December 2016 Seasonal Forecast

Barrier Assumptions

- The Middle River barrier is installed from March 31st, 2017 to November 20th, 2017
- The Old River at Tracy barrier is installed from April 3rd, 2017 to November 12th, 2017
- The Grant Line Canal barrier is installed from April 17th, 2017 to November 4th, 2017
- The HORB is installed from April 3rd, 2017 to November 12th, 2017.

Hydrology Assumptions

The water allocations studies upon which this November 2016 Seasonal Forecast is based include actual water supply conditions as of November 1, 2016. The Water Year classification is Dry for the Sacramento Valley and Critical for the San Joaquin Valley. The hydrology data for the forecast were taken from a planning tool and real time changes in operations have occurred since these studies were completed. Two scenarios were run under the following hydrologic assumptions:

50% Exceedence (90% Fall)

- Wetter hydrology (50%) based on the May 1st Water Supply Index (WSI) until September with historical hydrology (90%) in the fall months (Oct-Dec)
- Operating to meet SWRCB Water Rights Decision 1641 (D-1641) objectives along with moderate export restrictions required under the 2008 USFWS BiOp for Delta Smelt, 2009 NMFS BiOp for Salmonids and 2010 DFG Longfin Incidental Take Permit.
- Sacramento Valley Index was 20.5 and the San Joaquin Valley Index was 8.6

Table 1: Assumptions for 50% Exceedence

	Sacramento River		East Side Steams CFS	San Joaquin River at Vernalis CFS	Jones PP CFS	Banks PP CFS	Delta Inflow CFS	NDOI CFS
	Accretions CFS	Freeport CFS						
Jan	28786	51441	4107	1805	2277	2269	57580	54442
Feb	36912	64911	4409	3511	2719	2719	73070	69184
Mar	30454	53595	3515	3550	1840	1857	60886	57708
Apr	11764	27259	2391	2991	807	672	32842	30275
May	4716	17922	1616	4798	813	667	24533	20685
Jun	168	15730	1126	1445	1126	1126	18495	12163
Jul	-2602	22557	465	1220	4586	7123	24441	8002
Aug	-1952	20248	415	1057	4586	7140	21924	6051
Sep	1513	19461	580	1008	4571	7142	21255	6745
Oct	-407	11368	210	2033	4147	1138	13813	6892
Nov	1477	9969	260	1628	1880	2467	12064	6885
Dec	2228	10490	160	1626	3497	3253	12493	5001
Avg.	9421	27079	1604	2223	2737	3131	31116	23670

90% Exceedence (90% Fall)

- Drier hydrology (90%) based on the May 1st Water Supply Index (WSI) until September with historical hydrology (90%) in the fall months (Oct-Dec)
- Operating to meet SWRCB Water Rights Decision 1641 (D-1641) objectives along with moderate export restrictions required under the 2008 USFWS BiOp for Delta Smelt, 2009 NMFS BiOp for Salmonids and 2010 DFG Longfin Incidental Take Permit.
- Sacramento Valley Index was 13.4 and the San Joaquin Valley Index was 6.3

Table 2: Assumptions for 90% Exceedence

	Sacramento River		East Side Steams CFS	San Joaquin River at Vernalis CFS	Jones PP CFS	Banks PP CFS	Delta Inflow CFS	NDOI CFS
	Accretions CFS	Freeport CFS						
Jan	11710	23192	1187	1285	2147	2131	25890	22161
Feb	14405	24812	1699	1567	2215	2215	28316	24612
Mar	10911	20731	1625	1677	1368	1352	24259	21425
Apr	2353	12907	1021	1462	807	672	15591	12681
May	-1626	9807	743	1480	911	569	12227	8255
Jun	-4033	11562	537	706	1529	252	12998	7108
Jul	-5367	18101	224	683	2992	6440	19207	5039
Aug	-2927	18475	227	602	3464	7140	19508	4761
Sep	672	17444	329	706	4386	7142	18685	4278
Oct	-407	8603	210	1724	2651	1447	10739	5007
Nov	1477	9297	260	1242	2551	2618	11007	5002
Dec	2228	10051	160	1236	2749	2196	11664	5998
Avg.	2450	15415	685	1197	2314	2848	17508	10527

Summary of Results

EC and Bromide at Checks 2, 13, 41, and Silverwood Lake

- The 50% and 90% exceedence follow a similar trend until the month of August. This difference is the magnitude of the peaks is most likely due to the difference in Delta inflow between months of August and November. This difference is further compounded by the similar pumping between the two scenarios. The average pumping between the two scenarios is within 300 cfs, while the difference in Delta inflow is over 10,000 cfs.

EC and bromide at Old River Locations (Bacon Island and Highway 4)

- The higher peak observed in the 90% scenario is most likely due to the decrease in delta inflow combined with high pumping.

EC and Bromide at Export Locations

- The trends at Banks and Jones are similar to what is seen at Bacon Island and Highway 4.