

**YCWA Operations Model Run:**

Base Case and RP092413

10/10/2014

General Assumptions		
Model Configuration		
Model Scenario:	Base Case	RP092413
Water Balance/Operations Model Version:	1.17	1.17
Scenario Run Date:	9/27/2013	9/27/2013
Level of Development?	Present Level of Development	Present Level of Development
Narrows 1/2 Preference?	Narrows 1	Narrows 1
Slate Creek Operations?	Historical Flows	Historical Flows
Basis of Hydrologic Index Calculation?	Perfect Foresight	Perfect Foresight
Groundwater Substitution Transfers?	No	No
Use Weekly Power Generation Factors?	No	No
Temperature Model Run Date?	4/10/2014	
Date printed:	10/10/2014	10/10/2014

Minimum Flow Requirement Assumptions		
Water-Year Classification below Our House Dam:	Existing FERC License	Smartsville Index
Water-Year Classification below Log Cabin Dam:	Existing FERC License	Smartsville Index
Water-Year Classification below New Bullards Bar Dam:	Existing FERC License	Smartsville Index
Water-Year Classification below Englebright Dam:	North Yuba Index	North Yuba Index
Flow Requirements below Our House Dam:	Existing FERC License	RP081513
Flow Requirements below Log Cabin Dam:	Existing FERC License	RP081513
Flow Requirements below New Bullards Bar Dam:	Existing FERC License	RP092413
Flow Requirements below Englebright Dam:	Yuba River Accord	Yuba River Accord
Our House Dam Release Buffer:	3 cfs	3 cfs
Log Cabin Dam Release Buffer:	1 cfs	1 cfs
Minimum Flow Powerhouse Release Buffer:	2 cfs	2 cfs

New Bullards Bar Reservoir Storage Assumptions		
New Bullards Bar Reservoir Target Operating Line:	Yuba River Accord	Yuba River Accord
New Bullards Bar Reservoir Carryover Storage Protection Level:	99% Exceedance Drought (294,000 AF)	99% Exceedance Drought (294,000 AF)
Agricultural Delivery Deficiency for Carryover Storage Calculation:	50%	50%
Maximum Agricultural Delivery Deficiency for Carryover Storage:	50%	50%

Other Operational Requirements		
Englebright Release Flow Fluctuation Criteria:	Existing FERC License	Existing FERC License
New Bullards Bar Reservoir Flood Operations:	1972 Flood Control Manual	1972 Flood Control Manual
Englebright Reservoir Low-Storage Restriction:	PG&E Agreement with Marina Operator	PG&E Agreement with Marina Operator

**Notes:**

Timeseries Assumptions														
Flow Requirements below Our House Dam (cfs)														
Base Case														
WY Classification	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1-Apr 15	Apr 16-30	May	Jun 1-15	Jun 16-30	July	August	Sep
100% Unimp	30	30	30	30	30	30	30	50	50	50	30	30	30	30
50% Unimp	25.5	25.5	25.5	25.5	25.5	25.5	25.5	42.5	42.5	42.5	25.5	25.5	25.5	25.5
45% Unimp	24	24	24	24	24	24	24	40	40	40	24	24	24	24
40% Unimp	21	21	21	21	21	21	21	35	35	35	21	21	21	21

  

RP081513														
WY Classification	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
Extremely Critical	50	50	50	50	50	50	50	50	50	50	50	50		
Critical	50	50	50	50	50	50	60	60	60	50	50	50		
Dry	50	50	50	50	50	50	70	70	70	50	50	50		
Below Normal	50	50	70	70	70	70	120	120	120	70	70	60		
Above Normal	60	60	100	100	100	100	140	140	140	100	100	80		
Wet	60	60	120	120	120	120	140	140	140	120	120	80		

Flow Requirements below Log Cabin Dam (cfs)														
Base Case														
WY Classification	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1-Apr 15	Apr 16-30	May	Jun 1-15	Jun 16-30	July	August	Sep
100% Unimp	8	8	8	8	8	8	8	12	12	12	8	8	8	8
50% Unimp	6.8	6.8	6.8	6.8	6.8	6.8	6.8	10.2	10.2	10.2	6.8	6.8	6.8	6.8
45% Unimp	6.4	6.4	6.4	6.4	6.4	6.4	6.4	9.6	9.6	9.6	6.4	6.4	6.4	6.4
40% Unimp	5.6	5.6	5.6	5.6	5.6	5.6	5.6	8.4	8.4	8.4	5.6	5.6	5.6	5.6

  

RP081513														
WY Classification	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
Extremely Critical	6	6	6	6	6	12	18	18	18	6	6	6		
Critical	6	6	6	6	6	12	18	18	18	6	6	6		
Dry	6	6	10	10	10	16	18	18	18	10	10	6		
Below Normal	6	6	15	15	15	20	32	32	32	15	15	6		
Above Normal	8	8	20	20	20	30	55	55	55	20	20	8		
Wet	8	8	25	25	25	40	55	55	55	25	25	8		

Flow Requirements below New Bullards Bar Dam (cfs)														
Base Case														
WY Classification	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1-Apr 15	Apr 16-30	May	Jun 1-15	Jun 16-30	July	August	Sep
100% Unimp	5	5	5	5	5	5	5	5	5	5	5	5	5	5
50% Unimp	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
45% Unimp	4	4	4	4	4	4	4	4	4	4	4	4	4	4
40% Unimp	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5

  

RP092413														
WY Classification	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
Extremely Critical	90	90	90	90	100	120	140	120	120	100	90	90		
Critical	90	90	90	90	100	120	140	120	120	100	90	90		
Dry	90	90	90	90	100	120	140	120	120	100	90	90		
Below Normal	90	90	90	90	100	120	140	120	120	100	90	90		
Above Normal	90	90	90	90	100	120	220	220	220	100	90	90		
Wet	90	90	90	90	100	250	300	300	300	150	90	90		

**Timeseries Assumptions**  
**Flow Requirements at Smartsville (cfs)**

<b>Base Case</b>																
WY Classification	Oct 1-15	Oct 16-31	Nov	Dec	Jan	Feb	Mar	Apr 1-15	Apr 16-30	May 1-15	May 16-31	June 1-15	June 16-30	Jul	Aug	Sep
1	700	700	700	700	700	700	700	700	0	0	0	0	0	0	0	700
2	700	700	700	700	700	700	700	700	0	0	0	0	0	0	0	700
3	700	700	700	700	700	700	700	700	0	0	0	0	0	0	0	700
4	700	700	700	700	700	700	700	700	0	0	0	0	0	0	0	700
5	600	600	600	550	550	550	550	600	0	0	0	0	0	0	0	500
6	600	600	600	550	550	550	550	600	0	0	0	0	0	0	0	500
Conference	600	600	600	600	600	600	600	0	0	0	0	0	0	0	0	0
<b>Yuba River Accord</b>																
WY Classification	Oct 1-15	Oct 16-31	Nov	Dec	Jan	Feb	Mar	Apr 1-15	Apr 16-30	May 1-15	May 16-31	June 1-15	June 16-30	Jul	Aug	Sep
1	700	700	700	700	700	700	700	700	0	0	0	0	0	0	0	700
2	700	700	700	700	700	700	700	700	0	0	0	0	0	0	0	700
3	700	700	700	700	700	700	700	700	0	0	0	0	0	0	0	700
4	700	700	700	700	700	700	700	700	0	0	0	0	0	0	0	700
5	600	600	600	550	550	550	550	600	0	0	0	0	0	0	0	500
6	600	600	600	550	550	550	550	600	0	0	0	0	0	0	0	500
Conference	600	600	600	600	600	600	600	0	0	0	0	0	0	0	0	0

**Yuba Accord Flow Requirements at Marysville (cfs)**

<b>Base Case</b>																
WY Classification	Oct 1-15	Oct 16-31	Nov	Dec	Jan	Feb	Mar	Apr 1-15	Apr 16-30	May 1-15	May 16-31	June 1-15	June 16-30	Jul	Aug	Sep
1	500	500	500	500	500	500	700	1000	1000	2000	2000	1500	1500	700	600	500
2	500	500	500	500	500	500	700	700	800	1000	1000	800	500	500	500	500
3	500	500	500	500	500	500	500	700	700	900	900	500	500	500	500	500
4	400	400	500	500	500	500	500	600	900	900	600	400	400	400	400	400
5	400	400	500	500	500	500	500	500	600	600	400	400	400	400	400	400
6	350	350	350	350	350	350	350	350	500	500	400	300	150	150	150	350
Conference	400	400	400	400	245	245	245	245	245	245	245	245	245	70	70	70
<b>Yuba River Accord</b>																
WY Classification	Oct 1-15	Oct 16-31	Nov	Dec	Jan	Feb	Mar	Apr 1-15	Apr 16-30	May 1-15	May 16-31	June 1-15	June 16-30	Jul	Aug	Sep
1	500	500	500	500	500	500	700	1000	1000	2000	2000	1500	1500	700	600	500
2	500	500	500	500	500	500	700	700	800	1000	1000	800	500	500	500	500
3	500	500	500	500	500	500	500	700	700	900	900	500	500	500	500	500
4	400	400	500	500	500	500	500	600	900	900	600	400	400	400	400	400
5	400	400	500	500	500	500	500	500	600	600	400	400	400	400	400	400
6	350	350	350	350	350	350	350	350	500	500	400	300	150	150	150	350
Conference	400	400	400	400	245	245	245	245	245	245	245	245	245	70	70	70

**New Bullards Bar Reservoir Storage Targets**

<b>Base Case</b>																
Operating Line	31-Oct	30-Nov	31-Dec	31-Jan	28-Feb	31-Mar	30-Apr	31-May	30-Jun	15-Jul	31-Jul	15-Aug	31-Aug	15-Sep	30-Sep	
Upper Buffer	20,000	30,000	30,000	80,000	30,000	30,000	30,000	26,000	0	5,000	10,000	10,000	10,000	90,000	200,000	
Target Line	660,000	660,000	650,000	600,000	650,000	750,000	850,000	940,000	920,000	875,000	825,000	770,000	715,000	682,500	650,000	
Lower Buffer	10,000	30,000	30,000	30,000	30,000	30,000	30,000	100,000	80,000	60,000	40,000	35,000	15,000	5,000	2,000	
<b>RP092413</b>																
Operating Line	31-Oct	30-Nov	31-Dec	31-Jan	28-Feb	31-Mar	30-Apr	31-May	30-Jun	15-Jul	31-Jul	15-Aug	31-Aug	15-Sep	30-Sep	
Upper Buffer	20,000	30,000	30,000	80,000	30,000	30,000	30,000	26,000	0	5,000	10,000	10,000	10,000	90,000	200,000	
Target Line	660,000	660,000	650,000	600,000	650,000	750,000	850,000	940,000	920,000	875,000	825,000	770,000	715,000	682,500	650,000	
Lower Buffer	10,000	30,000	30,000	30,000	30,000	30,000	30,000	100,000	80,000	60,000	40,000	35,000	15,000	5,000	2,000	

Overview - Model Output Generation Summary																						
Water Year Classification:	Wet			Above Normal			Below Normal			Dry			Critical			Extremely Critical			Average All Years			
Model case:	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	
New Colgate Powerhouse Generation (Average MWh/yr)	1,718,243	1,588,897	-7.5%	1,335,665	1,197,314	-10.4%	1,193,149	1,085,471	-9.0%	848,513	748,183	-11.8%	784,804	692,070	-11.8%	491,895	409,987	-16.7%	1,234,739	1,115,452	-119,287	-9.7%
Narrows 2 Powerhouse Generation (Average MWh/yr)	263,333	260,176	-1.2%	191,245	190,625	-0.3%	162,909	163,983	0.7%	100,537	100,338	-0.2%	75,640	76,256	0.8%	83,846	82,812	0.0%	172,607	171,771	-836	-0.5%
Total YRDP Generation (Average MWh/yr)	1,981,576	1,849,073	-6.7%	1,526,910	1,387,939	-9.1%	1,356,058	1,249,454	-7.9%	949,050	848,520	-10.6%	860,444	768,326	-10.7%	575,742	492,800	-14.4%	1,407,346	1,287,223	-120,123	-8.5%
Overview - Model Output Flows Summary																						
Water Year Classification:	Wet			Above Normal			Below Normal			Dry			Critical			Extremely Critical			Average All Years			
Model case:	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	
Middle Yuba River																						
MYR below Our House Dam (Avg. AF/yr)	138,636	172,198	24.2%	50,773	85,105	67.6%	52,119	75,972	45.8%	62,765	74,324	18.4%	51,401	62,586	21.8%	45,949	54,279	18.1%	73,689	99,172	25,482	34.6%
MYR Near Confluence with NYR (Avg. AF/yr)	263,826	306,577	16.2%	115,908	159,130	37.3%	126,059	153,952	22.1%	132,346	145,459	9.9%	105,417	117,504	11.5%	128,128	137,830	7.6%	154,611	186,002	31,391	20.3%
Oregon Creek and North Yuba River																						
Oregon Creek below Log Cabin Dam (Avg. AF/yr)	34,871	44,060	26.4%	12,931	21,822	68.8%	16,530	20,569	24.4%	18,562	20,117	8.4%	15,903	16,806	5.7%	20,326	21,699	6.8%	20,212	26,120	5,908	29.2%
NYR below New Bullards Bar Dam (Avg. AF/yr)	337,941	414,026	22.5%	71,138	148,818	109.2%	85,135	152,418	79.0%	124,063	194,088	56.4%	89,001	155,553	74.8%	4,087	76,315	1767.4%	145,398	218,572	73,174	50.3%
Yuba River																						
Yuba River above New Colgate PH (Avg. AF/yr)	637,087	755,924	18.7%	207,461	328,363	58.3%	233,646	328,821	40.7%	276,360	359,498	30.1%	209,322	287,961	37.6%	156,403	238,333	52.4%	323,751	428,316	104,565	32.3%
Yuba River near Smartsville (Avg. AF/yr)	2,823,795	2,826,881	0.1%	1,702,620	1,703,820	0.1%	1,611,000	1,613,142	0.1%	1,320,190	1,315,648	-0.3%	1,141,016	1,138,557	-0.2%	959,722	959,504	0.0%	1,802,221	1,802,224	3	0.0%
Yuba River near Marysville (Avg. AF/yr)	2,755,362	2,758,448	0.1%	1,516,796	1,517,996	0.1%	1,437,193	1,439,335	0.1%	1,133,048	1,128,506	-0.4%	936,949	934,490	-0.3%	937,791	937,195	-0.1%	1,647,467	1,647,460	-7	0.0%
Average Agricultural Water Supply																						
Water Year Classification:	Wet			Above Normal			Below Normal			Dry			Critical			Extremely Critical			Average All Years			
Model case:	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	
Total (% of requested)	100%	100%	0%	100%	100%	0%	100%	100%	0%	100%	100%	0%	50%	50%	0%	50%	50%	0%	99%	99%	0%	
End of September Reservoir Storage																						
Water Year Classification:	Wet			Above Normal			Below Normal			Dry			Critical			Extremely Critical			Average All Years			
Model case:	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	
Reservoir Storage (AF)	652,111	650,931	-0.2%	643,499	646,546	0.5%	647,577	654,904	1.1%	574,860	574,291	-0.1%	242,087	240,231	-0.8%	242,087	240,231	-0.8%	610,312	611,294	982	0.2%

\*Water Year Classifications based on Smartsville Index

Model Output Summary - Generation

New Colgate Powerhouse Generation (Average Monthly MWh)																					
Month	Wet			Above Normal			Below Normal			Dry			Critical			Extremely Critical			Average All Years		
	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change
October	53,916	46,771	-13.3%	51,558	45,546	-11.7%	50,800	45,579	-10.3%	47,417	41,092	-13.3%	45,398	39,465	-13.1%	29,498	24,450	-17.1%	50,143	43,911	-12.4%
November	63,447	56,700	-10.6%	54,834	48,610	-11.3%	40,423	40,977	1.4%	49,436	42,219	-14.6%	44,120	37,827	-14.3%	25,167	20,161	-19.9%	52,485	46,767	-10.9%
December	97,951	89,665	-8.5%	64,466	56,878	-11.8%	57,032	51,104	-10.4%	52,662	45,364	-13.9%	29,393	22,396	-23.8%	14,076	10,680	-24.1%	65,340	57,993	-11.2%
January	138,548	130,675	-5.7%	97,118	90,804	-6.5%	129,125	122,025	-5.5%	63,964	58,986	-7.8%	59,241	51,689	-12.7%	6,477	6,794	4.9%	98,866	92,441	-6.5%
February	164,112	161,046	-1.9%	92,947	85,602	-7.9%	140,590	134,779	-4.1%	72,050	66,979	-7.0%	87,525	81,632	-6.7%	79,594	62,517	-21.5%	110,774	105,028	-5.2%
March	166,946	147,058	-11.9%	98,303	87,906	-10.6%	111,039	100,487	-9.5%	119,988	111,723	-6.9%	95,227	88,328	-7.2%	207,997	196,408	-5.6%	123,809	111,773	-9.7%
April	189,607	170,762	-9.9%	131,458	105,678	-19.6%	75,505	57,235	-24.2%	41,264	28,104	-31.9%	51,568	38,694	-25.0%	15,475	6,774	-56.2%	107,561	88,534	-17.7%
May	216,735	204,445	-5.7%	199,130	176,298	-11.5%	165,206	145,230	-12.1%	93,706	79,790	-14.9%	91,713	80,475	-12.3%	23,210	14,567	-37.2%	162,738	145,789	-10.4%
June	218,175	204,787	-6.1%	204,643	184,904	-9.6%	150,482	133,369	-11.4%	89,685	77,289	-13.8%	80,585	70,941	-12.0%	33,481	25,883	-22.7%	161,200	145,887	-9.5%
July	193,163	178,430	-7.6%	165,190	153,003	-7.4%	124,480	113,624	-8.7%	95,047	87,415	-8.0%	89,798	82,540	-8.1%	28,902	23,036	-20.3%	141,135	130,099	-7.8%
August	155,620	145,834	-6.3%	120,459	111,767	-7.2%	95,085	91,278	-4.0%	76,947	69,885	-9.2%	68,378	62,131	-9.1%	20,381	15,291	-25.0%	108,661	101,068	-7.0%
September	60,023	52,723	-12.2%	55,561	50,317	-9.4%	53,383	49,784	-6.7%	46,346	39,337	-15.1%	41,858	35,952	-14.1%	7,637	3,425	-55.1%	52,027	46,162	-11.3%
Average MWh/	1,718,243	1,588,897	-7.5%	1,335,665	1,197,314	-10.4%	1,193,149	1,085,471	-9.0%	848,513	748,183	-11.8%	784,804	692,070	-11.8%	491,895	409,987	-16.7%	1,234,739	1,115,452	-9.7%

Narrows 2 Powerhouse Generation (Average Monthly MWh)																					
Month	Wet			Above Normal			Below Normal			Dry			Critical			Extremely Critical			Average All Years		
	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change
October	4,803	4,670	-2.8%	3,674	3,968	8.0%	2,893	3,657	26.4%	1,425	1,395	-2.1%	0	0	0.0%	0	0	0.0%	3,002	3,149	4.9%
November	5,080	5,081	0.0%	4,092	4,241	3.6%	382	1,789	368.1%	2,338	2,395	2.5%	0	0	0.0%	0	273	0.0%	3,096	3,335	7.7%
December	15,428	15,554	0.8%	7,791	7,912	1.6%	7,735	8,643	11.7%	5,572	5,745	3.1%	1,847	1,979	7.1%	4,115	4,275	3.9%	8,635	8,867	2.7%
January	23,957	23,808	-0.6%	15,371	15,704	2.2%	24,880	24,999	0.5%	10,543	10,721	1.7%	11,525	11,838	2.7%	21,086	22,031	4.5%	17,423	17,592	1.0%
February	28,802	28,690	-0.4%	16,275	16,239	-0.2%	23,340	23,178	-0.7%	14,685	14,658	-0.2%	11,473	11,464	-0.1%	22,726	20,691	-9.0%	19,641	19,526	-0.6%
March	30,074	29,842	-0.8%	18,722	19,013	1.6%	20,904	20,672	-1.1%	23,946	24,016	0.3%	13,018	13,200	1.4%	35,919	35,543	-1.0%	22,906	22,933	0.1%
April	33,770	33,661	-0.3%	24,219	24,160	-0.2%	13,295	13,130	-1.2%	6,553	6,286	-4.1%	5,095	5,095	0.0%	0	0	0.0%	18,849	18,724	-0.7%
May	36,478	36,253	-0.6%	34,083	33,773	-0.9%	26,259	25,039	-4.6%	9,640	9,555	-0.9%	8,662	8,662	0.0%	0	0	0.0%	25,407	25,062	-1.4%
June	33,745	33,534	-0.6%	30,823	30,314	-1.7%	18,836	17,872	-5.1%	8,458	8,341	-1.4%	8,188	8,188	0.0%	0	0	0.0%	22,393	22,019	-1.7%
July	26,103	25,168	-3.6%	19,658	18,845	-4.1%	12,131	11,934	-1.6%	8,461	8,461	0.0%	8,461	8,461	0.0%	0	0	0.0%	16,215	15,723	-3.0%
August	18,531	17,385	-6.2%	11,539	11,080	-4.0%	9,206	9,157	-0.5%	7,976	7,976	0.0%	7,369	7,369	0.0%	0	0	0.0%	11,364	10,960	-3.6%
September	6,561	6,530	-0.5%	4,997	5,375	7.6%	3,048	3,912	28.4%	940	788	-16.1%	0	0	0.0%	0	0	0.0%	3,677	3,883	5.6%
Average MWh/	263,333	260,176	-1.2%	191,245	190,625	-0.3%	162,909	163,983	0.7%	100,537	100,338	-0.2%	75,640	76,256	0.8%	83,846	82,812	-1.2%	172,607	171,771	-0.5%

Model Output Summary - Miscellaneous Values

End of September New Bullards Bar Reservoir Storage (AF)			
WY Classification	Base	Alt	Change
Wet	652,111	650,931	-0.2%
Above Normal	643,499	646,546	0.5%
Below Normal	647,577	654,904	1.1%
Dry	574,860	574,291	-0.1%
Critical	495,674	487,097	-1.7%
Extremely Critical	242,087	240,231	-0.8%
Average All Years	610,312	611,294	0.2%

Average Agricultural Water Supply Allocation for April through September (%)			
WY Classification	Base	Alt	Change
Wet	100%	100%	0.0%
Above Normal	100%	100%	0.0%
Below Normal	100%	100%	0.0%
Dry	100%	100%	0.0%
Critical	100%	100%	0.0%
Extremely Critical	50%	50%	0.2%
Average All Years	99%	99%	0.0%

Number of Days Narrows 2 PH Releases Controlled by Flow Fluctuation Criteria			
WY Classification	Base	Alt	Change
Wet	14	27	92.9%
Above Normal	162	166	2.5%
Below Normal	0	0	0.0%
Dry	148	137	-7.4%
Critical	97	90	-7.2%
Extremely Critical	9	9	0.0%
Total All Years	430	429	-0.2%

Recurrence of North Yuba Index Year Types (Years)			
Flow Sched.	Base	Alt	Change
Sched. 1	23	21	-2
Sched. 2	8	10	2
Sched. 3	2	2	0
Sched. 4	6	5	-1
Sched. 5	1	2	1
Sched. 6	0	0	0
Conference	1	1	0

Average New Bullards Bar Reservoir Water-Surface Elevation on Sept. 10 (ft)			
WY Classification	Base	Alt	Change
Wet	1,887	1,887	0.0%
Above Normal	1,885	1,886	0.1%
Below Normal	1,887	1,889	0.1%
Dry	1,866	1,865	0.0%
Critical	1,842	1,840	-0.1%
Extremely Critical	1,737	1,736	-0.1%
Average All Years	1,875	1,875	0.0%

Average Number of Days per Year Dark Day Boat Ramp is Available (Water Level >= 1,758 ft) (days)			
WY Classification	Base	Alt	Change
Wet	365	365	0
Above Normal	365	365	0
Below Normal	365	365	0
Dry	365	365	0
Critical	365	365	0
Extremely Critical	182	180	-2
Average All Years	361	361	0

Average Number of Days per Year Cottage Creek Boat Ramp is Available (Water Level >= 1,853 ft) (Days)			
WY Classification	Base	Alt	Change
Wet	347	346	-1
Above Normal	355	354	-1
Below Normal	365	365	0
Dry	290	284	-6
Critical	188	174	-14
Extremely Critical	59	55	-4
Average All Years	321	318	-3

\*Water Year (WY) Classifications based on Smartsville Index

Model Output Summary - Flows

Middle Yuba River below Our House Dam (Average monthly flow, cfs)																					
Month	Wet			Above Normal			Below Normal			Dry			Critical			Extremely Critical			Average All Years		
	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change
October	34	47	38.2%	33	42	29.2%	31	39	26.9%	27	31	14.9%	24	26	9.6%	17	17	0.0%	30	39	27.0%
November	70	89	26.1%	57	75	32.6%	33	48	46.8%	86	98	13.8%	24	37	55.6%	22	31	36.7%	60	76	26.5%
December	259	311	20.3%	106	153	44.8%	48	80	65.3%	142	160	12.5%	32	51	59.8%	38	55	43.1%	137	174	27.3%
January	472	529	12.2%	111	164	47.2%	273	307	12.6%	63	83	32.7%	230	249	8.2%	302	321	6.2%	222	263	18.6%
February	179	247	38.1%	84	146	74.6%	148	184	24.1%	312	331	6.2%	26	49	89.7%	57	83	45.5%	160	207	29.6%
March	157	232	47.9%	98	162	64.7%	48	85	75.7%	222	240	8.1%	336	358	6.4%	173	196	12.9%	153	202	32.1%
April	374	431	15.3%	57	150	164.0%	47	125	169.2%	38	73	92.7%	31	63	103.2%	31	53	70.0%	118	183	54.3%
May	457	500	9.5%	129	206	59.0%	99	165	66.3%	47	73	56.0%	38	63	65.8%	38	53	39.5%	170	221	30.2%
June	189	261	38.4%	68	149	120.6%	44	108	144.0%	38	64	66.8%	31	51	62.4%	31	42	33.5%	81	139	72.2%
July	38	98	160.0%	33	75	128.3%	33	53	61.5%	29	40	37.5%	24	31	28.2%	17	17	0.4%	32	65	101.4%
August	33	58	76.6%	33	48	45.9%	32	37	15.0%	27	29	6.8%	23	26	12.8%	13	13	0.0%	30	42	38.4%
September	33	47	43.9%	33	41	25.0%	30	32	4.9%	26	27	3.3%	23	25	6.9%	15	16	1.4%	30	36	21.1%
Average AF/yr	138,636	172,198	24.2%	50,773	85,105	67.6%	52,119	75,972	45.8%	62,765	74,324	18.4%	51,401	62,586	21.8%	45,949	54,279	18.1%	73,689	99,172	34.6%

Middle Yuba River Near Confluence with North Yuba River (Average monthly flow, cfs)																					
Month	Wet			Above Normal			Below Normal			Dry			Critical			Extremely Critical			Average All Years		
	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change
October	50	59	18.9%	46	53	15.3%	43	50	16.0%	38	41	8.4%	30	30	2.2%	21	21	0.0%	43	49	14.2%
November	135	151	12.2%	117	134	14.0%	64	77	20.2%	141	151	7.1%	37	49	32.2%	38	46	21.5%	113	127	12.5%
December	531	592	11.5%	216	270	24.6%	132	167	27.0%	275	294	7.1%	93	112	20.4%	138	154	11.4%	285	327	14.8%
January	906	973	7.4%	259	320	23.4%	653	693	6.1%	192	215	12.0%	554	571	3.2%	840	859	2.3%	486	533	9.7%
February	546	624	14.4%	249	321	29.0%	403	444	10.1%	657	678	3.3%	105	128	22.0%	303	328	8.3%	420	474	12.9%
March	451	551	22.3%	334	416	24.3%	224	271	21.1%	526	551	4.7%	625	651	4.2%	557	585	4.9%	418	482	15.3%
April	721	811	12.4%	215	352	63.9%	182	283	55.3%	131	176	33.8%	82	125	52.2%	49	80	62.4%	289	381	31.7%
May	645	726	12.6%	239	357	49.6%	198	284	43.2%	97	130	34.7%	69	103	50.2%	72	97	34.0%	274	353	28.6%
June	244	352	44.0%	110	225	104.9%	77	150	95.5%	65	93	44.1%	47	66	42.2%	44	55	24.4%	118	197	66.5%
July	59	125	111.0%	50	92	85.7%	48	66	37.9%	41	50	20.8%	33	36	9.9%	20	20	0.0%	48	80	68.6%
August	47	69	46.1%	46	56	22.9%	41	43	5.8%	33	34	1.8%	29	31	6.7%	15	15	0.0%	41	49	21.5%
September	46	57	23.2%	44	48	9.3%	36	37	1.7%	32	32	1.1%	28	29	2.8%	19	19	0.6%	39	43	10.0%
Average AF/yr	263,826	306,577	16.2%	115,908	159,130	37.3%	126,059	153,952	22.1%	132,346	145,459	9.9%	105,417	117,504	11.5%	128,128	137,830	7.6%	154,611	186,002	20.3%

Oregon Creek below Log Cabin Dam (Average monthly flow, cfs)																					
Month	Wet			Above Normal			Below Normal			Dry			Critical			Extremely Critical			Average All Years		
	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change
October	9	5	-41.3%	7	5	-34.4%	6	4	-25.4%	4	4	-18.3%	4	2	-42.7%	2	2	0.0%	6	4	-33.3%
November	19	18	-9.7%	17	15	-11.7%	8	6	-28.7%	18	17	-9.5%	6	5	-24.9%	4	4	-0.8%	16	14	-11.9%
December	91	100	9.3%	29	35	20.5%	16	20	25.0%	44	45	3.9%	11	11	-1.0%	11	11	-6.4%	44	49	10.8%
January	153	163	6.4%	32	40	25.0%	118	124	4.6%	25	28	9.8%	103	102	-1.2%	157	157	0.2%	79	85	7.7%
February	93	104	11.2%	29	39	34.5%	55	60	9.1%	108	110	1.9%	7	7	-2.0%	36	36	-1.9%	64	70	10.6%
March	63	89	40.2%	35	53	50.3%	17	28	62.7%	69	76	9.7%	92	96	4.7%	94	99	5.2%	53	68	28.4%
April	83	115	39.3%	13	57	338.5%	11	33	195.6%	10	20	90.4%	8	19	137.5%	8	17	113.3%	27	54	101.3%
May	31	69	122.3%	16	58	254.6%	15	35	130.6%	12	19	62.1%	9	19	101.9%	9	19	102.1%	18	45	152.5%
June	11	46	313.5%	11	45	300.5%	11	21	87.7%	10	13	30.0%	8	8	0.5%	8	8	4.0%	11	31	193.3%
July	9	14	60.0%	9	9	1.9%	9	7	-25.1%	7	5	-32.2%	6	3	-57.4%	2	1	-4.4%	8	8	2.0%
August	9	5	-40.6%	9	4	-55.1%	5	3	-46.1%	4	2	-34.6%	3	2	-35.3%	1	1	0.0%	6	3	-46.3%
September	8	4	-45.2%	7	3	-55.0%	3	2	-26.9%	3	2	-18.7%	3	2	-29.4%	2	2	-5.6%	5	3	-44.0%
Average AF/yr	34,871	44,060	26.4%	12,931	21,822	68.8%	16,530	20,569	24.4%	18,562	20,117	8.4%	15,903	16,806	5.7%	20,326	21,699	6.8%	20,212	26,120	29.2%

\*Water Year Classifications based on Smartsville Index

Model Output Summary - Flows

North Yuba River below New Bullards Bar Dam (Average monthly flow, cfs)																					
Month	Wet			Above Normal			Below Normal			Dry			Critical			Extremely Critical			Average All Years		
	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change
October	7	92	1214.3%	7	92	1214.3%	7	92	1214.3%	6	92	1352.6%	6	92	1572.7%	6	92	1572.7%	7	92	1271.6%
November	7	92	1184.6%	7	92	1200.6%	7	92	1214.3%	6	92	1331.5%	6	92	1572.7%	6	92	1572.7%	7	92	1254.8%
December	535	599	12.1%	76	139	83.3%	7	92	1207.6%	408	553	35.7%	6	92	1572.7%	6	92	1572.7%	245	332	35.3%
January	1,509	1,570	4.1%	400	463	15.9%	744	820	10.2%	70	153	118.4%	6	92	1482.1%	6	92	1572.7%	601	672	11.8%
February	244	291	19.0%	60	141	137.4%	481	549	14.1%	1,015	1,086	7.0%	35	103	198.4%	6	102	1754.5%	362	431	18.9%
March	624	776	24.3%	236	313	32.9%	120	223	85.8%	574	629	9.6%	1,362	1,411	3.6%	7	123	1613.8%	467	560	19.8%
April	683	883	29.3%	32	238	651.6%	7	142	1928.6%	6	142	2142.1%	6	142	2481.8%	6	142	2481.8%	163	335	105.7%
May	1,176	1,289	9.6%	190	381	101.1%	7	122	1637.2%	6	122	1826.3%	6	122	2118.2%	6	122	2118.2%	321	460	43.3%
June	737	881	19.6%	141	310	120.3%	31	129	316.2%	6	122	1826.3%	6	122	2118.2%	6	122	2118.2%	213	349	64.1%
July	28	166	484.4%	8	103	1224.8%	7	102	1288.2%	6	102	1510.5%	6	102	1754.5%	6	102	1754.5%	12	116	893.8%
August	8	93	1068.2%	7	92	1214.3%	7	92	1214.3%	6	92	1352.6%	6	92	1572.7%	6	92	1572.7%	7	92	1233.1%
September	7	92	1214.3%	7	92	1214.3%	7	92	1214.3%	6	92	1352.6%	6	92	1572.7%	6	92	1572.7%	7	92	1271.6%
Average AF/yr	337,941	414,026	22.5%	71,138	148,818	109.2%	85,135	152,418	79.0%	124,063	194,088	56.4%	89,001	155,553	74.8%	4,087	76,315	1767.4%	145,398	218,572	50.3%

Yuba River above New Colgate Power House (Average monthly flow, cfs)																					
Month	Wet			Above Normal			Below Normal			Dry			Critical			Extremely Critical			Average All Years		
	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change
October	60	154	158.3%	56	148	164.8%	52	144	175.8%	47	136	188.8%	36	123	241.2%	27	113	323.7%	52	144	174.9%
November	159	261	63.7%	142	243	71.6%	80	178	122.1%	162	258	59.0%	45	143	218.9%	48	143	196.8%	134	233	74.4%
December	1,136	1,262	11.1%	324	441	36.0%	165	286	73.1%	717	882	23.0%	118	224	89.0%	178	281	57.4%	571	699	22.6%
January	2,524	2,653	5.1%	704	828	17.6%	1,500	1,616	7.7%	303	409	35.0%	646	750	16.1%	995	1,100	10.6%	1,160	1,278	10.2%
February	897	1,022	13.9%	362	516	42.6%	962	1,071	11.3%	1,765	1,857	5.2%	167	259	54.7%	391	512	31.2%	859	982	14.3%
March	1,165	1,417	21.6%	648	807	24.5%	406	556	37.0%	1,191	1,271	6.7%	2,064	2,139	3.6%	678	821	21.2%	968	1,125	16.2%
April	1,508	1,797	19.2%	303	647	113.4%	238	473	99.1%	170	350	105.8%	105	284	171.1%	59	226	284.3%	508	772	51.9%
May	1,882	2,076	10.3%	464	774	66.7%	238	439	84.2%	118	267	126.5%	83	234	182.4%	88	229	161.1%	629	847	34.5%
June	999	1,251	25.2%	263	548	108.3%	116	287	147.4%	77	222	186.2%	55	191	248.0%	52	179	244.8%	342	557	63.0%
July	93	296	219.8%	60	198	227.8%	58	171	196.5%	49	154	211.3%	40	139	252.5%	26	123	367.5%	62	200	220.7%
August	57	164	186.0%	54	150	176.1%	49	136	179.3%	41	127	211.7%	35	124	251.7%	21	108	403.6%	49	143	192.0%
September	56	151	172.2%	52	141	170.2%	44	130	193.0%	39	125	220.8%	34	121	255.9%	25	112	343.2%	47	136	189.9%
Average AF/yr	637,087	755,924	18.7%	207,461	328,363	58.3%	233,646	328,821	40.7%	276,360	359,498	30.1%	209,322	287,961	37.6%	156,403	238,333	52.4%	323,751	428,316	32.3%

Yuba River near Smartsville (Average monthly flow, cfs)																					
Month	Wet			Above Normal			Below Normal			Dry			Critical			Extremely Critical			Average All Years		
	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change
October	914	907	-0.8%	873	878	0.7%	859	874	1.8%	805	802	-0.4%	769	769	0.0%	588	588	0.0%	852	853	0.2%
November	1,437	1,439	0.1%	1,229	1,238	0.7%	852	956	12.2%	1,205	1,176	-2.4%	841	841	0.0%	607	611	0.6%	1,185	1,195	0.8%
December	3,532	3,540	0.2%	1,756	1,769	0.7%	1,410	1,447	2.6%	2,004	2,071	3.3%	879	881	0.2%	929	969	4.3%	2,117	2,143	1.2%
January	6,194	6,217	0.4%	2,748	2,781	1.2%	4,737	4,746	0.2%	1,838	1,871	1.8%	2,701	2,690	-0.4%	3,048	3,198	4.9%	3,635	3,663	0.7%
February	5,014	5,080	1.3%	2,584	2,620	1.4%	4,270	4,285	0.4%	4,282	4,285	0.1%	2,030	2,025	-0.3%	2,800	2,602	-7.1%	3,718	3,743	0.7%
March	4,809	4,773	-0.8%	3,017	3,027	0.3%	2,912	2,910	-0.1%	4,317	4,269	-1.1%	4,671	4,644	-0.6%	5,101	5,074	-0.5%	3,899	3,879	-0.5%
April	6,168	6,173	0.1%	2,990	2,979	-0.4%	1,917	1,901	-0.8%	1,172	1,163	-0.8%	1,071	1,071	0.1%	417	426	2.1%	2,928	2,922	-0.2%
May	6,893	6,906	0.2%	4,060	4,046	-0.3%	3,168	3,095	-2.3%	1,610	1,579	-1.9%	1,479	1,479	0.0%	611	611	0.0%	3,741	3,721	-0.5%
June	5,510	5,561	0.9%	3,868	3,872	0.1%	2,606	2,533	-2.8%	1,441	1,413	-1.9%	1,277	1,277	0.0%	681	681	0.0%	3,244	3,240	-0.1%
July	3,087	3,087	0.0%	2,420	2,373	-2.0%	1,815	1,775	-2.2%	1,416	1,416	0.0%	1,363	1,363	0.0%	549	549	0.0%	2,134	2,114	-1.0%
August	2,312	2,257	-2.4%	1,769	1,741	-1.5%	1,402	1,432	2.1%	1,168	1,155	-1.1%	1,079	1,079	0.0%	406	406	0.0%	1,619	1,599	-1.2%
September	994	985	-0.9%	918	930	1.3%	866	898	3.6%	774	757	-2.2%	720	720	0.0%	203	203	0.0%	863	866	0.3%
Average AF/yr	2,823,795	2,826,881	0.1%	1,702,620	1,703,820	0.1%	1,611,000	1,613,142	0.1%	1,320,190	1,315,648	-0.3%	1,141,016	1,138,557	-0.2%	959,722	959,504	0.0%	1,802,221	1,802,224	0.0%

\*Water Year Classifications based on Smartsville Index

Model Output Summary - Flows

Yuba River near Marysville (Average monthly flow, cfs)																					
Month	Wet			Above Normal			Below Normal			Dry			Critical			Extremely Critical			Average All Years		
	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change	Base	Alt	Change
October	588	582	-1.2%	539	545	1.1%	516	531	3.0%	469	466	-0.7%	412	412	0.0%	400	400	0.0%	520	522	0.3%
November	1,147	1,148	0.1%	931	939	0.9%	534	638	19.4%	913	884	-3.2%	500	500	0.0%	406	410	1.0%	887	896	1.1%
December	3,573	3,580	0.2%	1,670	1,683	0.8%	1,361	1,398	2.7%	1,927	1,994	3.5%	774	776	0.2%	877	916	4.5%	2,068	2,094	1.3%
January	6,837	6,860	0.3%	2,919	2,952	1.1%	5,172	5,181	0.2%	2,029	2,061	1.6%	3,115	3,104	-0.3%	4,065	4,215	3.7%	3,996	4,023	0.7%
February	5,884	5,949	1.1%	2,941	2,977	1.2%	4,827	4,843	0.3%	4,872	4,875	0.1%	2,167	2,162	-0.2%	3,172	2,975	-6.2%	4,260	4,284	0.6%
March	5,491	5,455	-0.7%	3,499	3,509	0.3%	3,428	3,425	-0.1%	4,987	4,939	-1.0%	5,383	5,357	-0.5%	5,714	5,687	-0.5%	4,495	4,476	-0.4%
April	6,885	6,890	0.1%	3,195	3,184	-0.3%	1,738	1,722	-0.9%	895	885	-1.1%	770	771	0.1%	256	258	1.0%	3,038	3,031	-0.2%
May	6,512	6,524	0.2%	3,553	3,539	-0.4%	2,498	2,425	-2.9%	883	852	-3.5%	745	745	0.0%	245	245	0.0%	3,176	3,157	-0.6%
June	4,722	4,774	1.1%	3,051	3,056	0.1%	1,737	1,664	-4.2%	567	539	-4.9%	400	400	0.0%	245	245	0.0%	2,418	2,414	-0.2%
July	2,074	2,074	0.0%	1,406	1,359	-3.4%	855	815	-4.7%	456	456	0.0%	400	400	0.0%	70	70	0.0%	1,157	1,136	-1.8%
August	1,425	1,369	-3.9%	897	870	-3.1%	725	755	4.1%	490	477	-2.6%	400	400	0.0%	70	70	0.0%	842	822	-2.3%
September	676	667	-1.4%	604	616	2.0%	598	630	5.2%	505	488	-3.3%	450	450	0.0%	70	70	0.0%	573	575	0.5%
Average AF/yr	2,755,362	2,758,448	0.1%	1,516,796	1,517,996	0.1%	1,437,193	1,439,335	0.1%	1,133,048	1,128,506	-0.4%	936,949	934,490	-0.3%	937,791	937,195	-0.1%	1,647,467	1,647,460	0.0%

\*Water Year Classifications based on Smartsville Index