Appendix H

Response to Comments

January 2014

Response to Comments

(Public Draft)

No.	Chapter	Section	Page Number	Line Number	Comment	Commenter Agency	Response to Comment
Draft Technical Memorandum							
1	ES	Table ES-1	2	21	The capacity of each channel varies. However, the conclusion of the study should be actually the amount of water that can be released from Friant Dam to keep the water within the channel of the study area until the conditions of the existing levees are known. The overall capacity of the system actually is dictated by the minimum capacity of the Reach 5 which is 2,350 cfs. An HH analysis should be performed to determine if there is any impact downstream.	USACE	The goal of the Channel Capacity Report is to identify and recommend the upper limit of Restoration Flows that can be conveyed in each reach to manage flood risk due to levee seepage and stability. Reclamation will use this information, along with other considerations including water year type, water allocation schedules, flow routing, channel losses, irrigation deliveries, fishery needs, other material impacts, etc., when determining releases of Restoration flows from Friant Dam. This evaluation is beyond the scope of this report.
2	3	3.1	13	General	The final scope of the SJRRP is to increase the capacity of some reaches and of the system by setback levees. If the increase of capacity of the federal levees is above the authorized capacity, than the changes have to be authorized by the Congress, since all federal levees were authorized for a certain capacity.	USACE	The SJRRP would coordinate with the USACE to obtain the appropriate permits on all projects within the Lower San Joaquin River Flood Control Project. For clarification, text specifying which levees are part of the Lower San Joaquin River Flood Control Project was added to Section 3.0 Study Area.
3	3	3.3	14	1	Same comment as for Reach 2B	USACE	See response to comment 2 above.
4	3	Figure 3-3	17	1	Show the limit of the reaches on the figure.	USACE	Figure 3-3 is a scanned figure and cannot be modified. A reference was added to note the original source. The limit of the reaches can be found in Figure 3-2.
5	3	Figure 3-3	17	1	Based on the legend shown on Figure 3-3 there is no levee maintained by the DWR. Is this correct? In this case the legend should be modified and the DWR removed from the legend.	USACE	Correct. There are no DWR maintained levees in the study area. The legend relates to a larger figure from which this figure is excerpted and which includes DWR-maintained levees in the Sacramento valley. See response to comment 4 above.

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6	4	4.1	18	23-29	The paragraph indicates the USACE guidance recommends that the allowable underseepage factor of safety used in evaluations and/or design of seepage control measures should correspond to an exit gradient at the toe of the levee of 0.5 (in general this would provide a Factor of Safety of 1.6 for a blanket with minimum unit weight of 110 pcf), but states that deviation from recommended design guidance is acceptable based and documented on sound engineering judgment and experience (USACE 2005). This is actually not correct. The USACE ETL 1110-2-569 (2005) requires an maximum allowable gradient of 0,5 (corresponding to a factor of safety of 1.6,) at the levee toe for any levee evaluation or design of seepage control measures. However, the EM 1110-2-1913, Appendix C requires a maximum gradient of 0.3 at the levee toe in case of construction of a seepage berm, Only for this case a higher gradient than 0.3 at the levee toe may be accepted based on engineering judgment. This EM establishes the levee design criteria, the ETL is mostly a guidance.	USACE	This referenced language was taken directly from the PEIS/R. The SJRRP will continue to coordinate with DWR, CVFPB, and USACE to ensure appropriate methods and criteria is used in all levee evaluations and design. Section 4.2 adds the following text to address this comment "The SJRRP will continue to coordinate with DWR, CVFPB, and USACE to ensure appropriate methods and criteria are used in all levee evaluations and design."
7	6	Table 6-1	24	13	See comment of Table ES-1	USACE	See response to comment 1 above.
8	7	7.1.1	25-26	General	The SJRRP hydraulic studies considered setback levees on some reaches, to increase the channel capacity. The setback levee and a higher channel capacity may have a negative impact on the channel downstream of the of the study area or downstream of the respective reaches. Was this negative impact and the mitigation considered in the analyses?	USACE	See response to comment 1 above.

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9	7	7.1.2	28	1	For Reach 2B the capacity of the channel was considered only upstream the Mendota Dam. Was it analyzed if the additional flow has any impact on the Mendota Dam operation?	USACE	During non-flood events, Mendota Dam is currently operated to maintain a specific pool elevation to allow for water deliveries. The in-channel capacity analysis assumed the same operation.
10	7	7.2.2	30	12	Stability or seepage analyses cannot be performed below the landside levee toe since there is no hydraulic head and no loading of the levee. Eventually a point with 0 gradient may be used for the water at the landside levee toe by creating the curve of the gradient vs., water elevation curve.	USACE	For clarity, the summary of the water surface elevations analyzed was removed.
11	7	7	25-36	General	Were the geotechnical analyzed performed only for the Middle East Bypass and the sediment transport only on Reach 2A ?	USACE	Because of the unreasonable results of the in-channel capacity of the Middle Eastside Bypass, a preliminary geotechnical analysis was performed only for that reach. However, additional geotechnical analysis within this reach and other reaches will be performed as part of the San Joaquin Levee Evaluation Project summarized in Chapter 10.1.2. Results from this work will be reported in future Channel Capacity Reports. For the 2014 Channel Capacity Report, only the Reach 2A sediment transport study was summarized because of the potential sediment transport issues at the Chowchilla Bifurcation Structures. Additional sediment transport studies may be performed in other reaches based on need as it relates to channel capacity. Text was added to Sections 4.2 and 7.2 to clarify this approach.

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12	8	8	37-39	General	Actually the conclusion of the report should be the amount of water possible to be released from the dam without loading the existing levees. This should not vary based on each reach capacity but should be the minimum than can flow through reach 5 within the channel limits..	USACE	See response to comment 1 above.
13	9	9	40-42	General	As a future program action, the erosion of the existing channel should be also analyzed, even for the water contained within the channel limits. The riverbank material should be determined along the channel and the armoring of erosion susceptible areas should be also considered.	USACE	Erosion of the existing channel would be evaluated on an as needed basis each time aerial photography is collected by the Implementing Agencies, as described in more detail in PEIS/R Appendix D, "Physical Monitoring and Management Plan." An additional Section 10.2.4 specific to erosion monitoring was also added to the Report.
14	7	7.1	25	23-25	The text states: "*Specific tasks included determining the channel capacity for each reach as well as the approximate length of the left and right bank levee where the water surface elevation of 2,000 cfs and 4,000 cfs flows exceeded the landslide ground elevation."* - An explanation as to why 2,000 cfs capacities are being determined should be given, since the Settlement requires at least 4,500 cfs capacities in most river improvement projects in Paragraph 11.	FWA	The SJRRP draft Framework for Implementation, dated June 19, 2012 provides a framework for how the Implementing Agencies may Implement the Settlement based on the current state of knowledge. The Framework identifies the 2,000 cfs flow as the flow necessary to allow continuity of flows for fish passage, provide temperature management ability, and allow floodplain inundation. The addition of the 2,000 cfs capacities in the Report is to provide information consistent with the Framework. The following language was added to Section 7.1: "The Working Draft Framework For Implementation (Reclamation, 2012), dated Jun 19, 2012, identifies a Restoration Flow release of up to 2,000 cfs as a necessary core action for successful implementation of the Settlement. Therefore, this study also determined the length of levee for the 2,000 cfs threshold."

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15	9	9	40	25	Delete "of"	FWA	Text revised
16	9	9.2.1	41	24-25	The text states: *"This project has the potential to increase the low flow of the channel capacity in the Eastside Bypass, near Reach 4B1."* - In other places in the TM (e.g. Table 8-1), there are references to the "Middle Eastside Bypass" and the "Lower Eastside Bypass." In which of these is the *"Eastside Bypass, near Reach 4B1"* located?	FWA	The text was revised to include "Middle Eastside Bypass, which parallels Reach 4B1."
17	9	9.2.2 & 9.2.3	41-42		Since none of the capacity limitations described in previous sections of this TM are described as being due to vegetation or lack of operation and maintenance improvements, the reason for including discussion of these issues should be clearly stated.	FWA	Current then-existing channel capacities were based on in-channel capacities, which used hydraulic models that accounted for vegetation roughness. This roughness may change with the release of Restoration flows. The following text was added to Section 9.2.2: "The amount of vegetation used to determine this year's then-existing channel capacity is based on the vegetation polygons from 2011 aerial photography. However, localized changes in vegetation could occur with the release of flows. Removal or monitoring of vegetation could be necessary to improve or maintain channel capacities."
18	9	9.3	42		Since Table 8-1 states the "2014 Recommended Then-Existing Channel Capacity" of Reach 3 is estimated to be 2,760 cfs and the Settlement expects the Reach 3 capacity to be at least 4,500 cfs, the Long-Term Action(s) that are being considered to increase the Reach 3 capacity should be described. In addition, the cost and other implications of the fact that improvements in Reach 3 were not contemplated under the Settlement as either Phase 1 or Phase 2 projects should be addressed.	FWA	The 2014 channel capacity recommendations are mainly based on the lack of geotechnical evaluations on the levees. The following text clarifying this was added to Section 9.3: "The San Joaquin Levee Evaluation Project is assisting the SJRRP in assessing flood risks associated with the SJRRP based on geotechnical data. Therefore, the SJRRP will not know if levee projects not described in the Settlement will be needed and therefore are not directly listed below. The following list of projects may change each year as additional information is provided."

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19	10	10.1.2.1	44	31-33	The text states: *"Prioritization of levees for geotechnical evaluation were based on two criteria: 1) magnitude of flows at which water surface elevations could impact levee performance; and 2) whether the levee segment would be used by SJRRP to pass near term or long-term Restoration Flows."* (emphasis added) - The term "near-term" Restoration Flows is not a term in the Settlement. The meaning of this term should be explained.	FWA	For clarification, these terms were removed from this section of the report. Instead it was replaced (noted in italics) with the following language: "Prioritization of levees for geotechnical evaluation were based on two criteria: 1) magnitude of flows at which water surface elevations could impact levee performance; and 2) *whether the levee segment would possibly be used by the SJRRP to pass Restoration Flows prior to the implementation of the site-specific projects.* "
20	10	10.1.2.1	44	35-36	The text states: *"DWR performed this hydraulic analysis for 2,000 cfs and 4,500 cfs flow."* - An explanation as to why DWR performed hydraulic analyses for 2,000 cfs flow should be given, since Settlement calls for at least 4,500 cfs capacities in most river improvement projects in Paragraph 11.	FWA	See response to comment 14 above. Also, the following text was added to this section: "Similar to the In-channel Capacity Study summarized in Section 7.1 above, the Working Draft Framework For Implementation identifies a Friant flow release of 2,000 cfs as a core action for Program success."
21	10	10.1.2.1	45	4	The term "near-term" Restoration Flows is not a term in the Settlement. The meaning of this term should be explained.	FWA	The term "near-term" was removed for clarity. See response to comment 19.
22	10	10.1.2.1	45	5 & 9	Again, the significance of 2,000 cfs should be explained since that capacity does not meet the requirements of the Settlement for at least 4,500 cfs capacity.	FWA	See response to comment 20 above.

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Appendix C - Middle Eastside Bypass Geotechnical Assessment							
23	2	2	8-12	General	Is the geotechnical report limited to the Middle Eastside Bypass levees? Geotechnical investigation and analysis should be provided for all levees affected by the project, if the water will be allowed to flow in the channels above the landside levee toe elevation. I understand in the first phase will be limited to the in-channel capacity. Due to the fact that the landside toe elevation is lower than the waterside toe, is the Eastside Bypass the only one analyzed in this phase, the remaining levees being analyzed as part of the next phase? Will be a second geotechnical report for the remaining levees considering the water above the landside toe generated later?	USACE	Section 10.1.2 San Joaquin Levee Evaluation Project of the Channel Capacity Report describes how the existing levees will be assessed by performing geotechnical explorations on identified levees. The preliminary geotechnical assessment of the Middle Eastside Bypass was only completed earlier because of the unreasonable in-channel capacity result due to the perched channel.
24	4	4	18-19		Is the erosion potential not included in the analyses?	USACE	Correct. This is identified in the Section 7 limitations. The broader SJLE also is limited only to seepage and stability.
25	4	4.1	18-19		Actually the levee height is measured from the landside levee toe to the levee crest. Sometimes, where there is no river bank, the waterside slope goes down to the bottom of the channel, therefore the landside toe elevation projection to the waterside is considered as waterside levee toe. Therefore it should be specified the analyzed elevation as the height of the water above the landside toe not relative to the waterside toe.	USACE	Yes, landside levee toe was used for estimating the height of the levee. The three subject sites are located where this is a wide bank between the levee and the channel, so the condition noted is not present. Landside was added to the main document to clarify PEIS/R text.

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26	4	4.1	18-19		It is known that the seepage models extend 2000 feet from the landside levee toe to prevent the effect of backwater of the vertical boundary conditions. Therefore the models for seepage analyses used by DWR and USACE extend 2000 feet landward of the toe and 1000 feet waterside (or to the centerline of the canal). All these models consider no flow as vertical boundary condition for the landside vertical limit of the model, not a constant head. There is no backwater effect (or bath tub) for 2000 feet wide model.	USACE	In accordance with the ULE Guidance Document for Geotechnical Analyses (Sec 4.8 and Fig 4-2), total head boundary condition is applied on the landside vertical limit of the model and no flow at the waterside vertical limit.
27	4	4.1	18-19		If the blanket truncation was considered as necessary, it should be shown on the model as a truncation but in any case no flow conditions should be applied on the waterside vertical face of the model also. The analyses should be revised considering no flow waterside and landside boundary conditions and the waterside blanket truncated as necessary.	USACE	As indicated on the last line of page 4, no-flow conditions were applied on the waterside vertical limit. According to the ULE Guidance Document, total head condition was applied on the landside vertical limit as boundary condition. As presented in the last paragraph of Section 4.1, a fixed head boundary condition was used for few sensitivity analyses to simulate truncation.
28	5	5.1	20-21		It is indicated the levee height is around 11 feet to 13 feet. Is this levee height measured from the landside levee toe or waterside levee toe?	USACE	Levee height measured from landside levee toe.
29	5	5.1	20-21		Was any exploration performed specific for this project or the data are from old exploration? A summary of the existing exploration and in-situ and laboratory testing should be provided. Also a general description of the levee embankment and foundation material should be provided besides the geomorphic condition, which is very summarized and does not describe the existing foundation condition.	USACE	Explorations specific for this project are ongoing. The analyses were performed as an early component of the SJLE and utilized preliminary crest boring/SPT data collected as the initial exploration phase of the SJLE. Summary of Exploration, laboratory testing and existing condition is being prepared by Kleinfelder and will be provided in the Geotechnical Evaluation Report.

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30	5	5.1	20-21		Sensitivity 2: The ditch empty or full has no impact on the strengths and permeabilities of the foundation layers. A sensitivity analysis should be used for ditch full or empty using the same permeabilities and strength parameters. Sensitivity two needs to be revised.	USACE	The Base Model considered empty ditch and used the same parameters as Sensitivity 1 (base model with ditch full). Therefore, Sensitivity 2 does not need to be revised.
31	5	5.1	20-21		Sensitivity 3. If the blanket is assumed to be cracked, it should be the entire blanket not only at the landside ditch. A cracked blanket at the landside ditch will reduce the gradient at the landside toe, allowing the pore pressure to be dissipated at the ditch. If the ditch is full, the cracks in the blanket would be closed anyway, if the ditch is empty, the gradient at the levee toe would be very low.	USACE	The model was based on visual observation during a field-visit to the site. Signs of cracks on the landside ground surface were not observed but cracks were visible at the ditch.
32	5	5.1	20-21		Sensitivity 6. Truncate the blanket as necessary but keep no flow conditions on the waterside vertical limit of the model	USACE	See the response 30 and 31 above.
33	5	5.2 & 5.3	21-23		Generally the same comments as for Site 1 regarding levee height and explorations.	USACE	See the response 30 and 31 above.
34	5	5.2	21-22		What is the reason for variation of the parameters for the sensitivity analysis?	USACE	The parameters were selected based on limited data. Sensitivity analyses were considered to reflect impact due to variations in selected parameters.
35	5	5.3	23		Sensitivity analysis 1. Truncate the blanket as necessary and keep no flow boundary for both landside and waterside vertical faces of the model	USACE	Please see the response above for comment 30. According to the ULE Guidance document, total head boundary condition is applied on the landside vertical face.

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36	5	5.4	23		Justify the reason for parameter variations.	USACE	The parameters were selected based on limited data. Sensitivity analyses were considered to reflect impact due to variations in selected parameters.