



**Sutter Butte Flood Control Agency
Feather River West Levee Project**

**INDEPENDENT PANEL OF EXPERTS (IPE)
REVIEW OF THE DRAFT ENGINEER'S REPORT**

***"Star Bend Setback Levee
Urban Levee Design Criteria Compliance"
Dated June 3, 2016***

AND IPE LETTER OF CONCURRENCE

June 30, 2016

IPE Members

**Mr. Thomas W. Smith, PE, GE, RiverSmith Engineering
Mr. George L. Sills, PE, Sills Engineering
Mr. Donald H. Babbitt, PE, GE, Consulting Engineer**

Mr. Michael Inamine, Sutter Butte Flood Control Agency

June 30, 2016

Mr. Michael Inamine, PE
Executive Director
Sutter Butte Flood Control Agency
P.O. Box M
1441 Garden Highway
Yuba City, CA 95991

Dear Mr. Inamine:

**Subject: Sutter Butte Flood Control Agency (SBFCA) - Feather River
West Levee Improvements (FRWL) - Review of Engineer's
Report for Star Bend Setback Levee**

Summary

As required by the Urban Level of Flood Protection (ULOP) criteria, this letter is the summary review report by the Independent Panel of Experts (IPE) of the subject line Engineer's Report. This report was prepared consistent with the published Urban Level of Flood Protection Criteria, to provide substantial evidence for an EVD-1 criterion to support a finding that the Star Bend Setback Levee meets all the criteria for 200-year urban level of flood protection finding.

The flood control features covered by this engineer's reports are for improvements to the West Levee of the Feather River at Star Bend. The location based on Project Levee stationing is from 473+75 to 512+00. The Engineer's Report for the Star Bend set back levee was prepared by Wood Rodgers. All construction for the Star Bend Setback Levee is complete although protection for the basin won't be in place until all the complimentary features for the Phase 1 Feather River West Levee Project are completed in December, 2016.

The IPE concurs with the set of conditions and facts outlined in this Engineer's Report, which supports a 200-year Urban Level of Flood Protection for the Star Bend Setback Levee within Feather River West Levee Project contingent on the condition referenced in the previous paragraph.

Flood Control Project Purpose

SBFCA is the project sponsor responsible for the rehabilitation of the flood control system that protects the Sutter Butte basin in Sutter and Butte Counties. The Sutter Butte basin includes the cities of Biggs, Gridley, Live Oak and Yuba City. This basin has been confined by man-made levees since the late 1800's. The west levee of the Feather River (WLFR) has been subjected to high water events of 1955, 1964, 1986 and 1997 that have resulted in levee distress problems consisting of cracks, boils, seepage, and a break.

The purpose of the overall project is to remedy the problem areas within the levees and provide a 200-year level of protection to the communities mentioned above within the floodplain of the west levee of the Feather River.

Background for Report and IPE Review

As a result of Senate Bill 5, enacted in 2007, state law requires that either the levee system meets a 200-year Urban Level of Flood Protection, or that an APF is made before cities and counties approve certain land-use decisions. The levee criteria associated with an Urban Level of Flood Protection and what is required for substantial evidence in the record to support an APF are contained in the following two documents:

1. Urban Levee Design Criteria (ULDC) – published by the Department of Water Resources (DWR) in May 2012, this document outlines the technical guidance and requirements for 20 technical areas associated with levee integrity and the evaluations needed to assure that an Urban Level of Flood Protection is met.
2. Urban Level of Flood Protection (ULOP) – published in November 2013 by DWR, this document describes the processes for having substantial evidence in the record to make an APF

Engineer's Report Prepared by Wood Rodgers

The IPE has reviewed the original draft of the Engineer's Report (dated May 2, 2016) prepared by the Star Bend design team at Wood Rodgers. The IPE had some comments and questions regarding the original draft report and submitted formal comments following that review. As a result, the Engineer revised the reports to address the IPE comments and submitted a revised draft (dated June 3, 2016). The revised draft addressed the vast majority of the IPE comments, but there remain a few technical comments that are still being addressed by the preparers. The IPE comments, Engineer's responses to IPE comments, and IPE backcheck reviews are contained in an Excel Spreadsheet that is attached to this letter. The remaining IPE comments that are still being addressed by the Engineer do not prohibit the IPE from making its findings.

IPE Findings within the Engineer's Reports

The IPE makes the following findings in regard to the June 3, 2016, Draft version of the Engineer's Report prepared by Wood Rodgers:

1. The Engineer's Report has been prepared under the direction of licensed Civil Engineer in the State of California. Jonathan Kors at Wood Rodgers will sign and stamp the final document.
2. The Engineer's Report includes a complete list of the flood management facilities that will be utilized in providing an urban level of flood protection, namely the levee. The Engineer's Report is organized to follow the Urban Levee Design Criteria (ULDC) outline.
3. The Engineer's Report identifies in text and in plates the locations of the flood protection facilities as well as levee stationing.
4. The Engineer's Report identifies the local maintaining agency that will operate and maintain the flood management facility that will be utilized in providing an urban level of flood

Mr. Michael Inamine, Sutter Butte Flood Control Agency

protection, which is Levee District 1.

5. The Engineer's Report contains a large reference list of reports, evaluations, inspections, and performance history of the flood management facilities. These reports were discussed and considered in the Engineer's Report.
6. As noted above, the Engineer provided responses to the early review comments of the IPE and made changes, clarifications, and improvements to their reports. A final version is forthcoming.
7. The Engineer's Report demonstrate a clear understanding of the requirements of DWR's ULDC and discuss where the levee system currently stands with regard to meeting each of the 20 ULDC criteria previously outlined.

IPE Concurrence

Based on our review of the Engineer's Report for the Star Bend Setback Levee for the Feather River West Levee Project, the IPE supports the information and findings in this Engineer's Report and also agrees with the assertions and conclusions contained within.

Sutter Butte Flood Control Agency West Feather River Levee Project

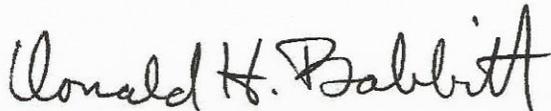
Independent Panel of Experts



Thomas W. Smith, PE, GE
Chairman



George L. Sills, PE



Donald H. Babbitt, PE, GE

Attachment: IPE Comment Spreadsheet, dated 6/29/16

From: Tom Smith [<mailto:tsmith@riversmithengineering.com>]
Sent: Friday, July 08, 2016 2:20 PM
To: 'Jay Punia' <jpunia@WoodRodgers.com>; DonBabbitt@sbcglobal.net;
'GEORGE SILLS' <georgesills@bellsouth.net>
Cc: 'Michael Bessette' <m.bessette@sutterbutteflood.org>; dpeterson
<dpeterson@pbieng.com>; christopher.krivanec@hdrinc.com; Chris Fritz
<cfritz@pbieng.com>; 'Jonathan Kors' <jkors@WoodRodgers.com>
Subject: RE: Response to IPE's pending comments

Hi Jay,

The IPE has reviewed and concurred with all the responses. A copy of the final spreadsheet with all comments closed out is attached.

Please let us know if there are any questions.

Best Regards,

Tom

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