

DRAFT September 23, 2011 For Discussion Purposes Only

Potential Operation Pattern for Fremont Weir Gated Channel, or "Notch"									
		Before Nov 10	Nov 10-Nov 30	Dec 1 - Feb 15	Feb 16 - Feb 28	March 1 - March 23	Mar 24-April 10	April 11-May 15	May 16 or Later
If Fremont Weir does not overtop that water year	Operations Concept	No Fremont Weir operations except for the minimum in-bank flow required to provide fish passage (up to 500 cfs if appropriate).	Initiate Fremont Weir flows up to 6,000 cfs, only if harvest is complete or if western tribs are already flooding.	Initiate Fremont Weir flows up to 6,000 cfs. A change in shallow water habitat distribution is anticipated (acres available at 0 to 1 foot depth and at 1 to 6 foot depth). As very shallow areas get deeper, new very shallow areas are created, variably offsetting the total amount available for dabbling and wading birds. These changes and tradeoffs will need to be analyzed and managed.	Initiate Fremont Weir flows up to 6,000 cfs. A change in shallow water habitat distribution is anticipated (acres available at 0 to 1 foot depth and at 1 to 6 foot depth). As very shallow areas get deeper, new very shallow areas are created, variably offsetting the total amount available for dabbling and wading birds. These changes and tradeoffs will need to be analyzed and managed.	Initiate Fremont Weir flows up to 6,000 cfs. A change in shallow water habitat distribution is anticipated (acres available at 0 to 1 foot depth and at 1 to 6 foot depth). As very shallow areas get deeper, new very shallow areas are created, variably offsetting the total amount of very shallow areas available for dabbling and wading birds. These changes and tradeoffs will need to be analyzed and managed.	No Fremont Weir notch operations except ramping down of flows initiated earlier to in-bank fish passage flow levels of 1,000 cfs or less, by April 10, at a rate that does not increase fish stranding. When natural events drop to 6,000 cfs at the YBY gauge, flows go in-bank approximately 11 days later. Unless natural floods are dominating the system during this time, time-to-drainage should be much less than 11 days from the time notch flows drop to 1,000 cfs. More detail about flow ramping is desirable. It will need to be determined in the YBFEP.	No Fremont Weir notch operations except for in-bank fish passage flows up to 500 cfs (if appropriate).	No Fremont Weir operations except for the minimum in-bank flow required to provide fish passage (up to 500 cfs if appropriate).
	Estimated "notch" operation frequency for a portion of the period		0 to very few water years	6 to 25% of water years	8 to 14% of water years	11 to 19% of water years	8 to 11% of water years	No floodplain inundation flows through Fremont Weir "notch" past April 11 in years Fremont Weir does not overtop	
If Fremont Weir overtops that water year	Operations Concept		When upstream flows are available, capture juvenile salmonids in up to 6,000 cfs into the Bypass and operate to achieve 30 day duration. Water availability in the river upstream will determine whether full 6,000 cfs flows are passed.	Provide continuity between events with flows up to 6,000 cfs to achieve 30 to 45+ day duration.	Provide continuity between events with flows up to 6,000 cfs to achieve 30 to 45+ day duration.	After FW overtopping stops, extend small flooding footprint in low-yield areas with up to 6,000 cfs notch flows to achieve at least 30 day duration, then ramp down to in-bank fish passage flows up to 500 cfs if appropriate.			
	Estimated "notch" operation frequency for a portion of the period		11% of water years	64% of water years	58 to 61% of water years	61% of water years	53 to 56% of water years	19% of water years	
Total % water years with Potential with-Project for-floodplain habitat operation, by period		0%	11%	69 to 89%	67 to 75%	72 to 81%	61 to 67%	19%	0%
Historical % of water years with Fremont Weir overflow in these periods, for reference		0%	11%	61%	50%	47%	22%	17%	8%
Footprint Targets: (Conservation easements or fee title will be required for all inundation on agricultural land)	Out-of-bank flows not created by project (zero or negligible)	Smaller Inundation - First flush "notch" operations add up to 10,000 acres to existing inundation. Operations piggybacking on overflow events prolong 7,000 to 10,000 acres of inundation.	Bigger Inundation - First flush "notch" operations add to existing inundation. Following natural spill events (non-project flooding, including westside tributaries or Fremont Weir), operate the notch to prolong duration and provide continuity between events. Natural spill events range considerably. Operations would target 17,000 acres of inundation.	Bigger Inundation - Following natural spill events (non-project flooding, including westside tributaries or Fremont Weir), operate the notch to prolong duration and provide continuity between events. Natural spill events range considerably. Operations would target 17,000 acres of inundation.	Smaller Prolonged Inundation - Acreage of 7,000 to 10,000 acres, with mitigation of impacts on agriculture.	Smaller Prolonged Inundation - Acreage of 7,000 to 10,000 acres, with mitigation of impacts on agriculture.	Smaller Prolonged Inundation - Acreage of 7,000 to 10,000 acres, with mitigation of impacts on agriculture.	Out-of-bank flows not created by project (zero or negligible)	

Note: Frequency estimates are based on water years 1968-2003 as represented in CALSIM results PP and the Fremont Weir bar charts summarizing historic overtopping in the Sac River Flood Control System Fact Sheet. High and low ranges were estimated based on avoidance of very short flow events.

Note: Notch ops at river stage 17.5 or higher correspond to times when Westside tributaries are also typically contributing flow. Preliminary investigations suggest that very short Fremont Weir "notch" events are unlikely to be met with substantial sustained Westside tributary flow, particularly early in the water year. This may have limiting implications on operations to send more juvenile winter-run salmon into the Bypass more often in November, December, January.