



New Bullards Bar Dam

August 6, 2019



Primary Missions

1. Flood Protection
 2. Water Supply Reliability
- The challenge of accomplishing these primary missions has been enhanced by climate change producing the need to obtain more effectiveness out of our existing facilities

Need for Additional Flood Protection

1986/1997 Floods:

- 5,000 homes damaged or destroyed
- \$500M state claim payout

Not enough flood storage to capture large flows:

- Oroville flood space: 750 TAF
- New Bullards Bar flood space: 170 TAF
- Authorized Marysville Dam flood space: 240 TAF (Never built)



1986 – Peach Tree Mall

Need for water supply reliability

Our challenges include:

- FERC Relicensing
- Bay Delta Water Quality Control Plan update
- Impacts of climate change with potential for less snow pack and longer droughts which reduces water supply reliability

Existing action to address needs

Construction of New Bullards Bar Secondary Spillway

1. Provides for increased flood protection capability out of New Bullards Bar dam through increased release capacity lower in reservoir, which increases effective flood storage space
2. Provides greater ability to have a flexible flood pool for the purpose of storing additional water during dry periods
3. YWA studies have verified the feasibility of the Secondary Spillway and the YWA Board has approved \$11 million for design and permitting of the Secondary Spillway

Benefits of FIRO

1. FIRO provides AR research to better the flood potential of ARs and improve AR forecasting
2. FIRO provides information and a process to help update the 1972 Water Control Manual for New Bullards Bar for both improved flood protection and water supply
3. FIRO provides information to improve the existing FCO program for managing AR storm events



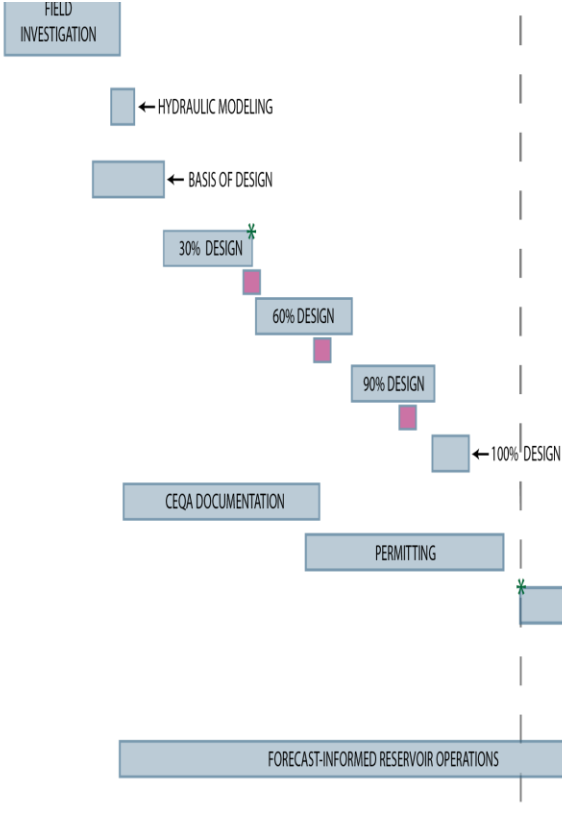
Thank you!

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Secondary Spillway Schedule

Feasibility, Design, Permitting, and Construction



Geotechnical Field Investigation	Jan 2019
Design:	
30%	Oct 2019
60%	Jun 2020
90%	Dec 2020
100%	Jan 2021
Environmental:	
CEQA Permitting	Apr 2020 Apr 2021
Construction Bid Award	Late 2021
Construction	Late 2024
Forecast-Informed Res Ops	Jan 2020
Water Control Manual	Jan 2024



FIO Operation with Secondary Spillway

Reduction in Peak Flood Flow/Stage

Location	Existing Conditions ¹ Base Case (BC)	F-IO and Option 4 Alternative	Stage Reduction (Alternative vs. BC) ft
	Flow cfs	Flow cfs	
1986 Event, Scaled 100%			
Yuba River Near Marysville	132,178	116,701	-1.3
Yuba + Feather Confluence	284,021	241,911	-2.0
Feather River Near Nicolaus	321,588	282,755	-1.2
1986 Event, Scaled 130%			
Yuba River Near Marysville	180,369	156,911	-1.8
Yuba + Feather Confluence	287,766	257,711	-1.5
Feather River Near Nicolaus	345,287	318,527	-0.9
1997 Event, Scaled 100%			
Yuba River Near Marysville	176,727	153,015	-2.0
Yuba + Feather Confluence	300,235	252,236	-2.3
Feather River Near Nicolaus	340,546	296,392	-1.4
1997 Event, Scaled 110%			
Yuba River Near Marysville	180,817	141,935	-3.1
Yuba + Feather Confluence	300,878	253,252	-2.3
Feather River Near Nicolaus	348,835	301,674	-1.5

¹ Based on CVHS Inflows

Note: Stages and Stage Reductions Based on Rating Curves and in Some Cases Extension of Rating Curves.

