



Sutter Butte Flood Control Agency

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sutterbutteflood.org

COUNTIES

Butte County
Sutter County

CITIES

City of Biggs
City of Gridley
City of Live Oak
City of Yuba City

LEVEE DISTRICTS

Levee District 1
Levee District 9

July 5, 2016

Mr. Mike Inamine, Executive Director
Sutter Butte Flood Control Agency
1441 Garden Highway
Yuba City, CA 95991

Dear Mike,
Subject: Professional Civil Engineer's Response to the Independent Panel of Experts' Comments (FRWLP1)

The Urban Levee Design Criteria Evaluation Engineer's Report for the Feather River West Levee Project 1 (FRWLP1) was presented to the Independent Panel of Experts (IPE) in conformance with requirements in DWR's Urban Level of Flood Protection guidelines.

The IPE concluded in their 6/30/16 review letter that "The IPE concurs with the set of conditions and facts outlined in this Engineer's Report, which supports an Adequate Progress Finding (APF) towards a 200-year Urban Level of Flood Protection for the Feather River West Levee Floodplain as shown in Figure 2 of the Phase 1 Engineer's Report." A number of specific comments on various issues were included with their letter.

The ULOP criteria require a response to the IPE comments by the California Professional Civil Engineer in responsible charge of the Engineer's Report. This letter includes my response to the IPE comments. In summary, none of the comments substantially change the project outlined in the Engineer's Report. Many of the comments have been addressed herein, and the remainder will be addressed prior to project completion.

Sincerely,

A handwritten signature in blue ink that reads "Michael W. Bessette".

Michael W. Bessette, P.E.
Director of Engineering

CC: Mr. Tom Smith, IPE Chair

Attachment: Engineer's Response to Specific IPE Comments

Administrative Draft Engineer's Report Feather River West Levee Phase I ULDC Compliance

Sutter Butte Flood Control Agency
Feather River West Levee

IPE REVIEW

Document Under Review:		Backcheck Document:												
ADMIN USE ONLY		REVIEWER			RESPONDENT			REVIEWER						
COMMENT ID (DO NOT Edit This Column)	REVIEWER CONTACT INFO (DO NOT Edit This Column)	LOCATION IN REPORT/DOC	DATE OF ORIGINAL COMMENT MM/DD/YY	ORIGINAL REVIEW COMMENT	RESPONDENT CONTACT INFO	DATE OF RESPONSE MM/DD/YY	RESPONSE	CONCURE	NON-CONCURE	RO	CARRY FORWARD	CLOSE D Y/N	DATE MM/DD/YY	BACK CHECK COMMENT (Needed Only if NOT Closing Comment)
New Comments on DOCUMENT TITLE														
EXT/AdminDraft-001	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 1.1, 3rd Bullet	5/12/16	Does this spread sheet serve as the IPE "Report"?	Dave Peterson PBI (916) 608-2212 dfrt@pbimg.com	5/26/16	Not entirely. The spreadsheet may be used as part of the IPE Report, however, the IPE Report needs to clearly state whether or not the IPE agrees with the assertions, exceptions, and conclusions presented in the Engineer's Report as they relate to ULDC.				X	Y	6/27/16	
EXT/AdminDraft-002	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 1.1, Second Para.	5/12/16	Figure 2 assumes that the "Interceptor Canal" (north and west of Yuba City) is an effective flood barrier. We are not sure this is the case as there was local flooding downstream of the canal in 1997. Please verify.	Chris Fritz PBI (916) 608-2212 cfritz@pbimg.com	5/26/16	It is possible that localized flooding may have occurred in this area and is not mapped on Figure 2. Figure 2 represents the results of flooding from levee breach scenarios and from SBFCA's 2012 Interior Drainage study. It is important to note that the 2012 analysis is a large scale evaluation of the interior drainage capability of the basin. No culverts were modeled as part of the study in order to conservatively estimate the extents of downstream flooding due to potential inadequacies at the interior pumping stations and at Wadsworth Canal. As a result of this approach, it is acknowledged that minor areas of localized flooding may not be accounted for in the Figure 2 map. However, the intent of the map on Figure 2 is to identify and delineate the areas with 3' or greater depths of flooding and it's our position that the map accurately reflects this intent without the need for further analysis.				X	N	6/27/16	Should this response or some form there of be included in the text?
EXT/AdminDraft-003	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.1.2, Table 3.1-1	5/12/16	In the USACE Column, why does the peak flow decrease in the downstream direction while the CVHS peaks do not? Is this correct? Please check.	Chris Fritz PBI (916) 608-2212 cfritz@pbimg.com	5/26/16	Yes, this is correct. This is due to attenuation and to differences in the timing and routing of tributary inflow hydrographs.	X		X		Y	6/27/16	
EXT/AdminDraft-004	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.4.1 Table 3.4-1	5/12/16	In the 4th row the safety factor is listed as "1.0 to 1.2". Can the extent of saturation be clarified here?	Robert K. Green, PE, GE AECOM 510-874-3036 robert.k.green@aecom.com	5/16/16	The FOS range of 1.0 to 1.2 for differing levels of saturation is from the criteria listed in the ULDC. Because the peak water levels generally occur over short periods of time, the rapid drawdown criteria of 1.0 was selected for the FRWL project as discussed in the GORR (URS, 2012). The following comment has been added below Table 3.4.1 "Because the peak water levels generally occur over short periods of time, the rapid drawdown criteria of 1.0 was selected as discussed in the GORR (URS, 2012)".	X				Y	6/27/16	
EXT/AdminDraft-005	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.4.2 Table 3.4-2	5/12/16	The table lists Levee Reaches that already meet ULDC Slope Stability Criteria. Is a reference needed to support these statements or is this included in the referenced documents?	Robert K. Green, PE, GE AECOM 510-874-3036 robert.k.green@aecom.com	5/16/16	These reaches meeting criteria are discussed in the Geotechnical Analyses for Pre-Design Formulation Report (URS, 2011). A reference to this report has been added to the Engineer's report text.	X				N	6/27/16	As written, the stated reference appears to be the documentation for the reaches needed remediation and is not clear that it is also for those that are already adequate.
EXT/AdminDraft-006	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.5.2 Table 3.5-1	5/12/16	Same as above. Is the documentation for these reaches included in the referenced documents?	Robert K. Green, PE, GE AECOM 510-874-3036 robert.k.green@aecom.com	5/16/16	These reaches meeting criteria are discussed in the Geotechnical Analyses for Pre-Design Formulation Report (URS, 2011). A reference to this report has been added to the Engineer's report text.	X				N	6/27/16	Same as above
EXT/AdminDraft-007	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.7.2	5/12/16	Couldn't find the backup within the referenced document (3.4D) to support the last sentence in the first paragraph. Please check.	Robert K. Green, PE, GE AECOM 510-874-3036 robert.k.green@aecom.com	5/24/16	The last sentence in the first paragraph has been revised as follows: The post-earthquake remediation plan should include both short-term repairs to restore 10-year grade and dimensions within 8 weeks and longer-term repairs to restore 200-year protection.	X				N	6/27/16	Sentence in text not changed.
EXT/AdminDraft-008	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.7.3	5/12/16	Nothing is listed under exceptions to ULDC	Robert K. Green, PE, GE AECOM 510-874-3036 robert.k.green@aecom.com	5/16/16	The following sentence has been added: The FRWL Project Phase 1 has no exceptions for seismic vulnerability per ULDC Section 7.7.	X				N	6/29/16	Could not find that sentence in Section 3.7.
EXT/AdminDraft-009	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.8.1	5/12/16	In the last sentence of 3.8.1: A patrol road should also be provided near the toe of the seepage berm that is too wide for the levee crown patrollers to see seepage conditions at the berm toe. Are the tops of the seepage berms platform material and/or the seepage berms in the dredge tailings area drivable? See plans Volume 4, C-303, 4 & 5.	Jay Punia Wood Rodgers (916) 503-5093 jpunia@woodrogers.com	5/23/16	The top of the seepage berms are not constructed to provide an all weather access road. However, the 30-foot operation and maintenance corridors would provide access and allow levee patrol person to inspect seepage conditions at the berm toe. The operations and maintenance corridors, including the seepage berm platforms (Volume 4, C-303, 4 & 5) that would serve as the O&M corridor, are drivable.	X				Y	6/29/16	
EXT/AdminDraft-010	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.8.2	5/12/16	Second to last paragraph: "The levee sections will be re-constructed to provide a minimum of a 3H:1V waterside slope, a 20-foot levee crown, and a 2H:1V landside slope." Isn't this just within the re-constructed degraded sections? Please clarify if needed.	Jay Punia Wood Rodgers (916) 503-5093 jpunia@woodrogers.com	5/23/16	The sections that will be reconstructed to provide a minimum of a 3 H:1V waterside slope, a 20-foot levee crown, and a 2 H:1V landside slope are at locations where the levee was degraded to install the slurry wall. This section of the report was revised to clarify.	X				Y	6/27/16	
EXT/AdminDraft-011	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.10	5/12/16	We recommend re-writing this section and adding more specifics relating to this project.	Elizabeth Mesbah HDR (916) 817-4913 Elizabeth.Mesbah@hdrinc.com		Concur. Section has been re-drafting documenting on-going inspection programs by the USACE, DWR, local LMAs and inspection performed as part of the SBFCA project.	X				Y	6/27/16	
EXT/AdminDraft-012	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.12	5/19/16	Comment Removed										
EXT/AdminDraft-013	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.13	5/19/16	Comments Removed										
EXT/AdminDraft-014	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.13.4	5/12/16	Third bullet... Sounds like we are openly ignoring some issues here. Might be worth mentioning that this is the freeboard reach and no action is required.	Sean Minard MMM (530) 742-6485	5/31/16	Provided more information regarding the so called "freeboard" reaches. No work will occur within these reaches and PBI will model the residual flood plain assuming no levee.	X				N	6/27/16	Could not find the change.
EXT/AdminDraft-015	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.14.2	5/12/16	Reference 3.14A appears to be the incorrect reference of the design of the Closure Structure at LPRB. This is for the 2nd Street encroachments. Please check.	Jay Punia Wood Rodgers (916) 503-5093 jpunia@woodrogers.com	5/23/16	This reference pertains to the retaining walls and not to the closure structure. Reference will be relocated to the appropriate section.	X				Y	6/27/16	
EXT/AdminDraft-016	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.17	5/12/16	Do the wave run-ups cause any levee erosion issues? Is it predominantly on the east levee? Didn't see this addressed.	Elizabeth Mesbah HDR (916) 817-4913 Elizabeth.Mesbah@hdrinc.com		Based on PBI's Wind/Wave Runup results, the wind and wave run-up expected is less than 3 feet and contained within the existing levee freeboard. With the recent installation of the cutoff wall, a significant portion of the waterside slope has been removed, built back up again and fully compacted. The levee slope has also been hydroseeded to reduce potential for erosion. This coupled with past performance indicates that run-up is relatively minor and can be assumed not to be the sole cause of creating a critical erosion site. This is further discussed in Section 3.10.2.	X				Y	6/27/16	
EXT/AdminDraft-017	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.19.2	5/12/16	Didn't we add one extra foot of freeboard for sea level rise? This section says we are outside the influence of sea level rise. Please clarify. Also no referenced document.	Chris Fritz PBI (916) 608-2212 cfritz@pbimg.com	5/26/16	Yes. We added one extra foot to account for future uncertainties. However, as of our current understanding, the project is outside of the influence of sea level rise. Text has been added to Section 3.19.2 to clarify. A reference to DWR's BWFS has also been added.	X				Y	6/27/16	
EXT/AdminDraft-018	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.20.2	5/12/16	Couldn't find the reference, 3.20A on the provided CD	Chris Fritz PBI (916) 608-2212 cfritz@pbimg.com	5/26/16	Reference 3.20A - Flood Safety Plan has been added to references.	X				Y	6/27/16	
EXT/AdminDraft-019	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 3.21.2	5/12/16	In Reference 3.21B, 6-03, the river gate is upstream of the Gridley bridge. Comment also applies to 3D-04.a. 3) b) and to Reference 3.21 C, 6-04.	Jay Punia Wood Rodgers (916) 503-5093 jpunia@woodrogers.com	5/23/16	Noted - the location of the river gate will be verified and updated appropriately as the OM manuals are finalized.		X			Y	6/27/16	
EXT/AdminDraft-020	Thomas W. Smith, PE, GE IPE Chairman 916.395.4455	Section 1.3	5/19/16	What appears to be "Figure 2" is not labeled. Additionally, the notes concerning not "addressing or showing" the residual floodplain is not clear as to what that is stating.	Chris Fritz PBI (916) 608-2212 cfritz@pbimg.com	5/26/16	A label for Figure 2 has been added and the notes have been revised to provide further clarification.	X				Y	6/27/16	