analysis of the potential impacts to SWP and CVP operations in the Delta.

Comment 3: The DPEIS/R erroneously indicates that the introduced salmon population should be considered an experimental population under the Endangered Species Act (ESA).

KCWA-3

The DPEIS/R indicates that application has been submitted to the U.S. Fish and Wildlife Service (USFWS) for the reintroduction of an experimental population of salmon into the San Joaquin River. However, under Section 1539(j) of the ESA, experimental populations are required to be "wholly separate geographically from nonexperimental populations of the same species." As is typical of salmon species, the introduced salmon are expected to migrate downstream, eventually entering the Delta. There is no means of ensuring that the introduced population remain "wholly separate geographically" from existing salmon populations. Consequently, it is erroneous to label the reintroduced salmon population as an experimental population. Therefore, the DPEIS/R should be amended to accurately describe the salmon population.

Comment 4: The DPEIS/R does not analyze the potential impacts resulting from the introduction of a population of salmon.

KCWA-4

The DPEIS/R states that the reintroduction of an experimental population of salmon will be analyzed in future "project-specific" NEPA, and possibly CEQA, documents (page 2-43); however, Table ES-5, page 20, identifies that the reintroduction of salmon is a programmatic element requiring program level NEPA and CEQA compliance. Despite this, the DPEIS/R does not analyze the impacts of restoring an experimental population of salmon. Experimental populations, under Section 1539(j) are managed as threatened species. As a result, introducing salmon could lead to additional California ESA and ESA restrictions to San Joaquin River and Delta water users alike. However, the DPEIS/R does not contain sufficient information to analyze the impacts of the reintroduction of salmon to the San Joaquin River. Further, there is no discussion or analysis of long-term impacts to water users should the experimental

KCWA-4 cont'd

population status be removed in the future. Therefore, the DPEIS/R should be amended to include a meaningful discussion and analysis of the potential impacts associated with the reintroduction of salmon.

Comment 5: The DPEIS/R does not identify available capacity in the Delta to move recaptured Program water.

KCWA-5

Alternatives A1 and A2 analyze the ability to recapture Program water in the Delta using only existing facilities. Additionally, Alternatives B1 and B2 include the recapture of Program water in the Delta, as well as the San Joaquin River. Further, the DPEIS/R indicates capacity in SWP and/or CVP facilities could be utilized, when available, to recapture and deliver Program water. However, the DPEIS/R fails to identify whose capacity in either system will be utilized. Additionally, SWP and CVP Delta facilities already have capacity limitations due to regulatory restrictions and equipment maintenance. As a result, capacity in the system to move non-SWP and/or non-CVP water in the system is not likely to occur. As a result, the use of SWP and CVP capacity to recapture and deliver Program water is not a feasible option. Therefore, the DPEIS/R should be amended to either remove the use of Delta facilities or to include a discussion of the infeasibility of Delta recapture and the need for alternate means of recapture and delivery of Program water.

Comment 6: The DPEIS/R indicates additional analyses will be incorporated into the final document, but will not be available for subsequent public review.

KCWA-6

The DPEIS/R states that additional analyses are currently being performed to analyze the potential impacts of the Program alternatives under the 2008 USFWS CVP/SWP Operations Biological Opinion and the 2009 National Marine Fisheries Service CVP/SWP Operations Biological Opinion. Additionally, the DPEIS/R states that the results of these analyses are likely to change the anticipated effects of the Program alternatives. Further, the DPEIS/R states that the analyses will only be included in the Final PEIS/R. Section 15126.6(d) of the CEQA Guidelines requires an EIR to contain "... sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project." Absent the inclusion of the analyses in the DPEIS/R, there is no way for entities reviewing the DPEIS/R to draw meaningful conclusions regarding the potential impacts of the alternatives on SWP and CVP operations. Additionally, inclusion of the analyses in the Final PEIS/R does not allow the responsible agencies, potentially affected agencies or the public at large the opportunity to fully review and comment on the proposed Program. Therefore, the DPEIS/R should be amended to include the analyses, when complete, and recirculated for public review.

Comment 7: The DPEIS/R fails to identify the environmentally superior alternative as required by CEQA.

KCWA-7

Section 15126.6(e) of the CEQA Guidelines requires the environmentally superior alternative to be identified. The DPEIS/R does not identify the environmentally superior alternative as required by CEQA. Therefore, the DPEIS/R must be amended to include a description of the environmentally superior alternative.

If you have any questions, please contact Curtis Creel of my staff at (661) 634-1400.

Sincerely,

James M. Beck
General Manager

Responses to Comments from Kern County Water Agency

KCWA-1: As described in Chapter 12.0, "Hydrology – Groundwater," of the Draft PEIS/R the San Joaquin Valley Groundwater Basin is in a state of overdraft, and groundwater levels are expected to continue in a downward trend under the No-Action Alternative. Because the action alternatives would potentially increase reliance on groundwater, it is anticipated that the action alternatives would increase overdraft and accelerate the downward groundwater level trend, resulting in adverse impacts to groundwater levels and quality. There are no available feasible mitigation measures to reduce the impact and, therefore, impacts to groundwater levels and quality would remain potentially significant and unavoidable. As noted by the commenter, this impact could disproportionately accrue to minority and low-income populations, in part because the areas where this impact could occur also have high proportions of minority residents and low-income residents, as described beginning on page 9-39 of the Draft PEIS/R. Project-level actions, including the release if Interim and Restoration flows and an associated increase in groundwater pumping, would result in less-than-significant impacts to air quality. As described under Impact AIR-6 on page 4-35 of the Draft PEIS/R, pollutant emissions resulting from project-level actions under any action alternative would not exceed SJVAPCD standards, and would therefore be less than significant. Text has not been revised.

KCWA-2: The Draft PEIS/R does not evaluate potential impacts from new regulations as a result of Settlement-related changes to the hydrology of the Delta, because no new regulations are anticipated. Should new regulations concerning CVP and SWP operations in the Delta come into effect in the future, recapture of Interim and Restoration flows would be subject to those regulations, as described on page 2-32 of the Draft PEIS/R. Recent changes in the regulations governing CVP and SWP operations in the Delta are assessed in Appendix C, "CVP/SWP Long-Term Operations Sensitivity Analysis," of this Final PEIS/R. Text has not been revised.

KCWA-3: According to Title 50 CFR, Part 17, Section 17.80, "The term experimental population means an introduced and/or designated population (including any offspring arising solely therefrom) that has been so designated in accordance with the procedures of this subpart but only when, and at such times as the population is wholly separate geographically from non-experimental populations of the same species. Where part of an experimental population overlaps with natural populations of the same species on a particular occasion, but is wholly separate at other times, specimens of the experimental population will not be recognized as such while in the area of overlap. That is, experimental status will only be recognized outside the areas of overlap. Thus, such a population shall be treated as experimental only when the times of geographic separation are reasonably predictable; e.g., fixed migration patterns, natural or man-made barriers. A population is not treated as experimental if total separation will occur solely as a result of random and unpredictable events."

Under this regulation, reintroduced spring-run Chinook salmon in the San Joaquin River would be considered experimental, as no population of this species currently exists in the San Joaquin River. These individuals will be considered experimental when in the San Joaquin River Basin, where they are considered wholly separate from spring-run Chinook

salmon populations in the Sacramento River Basin. San Joaquin River Basin and Sacramento River Basin populations would geographically overlap in the Delta during migration to the Pacific Ocean. When these populations overlap geographically, the reintroduced population would no longer be considered experimental.

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

KCWA-4: As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R the reintroduction of spring-run and fall-run Chinook salmon is included in all action alternatives as a program-level action, and is evaluated in Chapters 4.0 through 26.0 at a program level of detail. The Implementing Agencies acknowledge that additional analysis pursuant to NEPA and/or CEQA will be required in the future for activities addressed at a program level in this Draft PEIS/R, after specific project details are identified. At that time, the Implementing Agencies would require compliance with the mitigation measures and performance standards set forth in this PEIS/R as conditions for approval of subsequent actions. For further information related to Federal and State Special-Status Species Concerns, see also MCR-6, "Third-Party Concerns and Outreach," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R."

The commenter states that, "there is no discussion or analysis of long-term impacts to water users should the experimental population status be removed in the future." It is assumed that the commenter is referring to potential restriction on diversions that would be associated with entrainment of a list species. Under the action alternatives, entrainment at existing water supply diversions could occur within three regions – the Restoration Area, the San Joaquin River between the Merced River and the Delta, and the Delta. These three areas are individually addressed below.

Impact FSH-7 ("*Changes in Diversions and Entrainment in the San Joaquin River Between Friant Dam and the Merced River*") on page 5-72 of the Draft PEIS/R describes the effects on fisheries from entrainment in the Restoration Area. Program-level actions, including construction of properly functioning fish screens, are included under all action alternatives to reduce entrainment of listed and non-listed fish species, as described on pages 2-46 and 2-47 of the Draft PEIS/R. Further, consistent with 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 ESA, 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) of the Act, except to the extent that such costs are already or are further willingly borne by the State of California or by the Third Parties.

Risk of entrainment between the Merced River and the Delta as a result of changes in diversion is discussed on pages 5-75 and 5-76 of the Draft PEIS/R, under Impact FSH-12. As described on page 5-75 of the Draft PEIS/R, increased pumping along the San Joaquin River under Alternatives B1, B2, C1, and C2 may increase the potential for entrainment of juveniles of representative fish species into the pumps and canals, resulting in losses because of mortality, or displacement from suitable habitat. Additionally, it could reduce

attraction flow for fall-run Chinook salmon and Central Valley steelhead to the tributaries. However, all diversion facilities would be operated in accordance with existing operating criteria, prevailing and relevant laws, regulations, BOs, and court orders in place at the time the program-level actions were performed. These operating criteria and fish screen designs would reduce the risk of entrainment, and thus reduce the impact to fisheries to a less-than-significant level, and resulting in minimal to no affects to water users between the Merced River and the Delta.

The analyses presented in Chapter 5.0, "Biological Resources – Fisheries," of the Draft PEIS/R include a qualitative analysis of the potential changes in diversions and entrainment in the Delta. This qualitative analysis is identified on page 5-102 for Impact FSH-35 (Changes in Diversions and Entrainment in the Delta); and pages 5-107 through 5-111 for Impact FSH-39 (Changes to Delta Inflow and Flow Patterns in the Delta). These impact statements indicate that increased San Joaquin River inflows, and ratios of the inflows to reverse flows predicted for Alternatives A1 through C2, are expected to reduce the number of fish that would move through the south Delta, thus reducing the risk of entrainment. As stated in Impact FSH-39, Alternatives A1 through C2 would increase San Joaquin River inflows and reverse Old and Middle river flows, and ratios of the inflows to reverse flows. These outcomes would likely result in lower occurrences of most Delta fish species in the south Delta, which would provide a beneficial effect to many Delta fish species, including Central Valley fall-run Chinook salmon, Central Valley steelhead, Sacramento splittail, longfin smelt, and delta smelt. While the potential for entrainment of reintroduced spring-run Chinook salmon is not evaluated in the Draft PEIS/R, it can be inferred from this analysis that increased San Joaquin River inflows, and ratios of the inflows to reverse flows predicted for Alternatives A1 through C2, would also minimize the number of spring-run Chinook salmon that would be at risk of entrainment as a result of diversions.

As described on pages 5-101 through 5-104 of the Draft PEIS/R, increased reverse flows in upper Old and Middle rivers and higher levels of pumping to recapture the increased inflow would potentially increase entrainment and predation risks and delay migration for fish, including fish originating from the central Delta. These impacts are covered entirely through the focus on south Delta where fish impacts would be greatest. As described in Impacts FSH-35 (page 5-101) and FSH-39 (page 5-107), it is anticipated that the increased San Joaquin River inflow due to Interim and Restoration flows would offset the impact by reducing the number of fish that are likely to migrate through the south Delta, resulting in in no net change in fish entrainment and a less-than-significant impact. When impacts to special-status fish species from pumping threaten to exceed the limits set by the USFWS 2008 CVP/SWP Operations BO and the NMFS 2009 CVP/SWP Operations BO or other regulations in effect at the time, Reclamation would implement actions to reduce pumping and/or inflow. The potential for this finding to change with implementation of the 2008 USFWS CVP/SWP Operations BO and 2009 NMFS CVP/SWP Operations BO (2009a) is evaluated in Appendix C, "CVP/SWP Long-Term Operations Sensitivity Analysis," of this Final PEIS/R. Appendix C concludes that while implementation of the BOs would affect the timing and quantity of water diverted under the action alternatives, the risk of entrainment as a result of the action alternatives would

not change from the Draft PEIS/R, and would remain less than significant. Text has not been revised.

KCWA-5: As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, no change in operational requirements would be required to recapture Interim and Restoration flows in the Restoration Area or in the Delta under the regulatory compliance standards in place at the time water is recaptured. Recirculation would be subject to available capacity and existing operational constraints within CVP/SWP storage and conveyance facilities. As described in Chapter 13.0, "Hydrology – Surface Water Supplies and Facilities Operations," of the Draft PEIS/R, during spring and summer, water demands and schedules are greater than the capacity of Reclamation and DWR to pump water from the Jones and Banks pumping plants; water stored in San Luis Reservoir is used to make up the difference. Since San Luis Reservoir receives very little natural inflow, water must be stored during fall and winter when the two Delta pumping plants can pump more water from the Delta than is needed to meet water demands. The CVP share of San Luis Reservoir is typically at its lowest in August and September and at its maximum in April. The SWP contracts between DWR and individual State water contractors define several classifications of water available for delivery under specific circumstances. All classifications are considered "project water."

The quantities of water that could be recaptured at existing CVP/SWP facilities in the San Joaquin River and in the Delta were evaluated using historical hydrologic data and regulatory constraints, as described in Appendix H, "Modeling," of the Draft PEIS/R. Results indicate that capacity is available under existing physical and regulatory constraints to allow recapture of some portion of the Restoration Flows at existing CVP/SWP facilities in the San Joaquin River and in the Delta. See Table 13-109 of the Draft PEIS/R for a summary of the anticipated changes in simulated exports at Jones and Banks pumping plants under the program alternatives.

Text has not been revised.

KCWA-6: 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 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 RPAs 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, which are based on the conditions evaluated in the 2005 USFWS and 2004 NMFS BOs. The CalSim-II simulations for the sensitivity analyses presented in Appendix C to the Final PEIS/R were developed to identify the range of potential operation changes that could occur under any RPA implementation scenario. CalSim-II output from these simulations was 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.

KCWA-7: The environmentally preferable/superior alternative is identified as Alternative B2 in Chapter 27.0, "Other NEPA and CEQA Considerations," of the Draft PEIS/R unless a future study of the benefits of floodplain restoration in Reach 4B1 determines that Alternative B1 is the environmentally preferable/superior alternative. Text has not been revised.

3.8.12 Kings River Fisheries Management Program

KRFMP

September 19, 2011

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

Re: Comments on San Joaquin River Restoration Program Draft Program Environmental Impact Statement / Environmental Impact Report

Dear Ms. Forsythe,

Please accept the following comments on the SJRRP PEIS/EIR on behalf of the Kings River Fisheries Management Program (KRFMP), the Kings River Conservancy, the Public Advisory Group to the KRFMP, the El Rio Reyes Trust, the Fly Fishers for Conservation – Fresno Chapter, and the Kaweah Fly Fishers.

The Kings River Water Association (KRWA) is an organization representing the 28 public districts and canal companies with Kings River water rights and the administrator of those entitlements and water release operations. The Kings River Conservation District (KRCD) is a multi-county special district created in 1951 to manage resources within the watershed on the lower Kings River. KRCD serves constituents in an area comprising 1.2 million acres in portions of Fresno, Kings and Tulare counties. These two agencies partner with the California Department of Fish and Game (CDFG) in the Kings River Fisheries Management Program, which is dedicated to improving and enhancing the Kings River watershed and fishery habitat while maintaining its beneficial uses, recognizing that a healthy river is important to the region's well being and future quality of life.

KRFMP-1

Together, the KRFMP and other signatories offer the following comments on the San Joaquin River Restoration Program's draft Program Environmental Impact Statement/Environmental Impact Report. A fundamental premise of the SJRRP is that the Program is to have no impacts on parties other than Friant Division contractors and their water users. That core principle is embedded in the stipulation that resulted in the SJRRP, the legislation that implemented that stipulation, and in a number of other agreements and assurances provided as the SJRRP was being developed. The KRFMP and signing parties provide these comments as potentially affected third parties under both the National Environmental Policy Act and the California Environmental Quality Act.

1) Multiple inaccuracies exist in Chapter 21.0, the section on Recreation, that will result in third party impacts which the settlement and its implementation are required to avoid.

KRFMP-1 con't

Page 21-34, lines 4-22 state that an estimated 18,000 anglers per year, the majority of which are presumed to be trout anglers, utilize Lost Lake Park, which would likely be closed as a result of the presence of salmon in the area. These anglers would then be displaced, and looking for a new site to fish in.

Page 21-34, lines 23-35 suggest the Kings River below Pine Flat Dam as an area with available trout fishing opportunities in the general area of the San Joaquin River. These lines also highlight the work of the Kings River Fisheries Management Program and the Kings River Conservancy in enhancing the fishery and access to the fishery. Lines 36-37 conclude "These fisheries and recreation access improvements suggest that the capacity exists at the Kings River to absorb trout angling activity that would be displaced from Reach 1."

The addition of 18,000 plus anglers (considering the estimate for Lost Lake Park ALONE was 18,000) per year, to an already very heavily used Kings River System, represents an enormous third party impact redirected to the Kings River Fisheries Management Program (KRFMP) and its signatories. The data from all of the monitoring reports of the KRFMP (Annual Technical reports from 1999 through the 2010 program year) indicate that current angling pressure is an issue that the KRFMP is attempting to work through. Therefore, in no way can this indicate "that the capacity exists at the Kings River" to absorb additional angling pressure of this magnitude.

Before simply shifting the angling pressure entirely to the Kings River as suggested by this document, the San Joaquin River Restoration Program should endeavor to the enhancement of other potential on and off-stream options near the San Joaquin River itself.

KRFMP-2

2) Page 21-34, lines 4-22 state that an estimated 18,000 anglers per year, the majority of which are presumed to be trout anglers, utilize Lost Lake Park, which would likely be closed as a result of the presence of salmon in the area. These anglers would then be displaced, and looking for a new site to fish in.

Page 21-35, lines 7-25 outline the potential Mitigation Measures the program will take due to the lost fishing opportunities on the San Joaquin, and all of the alternatives indicate the mitigation measures as "Enhance Fishing Access and Fish Populations on the Kings River below Pine Flat Dam." The section concludes with a statement that "This impact would be less than significant with mitigation."

At best, the quoted lines are misleading, and at worst simply untrue. Considering not a single party listed in the mitigation measures (Kings River Water Association, Kings River Conservation District, Kings River Fisheries Management Program, Kings River Conservancy) was even contacted, it is unclear how the EIS/EIR came to the conclusion that this situation is even mitigatable, particularly when no level of detail has been provided. The addition of 18,000 plus anglers per year represents an enormous third

KRFMP-2 con't

party impact to the Kings River and all the agencies that have been working for multiple years in a successful fashion to enhance this resource. It appears that redirecting huge numbers of anglers to the Kings River – which is already heavily fished and likely at or beyond its maximum capacity already – will require a substantial investment in stocking, enforcement and projects in order to be mitigated, if mitigation is even possible.

Before simply shifting the angling pressure entirely to the Kings River as suggested by this document, the San Joaquin River Restoration Program should endeavor to the enhancement of other potential on and off-stream options near the San Joaquin River itself.

3) In Chapter 2.0, Description of Alternatives, on page 2-39, lines 20-30, a Mendota Pool Bypass is discussed. Lines 25-28 state "The bifurcation structure would include a fish screen or other positive fish barrier to direct fish into the bypass channel and minimize or avoid fish passage from Reach 2B to the Mendota Pool." This action addresses the issue of downstream migration of smolt, but not upstream migration of returning adults, which could result in fish passage from Reach 3 to the Mendota Pool.

Page 21-34, lines 4-22 state that an estimated 18,000 anglers per year, the majority of which are presumed to be trout anglers, utilize Lost Lake Park, which would likely be closed as a result of the presence of salmon in the area. These anglers would then be displaced, and looking for a new site to fish in.

Page 21-35, lines 7-25 outline the potential Mitigation Measures the program will take due to the lost fishing opportunities on the San Joaquin, and all of the alternatives indicate the mitigation measures as "Enhance Fishing Access and Fish Populations on the Kings River below Pine Flat Dam." The section concludes with a statement that "This impact would be less than significant with mitigation."

KRFMP-3

It is necessary to install a similar "fish screen or other positive fish barrier to direct fish into the bypass channel and minimize or avoid fish passage" in the opposite direction as well, from Reach 3 to the Mendota Pool. Studies have shown that straying among salmon species is not uncommon. Quinn *et al* (1991) found straying rates of between 9.9% and 27.5% in fall run Chinook salmon *Oncorhynchus tshawytscha* originating from lower Columbia River hatcheries. Installation of a positive fish barrier or fish screen at this location would be supported by language in multiple sections of Chapter 5.0, Biological Resources – Fisheries, as well as language in the San Joaquin River Restoration Settlement Act.

Quinn T.P. , R.S. Nemeth, and D.O. McIsaac. 1991. Homing and straying patterns of fall Chinook salmon in the lower Columbia River. Transactions of the American Fisheries Society 120:150-156.

The Mendota Dam at the Mendota Pool should not be considered a positive fish barrier from Reach 3 to the Mendota Pool. The document itself references the presence of salmon in the San Joaquin River System as late as the 1990s, and logically the only way these salmon could have reached the system beyond Reach 3 would have been through the Mendota Dam and into the pool.

Without such a barrier, a significant percentage of the returning fish could find their way into the James Bypass during periods when Kings River floodwater is discharging into the Mendota Pool since, during those periods, the majority of the water entering Mendota Pool is from the Kings River. While that only occurs once every 4-5 years on average, the impacts on the affected year classes of returning fish could be significant and could materially impact the SJRRP's potential for success. That impact is not considered by the EIS/EIR. Moreover, if returning salmon are allowed to stray into the false pathway created by Kings River flood flows, closure of the Kings River to fishing could occur in the same fashion as the closures being suggested on the San Joaquin River by the SJRRP. Such a closure would not only create an enormous impact on the Kings River Fisheries Management Program, which would eliminate the mitigation proposed by the EIS/EIR for the aforementioned closure of the San Joaquin River system. As a result, failure to construct a barrier to prevent straying of salmon into the Kings River system could create additional impacts not considered by the EIS/EIR and could preclude the single mitigation measure proposed for the closure of the San Joaquin River to fishing.

KRFMP-3 con't

4) Page 21-49, lines 12-20 address the "Effects on Swimming or Wading and Fishing Opportunities from Increased Flow in the Restoration Area." Lines 28-30 state "Flows of 1,500 cfs and above would make swimming at Reach 1 sites undesirable and potentially more hazardous compared to swimming during baseline flows of 300 cfs or less." Finally, on page 21-50, lines 3-7 state, "Because the scheduled Interim and Restoration flows of 1,500 cfs and greater would occur only during March and April in most years, and because similar swimming and fishing would remain in the vicinity of Reach 1, as well as on the Kings River and at Millerton Lake, significant adverse effects on these activities are not likely. Therefore, this impact would be less than significant."

KRFMP-4

Diverting swimmers and waders to the Kings River during the months of March and April would result in immense public safety issues, representing yet another third party impact. Flows in the Kings River during the months of March and April in most years are extremely cold and are at or above the 1,500 cfs level that according to this program document results in swimming conditions that are "undesirable and potentially more hazardous."

5) Pages 21-50 through 21-53 describe the "Effects on Boating Opportunities from Increased Flow in the Restoration Area." Page 21-51, lines 40-42 outline, "a reduction of boating opportunities that could occur from mid-March through April during all but Wet water years," due to the high flows. Page 21-52, lines 2-4 state, "boaters who could be

KRFMP-5

displaced from the San Joaquin River because of high spring flows also have available to them similar boating opportunities on the lower Kings River below Pine Flat Lake."

KRFMP-5 cont'd

As mentioned above in the swimming and wading section, the Kings River during the months of March and April in most years have similar high spring flows that are mandated by the SJRRP. Additionally, the Kings River below Pine Flat Lake has several diversion structures within the river itself that could be a hazard to boaters unaware of their presence. Simply suggesting that a boater could replace their San Joaquin River experience on the Kings River would result in public safety issues, representing still another third party impact.

KRFMP-6

6) Page 21-52, lines 9-11 state "It appears that ample capacity exists on the Kings River to absorb what is most likely a low number of spring-time boaters that could be displaced from the San Joaquin River." Lines 29-31 on the same page state, "The program will also inform the public of similar alternative boating opportunities in the area, such as those available on the lower Kings River below Pine Flat Reservoir." And finally, page 21-53, line 27 states, "With mitigation, this impact would be less than significant."

The assumption of ample capacity on the Kings River to absorb spring-time boaters is a faulty one. The very reason for displacing San Joaquin River boaters, "high spring-time flows", already exists on the Kings River. Thus, informing the public of alternative boating opportunities on the Kings would result in public safety issues, representing another third party impact.

Thank you for your consideration of our comments. If you have any questions in regards to these comments, please direct these to:

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Kent Kinney
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El Rio Reyes Trust

Jeff Trafican
President
Fly Fishers for Conservation – Fresno Chapter

Wayne Thompson
President
Kaweah Fly Fishers

Responses to Comments from Kings River Fisheries Management Program

KRFMP-1: The commenter raises several concerns regarding text in Chapter 21.0, "Recreation," of the Draft PEIS/R. First, in reference to Impact REC-4, the commenter states, "The addition of 18,000 plus anglers (considering the estimate for Lost lake Park ALONE was 18,000) per year, to an already very heavily used Kings River System, represents an enormous third party impact," (emphasis in original). Impact REC-4 as described in the Draft PEIS/R incorrectly reported the estimated number of anglers visiting Lost Lake Park annually, located in Reach 1A, as approximately 18,000. The estimated number of anglers is approximately 1,600. The text on page 21-34, lines 7 through 12, has been revised in Chapter 4.0, "Errata," of this Final PEIS/R to clarify that most of the approximately 1,600 anglers visiting the park annually do so multiple times each year, for a total of approximately 18,000 angler days. This estimated number of angler days, based on a survey conducted by Houser and North in 2000, refers to the number of estimated visits to the park made by individuals to fish (angler days). These data represent the best available information on recreational use in Reach 1 and provide a reasonable estimate of angler days for the reach, given that most trout fishing occurs from the riverbank in Lost Lake Park.

The commenter also states that, "Before simply shifting the angling pressure entirely to the Kings River as suggested by this document, the San Joaquin River Restoration Program should endeavor to the enhancement of other potential on and off-stream options near the San Joaquin River itself." Mitigation Measure REC-4 would enhance public fishing access and trout populations on the Kings River below Pine Flat Dam to better accommodate anglers displaced from Reach 1 who choose to travel to the Kings River. Specific actions to enhance public fishing access and trout populations would be determined during subsequent site-specific NEPA/CEQA evaluation of Chinook salmon reintroduction, but could include fish habitat enhancement projects in the river, fish stocking, fish population monitoring, hatchery production of catchable trout, public education, and/or public outreach. The Draft PEIS/R concluded that the actual number of anglers displaced to the Kings River would be relatively small and, after implementation of Mitigation Measure REC-4, would not impact angling opportunities on the Kings River.

While some displaced anglers could travel to the Kings River below Pine Flat Dam (approximately 40 miles southeast of Reach 1), others may choose not to fish, or could elect to pursue other fishing opportunities in the vicinity of Reach 1, such as warm-water sport fishing in isolated gravel pits and ponds along Reach 1, or angling opportunities upstream from Millerton Lake. For a number of reasons, it is likely that some portion of the approximately 1,600 anglers displaced from the San Joaquin River would be attracted to sites other than the Kings River. Also, San Joaquin River anglers who may be displaced by the SJRRP to the Kings River would likely be dispersed to the several park sites providing fishing access, reducing the increase in angling pressure at any one site. Therefore, even if all of the approximately 1,600 San Joaquin River anglers, and their approximately 18,000 days of annual angling activity, were displaced to the Kings River (which is highly unlikely as described above), it would represent only about 12 additional anglers per site per day during the peak season. In addition to on-stream trout angling opportunities at the Kings River, San Joaquin River anglers have the opportunity to fish

for trout at 83-acre Avocado Lake (adjacent to the Kings River), as the lake is also stocked with trout by DFG. This could further reduce the additional fishing pressure on the Kings River from displaced San Joaquin River anglers.

Relating to the capacity of the Kings River trout fishery to absorb additional angling pressure, the commenter references Kings River Fisheries Management Program (KRFMP) monitoring reports. These reports (or any other sources that we are aware of) do not provide information on current angling activity levels on the Kings River, nor the angling pressure that is most compatible with the current capacity of the fishery. Therefore, it is not appropriate to use these sources to calculate what percent increase any increased angling activity on the Kings River from displaced San Joaquin anglers is likely to represent. However, it should also be noted that the Kings River receives 25,000 sub-catchable "put and grow" fish annually (KRFMP 2008), which the San Joaquin River does not receive, and that the planned improvements of the Kings River Fisheries Management Program and others to trout habitat at numerous sites on the Kings River are also likely to increase the capacity of the fishery in the long term.

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

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

Regarding development of alternate warm-water fishing opportunities in the vicinity of the San Joaquin River, Mitigation Measure REC-5, described on page 21-36 of the Draft PEIS/R, would require that project proponent(s) for future program-level actions with the potential to result in significant impacts to warm-water fishing opportunities work in cooperation with the SJRC, the SJRPCT, DFG, Fresno County, and other agencies participating in management of the San Joaquin River Parkway to enhance remaining warm-water fishing opportunities or create new opportunities in the vicinity.

In response to comments received on the Draft PEIS/R and through continued coordination with DFG and other agencies participating in management of the San

Joaquin River Parkway, Reclamation is currently working to identify opportunities to enhance or create warm-water fishing opportunities in the vicinity of Reach 1. Reclamation will continue to work with DFG and other agencies to pursue ways to enhance or create warm-water fishing opportunities in the Reach 1 vicinity.

See also MCR-9, "Recreation Impacts and Kings River," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment.

KRFMP-2: The commenter raises several concerns with Impact and Mitigation Measure REC-4, as described on pages 21-34 and 21-35 of the Draft PEIS/R. This comment is substantially similar to comment KRFMP-1. See response to comment KRFMP-1. See also MCR-9, "Recreation Impacts and Kings River," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment.

KRFMP-3: The commenter is correct that salmon migrated upstream past the Mendota Dam as recently as the late 1990s. Mendota Dam is equipped with a fish ladder originally constructed to facilitate upstream migration. While not a complete barrier to upstream migration, Mendota Dam is now considered to present a considerable barrier, particularly at low flow, and the fish ladder at Mendota Dam would likely require substantial modification to function properly (McBain and Trush 2002). 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 the program level. The need for additional barriers at specific locations, such as downstream from Mendota Dam to direct migrating salmon into the Mendota Pool Bypass, is currently under evaluation as part of the Mendota Pool Bypass and Reach 2B Improvements Project. Studies to be conducted in support of the Mendota Pool Bypass and Reach 2B Improvements Project will include a project-level evaluation of the potential impacts of the project to recreation, including the potential impacts of a No-Action Alternative under which no barrier would be installed.

The commenter also raises concerns regarding the potential for fishing closures on the Kings River as a result of reintroduced Chinook salmon straying into the Kings River via the Fresno Slough to impact recreational activities on the Kings River and preclude implementation of Mitigation Measure REC-4 (described in Chapter 21.0, "Recreation," of the Draft PEIS/R). For the reasons described above, straying of reintroduced Chinook salmon into the Kings River is not anticipated to occur as a result of implementing the action alternatives. If, however, DFG elected to impose fishing restrictions on the Kings River due to straying of Chinook salmon or for any other reason, DFG would complete project-level environmental analyses to comply with CEQA before implementing new regulations. Text has not been revised.

KRFMP-4: The text referenced in the comment states that, "similar swimming and fishing would remain available in the vicinity of Reach 1, as well as on the Kings River and at Millerton Lake, significant adverse effects on these activities are not likely." It does not divert all swimming and wading to the Kings River. The impact conclusion is

not “no impact,” but rather “less than significant.” Therefore, no mitigation for impacts to swimming is proposed.

As described on page 21-49 of Chapter 21.0, “Recreation,” of the Draft PEIS/R, under Impact REC-11, the impacts on swimming and wading from increased flows would primarily occur during March and April. Although hot weather occasionally occurs in the Fresno area during these months, the average daily high temperature is 68 ºF in March and 75 ºF in April. This period is before the onset of consistently hot days (greater than 80 to 85 ºF) that draw the public to the river to swim or wade. Water temperatures in the river are also low (55 to 60 ºF) during April and May. Given these moderate air temperatures and cold water temperatures, the number of potentially affected swimmers and waders would be small. Regarding public safety issues on the Kings River, during most years mean flows below Pine Flat Reservoir during March and April are between 500 and 2,000 cfs (and considerably lower below Fresno Weir). The much higher flows that occurred during much of March and April of 2011 are typical only of periods when very high inflow into Pine Flat Reservoir results in large dam releases. It should also be noted that similar swimming opportunities would remain available at Millerton Lake during March and April.

KRFMP-5: As described in Chapter 21.0, "Recreation," of the Draft PEIS/R under Impact REC-12, adverse impacts on boating would primarily occur during a 4- to 6-week period in March and April of some years, well before the warmer late spring and summer period when most boating activity on the river occurs. (Increased flow would have beneficial effects on boating during late spring and summer in most years.) Therefore, the number of potentially affected boaters would be small. Also, during most years the mean flows in the Kings River below Pine Flat Reservoir during March and April are between 500 and 1,500 cfs (and considerably less below Fresno Weir). Published paddling guides indicate that flows below 2,500 cfs are suitable for boating on the Kings River, including for novices (American Whitewater Association 2007). Although the diversion structures (weirs) may pose a hazard to boaters, the same guides also indicate that all are easily portaged, and that boaters may bypass Gould Weir by using a side channel. The paddling guides also suggest that the Kings River presents fewer hazards from trees and brush than Reach 1 of the San Joaquin River, which is characterized in many areas by narrow, braided channels, with trees and other vegetation in the channels, as a result of the historically low flows. This analysis supports the analysis and conclusions presented in the Draft PEIS/R. Text has not been revised.

KRFMP-6: As stated on page 2-52 of the Draft PEIS/R, “The purpose of the recreation outreach program will be to inform the recreating public as well as agencies and organizations that serve the recreating public and protect public safety, of changes in river flows that would occur as a result of the Restoration Flows, and of the potential effects associated with those changes, including recreational boating hazards, particularly in Reach 1. The program will also inform the public of similar alternative boating opportunities in the area, such as those available on the lower Kings River below Pine Flat Reservoir.” If acceptable boating opportunities are not available on the lower Kings River below Pine Flat Reservoir due to high flows or other conditions, the recreation

outreach program would not identify such opportunities. See also response to comment KRFMP-5 for additional information relevant to this comment.

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3.8.13 Kings River Water Association

KRWA

September 19, 2011

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

Re: Comments on San Joaquin River Restoration Program Draft Program Environmental
Impact Statement / Environmental Impact Report

Dear Ms. Forsythe,

Please accept the following comments on the above-referenced SJRRP PEIS/EIR on behalf of the Kings River Water Association (KRWA) along with their member units (listed in Appendix A), and the Kings River Conservation District (KRCD). Please include these comments in the administrative record for the SJRRP PEIS/EIR.

The KRWA is an organization representing the 28 public districts and canal companies with Kings River water rights and the administrator of those entitlements and water release operations. The KRCD is a multi-county special district created in 1951 to manage resources within the watershed on the lower Kings River. KRCD serves constituents in an area comprising 1.2 million acres in portions of Fresno, Kings and Tulare counties. These two agencies partner with the California Department of Fish and Game (CDFG) in the Kings River Fisheries Management Program (KRFMP) which is dedicated to improving and enhancing the Kings River watershed and fishery habitat while maintaining its beneficial uses, recognizing that a healthy river is essential to the region's well being and future quality of life.

A fundamental premise of the SJRRP is that the Program is to have no impacts on parties other than Friant Division contractors and their water users. That core principle is embedded in the stipulation that resulted in the SJRRP, the legislation that implemented that stipulation, and in a number of other agreements and assurances provided as the SJRRP was being developed. The KRWA and KRCD provide these comments as potentially affected third parties under both the National Environmental Policy Act and the California Environmental Quality Act.

KRWA-1

1) In Chapter 2.0, Description of Alternatives, on page 2-39, lines 20-30, a Mendota Pool Bypass is discussed. Lines 25-28 state "The bifurcation structure would include a fish screen or other positive fish barrier to direct fish into the bypass channel and minimize or avoid fish passage from Reach 2B to the Mendota Pool." This action addresses the issue of downstream migration of smolt, but not upstream migration of returning adults, which could result in fish passage from Reach 3 to the Mendota Pool.

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Kings River Water Association
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KRWA-1 cont'd

It is necessary to install a similar "fish screen or other positive fish barrier to direct fish into the bypass channel and minimize or avoid fish passage" in the opposite direction as well, from Reach 3 to the Mendota Pool. Studies have shown that straying among salmon species is not uncommon. Quinn *et al* (1991) found straying rates of between 9.9% and 27.5% in fall run Chinook salmon *Oncorhynchus tshawytscha* originating from lower Columbia River hatcheries. Installation of a positive fish barrier or fish screen at this location would be supported by language in multiple sections of Chapter 5.0, Biological Resources – Fisheries, as well as language in the San Joaquin River Restoration Settlement Act.

Quinn T.P., R.S. Nemeth, and D.O. McIsaac. 1991. Homing and straying patterns of fall Chinook salmon in the lower Columbia River. Transactions of the American Fisheries Society 120:150-156.

The Mendota Dam at the Mendota Pool should not be considered a positive fish barrier from Reach 3 to the Mendota Pool. The document itself references the presence of Salmon in the San Joaquin River System as late as the 1990s, and logically the only way these Salmon could have reached the system beyond Reach 3 would have been through the Mendota Dam and into the pool. Without such a barrier, a significant percentage of the returning fish may be lost, to the substantial detriment of the Program. Those fish could find their way into the James Bypass during (admittedly infrequent) periods when floodwater is discharging into the Mendota Pool.

Previous San Joaquin River Restoration Program documents, specifically the Mendota Pool Bypass and Reach 2B Improvements Project Initial Options Technical Memorandum dated April 2010, notes the need for fish screens and barriers to be constructed at either end of the Mendota Pool Bypass to prevent fish from entering the Pool (see Section 7.1.3). This document proposes that a fish screen be constructed at the upstream end of the Bypass to keep downstream migrating fish in the Bypass channel and a fish barrier be constructed at the downstream end of the Bypass to keep upstream migrating adults in the Bypass. It is imperative that fish screens and barriers be installed on both ends of the Bypass to prevent fish from entering the Pool and that the fish screens and barriers be designed to handle all hydrologic flow conditions. Portions of the referenced document about the Mendota Pool Bypass Fish Barrier (see Section 7.2.6) state that "For flood operations . . . the barrier could be removed to prevent hydraulic modification, excessive debris collection, and maintain channel capacity", but when flood flows are entering the Pool from the Kings River is precisely the time the fish barrier needs to in place and operational to prevent fish in the San Joaquin River/Mendota Pool Bypass from entering the Pool and potentially entering a false pathway.

KRWA-2

2) Lines 5-6 on page 5-55 identify "Seasonal barriers or screens to reduce entry by fish into false migration pathways and minimize the potential for stranding of migratory and anadromous fish," as actions to be performed in the Restoration Area.

Lines 31-35 on page 5-15 and lines 1-2 on page 5-16 state "False pathways also affect both upstream and downstream fish movement. During upstream movement, flow may attract fish into drains and bypasses that do not provide habitat because spawning substrate or cover, food availability, water temperatures, DO concentrations, salinity, and other environmental conditions are unsuitable."

Lines 3-6 on page 5-16 state "The San Joaquin River also has an extensive system of bypasses and canals that divert and carry water around the mainstem San Joaquin River channel. Bypasses may not have environmental conditions that support

movement of fish to downstream habitat, especially if flow entering the bypass becomes discontinuous and fish are stranded."
Lines 9-12 on page 5-16 identifies multiple false pathways including "Salt Slough, Mud Slough, Bear Creek, Ash Slough, Berenda Slough, Dry Creek, Fresno River, Lone Willow Slough, Mariposa Bypass, Eastside Bypass, Arroyo Canal, Main Canal, other canals, and Little Dry Creek."
These statements omit the James Bypass, which fits all of the characteristics of a bypass (discontinuous flow) and a false pathway (flow when present may attract fish into a bypass that does not provide suitable habitat) as previously defined. The stated Restoration Goal is to "restore and maintain fish populations in good condition in the main stem of the San Joaquin River."
Given the straying rates of salmon as documented by Quinn *et al* (1991) and others (McIsaac 1990, Unwin and Quinn 1993), which would represent very conservative estimates because the salmon being re-introduced are from another watershed, a screen or barrier to minimize or avoid fish passage from Reach 3 to the Mendota Pool, discouraging fish from migrating into the false pathway of the James Bypass, would be a necessary installation for the program to properly "restore and maintain fish populations in good condition in the main stem of the San Joaquin River." The Mendota Dam at the Mendota Pool should not be considered a positive fish barrier from Reach 3 to the Mendota Pool. The document itself references the presence of salmon in the San Joaquin River System as late as the 1990s, and logically the only way these salmon could have reached the system beyond Reach 3 would have been through the Mendota Dam and into the pool. Thus, the Mendota Dam is not a positive barrier. The omission of such a structure could potentially result in a third party impact, when "No Third Party Impacts" is a core aspect of the SJRRP and its implementation.

KRWA-2 cont'd

McIsaac, D.O. 1990. Factors affecting the abundance of 1977-1979 brood wild fall Chinook salmon, *Oncorhynchus tshawytscha* in the Lewis River, Washington. PhD. Thesis, University of Washington, Seattle, 174p.
Quinn T.P., R.S. Nemeth, and D.O. McIsaac. 1991. Homing and straying patterns of fall Chinook salmon in the lower Columbia River. Transactions of the American Fisheries Society 120:150-156.
Unwin, M.J., T.P. Quinn. 1993. Homing and straying patterns of Chinook salmon (*Oncorhynchus tshawytscha*) from a New Zealand Hatchery: Spatial distribution of strays and effects of release date. Canadian Journal of Fisheries and Aquatic Sciences, 50:1168-1175.

3) Multiple inaccuracies exist in Chapter 21.0, the section on Recreation, that will result in third party impacts which the settlement and its implementation are required to avoid.

Page 21-34, lines 4-22 state that an estimated 18,000 anglers per year, the majority of which are presumed to be trout anglers, utilize Lost Lake Park, which would likely be closed as a result of the presence of salmon in the area. These anglers would then be displaced, and looking for a new site to fish in.
Page 21-34, lines 23-35 suggest the Kings River below Pine Flat Dam as an area with available trout fishing opportunities in the general area of the San Joaquin River. These lines also highlight the work of the Kings River Fisheries Management Program and the Kings River Conservancy in enhancing the fishery and access to the fishery. Lines 36-37 conclude "These fisheries and recreation access improvements suggest that the capacity exists at the Kings River to absorb trout angling activity that would be displaced from Reach 1."
The addition of 18,000 plus anglers (considering the estimate for Lost Lake Park ALONE was 18,000) per year, to an already very heavily used Kings River System, represents an enormous third party impact redirected to the Kings River Fisheries

KRWA-3

KRWA-3 cont'd

Management Program (KRFMP) and its signatories. The data from all of the monitoring reports of the KRFMP (Annual Technical reports from 1999 through the 2010 program year) indicate that current angling pressure is an issue that the KRFMP is attempting to work through. Therefore, in no way can this indicate "that the capacity exists at the Kings River" to absorb additional angling pressure of this magnitude.
Before simply shifting the angling pressure entirely to the Kings River as suggested by this document, the San Joaquin River Restoration Program should endeavor to enhance potential on and off-stream fishing options near the San Joaquin River itself to mitigate for these impacts.

4) Page 21-34, lines 4-22 state that an estimated 18,000 anglers per year, the majority of which are presumed to be trout anglers, utilize Lost Lake Park, which would likely be closed as a result of the presence of salmon in the area. These anglers would then be displaced, and looking for a new site to fish in.

Page 21-35, lines 7-25 outline the potential Mitigation Measures the program will take due to the lost fishing opportunities on the San Joaquin, and all of the alternatives indicate the mitigation measures as "Enhance Fishing Access and Fish Populations on the Kings River below Pine Flat Dam." The section concludes with a statement that "This impact would be less than significant with mitigation."

KRWA-4

At best, the quoted lines are misleading, and at worst simply untrue. Considering not a single party listed in the mitigation measures (Kings River Water Association, Kings River Conservation District, Kings River Fisheries Management Program, Kings River Conservancy) was even contacted, it is unclear how the EIS/EIR came to the conclusion that this situation is even mitigateable, particularly when no level of detail has been provided. The addition of 18,000 plus anglers per year represents an enormous third party impact to the Kings River and all the agencies that have been working for multiple years in a successful fashion to enhance this resource. It appears that redirecting huge numbers of anglers to the Kings River – which is already heavily fished and likely at or beyond its maximum capacity already – will require a substantial investment in stocking, enforcement and projects in order to be mitigated, if mitigation is even possible.
Before simply shifting the angling pressure entirely to the Kings River as suggested by this document, the San Joaquin River Restoration Program should endeavor to the enhancement of other potential on and off-stream options near the San Joaquin River itself.

5) In Chapter 2.0, Description of Alternatives, on page 2-39, lines 20-30, a Mendota Pool Bypass is discussed. Lines 25-28 state "The bifurcation structure would include a fish screen or other positive fish barrier to direct fish into the bypass channel and minimize or avoid fish passage from Reach 2B to the Mendota Pool." This action addresses the issue of downstream migration of smolt, but not upstream migration of returning adults, which could result in fish passage from Reach 3 to the Mendota Pool.

KRWA-1 cont'd

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KRWA-1 cont'd

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It is necessary to install a similar "fish screen or other positive fish barrier to direct fish into the bypass channel and minimize or avoid fish passage" in the opposite direction as well, from Reach 3 to the Mendota Pool. Studies have shown that straying among salmon species is not uncommon. Quinn *et al* (1991) found straying rates of between 9.9% and 27.5% in fall run Chinook salmon *Oncorhynchus tshawytscha* originating from lower Columbia River hatcheries. Installation of a positive fish barrier or fish screen at this location would be supported by language in multiple sections of Chapter 5.0, Biological Resources – Fisheries, as well as language in the San Joaquin River Restoration Settlement Act.

Quinn T.P., R.S. Nemeth, and D.O. McIsaac. 1991. Homing and straying patterns of fall Chinook salmon in the lower Columbia River. Transactions of the American Fisheries Society 120:150-156.

The Mendota Dam at the Mendota Pool should not be considered a positive fish barrier from Reach 3 to the Mendota Pool. The document itself references the presence of Salmon in the San Joaquin River System as late as the 1990s, and logically the only way these Salmon could have reached the system beyond Reach 3 would have been through the Mendota Dam and into the pool.

Without such a barrier, a significant percentage of the returning fish could find their way into the James Bypass during periods when Kings River floodwater is discharging into the Mendota Pool since, during those periods, the majority of the water entering Mendota Pool is from the Kings River. While that only occurs once every 4-5 years on average, the impacts on the affected year classes of returning fish could be significant and could materially impact the SJRRP's potential for success. That impact is not considered by the EIS/EIR. Moreover, if returning salmon are allowed to stray into the false pathway created by Kings River flood flows, closure of the Kings River to fishing could occur in the same fashion as the closures being suggested on the San Joaquin River by the SJRRP. Such a closure would not only create an enormous impact on users of the Kings River, but would also eliminate the mitigation proposed by the EIS/EIR for closure of the San Joaquin River system. As a result, failure to construct a barrier to prevent straying of salmon into the Kings River system could create additional impacts not considered by the EIS/EIR and could preclude the single mitigation measure proposed for the closure of the San Joaquin River to fishing.

KRWA-5

6) Page 21-49, lines 12-20 address the "Effects on Swimming or Wading and Fishing Opportunities from Increased Flow in the Restoration Area." Lines 28-30 state "Flows of 1,500 cfs and above would make swimming at Reach 1 sites undesirable and potentially more hazardous compared to swimming during baseline flows of 300 cfs or less." Finally, on page 21-50, lines 3-7 state, "Because the scheduled Interim and Restoration flows of 1,500 cfs and greater would occur only during March and April in most years, and because similar swimming and fishing would remain in the vicinity of Reach 1, as well as on the Kings River and at Millerton Lake, significant adverse effects on these activities are not likely. Therefore, this impact would be less than significant."

KRWA-5 cont'd

Diverting swimmers and waders to the Kings River during the months of March and April would result in immense public safety issues, representing yet another third party impact. Flows in the Kings River during the months of March and April in most years are extremely cold and are at or above the 1,500 cfs level that according to this program document results in swimming conditions that are "undesirable and potentially more hazardous."

KRWA-6

7) Pages 21-50 through 21-53 describe the "Effects on Boating Opportunities from Increased Flow in the Restoration Area." Page 21-51, lines 40-42 outline, "a reduction of boating opportunities that could occur from mid-March through April during all but Wet water years," due to the high flows. Page 21-52, lines 2-4 state, "boaters who could be displaced from the San Joaquin River because of high spring flows also have available to them similar boating opportunities on the lower Kings River below Pine Flat Lake."

As mentioned above in the swimming and wading section, the Kings River during the months of March and April in most years have similar high spring flows that are mandated by the SJRRP. Additionally, the Kings River below Pine Flat Lake has several diversion structures within the river itself that could be a hazard to boaters unaware of their presence. Simply suggesting that a boater could replace their San Joaquin River experience on the Kings River would result in public safety issues, representing still another third party impact.

KRWA-7

8) Page 21-52, lines 9-11 state "It appears that ample capacity exists on the Kings River to absorb what is most likely a low number of spring-time boaters that could be displaced from the San Joaquin River." Lines 29-31 on the same page state, "The program will also inform the public of similar alternative boating opportunities in the area, such as those available on the lower Kings River below Pine Flat Reservoir." And finally, page 21-53, line 27 states, "With mitigation, this impact would be less than significant."

The assumption of ample capacity on the Kings River to absorb spring-time boaters is a faulty one. The very reason for displacing San Joaquin River boaters, "high spring-time flows", already exists on the Kings River. Thus, informing the public of alternative boating opportunities on the Kings would result in public safety issues, representing another third party impact.

KRWA-8

9) Page 5-9 Line 37 states: Steelhead are believed to have been historically abundant in the San Joaquin River, although little detailed information on their distribution and abundance is available (Lindley *et al.* 2006, McEwan 2001)

- McEwan 2001 reported that;

"There is little documentation of historical steelhead distribution in the Central Valley. This is probably because it is difficult to assess or monitor steelhead. However, available information indicates that steelhead were well-distributed throughout the Sacramento and San Joaquin river systems. Steelhead were found from the upper Sacramento and Pit river systems south to the Kings River (and

possibly Kern river systems in wet years) and in both east- and west- side tributaries of the Sacramento River."

Lindley *et al.* (2006) used a habitat model and environmental information to model historical distributions of steelhead throughout the Central Valley. They reported that: "In agreement with the suggestions of McEwan (2001)...our results suggest that *O. mykiss* was relatively less abundant in San Joaquin tributaries than Sacramento River tributaries due to natural migration barriers."

KRWA-8 cont'd

Although the EIS/EIR does not assert that steelhead were abundant on the Kings River and neither do the sources cited, the EIS/EIR nevertheless could be read to suggest something more than anadromous fish were occasionally present on the Kings River. The simple fact is that the Kings River spills flood water into the San Joaquin infrequently. When that has occurred historically, a few anadromous fish may have strayed into the Kings River and been observed, but no sustained runs could have existed, or did exist. The EIS/EIR should make that point clearly.

10) Page 11-6 Lines 17-21 states "The bypass system consists primarily of man-made channels (Eastside, Chowchilla, and Mariposa bypasses), which divert and carry flood flows from the San Joaquin River at Gravelly Ford, along with inflows from the Kings River and other tributaries, downstream to the mainstem just above Merced River."

KRWA-9

The impression is given here that the Kings River utilizes the entire bypass system (Eastside, Chowchilla, and Mariposa bypasses), which is incorrect. Flows from the Kings River enter the San Joaquin River system via the Fresno Slough into the Mendota Pool. The flows are conveyed through Restoration Area River Reaches 3 and 4A. The flows join the bypass system Eastside Bypass and are then routed through Eastside Bypass Reach 2. The Kings River does not directly contribute flow to the Chowchilla Bypass or the Eastside Bypass Reach 1. The text should be revised to better describe the reaches utilized by the Kings River.

11) Page 11-10, Lines 26-35 describe Army Weir, with multiple errors. Lines 28-31 specifically state "Although constructed by, and under the jurisdiction of, USACE, permission was granted to the Kings River Water Association to operate the structure according to agreements among the water users."

KRWA-10

The USACE directs operation of the Army Weir during periods of flood release, not the Kings River Water Association as stated. Normally, under present conditions, Kings River flood water is diverted north up to the capacity of the Kings River North channels. The capacity of Kings River North channels is 4,750 cfs. When Kings River North capacity is reached, flood water is then sent south. Water is diverted south at the Army Weir into the Clarks Fork and at the Crescent Bypass Weir into the Crescent Bypass. The Clarks Fork and Crescent Bypass join and the downstream confluence is the Kings River South. The capacity of the Kings River South is 3,200 cfs. Flows greater than the design capacities of the North and South channels, or 7,950 cfs, are divided equally or as dictated by conditions prevailing at the time.

12) Page 11-10 Lines 36-42 and Page 11-11 Lines 1-4 describe Crescent Weir incorrectly, omitting the Crescent Bypass structure, incorrectly identifying the agency responsible for the structure, and incorrectly stating the flow capacity to the south of the Crescent Weir. Lines 40-42 state "The Zalda Reclamation District controls flows greater than

KRWA-11

4,750 cfs at the Crescent Weir by sending the first 4,750 cfs north, and the excess, up to a maximum of 2,000 cfs, to the south.

KRWA-11 cont'd

The facility, in conjunction with the Crescent Bypass Weir, is used to divert flood flows into the Crescent Bypass and eventually into the Kings River South. The USACE controls all flood flows and the Kings River Conservation District and Crescent Canal Company operate the facilities to meet USACE objective flows. Flow diversion capacities north and south are discussed in the previous comment. The Crescent Bypass has a design capacity of 1,500 cfs.

13) Page 11-8, lines 12-16 and Page 11-18, lines 4-8 do not do a sufficient job of addressing limitations in the flow capacities of Reach 2B and Reach 3, particularly during flood release occasions. Lines 4-8 on page 11-18 state "Up to 2,500 cfs shall normally be routed through the San Joaquin River insofar as it does not exceed the capacity of the river when added to the releases from Pine Flat Dam and the remaining increment flow (excess water from the Kings River system has priority to available capacity in the San Joaquin River below the Mendota Pool)."

KRWA-12

It is not clear from the document that flood operations will have priority over restoration flows. Flood releases from the James Bypass/Fresno Slough contribute significant flow to Restoration Area River Reach 3 and 4A during Wet and Normal-Wet year types. The flood releases are typically from snowmelt events and can occur for a period of months under some circumstances. During these flood releases, occasionally most or all of the 4,500 cfs channel capacity in Reach 3 is required to safely convey flood waters from the Fresno Slough through the system. During these occasions, flood operations will significantly limit restoration flows released from Friant Dam and diverted into reach 2B. These occasions are expected to occur infrequently. This limitation should be discussed in the text and language added that clearly states that flood operations have precedence over restoration flows and flow objectives in Reach 2B may not be met in some circumstances.

14) Multiple areas in the document address fish screening, including sections of chapters 2.0, 5.0 and 28.0, that may be necessary for the movement of fish throughout the system.

KRWA-13

The document does not address potential impacts on flood control from fish screens or fish facilities necessary to prevent unintended upstream migration of anadamorous fish into the Mendota Pool. These facilities are considered generally under the Temporary Fish Barrier Program as described on page 28-5 but the need for these facilities at Mendota Pool is not specifically addressed in the document. For a number of reasons, these facilities may have a significant impact on passing flood flows through the facility. The facility may limit the flow capacity of the conveyance. The facility may introduce intended or unintended operational limitations on the flood control system. A failure of the facility may impose an operational or physical restriction on the conveyance. The potential need for such a facility at the Mendota Pool and the impacts of such a facility on flood control should be considered by the document.

Thank you for your consideration of our comments. If you have any questions in regards to these comments, please direct these to:

Clifton Lollar
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clollar@kingsriverwater.org

Sincerely,

David Orth, General Manager
Kings River Conservation District

Steve Haugen, Watermaster
Kings River Water Association

cc: Representative Jim Costa
Representative Devin Nunes
Representative Tom McClintock
Representative Dennis Cardoza
Representative Jeff Denham
Senator Dianne Feinstein
Senator Barbara Boxer
The Ferguson Group, Inc.

APPENDIX A

The members of the KRWA are as follows:

ALTA IRRIGATION DISTRICT, an irrigation district
BURREL DITCH COMPANY, a corporation
CLARK'S FORK RECLAMATION DISTRICT NO. 2069, a reclamation district
CONSOLIDATED IRRIGATION DISTRICT, an irrigation district
CORCORAN IRRIGATION COMPANY, a corporation
CRESCENT CANAL COMPANY, a corporation
EMPIRE WEST SIDE IRRIGATION DISTRICT, an irrigation district
FRESNO IRRIGATION DISTRICT, an irrigation district
JAMES IRRIGATION DISTRICT, an irrigation district
JOHN HEINLEN MUTUAL WATER COMPANY, a corporation
KINGS RIVER WATER DISTRICT, a water district
LAGUNA IRRIGATION DISTRICT, an irrigation district
LAST CHANCE WATER DITCH COMPANY, a corporation
LEMOORE CANAL & IRRIGATION COMPANY, a corporation
LIBERTY CANAL COMPANY, a corporation
LIBERTY MILL RACE COMPANY, a corporation
LOVELACE WATER CORPORATION, a corporation
PEOPLES DITCH COMPANY, a corporation
REED DITCH COMPANY, a corporation
RIVERDALE IRRIGATION DISTRICT, an irrigation district
SOUTHEAST LAKE WATER COMPANY, a corporation
STINSON CANAL & IRRIGATION COMPANY, a corporation
STRATFORD IRRIGATION DISTRICT, an irrigation district
TRANQUILLITY IRRIGATION DISTRICT, an irrigation district
TULARE LAKE BASIN WATER STORAGE DISTRICT, a water storage district
TULARE LAKE CANAL COMPANY, a corporation
TULARE LAKE RECLAMATION DISTRICT NO. 761, a reclamation district
UPPER SAN JOSE WATER COMPANY, a corporation

Responses to Comments from Kings River Water Association

KRWA-1: The commenter is correct that salmon migrated upstream past the Mendota Dam as recently as the late 1990s. Mendota Dam is equipped with a fish ladder originally constructed to facilitate upstream migration. While not a complete barrier to upstream migration, Mendota Dam is now considered to present a considerable barrier, particularly at low flow, and the fish ladder at Mendota Dam would likely require substantial modification to function properly (McBain and Trush 2002). 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 the program level. The need for additional barriers at specific locations, such as downstream from Mendota Dam to direct migrating salmon into the Mendota Pool Bypass is currently under evaluation as part of the Mendota Pool Bypass and Reach 2B Improvements Project. Studies to be conducted in support of the Mendota Pool Bypass and Reach 2B Improvements Project will include a project-level evaluation of the potential impacts of the project to recreation, including the potential impacts of a No-Action Alternative under which no barrier would be installed.

The commenter also raises concerns regarding the potential for fishing closures on the Kings River as a result of reintroduced Chinook salmon straying into the Kings River via the Fresno Slough to impact recreational activities on the Kings River and preclude implementation of Mitigation Measure REC-4 (described in Chapter 21.0, "Recreation," of the Draft PEIS/R). For the reasons described above, straying of reintroduced Chinook salmon into the Kings River is not anticipated to occur as a result of implementing the action alternatives. If, however, DFG elected to impose fishing restrictions on the Kings River due to straying of Chinook salmon or for any other reason, DFG would complete project-level environmental analyses to comply with CEQA before implementing new regulations. Text has not been revised.

KRWA-2: Text on page 5-17, lines 29 through 33, of the Draft PEIS/R has been revised to add James Bypass in response to comment. See Chapter 4.0, "Errata," of this Final PEIS/R.

KRWA-3: The commenter raises several concerns regarding text in Chapter 21.0, "Recreation," of the Draft PEIS/R. First, in reference to Impact REC-4, the commenter states, "The addition of 18,000 plus anglers (considering the estimate for Lost lake Park ALONE was 18,000) per year, to an already very heavily used Kings River System, represents an enormous third party impact," (emphasis in original). Impact REC-4 as described in the Draft PEIS/R incorrectly reported the estimated number of anglers visiting Lost Lake Park annually, located in Reach 1A, as approximately 18,000. The estimated number of anglers is approximately 1,600. The text on page 21-34, lines 7 through 12, has been revised in Chapter 4.0, "Errata," of this Final PEIS/R to clarify that most of the approximately 1,600 anglers visiting the park annually do so multiple times each year, for a total of approximately 18,000 angler days. This estimated number of angler days, based on a survey conducted by Houser and North in 2000, refers to the number of estimated visits to the park made by individuals to fish (angler days). These data represent the best available information on recreational use in Reach 1 and provide a

reasonable estimate of angler days for the reach, given that most trout fishing occurs from the riverbank in Lost Lake Park.

The commenter also states that, "Before simply shifting the angling pressure entirely to the Kings River as suggested by this document, the San Joaquin River Restoration Program should endeavor to the enhancement of other potential on and off-stream options near the San Joaquin River itself." Mitigation Measure REC-4 would enhance public fishing access and trout populations on the Kings River below Pine Flat Dam to better accommodate anglers displaced from Reach 1 who choose to travel to the Kings River. Specific actions to enhance public fishing access and trout populations would be determined during subsequent site-specific NEPA/CEQA evaluation of Chinook salmon reintroduction, but could include fish habitat enhancement projects in the river, fish stocking, fish population monitoring, hatchery production of catchable trout, public education, and/or public outreach. The Draft PEIS/R concluded that the actual number of anglers displaced to the Kings River would be relatively small and, after implementation of Mitigation Measure REC-4, would not impact angling opportunities on the Kings River.

While some displaced anglers could travel to the Kings River below Pine Flat Dam (approximately 40 miles southeast of Reach 1), others may choose not to fish, or could elect to pursue other fishing opportunities in the vicinity of Reach 1, such as warm-water sport fishing in isolated gravel pits and ponds along Reach 1, or angling opportunities upstream from Millerton Lake. For a number of reasons, it is likely that some portion of the approximately 1,600 anglers displaced from the San Joaquin River would be attracted to sites other than the Kings River. Also, San Joaquin River anglers who may be displaced by the SJRRP to the Kings River would likely be dispersed to the several park sites providing fishing access, reducing the increase in angling pressure at any one site. Therefore, even if all of the approximately 1,600 San Joaquin River anglers, and their approximately 18,000 days of annual angling activity, were displaced to the Kings River (which is highly unlikely as described above), it would represent only about 12 additional anglers per site per day during the peak season. In addition to on-stream trout angling opportunities at the Kings River, San Joaquin River anglers have the opportunity to fish for trout at 83-acre Avocado Lake (adjacent to the Kings River), as the lake is also stocked with trout by DFG. This could further reduce the additional fishing pressure on the Kings River from displaced San Joaquin River anglers.

Relating to the capacity of the Kings River trout fishery to absorb additional angling pressure, the commenter references KRFMP monitoring reports. These reports (or any other sources that we are aware of) do not provide information on current angling activity levels on the Kings River, nor the angling pressure that is most compatible with the current capacity of the fishery. Therefore, it is not appropriate to use these sources to calculate what percent increase any increased angling activity on the Kings River from displaced San Joaquin anglers is likely to represent. However, it should also be noted that the Kings River receives 25,000 sub-catchable "put and grow" fish annually (KRFMP 2008), which the San Joaquin River does not receive, and that the planned improvements of the Kings River Fisheries Management Program and others to trout

habitat at numerous sites on the Kings River are also likely to increase the capacity of the fishery in the long term.

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

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

Regarding development of alternate warm-water fishing opportunities in the vicinity of the San Joaquin River, Mitigation Measure REC-5, described on page 21-36 of the Draft PEIS/R, would require that project proponent(s) for future program-level actions with the potential to result in significant impacts to warm-water fishing opportunities work in cooperation with the SJRC, the SJRPCT, DFG, Fresno County, and other agencies participating in management of the San Joaquin River Parkway to enhance remaining warm-water fishing opportunities or create new opportunities in the vicinity.

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

See also MCR-9, “Recreation Impacts and Kings River,” in Chapter 2.0, “Master Comment Responses,” of this Final PEIS/R for additional information relevant to this comment.

KRWA-4: The commenter raises several concerns with Impact and Mitigation Measure REC-4, as described on pages 21-34 and 21-35 of the Draft PEIS/R. This comment is substantially similar to comment KRWA-3. See response to comment KRWA-3. See also MCR-9, “Recreation Impacts and Kings River,” in Chapter 2.0, “Master Comment Responses,” of this Final PEIS/R for additional information relevant to this comment.

KRWA-5: The commenter states that, “Diverting swimmers and waders to the Kings River during the months of March and April would result in immense public safety issues, representing yet another third party impact.” The text referenced in the comment states that, “similar swimming and fishing would remain available in the vicinity of Reach 1, as well as on the Kings River and at Millerton Lake, significant adverse effects on these activities are not likely.” It does not divert all swimming and wading to the Kings River. The impact conclusion is not “no impact,” but rather “less than significant.” Therefore, no mitigation for impacts to swimming is proposed.

As described on page 21-49 of Chapter 21.0, “Recreation,” of the Draft PEIS/R under Impact REC-11, the impacts on swimming and wading from increased flows would primarily occur during March and April. Although hot weather occasionally occurs in the Fresno area during these months, the average daily high temperature is 68 ºF in March and 75 ºF in April. This period is before the onset of consistently hot days (greater than 80 to 85 ºF) that draw the public to the river to swim or wade. Water temperatures in the river are also low (55 to 60 ºF) during April and May. Given these moderate air temperatures and cold water temperatures, the number of potentially affected swimmers and waders would be small. Regarding public safety issues on the Kings River, during most years mean flows below Pine Flat Reservoir during March and April are between 500 and 2,000 cfs (and considerably lower below Fresno Weir). The much higher flows that occurred during much of March and April of 2011 are typical only of periods when very high inflow into Pine Flat Reservoir results in large dam releases. It should also be noted that similar swimming opportunities would remain available at Millerton Lake during March and April.

KRWA-6: As described in Chapter 21.0, "Recreation," of the Draft PEIS/R under Impact REC-12, adverse impacts on boating would primarily occur during a 4- to 6-week period in March and April of some years, well before the warmer late spring and summer period when most boating activity on the river occurs. (Increased flow would have beneficial effects on boating during late spring and summer in most years.) Therefore, the number of potentially affected boaters would be small. Also, during most years the mean flows in the Kings River below Pine Flat Reservoir during March and April are between 500 and 1,500 cfs (and considerably less below Fresno Weir). Published paddling guides indicate that flows below 2,500 cfs are suitable for boating on the Kings River, including for novices (American Whitewater Association 2007). Although the diversion structures (weirs) may pose a hazard to boaters, the same guides also indicate that all are easily portaged, and that boaters may bypass Gould Weir by using a side channel. The paddling guides also suggest that the Kings River presents fewer hazards from trees and brush than Reach 1 of the San Joaquin River, which is characterized in many areas by narrow, braided channels, with trees and other vegetation in the channels, as a result of the historically low flows. This analysis supports the analysis and conclusions presented in the Draft PEIS/R. Text has not been revised.

KRWA-7: As stated on page 2-52 of the Draft PEIS/R, “The purpose of the recreation outreach program will be to inform the recreating public as well as agencies and organizations that serve the recreating public and protect public safety, of changes in river flows that would occur as a result of the Restoration Flows, and of the potential

effects associated with those changes, including recreational boating hazards, particularly in Reach 1. The program will also inform the public of similar alternative boating opportunities in the area, such as those available on the lower Kings River below Pine Flat Reservoir." If acceptable boating opportunities are not available on the lower Kings River below Pine Flat Reservoir due to high flows or other conditions, the recreation outreach program would not identify such opportunities. See also response to comment KRWA-6 for additional information relevant to this comment.

KRWA-8: As commenter notes, the PEIS/R does not imply a historically abundant population of steelhead on the Kings River. The PEIS/R notes that there is little documentation of historical steelhead abundance. It would therefore be speculative to describe the historical abundance and timing of steelhead populations in the Kings River beyond the description currently provided in the Draft PEIS/R. Text has not been revised.

KRWA-9: The section referenced is a general description of flood management in the Restoration Area, and does not present the level of detail suggested in the comment. Subsequent sections of Chapter 11.0 of the Draft PEIS/R, "Hydrology – Flood Management," describe the Kings River and its relation to the Restoration Area in greater detail. Text on page 11-6, line 20, of the Draft PEIS/R has been revised to remove the reference to Kings River. See Chapter 4.0, "Errata," of this Final PEIS/R.

KRWA-10: Text on page 11-10, lines 28 through 35, 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.

KRWA-11: Text 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.

KRWA-12: 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. Text has not been revised.

KRWA-13: 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 the program level. Subsequent site-specific studies, including study of the Mendota Pool Bypass, will consider the necessary modifications for fish passage and fish barriers to avoid or reduce increased flood risk to a less-than-significant level, consistent with Mitigation Measure FLD-1 as described on page 11-40 of the Draft PEIS/R. Text has not been revised.

3.8.14 Lower San Joaquin Levee District (Reggie Hill)

SAN JOAQUIN RIVER RESTORATION PROGRAM

PUBLIC COMMENTS LSJLD-1
for the San Joaquin River Restoration Program
Draft Environmental Impact Statement/Environmental Impact Report

Please check your affiliation:

- [ ] Federal
- [ ] State
- [ ] Elected Official
- [ ] Tribe
- [x] Local Agency
- [ ] Organization
- [ ] Individual

Written comments can be submitted at the public hearings, mailed to the Bureau of Reclamation (mailing address is on the back of this card), faxed 916-978-5114, or emailed to pelsrcomments@restoresjr.net by 5 p.m. (PDT) on Thursday, July 21, 2011. Thank you.

(Please print clearly)

Name Reggie Hill

Organization and Address Lower San Joaquin Levee District
11704 W. Henry Miller Ave.
Dos Palos 93620

Phone (209) 387-4545 FAX (209) 387-4237 E-mail lsjldeelite.net

Comment here: _____ *Date* _____ *Main Topic of Comments*

Attached –

All comments become part of the public record.

LOWER SAN JOAQUIN LEVEE DISTRICT comments - May 25, 2011

LSJLD1-1
- There has been frustration and difficulty in obtaining a reimbursement agreement with USBR for the last two years, because of agreement language conflicts.

LSJLD1-2
- The Settlement Agreement does have language for authorizing reimbursements with discretion by USBR. The USBR's position, from the past correspondence, seems to be that evaluation of impacts from the Program is not a reimbursable expense.

LSJLD1-3
- The District budget is for funding regularly scheduled operation and maintenance of the flood facilities. No nonessential funding is allocated. Redirecting resources toward the Restoration Program pulls necessary funds away from needed actions with the flood project.

LSJLD1-4
- Restoration Program activities cause additional expenses, which are not budgeted, decreasing the District's ability to address its obligation with required maintenance and operation. The District gave assurances to the State and Federal government, when the project was completed, the flood project system would be maintained and operated in accordance with its design criteria, providing needed flood protection. If District revenue is expended elsewhere, this jeopardizes its ability to provide protection from flood flows in the system. That redirection of resources causes liability issues since this reduces our ability to adhere to the flood project standards we are obligated to maintain, which equates to unnecessary exposure.

LSJLD1-5
- Some of the proposed alternatives of the restoration involves taking adjacent lands out of production for expanding the flood system. This reduces the District revenue base within its boundaries, further reducing its ability to maintain the project to intended standards of protection.

LSJLD1-6
- USBR Cooperating Agency request stipulated there needs to be a commitment of District resources toward relevant matters specific to our expertise. This raises a major concern about committing District resources toward the success of the Restoration Program without reimbursement. As per the Cooperating Agency request, as it was presented, there is no significant benefit to the District to be a participant.

LSJLD1-7
- The District's obligation was established by the State Legislature to operate and maintain this flood project for the benefit of the affected landowners. The State Legislature has not altered that direction for the District.

LSJLD1-8
- The Settlement Agreement did not pursue any input from the District about the use of the flood system channels for their restoration goals. The Restoration Program has not fully embraced our obligation by its continued lack of concern for the flood project purpose. Their primary focus has been river restoration with little regard in addressing flood management issues that are being affected. The District cannot continue to expend its financial resources in "reviewing" constant restoration documents without assistance, and maintaining its obligation with the project under these circumstances.

LSJLD1-9
- There is mis-trust that has developed since the Settlement Agreement was signed, by the actions of USBR and DWR. The further the interpretation of the settlement language ventures along this restoration process, the more misrepresentation there appears of the initial presentation of the project. At issue is what is the cost to the District and

LSJLD1-9 cont'd

landowners when the government and its agencies are not straightforward in their dealings with the locals who are impacted from the Restoration Program.

LSJLD1-10

- The latest contrary approach to flood management is the direction of the environmental interests to use the Chowchilla Canal Bypass for fish flows, which is not part of the Settlement Agreement. Total disregard to flood management is unacceptable.

LSJLD1-11

- The flood system has worked well for its intended purpose, but it has also been abused by upstream reservoir operations releasing flows beyond its design capacities. This abuse has compromised the project, which makes the Board and the landowners in the District uncomfortable with restoration activities proposing further compromise of the project.

LSJLD1-12

- Flood damages cannot be totally prevented, but they have been minimized by this flood project's existence. Using the flood system and its bypasses for restoration purposes places risk on the project and the landowners. Compromising flood protection is unacceptable and exposes the District to liability issues.

LSJLD1-13

- The adverse impacts from restoration flows in the system also presents difficulties with the District's ability to accomplish its obligated maintenance. The District's obligation is to maintain the flood project to levels designed to afford the highest form of flood protection within project capabilities. Restoration flows jeopardize that ability by encouraging riparian habitat in low-flow regimes, altering the channel's design capabilities for passing higher flood flows and increasing maintenance activities. This location is wrong to recruit vegetation growth as it restricts flow capabilities by its mere presence, which captures sediment. Sand deposition in the river and bypass system is a constant issue.

LSJLD1-14

- Sand deposition in the river is always occurring, either with high flows or low flows. However, low flows such as interim flows, allow for more deposition due to slower velocities, allowing sand materials being carried in the water to drop out where the channel bottom configuration heightens the opportunity for sand to settle. That is why the maintenance of the channel, through sand removal and vegetation management is so vital. These two impacts can raise the water surface elevation to higher levels at the same flow rate, jeopardizing the levee integrity.

LSJLD1-15

- There is frustration concerning the Restoration Program implementation schedule that is out of touch with all the impacts and actions that have taken place since its formulation in 2006. This preconceived timeline has failed to be adjusted to reflect changes and unresolved issues that have occurred during the past five years. This failure allows missed opportunities to correct issues to be unresolved, further exasperating cooperation between the agencies and landowners.

LSJLD1-16

- According to the USBR money isn't an impact but be assured it's a huge impact and the District is having to carry the Fed. Govt. (USBR) on this project and it's a sad state of affairs. The District has spent thousands of dollars that were unbudgeted and won't be reimbursed.

LSJD1-17

- A 6,000 page PEIR/EIS is a hard ship and burden in that it is two years late with various projects being considered and in early stages of negotiations with a initial 60 day review and comment period.

LSJLD1-18
- A continual turnover in Bureau staff and political staff delays progress and is frustrating due to steep learning curves that must be overcome.

LSJLD1-19
- Our District isn't against the River restoration as long as there are no unmitigated third parties impacts and to date there have been huge impacts with no mitigation. Follow the law passed by Congress and mitigate all these impacts. Quit cherry picking the law by adhering to parts of the law and circumventing parts of the law.

LSJLD1-20
- These issues listed here have been unmitigated and cause a huge drain on District resources - staff wise and financially.

Responses to Comments from Lower San Joaquin Levee District (Reggie Hill)

LSJLD1-1: Comment noted. Reclamation will continue to work with LSJLD to better understand how the future conditions may affect their overall operations. Additionally, coordination will continue in order to assess the potential changes, if any, in operations and maintenance costs that may occur as a result of implementing the Settlement. See MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment.

LSJLD1-2: Comment noted. Reclamation will continue to work with LSJLD to better understand how the future conditions may affect their overall operations. Additionally, coordination will continue in order to assess the potential changes, if any, in operations and maintenance costs that may occur as a result of implementing the Settlement. See MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment.

LSJLD1-3: Comment noted. Reclamation will continue to work with LSJLD to better understand how the future conditions may affect their overall operations. Additionally, coordination will continue in order to assess the potential changes, if any, in operations and maintenance costs that may occur as a result of implementing the Settlement. See MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment.

LSJLD1-4: Comment noted. Reclamation will continue to work with LSJLD to better understand how the future conditions may affect their overall operations. Additionally, coordination will continue in order to assess the potential changes, if any, in operations and maintenance costs that may occur as a result of implementing the Settlement. See MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment.

LSJLD1-5: All of the action alternatives 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 Planning 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 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, "Master Comment Responses," 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.

LSJLD1-6: Reclamation will continue to work with LSJLD to better understand how the future conditions may affect their overall operations. Additionally, coordination will continue in order to assess the potential changes, if any, in operations and maintenance costs that may occur as a result of implementing the Settlement. For additional information, see MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R

LSJLD1-7: Comment noted. This comment does not raise issues or concerns specific to the environmental analysis presented in the Draft PEIS/R.

LSJLD1-8: Comment noted. This comment does not raise issues or concerns specific to the environmental analysis presented in the Draft PEIS/R. Reclamation will continue to work with LSJLD to better understand how the future conditions may affect their overall operations. Additionally, coordination will continue in order to assess the potential changes, if any, in operations and maintenance costs. See MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment.

LSJLD1-9: Comment noted. This comment does not raise issues or concerns specific to the environmental analysis presented in the Draft PEIS/R. As described in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0, "Master Comment Responses," 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 also MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment.

LSJLD1-10: The Draft PEIS/R does not disregard flood management, nor does it propose to "use the Chowchilla Canal Bypass for fish flows." 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 considered, but not retained for inclusion in the action alternatives because as a complete alternative to conveying flows in the river channel, it would prevent achieving the SJRRP purpose and need, consistent with the Settlement; as a partial alternative, where Interim or Restoration flows could be split between the bypass system and the river channel, it would conflict with achieving the SJRRP purpose and need by potentially stranding reintroduced fish in the bypass system. However in consideration of downstream conditions, Interim or Restoration flows could be temporarily diverted to the bypass system, and flood flows would continue to be routed through the bypass system in accordance with the standard operations of the system. Text has not been revised.

LSJLD1-11: Comment noted. This comment does not raise issues or concerns specific to the environmental analysis presented in the Draft PEIS/R. Reclamation will continue to work with LSJLD to better understand how the future conditions may affect their overall operations. Additionally, coordination will continue in order to assess the potential changes, if any, in operations and maintenance costs. See MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment.

LSJLD1-12: 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 the Settlement that could address channel capacity issues identified in the Settlement or through the SJRRP or other programs.

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.

LSJLD1-13: Reclamation understands that 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). Reclamation will continue to work with LSJLD to better understand how the future conditions may affect their overall operations. Additionally, coordination will continue in order to assess the potential changes, if any, in operations and maintenance costs. See MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment. Text has not been revised.

LSJLD1-14: Reclamation understands that 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). Reclamation will continue to work with LSJLD to better understand how the future conditions may affect their overall operations. Additionally, coordination will continue in order to assess the potential changes, if any, in operations and maintenance costs. See MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment.

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 the Settlement that could address channel capacity issues identified in the Settlement or through the SJRRP or other programs.

As described on page 2-21 of the Draft PEIS/R, Reclamation would conduct erosion monitoring using several standard methodologies and protocols commonly employed by

DWR, reclamation districts, and/or USACE to monitor levee erosion. Aerial photography and/or ground surveys would be compared to identify changes in bank line over time, indicating potential erosion. True color aerial photographs would be inspected and compared with previous aerial photographs to identify areas of sediment mobilization, bar formation, and bank erosion. After these areas have been initially identified using aerial photography, they would be visited and inspected. If inspections indicate that erosion-related impacts exist or are imminent, management actions would be taken to address the issue. Potential management actions to address erosion-related impacts are described in Section 2.4.3, "Physical Monitoring and Management Plan," of the Draft PEIS/R.

Text has not been revised.

LSJLD1-15: As described in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0, "Master Comment Responses," 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 comment does not raise issues or concerns specific to the environmental analysis presented in the Draft PEIS/R.

LSJLD1-16: Comment noted. Reclamation will continue to work with LSJLD to better understand how the future conditions may affect their overall operations. Additionally, coordination will continue in order to assess the potential changes, if any, in operations and maintenance costs that may occur as a result of implementing the Settlement. See MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment.

LSJLD1-17: While every attempt was made to minimize the length of the Draft PEIS/R, the size and complexity of the program necessitated a large document to support compliance with NEPA/CEQA. Delays in the release of the document for public review were necessary to allow for the incorporation of input from the broad group of stakeholders and public interested in the implementation of the Settlement. The public

comment period was extended at the request of stakeholders for an additional 3 months beyond the initial comment due date of June 21, 2011, closing on September 21, 2011. Text has not been revised.

LSJLD1-18: Comment noted. This comment does not raise issues or concerns specific to the environmental analysis presented in the Draft PEIS/R. Text has not been revised.

LSJLD1-19: The commenter states that, "to date there have been huge impacts with no mitigation." It is assumed based on preceding comments that this refers to SJRRP activities to date, including ongoing outreach activities, the size of the Draft PEIS/R released for public review, and release of Interim Flows. Mitigation is not typically provided for conducting outreach to potentially affected Third Parties, nor for releasing draft environmental compliance documents for public review. Mitigation measures for potentially significant impacts associated with Interim Flows in Water Years 2010 through 2012 are described in the *Water Year 2010 Interim Flows Environmental Assessment/Initial Study* (SJRRP 2009) and supplemental environmental assessments (EA) issued for Water Years 2011 and 2012 (SJRRP 2010c and 2011k).

Reclamation will continue to work with LSJLD to better understand how the future conditions may affect their overall operations. Additionally, coordination will continue in order to assess the potential changes, if any, in operations and maintenance costs that may occur as a result of implementing the Settlement. See MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R for additional information relevant to this comment. As mentioned in response to comment LSJLD-17, while every attempt was made to minimize the length of the Draft PEIS/R, the size and complexity of the program necessitated a large document to support compliance with NEPA/CEQA. Delays in the release of the document for public review were necessary in order to allow for the incorporation of input from the broad group of stakeholders and public interested in the implementation of the Settlement. The public comment period was extended at the request of stakeholders for an additional 3 months beyond the initial comment due date of June 21, 2011, closing on September 21, 2011. Text has not been revised.

LSJLD1-20: This comment is substantially similar to comment LSJLD1-19. See response to comment LSJLD1-19.

3.8.15 Lower San Joaquin Levee District (Thomas Keene)

LSJLD-2

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September 21, 2011

Ms. Michelle Banonis
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Ms. Fran Schulte
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Department of Water Resources
South Central Region
3374 East Shields Avenue
Fresno, California 93726

Re: The Lower San Joaquin Levee District comments concerning the Draft Program Environmental Impact Statement / Environmental Impact Report for the San Joaquin River Restoration Program

Dear Ms. Banonis and Ms. Schulte:

Enclosed please find the above referenced document.

Very truly yours,

Linneman, Burgess, Telles,
Van Atta, Vierra, Rathmann,
Whitehurst & Keene

Thomas J. Keene

cc: Reggie Hill, Secretary/Manager
Lower San Joaquin Levee District

Enclosure

LSJLD's Draft Comments on PEIS/R

The Lower San Joaquin Levee District

Chapter 11 of the PEIS/R on Flood Management gives very little information about the Lower San Joaquin Levee District, (page 11-23, section 11.2.3), even though the District is the agency which is responsible for flood protection through most of the area which will be affected by the San Joaquin River Restoration Program. It is suggested that the following information be added to the text of the PEIS/R. It is noted where particular information is already in the document:

The Lower San Joaquin River Flood Control Project is owned by the State of California, and administered through the Department of Water Resources, Central Valley Flood Protection Board, (PEIS/R page 11-22, Section 11.2.2). The Flood Protection Board contracts with the Lower San Joaquin Levee District for the District to operate, maintain and repair levees, bypasses and other facilities built in connection with the Flood Control Project, (PEIS/R Page 11-23, Section 11.2.3), in the manner which is set forth in the Lower San Joaquin River Flood Control Project Operation and Maintenance Manual for Levees, Irrigation and Drainage Structures, Channels and Miscellaneous Facilities, (the "O & M Manual"). The District was created by special act of the California Legislature in 1955 for this purpose and has served this purpose since the Flood Control Project was constructed.

LSJLD2-1

The District's jurisdictional boundaries extend from Gravelly Ford in the south to the confluence of the San Joaquin and Merced Rivers in the north. The District is responsible for maintaining the levees which are part of the Flood Control Project, (PEIS/R page 11-13, Section 11.1.3), along the Chowchilla Canal Bypass, the Eastside Bypass and the Mariposa Bypass, and for operating the bifurcation and control structures on those bypasses from Gravelly Ford in the south to the confluence of the San Joaquin and Merced Rivers in the north. The District is also responsible for maintaining the pilot channel through the San Joaquin River within the District's geographic area at certain carrying capacities.

The O & M Manual requires the District to maintain the flood project channels and levee banks free of any new vegetation. It requires the District to go on "flood watch" whenever water in the Flood Control Project system reaches the waterside toe of a project levee. The District is also required to inspect "drainage flap gates",[1] after high flows to make sure that they are not propped open by debris. Historically the District has met these requirements through a number of means. The District has relied heavily on the application of herbicides from motorized equipment, as well as by hand. It also uses motor vehicles to drag each end of a chain across a canal bank to remove vegetation as well. Sand which has accumulated in some parts of the

[1]Drainage flap gates are the means by which landowners discharge water directly into the bypass system.

bypass system has been removed either by the District or by others at the District's behest during the periods when these areas are dry using heavy earth moving equipment. By using these means the District has managed to fulfill its contractual obligations with a staff of only five workers, a foreman, the District Superintendent and the District's Secretary-Manager.

However, since the River Restoration Program began, the District has had to change its methods. Because of the nature of the herbicides which have been used historically by the District, no water can be in the channels during the application to avoid the possibility of the herbicide being carried by the water downstream to the Delta and eventually into the San Francisco Bay. Before the District can use motorized equipment on the bottom of a channel, the channel must not only be dry but it must be completely dried out, which requires weeks without water in the watercourse coupled with dry weather. This severely limits the District's ability to use techniques of applying herbicides from motor vehicles and using heavy equipment to remove sand and it hinders the District's ability to chain the levees. The changes in the amount of water which is in the system due to the Restoration Program have necessitated the District spending more time checking all of the flap gates to make sure that they are closed and having employees on flood watch along levees because there is water touching the waterside toe of a levee.

LSJLD2-1 cont'd

The District finances its operations almost exclusively by collecting assessments from the property which is located within the District's jurisdictional boundaries. The Bureau of Reclamation has acknowledged that, because of the River Restoration Program, the District has incurred additional costs of operation and maintenance. It has entered into a Financial Assistance Agreement with the District for the 2010-2011 water year, under which Reclamation intends to reimburse the District the additional costs of added flap gate inspection, flood watches and the District hiring a consultant to help change the type and method of application of herbicides. Reclamation has indicated to the District its desire to enter into such an agreement for the life of the River Restoration Program but it has also made clear that it has no intention of entering into such an agreement or providing any funding to the District after the end of the Program in 2025.

The Flood Control Project

There are erroneous descriptions of the San Joaquin River Flood Control Project and its operation throughout the document. What follows is an accurate description. It includes both paraphrasing and quotations from the O & M Manual.

Flood Control Project Description

LSJLD2-2

There are three bypasses in this Project: 1) Chowchilla Canal, 2) Eastside and 3) Mariposa Bypasses, which convey flood flows from the San Joaquin, Kings, Fresno and Chowchilla (via Berenda and Ash Sloughs) Rivers. There is no such thing as "the Chowchilla Bifurcation Structure." The correct description is: that the bifurcation location contains the Chowchilla Canal Bypass control structure and the San Joaquin River control structure. Flows that are diverted at the bifurcation either go through the Chowchilla Canal Bypass control structure into the bypass or through the San Joaquin River control structure into the river. The Chowchilla Canal Bypass (with a channel capacity rating of 5,500 cfs) extends from the San

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Joaquin River to the confluence of the Fresno River, which marks the beginning of the Eastside Bypass. Eastside Bypass Reach 1 (with a channel capacity rating of 10,000 cfs from Fresno River to Berenda Slough, 12,000 cfs from Berenda Slough to Ash Slough; 17,000 cfs from Ash Slough to the San Joaquin River interchange at Washington Avenue) extends from the Fresno River confluence to the San Joaquin River interchange in Merced County and receives flows from the Fresno River, Ash and Berenda Sloughs. Eastside Bypass Reach 2 (with a channel capacity rating of 16,500 cfs) extends from the San Joaquin River interchange confluence to the head of the Mariposa Bypass, and receives flows from a portion of the Merced County Streams Group (Deadman and Mariposa Creeks). Eastside Bypass Reach 3 (with a channel capacity rating of 12,000 cfs from the Eastside Bypass control structure to Owens Creek; 13,500 cfs from Owens Creek to Bear Creek; 18,500 cfs from Bear Creek to the confluence with the San Joaquin River) extends from the head of the Mariposa Bypass to the head of Reach 5 and receives flows from the remaining Merced County Streams Group (Owens, Duck and Bear Creeks).

Operation of the Flood Control Project Facilities

The general rule set forth in the O & M Manual is that the District must operate and maintain the structures and facilities constructed by the State of California in such a manner and at such times and for such periods as may be necessary to obtain the maximum flood protection benefits intended for the Flood Control Project.

San Joaquin River and Chowchilla Canal Bypass control structures

LSJLD2-2 cont'd

The flow in the San Joaquin River upstream of the control structures at the head of the Chowchilla Canal Bypass will normally vary from 0 to 8,000 cfs with higher infrequent flows occurring when the flood control capacity of Millerton Lake behind Friant Dam is exceeded. The first increment of flow down the San Joaquin River may be routed through either structure. Up to 2,500 cfs will normally be routed through the San Joaquin River control structure insofar as it does not exceed the capacity of the river when added to the releases from Pine Flat Dam and the remaining increment of flow. Up to 5,500 cfs will be passed through the Chowchilla Canal Bypass control structure. A total flow of 8,000 cfs will normally be divided with 2,500 cfs passing through the river structure and 5,500 cfs passing through the bypass structure.

Should the flows exceed 8,000 cfs at the control structures or 10,000 cfs at the latitude of Mendota, the District has some discretion in the operation of the system with the objective of minimizing damage to the flood control project and protected area. The decision as to whether the initial water should flow in the San Joaquin River or into the Chowchilla Canal Bypass is to be based on the overall flood control needs of the project area. Due to the poor condition of the river channel downstream of the San Joaquin River control structure, the flows are metered and the District regulates them so that they do not exceed 2,500 cfs when Pine Flat is not releasing maximum flows down the Kings River North Fork.

Eastside Bypass and Mariposa Bypass control structures

The maximum design flow in the Eastside Bypass upstream from the control structures during flood conditions is 16,500 cfs. The system has been designed so that the first 8,500 cfs of

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flow is passed through the Mariposa Bypass control structure. It is the objective of the radial gate control to divert the flow in excess of 8,500 cfs through the Eastside Bypass control structure. Abnormal flows in the Eastside Bypass, (that is flows over 16,500 cfs,) must be divided through the two structures. Flows through the Eastside Bypass control structure are dictated by the discharges from the Merced Streams Project inflow. Keeping the flows through the Eastside Bypass control structure at minimum allows the Merced Streams flood flows to enter the Flood Control Project facilities more efficiently.

San Joaquin River and Sand Slough structures

These facilities must be operated in such a way as to prevent or reduce flooding during periods of high water. The O & M Manual provides that these facilities, which were constructed as a part of the protective works, shall not be used for purposes other than flood protection during the flood season without approval of the Central Valley Flood Protection Board. This general rule of operation is then "fleshed out" with the following supplemental criteria:

LSJLD2-2 cont'd

The San Joaquin River Structure shall be operated when the combined flow in the Interchange Area is 10,000 cfs. At that point, the District is to open one gate fully, wait two hours, and then open another gate and wait two hours and then repeat the process until all gates are open. During periods of receding flood flows in the Interchange Area, the gates may be operated by reversing the opening schedule, closing the four gates when the flood channel capacity drops below 10,000 cfs, or leaving the gates open during the entire recession of flow.

The Sand Slough Structure and San Joaquin River control structure have been designed to divide and divide automatically the flows, ranging from minimum measurable flows to and including 200 cfs, occurring in the San Joaquin River above the river and the Sand Slough structure. The first 50 cfs of flow in the river will be diverted into San Slough and that all flows in excess thereof will be divided as equally as possible between the river and Sand Slough. In addition, the structure flow diversion may be changed temporarily by the Superintendent whenever necessary to deliver water introduced into the river only for transportation and regulated so as not to affect the water rights of local interests.

Chapter 11 of the PEIS/R discussion of Flood Management

Technical Comments

LSJLD2-3a

Attached to this document is an addendum containing the comments of CH2M Hill, the engineering firm which has been retained by the District to perform a technical review of the PEIS/R. Those comments are incorporated here in by this reference.

LSJLD2-3b

The addendum contains a number of comments addressing the modeling mentioned in the PEIS/R. They point out that the models used do not have the ability to evaluate how more frequent high flows and flow levels will saturate and compromise levee integrity over time. A UNET model can only provide a theoretical estimate of the flow capacities in the river. The impact assessment methodology is only theoretical in nature and has very limited applicability to

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LSJLD2-3b cont'd

the actual physical system in the restoration area. The river is far more complex than any model can assess. The document does not adequately describe the limitations of this methodology.

LSJLD2-4

The document does not adequately evaluate the potential performance of the levees which the District maintains. Such an evaluation must consider the composition of the levees and the foundation materials and evaluate seepage through and under the levees. This kind of analysis cannot be addressed with a single factor of safety

Program Level Impacts

LSJLD2-5a

In considering "FLD-1" impacts, the PEIS/R initially states that the River Restoration Program would include the development of riparian habitat in reached 2B and 4B of the river "which would increase vegetation or change sediment deposition patterns within these river reaches.", however, the document assures the reader that, "hydraulic modeling of these actions demonstrates little to no changes in water level frequencies throughout the system." (Page 11-31, Section 11.3.4). Apparently, the parameters which will be used to design the improvements which will mitigate the impact of the program on flood protection have not yet been developed.[2] But the document claims to rely on a hydraulic model which can accurately analyze the changes in water level frequencies caused by increased vegetation and changes in the amount and locations of sedimentary deposits without identifying even the parameters which will be used to design the improvements. Obviously this is impossible. Either the proponents of the project do know the parameters of the yet-to-be-designed improvements or they do not have a model which is reliable. Without the disclosure of this information the conclusion that the level of impact on flood control will be reduced to less than significant is not warranted.

LSJLD2-5b

The discussion of FLD-1 goes on to acknowledge that there are potentially significant impacts from Alternatives A1 through C2 to "expose people or structures to a significant risk of loss, injury of death involving flooding, including flooding as a result of the failure of a levee or dam." (PEIS/R pages 11-31 to 11-32, Section 11.34.) The primary concern set forth in the document, appears to be that constructing improvements to one part of the system may result in a break out of flood water in another, unforeseen part of the system. The mitigation measure provided with regard to the construction of improvements is to require the "project proponents for the site-specific project [to] incorporate actions into site-specific design of individual projects to reduce the predicted flood flow impacts to less-than-significant levels." (Page 11-40, Section 11.3.4).[3]

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[2] "Because the details of the program-level actions are not known at this time, there is insufficient information available to describe specific actions that would reduce this impact to less than significant levels." (PEIS/R, page 11-40, Section 11.3.4.

[3] Exactly who the "project proponents" might be if someone other than the Bureau of Reclamation or the State of California's Department of Water Resources, is not made clear. Presumably this is not an attempt to put the burden of reducing environmental impacts to an acceptable level on either the District or on landowners who advocate specific improvement project which might be needed to restore the same level of flood protection which they had prior to the River Restoration Program being implemented.

The point of preparing a programmatic environmental document is to consider the system as a whole, rather than piecemeal. The examination of environmental consequences on a project-by-project, incremental approach is no substitute for a programmatic examination. To defer the environmental analysis of flood impacts to site-specific projects ignores the very fact that this is a hydraulic system and changing one piece of it will, necessarily, have an effect elsewhere in the system. The changes which will need to occur in order to achieve the purposes of the program have, to some extent, been identified in the Settlement Agreement and in Appendix H to the PEIS/R. Presumably these changes, either singly or in some combinations, will constitute the projects which will tier off of the programmatic document. Unfortunately, none of the projects identified in the Settlement Agreement are even mentioned in Chapter 11. Not only should the LSJLD2-6a impact of building the already identified improvements be examined at the programmatic level but additional design and development work should have been performed prior to the publication of the programmatic document so that the environmental consequences of these physical changes to the entire flood control project could be considered on a system-wide basis before examining the consequences of the construction of particular improvement projects. There is a real need for a programmatic environmental document to examine the flood protection impacts of the building the known improvement projects but this document fails to meet that need.

The authors of the document say that they are sure that the changes to the system which will be constructed, (what ever they are going to be,) will mitigate the impacts on flood control to a level which is less than significant but, because of a lack of recent data regarding channel and levee conditions, the impact is considered potentially significant anyway.

> "However, incorporating actions into project design and mitigation measures to reduce redirected flood flow impacts to less than significant levels will be accomplished using known and accepted engineering design standards and features. Actions could include but would not be limited to modifications to project design modifications to existing levees, providing a larger floodplain between levees through the acquisition of land and construction of setback levees, or regrading of land between levees. With mitigation, this impact would be **less than significant.**" (PEIS/R, page 11-40, Section 11.3.4.

The difference between those alternatives which are identified in the PEIS/R with the LSJLD2-6b number "1" and those identified with the number "2" is that the former would put only 475 cfs in Reach 4B1 of the River (with the balance of the restoration flows going through the Eastside Bypass), and the latter would leave the full 4,500 cfs in the river. Clearly the changes which would have to made to Reach 4B1 of the river in order to allow it to hold 4,500 cfs would be extreme. They would almost undoubtedly include a widening of the footprint of the river, regrading the land and the construction of new levees some distance back from the current river bed, (in those parts of reach 4B1 in which there is still a discernable rive bed). The amount of land which is currently in agricultural production which this would take out of production could be very significant.

Alternatively, if Reach 4B1 of the river needs to be modified only to allow for the passage of 475 cfs, with the difference going through the Eastside Bypass (and possibly the Mariposa Bypass), then, while changes to the river bed would still be required which will take up some

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LSJLD2-6b cont'd

additional land, it is not as likely to be nearly as much land. Since the project would require the development of a riparian habitat wherever the fish will pass, the affected portions of the bypass system would, at the very least, have to be re-graded. However, the impact of the development of a riparian habitat in the bypass system would certainly have an impact on the ability of the bypass system to carry flood waters, (regardless of what the above referenced hydraulic model may indicate). If the project is to maintain at least the present level of flood protection, under this group of alternatives, improvements must be designed and constructed to increase the carrying capacity of the affected reaches of the bypass system. Again, this could require taking land along these portions of the bypass system which is currently in agricultural production out of production either by acquiring fee title to the land or increasing the existing easement both to include the passage of restoration flows (rather than just flood flows) and to add the land subject to the easement. Either of these changes would take that land out of the District's tax base. It would also create an additional burden on the District's operation and maintenance of the bypass system not only during the life of the River Restoration Program but after the program was completed, particularly if it is successful in reestablishing the population of endangered fish.

LSJLD2-7

The PEIS/R makes no attempt to differentiate between the amount of land or the location of land which would have to be removed from agricultural production between those alternatives designated with the "1" suffix and those designated with the "2" suffix. It is obvious, even at the programmatic level, that there would be a significant difference. It makes no sense to perform the programmatic environmental analysis of flood protection impacts without analyzing the obvious consequences of the alternatives which are under consideration. In this case, a key difference between the alternatives identified in the PEIS/R is whether the Levee District will have to maintain a bypass system which contains an endangered species' habitat after the Program is over and the habitat has been established in the bypass system. This is a clear difference between the alternatives which does not depend on knowing even the parameters of the specific improvements which will have to be constructed in order to effectuate the purposes of the River Restoration Program. It is a difference which is likely to have a major impact on the District's ability to provide flood protection at its current level. It is a difference which the PEIS/R ignores.

LSJLD2-8

Impact FLD-2 is whether the program would substantially reduce opportunities for levee and flood system facilities inspection and maintenance. This impact as to Alternatives A1 through C2 is not really discussed separately in Chapter 11. There is an indication in Table 11-4 on page 11-25 that any impacts would be less than significant and, Section 11.3.4 on page 11-40 provides only that program construction activities "may temporarily limit access for maintenance and inspection staff. The duration of this impact, however, would not completely impede the inspection and maintenance activities."

From the District's perspective, this statement is patently untrue. As noted above, prior to the initial implementation of the River Restoration Program, most of the means which the District has historically used to meet its obligations for flood control activities have required the water way to be dry. The River Restoration Program has resulted and will continue to result in there being water in the system in all but the winter months, during which time there is often water in the system from the weather. This change has occurred not because of construction activities, (there has been no construction up until now), but because of the presence of the water

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LSJLD2-8 cont'd

itself. This impact will continue not only during the specific term of the River Restoration Program but will be a permanent change to the operation of the river and Flood Control Program While this has certainly impeded the District's ability to maintain the pilot channel in the river itself, its impact on that portion of the Eastside Bypass from the Sand Slough Control Structure to the beginning of the Mariposa Bypass will be very significant if Alternatives A1, B1 or C1 are chosen. Under these alternatives, there will be water in this segment of the Eastside Bypass all year and water in either the Mariposa Bypass or the Eastside Bypass from the Mariposa to the confluence with the San Joaquin River. This will greatly limit the District's access for maintenance activities. The District has advised the Bureau of Reclamation of this fact at every opportunity during at least the last three years. It is disheartening to see that Reclamation still does not get the message.

Project Level Impacts

LSJLD2-9

Chapter 11 of the PEIS/R refers to the description in Chapter 2.0, of the Project Level, saying that it deals primarily with the re-operation of Friant Dam, (Section 11.3.5, page 11-41). The District notes, however, that section 2.4.1, on page 2-14, also includes the re-operation of downstream flow control structures, "which includes modifying operations of the San Joaquin River Flood Control Project, (flood management system) and other structures to convey Interim and Restoration flows." Presumably this will include the bifurcation structures operated and maintained by the Levee District, such as the Sand Slough Control Structure and the bifurcation structure at the head of the Chowchilla Canal Bypass. While the Restoration Administrator is supposed to recommend to the Secretary the date for commencing full Restoration Flows a number of federal and state actions are necessary before full Restoration Flows are released. Among these actions are channel capacity modifications, (Section 2.4.1, page 2-21). It is also noted in Chapter 2 that the Secretary is required to commence full Restoration Flows "on a date certain no later than January 1, 2014." (Section 2.4.1, page 2-20.) Exactly which channel capacity modifications will have been completed by January 1, 2014, is not made clear nor is it made clear in what way the operations of the Flood Control Project will need to change. Most importantly, it does not say who will operate or maintain the "channel capacity modifications" which have not yet been constructed. The Levee District fears that it is the entity most likely to be given these tasks.

LSJLD2-10

However, in considering FLD-6, the PEIS/R provides that, because the Interim and Restoration flows would be limited by the then-existing channel capacity of the affected water courses, the actions would have a less than significant impact on the exposure of people or structures to significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, (Section 11.3.5, page 11-43). In considering FLD-7, the PEIS/R at last recognizes that the increased duration of elevated flows will subject the channels and levees to increased periods of saturation, (Section 11.3.5, page 11-49). However, it goes on to say that, maintenance activities, such as putting gravel on top of the levees "are anticipated to be completed as part of normal flood system maintenance" which would have to be done anyway and, therefore, the impacts of the project would be less than significant.

This is nonsense. If levies are wet for more of the year, there will be a greater need for maintenance. If the District has to have men on flood watch for more of the year because the

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LSJLD2-10 cont'd

water has reached the inside tow of the levee then the Levee District will have incurred significant additional personnel costs and these men will not be available to perform other maintenance activities. If men are on flood watch for more of the year, there will be additional trips taken on the roads on top of the levees and, therefore, the roads will have to be re-graveled more frequently and the vehicles will have to be replaced more often. All of this adds to the District's cost of operation. The fact that Reclamation has entered into a Financial Assistance Agreement with the Levee District to reimburse the District for the additional expense it incurs as a result of the 2010-2011 project is the best indication that Reclamation knows this. The failure of the PEIS/R to admit at this point that the District incurs increased costs of operations and maintenance as a result of there being water in the system more often is absurd.

LSJLD2-11

Eventually the discussion reaches that point in saying: "Increased average flows in [the] Restoration Area reaches ***could*** result in less opportunity for levee and flood system facilities inspection and maintenance." It goes to state that, if that is in fact the case, then Reclamation will "conduct or enter into an agreement with others to conduct such additional maintenance activities." It then refers to the financial assistance agreement which Reclamation was negotiating with the District, and which is now in effect for Water Year 2010-2011. It does refer to a "long-term agreement" but it does not specify whether such an agreement would continue beyond the planned termination of the River Restoration Program at the end of 2025. As noted above, Reclamation has indicated to the District that it does not anticipate any agreement which lasts beyond the end of 2025.

The District's activities are supported almost wholly from the assessments which it collects on land which is inside the District's jurisdictional boundaries. Like any special purpose district created by California law, the Levee District cannot collect assessments from governmental entities. The District already has the problem that its tax base is eroding because the state and federal governments have acquired land inside the District – primarily for wildlife refuges – in recent years. Other governmental agencies, such as the City of Firebaugh, have also acquired land. It is an unavoidable fact of life that whether the River Restoration Program chooses one of the options identified by the suffix "1" or one of the options identified by the suffix "2", additional land will no longer be subject to assessment. The District will, therefore, be required to perform more operation and maintenance activities with less income. Unless there is money committed in perpetuity to the District from some other source, the it will not be economically feasible for the District to maintain the current level of flood protection.

LSJLD2-12

Conclusions and Recommendations:

A programmatic environmental document is sorely needed. The PEIS/R which has been presented does not meet the need. However, before that document is even prepared a number of things need to have happened:

1. The program needs to have been planned sufficiently to allow a system wide analysis of the flood impacts on a programmatic level. This does not mean that the design of specific improvements has to be completed. It means only that the scope of the improvements and what those improvements need to do has to be clearly enough defined that it can be

LSJLD2-12 cont'd

determined if, in fact, they can be designed in such a way to have no significant impact on the District's ability to provide at least the present level of flood protection.

2. If the programmatic environmental document is going to use a computer model, then

LSJLD2-13

a. The assumptions in that model, (including the assumed parameters of the improvements to be constructed in the system), need to be in the environmental document so that they can be examined.

b. The limitations of that model need to be disclosed in the document and fully discussed.

c. The use of the model must be supplemented by additional data, observations and analysis.

LSJLD2-14

3. The levees must be evaluated. Such an evaluation must consider the composition of the levees and the foundation materials and evaluate seepage through and under the levees.

LSJLD2-15

In the development of the programmatic environmental document, the long term financial viability of the Levee District needs to be addressed. This viability is threatened in at least two ways: (a) a change in the use of land within the District's boundaries so that it will become a part of the river or a part of flood plain will reduce the District's income from assessments and, (b) the increase in the District's costs of operations and maintenance both during the River Restoration Program and after the River Restoration Program is completed at the end of 2025. These increases in cost will occur both because of the construction of the new facilities which will have to be maintained and because the methods currently used by the District will have to be modified due to the fact that water will be present year round. The alternative methods, (e.g. spraying herbicides by hand rather than using a machine; using herbicides which are water-safe which, as a rule, require the application of more of the product, more often; having to use resources, both in personnel costs and in capital costs to stand flood watch, etc.) are less cost effective than the methods currently used.

Some permanent source of funding, in addition to the assessment of the lands currently within the District, must be secured. This source of funding must continue after the River Restoration Project comes to an end at the end of 2025. It will be difficult, if not impossible, to quantify the amount of ongoing funding that will be necessary without knowing how much of the land which is currently within the District's boundaries and in agricultural production will be taken out of production by the River Restoration Program. This, in turn, probably means that the programmatic environmental document will need to come up with an estimate of the amount of land, the type of land and the location of the land which will be used in the alternatives considered. Principally this means the differences between the alternatives which would use and those which would not use the Eastside Bypass to transport water around Reach 4B1 of the river.

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ADDENDUM

TO THE COMMENTS OF

THE LOWER SAN JOAQUIN LEVEE DISTRICT

ON THE DRAFT PROGRAM ENVIRONMENTAL IMPACT STATEMENT /

ENVIRONMENTAL IMPACT REPORT

FOR THE SAN JOAQUIN RIVER RESTORATION PROGRAM

Prepared by CH2M Hill for the

Lower San Joaquin Levee District

San Joaquin River Restoration Program PEIS

Flood comments Prepared for Lower San Joaquin Levee District

9/20/2011

Chapter 2 –Description of Alternatives

LSJLD2-16 **Chapter 2 Page 2-14, line 23** - Text states the action is "Minimizing increases in flood risk in the Restoration Area as a result of Interim and Restoration flows". Action should be "No increase in flood risk as a result of Interim and Restoration flows"

LSJLD2-17 **Chapter 2 Page 2-22 line 30** - Corp EM 1110-2-1913 performance standards do not cover all levee stability issues

LSJLD2-18 **Chapter 2 Page 2-23 line 2** - Text refers to "flows that would not significantly increase flood risk". Revise text to acknowledge "no increase in flood risk"

LSJLD2-19 **Chapter 2 Page 2-23 lines 34-37** - The document discusses the application of levee design criteria presented in the U.S. Army Corps of Engineers Engineering Manual (USACE), EM 1110-2-1913, Design and Construction of Levees, throughout the Restoration Area. It is understood that USACE criteria for levees may vary slightly from district to district and it is recommended that the requirements for the levees meet the requirements of the Engineering Manual, and any additional requirements of the Sacramento District of the USACE.

LSJLD2-20 **Chapter 2 Page 2-23 line 34-41** - Lines 34 through 39, the discussion refers to maintaining a minimum factor of safety of 1.4 and refers to Table 2-6 from Engineer Manual EM 1110-2-1913, which presents minimum factors of safety for slope stability analyses. The discussion on lines 40 through 41 of this page then defines the Factor of Safety as the reciprocal of the exit gradient. This factor of safety, as defined in the PEIS document on the basis of the exit gradient, is the result of a different type of analysis than the analysis referred to in Table 2-6. Table 2-6 refers to slope stability analyses, which are typically performed using a limit equilibrium analysis of the forces causing potential slope failure, and the forces resisting potential failure. The factor of safety as defined in the PEIS for exit gradients is estimated from a flow net or finite element analysis of the seepage through and below the levee. The factor of safety for seepage erosion as defined in the text assumes the critical exit gradient is 1.0. Based on experience with the USACE on other projects in the Sacramento District, it is understood that their criteria for evaluation of seepage erosion are more stringent. It is understood that USACE uses a lower exit gradient that depends on the case being analyzed.

In summary, evaluation of the potential performance of the levees will require, among other things, evaluation of the composition of the levees and foundation materials, analysis of several modes of potential slope stability failure, as well as evaluation of seepage through and under the levees. Therefore, these analyses cannot be addressed with a single factor of safety requirement. Considering the potential for differences in interpretation of criteria, it is recommended that a more detailed and site specific summary of the design criteria, considering all potential failure modes and considering specific USACE District requirements, be established.

LSJLD2-21 **Chapter 2 Page 2-25 line 1** - The proposed Channel Capacity Advisory Group must have a clear authorized purpose and there must be agreed upon procedures, protocols, and performance standards in place to guide the review and response to comments provided by the group. There must be a formal process for Reclamation to respond to and resolve comments provided by the group.

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LSJLD2-22 **Chapter 2 Page 2-25 line 33-39** - The text refers to maintaining a factor of safety of 1.4. As discussed previously, the criteria established for safe performance of the levees cannot be expressed by a single factor of safety requirement. A more detailed and site specific summary of the criteria, considering all potential failure modes, should be established.

LSJLD2-23 **Chapter 2 Page 2-26 line 1-7 -** A more detailed description of the process to evaluate levees should be provided. The evaluation of levees with respect to the USACE criteria will require detailed assessments of the current levee configurations, adjacent land uses, and topography, past flow conditions, and future flow conditions. Detailed subsurface explorations would be required to understand potential changes to seepage conditions.

LSJLD2-24 **Chapter 2 Page 2-26 line 15-24** - The text describes an analysis of exit gradients but compares this to the USACE criteria for factors of safety from slope stability analyses. The criteria for evaluating seepage erosion and exit gradients differ from the factor of safety requirements for slope stability analyses, as discussed in a previous comment. Also, the description of the exit gradient criteria refers to one mode of potential failure (seepage erosion) that should be evaluated for the levees. As discussed previously, the criteria established for safe performance of the levees cannot be expressed by single factor of safety requirement. A more detailed and site specific summary of the criteria, considering all potential failure modes, should be established.

LSJLD2-25 **Chapter 2 Page 2-26 line 25-30** - The discussion of the performance monitoring is very general, as would be expected considering the lack of site specific information. It is anticipated that the plan for physical monitoring would be revised to be more site specific based on the findings of the analyses of the levee conditions, as more data is available.

LSJLD2-26 **Chapter 2 Page 2-26 line 11-14** - Use of the one-dimensional HEC-RAS hydraulic model described in Appendix I provides only a theoretical estimate of in-channel flow capacity and does incorporate enough information to determine in-channel flows that would have a less-than-significant effect on flood risk. Flood risk is dependent on many other physical factors and local knowledge of the specific reach under investigation. Document should also reference the Seepage Management Plan and supporting groundwater thresholds identified in Appendix H of the plan.

LSJLD2-27 **Chapter 2 Page 2-27 line 1** - Reclamation needs to agree to implement recommended monitoring and management actions submitted by the Channel Capacity Advisory Group.

LSJLD2-28 **Chapter 2 Page 2-28 line 18** - It is clear based on the results of the interim flow studies that implementing the settlement has already and will continue to require increased O&M activities..

LSJLD2-29 **Chapter 2 Page 2-39 line 7-11** - LSJLD needs to be included in any study to determine needed conveyance modifications to maintain existing levels of flood protection.

Chapter 11 – Flood Management

LSJLD2-30 **Chapter 11** - There is a lack of focus on the critical flood issues in the restoration area and on the background and operations of the LSJLD. Many of the descriptions of flood operations and facilities are inaccurate. Need to include DWR flood design capacity figure showing design capacities for all reaches in the study area.

LSJLD2-31 **Chapter 11 Page 11-6 line 23-24 -** Need to include a description of the LSJLD and the significance of its flood operations in the study area between Gravelly Ford and the Merced River. The LSJLD was created in 1955 and is responsible for the maintenance and operation of the project flood control facilities. LSJLD, in

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LSJLD2-31 cont'd — accordance with its agreement with the state Reclamation Board, is obligated to maintain not only the bypasses, but the channel of the San Joaquin River in the project area, in a condition where the channel will carry specified flood flows in accordance with the maximum benefits for flood protection. This obligation may be in direct conflict with some of the proposed restoration actions, including those that encourage vegetation growth in and along the river or bypass channels.

LSJLD2-32 — **Chapter 11 Page 11-9 line 24-25** - Mendota Pool does not function as a reservoir and has no operable flood or water operations storage.

LSJLD2-33 — **Chapter 11 Page 11-9 line 41-42** - Flows greater than 600 cfs may be diverted into the Arroyo Canal during the irrigation season.

LSJLD2-34 — **Chapter 11 Page 11-10 line 1-2** - Flood flows are not diverted in the Arroyo Canal except for irrigation purposes. Flood flows generally pass the canal and continue downstream.

LSJLD2-35 — **Chapter 11 Page 11-10 line 10** - What is "excess water"?. Need to define and better explain that Kings River flows have priority over San Joaquin River flows in Mendota Pool during flood events

LSJLD2-36 — **Chapter 11 Page 11-10 line 15-16** - The text should clarify that the design capacity of the James Bypass/Fresno Slough is 4,750 cfs according to Corp Flood Diagrams. Also need to explain that per current flood control manual operations, the Kings River conveys up to the first 4,750 cfs of flow into the San Joaquin River and then up to the next 4,750 cfs is diverted to the Tulare Lake Bed. Above a Kings River flood flow of 9,500 cfs, the remaining flow is split 50/50 between the San Joaquin River and the Tulare Lake Bed. Kings River flood flows have priority over Restoration Flows released from Friant Dam into the San Joaquin River. The operation of the Chowchilla Bifurcation Structure is coordinated with the amount of Kings River flood flows entering the San Joaquin River system via Fresno Slough, if San Joaquin River flood flows are being released from Friant Dam. The volume of San Joaquin River flow routed into the bypass system is increased as the amount of Kings River flood flows entering the San Joaquin River increases. Under high Kings River flow conditions, all flows in the San Joaquin River may be routed into the bypass system at the Chowchilla Bifurcation Structure.

LSJLD2-37 — **Chapter 11 Page 11-13 line 16-17** - The levees constructed in the restoration area were constructed by the State as noted on page 11-6 line 13.

LSJLD2-38 — **Chapter 11 Page 11-13 line 32-37** - Need to acknowledge in the text that there has been significant flood damage caused by seepage at flows below accepted design capacities. There has been a significant loss of the original design flow capacity caused by subsidence, sand build up, and vegetation growth in the channels.

LSJLD2-39 — **Chapter 11 Page 11-13 line 37-38** - The sentence should note that Table 11-1 provides original design capacities and should reference the source of the design capacity information. Many of these capacities have been decreased over time due to sedimentation, subsidence, and vegetation growth. For example the current capacity of Reach 2B is estimated to be about 1300 cfs.

LSJLD2-40 — **Chapter 11 Page 11-17 Table 11-1** - Add note stating that the actual Reach 2B capacity has been reduced to 1300 cfs

LSJLD2-41 — **Chapter 11 Page 11-16 line 37-38** - Add note stating that the actual Reach 4B1 capacity has been reduced to 0 to 200 cfs

LSJLD2-42 — **Chapter 11 Page 11-17 Table 11-1** - Note 1 indicates "Summarized from results of one-dimensional HEC-RAS hydraulic modeling described in Appendix H, "Modeling." Table should be based on and reference actual design capacities published in DWR or USACE flood flow capacity diagrams. HEC-RAS

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LSJLD2-42 cont'd modeling has no relevance to design capacities.

LSJLD2-43 **Chapter 11 Page 11-18 line 38** - Should read: Sand Slough Control Structure 'was designed' to maintain this design discharge.

LSJLD2-44 **Chapter 11 Page 11-23 line 11-16** -The description of the LSJLD is inadequate considering the critical role and health and safety responsibilities the District has in the study area. The description should include the following text.

The LSJLD was created in 1955 and is responsible for the maintenance and operation of the project flood control facilities. LSJLD, in accordance with its agreement with the state Reclamation Board, is obligated to maintain not only the bypasses, but the channel of the San Joaquin River in the project area, in a condition where the channel will carry specified flood flows in accordance with the maximum benefits for flood protection. This obligation may be in direct conflict with some of the proposed restoration actions, including those that encourage vegetation growth in and along the river or bypass channels. The LSJLD is responsible for the project levees, bifurcation structures, control structures, and bypass channels that route high flows out of the San Joaquin River into the bypass system, moderating flows in Reaches 2B, 3, 4, and 5. Major facilities in the San Joaquin River Flood Control Project include the Chowchilla Bifurcation Structure, Chowchilla Bypass, Eastside Bypass Control Structure, Eastside Bypass, Mariposa Bypass Structure, and Mariposa Bypass. The LSJLD is funded by property tax assessments on lands within the LSJLD boundaries that receive flood control benefits. As a result of conversion of lands to state and federal ownership (primarily for wildlife areas), the LSJLD is facing a disappearing tax base at a time when O&M costs are rising.

LSJLD2-45 **Chapter 11 Page 11-27 line 1** -Impact assessment methodology needs to be included or be preceded by a clear description of flood control operations under the alternatives. Need to identify if the proposed Mendota Bypass will be used for flood control purposes. Re-plumbing the system will allow alternate flow paths and will impact flood operations. There is the potential for a significant increase in the amount of flood flow that could enter Reach 3 if the Mendota Bypass is constructed. Since increases in flood risk are being evaluated at the project level in this document, a detailed description of potential changes to flood operations and impacts must be included. Kings River flood flows from Fresno Slough must also be considered in the flood evaluation.

LSJLD2-46 **Chapter 11 Page 11-27 line 2-3** - These models have no ability to simulate the true physical processes that will impact flood operations and maintenance in the restoration area. These models do not have the ability to evaluate how more frequent high flows and flow levels will saturate and compromise levee integrity over time. Since minimizing flood risk is being evaluated at the project level, a more rigorous analysis of the impacts of increased flow frequency and flow levels should be provided in the document. The evaluation of redirected flood impacts cannot simply be based on a theoretical modeling exercise using outdated fragility curves.

LSJLD2-47 **Chapter 11 Page 11-27 line 6-7** - Need to include information regarding the calibration and prior usage of these modeling tools that make them appropriate for use in this impact assessment.

LSJLD2-48 **Chapter 11 Page 11-27 line 12-14** - The document should acknowledge that the UNET model can only provide a theoretical estimate of the non-damaging flow capacities in Reaches 2A,2B, 3, 4A, and 4B. There are many other physical parameters that must be considered in the evaluation of non-damaging flow capacity.

LSJLD2-49 **Chapter 11 Page 11-27 and 28 lines 15-18 and 1-8** - The impact assessment methodology is

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LSJLD2-49 cont'd	theoretical in nature and has very limited applicability to the actual physical river system in the restoration area. The document needs to describe the limitations of this method and its application to the San Joaquin River's highly complex and flow capacity constrained flood management system.
LSJLD2-50	**Chapter 11 Page 11-29 line 13 -14** - How does the impact assessment methodology provide a meaningful assessment of increased risk due to underseepage, through seepage, or slope stability?.
LSJLD2-51	**Chapter 11 Page 11-27 line 15 -16** - How does the impact assessment methodology provide a meaningful assessment of increased risk due to erosion or associated landside slope stability mechanisms?
LSJLD2-52	**Chapter 11 Page 11-31 line 40-41** - Preceding text does not adequately inform the reader regarding the "lack of recent and inconsistent information" regarding channel and levee conditions in the Restoration Area. Preceding sections need to clearly describe these data issues for the reader.
LSJLD2-53	**Chapter 11 Page 11-35 line 13-16** - How will redirected impacts to Reaches 3 and 4A be mitigated?
LSJLD2-54	**Chapter 11 Page 11-35 line 21-24** - Localized backwater and redirection effects can cause significant impacts to local flood and water operations. LSJLD and third party interests need to be included in site-specific studies and designs to ensure that all program-level actions are appropriately refined to eliminate any potential impacts.
LSJLD2-55	**Chapter 11 Page 11-35 line 29-32** - Increased vegetation and sediment deposition can cause significant impacts to local flood and water system operations including increased O&M costs. LSJLD and third party interests need to be included in site-specific studies and designs to ensure that levee and channel improvements are appropriately designed to eliminate any potential impacts. Document does not adequately describe vegetation management response actions and how these actions will be funded.
LSJLD2-56	**Chapter 11 Page 11-35 line 30-32** - The increased O&M costs to manage increased vegetation growth and sediment deposition can cause significant financial impacts to local flood and water system operations. A long-term financial agreement must be in place before this action can be considered less than significant.
LSJLD2-57	**Chapter 11 Page 11-41 line 31-35** - The project level impact and mitigation section must identify and evaluate all potential land use related inundation and anticipated seepage-related impacts to all existing and proposed land uses such as the City of Mendota's and City of Firebaugh's well fields and all public facilities and parks (including total acreage to be impacted) needs to be specifically identified and how such impacts will be mitigated. The Firebaugh City Manager reports that they have to monitor levees at flows above 4,000 cfs and have to sandbag if flows approach 4,200 cfs. The city also experiences a rise in local groundwater levels that stops percolation at the waste water treatment plan settling ponds, requires pumping of construction trenches, saturates embankments and levees, and floods recreation facilities. All of these impacts must be addressed in the document since minimizing flood risk is being evaluated at the project level for NEPA/CEQA compliance.
LSJLD2-58	**Chapter 11 Page 11-43 line 7-8** -The actions included in Alternatives A1 through C2 should "prevent" or avoid potential substantial increases in flood risk which might otherwise occur. A "reduction" in flood risk is only acceptable if the risk is reduced to the No-Action level.
LSJLD2-59	**Chapter 11 Page 11-43 line 15** -Consistent with comments on Chapter 2, the proposed Channel Capacity Advisory Group must have a clear authorized purpose and there must be agreed upon procedures, protocols, and performance standards in place to guide the review and response to comments provided by the group. There must be a formal process for Reclamation to respond to and resolve comments provided by the group.

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LSJLD2-60 **Chapter 11 Page 11-43 line 17** - Consistent with comments on Chapter 2, the use of one-dimensional HEC-RAS hydraulic modeling described in Appendix I provides only a theoretical estimate of in-channel flow capacity and doesn't incorporate enough information to determine actual then-existing in-channel flow capacities.

LSJLD2-61 **Chapter 11 Page 11-43 line 20-22** - The evaluation of the potential performance of the levees will require, among other things, evaluation of the composition of the levees and foundation materials, analysis of several modes of potential slope stability failure, as well as evaluation of seepage through and under the levees. These analyses cannot be addressed with a single factor of safety requirement. The use of the Factor of Safety of 1.4 or greater is inadequate for determination of safe limiting Interim and Restoration flows. Considering the potential for differences in interpretation of criteria, it is recommended that a more detailed and site specific set of design criteria, considering all potential failure modes and specific USACE District requirements, be established.

LSJLD2-62 **Chapter 11 Page 11-43 line 26-27** - There may be locations along the river in the Restoration Area where the channel invert elevation is higher than the elevation of the landside levee toe. Therefore, this criteria may not provide a minimum level of protection in all cases.

LSJLD2-63 **Chapter 11 Page 11-43 line 28-30** - As noted previously, the evaluation of the potential performance of the levees will require, among other things, evaluation of the composition of the levees and foundation materials, analysis of several modes of potential slope stability failure, as well as evaluation of seepage through and under the levees. Limiting Interim and Restoration flows to levels that correspond to a single Factor of Safety of 1.4 or higher does not address all of these performance measures. Considering the potential for differences in interpretation of criteria, it is recommended that a more detailed and site specific set of design criteria, considering all potential failure modes and specific USACE District requirements, be established.

LSJLD2-64 **Chapter 11 Page 11-43 line 30-34** - The USACE Factor of Safety of 1.4 cited in Chapter 2 does not provide a minimum Factor of Safety associated with all the failure modes contributing to levee erosion and seepage impacts.

LSJLD2-65 **Chapter 11 Page 11-44 line 19-23** - Figure 11-18 shows a particular hydrologic sequence when peak snow melt releases are avoided, but there may be many other hydrologic sequences where peak snow melt releases are not avoided and levees saturated by preceding Restoration flows may be more susceptible to failure during high flood flow releases. This impact may not be less than significant in many cases.

LSJLD2-66 **Chapter 11 Page 11-44 line 24-29** - Peak Interim and Restoration flows in (April-June) that occur after major rain-flood events may contribute to additional levee erosion, seepage, and exacerbate existing problems or delay required maintenance. This impact may not be less than significant in many cases.

LSJLD2-67 **Chapter 11 Page 11-48 line 9-12** – Immediate and long-term actions associated with maintaining channel capacities are outlined in PEIS/R Appendix D (Physical Monitoring and Management Plan), chapters 4 and 5. The document needs to provide a more detailed description of how and when these actions would be implemented.

LSJLD2-68 **Chapter 11 Page 11-48 line 19-20** -Consistent with comments on Chapter 2, the Invasive Vegetation Monitoring and Management Plan acknowledges the importance of controlling invasive riparian species, but it is unclear how the program can effectively identify and control invasive plant species. The PEIS should include an analysis of the feasibility of implementing an invasive plant monitoring and control program. The PEIS should describe the potential impacts on vegetation and wildlife, and restoration project success within the context of ongoing control measures or diminished habitat functions resulting from invasive plant species.

LSJLD2-69 **Chapter 11 Page 11-49 lines 1-4** - Consistent with previous comments, the measures to reduce flood

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LSJLD2-69 cont'd risk described in Chapter 2 need to be more specific and thorough. The three measures that Reclamation proposes to implement to collectively avoid a potentially significant increase in the risk of flood damage, or levee failure due to underseepage, throughseepage, erosion, or landside slope stability need to be further developed to avoid potential increases in flood risk. As discussed previously, the safe performance of the levees cannot be expressed by a single USACE factor of safety requirement. A more detailed and site specific summary of the criteria, considering all potential failure modes, should be established.

Appendix H – Water Supply and Flood Modeling

LSJLD2-70 **Appendix H Section 7.1.1 Page 7-1 lines 20-21** - MEI 2008a page 4 section 2.3 Main Channel Manning's n values refers to a non standard method used to compute composite roughness values. Has there been any peer review or acceptance by the USACE Hydrologic Engineering Center of this method?

LSJLD2-71 **Appendix H Section 7.1.1 Page 7-2 lines 7-8** - MEI 2008b page 8 section 2.3 Modeling of Roughness Zones refers to a non standard method used to compute composite roughness values. Has there been any peer review or acceptance by the USACE Hydrologic Engineering Center of this method?

LSJLD2-72 **Appendix H Section 7.1.1 Page 7-2 lines 24-29** - The proper definition and application of the seven distinct roughness zone types is critical to model calibration and the evaluation of alternatives. Definition of the zone types should be consistent with related model applications and be validated by actual physical river conditions. A roughness greater than 0.1 may be needed to account for dense vegetation that significantly impedes flow.

LSJLD2-73 **Appendix H Section 7.1.2 Page 7-2 lines 30** - The modeling assumptions section should acknowledge and describe that a non-standard method is used to compute composite roughness values. This assumed methodology could have significant influence on the capacity analysis and impact analyses of the alternatives. Has there been any peer review or acceptance by the USACE Hydrologic Engineering Center of this method?

LSJLD2-74 **Appendix H Section 7.1.2 Page 7-3 lines 10-13** - What does "the model was validated to the extent possible" mean? Model calibration and validation documents should be referenced here similar to what was provided for Calsim. Was the model independently calibrated and validated based on different low and high flow events? What is the level of confidence associated with the model for use to evaluate channel capacity, fish passage, and sediment transport?

LSJLD2-75 **Appendix H Section 7.1.3 Page 7-3 lines 22-29** - Text should state that the model only provides a theoretical evaluation of non-damaging flow capacity and does not account for all the other physical parameters that are affected by the changes in flow frequency, duration, and magnitude. These impacts include increased levee saturation, seepage, piping, and underflow.

LSJLD2-76 **Appendix H Section 7.1.3 Page 7-3 lines 22-29** -MEI 2008c page 1 section 2.1 Water-Surface Profiles states that "It is recognized that discharges of this magnitude may not actually occur in the downstream portions of the reach under existing conditions due to seepage, irrigation diversions, and operating procedure at the large diversion structures along the reach; thus, the discharges and estimated water-surface elevations used in the this flooding and inundation analysis are believed to represent the upper limit of those that are likely to occur in each of the subreaches" This qualifying text should be included in section 7.1.3 with the flow capacity analysis.

LSJLD2-77 **Appendix H Section 7.1.3 Page 7-4 Table 7-1** - The notes at the bottom of the table should include a note acknowledging that the non-damaging capacity of Reach 2B is limited to 1300 cfs based on actual flow conditions. Table needs to include error bounds on simulated values since additional model calibration is recommended to improve the model.

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LSJLD2-78	**Appendix H Section 7.1.3 Page 7-4 line 5-6** - Are the results of the sensitivity analysis available for review? Were the limitations of the model acknowledged in the results?
LSJLD2-79	**Appendix H Section 7.2 Page 7-5 line 5-8** -Interim and Restoration flows will need to be reduced if Kings River flows are entering Mendota Pool under flood conditions. Kings River flows may completely occupy the flood flow capacity in Reach 3 below Mendota Pool.
LSJLD2-80	**Appendix H Section 7.2 Page 7-5 line 8-10** - What changes in the operational criteria at the bifurcation structures are being proposed? These should be documented as part of the flood flow operations analysis. The operational rules should acknowledge that the Mendota Pool Bypass will not be used for flood flow purposes under any conditions.
LSJLD2-81	**Appendix H Section 7.2 Page 7-5 line 17-18** - Tetra Tech 2009 page 2 Section 3 Evaluation of Likely Failure Points (LFP) refers to use of the Comp Study UNET model to evaluate which locations would require strengthening under project conditions. The analysis is limited to the comparison of water surface profiles for advertised (design) capacities based on the steady-state HEC-RAS model and does not account for other physical parameters that influence levee stability due to changes in flow frequency, duration, and magnitude. Potential impacts include increased levee saturation, seepage, piping, and underflow. The comparison of the LFP to the computed advertised water surface profile is not an adequate evaluation.
LSJLD2-82	**Appendix H Section 7.2 Page 7-5 line 17-18** -Tetra Tech 2009 page 3 Section 3 Evaluation of Likely Failure Points (LFP) notes that the results of the UNET analysis highlight the need for a detailed study of both the geotechnical stability and top-of- levee profiles in Reach 3 and 4A before a determination can be made regarding the need to strengthen them as part of the Restoration project. This need for a detailed study should be acknowledged in the PEIS/R section on flood control.
LSJLD2-83	**Appendix H Section 7.2.1 Page 7-5 line 119** - The Model description section needs to state if the non-standard method used to compute composite roughness values in HEC-RAS was also applied to the Comp Study UNET model. This assumed methodology could have significant influence on the capacity analysis and impact analyses of the alternatives.
LSJLD2-84	**Appendix H Section 7.2.1 Page 7-6 line 13-22** - Due to the sandy materials and condition of many of the levees, likely failure is not simply a function of a defined water surface but of the duration and frequency of flow in the channel. An analysis based on likely failure points for given water surface elevations does not adequately capture the increased flood risk in the Restoration area as a result of Interim and Restoration flows.
LSJLD2-85	**Appendix H Section 7.2.1 Page 7-8 line 21-23** -It should be clearly stated in the PEIS/R Alternatives description and assumptions that the proposed Mendota Pool Bypass will not be operated for flood flow conveyance.
LSJLD2-86	**Appendix N – Geomorphology, Sediment Transport, and Vegetation Assessment** **Appendix N Section 5.3.2 Page 5-16 line 25-26** - The section of text on Reach 2A describes the results of the SRH-1D sediment transport and vegetation response modeling. The text states "the base flow under Project Conditions in this reach will substantially increase the amount of vegetation in the reach". Lines 33-35 state that "native plant productivity doubles from Baseline Conditions when Alternative A flow is introduced". Invasive plants also increase by 18%. Lines 37-38 state "In the downstream subreach of Reach 2A, Alternative A flows increased base level of low flows and subsequently increased vegetation coverage along the banks. These model predictions support the need for a comprehensive sediment/vegetation management plan and development of a long-term O&M agreement between Reclamation and the LSJLD to provide financial support for on-going sediment and vegetation management

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LSJLD2-86 cont'd

in the Restoration Area.

LSJLD2-87

Appendix N Section 5.4.2 Page 5-21 line 7-10 -The section of text on Reach 2B describes the results of the SRH-1D sediment transport and vegetation response modeling. The text states "Sand transport was estimated to increase from 4,300 tons/year to more than 33,000 tons/year. This is a seven fold increase in the amount of sand transported in this reach". Lines 21-24 state "Levee and flood control measures are recommended in this reach to account for future deposition."

LSJLD2-88

Appendix N Section 5.4.2 Page 5-21 line 25-29 - The section of text on Reach 2B describes the results of the SRH-1D sediment transport and vegetation response modeling. The test states "The increase in base flows in this reach under Project Conditions is anticipated to increase the amount of vegetation in the channel.... Increases in base flow will support a riparian vegetation community". Page 5-22 lines 12-13 states "Average plant productivity width in this reach is estimated to increase by a factor of 1.5 to 2, relative to Baseline Conditions.

LSJLD2-89

Appendix N Section 5.6.2 Page 5-32 line 24-26 - This text on Reach 4A notes that Baseline simulations in 4a predicted almost continuous flow, but acknowledged that the reach is generally dry a majority of the time. This causes an error in the impact analysis since the conclusion on lines 33-34 is that there is very little difference in predicted vegetation between Alternative A and Baseline Conditions. In fact there will likely be significant vegetation growth as a result of Interim and Restoration flows in Reach 4A. This impact should be documented in the PEIS/R.

LSJLD2-90

Appendix N Section 5.7.2 Page 5-35 line 9-12 -The section of text on Reach 4B1 recommends the following " Future levee design to protect adjacent properties should be incorporated in future modeling run to accurately predict sediment transport and geomorphic channel change in this reach. Results presented herein are preliminary and do not represent the influence of possible levees". Since Reach 4B1 may be expanded to convey up to 4500 cfs, it is critical that a thorough sediment transport and geomorphic analysis be conducted to evaluate potential channel migration, vegetation, and O&M issues.

LSJLD2-91

Appendix N Section 5.7.2 Page 5-35 line 24-26 - The summary findings for Reach 4B1 predict an average erosion of 1.9 feet under the 4500 cfs scenario over a 17 –year simulation period. This erosion must be considered in the design process to account for additional seepage potential and impacts to levee stability.

LSJLD2-92

Appendix N Section 5.8.2 Page 5-38 line 33-34 -The section of text on Reach 4B2 describes the results of the SRH-1D sediment transport and vegetation response modeling. The text states that "The Alternative A flows had approximately 15 to 20 percent more native plant productivity in this reach". These model predictions support the need for a comprehensive sediment/vegetation management plan and development of a long-term O&M agreement between Reclamation and the LSJLD to provide financial support for on-going sediment and vegetation management in the Restoration Area.

LSJLD2-93

Appendix N Section 5.9.2 Page 5-43 line 4-5 - The section of text on Reach 5 describes the results of the SRH-1D sediment transport and vegetation response modeling. The text states "The simulated plant productivity under Alternative A flows was approximately 30 percent greater in Reach 5a and 38 percent greater in Reach 5b.Alternative". This significant increase again demonstrates the need for a comprehensive sediment/vegetation management plan to prevent increases in flood risk.

LSJLD2-94

Appendix N Section 5.10.2 Page 5-47 line 34-35 -The section of text on the Eastside Bypass states that "Under project conditions, flows are restored to Reach 4B1 and less flow is diverted to the Eastside Bypass. This may be true under the condition of 4B1 at 4500 cfs, but with 4B1 at 475 cfs Restoration pulse flows will need to flow through the Bypass on a more frequent basis and result in an increase in vegetation

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LSJLD2-94 cont'd

growth. This increase in vegetation growth needs to be documented in the PEIS/R.

LSJLD2-95

Appendix N Section 5.11.2 Page 5-52 line 19-20 - The section of text on the Mariposa Bypass states that "Under project conditions, flows are restored to Reach 4B1 and less flow is diverted to the Eastside Bypass. This may be true under the condition of 4B1 at 4500 cfs, but with 4B1 at 475 cfs Restoration pulse flows will need to flow through the Bypass on a more frequent basis and result in an increase in vegetation growth. This increase in vegetation growth needs to be documented in the PEIS/R.

LSJLD2-96

Appendix N Section 5 - The geomorphic, sediment transport, and vegetation analysis needs to evaluate potential impacts to the Chowchilla Bypass. Changes in sediment transport and river form in Reach 2A may cause changes to sediment transport and deposition in the Chowchilla Bypass.

Responses to Comments from Lower San Joaquin Levee District (Thomas Keene)

LSJLD2-1: As discussed in MCR-8, "Operations and Maintenance Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, Reclamation recognizes that continued release and conveyance of Interim and Restoration flows likely would change maintenance activities compared with pre-SJRRP conditions. Currently, Reclamation is working with LSJLD to develop and implement an agreement to provide financial assistance for additional Settlement-related costs incurred by LSJLD. The agreement is intended to assist LSJLD in adapting to Settlement implementation, as needed, to potentially maintain an increased level of flood management under release of Interim and Restoration flows. Such an agreement would likely be similar to the agreement recently completed by Reclamation and LSJLD for Water Year 2011 Interim Flows.

Text on page 11-23, lines 11 through 16, of the Draft PEIS/R, has been revised in response to this and other comments to clarify that LSJLD is responsible for operations and maintenance of the project levees, bifurcation structures, control structures, and bypass channels that route high flows out of the San Joaquin River into the bypass system, moderating flows in Reaches 2B, 3, 4, and 5. Major facilities in the San Joaquin River Flood Control Project include the Chowchilla Bypass Bifurcation Structure, Chowchilla Bypass, Eastside Bypass Control Structure, Eastside Bypass, Mariposa Bypass Structure, and Mariposa Bypass. LSJLD, in accordance with its agreement with the Reclamation Board, is obligated to maintain not only the bypasses, but the channel of the San Joaquin River in the project area, in a condition where the channel will carry specified flood flows in accordance with the maximum benefits for flood protection. LSJLD is funded by property tax assessments on lands within LSJLD boundaries that receive flood control benefits. See Chapter 4.0, "Errata," of this Final PEIS/R. The responsibilities of CVFPB and LSJLD are further described in MCR-8, along with potential effects on operations and maintenance activities.

LSJLD2-2: 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 and operations. Text throughout Section 11.1, "Environmental Setting," of the Draft PEIS/R, has been revised in response to this and other comments to provide more detail in descriptions of flood control facilities, beginning on page 11-9, lines 40 through 42. See Chapter 4.0, "Errata," of this Final PEIS/R.

LSJLD2-3a: This comment refers to an addendum to the LSJLD2 comment letter that contains comments LSJLD2-16 through LSJLD2-96. See responses to comments provided in the addendum referenced in this comment, including comments LSJLD2-16 through LSJLD2-96.

LSJLD2-3b: The best available modeling tools were used to evaluate the potential effects of the program alternatives on flood management, including the impacts of increased flow frequency and flow levels, and are described in more detail in Draft PEIS/R Appendix H, "Modeling."

UNET and 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. 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 pages 7-6 and 7-7. The UNET model of the San Joaquin River system 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.

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. With 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.

Text has not been revised.

LSJLD2-4: 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 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 EM 1110-2-1913 (USACE 2000) and ETR 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.

LSJLD2-5a: UNET/HEC-FDA modeling, as described in Draft PEIS/R Appendix H, "Modeling," analyzes the potential for damages to be transferred downstream by changes in water surface elevation due to changes in channel geometry. The site-specific parameters and riparian habitat of Reach 2B and Reach 4B will be determined at the project-level, but would be designed such that little or no change in water level frequencies would occur in upstream and downstream reaches, consistent with the discussion in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R. As set forth in Mitigation Measure FLD-1, on page 11-40, site-specific projects will incorporate measures to avoid or reduce flood risk to the less-than-significant level, or will not be implemented as part of the SJRRP.

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 pages 7-6 and 7-7 of Appendix H. 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.

Text has not been revised.

LSJLD2-5b: As described on page 3-13 of the Draft PEIS/R, program-level mitigation measures provide broad overview guidance on the nature and types of mitigation measures applicable to subsequent site-specific projects. During project-specific study of each program-level action, the program-level mitigation measures would be reevaluated

for applicability based on project-specific information, including findings of significance, and each measure would be refined to apply to the specific project or would be replaced with an equivalent measure. The final measures would then be incorporated into a project-specific MMRP. Actual implementation, monitoring, and reporting of the mitigation measures would be conducted under the purview of the project MMRP, and would be the responsibility of the project proponent for the site-specific project, as identified in the project-specific MMRP. The project proponent may include Reclamation, DWR, and other Federal, State, or local agencies. The project proponent may include lead agencies of future site-specific projects, and may or may not be members of the Implementing Agencies. As noted in the comment, this is not an attempt to put the burden of reducing environmental impacts to an acceptable level on either the District or on landowners who advocate specific improvement projects that might be needed to restore the same level of flood protection that they had before the Settlement implementation. Text has not been revised.

LSJLD2-6a: As described in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, the action alternatives include the actions described in the Settlement. Potential project- and program-level impacts of these actions to flood management are described in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R. As described on page 1-10 of the Draft PEIS/R, the PEIS/R provides broad direction for a wide range of possible future actions while allowing the opportunity for flexibility to respond to changing needs and conditions. Future project-level NEPA/CEQA documents may incorporate the findings of the PEIS/R by reference through "tiering," or incorporating by reference general discussions from the PEIS/R. It is anticipated that later documents will focus solely on issues specific to the later project. A PEIS/R can be used in this way to simplify the task of preparing environmental documents for later parts of a program.

The program-level analysis presented in the PEIS/R considers the broad environmental effects of implementing the Settlement, and addresses the entire suite of effects of implementing the Settlement, including the project-level actions evaluated in detail in this Draft PEIS/R, as well as cumulative impacts. Based on the program-level analysis, the Draft PEIS/R also identifies mitigation measures and performance standards that would apply to subsequent, future project components implemented as part of the Settlement (as conditions of approval). The Implementing Agencies would incorporate these performance standards into the implementation of Settlement actions to avoid or reduce impacts. The Implementing Agencies acknowledge that additional analysis pursuant to NEPA and/or CEQA will be required in the future for activities addressed at a program level in this Draft PEIS/R, after specific project details are identified. At that time, the Implementing Agencies would require compliance with the mitigation measures and performance standards set forth in this PEIS/R as conditions for approval of subsequent actions.

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, including fish reintroduction 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 also MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," and MCR-3, "Order and Schedule of Implementing Settlement Actions," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, for a discussion of funding sources and the schedule and budget for completion of activities.

LSJLD2-6b: All of the action alternatives 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 Planning 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 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, "Master Comment Responses," 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.

LSJLD2-7: As described in Chapter 16.0, "Land Use Planning and Agricultural Resources," of the Draft PEIS/R under Alternatives A2 and B2, program-level impacts related to land use and agricultural resources in the study area would be similar to, but potentially greater than, those described under Alternatives A1 and B1. Whereas under Alternatives A1 and B1, improvements would be constructed in Reach 4B1 to achieve flow capacity of at least 475 cfs, under Alternatives A2 and B2 improvements would be constructed in Reach 4B to achieve flow capacity of at least 4,500 cfs. Estimates of the potential quantities of fill and land necessary for potential modifications to Reach 4B1 under all action alternatives are presented in the Restoration and Water Management Actions in Program Alternatives Attachment to Appendix G, "Plan Formulation," of the Draft PEIS/R.

The nearly 10-fold increase in flow capacity under Alternatives A2, B2, and C2 over Alternatives A1, B1, and C1 is understood to take significantly more fill material than for increasing flow capacity to 475 cfs. Therefore, these alternatives would also result in

indirect temporary or long-term conversion of additional Important Farmland to nonagricultural land uses, convert riparian forest to non-forest uses, or otherwise be inconsistent with land uses in the adopted general plan and zoning ordinances of Fresno and Madera counties. The significant impacts described above under Alternatives A1 and B1 would be similar to but potentially greater than under Alternatives A2 and B2. 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.

As described in MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," 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.

LSJLD2-8: The project-specific details of actions evaluated at a program level in the Draft PEIS/R were not available at the time of preparation of analyses for the Draft PEIS/R. For 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 program-level analysis considers the broad environmental effects of implementing the Settlement, and addresses the entire suite of effects of implementing the Settlement, including the project-level actions evaluated in detail in this Draft PEIS/R, as well as cumulative impacts. Based on the program-level analysis, this Draft PEIS/R also identifies mitigation measures and performance standards that would apply to subsequent, future project components implemented as part of the Settlement (as conditions of approval). The Implementing Agencies would incorporate these performance standards into the implementation of Settlement actions to avoid or reduce impacts.

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. As described on page 11-40, lines 20 through 25, of the Draft PEIS/R, program-level construction activities could temporarily limit access for maintenance and inspection staff, requiring coordination between construction and maintenance activities. Further discussion of impacts to levee and flood system facilities inspection and maintenance is provided at the project level in Impact FLD-7 on page 11-49.

Text has not been revised.

LSJLD2-9: Text in the Draft PEIS/R has been revised to clarify that the Lower San Joaquin Flood Control Project would not be re-operated, 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 of the Final PEIS/R, "Errata"). Flood control facilities would continue to be operated as part of the flood management system, and flood operation criteria would supersede operations to convey Interim and Restoration flows, as described briefly in the Draft PEIS/R on page ES-25 and in greater detail on page 2-29, lines 32 through 42.

The schedule for completion for channel capacity modifications included in Phase 1 actions is December 31, 2013. As described in MCR-2, "SJRRP Funding Availability, Sources, and Cost Estimates," in Chapter 2.0, "Master Comment Responses," 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 commenter is correct that the commencement of release of full Restoration flows is scheduled for January 1, 2014; however, as discussed in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, Restoration Flows would be limited to then-existing channel capacity. This and other measures discussed in Chapter 2.0 as well as in Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R, would minimize potential increases in flood risk due to Restoration flows. The change in operations at Friant Dam and the routing of Interim and Restoration flows could increase 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). Additionally, flows would change the nature of operations and maintenance activities; those activities currently performed in a dry channel, would be performed in wet channel conditions. Reclamation would conduct or enter into agreements with others to perform such additional maintenance activities and assist the local maintaining agencies in the transition from dry

to wet working conditions, made necessary as a result of implementing the Settlement. For more information please see MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R.

LSJLD2-10: As discussed on page 11-49, lines 32 and 33, of the Draft PEIS/R, "increased average flows in Restoration Area reaches could result in less opportunity for levee and flood system facilities inspection and maintenance." The paragraph goes on to state that, because Reclamation would enter into an agreement with LSJLD for the additional maintenance activities, the existing level of flood management would continue with the release of Interim and Restoration flows, and therefore Impact FLD-7 would be less than significant.

The change in operations at Friant Dam and the routing of Interim and Restoration flows could increase 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). Additionally, flows would change the nature of operations and maintenance activities; those activities currently performed in a dry channel, would be performed in wet channel conditions. As described in MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," 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.

LSJLD2-11: The change in operations at Friant Dam and the routing of Interim and Restoration flows could increase 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 nature of operations and maintenance activities; those activities 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 discussed in further detail in MCR-8, "Operations and Maintenance Agreement Considerations," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R, these agreements are still under development. Therefore, the words "long-term" have been removed from the text of page 11-50, line 4, to reflect that no termination date has yet been agreed upon for maintenance agreements.

As described on page 2-94, lines 23 through 26, of the Draft PEIS/R, Reclamation would monitor and manage the response of the system during release of Interim and Restoration flows and reduce or redirect flows, as necessary to limit the potential for significant impacts to occur downstream. Although flow schedules in Exhibit B of the Settlement include year-round release and conveyance of Interim or Restoration flows, Reclamation may reduce or stop flows for a portion of the year in response to a variety of potential conditions, including those described in the Physical Monitoring and Management Plan (see Appendix D of the Draft PEIS/R).

Additionally, the PEIS/R would provide for additional protections against downstream impacts and increased maintenance. Throughout Settlement implementation, the maximum downstream extent and rate of Interim and Restoration flows to be released would be limited to then-existing channel capacities. As channel or structure modifications are completed with additional environmental compliance, maximum Interim Flow releases would be correspondingly increased in accordance with then-existing channel capacities and with the release schedule. As described on page 2-24, starting with line 19, of the Draft PEIS/R, to determine and update estimates of then-existing channel capacity, a Channel Capacity Advisory Group would be established to provide independent review of estimated then-existing channel capacities, monitoring results, and management actions to address vegetation and sediment transport within the system as identified by Reclamation. The Channel Capacity Advisory Group would be composed of one member from each of the following:

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

LSJLD2-12: The PEIS/R presents a sufficient analysis of all SJRRP action alternatives at the program level, as well as sufficient analysis of actions specified in Chapter 2.0, "Description of Alternatives," of the Draft PEIS/R, as project-level actions at the project level. Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R and presents both program- and project-level impact analyses and mitigation related to flood management. The impact assessment is presented by impact rather than by action, consistent with common practice in presenting impact assessments for NEPA and CEQA documentation.

The project-specific details of actions evaluated at a program level in the Draft PEIS/R were not available at the time of preparation of analyses for the Draft PEIS/R. For 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 program-level analysis considers the broad environmental effects of implementing the Settlement, and addresses the entire suite of effects of implementing the Settlement, including the project-level actions evaluated in detail in this Draft PEIS/R, as well as cumulative impacts. Based on the program-level analysis, this Draft PEIS/R also identifies mitigation measures and performance standards that would apply to subsequent, future project components implemented as part of the Settlement (as conditions of approval). The Implementing Agencies would incorporate these performance standards into the implementation of Settlement actions to avoid or reduce impacts.

The range of potential implementation of improvements mentioned by the commenter is discussed in Chapter 2.0, “Description of Alternatives,” of the Draft PEIS/R. Further information, including preliminary design information and cost estimates that were used in the analysis, are presented in Appendix G, “Plan Formulation,” of the Draft PEIS/R.

LSJLD2-13: As described in Chapter 1.0, “Introduction,” of the Draft PEIS/R, the program-level analysis presented in the PEIS/R considers the broad environmental effects of implementing the Settlement, and addresses the entire suite of effects of implementing the Settlement, including the project-level actions evaluated in detail in this Draft PEIS/R, as well as cumulative impacts.

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 Draft PEIS/R Appendix H, "Modeling."

The models, including assumptions and limitations, are described at an appropriate level of detail with additional sources of information cited, as appropriate. The Impact Assessment Methodology section of each resource area includes a discussion of the methodology used to support the analyses, including a discussion of models and data used, for chapters 4.0 through 26.0 of the Draft PEIS/R. For many resource areas, additional modeling and data are provided in appendices, as referenced in the appropriate chapter. The PEIS/R does not attempt to provide a comprehensive description of all models applied, as this is beyond the level of detail necessary to support to the analyses and provide disclosure.

LSJLD2-14: This comment is substantially similar to comment LSJLD2-4. See response to comment LSJLD2-4.

LSJLD2-15: This comment is substantially similar to comment LSJLD2-11. See response to comment LSJLD2-11.

LSJLD2-16: 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 are: (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.

LSJLD2-17: EM 1110-2-1913 describes USACE criteria and procedures for evaluating levee landslide slope stability. Text of 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 also cite ETL 1110-2-569 (USACE 2005), which addresses levee underseepage. See Chapter 4.0, "Errata," of this Final PEIS/R. The revisions 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 EM 1110-2-1913 (USACE 2000) and ETL 1110-2-569 (USACE 2005). In the event the levee performance criteria are revised by USACE, such revisions would be considered. Erosion is addressed through measures included in all action alternatives, describe on pages 2-26 to 2-28 of the Draft PEIS/R, to closely monitor erosion and perform maintenance and/or reduce Interim and Restoration flows as necessary to avoid erosion-related impacts. 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).

LSJLD2-18: This comment is substantially similar to comment LSJLD2-16. See response to comment LSJLD2-16.

LSJLD2-19: 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 EM 1110-2-1913 (USACE 2000) and ETL 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.

LSJLD2-20: 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 EM 1110-2-1913 (USACE 2000) and ETL 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.

LSJLD2-21: 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.

LSJLD2-22: This comment is substantially similar to LSJLD2-20. See response to comment LSJLD2-20 in this chapter.

LSJLD2-23: 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 EM 1110-2-1913 (USACE 2000) and ETL 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.

LSJLD2-24: This comment is substantially similar to LSJLD2-20. See response to comment LSJLD2-20 in this chapter.

LSJLD2-25: Comment noted. Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R is designed to incorporate information as it becomes available. The Physical Monitoring and Management Plan provides guidelines for observing and adjusting to changes in physical conditions within the Restoration Area (page 2-49, lines 15 and 16, of the Draft PEIS/R). The Channel Capacity Advisory Group, described on page 2-25 of the Draft PEIS/R, would be responsible for providing timely independent review of data, analytical methodology, and results used to estimate then-existing channel capacities, including application of the USACE levee performance criteria.

Under Mitigation Measure FLD-1 (described in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R) 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 study identifies the potential for a program-level action to locally impede flow or transfer flood risk to downstream 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 and 10, of the Draft PEIS/R). Text has not been revised.

LSJLD2-26: 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." The Seepage Management Plan Attachment to Appendix D, "Physical Monitoring and Management Plan," of the Draft PEIS/R is summarized 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.

LSJLD2-27: 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.

LSJLD2-28: 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 as 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 a 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, "Master Comment Responses," of this Final PEIS/R.

LSJLD2-29: 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.

LSJLD2-30: 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 responsibility, facilities, and operations. Text throughout section 11.1, "Environmental Setting," in Chapter 11.0, "Hydrology – Flood Management," of the Draft PEIS/R, has been revised in response to this and other comments to expand or provide more detail in descriptions of flood control facilities. See Chapter 4.0, "Errata," of this Final PEIS/R. The DWR flood design capacity figure is not shown because design capacities of all pertinent reaches are described throughout the text of Chapter 11.0. Specifically, Table 11-1 lists design capacities of San Joaquin River reaches and bypasses within the Restoration Area, and further description of the flood management operations and conditions for the San Joaquin River from Friant Dam to the Merced River is provided on pages 11-16 through 11-19 of the Draft PEIS/R.

LSJLD2-31: 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 responsibility, facilities, and operations. See Chapter 4.0, "Errata," of this Final PEIS/R.

LSJLD2-32: 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.

LSJLD2-33: 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 and 24, of the Draft PEIS/R. See Chapter 4.0, "Errata," of this Final PEIS/R.

LSJLD2-34: 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.

LSJLD2-35: "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 *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.

LSJLD2-36: 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.

LSJLD2-37: 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.

LSJLD2-38: 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.

LSJLD2-39: 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 has been 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.

LSJLD2-40: 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.

LSJLD2-41: Historical operations related to flows in Reach 4B1 are discussed on pages 11-9 and 11-18. 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.

LSJLD2-42: 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.

LSJLD2-43: 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.

LSJLD2-44: 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 LDJLD responsibility, facilities, and operations. See Chapter 4.0, "Errata," of this Final PEIS/R.

LSJLD2-45: 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 *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. 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.

LSJLD2-46: 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. UNET and 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.

LSJLD2-47: 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.

LSJLD2-48: 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 LSJLD2-20 and LSJLD2-46.

LSJLD2-49: The best available tools were applied to the 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 pages 7-6 and 7-7 of Appendix H. 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.

LSJLD2-50: 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 LSJLD2-20.

LSJLD2-51: This comment is substantially similar to comment EC1-252. Erosion and landside slope stability are also discussed in Impact FLD-6, addressed in response to comment LSJLD2-50. See responses to comments LSJLD2-20 and LSJLD2-50.

LSJLD2-52: 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.

LSJLD2-53: 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 and 10, of the Draft PEIS/R). Text has not been revised.

LSJLD2-54: 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 LSJLD2-53 for additional information relevant to this comment.

LSJLD2-55: 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 page 2-49 through page 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, "Master Comment Responses," of this Final PEIS/R 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 as 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 a 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, "Master Comment Responses," 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 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 past and for 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.

LSJLD2-56: 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 as 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 a 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, "Master Comment Responses," of this Final PEIS/R, for additional information relevant to this comment.

LSJLD2-57: 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 Mendota to address reliability of water resources in association with project-level actions, such as the

Mendota Pool Bypass and Reach 2B Channel Improvements. Additionally, the commenter states that the City of Firebaugh needs to sandbag if flows approach 4,200 cfs and the city monitors levees during San Joaquin River flows above 4,000 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 through 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.

LSJLD2-58: 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 the Settlement that could address channel capacity issues identified in the Settlement or through the SJRRP or other programs. Reclamation would reduce 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.

LSJLD2-59: 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. 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.

LSJLD2-60: This comment is substantially similar to comment LSJLD2-26. See response to comment LSJLD2-26.

LSJLD2-61: 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 LSJLD2-20 for additional information relevant to this comment.

LSJLD2-62: 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 modeling 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 LSJLD2-20.

LSJLD2-63: This comment is substantially similar to comment LSJLD-20. See response to comment LSJLD2-20.

LSJLD2-64: This comment is substantially similar to comment LSJLD-20. See response to comment LSJLD2-20.

LSJLD2-65: 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. Text has not been revised.

LSJLD2-66: As described in Impact FLD-6 in Chapter 11.0,"Hydrology – Flood Management," of the Draft PEIS/R, 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. 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, "Master Comment Responses," of this Final PEIS/R.

LSJLD2-67: The description of immediate and long-term actions for maintaining channel capacities as provided in the Draft PEIS/R is sufficient for the purposes of analyses and disclosure within the programmatic nature of the PEIS/R. 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.

LSJLD2-68: 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, 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 restoration project success within the context of ongoing control measures or diminished habitat functions is outside 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).

LSJLD2-69: 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 are: (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 EM 1110-2-1913 (USACE 2000) and ETL 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 LSJLD2-20 and LSJLD2-23.

LSJLD2-70: 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.

LSJLD2-71: This comment is substantially similar to comment LSJLD2-70. See response to comment LSJLD2-70.

LSJLD2-72: 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.

LSJLD2-73: This comment is substantially similar to comment LSJLD2-70. See response to comment LSJLD2-70.

LSJLD2-74: 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, is shown 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.

LSJLD2-75: 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 are: (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 LSJLD2-20 and LSJLD2-50 for additional information relevant to this comment.

LSJLD2-76: 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.

LSJLD2-77: 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 are: (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 LSJLD2-20 and LSJLD2-50 for additional information relevant to this comment.

LSJLD2-78: 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 current site-specific evaluations of potential modifications in Reaches 2B and 4B. Text has not been revised.

LSJLD2-79: 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 LSJLD2-35.

LSJLD2-80: 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 LSJLD2-35.

LSJLD2-81: 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 LSJLD2-20.

LSJLD2-82: 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 LSJLD2-20. See also responses to comments LSJLD2-23 and LSJLD2-81.

LSJLD2-83: The roughness values in the Sacramento and San Joaquin River Basins Comprehensive Study UNET Model for the SJR 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 LSJLD2-70.

LSJLD2-84: 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 LSJLD2-20.

LSJLD2-85: This comment is substantially similar to comment LSJLD2-45. See response to comments LSJLD2-45.

LSJLD2-86: 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 as 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 a 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, "Master Comment Responses," of this Final PEIS/R.

LSJLD2-87: 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.

LSJLD2-88: This comment is substantially similar to comment LSJLD2-87. See response **to** comment LSJLD2-87.

LSJLD2-89: This comment is substantially similar to comment LSJLD2-87. See response to comment LSJLD2-87.

LSJLD2-90: 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 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.

LSJLD2-91: 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 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.

LSJLD2-92: This comment is substantially similar to comment LSJLD2-87. See response to comment LSJLD2-87.

LSJLD2-93: 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 LSJLD2-87.

LSJLD2-94: This comment is substantially similar to comment LSJLD2-87. See response to comment LSJLD2-87.

LSJLD2-95: This comment is substantially similar to comment LSJLD2-87. See response to comment LSJLD2-87.

LSJLD2-96: This comment is substantially similar to comment LSJLD2-87. See response to comment LSJLD2-87.

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 PEIS/R, as they would be highly speculative and in violation of the terms and conditions of 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 MCR-5, "Adequacy of Purpose and Need, and Range of Alternatives, Under NEPA/CEQA," in Chapter 2.0, "Master Comment Responses," of this Final PEIS/R 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.