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APPENDIX A

Hydrology & Operation Plans

DAILY OPERATION PLAN, MARCH 14

Pulse Period: April 15–May 15 • Flow Target: 4,450cfs

Ungaged Flow at Vernalis = 700cfs

	San Joaquin River near Vernalis						Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stan. R blw Goodwin	
	Existing Flow	VAMP Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	Maintain Priority Flow Level M=Merced T=Tuol.
	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	
	[calc]	[calc]	[calc]	[calc]					[calc]					[calc]		
Apr 01					456	700	250		250			175		175	1,500	
Apr 02					452	700	250		250			175		175	1,500	
Apr 03					448	700	250		250			175		175	1,500	
Apr 04	3,077			3,077	444	700	250		250			175		175	1,500	
Apr 05	3,073			3,073	440	700	250		250			175		175	1,500	
Apr 06	3,069			3,069	436	700	250		250			175		175	1,500	
Apr 07	3,065			3,065	432	700	250		250			175		175	1,500	
Apr 08	3,061			3,061	428	700	250		250			175		175	1,500	
Apr 09	3,057			3,057	424	700	250		250			175		175	1,500	
Apr 10	3,053			3,053	420	700	250		250			175		175	1,500	
Apr 11	3,049	0		3,049	416	700	250	0	250			175		175	1,500	
Apr 12	3,045	0		3,045	412	700	250	300	550	0		175		175	1,500	M
Apr 13	3,041	0		3,041	408	700	250	300	550	0	725	725	300	1,025	1,500	M
Apr 14	3,037	0	0	3,037	404	700	250	250	500	0	1,200	1,200	100	1,300	1,500	M
Apr 15	3,583	600	1.19	4,183	400	700	250	250	500	0	1,400	1,400	0	1,400	1,500	M
Apr 16	4,054	400	1.98	4,454	396	700	250	250	500	0	1,400	1,400	0	1,400	1,500	M
Apr 17	4,250	250	2.48	4,500	392	700	250	250	500	0	1,400	1,400	0	1,400	1,500	M
Apr 18	4,246	250	2.98	4,496	388	700	250	250	500	0	1,400	1,400	0	1,400	1,500	M
Apr 19	4,242	250	3.47	4,492	384	700	250	830	1,080	0	1,400	1,400	0	1,400	1,500	
Apr 20	4,238	250	3.97	4,488	380	700	250	900	1,150	0	700	720	80	800	1,500	
Apr 21	4,234	250	4.46	4,484	376	700	250	900	1,150	0	400	400	320	720	1,500	
Apr 22	3,550	910	6.27	4,460	372	700	250	900	1,150	0	400	400	320	720	1,500	
Apr 23	3,226	1,220	8.69	4,446	368	700	250	900	1,150	0	400	400	320	720	1,500	
Apr 24	3,222	1,220	11.11	4,442	364	700	250	400	650	0	400	400	320	720	1,500	
Apr 25	3,218	1,220	13.53	4,438	360	700	250	50	300	0	1,000	1,000	250	1,250	1,500	T
Apr 26	3,214	1,220	15.95	4,434	356	700	250	50	300	0	1,600	1,600	0	1,600	1,500	T
Apr 27	3,810	650	17.24	4,460	352	700	250	50	300	0	1,600	1,600	0	1,600	1,500	T
Apr 28	4,406	50	17.34	4,456	348	700	250	60	310	0	1,600	1,600	0	1,600	1,500	T
Apr 29	4,402	50	17.43	4,452	344	700	250	60	310	0	1,600	1,600	0	1,600	1,500	T
Apr 30	4,398	50	17.53	4,448	340	700	250	60	310	0	1,600	1,600	0	1,600	1,500	T
May 01	4,394	60	17.65	4,454	336	700	250	70	320	0	1,600	1,600	0	1,600	1,500	T
May 02	4,390	60	17.77	4,450	332	700	250	70	320	0	1,600	1,600	0	1,600	1,500	T
May 03	4,386	60	17.89	4,446	328	700	250	300	550	0	1,600	1,600	0	1,600	1,500	T
May 04	4,382	70	18.03	4,452	324	700	250	700	950	0	1,600	1,400	0	1,400	1,500	M
May 05	4,378	70	18.17	4,448	320	700	250	700	950	0	1,375	1,000	0	1,000	1,500	M
May 06	4,174	300	18.76	4,474	316	700	250	700	950	0	950	1,000	0	1,000	1,500	M
May 07	3,770	700	20.15	4,470	312	700	250	700	950	0	950	1,000	0	1,000	1,500	M
May 08	3,766	700	21.54	4,466	308	700	250	700	950	0	950	1,000	0	1,000	1,500	M
May 09	3,762	700	22.93	4,462	304	700	250	700	950	0	950	1,000	0	1,000	1,500	M
May 10	3,758	700	24.32	4,458	300	700	250	700	950	0	950	1,000	0	1,000	1,500	M
May 11	3,754	700	25.71	4,454	296	700	250	600	850	0	950	1,000	0	1,000	1,500	M
May 12	3,750	700	27.09	4,450	292	700	250	500	750	0	950	1,000	100	1,100	1,500	
May 13	3,746	700	28.48	4,446	288	700	250	0	250		950	1,050	150	1,200	1,500	
May 14	3,742	700	29.87	4,442	284	700	250	0	250		950	1,000		1,000	1,500	
May 15	3,788	650	31.16	4,438	280	700	250		250		950	1,000		1,000	1,500	
May 16	3,734	0		3,734	276	700	250		250			175		175	1,500	
May 17	3,730	0		3,730	272	700	250		250			175		175	1,500	
May 18	2,901	0		2,901	268	700	250		250			175		175	1,500	
May 19	2,897	0		2,897	264	700	250		250			175		175	1,500	
May 20	2,893	0		2,893	260	700	250		250			175		175	1,500	
May 21	2,889	0		2,889	256	700	250		250			175		175	1,500	
May 22	2,885	0		2,885	252	700	250		250			175		175	1,500	
May 23	2,881	0		2,881	248	700	250		250			175		175	1,500	
May 24	2,877	0		2,877	244	700	250		250			175		175	1,500	
May 25	2,873	0		2,873	240	700	250		250			175		175	1,500	
May 26	2,869	0		2,869	236	700	250		250			175		175	1,500	
May 27	2,865	0		2,865	232	700	250		250			175		175	1,500	
May 28	2,861	0		2,861	228	700	250		250			175		175	1,500	
May 29	2,857	0		2,857	224	700	250		250			175		175	1,500	
May 30	2,853	0		2,853	220	700	250		250			175		175	1,500	
May 31	2,849	0		2,849	216	700	250		250			175		175	1,500	
					VAMP period											
Mean (cfs):	3,943	507		4,450	348	700		434	684	0		1,145	73	1,218		
Suppl. Water (TAF)																
Provided		31.16						26.68		0.00			4.48			
Target		31.17						26.68		0.00			4.49			

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, MARCH 14

Pulse Period: April 15–May 15 • Flow Target: 4,450cfs

Ungaged Flow at Vernalis = 1,000cfs

	San Joaquin River near Vernalis						Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stan. R blw Goodwin	
	Existing Flow	VAMP Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	Maintain Priority Flow Level M=Merced T=Tuol.
	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	
	[calc]	[calc]	[calc]	[calc]					[calc]					[calc]		
Apr 01					456	1,000	250		250			175		175	1,500	
Apr 02					452	1,000	250		250			175		175	1,500	
Apr 03					448	1,000	250		250			175		175	1,500	
Apr 04	3,377			3,377	444	1,000	250		250			175		175	1,500	
Apr 05	3,373			3,373	440	1,000	250		250			175		175	1,500	
Apr 06	3,369			3,369	436	1,000	250		250			175		175	1,500	
Apr 07	3,365			3,365	432	1,000	250		250			175		175	1,500	
Apr 08	3,361			3,361	428	1,000	250		250			175		175	1,500	
Apr 09	3,357			3,357	424	1,000	250		250			175		175	1,500	
Apr 10	3,353			3,353	420	1,000	250		250			175		175	1,500	
Apr 11	3,349	0		3,349	416	1,000	250	0	250			175		175	1,500	
Apr 12	3,345	0		3,345	412	1,000	250	0	250	0		175		175	1,500	M
Apr 13	3,341	0		3,341	408	1,000	250	0	250	0	725	1,025	0	1,025	1,500	M
Apr 14	3,337	0	0	3,337	404	1,000	250	0	250	0	1,200	1,200	0	1,200	1,500	M
Apr 15	4,183	0	0.00	4,183	400	1,000	250	0	250	0	1,400	1,350	0	1,350	1,500	M
Apr 16	4,354	0	0.00	4,354	396	1,000	250	0	250	0	1,400	1,350	0	1,350	1,500	M
Apr 17	4,500	0	0.00	4,500	392	1,000	250	0	250	0	1,400	1,350	0	1,350	1,500	M
Apr 18	4,496	0	0.00	4,496	388	1,000	250	0	250	0	1,400	1,350	0	1,350	1,500	M
Apr 19	4,492	0	0.00	4,492	384	1,000	250	500	750	0	1,400	1,350	0	1,350	1,500	
Apr 20	4,488	0	0.00	4,488	380	1,000	250	500	750	0	700	850	0	850	1,500	
Apr 21	4,484	0	0.00	4,484	376	1,000	250	500	750	0	400	850	0	850	1,500	
Apr 22	3,980	500	0.99	4,480	372	1,000	250	500	750	0	400	850	0	850	1,500	
Apr 23	3,976	500	1.98	4,476	368	1,000	250	500	750	0	400	850	0	850	1,500	
Apr 24	3,972	500	2.98	4,472	364	1,000	250	200	450	0	400	850	0	850	1,500	
Apr 25	3,968	500	3.97	4,468	360	1,000	250	0	250	0	1,000	1,100	0	1,100	1,500	T
Apr 26	3,964	500	4.96	4,464	356	1,000	250	0	250	0	1,600	1,400	0	1,400	1,500	T
Apr 27	4,210	200	5.36	4,410	352	1,000	250	0	250	0	1,600	1,400	0	1,400	1,500	T
Apr 28	4,506	0	5.36	4,506	348	1,000	250	0	250	0	1,600	1,400	0	1,400	1,500	T
Apr 29	4,502	0	5.36	4,502	344	1,000	250	0	250	0	1,600	1,400	0	1,400	1,500	T
Apr 30	4,498	0	5.36	4,498	340	1,000	250	0	250	0	1,600	1,400	0	1,400	1,500	T
May 01	4,494	0	5.36	4,494	336	1,000	250	0	250	0	1,600	1,400	0	1,400	1,500	T
May 02	4,490	0	5.36	4,490	332	1,000	250	0	250	0	1,600	1,400	0	1,400	1,500	T
May 03	4,486	0	5.36	4,486	328	1,000	250	0	250	0	1,600	1,400	0	1,400	1,500	T
May 04	4,482	0	5.36	4,482	324	1,000	250	300	550	0	1,600	1,400	0	1,400	1,500	M
May 05	4,478	0	5.36	4,478	320	1,000	250	450	700	0	1,375	1,075	0	1,075	1,500	M
May 06	4,474	0	5.36	4,474	316	1,000	250	450	700	0	950	950	0	950	1,500	M
May 07	4,145	300	5.95	4,445	312	1,000	250	450	700	0	950	950	0	950	1,500	M
May 08	4,016	450	6.84	4,466	308	1,000	250	450	700	0	950	950	0	950	1,500	M
May 09	4,012	450	7.74	4,462	304	1,000	250	450	700	0	950	950	0	950	1,500	M
May 10	4,008	450	8.63	4,458	300	1,000	250	450	700	0	950	950	0	950	1,500	M
May 11	4,004	450	9.52	4,454	296	1,000	250	450	700	0	950	950	0	950	1,500	M
May 12	4,000	450	10.41	4,450	292	1,000	250	160	410	0	950	950	0	950	1,500	
May 13	3,996	450	11.31	4,446	288	1,000	250	0	250		950	950	0	950	1,500	
May 14	3,992	450	12.20	4,442	284	1,000	250	0	250		950	950		950	1,500	
May 15	3,988	160	12.52	4,148	280	1,000	250		250		950	950		950	1,500	
May 16	3,984	0		3,984	276	1,000	250		250			175		175	1,500	
May 17	3,980	0		3,980	272	1,000	250		250			175		175	1,500	
May 18	3,201	0		3,201	268	1,000	250		250			175		175	1,500	
May 19	3,197	0		3,197	264	1,000	250		250			175		175	1,500	
May 20	3,193	0		3,193	260	1,000	250		250			175		175	1,500	
May 21	3,189	0		3,189	256	1,000	250		250			175		175	1,500	
May 22	3,185	0		3,185	252	1,000	250		250			175		175	1,500	
May 23	3,181	0		3,181	248	1,000	250		250			175		175	1,500	
May 24	3,177	0		3,177	244	1,000	250		250			175		175	1,500	
May 25	3,173	0		3,173	240	1,000	250		250			175		175	1,500	
May 26	3,169	0		3,169	236	1,000	250		250			175		175	1,500	
May 27	3,165	0		3,165	232	1,000	250		250			175		175	1,500	
May 28	3,161	0		3,161	228	1,000	250		250			175		175	1,500	
May 29	3,157	0		3,157	224	1,000	250		250			175		175	1,500	
May 30	3,153	0		3,153	220	1,000	250		250			175		175	1,500	
May 31	3,149	0		3,149	216	1,000	250		250			175		175	1,500	
					VAMP period											
Mean (cfs):	4,246	204		4,450	348	1,000		204	454	0		1,148	0	1,148		
Suppl. Water (TAF)																
Provided		12.52						12.52		0.00			0.00			
Target		12.52						12.52		0.00			0.00			

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, MARCH 20

Pulse Period: April 15–May 15 • Flow Target: 3,200cfs

Ungaged Flow at Vernalis = 700cfs

	San Joaquin River near Vernalis						Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin			
	Existing Flow	VAMP Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.
	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	
	[calc]	[calc]	[calc]	[calc]					[calc]					[calc]			[calc]	
Apr 01					456	700	250		250			300		300	704		704	
Apr 02					452	700	250		250			300		300	704		704	
Apr 03					448	700	250		250			300		300	704		704	
Apr 04	2,406			2,406	444	700	250		250			300		300	704		704	
Apr 05	2,402			2,402	440	700	250		250			300		300	704		704	
Apr 06	2,398			2,398	436	700	250		250			300		300	704		704	
Apr 07	2,394			2,394	432	700	250		250			300		300	704		704	
Apr 08	2,390			2,390	428	700	250		250			300		300	704		704	
Apr 09	2,386			2,386	424	700	250		250			300		300	704		704	
Apr 10	2,382			2,382	420	700	250		250			300		300	704		704	
Apr 11	2,378	0		2,378	416	700	250	0	250			300		300	704		704	
Apr 12	2,374	0		2,374	412	700	250	450	700	0		300		300	704		704	M
Apr 13	2,370	0		2,370	408	700	250	530	780	0	510	540	0	540	704	0	704	M
Apr 14	2,366	0	0	2,366	404	700	250	530	780	0	510	540	0	540	704	0	704	M
Apr 15	2,602	450	0.89	3,052	400	700	250	530	780	0	510	540	0	540	780	0	780	M
Apr 16	2,598	530	1.94	3,128	396	700	250	530	780	0	510	540	0	540	780	0	780	M
Apr 17	2,670	530	3.00	3,200	392	700	250	530	780	0	510	540	0	540	780	0	780	M
Apr 18	2,666	530	4.05	3,196	388	700	250	530	780	0	510	540	0	540	780	0	780	M
Apr 19	2,662	530	5.10	3,192	384	700	250	530	780	0	510	540	0	540	780	0	780	
Apr 20	2,658	530	6.15	3,188	380	700	250	530	780	0	510	540	0	540	780	0	780	
Apr 21	2,654	530	7.20	3,184	376	700	250	310	560	0	510	540	0	540	780	0	780	
Apr 22	2,650	530	8.25	3,180	372	700	250	0	250	0	775	790	0	790	780	0	780	
Apr 23	2,646	530	9.30	3,176	368	700	250	0	250	0	1,260	1,200	0	1,200	780	0	780	
Apr 24	2,892	310	9.92	3,202	364	700	250	0	250	0	1,260	1,200	0	1,200	780	0	780	
Apr 25	3,298	0	9.92	3,298	360	700	250	0	250	0	1,260	1,200	0	1,200	780	0	780	T
Apr 26	3,294	0	9.92	3,294	356	700	250	0	250	0	1,260	1,200	0	1,200	780	0	780	T
Apr 27	3,290	0	9.92	3,290	352	700	250	0	250	0	1,260	1,200	0	1,200	780	0	780	T
Apr 28	3,286	0	9.92	3,286	348	700	250	0	250	0	1,260	1,200	0	1,200	780	0	780	T
Apr 29	3,282	0	9.92	3,282	344	700	250	0	250	0	1,260	1,200	0	1,200	780	0	780	T
Apr 30	3,278	0	9.92	3,278	340	700	250	0	250	0	1,260	1,200	0	1,200	780	0	780	T
May 01	3,274	0	9.92	3,274	336	700	250	0	250	0	1,260	1,200	0	1,200	758	0	758	T
May 02	3,270	0	9.92	3,270	332	700	250	370	620	0	1,260	1,200	0	1,200	758	0	758	T
May 03	3,244	0	9.92	3,244	328	700	250	600	850	0	775	790	0	790	758	0	758	T
May 04	3,240	0	9.92	3,240	324	700	250	620	870	0	510	540	0	540	758	0	758	M
May 05	2,826	370	10.65	3,196	320	700	250	620	870	0	510	540	0	540	758	0	758	M
May 06	2,572	600	11.84	3,172	316	700	250	620	870	0	510	540	0	540	758	0	758	M
May 07	2,568	620	13.07	3,188	312	700	250	620	870	0	510	540	0	540	758	0	758	M
May 08	2,564	620	14.30	3,184	308	700	250	620	870	0	510	540	0	540	758	0	758	M
May 09	2,560	620	15.53	3,180	304	700	250	620	870	0	510	540	0	540	758	0	758	M
May 10	2,556	620	16.76	3,176	300	700	250	620	870	0	510	540	0	540	758	0	758	M
May 11	2,552	620	17.99	3,172	296	700	250	620	870	0	510	540	0	540	758	0	758	M
May 12	2,548	620	19.22	3,168	292	700	250	450	700	0	510	540	0	540	758	0	758	
May 13	2,544	620	20.45	3,164	288	700	250	0	250		510	540	0	540	758	0	758	
May 14	2,540	620	21.68	3,160	284	700	250	0	250		345	345		345	758		758	
May 15	2,536	450	22.57	2,986	280	700	250		250			175		175	758		758	
May 16	2,337	0		2,337	276	700	250		250			175		175	694		694	
May 17	2,163	0		2,163	272	700	250		250			175		175	694		694	
May 18	2,095	0		2,095	268	700	250		250			175		175	694		694	
May 19	2,091	0		2,091	264	700	250		250			175		175	694		694	
May 20	2,087	0		2,087	260	700	250		250			175		175	694		694	
May 21	2,083	0		2,083	256	700	250		250			175		175	694		694	
May 22	2,079	0		2,079	252	700	250		250			175		175	694		694	
May 23	2,075	0		2,075	248	700	250		250			175		175	694		694	
May 24	2,071	0		2,071	244	700	250		250			175		175	694		694	
May 25	2,067	0		2,067	240	700	250		250			175		175	694		694	
May 26	2,063	0		2,063	236	700	250		250			175		175	694		694	
May 27	2,059	0		2,059	232	700	250		250			175		175	694		694	
May 28	2,055	0		2,055	228	700	250		250			175		175	694		694	
May 29	2,051	0		2,051	224	700	250		250			175		175	694		694	
May 30	2,047	0		2,047	220	700	250		250			175		175	694		694	
May 31	2,043	0		2,043	216	700	250		250			175		175	694		694	
	VAMP period																	
Mean (cfs):	2,833	367		3,200	348	700		367	617	0		769	0	769		0	766	
Suppl. Water (TAF)																		
Provided		22.57						22.57		0.00		0.00				0.00		
Target		22.57						22.57		0.00		0.00				0.00		

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, MARCH 20

Pulse Period: April 15–May 15 • Flow Target: 3,200cfs

Ungaged Flow at Vernalis = 1,000cfs

	San Joaquin River near Vernalis						Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin			
	Existing Flow	VAMP Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.
	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	
	[calc]	[calc]	[calc]	[calc]					[calc]					[calc]			[calc]	
Apr 01					456	1,000	250		250			300		300	704		704	
Apr 02					452	1,000	250		250			300		300	704		704	
Apr 03					448	1,000	250		250			300		300	704		704	
Apr 04	2,706			2,706	444	1,000	250		250			300		300	704		704	
Apr 05	2,702			2,702	440	1,000	250		250			300		300	704		704	
Apr 06	2,698			2,698	436	1,000	250		250			300		300	704		704	
Apr 07	2,694			2,694	432	1,000	250		250			300		300	704		704	
Apr 08	2,690			2,690	428	1,000	250		250			300		300	704		704	
Apr 09	2,686			2,686	424	1,000	250		250			300		300	704		704	
Apr 10	2,682			2,682	420	1,000	250		250			300		300	704		704	
Apr 11	2,678	0		2,678	416	1,000	250	0	250			300		300	704		704	
Apr 12	2,674	0		2,674	412	1,000	250	55	305	0		300		300	704		704	M
Apr 13	2,670	0		2,670	408	1,000	250	55	305	0	510	720	0	720	704	0	704	M
Apr 14	2,666	0	0	2,666	404	1,000	250	55	305	0	510	720	0	720	704	0	704	M
Apr 15	3,082	55	0.11	3,137	400	1,000	250	55	305	0	510	720	0	720	780	0	780	M
Apr 16	3,078	55	0.22	3,133	396	1,000	250	55	305	0	510	720	0	720	780	0	780	M
Apr 17	3,150	55	0.33	3,205	392	1,000	250	55	305	0	510	720	0	720	780	0	780	M
Apr 18	3,146	55	0.44	3,201	388	1,000	250	55	305	0	510	720	0	720	780	0	780	M
Apr 19	3,142	55	0.55	3,197	384	1,000	250	50	300	0	510	720	0	720	780	0	780	
Apr 20	3,138	55	0.65	3,193	380	1,000	250	50	300	0	510	720	0	720	780	0	780	
Apr 21	3,134	55	0.76	3,189	376	1,000	250	0	250	0	510	720	0	720	780	0	780	
Apr 22	3,130	50	0.86	3,180	372	1,000	250	0	250	0	775	800	0	800	780	0	780	
Apr 23	3,126	50	0.96	3,176	368	1,000	250	0	250	0	1,260	860	0	860	780	0	780	
Apr 24	3,202	0	0.96	3,202	364	1,000	250	0	250	0	1,260	860	0	860	780	0	780	
Apr 25	3,258	0	0.96	3,258	360	1,000	250	0	250	0	1,260	860	0	860	780	0	780	T
Apr 26	3,254	0	0.96	3,254	356	1,000	250	0	250	0	1,260	860	0	860	780	0	780	T
Apr 27	3,250	0	0.96	3,250	352	1,000	250	0	250	0	1,260	860	0	860	780	0	780	T
Apr 28	3,246	0	0.96	3,246	348	1,000	250	0	250	0	1,260	860	0	860	780	0	780	T
Apr 29	3,242	0	0.96	3,242	344	1,000	250	0	250	0	1,260	860	0	860	780	0	780	T
Apr 30	3,238	0	0.96	3,238	340	1,000	250	0	250	0	1,260	860	0	860	780	0	780	T
May 01	3,234	0	0.96	3,234	336	1,000	250	0	250	0	1,260	860	0	860	758	0	758	T
May 02	3,230	0	0.96	3,230	332	1,000	250	0	250	0	1,260	860	0	860	758	0	758	T
May 03	3,204	0	0.96	3,204	328	1,000	250	160	410	0	775	860	0	860	758	0	758	T
May 04	3,200	0	0.96	3,200	324	1,000	250	160	410	0	510	710	0	710	758	0	758	M
May 05	3,196	0	0.96	3,196	320	1,000	250	160	410	0	510	710	0	710	758	0	758	M
May 06	3,042	160	1.28	3,202	316	1,000	250	160	410	0	510	710	0	710	758	0	758	M
May 07	3,038	160	1.60	3,198	312	1,000	250	160	410	0	510	710	0	710	758	0	758	M
May 08	3,034	160	1.91	3,194	308	1,000	250	160	410	0	510	710	0	710	758	0	758	M
May 09	3,030	160	2.23	3,190	304	1,000	250	160	410	0	510	710	0	710	758	0	758	M
May 10	3,026	160	2.55	3,186	300	1,000	250	160	410	0	510	710	0	710	758	0	758	M
May 11	3,022	160	2.87	3,182	296	1,000	250	160	410	0	510	710	0	710	758	0	758	M
May 12	3,018	160	3.18	3,178	292	1,000	250	160	410	0	510	710	0	710	758	0	758	
May 13	3,014	160	3.50	3,174	288	1,000	250	0	250		510	710	0	710	758	0	758	
May 14	3,010	160	3.82	3,170	284	1,000	250	0	250		345	345		345	758		758	
May 15	3,006	160	4.14	3,166	280	1,000	250		250			175		175	758		758	
May 16	2,637	0		2,637	276	1,000	250		250			175		175	694		694	
May 17	2,463	0		2,463	272	1,000	250		250			175		175	694		694	
May 18	2,395	0		2,395	268	1,000	250		250			175		175	694		694	
May 19	2,391	0		2,391	264	1,000	250		250			175		175	694		694	
May 20	2,387	0		2,387	260	1,000	250		250			175		175	694		694	
May 21	2,383	0		2,383	256	1,000	250		250			175		175	694		694	
May 22	2,379	0		2,379	252	1,000	250		250			175		175	694		694	
May 23	2,375	0		2,375	248	1,000	250		250			175		175	694		694	
May 24	2,371	0		2,371	244	1,000	250		250			175		175	694		694	
May 25	2,367	0		2,367	240	1,000	250		250			175		175	694		694	
May 26	2,363	0		2,363	236	1,000	250		250			175		175	694		694	
May 27	2,359	0		2,359	232	1,000	250		250			175		175	694		694	
May 28	2,355	0		2,355	228	1,000	250		250			175		175	694		694	
May 29	2,351	0		2,351	224	1,000	250		250			175		175	694		694	
May 30	2,347	0		2,347	220	1,000	250		250			175		175	694		694	
May 31	2,343	0		2,343	216	1,000	250		250			175		175	694		694	
	VAMP period																	
Mean (cfs):	3,133	67		3,200	348	1,000		67	317	0		769	0	769		0	766	
Suppl. Water (TAF)																		
Provided		4.14						4.14		0.00		0.00				0.00		
Target		4.13						4.13		0.00		0.00				0.00		

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, MARCH 23

Pulse Period: April 15–May 15 • Flow Target: 3,200cfs

Ungaged Flow at Vernalis = 500cfs

	San Joaquin River near Vernalis						Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin			
	Existing Flow	VAMP Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.
	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	
	[calc]	[calc]	[calc]	[calc]					[calc]					[calc]			[calc]	
Apr 01					456	500	250		250			300		300	704		704	
Apr 02					452	500	250		250			300		300	704		704	
Apr 03					448	500	250		250			300		300	704		704	
Apr 04	2,206			2,206	444	500	250		250			300		300	704		704	
Apr 05	2,202			2,202	440	500	250		250			300		300	704		704	
Apr 06	2,198			2,198	436	500	250		250			300		300	704		704	
Apr 07	2,194			2,194	432	500	250		250			300		300	704		704	
Apr 08	2,190			2,190	428	500	250		250			300		300	704		704	
Apr 09	2,186			2,186	424	500	250		250			300		300	704		704	
Apr 10	2,182			2,182	420	500	250		250			300		300	704		704	
Apr 11	2,178	0		2,178	416	500	250	0	250			300		300	704		704	
Apr 12	2,174	0		2,174	412	500	250	600	850	0		300		300	704		704	M
Apr 13	2,170	0		2,170	408	500	250	600	850	0	510	510	0	510	704	230	934	M
Apr 14	2,166	0	0	2,166	404	500	250	580	830	0	510	510	0	510	704	230	934	M
Apr 15	2,372	830	1.65	3,202	400	500	250	580	830	0	510	510	0	510	780	200	980	M
Apr 16	2,368	830	3.29	3,198	396	500	250	580	830	0	510	510	0	510	780	200	980	M
Apr 17	2,440	780	4.84	3,220	392	500	250	580	830	0	510	510	0	510	780	200	980	M
Apr 18	2,436	780	6.39	3,216	388	500	250	580	830	0	510	510	0	510	780	200	980	M
Apr 19	2,432	780	7.93	3,212	384	500	250	580	830	0	510	510	0	510	780	200	980	
Apr 20	2,428	780	9.48	3,208	380	500	250	580	830	0	510	510	0	510	780	200	980	
Apr 21	2,424	780	11.03	3,204	376	500	250	320	570	0	510	510	0	510	780	200	980	
Apr 22	2,420	780	12.58	3,200	372	500	250	0	250	0	775	775	0	775	780	200	980	
Apr 23	2,416	780	14.12	3,196	368	500	250	0	250	0	1,260	1,260	0	1,260	780	60	840	
Apr 24	2,677	520	15.15	3,197	364	500	250	0	250	0	1,260	1,260	0	1,260	780	60	840	
Apr 25	3,158	60	15.27	3,218	360	500	250	0	250	0	1,260	1,260	0	1,260	780	60	840	T
Apr 26	3,154	60	15.39	3,214	356	500	250	0	250	0	1,260	1,260	0	1,260	780	60	840	T
Apr 27	3,150	60	15.51	3,210	352	500	250	0	250	0	1,260	1,260	0	1,260	780	60	840	T
Apr 28	3,146	60	15.63	3,206	348	500	250	0	250	0	1,260	1,260	0	1,260	780	60	840	T
Apr 29	3,142	60	15.75	3,202	344	500	250	0	250	0	1,260	1,260	0	1,260	780	65	845	T
Apr 30	3,138	60	15.87	3,198	340	500	250	0	250	0	1,260	1,260	0	1,260	780	70	850	T
May 01	3,134	65	16.00	3,199	336	500	250	0	250	0	1,260	1,260	0	1,260	758	100	858	T
May 02	3,130	70	16.14	3,200	332	500	250	395	645	0	1,260	1,260	0	1,260	758	100	858	T
May 03	3,104	100	16.33	3,204	328	500	250	670	920	0	775	775	0	775	758	195	953	T
May 04	3,100	100	16.53	3,200	324	500	250	670	920	0	510	510	0	510	758	190	948	M
May 05	2,611	590	17.70	3,201	320	500	250	670	920	0	510	510	0	510	758	190	948	M
May 06	2,342	860	19.41	3,202	316	500	250	670	920	0	510	510	0	510	758	195	953	M
May 07	2,338	860	21.11	3,198	312	500	250	670	920	0	510	510	0	510	758	200	958	M
May 08	2,334	865	22.83	3,199	308	500	250	670	920	0	510	510	0	510	758	205	963	M
May 09	2,330	870	24.56	3,200	304	500	250	670	920	0	510	510	0	510	758	205	963	M
May 10	2,326	875	26.29	3,201	300	500	250	670	920	0	510	510	0	510	758	210	968	M
May 11	2,322	875	28.03	3,197	296	500	250	670	920	0	510	510	0	510	758	210	968	M
May 12	2,318	880	29.77	3,198	292	500	250	600	850	0	510	510	0	510	758	210	968	
May 13	2,314	880	31.52	3,194	288	500	250	0	250		510	510	0	510	758	210	968	
May 14	2,310	880	33.26	3,190	284	500	250	0	250		345	345		345	758		758	
May 15	2,306	810	34.87	3,116	280	500	250		250			175		175	758		758	
May 16	2,137	0		2,137	276	500	250		250			175		175	694		694	
May 17	1,963	0		1,963	272	500	250		250			175		175	694		694	
May 18	1,895	0		1,895	268	500	250		250			175		175	694		694	
May 19	1,891	0		1,891	264	500	250		250			175		175	694		694	
May 20	1,887	0		1,887	260	500	250		250			175		175	694		694	
May 21	1,883	0		1,883	256	500	250		250			175		175	694		694	
May 22	1,879	0		1,879	252	500	250		250			175		175	694		694	
May 23	1,875	0		1,875	248	500	250		250			175		175	694		694	
May 24	1,871	0		1,871	244	500	250		250			175		175	694		694	
May 25	1,867	0		1,867	240	500	250		250			175		175	694		694	
May 26	1,863	0		1,863	236	500	250		250			175		175	694		694	
May 27	1,859	0		1,859	232	500	250		250			175		175	694		694	
May 28	1,855	0		1,855	228	500	250		250			175		175	694		694	
May 29	1,851	0		1,851	224	500	250		250			175		175	694		694	
May 30	1,847	0		1,847	220	500	250		250			175		175	694		694	
May 31	1,843	0		1,843	216	500	250		250			175		175	694		694	
	VAMP period																	
Mean (cfs):	2,633	567		3,200	348	500		407	657	0		769	0	769		160	926	
Suppl. Water (TAF)																		
Provided		34.87						25.00		0.00			0.00			9.87		
Target		34.87						25.00		0.00			0.00			9.87		

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, APRIL 3

Pulse Period: April 15–May 15 • Flow Target: 3,200cfs

Ungaged Flow at Vernalis = 500cfs • 24 TAF "other" supplemental water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)				
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	b(2) or other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]	
Apr 01					2,071	447	408	350		350			347		347	569			569	
Apr 02					2,069	451	490	340		340			350		350	572			572	
Apr 03						448	500	250		250			300		300	704			704	
Apr 04	2,223				2,223	444	500	250		250			300		300	704			704	
Apr 05	2,292				2,292	440	500	250		250			300		300	704			704	
Apr 06	2,198				2,198	436	500	250		250			300		300	704			704	
Apr 07	2,194				2,194	432	500	250		250			300		300	704			704	
Apr 08	2,190				2,190	428	500	250		250			300		300	704			704	
Apr 09	2,186				2,186	424	500	250		250			300		300	704			704	
Apr 10	2,182				2,182	420	500	250		250			300		300	704			704	
Apr 11	2,178	0			2,178	416	500	250	0	250			300		300	704			704	
Apr 12	2,174	0			2,174	412	500	250	440	690	0		300		300	704			704	M
Apr 13	2,170	0			2,170	408	500	250	440	690	0	510	510	0	510	780	0	720	1,500	M
Apr 14	2,166	0		0	2,166	404	500	250	440	690	0	510	510	0	510	780	0	720	1,500	M
Apr 15	2,448	440	720	0.87	3,608	400	500	250	440	690	0	510	510	0	510	780	0	720	1,500	M
Apr 16	2,444	440	720	1.75	3,604	396	500	250	440	690	0	510	510	0	510	780	0	720	1,500	M
Apr 17	2,440	440	720	2.62	3,600	392	500	250	440	690	0	510	510	0	510	780	0	720	1,500	M
Apr 18	2,436	440	720	3.49	3,596	388	500	250	440	690	0	510	510	0	510	780	0	720	1,500	M
Apr 19	2,432	440	720	4.36	3,592	384	500	250	440	690	0	510	510	0	510	780	0	720	1,500	
Apr 20	2,428	440	720	5.24	3,588	380	500	250	440	690	0	510	510	0	510	780	0	720	1,500	
Apr 21	2,424	440	720	6.11	3,584	376	500	250	440	690	0	510	510	0	510	780	0	720	1,500	
Apr 22	2,420	440	720	6.98	3,580	372	500	250	240	490	0	775	775	0	775	780	0	420	1,200	
Apr 23	2,416	440	720	7.85	3,576	368	500	250	240	490	0	1,260	1,260	0	1,260	780	200	0	980	
Apr 24	2,677	440	420	8.73	3,537	364	500	250	240	490	0	1,260	1,260	0	1,260	780	200	0	980	
Apr 25	3,158	440	0	9.60	3,598	360	500	250	240	490	0	1,260	1,260	0	1,260	780	200	0	980	T
Apr 26	3,154	440	0	10.47	3,594	356	500	250	240	490	0	1,260	1,260	0	1,260	780	200	0	980	T
Apr 27	3,150	440	0	11.35	3,590	352	500	250	240	490	0	1,260	1,260	0	1,260	780	200	0	980	T
Apr 28	3,146	440	0	12.22	3,586	348	500	250	290	540	0	1,260	1,260	0	1,260	780	200	0	980	T
Apr 29	3,142	440	0	13.09	3,582	344	500	250	290	540	0	1,260	1,260	0	1,260	758	200	0	958	T
Apr 30	3,138	440	0	13.96	3,578	340	500	250	290	540	0	1,260	1,260	0	1,260	758	200	0	958	T
May 01	3,112	490	0	14.94	3,602	336	500	250	290	540	0	1,260	1,260	0	1,260	758	200	0	958	T
May 02	3,108	490	0	15.91	3,598	332	500	250	290	540	0	1,260	1,260	0	1,260	758	200	0	958	T
May 03	3,104	490	0	16.88	3,594	328	500	250	540	790	0	775	775	0	775	758	645	0	1,403	T
May 04	3,100	490	0	17.85	3,590	324	500	250	540	790	0	510	510	0	510	758	742	0	1,500	M
May 05	2,611	935	0	19.71	3,546	320	500	250	540	790	0	510	510	0	510	758	742	0	1,500	M
May 06	2,342	1,282	0	22.25	3,624	316	500	250	540	790	0	510	510	0	510	758	742	0	1,500	M
May 07	2,338	1,282	0	24.79	3,620	312	500	250	540	790	0	510	510	0	510	758	0	742	1,500	M
May 08	2,334	1,282	0	27.33	3,616	308	500	250	540	790	0	510	510	0	510	758	0	742	1,500	M
May 09	2,330	540	742	28.41	3,612	304	500	250	540	790	0	510	510	0	510	758	0	742	1,500	M
May 10	2,326	540	742	29.48	3,608	300	500	250	540	790	0	510	510	0	510	758	0	742	1,500	M
May 11	2,322	540	742	30.55	3,604	296	500	250	540	790	0	510	510	0	510	758	0	742	1,500	M
May 12	2,318	540	742	31.62	3,600	292	500	250	455	705	0	510	510	0	510	758	0	742	1,500	
May 13	2,314	540	742	32.69	3,596	288	500	250	0	250		510	510	0	510	758	0	742	1,500	
May 14	2,310	540	742	33.76	3,592	284	500	250	0	250		345	345		345	694			694	
May 15	2,306	455	742	34.66	3,503	280	500	250		250			175		175	694			694	
May 16	2,073	0			2,073	276	500	250		250			175		175	694			694	
May 17	1,899	0			1,899	272	500	250		250			175		175	694			694	
May 18	1,895	0			1,895	268	500	250		250			175		175	694			694	
May 19	1,891	0			1,891	264	500	250		250			175		175	694			694	
May 20	1,887	0			1,887	260	500	250		250			175		175	694			694	
May 21	1,883	0			1,883	256	500	250		250			175		175	694			694	
May 22	1,879	0			1,879	252	500	250		250			175		175	694			694	
May 23	1,875	0			1,875	248	500	250		250			175		175	694			694	
May 24	1,871	0			1,871	244	500	250		250			175		175	694			694	
May 25	1,867	0			1,867	240	500	250		250			175		175	694			694	
May 26	1,863	0			1,863	236	500	250		250			175		175	694			694	
May 27	1,859	0			1,859	232	500	250		250			175		175	694			694	
May 28	1,855	0			1,855	228	500	250		250			175		175	694			694	
May 29	1,851	0			1,851	224	500	250		250			175		175	694			694	
May 30	1,847	0			1,847	220	500	250		250			175		175	694			694	
May 31	1,843	0			1,843	216	500	250		250			175		175	694			694	
	VAMP period																			
Mean (cfs):	2,636	564			3,590	348	500		407	657	0		769	0	769		157	390	1,317	
Suppl. Water (TAF)																				
Provided		34.66							25.00		0.00			0.00			9.66	23.99		
Target		34.66							25.00		0.00			0.00			9.66			

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, APRIL 3

Pulse Period: April 15–May 15 • Flow Target: 3,200cfs

Ungaged Flow at Vernalis = 1,000cfs • 45 TAF "other" supplemental water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)					
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	b(2) or other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.	
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)		
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]		
Apr 01					2,071	447	408	350		350			347		347	569			569		Apr 01
Apr 02					2,069	451	490	340		340			350		350	572			572		Apr 02
Apr 03						448	500	250		250			300		300	704			704		Apr 03
Apr 04	2,223				2,223	444	500	250		250			300		300	704			704		Apr 04
Apr 05	2,292				2,292	440	500	250		250			300		300	704			704		Apr 05
Apr 06	2,198				2,198	436	500	250		250			300		300	704			704		Apr 06
Apr 07	2,194				2,194	432	500	250		250			300		300	704			704		Apr 07
Apr 08	2,190				2,190	428	500	250		250			300		300	704			704		Apr 08
Apr 09	2,186				2,186	424	500	250		250			300		300	704			704		Apr 09
Apr 10	2,182				2,182	420	500	250		250			300		300	704			704		Apr 10
Apr 11	2,178	0			2,178	416	500	250	0	250			300		300	704			704		Apr 11
Apr 12	2,174	0			2,174	412	500	250	0	250	0		300		300	704			704	M	Apr 12
Apr 13	2,170	0			2,170	408	500	250	0	250	0	510	510	0	510	780	0	720	1,500	M	Apr 13
Apr 14	2,166	0		0	2,166	404	500	250	0	250	0	510	510	0	510	780	0	720	1,500	M	Apr 14
Apr 15	2,948	0	720	0.00	3,668	400	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500	M	Apr 15
Apr 16	2,944	0	720	0.00	3,664	396	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500	M	Apr 16
Apr 17	2,940	0	720	0.00	3,660	392	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500	M	Apr 17
Apr 18	2,936	0	720	0.00	3,656	388	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500	M	Apr 18
Apr 19	2,932	0	720	0.00	3,652	384	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500		Apr 19
Apr 20	2,928	0	720	0.00	3,648	380	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500		Apr 20
Apr 21	2,924	0	720	0.00	3,644	376	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500		Apr 21
Apr 22	2,920	0	720	0.00	3,640	372	1,000	250	0	250	0	775	775	0	775	780	0	720	1,500		Apr 22
Apr 23	2,916	0	720	0.00	3,636	368	1,000	250	0	250	0	1,260	1,260	0	1,260	780	0	720	1,500		Apr 23
Apr 24	3,177	0	720	0.00	3,897	364	1,000	250	0	250	0	1,260	1,260	0	1,260	780	0	720	1,500		Apr 24
Apr 25	3,658	0	720	0.00	4,378	360	1,000	250	0	250	0	1,260	1,260	0	1,260	780	0	720	1,500	T	Apr 25
Apr 26	3,654	0	720	0.00	4,374	356	1,000	250	0	250	0	1,260	1,260	0	1,260	780	0	720	1,500	T	Apr 26
Apr 27	3,650	0	720	0.00	4,370	352	1,000	250	0	250	0	1,260	1,260	0	1,260	780	0	720	1,500	T	Apr 27
Apr 28	3,646	0	720	0.00	4,366	348	1,000	250	0	250	0	1,260	1,260	0	1,260	780	0	720	1,500	T	Apr 28
Apr 29	3,642	0	720	0.00	4,362	344	1,000	250	0	250	0	1,260	1,260	0	1,260	758	0	742	1,500	T	Apr 29
Apr 30	3,638	0	720	0.00	4,358	340	1,000	250	0	250	0	1,260	1,260	0	1,260	758	0	742	1,500	T	Apr 30
May 01	3,612	0	742	0.00	4,354	336	1,000	250	0	250	0	1,260	1,260	0	1,260	758	0	742	1,500	T	May 01
May 02	3,608	0	742	0.00	4,350	332	1,000	250	0	250	0	1,260	1,260	0	1,260	758	0	742	1,500	T	May 02
May 03	3,604	0	742	0.00	4,346	328	1,000	250	210	460	0	775	775	0	775	758	0	742	1,500	T	May 03
May 04	3,600	0	742	0.00	4,342	324	1,000	250	220	470	0	510	510	0	510	758	0	742	1,500	M	May 04
May 05	3,111	0	742	0.00	3,853	320	1,000	250	220	470	0	510	510	0	510	758	0	742	1,500	M	May 05
May 06	2,842	210	742	0.42	3,794	316	1,000	250	220	470	0	510	510	0	510	758	0	742	1,500	M	May 06
May 07	2,838	220	742	0.85	3,800	312	1,000	250	220	470	0	510	510	0	510	758	0	742	1,500	M	May 07
May 08	2,834	220	742	1.29	3,796	308	1,000	250	220	470	0	510	510	0	510	758	0	742	1,500	M	May 08
May 09	2,830	220	742	1.73	3,792	304	1,000	250	220	470	0	510	510	0	510	758	0	742	1,500	M	May 09
May 10	2,826	220	742	2.16	3,788	300	1,000	250	220	470	0	510	510	0	510	758	0	742	1,500	M	May 10
May 11	2,822	220	742	2.60	3,784	296	1,000	250	220	470	0	510	510	0	510	758	0	742	1,500	M	May 11
May 12	2,818	220	742	3.03	3,780	292	1,000	250	0	250	0	510	510	0	510	758	0	742	1,500		May 12
May 13	2,814	220	742	3.47	3,776	288	1,000	250	0	250		510	510	0	510	758	0	742	1,500		May 13
May 14	2,810	220	742	3.91	3,772	284	1,000	250	0	250		345	345		345	694			694		May 14
May 15	2,806	0	742	3.91	3,548	280	1,000	250		250			175		175	694			694		May 15
May 16	2,573	0			2,573	276	1,000	250		250			175		175	694			694		May 16
May 17	2,399	0			2,399	272	1,000	250		250			175		175	694			694		May 17
May 18	2,395	0			2,395	268	1,000	250		250			175		175	694			694		May 18
May 19	2,391	0			2,391	264	1,000	250		250			175		175	694			694		May 19
May 20	2,387	0			2,387	260	1,000	250		250			175		175	694			694		May 20
May 21	2,383	0			2,383	256	1,000	250		250			175		175	694			694		May 21
May 22	2,379	0			2,379	252	1,000	250		250			175		175	694			694		May 22
May 23	2,375	0			2,375	248	1,000	250		250			175		175	694			694		May 23
May 24	2,371	0			2,371	244	1,000	250		250			175		175	694			694		May 24
May 25	2,367	0			2,367	240	1,000	250		250			175		175	694			694		May 25
May 26	2,363	0			2,363	236	1,000	250		250			175		175	694			694		May 26
May 27	2,359	0			2,359	232	1,000	250		250			175		175	694			694		May 27
May 28	2,355	0			2,355	228	1,000	250		250			175		175	694			694		May 28
May 29	2,351	0			2,351	224	1,000	250		250			175		175	694			694		May 29
May 30	2,347	0			2,347	220	1,000	250		250			175		175	694			694		May 30
May 31	2,343	0			2,343	216	1,000	250		250			175		175	694			694		May 31
	VAMP period																				
Mean (cfs):	3,136	64			3,931	348	1,000		64	314	0		769	0	769		0	731	1,500		Mean (cfs):
Suppl. Water (TAF)																					Suppl. Water (TAF)
Provided		3.91							3.91		0.00			0.00			0.00	44.93			Provided
Target		3.91							3.91		0.00			0.00			0.00				Target

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, APRIL 3

Pulse Period: April 15–May 15 • Flow Target: 3,200cfs

Ungaged Flow at Vernalis = 500cfs • 45 TAF "other" supplemental water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)					
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.	
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)		
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]		
					2,071	447	408	350		350			347		347	569			569		Apr 01
					2,069	451	490	340		340			350		350	572			572		Apr 02
						448	500	250		250			300		300	704			704		Apr 03
2,223					2,223	444	500	250		250			300		300	704			704		Apr 04
2,292					2,292	440	500	250		250			300		300	704			704		Apr 05
2,198					2,198	436	500	250		250			300		300	704			704		Apr 06
2,194					2,194	432	500	250		250			300		300	704			704		Apr 07
2,190					2,190	428	500	250		250			300		300	704			704		Apr 08
2,186					2,186	424	500	250		250			300		300	704			704		Apr 09
2,182					2,182	420	500	250		250			300		300	704			704		Apr 10
2,178	0				2,178	416	500	250	0	250			300		300	704			704		Apr 11
2,174	0				2,174	412	500	250	550	800	0		300		300	704			704	M	Apr 12
2,170	0				2,170	408	500	250	700	950	0	510	510	90	600	780	0	720	1,500	M	Apr 13
2,166	0			0	2,166	404	500	250	700	950	0	510	510	100	610	780	0	720	1,500	M	Apr 14
2,448	640	720		1.27	3,808	400	500	250	700	950	0	510	510	100	610	780	0	720	1,500	M	Apr 15
2,444	800	720		2.86	3,964	396	500	250	700	950	0	510	510	100	610	780	0	720	1,500	M	Apr 16
2,440	800	720		4.44	3,960	392	500	250	700	950	0	510	510	100	610	780	0	720	1,500	M	Apr 17
2,436	800	720		6.03	3,956	388	500	250	700	950	0	510	510	100	610	780	0	720	1,500	M	Apr 18
2,432	800	720		7.62	3,952	384	500	250	580	830	0	510	510	100	610	780	0	720	1,500		Apr 19
2,428	800	720		9.20	3,948	380	500	250	430	680	0	510	510	235	745	780	0	720	1,500		Apr 20
2,424	800	720		10.79	3,944	376	500	250	230	480	0	510	510	390	900	780	0	720	1,500		Apr 21
2,420	815	720		12.41	3,955	372	500	250	80	330	0	775	775	325	1,100	780	0	720	1,500		Apr 22
2,416	820	720		14.03	3,956	368	500	250	80	330	0	1,260	1,260	0	1,260	780	0	720	1,500		Apr 23
2,677	555	720		15.13	3,952	364	500	250	80	330	0	1,260	1,260	0	1,260	780	0	720	1,500		Apr 24
3,158	80	720		15.29	3,958	360	500	250	80	330	0	1,260	1,260	0	1,260	780	0	720	1,500	T	Apr 25
3,154	80	720		15.45	3,954	356	500	250	80	330	0	1,260	1,260	0	1,260	780	0	720	1,500	T	Apr 26
3,150	80	720		15.61	3,950	352	500	250	80	330	0	1,260	1,260	0	1,260	780	0	720	1,500	T	Apr 27
3,146	80	720		15.77	3,946	348	500	250	80	330	0	1,260	1,260	0	1,260	780	0	720	1,500	T	Apr 28
3,142	80	720		15.93	3,942	344	500	250	80	330	0	1,260	1,260	0	1,260	758	0	742	1,500	T	Apr 29
3,138	80	720		16.09	3,938	340	500	250	100	350	0	1,260	1,260	0	1,260	758	0	742	1,500	T	Apr 30
3,112	80	742		16.24	3,934	336	500	250	100	350	0	1,260	1,260	0	1,260	758	0	742	1,500	T	May 01
3,108	80	742		16.40	3,930	332	500	250	550	800	0	1,260	1,260	0	1,260	758	0	742	1,500	T	May 02
3,104	100	742		16.60	3,946	328	500	250	650	900	0	775	775	0	775	758	0	742	1,500	T	May 03
3,100	100	742		16.80	3,942	324	500	250	680	930	0	510	510	190	700	758	0	742	1,500	M	May 04
2,611	550	742		17.89	3,903	320	500	250	680	930	0	510	510	190	700	758	0	742	1,500	M	May 05
2,342	840	742		19.56	3,924	316	500	250	690	940	0	510	510	190	700	758	0	742	1,500	M	May 06
2,338	870	742		21.28	3,950	312	500	250	700	950	0	510	510	190	700	758	0	742	1,500	M	May 07
2,334	870	742		23.01	3,946	308	500	250	700	950	0	510	510	190	700	758	0	742	1,500	M	May 08
2,330	880	742		24.75	3,952	304	500	250	700	950	0	510	510	190	700	758	0	742	1,500	M	May 09
2,326	890	742		26.52	3,958	300	500	250	700	950	0	510	510	190	700	758	0	742	1,500	M	May 10
2,322	890	742		28.28	3,954	296	500	250	700	950	0	510	510	190	700	758	0	742	1,500	M	May 11
2,318	890	742		30.05	3,950	292	500	250	350	600	0	510	510	190	700	758	0	742	1,500		May 12
2,314	890	742		31.81	3,946	288	500	250	0	250		510	510	190	700	758	0	742	1,500		May 13
2,310	890	742		33.58	3,942	284	500	250	0	250		345	345		345	694			694		May 14
2,306	540	742		34.65	3,588	280	500	250		250			175		175	694			694		May 15
2,073	0				2,073	276	500	250		250			175		175	694			694		May 16
1,899	0				1,899	272	500	250		250			175		175	694			694		May 17
1,895	0				1,895	268	500	250		250			175		175	694			694		May 18
1,891	0				1,891	264	500	250		250			175		175	694			694		May 19
1,887	0				1,887	260	500	250		250			175		175	694			694		May 20
1,883	0				1,883	256	500	250		250			175		175	694			694		May 21
1,879	0				1,879	252	500	250		250			175		175	694			694		May 22
1,875	0				1,875	248	500	250		250			175		175	694			694		May 23
1,871	0				1,871	244	500	250		250			175		175	694			694		May 24
1,867	0				1,867	240	500	250		250			175		175	694			694		May 25
1,863	0				1,863	236	500	250		250			175		175	694			694		May 26
1,859	0				1,859	232	500	250		250			175		175	694			694		May 27
1,855	0				1,855	228	500	250		250			175		175	694			694		May 28
1,851	0				1,851	224	500	250		250			175		175	694			694		May 29
1,847	0				1,847	220	500	250		250			175		175	694			694		May 30
1,843	0				1,843	216	500	250		250			175		175	694			694		May 31
	VAMP period																				
2,636	564				3,931	348	500		449	699	0		769	114	883		0	731	1,500		Mean (cfs):
																					Suppl. Water (TAF)
	34.65								27.63		0.00			7.02			0.00	44.93			Provided
	34.66								27.63		0.00			7.02			0.00				Target

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, APRIL 3

Pulse Period: April 17–May 17 • Flow Target: 3,200cfs

Ungaged Flow at Vernalis = 1,000cfs • 45 TAF "other" supplemental water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)				
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	b(2) or other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]	
Apr 01					2,071	447	408	350		350			347		347	569			569	
Apr 02					2,069	451	490	340		340			350		350	572			572	
Apr 03						448	500	250		250			300		300	704			704	
Apr 04	2,223				2,223	444	500	250		250			300		300	704			704	
Apr 05	2,292				2,292	440	500	250		250			300		300	704			704	
Apr 06	2,198				2,198	436	500	250		250			300		300	704			704	
Apr 07	2,194				2,194	432	500	250		250			300		300	704			704	
Apr 08	2,190				2,190	428	500	250		250			300		300	704			704	
Apr 09	2,186				2,186	424	500	250		250			300		300	704			704	
Apr 10	2,182				2,182	420	500	250		250			300		300	704			704	
Apr 11	2,178				2,178	416	500	250		250			300		300	704			704	
Apr 12	2,174				2,174	412	500	250		250			300		300	704			704	
Apr 13	2,670	0			2,670	408	1,000	250	0	250			300		300	704			704	
Apr 14	2,666	0			2,666	404	1,000	250	0	250	0		300		300	704			704	M
Apr 15	2,662	0			2,662	400	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500	M
Apr 16	2,658	0		0	2,658	396	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500	M
Apr 17	2,940	0	720	0.00	3,660	392	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500	M
Apr 18	2,936	0	720	0.00	3,656	388	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500	M
Apr 19	2,932	0	720	0.00	3,652	384	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500	M
Apr 20	2,928	0	720	0.00	3,648	380	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500	M
Apr 21	2,924	0	720	0.00	3,644	376	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500	
Apr 22	2,920	0	720	0.00	3,640	372	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500	
Apr 23	2,916	0	720	0.00	3,636	368	1,000	250	0	250	0	510	510	0	510	780	0	720	1,500	
Apr 24	2,912	0	720	0.00	3,632	364	1,000	250	0	250	0	775	775	0	775	780	0	720	1,500	
Apr 25	2,908	0	720	0.00	3,628	360	1,000	250	0	250	0	1,260	1,260	0	1,260	780	0	720	1,500	
Apr 26	3,169	0	720	0.00	3,889	356	1,000	250	0	250	0	1,260	1,260	0	1,260	780	0	720	1,500	
Apr 27	3,650	0	720	0.00	4,370	352	1,000	250	0	250	0	1,260	1,260	0	1,260	780	0	720	1,500	T
Apr 28	3,646	0	720	0.00	4,366	348	1,000	250	0	250	0	1,260	1,260	0	1,260	780	0	720	1,500	T
Apr 29	3,642	0	720	0.00	4,362	344	1,000	250	0	250	0	1,260	1,260	0	1,260	780	0	720	1,500	T
Apr 30	3,638	0	720	0.00	4,358	340	1,000	250	0	250	0	1,260	1,260	0	1,260	780	0	720	1,500	T
May 01	3,634	0	720	0.00	4,354	336	1,000	250	0	250	0	1,260	1,260	0	1,260	758	0	742	1,500	T
May 02	3,630	0	720	0.00	4,350	332	1,000	250	0	250	0	1,260	1,260	0	1,260	758	0	742	1,500	T
May 03	3,604	0	742	0.00	4,346	328	1,000	250	0	250	0	1,260	1,260	0	1,260	758	0	742	1,500	T
May 04	3,600	0	742	0.00	4,342	324	1,000	250	170	420	0	1,260	1,260	0	1,260	758	0	742	1,500	T
May 05	3,596	0	742	0.00	4,338	320	1,000	250	210	460	0	775	775	0	775	758	0	742	1,500	T
May 06	3,592	0	742	0.00	4,334	316	1,000	250	230	480	0	510	510	0	510	758	0	742	1,500	M
May 07	3,103	170	742	0.34	4,015	312	1,000	250	230	480	0	510	510	0	510	758	0	742	1,500	M
May 08	2,834	210	742	0.75	3,786	308	1,000	250	230	480	0	510	510	0	510	758	0	742	1,500	M
May 09	2,830	230	742	1.21	3,802	304	1,000	250	230	480	0	510	510	0	510	758	0	742	1,500	M
May 10	2,826	230	742	1.67	3,798	300	1,000	250	230	480	0	510	510	0	510	758	0	742	1,500	M
May 11	2,822	230	742	2.12	3,794	296	1,000	250	230	480	0	510	510	0	510	758	0	742	1,500	M
May 12	2,818	230	742	2.58	3,790	292	1,000	250	230	480	0	510	510	0	510	758	0	742	1,500	M
May 13	2,814	230	742	3.03	3,786	288	1,000	250	230	480	0	510	510	0	510	758	0	742	1,500	M
May 14	2,810	230	742	3.49	3,782	284	1,000	250	0	250	0	510	510	0	510	758	0	742	1,500	
May 15	2,806	230	742	3.95	3,778	280	1,000	250	0	250		510	510	0	510	758	0	742	1,500	
May 16	2,802	230	742	4.40	3,774	276	1,000	250	0	250		345	345		345	694			694	
May 17	2,798	0	742	4.40	3,540	272	1,000	250		250			175		175	694			694	
May 18	2,565	0			2,565	268	1,000	250		250			175		175	694			694	
May 19	2,391	0			2,391	264	1,000	250		250			175		175	694			694	
May 20	2,387	0			2,387	260	1,000	250		250			175		175	694			694	
May 21	2,383	0			2,383	256	1,000	250		250			175		175	694			694	
May 22	2,379	0			2,379	252	1,000	250		250			175		175	694			694	
May 23	2,375	0			2,375	248	1,000	250		250			175		175	694			694	
May 24	2,371	0			2,371	244	1,000	250		250			175		175	694			694	
May 25	2,367	0			2,367	240	1,000	250		250			175		175	694			694	
May 26	2,363	0			2,363	236	1,000	250		250			175		175	694			694	
May 27	2,359	0			2,359	232	1,000	250		250			175		175	694			694	
May 28	2,355	0			2,355	228	1,000	250		250			175		175	694			694	
May 29	2,351	0			2,351	224	1,000	250		250			175		175	694			694	
May 30	2,347	0			2,347	220	1,000	250		250			175		175	694			694	
May 31	2,343	0			2,343	216	1,000	250		250			175		175	694			694	
	VAMP period																			
Mean (cfs):	3,128	72			3,931	340	1,000		72	322	0		769	0	769		0	731	1,500	
Suppl. Water (TAF)																				
Provided		4.40							4.40		0.00			0.00			0.00	44.93		
Target		4.40							4.40		0.00			0.00			0.00			

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, APRIL 3

Pulse Period: April 17–May 17 • Flow Target: 3,200cfs

Ungaged Flow at Vernalis = 500cfs • 24 TAF "other" supplemental water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)				
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	b(2) or other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]	
Apr 01					2,071	447	408	350		350			347		347	569			569	
Apr 02					2,069	451	490	340		340			350		350	572			572	
Apr 03						448	500	250		250			300		300	704			704	
Apr 04	2,223				2,223	444	500	250		250			300		300	704			704	
Apr 05	2,292				2,292	440	500	250		250			300		300	704			704	
Apr 06	2,198				2,198	436	500	250		250			300		300	704			704	
Apr 07	2,194				2,194	432	500	250		250			300		300	704			704	
Apr 08	2,190				2,190	428	500	250		250			300		300	704			704	
Apr 09	2,186				2,186	424	500	250		250			300		300	704			704	
Apr 10	2,182				2,182	420	500	250		250			300		300	704			704	
Apr 11	2,178				2,178	416	500	250		250			300		300	704			704	
Apr 12	2,174				2,174	412	500	250		250			300		300	704			704	
Apr 13	2,170	0			2,170	408	500	250	0	250			300		300	704			704	
Apr 14	2,166	0			2,166	404	500	250	440	690	0		300		300	704			704	M
Apr 15	2,162	0			2,162	400	500	250	440	690	0	510	510	0	510	780	0	720	1,500	M
Apr 16	2,158	0		0	2,158	396	500	250	440	690	0	510	510	0	510	780	0	720	1,500	M
Apr 17	2,440	440	720	0.87	3,600	392	500	250	440	690	0	510	510	0	510	780	0	720	1,500	M
Apr 18	2,436	440	720	1.75	3,596	388	500	250	440	690	0	510	510	0	510	780	0	720	1,500	M
Apr 19	2,432	440	720	2.62	3,592	384	500	250	440	690	0	510	510	0	510	780	0	720	1,500	M
Apr 20	2,428	440	720	3.49	3,588	380	500	250	440	690	0	510	510	0	510	780	0	720	1,500	M
Apr 21	2,424	440	720	4.36	3,584	376	500	250	440	690	0	510	510	0	510	780	0	720	1,500	
Apr 22	2,420	440	720	5.24	3,580	372	500	250	440	690	0	510	510	0	510	780	0	720	1,500	
Apr 23	2,416	440	720	6.11	3,576	368	500	250	440	690	0	510	510	0	510	780	0	720	1,500	
Apr 24	2,412	440	720	6.98	3,572	364	500	250	240	490	0	775	775	0	775	780	0	420	1,200	
Apr 25	2,408	440	720	7.85	3,568	360	500	250	240	490	0	1,260	1,260	0	1,260	780	200	0	980	
Apr 26	2,669	440	420	8.73	3,529	356	500	250	240	490	0	1,260	1,260	0	1,260	780	200	0	980	
Apr 27	3,150	440	0	9.60	3,590	352	500	250	240	490	0	1,260	1,260	0	1,260	780	200	0	980	T
Apr 28	3,146	440	0	10.47	3,586	348	500	250	240	490	0	1,260	1,260	0	1,260	780	200	0	980	T
Apr 29	3,142	440	0	11.35	3,582	344	500	250	240	490	0	1,260	1,260	0	1,260	780	200	0	980	T
Apr 30	3,138	440	0	12.22	3,578	340	500	250	290	540	0	1,260	1,260	0	1,260	780	200	0	980	T
May 01	3,134	440	0	13.09	3,574	336	500	250	290	540	0	1,260	1,260	0	1,260	758	200	0	958	T
May 02	3,130	440	0	13.96	3,570	332	500	250	290	540	0	1,260	1,260	0	1,260	758	200	0	958	T
May 03	3,104	490	0	14.94	3,594	328	500	250	290	540	0	1,260	1,260	0	1,260	758	200	0	958	T
May 04	3,100	490	0	15.91	3,590	324	500	250	290	540	0	1,260	1,260	0	1,260	758	200	0	958	T
May 05	3,096	490	0	16.88	3,586	320	500	250	540	790	0	775	775	0	775	758	645	0	1,403	T
May 06	3,092	490	0	17.85	3,582	316	500	250	540	790	0	510	510	0	510	758	742	0	1,500	M
May 07	2,603	935	0	19.71	3,538	312	500	250	540	790	0	510	510	0	510	758	742	0	1,500	M
May 08	2,334	1,282	0	22.25	3,616	308	500	250	540	790	0	510	510	0	510	758	742	0	1,500	M
May 09	2,330	1,282	0	24.79	3,612	304	500	250	540	790	0	510	510	0	510	758	0	742	1,500	M
May 10	2,326	1,282	0	27.33	3,608	300	500	250	540	790	0	510	510	0	510	758	0	742	1,500	M
May 11	2,322	540	742	28.41	3,604	296	500	250	540	790	0	510	510	0	510	758	0	742	1,500	M
May 12	2,318	540	742	29.48	3,600	292	500	250	540	790	0	510	510	0	510	758	0	742	1,500	M
May 13	2,314	540	742	30.55	3,596	288	500	250	540	790	0	510	510	0	510	758	0	742	1,500	M
May 14	2,310	540	742	31.62	3,592	284	500	250	455	705	0	510	510	0	510	758	0	742	1,500	
May 15	2,306	540	742	32.69	3,588	280	500	250	0	250		510	510	0	510	758	0	742	1,500	
May 16	2,302	540	742	33.76	3,584	276	500	250	0	250		345	345		345	694			694	
May 17	2,298	455	742	34.66	3,495	272	500	250		250			175		175	694			694	
May 18	2,065	0			2,065	268	500	250		250			175		175	694			694	
May 19	1,891	0			1,891	264	500	250		250			175		175	694			694	
May 20	1,887	0			1,887	260	500	250		250			175		175	694			694	
May 21	1,883	0			1,883	256	500	250		250			175		175	694			694	
May 22	1,879	0			1,879	252	500	250		250			175		175	694			694	
May 23	1,875	0			1,875	248	500	250		250			175		175	694			694	
May 24	1,871	0			1,871	244	500	250		250			175		175	694			694	
May 25	1,867	0			1,867	240	500	250		250			175		175	694			694	
May 26	1,863	0			1,863	236	500	250		250			175		175	694			694	
May 27	1,859	0			1,859	232	500	250		250			175		175	694			694	
May 28	1,855	0			1,855	228	500	250		250			175		175	694			694	
May 29	1,851	0			1,851	224	500	250		250			175		175	694			694	
May 30	1,847	0			1,847	220	500	250		250			175		175	694			694	
May 31	1,843	0			1,843	216	500	250		250			175		175	694			694	
	VAMP period																			
Mean (cfs):	2,628	564			3,582	340	500		407	657	0		769	0	769		157	390	1,317	
Suppl. Water (TAF)																				
Provided		34.66							25.00		0.00			0.00			9.66	23.99		
Target		35.15							25.00		0.15			0.00			10.00			

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, APRIL 10

Pulse Period: April 19–May 19 • Flow Target: 3,200cfs

Ungaged Flow at Vernalis = 500cfs • No "other" supplemental water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)					
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.	
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)		
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]		
Apr 01					2,071	447	407	350		350			347		347	569			569		Apr 01
Apr 02					2,069	451	481	340		340			350		350	572			572		Apr 02
Apr 03					2,163	459	466	310		310			345		345	572			572		Apr 03
Apr 04	2,041				2,041	466	318	323		323			339		339	572			572		Apr 04
Apr 05	1,974				1,974	447	258	348		348			328		328	638			638		Apr 05
Apr 06	2,069				2,069	425	382	370		370			317		317	666			666		Apr 06
Apr 07	2,303				2,303	393	567	396		396			325		325	710			710		Apr 07
Apr 08	2,535				2,535	386	779	376		376			323		323	725			725		Apr 08
Apr 09	2,533				2,533	422	735	370		370			318		318	722			722		Apr 09
Apr 10	2,330				2,330	420	500	250		250			300		300	704			704		Apr 10
Apr 11	2,338				2,338	416	500	250		250			300		300	704			704		Apr 11
Apr 12	2,294				2,294	412	500	250		250			300		300	704			704		Apr 12
Apr 13	2,170	0			2,170	408	500	250	0	250			300		300	704			704		Apr 13
Apr 14	2,166	0			2,166	404	500	250	0	250			300		300	704			704		Apr 14
Apr 15	2,162	0			2,162	400	500	250	250	500			150		150	704			704		Apr 15
Apr 16	2,158	0			2,158	396	500	250	655	905	0		150		150	704			704	M	Apr 16
Apr 17	2,004	0	0		2,004	392	500	250	660	910	0	475	700	0	700	704	0	0	704	M	Apr 17
Apr 18	2,000	250	0		2,250	388	500	250	660	910	0	475	700	0	700	704	0	0	704	M	Apr 18
Apr 19	2,546	655	0	1.30	3,201	384	500	250	665	915	0	475	700	0	700	704	0	0	704	M	Apr 19
Apr 20	2,542	660	0	2.61	3,202	380	500	250	670	920	0	475	700	0	700	704	0	0	704	M	Apr 20
Apr 21	2,538	660	0	3.92	3,198	376	500	250	675	925	0	475	700	0	700	704	0	0	704	M	Apr 21
Apr 22	2,534	665	0	5.24	3,199	372	500	250	180	430	0	475	700	0	700	704	0	0	704	M	Apr 22
Apr 23	2,530	670	0	6.57	3,200	368	500	250	180	430	0	475	1,200	0	1,200	704	0	0	704		Apr 23
Apr 24	2,526	675	0	7.90	3,201	364	500	250	185	435	0	475	1,200	0	1,200	704	0	0	704		Apr 24
Apr 25	3,022	180	0	8.26	3,202	360	500	250	190	440	0	475	1,200	0	1,200	704	0	0	704		Apr 25
Apr 26	3,018	180	0	8.62	3,198	356	500	250	195	445	0	750	1,200	0	1,200	704	0	0	704		Apr 26
Apr 27	3,014	185	0	8.99	3,199	352	500	250	200	450	0	1,230	1,200	0	1,200	704	0	0	704		Apr 27
Apr 28	3,010	190	0	9.36	3,200	348	500	250	200	450	0	1,230	1,200	0	1,200	704	0	0	704		Apr 28
Apr 29	3,006	195	0	9.75	3,201	344	500	250	205	455	0	1,230	1,200	0	1,200	704	0	0	704	T	Apr 29
Apr 30	3,002	200	0	10.15	3,202	340	500	250	65	315	0	1,230	1,200	0	1,200	704	0	0	704	T	Apr 30
May 01	2,998	200	0	10.54	3,198	336	500	250	70	320	0	1,230	550	0	550	1,500	0	0	1,500	T	May 01
May 02	2,994	205	0	10.95	3,199	332	500	250	70	320	0	1,230	550	0	550	1,500	0	0	1,500	T	May 02
May 03	3,136	65	0	11.08	3,201	328	500	250	75	325	0	1,230	550	0	550	1,500	0	0	1,500	T	May 03
May 04	3,132	70	0	11.22	3,202	324	500	250	80	330	0	1,230	550	0	550	1,500	0	0	1,500	T	May 04
May 05	3,128	70	0	11.36	3,198	320	500	250	85	335	0	1,230	550	0	550	1,500	0	0	1,500	T	May 05
May 06	3,124	75	0	11.50	3,199	316	500	250	90	340	0	1,230	550	0	550	1,500	0	0	1,500	T	May 06
May 07	3,120	80	0	11.66	3,200	312	500	250	130	380	0	750	550	0	550	1,500	0	0	1,500	T	May 07
May 08	3,116	85	0	11.83	3,201	308	500	250	130	380	0	475	515	0	515	1,500	0	0	1,500	M	May 08
May 09	3,112	90	0	12.01	3,202	304	500	250	135	385	0	475	515	0	515	1,500	0	0	1,500	M	May 09
May 10	3,073	130	0	12.27	3,203	300	500	250	140	390	0	475	515	0	515	1,500	0	0	1,500	M	May 10
May 11	3,069	130	0	12.53	3,199	296	500	250	140	390	0	475	515	0	515	1,500	0	0	1,500	M	May 11
May 12	3,065	135	0	12.79	3,200	292	500	250	150	400	0	475	515	0	515	1,500	0	0	1,500	M	May 12
May 13	3,061	140	0	13.07	3,201	288	500	250	150	400	0	475	515	0	515	1,500	0	0	1,500	M	May 13
May 14	3,057	140	0	13.35	3,197	284	500	250	155	405	0	475	515	0	515	1,500	0	0	1,500	M	May 14
May 15	3,053	150	0	13.65	3,203	280	500	250	740	990	0	475	515	0	515	1,500	0	0	1,500	M	May 15
May 16	3,049	150	0	13.94	3,199	276	500	250	740	990	0	475	515	0	515	918	0	0	918		May 16
May 17	3,045	155	0	14.25	3,200	272	500	250	250	500		475	515	0	515	918	0	0	918		May 17
May 18	2,459	740	0	15.72	3,199	268	500	250		250		300	300		300	918			918		May 18
May 19	2,455	740	0	17.19	3,195	264	500	250		250			150		150	918			918		May 19
May 20	2,236	250			2,486	260	500	250		250			150		150	918			918		May 20
May 21	2,082	0			2,082	256	500	250		250			150		150	918			918		May 21
May 22	2,078	0			2,078	252	500	250		250			150		150	918			918		May 22
May 23	2,074	0			2,074	248	500	250		250			150		150	918			918		May 23
May 24	2,070	0			2,070	244	500	250		250			150		150	918			918		May 24
May 25	2,066	0			2,066	240	500	250		250			150		150	918			918		May 25
May 26	2,062	0			2,062	236	500	250		250			150		150	918			918		May 26
May 27	2,058	0			2,058	232	500	250		250			150		150	918			918		May 27
May 28	2,054	0			2,054	228	500	250		250			150		150	918			918		May 28
May 29	2,050	0			2,050	224	500	250		250			150		150	918			918		May 29
May 30	2,046	0			2,046	220	500	250		250			150		150	918			918		May 30
May 31	2,042	0			2,042	216	500	250		250			150		150	918			918		May 31
	VAMP period																				
Mean (cfs):	2,920	280			3,200	332	500		280	530	0		735	0	735		0	0	1,103		Mean (cfs):
Suppl. Water (TAF)																					Suppl. Water (TAF)
Provided		17.19							17.19		0.00			0.00			0.00	0.00			Provided
Target		17.19							17.19		0.00			0.00			0.00				Target

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, APRIL 10

Pulse Period: April 19–May 19 • Flow Target: 4,450cfs

Ungaged Flow at Vernalis = 800cfs • No "other" supplemental water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)					
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.	
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)		
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]		
Apr 01					2,071	447	407	350		350			347		347	569			569		Apr 01
Apr 02					2,069	451	481	340		340			350		350	572			572		Apr 02
Apr 03					2,163	459	466	310		310			345		345	572			572		Apr 03
Apr 04	2,041				2,041	466	318	323		323			339		339	572			572		Apr 04
Apr 05	1,974				1,974	447	258	348		348			328		328	638			638		Apr 05
Apr 06	2,069				2,069	425	382	370		370			317		317	666			666		Apr 06
Apr 07	2,303				2,303	393	567	396		396			325		325	710			710		Apr 07
Apr 08	2,535				2,535	386	779	376		376			323		323	725			725		Apr 08
Apr 09	2,533				2,533	422	735	370		370			318		318	722			722		Apr 09
Apr 10	2,630				2,630	420	800	250		250			300		300	704			704		Apr 10
Apr 11	2,638				2,638	416	800	250		250			300		300	704			704		Apr 11
Apr 12	2,594				2,594	412	800	250		250			300		300	704			704		Apr 12
Apr 13	2,470	0			2,470	408	800	250	0	250			300		300	704			704		Apr 13
Apr 14	2,466	0			2,466	404	800	250	0	250			300		300	704			704		Apr 14
Apr 15	2,462	0			2,462	400	800	250	200	450			150		150	704			704		Apr 15
Apr 16	2,458	0			2,458	396	800	250	610	860	100		150		150	704			704	M	Apr 16
Apr 17	2,304	0	0		2,304	392	800	250	610	860	100	475	475	325	800	704	796	0	1,500	M	Apr 17
Apr 18	2,300	200	0		2,500	388	800	250	615	865	100	475	475	325	800	704	796	0	1,500	M	Apr 18
Apr 19	2,621	1,831	0	3.63	4,452	384	800	250	620	870	100	475	475	325	800	704	796	0	1,500	M	Apr 19
Apr 20	2,617	1,831	0	7.26	4,448	380	800	250	625	875	100	475	475	325	800	704	796	0	1,500	M	Apr 20
Apr 21	2,613	1,836	0	10.91	4,449	376	800	250	630	880	100	475	475	325	800	704	796	0	1,500	M	Apr 21
Apr 22	2,609	1,841	0	14.56	4,450	372	800	250	680	930	100	475	475	325	800	704	796	0	1,500	M	Apr 22
Apr 23	2,605	1,846	0	18.22	4,451	368	800	250	1,185	1,435	150	475	475	325	800	704	751	0	1,455		Apr 23
Apr 24	2,601	1,851	0	21.89	4,452	364	800	250	1,165	1,415	150	475	475	425	900	704	96	0	800		Apr 24
Apr 25	2,597	1,856	0	25.57	4,453	360	800	250	915	1,165	100	475	475	450	925	704	96	0	800		Apr 25
Apr 26	2,593	1,856	0	29.25	4,449	356	800	250	915	1,165	100	750	750	480	1,230	704	96	0	800		Apr 26
Apr 27	2,589	1,861	0	32.94	4,450	352	800	250	920	1,170	100	1,230	1,230	0	1,230	704	96	0	800		Apr 27
Apr 28	2,860	1,591	0	36.10	4,451	348	800	250	920	1,170	100	1,230	1,230	0	1,230	704	96	0	800		Apr 28
Apr 29	3,336	1,111	0	38.30	4,447	344	800	250	890	1,140	100	1,230	1,230	0	1,230	704	96	0	800	T	Apr 29
Apr 30	3,332	1,116	0	40.52	4,448	340	800	250	390	640	0	1,230	1,230	0	1,230	704	96	0	800	T	Apr 30
May 01	3,328	1,116	0	42.73	4,444	336	800	250	240	490	100	1,230	1,230	0	1,230	1,500	0	0	1,500	T	May 01
May 02	3,324	1,086	0	44.88	4,410	332	800	250	240	490	100	1,230	1,230	0	1,230	1,500	0	0	1,500	T	May 02
May 03	4,116	390	0	45.66	4,506	328	800	250	245	495	100	1,230	1,230	0	1,230	1,500	0	0	1,500	T	May 03
May 04	4,112	340	0	46.33	4,452	324	800	250	250	500	100	1,230	1,230	0	1,230	1,500	0	0	1,500	T	May 04
May 05	4,108	340	0	47.01	4,448	320	800	250	255	505	100	1,230	1,230	0	1,230	1,500	0	0	1,500	T	May 05
May 06	4,104	345	0	47.69	4,449	316	800	250	260	510	100	1,230	1,230	0	1,230	1,500	0	0	1,500	T	May 06
May 07	4,100	350	0	48.38	4,450	312	800	250	650	900	130	750	750	480	1,230	1,500	0	0	1,500	T	May 07
May 08	4,096	355	0	49.09	4,451	308	800	250	650	900	150	475	475	325	800	1,500	0	0	1,500	M	May 08
May 09	3,612	840	0	50.76	4,452	304	800	250	650	900	150	475	475	325	800	1,500	0	0	1,500	M	May 09
May 10	3,333	1,105	0	52.95	4,438	300	800	250	655	905	150	475	475	325	800	1,500	0	0	1,500	M	May 10
May 11	3,329	1,125	0	55.18	4,454	296	800	250	660	910	150	475	475	325	800	1,500	0	0	1,500	M	May 11
May 12	3,325	1,125	0	57.41	4,450	292	800	250	660	910	150	475	475	325	800	1,500	0	0	1,500	M	May 12
May 13	3,321	1,130	0	59.65	4,451	288	800	250	665	915	150	475	475	325	800	1,500	0	0	1,500	M	May 13
May 14	3,317	1,135	0	61.90	4,452	284	800	250	670	920	150	475	475	325	800	1,500	0	0	1,500	M	May 14
May 15	3,313	1,135	0	64.15	4,448	280	800	250	625	875	200	475	475	325	800	1,500	0	0	1,500	M	May 15
May 16	3,309	1,140	0	66.41	4,449	276	800	250	625	875	200	475	475	325	800	918	582	0	1,500		May 16
May 17	3,305	1,145	0	68.69	4,450	272	800	250	0	250		475	475	325	800	918	582	0	1,500		May 17
May 18	2,719	1,732	0	72.12	4,451	268	800	250		250		300	300		300	918			918		May 18
May 19	2,715	1,732	0	75.56	4,447	264	800	250		250			150		150	918			918		May 19
May 20	2,536	0			2,536	260	800	250		250			150		150	918			918		May 20
May 21	2,382	0			2,382	256	800	250		250			150		150	918			918		May 21
May 22	2,378	0			2,378	252	800	250		250			150		150	918			918		May 22
May 23	2,374	0			2,374	248	800	250		250			150		150	918			918		May 23
May 24	2,370	0			2,370	244	800	250		250			150		150	918			918		May 24
May 25	2,366	0			2,366	240	800	250		250			150		150	918			918		May 25
May 26	2,362	0			2,362	236	800	250		250			150		150	918			918		May 26
May 27	2,358	0			2,358	232	800	250		250			150		150	918			918		May 27
May 28	2,354	0			2,354	228	800	250		250			150		150	918			918		May 28
May 29	2,350	0			2,350	224	800	250		250			150		150	918			918		May 29
May 30	2,346	0			2,346	220	800	250		250			150		150	918			918		May 30
May 31	2,342	0			2,342	216	800	250		250			150		150	918			918		May 31
	VAMP period																				
Mean (cfs):	3,221	1,229			4,450	332	800		635	885	119		736	237	974		238	0	1,340		Mean (cfs):
Suppl. Water (TAF)																					Suppl. Water (TAF)
Provided		75.56							39.05		7.30			14.60			14.60	0.00			Provided
Target		75.55							39.05		7.30			14.60			14.60				Target

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, APRIL 10

Pulse Period: April 19–May 19 • Flow Target: 3,200cfs

Ungaged Flow at Vernalis = 500cfs • 24.4 "other" supplemental water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)					
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.	
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)		
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]		
Apr 01					2,071	447	407	350		350			347		347	569			569		Apr 01
Apr 02					2,069	451	481	340		340			350		350	572			572		Apr 02
Apr 03					2,163	459	466	310		310			345		345	572			572		Apr 03
Apr 04	2,041				2,041	466	318	323		323			339		339	572			572		Apr 04
Apr 05	1,974				1,974	447	258	348		348			328		328	638			638		Apr 05
Apr 06	2,069				2,069	425	382	370		370			317		317	666			666		Apr 06
Apr 07	2,303				2,303	393	567	396		396			325		325	710			710		Apr 07
Apr 08	2,535				2,535	386	779	376		376			323		323	725			725		Apr 08
Apr 09	2,533				2,533	422	735	370		370			318		318	722			722		Apr 09
Apr 10	2,330				2,330	420	500	250		250			300		300	704			704		Apr 10
Apr 11	2,338				2,338	416	500	250		250			300		300	704			704		Apr 11
Apr 12	2,294				2,294	412	500	250		250			300		300	704			704		Apr 12
Apr 13	2,170	0			2,170	408	500	250	0	250			300		300	704			704		Apr 13
Apr 14	2,166	0			2,166	404	500	250	0	250			300		300	704			704		Apr 14
Apr 15	2,162	0			2,162	400	500	250	0	250			150		150	704			704		Apr 15
Apr 16	2,158	0			2,158	396	500	250	250	500	0		150		150	704			704	M	Apr 16
Apr 17	2,004	0	0		2,004	392	500	250	250	500	0	475	700	0	700	704	0	796	1,500	M	Apr 17
Apr 18	2,000	0	0		2,000	388	500	250	250	500	0	475	700	0	700	704	0	796	1,500	M	Apr 18
Apr 19	2,546	250	796	0.50	3,592	384	500	250	250	500	0	475	700	0	700	704	0	796	1,500	M	Apr 19
Apr 20	2,542	250	796	0.99	3,588	380	500	250	250	500	0	475	700	0	700	704	0	796	1,500	M	Apr 20
Apr 21	2,538	250	796	1.49	3,584	376	500	250	250	500	0	475	700	0	700	704	0	796	1,500	M	Apr 21
Apr 22	2,534	250	796	1.98	3,580	372	500	250	250	500	0	475	700	0	700	704	0	796	1,500	M	Apr 22
Apr 23	2,530	250	796	2.48	3,576	368	500	250	250	500	0	475	700	0	700	704	0	796	1,500		Apr 23
Apr 24	2,526	250	796	2.98	3,572	364	500	250	250	500	0	475	700	0	700	704	0	796	1,500		Apr 24
Apr 25	2,522	250	796	3.47	3,568	360	500	250	225	475	0	475	700	0	700	704	0	796	1,500		Apr 25
Apr 26	2,518	250	796	3.97	3,564	356	500	250	125	375	0	750	770	0	770	704	0	796	1,500		Apr 26
Apr 27	2,514	250	796	4.46	3,560	352	500	250	125	375	0	1,230	900	0	900	704	0	796	1,500		Apr 27
Apr 28	2,580	225	796	4.91	3,601	348	500	250	125	375	0	1,230	900	0	900	704	0	796	1,500		Apr 28
Apr 29	2,706	125	796	5.16	3,627	344	500	250	125	375	0	1,230	900	0	900	704	0	796	1,500	T	Apr 29
Apr 30	2,702	125	796	5.40	3,623	340	500	250	125	375	0	1,230	900	0	900	704	0	796	1,500	T	Apr 30
May 01	2,698	125	796	5.65	3,619	336	500	250	130	380	0	1,230	900	0	900	1,500	0	0	1,500	T	May 01
May 02	2,694	125	796	5.90	3,615	332	500	250	130	380	0	1,230	900	0	900	1,500	0	0	1,500	T	May 02
May 03	3,486	125	0	6.15	3,611	328	500	250	135	385	0	1,230	900	0	900	1,500	0	0	1,500	T	May 03
May 04	3,482	130	0	6.41	3,612	324	500	250	135	385	0	1,230	900	0	900	1,500	0	0	1,500	T	May 04
May 05	3,478	130	0	6.66	3,608	320	500	250	125	375	0	1,230	900	0	900	1,500	0	0	1,500	T	May 05
May 06	3,474	135	0	6.93	3,609	316	500	250	275	525	0	1,230	900	0	900	1,500	0	0	1,500	T	May 06
May 07	3,470	135	0	7.20	3,605	312	500	250	360	610	0	750	770	0	770	1,500	0	0	1,500	T	May 07
May 08	3,466	125	0	7.45	3,591	308	500	250	360	610	0	475	700	0	700	1,500	0	0	1,500	M	May 08
May 09	3,332	275	0	7.99	3,607	304	500	250	360	610	0	475	700	0	700	1,500	0	0	1,500	M	May 09
May 10	3,258	360	0	8.71	3,618	300	500	250	360	610	0	475	700	0	700	1,500	0	0	1,500	M	May 10
May 11	3,254	360	0	9.42	3,614	296	500	250	360	610	0	475	700	0	700	1,500	0	0	1,500	M	May 11
May 12	3,250	360	0	10.14	3,610	292	500	250	360	610	0	475	700	0	700	1,500	0	0	1,500	M	May 12
May 13	3,246	360	0	10.85	3,606	288	500	250	360	610	0	475	700	0	700	1,500	0	0	1,500	M	May 13
May 14	3,242	360	0	11.56	3,602	284	500	250	360	610	0	475	700	0	700	1,500	0	0	1,500	M	May 14
May 15	3,238	360	0	12.28	3,598	280	500	250	360	610	0	475	700	0	700	1,500	0	0	1,500	M	May 15
May 16	3,234	360	0	12.99	3,594	276	500	250	360	610	0	475	700	0	700	918	0	582	1,500		May 16
May 17	3,230	360	0	13.71	3,590	272	500	250	0	250		475	700	0	700	918	0	582	1,500		May 17
May 18	2,644	360	582	14.42	3,586	268	500	250		250		300	345		345	918			918		May 18
May 19	2,640	360	582	15.13	3,582	264	500	250		250			150		150	918			918		May 19
May 20	2,281	0			2,281	260	500	250		250			150		150	918			918		May 20
May 21	2,082	0			2,082	256	500	250		250			150		150	918			918		May 21
May 22	2,078	0			2,078	252	500	250		250			150		150	918			918		May 22
May 23	2,074	0			2,074	248	500	250		250			150		150	918			918		May 23
May 24	2,070	0			2,070	244	500	250		250			150		150	918			918		May 24
May 25	2,066	0			2,066	240	500	250		250			150		150	918			918		May 25
May 26	2,062	0			2,062	236	500	250		250			150		150	918			918		May 26
May 27	2,058	0			2,058	232	500	250		250			150		150	918			918		May 27
May 28	2,054	0			2,054	228	500	250		250			150		150	918			918		May 28
May 29	2,050	0			2,050	224	500	250		250			150		150	918			918		May 29
May 30	2,046	0			2,046	220	500	250		250			150		150	918			918		May 30
May 31	2,042	0			2,042	216	500	250		250			150		150	918			918		May 31
	VAMP period																				
Mean (cfs):	2,954	246			3,597	332	500		246	496	0		769	0	769		0	397	1,500		Mean (cfs):
Suppl. Water (TAF)																					Suppl. Water (TAF)
Provided		15.13							15.13		0.00			0.00			0.00	24.41			Provided
Target		15.13							15.13		0.00			0.00			0.00				Target

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, APRIL 12

Pulse Period: April 20–May 20 • Flow Target: 4,450cfs

Ungaged Flow at Vernalis = 650cfs • 18.14 "other" supplemental water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)					
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.	
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)		
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]		
Apr 01					2,071	515	639	220		220			347		347	412			412		Apr 01
Apr 02					2,069	519	749	210		210			350		350	447			447		Apr 02
Apr 03					2,163	527	685	180		180			345		345	463			463		Apr 03
Apr 04	2,041				2,041	534	505	193		193			339		339	448			448		Apr 04
Apr 05	1,978				1,978	515	433	218		218			328		328	488			488		Apr 05
Apr 06	2,078				2,078	493	577	240		240			317		317	578			578		Apr 06
Apr 07	2,329				2,329	461	805	266		266			325		325	650			650		Apr 07
Apr 08	2,610				2,610	454	1,004	246		246			323		323	627			627		Apr 08
Apr 09	2,654				2,654	490	978	240		240			318		318	592			592		Apr 09
Apr 10	2,578				2,578	541	908	232		232			327		327	553			553		Apr 10
Apr 11	2,478				2,478	546	832	241		241			326		326	564			564		Apr 11
Apr 12	2,361				2,361	505	700	250		250			300		300	600			600		Apr 12
Apr 13	2,318	0			2,318	486	650	250	0	250			300		300	600			600		Apr 13
Apr 14	2,296	0			2,296	468	650	250	0	250			300		300	600			600		Apr 14
Apr 15	2,286	0			2,286	450	650	250	0	250		250	250		250	600			600		Apr 15
Apr 16	2,268	0			2,268	446	650	250	0	250		250	250		250	600			600		Apr 16
Apr 17	2,200	0	0		2,200	442	650	250	250	500	50	250	250	0	250	600	0		600		Apr 17
Apr 18	2,196	0	0		2,196	438	650	250	740	990	100	475	475	575	1,050	1,205	0	295	1,500		Apr 18
Apr 19	2,192	0	0		2,192	433	650	250	840	1,090	100	475	475	360	835	1,205	0	295	1,500		Apr 19
Apr 20	3,018	875	295	1.74	4,188	429	650	250	840	1,090	100	475	475	225	700	1,205	0	295	1,500	T	Apr 20
Apr 21	3,013	1,200	295	4.12	4,508	425	650	250	840	1,090	100	475	475	225	700	1,205	0	295	1,500	T	Apr 21
Apr 22	3,009	1,165	295	6.43	4,469	421	650	250	840	1,090	100	475	475	225	700	1,205	0	295	1,500	T	Apr 22
Apr 23	3,005	1,165	295	8.74	4,465	417	650	250	840	1,090	100	475	475	225	700	1,205	0	295	1,500	T	Apr 23
Apr 24	3,001	1,165	295	11.05	4,461	413	650	250	840	1,090	100	475	475	225	700	1,205	0	295	1,500	T	Apr 24
Apr 25	2,997	1,165	295	13.36	4,457	408	650	250	840	1,090	100	475	475	225	700	1,205	0	295	1,500	T	Apr 25
Apr 26	2,993	1,165	295	15.67	4,453	404	650	250	840	1,090	100	475	475	225	700	1,205	0	295	1,500	T	Apr 26
Apr 27	2,988	1,165	295	17.98	4,448	400	650	250	385	635	60	700	700	0	700	1,205	0	295	1,500	T	Apr 27
Apr 28	2,984	1,165	295	20.29	4,444	396	650	250	130	380	50	1,230	1,230	0	1,230	1,205	0	295	1,500		Apr 28
Apr 29	3,205	940	295	22.16	4,440	392	650	250	130	380	50	1,230	1,230	270	1,500	1,205	0	295	1,500		Apr 29
Apr 30	3,731	445	295	23.04	4,471	388	650	250	130	380	50	1,230	1,230	270	1,500	1,205	0	295	1,500		Apr 30
May 01	3,727	450	295	23.93	4,472	383	650	250	130	380	50	1,230	1,230	270	1,500	1,205	0	295	1,500		May 01
May 02	3,723	450	295	24.82	4,468	379	650	250	135	385	50	1,230	1,230	270	1,500	1,205	0	295	1,500		May 02
May 03	3,718	450	295	25.72	4,463	375	650	250	140	390	50	1,230	1,230	270	1,500	1,205	0	295	1,500		May 03
May 04	3,714	450	295	26.61	4,459	371	650	250	140	390	50	1,230	1,230	270	1,500	1,205	0	295	1,500		May 04
May 05	3,710	455	295	27.51	4,460	367	650	250	140	390	50	1,230	1,230	270	1,500	1,205	0	295	1,500		May 05
May 06	3,706	460	295	28.42	4,461	363	650	250	140	390	60	1,230	1,230	270	1,500	1,205	0	295	1,500		May 06
May 07	3,702	460	295	29.34	4,457	358	650	250	140	390	100	1,230	1,230	270	1,500	1,205	0	295	1,500		May 07
May 08	3,698	460	295	30.25	4,453	354	650	250	520	770	100	800	800	700	1,500	1,205	0	295	1,500		May 08
May 09	3,693	470	295	31.18	4,458	350	650	250	725	975	100	475	475	620	1,095	1,205	0	295	1,500	M	May 09
May 10	3,259	940	295	33.04	4,494	346	650	250	725	975	100	475	475	425	900	1,205	0	295	1,500	M	May 10
May 11	2,930	1,240	295	35.50	4,465	342	650	250	725	975	100	475	475	425	900	1,205	0	295	1,500	M	May 11
May 12	2,926	1,250	295	37.98	4,471	338	650	250	725	975	100	475	475	425	900	1,205	0	295	1,500	M	May 12
May 13	2,922	1,250	295	40.46	4,467	333	650	250	725	975	100	475	475	425	900	1,205	0	295	1,500	M	May 13
May 14	2,918	1,250	295	42.94	4,463	329	650	250	725	975	100	475	475	425	900	1,205	0	295	1,500	M	May 14
May 15	2,913	1,250	295	45.42	4,458	325	650	250	725	975	100	475	475	425	900	1,205	0	295	1,500	M	May 15
May 16	2,909	1,250	295	47.90	4,454	321	650	250	725	975	100	475	475	425	900	1,205	0	295	1,500	M	May 16
May 17	2,905	1,250	295	50.38	4,450	317	650	250	725	975	50	475	475	425	900	1,205	0	295	1,500		May 17
May 18	2,901	1,250	295	52.86	4,446	313	650	250	250	500		475	475	425	900	1,205	0	295	1,500		May 18
May 19	2,897	1,250	295	55.34	4,442	309	650	250		250		300	300		300	600			600		May 19
May 20	2,893	1,200	295	57.72	4,388	305	650	250		250			150		150	600			600		May 20
May 21	2,109	250			2,359	301	650	250		250			150		150	600			600		May 21
May 22	1,955	0			1,955	297	650	250		250			150		150	600			600		May 22
May 23	1,951	0			1,951	293	650	250		250			150		150	600			600		May 23
May 24	1,947	0			1,947	289	650	250		250			150		150	600			600		May 24
May 25	1,943	0			1,943	285	650	250		250			150		150	600			600		May 25
May 26	1,939	0			1,939	281	650	250		250			150		150	600			600		May 26
May 27	1,935	0			1,935	277	650	250		250			150		150	600			600		May 27
May 28	1,931	0			1,931	273	650	250		250			150		150	600			600		May 28
May 29	1,927	0			1,927	269	650	250		250			150		150	600			600		May 29
May 30	1,923	0			1,923	265	650	250		250			150		150	600			600		May 30
May 31	1,919	0			1,919	261	650	250		250			150		150	600			600		May 31
	VAMP period																				
Mean (cfs):	3,216	939			4,450	375	650		532	782	81		736	325	1,062	1,205	0	295	1,500		Mean (cfs):
Suppl. Water (TAF)																					Suppl. Water (TAF)
Provided		57.72							32.72		5.00			20.00			0.00	18.14			Provided
Target		57.72							32.72		5.00			20.00			0.00				Target

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, APRIL 16

Pulse Period: April 20–May 20 • Flow Target: 4,450cfs

Ungaged Flow at Vernalis = 650cfs • 2.8 TAF "other" supplemetntal water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)				
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]	
Apr 01					2,071	515	639	220		220			347		347	410			410	
Apr 02					2,069	519	749	210		210			350		350	450			450	
Apr 03					2,163	527	685	180		180			345		345	460			460	
Apr 04	2,044				2,041	534	505	193		193			339		339	450			450	
Apr 05	1,975				1,978	515	433	218		218			328		328	490			490	
Apr 06	2,080				2,078	493	577	240		240			317		317	580			580	
Apr 07	2,331				2,329	461	805	266		266			325		325	650			650	
Apr 08	2,612				2,610	454	1,004	246		246			323		323	630			630	
Apr 09	2,654				2,654	490	978	240		240			318		318	590			590	
Apr 10	2,581				2,578	541	908	232		232			327		327	550			550	
Apr 11	2,476				2,478	546	832	241		241			326		326	560			560	
Apr 12	2,429				2,432	547	771	245		245			328		328	570			570	
Apr 13	2,428	0			2,432	545	764	253		253			329		329	570			570	
Apr 14	2,425	0			2,422	499	739	255		255			319		319	570			570	
Apr 15	2,419	0			2,423	469	730	263		263		250	256		256	570			570	
Apr 16	2,291	0			2,291	446	650	250	0	250		250	250		250	600			600	
Apr 17	2,200	0	0		2,200	442	650	250	140	390	0	250	250	0	250	600	0		600	
Apr 18	2,209	0	0		2,209	438	650	250	180	430	0	475	475	825	1,300	1,205	250	45	1,500	
Apr 19	2,192	0	0		2,192	433	650	250	585	835	50	475	475	825	1,300	1,205	250	45	1,500	
Apr 20	3,018	1,215	45	2.41	4,278	429	650	250	950	1,200	150	475	475	425	900	1,205	250	45	1,500	T
Apr 21	3,013	1,255	45	4.90	4,313	425	650	250	950	1,200	150	475	475	135	610	1,205	250	45	1,500	T
Apr 22	3,009	1,310	45	7.50	4,364	421	650	250	900	1,150	150	475	475	135	610	1,205	250	45	1,500	T
Apr 23	3,005	1,485	45	10.44	4,535	417	650	250	900	1,150	150	475	475	135	610	1,205	250	45	1,500	T
Apr 24	3,001	1,485	45	13.39	4,531	413	650	250	900	1,150	150	475	475	135	610	1,205	250	45	1,500	T
Apr 25	2,997	1,435	45	16.23	4,477	408	650	250	900	1,150	150	475	475	135	610	1,205	250	45	1,500	T
Apr 26	2,993	1,435	45	19.08	4,473	404	650	250	850	1,100	150	475	475	135	610	1,205	250	45	1,500	T
Apr 27	2,988	1,435	45	21.93	4,468	400	650	250	400	650	150	700	650	0	650	1,205	250	45	1,500	T
Apr 28	2,984	1,435	45	24.77	4,464	396	650	250	350	600	150	1,230	1,230	0	1,230	1,205	200	45	1,450	
Apr 29	3,155	1,250	45	27.25	4,450	392	650	250	250	500	100	1,230	1,230	0	1,230	1,205	200	45	1,450	
Apr 30	3,731	750	45	28.74	4,526	388	650	250	250	500	100	1,230	1,230	160	1,390	1,205	200	45	1,450	
May 01	3,727	700	45	30.13	4,472	383	650	250	250	500	100	1,230	1,230	160	1,390	1,205	200	45	1,450	
May 02	3,723	710	45	31.54	4,478	379	650	250	250	500	100	1,230	1,230	160	1,390	1,205	200	45	1,450	
May 03	3,718	710	45	32.95	4,473	375	650	250	250	500	100	1,230	1,230	160	1,390	1,205	200	45	1,450	
May 04	3,714	710	45	34.35	4,469	371	650	250	250	500	100	1,230	1,230	160	1,390	1,205	220	45	1,470	
May 05	3,710	710	45	35.76	4,465	367	650	250	250	500	100	1,230	1,230	160	1,390	1,205	230	45	1,480	
May 06	3,706	730	45	37.21	4,481	363	650	250	250	500	100	1,230	1,230	160	1,390	1,205	230	45	1,480	
May 07	3,702	740	45	38.68	4,487	358	650	250	550	800	130	1,230	1,230	160	1,390	1,205	230	45	1,480	
May 08	3,698	740	45	40.15	4,483	354	650	250	700	950	150	800	850	180	1,030	1,205	250	45	1,500	
May 09	3,693	740	45	41.61	4,478	350	650	250	800	1,050	150	475	475	420	895	1,205	250	45	1,500	M
May 10	3,309	1,110	45	43.81	4,464	346	650	250	800	1,050	150	475	475	290	765	1,205	250	45	1,500	M
May 11	2,930	1,520	45	46.83	4,495	342	650	250	800	1,050	150	475	475	290	765	1,205	250	45	1,500	M
May 12	2,926	1,490	45	49.79	4,461	338	650	250	800	1,050	150	475	475	290	765	1,205	250	45	1,500	M
May 13	2,922	1,490	45	52.74	4,457	333	650	250	800	1,050	150	475	475	290	765	1,205	250	45	1,500	M
May 14	2,918	1,490	45	55.70	4,453	329	650	250	800	1,050	150	475	475	290	765	1,205	250	45	1,500	M
May 15	2,913	1,490	45	58.65	4,448	325	650	250	800	1,050	150	475	475	290	765	1,205	250	45	1,500	M
May 16	2,909	1,490	45	61.61	4,444	321	650	250	800	1,050	100	475	475	290	765	1,205	250	45	1,500	M
May 17	2,905	1,490	45	64.56	4,440	317	650	250	790	1,040	50	475	475	290	765	1,205	250	45	1,500	
May 18	2,901	1,490	45	67.52	4,436	313	650	250	250	500		475	475	275	750	1,205	250	45	1,500	
May 19	2,897	1,440	45	70.37	4,382	309	650	250		250		300	300		300	600			600	
May 20	2,893	1,365	45	73.08	4,303	305	650	250		250			150		150	600			600	
May 21	2,109	250			2,359	301	650	250		250			150		150	600			600	
May 22	1,955	0			1,955	297	650	250		250			150		150	600			600	
May 23	1,951	0			1,951	293	650	250		250			150		150	600			600	
May 24	1,947	0			1,947	289	650	250		250			150		150	600			600	
May 25	1,943	0			1,943	285	650	250		250			150		150	600			600	
May 26	1,939	0			1,939	281	650	250		250			150		150	600			600	
May 27	1,935	0			1,935	277	650	250		250			150		150	600			600	
May 28	1,931	0			1,931	273	650	250		250			150		150	600			600	
May 29	1,927	0			1,927	269	650	250		250			150		150	600			600	
May 30	1,923	0			1,923	265	650	250		250			150		150	600			600	
May 31	1,919	0			1,919	261	650	250		250			150		150	600			600	
	VAMP period																			
Mean (cfs):	3,216	1,189			4,450	375	650		595	845	119		736	237	974	1,205	237	45	1,487	
Suppl. Water (TAF)																				
Provided		73.08							36.59		7.30		14.60				14.60	2.77		
Target		73.09							36.59		7.30		14.60				14.60			

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, APRIL 23

Pulse Period: April 20–May 20 • Flow Target: 4,450cfs

Ungaged Flow at Vernalis = 650cfs • 2.8 TAF "other" supplemetntal water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)				
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]	
					2,071	515	534	220		220			347		347	407			407	
					2,069	519	543	210		210			350		350	409			409	
					2,163	527	560	180		180			345		345	411			411	
	1,911				2,041	534	413	193		193			339		339	439			439	
	1,848				1,978	515	355	218		218			328		328	558			558	
	1,948				2,078	493	456	240		240			317		317	556			556	
	2,199				2,329	461	605	266		266			325		325	551			551	
	2,480				2,610	454	896	246		246			323		323	561			561	
	2,524				2,654	490	947	240		240			318		318	347			347	
	2,448				2,578	541	844	232		232			327		327	548			548	
	2,348				2,478	546	947	241		241			326		326	551			551	
	2,302				2,432	547	646	245		245			328		328	551			551	
	2,432	0			2,432	545	777	253		253			329		329	550			550	
	2,422	0			2,422	499	755	255		255			319		319	555			555	
	2,423	0			2,423	469	754	263		263		250	256		256	548			548	
	2,489	0			2,489	453	863	261	0	261		250	255		255	552			552	
	2,284	0	0		2,284	422	756	250	124	374	0	250	255	0	255	553	0		553	
	2,128	0	0		2,128	357	605	250	172	422	0	475	475	667	1,142	1,205	0	0	967	
	2,206	0	0		2,206	282	715	250	585	835	50	475	475	966	1,441	1,205	311	90	1,606	
	2,984	791	0	1.57	3,537	203	697	250	939	1,189	150	475	475	547	1,022	1,205	260	45	1,510	T
	3,067	1,449	90	4.44	4,606	239	855	250	1,009	1,259	150	475	475	150	625	1,205	254	45	1,504	T
	3,310	1,442	45	7.30	4,796	379	1,177	250	999	1,249	150	475	475	148	623	1,205	251	45	1,501	T
	3,169	1,493	45	10.26	4,707	417	1,000	250	900	1,150	150	475	475	135	610	1,205	200	45	1,450	T
	2,959	1,558	45	13.35	4,562	413	650	250	900	1,150	150	475	475	135	610	1,205	150	45	1,400	T
	2,997	1,484	45	16.30	4,526	408	650	250	900	1,150	150	475	475	135	610	1,205	200	45	1,450	T
	2,993	1,335	45	18.95	4,373	404	650	250	900	1,150	150	475	475	135	610	1,205	235	45	1,485	T
	2,988	1,385	45	21.69	4,418	400	650	250	900	1,150	150	700	610	0	610	1,205	250	45	1,500	T
	2,984	1,420	45	24.51	4,449	396	650	250	350	600	150	1,230	650	0	650	1,205	250	45	1,500	
	3,115	1,300	45	27.09	4,460	392	650	250	200	450	100	1,230	1,230	0	1,230	1,205	250	45	1,500	
	3,151	1,300	45	29.67	4,496	388	650	250	200	450	100	1,230	1,230	130	1,360	1,205	250	45	1,500	
	3,727	750	45	31.15	4,522	383	650	250	200	450	100	1,230	1,230	130	1,360	1,205	250	45	1,500	
	3,723	680	45	32.50	4,448	379	650	250	200	450	100	1,230	1,230	130	1,360	1,205	250	45	1,500	
	3,718	680	45	33.85	4,443	375	650	250	200	450	100	1,230	1,230	130	1,360	1,205	250	45	1,500	
	3,714	680	45	35.20	4,439	371	650	250	200	450	100	1,230	1,230	130	1,360	1,205	250	45	1,500	
	3,710	680	45	36.55	4,435	367	650	250	200	450	100	1,230	1,230	130	1,360	1,205	250	45	1,500	
	3,706	680	45	37.90	4,431	363	650	250	200	450	100	1,230	1,230	130	1,360	1,205	250	45	1,500	
	3,702	680	45	39.25	4,427	358	650	250	535	785	130	1,230	1,230	130	1,360	1,205	250	45	1,500	
	3,698	680	45	40.60	4,423	354	650	250	640	890	150	800	850	135	985	1,205	250	45	1,500	
	3,693	680	45	41.94	4,418	350	650	250	775	1,025	150	475	535	355	890	1,205	250	45	1,500	M
	3,309	1,050	45	44.03	4,404	346	650	250	775	1,025	150	475	535	265	800	1,205	250	45	1,500	M
	2,990	1,395	45	46.79	4,430	342	650	250	775	1,025	150	475	535	265	800	1,205	250	45	1,500	M
	2,986	1,440	45	49.65	4,471	338	650	250	775	1,025	150	475	535	265	800	1,205	250	45	1,500	M
	2,982	1,440	45	52.51	4,467	333	650	250	775	1,025	150	475	535	265	800	1,205	250	45	1,500	M
	2,978	1,440	45	55.36	4,463	329	650	250	775	1,025	150	475	535	265	800	1,205	250	45	1,500	M
	2,973	1,440	45	58.22	4,458	325	650	250	775	1,025	150	475	535	265	800	1,205	250	45	1,500	M
	2,969	1,440	45	61.08	4,454	321	650	250	775	1,025	100	475	535	265	800	1,205	250	45	1,500	M
	2,965	1,440	45	63.93	4,450	317	650	250	750	1,000	50	475	535	265	800	1,205	250	45	1,500	
	2,961	1,440	45	66.79	4,446	313	650	250	250	500		475	535	265	800	1,205	250	45	1,500	
	2,957	1,390	45	69.54	4,392	309	650	250		250		300	300		300	600			600	
	2,953	1,315	45	72.15	4,313	305	650	250		250			150		150	600			600	
	2,109	250			2,359	301	650	250		250			150		150	600			600	
	1,955	0			1,955	297	650	250		250			150		150	600			600	
	1,951	0			1,951	293	650	250		250			150		150	600			600	
	1,947	0			1,947	289	650	250		250			150		150	600			600	
	1,943	0			1,943	285	650	250		250			150		150	600			600	
	1,939	0			1,939	281	650	250		250			150		150	600			600	
	1,935	0			1,935	277	650	250		250			150		150	600			600	
	1,931	0			1,931	273	650	250		250			150		150	600			600	
	1,927	0			1,927	269	650	250		250			150		150	600			600	
	1,923	0			1,923	265	650	250		250			150		150	600			600	
	1,919	0			1,919	261	650	250		250			150		150	600			600	
	VAMP period																			
	3,230	1,173			4,441	353	686		594	844	119		736	224	959	1,205	237	45	1,480	
		72.15							36.50		7.30		13.75				14.60	2.77		
		72.25							36.50		7.30		13.85				14.60			

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, MAY 2

Pulse Period: April 20–May 20 • Flow Target: 4,450cfs

Ungaged Flow at Vernalis = 650cfs • 2.8 TAF "other" supplemetntal water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)					
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.	
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)		
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]		
Apr 01					2,071	515	534	220		220			347		347	407			407		Apr 01
Apr 02					2,069	519	543	210		210			350		350	409			409		Apr 02
Apr 03					2,163	527	560	180		180			345		345	411			411		Apr 03
Apr 04	1,911				2,041	534	413	193		193			339		339	439			439		Apr 04
Apr 05	1,848				1,978	515	355	218		218			328		328	558			558		Apr 05
Apr 06	1,948				2,078	493	456	240		240			317		317	556			556		Apr 06
Apr 07	2,199				2,329	461	605	266		266			325		325	551			551		Apr 07
Apr 08	2,480				2,610	454	896	246		246			323		323	561			561		Apr 08
Apr 09	2,524				2,654	490	947	240		240			318		318	347			347		Apr 09
Apr 10	2,448				2,578	541	844	232		232			327		327	548			548		Apr 10
Apr 11	2,348				2,478	546	947	241		241			326		326	551			551		Apr 11
Apr 12	2,302				2,432	547	646	245		245			328		328	551			551		Apr 12
Apr 13	2,432	0			2,432	545	777	253		253			329		329	550			550		Apr 13
Apr 14	2,422	0			2,422	499	755	255		255			319		319	555			555		Apr 14
Apr 15	2,423	0			2,423	469	754	263		263		250	256		256	548			548		Apr 15
Apr 16	2,489	0			2,489	453	863	261	0	261		250	255		255	552			552		Apr 16
Apr 17	2,284	0	0		2,284	422	756	250	124	374	0	250	255	0	255	553	0		553		Apr 17
Apr 18	2,135	0	0		2,135	357	612	250	172	422	0	475	475	667	1,142	1,205	0	0	967		Apr 18
Apr 19	2,214	0	0		2,206	282	723	250	585	835	50	475	475	966	1,441	1,205	311	90	1,606		Apr 19
Apr 20	2,994	791	0	1.57	3,537	202	707	250	939	1,189	150	475	475	547	1,022	1,205	260	45	1,510	T	Apr 20
Apr 21	3,078	1,449	90	4.44	4,606	236	866	250	1,009	1,259	150	475	475	150	625	1,205	254	45	1,504	T	Apr 21
Apr 22	3,323	1,442	45	7.30	4,796	376	1,192	250	999	1,249	150	475	475	148	623	1,205	251	45	1,501	T	Apr 22
Apr 23	3,187	1,493	45	10.26	4,714	519	1,022	250	970	1,220	150	475	475	148	623	1,205	212	45	1,462	T	Apr 23
Apr 24	3,102	1,558	45	13.35	4,695	509	797	250	978	1,228	150	475	475	147	622	1,205	149	45	1,399	T	Apr 24
Apr 25	3,031	1,509	45	16.35	4,585	450	583	250	982	1,232	150	475	475	149	624	1,205	176	45	1,426	T	Apr 25
Apr 26	2,913	1,416	45	19.16	4,372	392	475	250	999	1,249	150	475	475	147	622	1,205	249	45	1,499	T	Apr 26
Apr 27	2,903	1,453	45	22.04	4,400	351	523	250	1,010	1,260	150	700	610	9	619	1,205	252	45	1,502	T	Apr 27
Apr 28	2,901	1,528	45	25.07	4,473	406	579	250	435	685	150	1,230	650	4	654	1,205	252	45	1,502		Apr 28
Apr 29	3,027	1,410	45	27.87	4,482	381	612	250	324	574	100	1,230	1,230	0	1,221	1,205	254	45	1,504		Apr 29
Apr 30	2,903	1,416	45	30.67	4,364	362	393	250	298	548	100	1,230	1,230	140	1,370	1,205	251	45	1,501		Apr 30
May 01	3,556	839	45	32.34	4,431	361	491	250	271	521	100	1,230	1,230	145	1,375	1,205	254	45	1,504		May 01
May 02	3,697	815	45	33.96	4,557	379	650	250	200	450	100	1,230	1,230	130	1,360	1,205	250	45	1,500		May 02
May 03	3,696	797	45	35.54	4,538	375	650	250	200	450	100	1,230	1,230	130	1,360	1,205	250	45	1,500		May 03
May 04	3,714	751	45	37.03	4,510	371	650	250	200	450	100	1,230	1,230	130	1,360	1,205	250	45	1,500		May 04
May 05	3,710	680	45	38.37	4,435	367	650	250	200	450	100	1,230	1,230	130	1,360	1,205	250	45	1,500		May 05
May 06	3,706	680	45	39.72	4,431	363	650	250	200	450	100	1,230	1,230	130	1,360	1,205	250	45	1,500		May 06
May 07	3,702	680	45	41.07	4,427	358	650	250	535	785	130	1,230	1,230	130	1,360	1,205	250	45	1,500		May 07
May 08	3,698	680	45	42.42	4,423	354	650	250	640	890	150	800	850	135	985	1,205	250	45	1,500		May 08
May 09	3,693	680	45	43.77	4,418	350	650	250	775	1,025	150	475	535	355	890	1,205	250	45	1,500	M	May 09
May 10	3,309	1,050	45	45.85	4,404	346	650	250	775	1,025	150	475	535	265	800	1,205	250	45	1,500	M	May 10
May 11	2,990	1,395	45	48.62	4,430	342	650	250	775	1,025	150	475	535	265	800	1,205	250	45	1,500	M	May 11
May 12	2,986	1,440	45	51.48	4,471	338	650	250	775	1,025	150	475	535	265	800	1,205	250	45	1,500	M	May 12
May 13	2,982	1,440	45	54.33	4,467	333	650	250	775	1,025	150	475	535	265	800	1,205	250	45	1,500	M	May 13
May 14	2,978	1,440	45	57.19	4,463	329	650	250	775	1,025	150	475	535	265	800	1,205	250	45	1,500	M	May 14
May 15	2,973	1,440	45	60.04	4,458	325	650	250	775	1,025	150	475	535	265	800	1,205	250	45	1,500	M	May 15
May 16	2,969	1,440	45	62.90	4,454	321	650	250	775	1,025	100	475	535	265	800	1,205	250	45	1,500	M	May 16
May 17	2,965	1,440	45	65.76	4,450	317	650	250	750	1,000	50	475	535	265	800	1,205	250	45	1,500		May 17
May 18	2,961	1,440	45	68.61	4,446	313	650	250	250	500		475	535	265	800	1,205	250	45	1,500		May 18
May 19	2,957	1,390	45	71.37	4,392	309	650	250		250		300	300		300	600			600		May 19
May 20	2,953	1,315	45	73.98	4,313	305	650	250		250			150		150	600			600		May 20
May 21	2,109	250			2,359	301	650	250		250			150		150	600			600		May 21
May 22	1,955	0			1,955	297	650	250		250			150		150	600			600		May 22
May 23	1,951	0			1,951	293	650	250		250			150		150	600			600		May 23
May 24	1,947	0			1,947	289	650	250		250			150		150	600			600		May 24
May 25	1,943	0			1,943	285	650	250		250			150		150	600			600		May 25
May 26	1,939	0			1,939	281	650	250		250			150		150	600			600		May 26
May 27	1,935	0			1,935	277	650	250		250			150		150	600			600		May 27
May 28	1,931	0			1,931	273	650	250		250			150		150	600			600		May 28
May 29	1,927	0			1,927	269	650	250		250			150		150	600			600		May 29
May 30	1,923	0			1,923	265	650	250		250			150		150	600			600		May 30
May 31	1,919	0			1,919	261	650	250		250			150		150	600			600		May 31
	VAMP period																				
Mean (cfs):	3,211	1,203			4,450	357	664		620	870	119		736	227	962	1,205	238	45	1,480		Mean (cfs):
Suppl. Water (TAF) Provided		73.98							38.12		7.30			13.93			14.63	2.77			Suppl. Water (TAF) Provided
Target		73.39							36.89		7.30			14.60			14.60				Target

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, MAY 4

Pulse Period: April 20–May 20 • Flow Target: 4,450cfs

Ungaged Flow at Vernalis = 500cfs • 1.4 TAF "other" supplemetntal water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)					
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.	
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)		
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]		
Apr 01					2,071	515	534	220		220			347		347	407			407		Apr 01
Apr 02					2,069	519	543	210		210			350		350	409			409		Apr 02
Apr 03					2,163	527	560	180		180			345		345	411			411		Apr 03
Apr 04	1,911				2,041	534	413	193		193			339		339	439			439		Apr 04
Apr 05	1,848				1,978	515	355	218		218			328		328	558			558		Apr 05
Apr 06	1,948				2,078	493	456	240		240			317		317	556			556		Apr 06
Apr 07	2,199				2,329	461	605	266		266			325		325	551			551		Apr 07
Apr 08	2,480				2,610	454	896	246		246			323		323	561			561		Apr 08
Apr 09	2,524				2,654	490	947	240		240			318		318	347			347		Apr 09
Apr 10	2,448				2,578	541	844	232		232			327		327	548			548		Apr 10
Apr 11	2,348				2,478	546	947	241		241			326		326	551			551		Apr 11
Apr 12	2,302				2,432	547	646	245		245			328		328	551			551		Apr 12
Apr 13	2,432	0			2,432	545	777	253		253			329		329	550			550		Apr 13
Apr 14	2,422	0			2,422	499	755	255		255			319		319	555			555		Apr 14
Apr 15	2,423	0			2,423	469	754	263		263		250	256		256	548			548		Apr 15
Apr 16	2,489	0			2,489	453	863	261	0	261		250	255		255	552			552		Apr 16
Apr 17	2,284	0	0		2,284	422	756	250	124	374	0	250	255	0	255	553	0		553		Apr 17
Apr 18	2,135	0	0		2,135	357	612	250	172	422	0	475	475	667	1,142	1,205	0	0	967		Apr 18
Apr 19	2,014	0	0		2,206	282	523	250	535	785	50	475	475	966	1,441	1,205	311	90	1,606		Apr 19
Apr 20	2,794	791	0	1.57	3,347	202	507	250	889	1,139	150	475	475	547	1,022	1,205	260	45	1,510	T	Apr 20
Apr 21	2,878	1,449	90	4.44	4,417	236	666	250	959	1,209	150	475	475	150	625	1,205	254	45	1,504	T	Apr 21
Apr 22	3,123	1,392	45	7.20	4,560	376	992	250	949	1,199	150	475	475	148	623	1,205	251	45	1,501	T	Apr 22
Apr 23	2,987	1,443	45	10.07	4,475	519	822	250	920	1,170	150	475	475	148	623	1,205	212	45	1,462	T	Apr 23
Apr 24	2,902	1,508	45	13.06	4,455	509	597	250	928	1,178	150	475	475	147	622	1,205	149	45	1,399	T	Apr 24
Apr 25	2,831	1,459	45	15.95	4,335	450	383	250	932	1,182	150	475	475	149	624	1,205	176	45	1,426	T	Apr 25
Apr 26	2,713	1,366	45	18.66	4,124	392	275	250	949	1,199	150	475	475	147	622	1,205	249	45	1,499	T	Apr 26
Apr 27	2,703	1,403	45	21.44	4,151	351	323	250	960	1,210	150	700	610	9	619	1,205	252	45	1,502	T	Apr 27
Apr 28	2,701	1,478	45	24.37	4,224	406	379	250	385	635	150	1,230	650	4	654	1,205	252	45	1,502		Apr 28
Apr 29	2,827	1,360	45	27.07	4,232	381	412	250	274	524	100	1,230	1,230	0	1,221	1,205	254	45	1,504		Apr 29
Apr 30	2,703	1,366	45	29.78	4,114	362	193	250	248	498	100	1,230	1,230	140	1,370	1,205	251	45	1,501		Apr 30
May 01	3,356	789	45	31.35	4,181	361	291	250	221	471	100	1,230	1,230	145	1,375	1,205	254	45	1,504		May 01
May 02	3,392	765	45	32.86	4,202	340	345	250	225	475	100	1,230	1,230	139	1,369	1,205	253	45	1,503		May 02
May 03	3,436	747	45	34.35	4,228	287	390	250	202	452	100	1,230	1,230	143	1,373	1,205	251	45	1,501		May 03
May 04	3,425	713	45	35.76	4,183	371	400	250	200	450	100	1,230	1,230	130	1,360	1,205	295	0	1,500		May 04
May 05	3,472	719	45	37.19	4,236	367	500	250	200	450	100	1,230	1,230	130	1,360	1,205	295	0	1,500		May 05
May 06	3,556	727	0	38.63	4,283	363	500	250	200	450	100	1,230	1,230	130	1,360	1,205	295	0	1,500		May 06
May 07	3,552	725	0	40.07	4,277	358	500	250	535	785	150	1,230	1,230	130	1,360	1,205	295	0	1,500		May 07
May 08	3,548	725	0	41.50	4,273	354	500	250	640	890	200	800	850	135	985	1,205	295	0	1,500		May 08
May 09	3,543	725	0	42.94	4,268	350	500	250	1,000	1,250	200	475	535	355	890	1,205	295	0	1,500	M	May 09
May 10	3,159	1,115	0	45.15	4,274	346	500	250	1,000	1,250	200	475	535	265	800	1,205	295	0	1,500	M	May 10
May 11	2,840	1,490	0	48.11	4,330	342	500	250	1,000	1,250	200	475	535	265	800	1,205	295	0	1,500	M	May 11
May 12	2,836	1,760	0	51.60	4,596	338	500	250	1,000	1,250	200	475	535	265	800	1,205	295	0	1,500	M	May 12
May 13	2,832	1,760	0	55.09	4,592	333	500	250	1,000	1,250	200	475	535	265	800	1,205	295	0	1,500	M	May 13
May 14	2,828	1,760	0	58.58	4,588	329	500	250	1,000	1,250	200	475	535	265	800	1,205	295	0	1,500	M	May 14
May 15	2,823	1,760	0	62.07	4,583	325	500	250	1,000	1,250	150	475	535	265	800	1,205	295	0	1,500	M	May 15
May 16	2,819	1,760	0	65.56	4,579	321	500	250	1,000	1,250	100	475	535	265	800	1,205	295	0	1,500	M	May 16
May 17	2,815	1,760	0	69.05	4,575	317	500	250	750	1,000	50	475	535	265	800	1,205	295	0	1,500		May 17
May 18	2,811	1,710	0	72.45	4,521	313	500	250	250	500		475	535	265	800	1,205	295	0	1,500		May 18
May 19	2,807	1,660	0	75.74	4,467	309	500	250		250		300	300		300	600			600		May 19
May 20	2,803	1,360	0	78.44	4,163	305	500	250		250			150		150	600			600		May 20
May 21	1,959	250			2,209	301	500	250		250			150		150	600			600		May 21
May 22	1,805	0			1,805	297	500	250		250			150		150	600			600		May 22
May 23	1,801	0			1,801	293	500	250		250			150		150	600			600		May 23
May 24	1,797	0			1,797	289	500	250		250			150		150	600			600		May 24
May 25	1,793	0			1,793	285	500	250		250			150		150	600			600		May 25
May 26	1,789	0			1,789	281	500	250		250			150		150	600			600		May 26
May 27	1,785	0			1,785	277	500	250		250			150		150	600			600		May 27
May 28	1,781	0			1,781	273	500	250		250			150		150	600			600		May 28
May 29	1,777	0			1,777	269	500	250		250			150		150	600			600		May 29
May 30	1,773	0			1,773	265	500	250		250			150		150	600			600		May 30
May 31	1,769	0			1,769	261	500	250		250			150		150	600			600		May 31
	VAMP period																				
Mean (cfs):	3,026	1,276			4,317	353	483		658	908	131		736	227	963	1,205	260	23	1,480		Mean (cfs):
Suppl. Water (TAF) Provided		78.44							40.46		8.03			13.97			15.97	1.43			Suppl. Water (TAF) Provided
Target		86.12							45.00		8.52			14.60			18.00				Target

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, MAY 7

Pulse Period: April 20–May 20 • Flow Target: 4,450cfs

Ungaged Flow at Vernalis = 500cfs • 2.8 TAF "other" supplemetntal water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)					
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.	
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)		
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]		
Apr 01					2,070	515	663	220		220			347		347	407			407		Apr 01
Apr 02					2,170	519	674	210		210			350		350	409			409		Apr 02
Apr 03					2,160	527	687	180		180			345		345	411			411		Apr 03
Apr 04	2,040				2,040	534	542	193		193			339		339	439			439		Apr 04
Apr 05	1,980				1,980	515	487	218		218			328		328	558			558		Apr 05
Apr 06	2,080				2,080	493	588	240		240			317		317	556			556		Apr 06
Apr 07	2,330				2,330	461	736	266		266			325		325	551			551		Apr 07
Apr 08	2,610				2,610	454	1,026	246		246			323		323	561			561		Apr 08
Apr 09	2,660				2,660	490	1,083	240		240			318		318	347			347		Apr 09
Apr 10	2,580				2,580	541	976	232		232			327		327	548			548		Apr 10
Apr 11	2,480				2,480	546	1,079	241		241			326		326	551			551		Apr 11
Apr 12	2,430				2,430	547	774	245		245			328		328	551			551		Apr 12
Apr 13	2,430	0			2,430	545	775	253		253			329		329	550			550		Apr 13
Apr 14	2,420	0			2,420	499	753	255		255			319		319	555			555		Apr 14
Apr 15	2,420	0			2,420	469	751	263		263		250	256		256	548			548		Apr 15
Apr 16	2,490	0			2,490	453	864	261	0	261		250	255		255	552			552		Apr 16
Apr 17	2,280	0	0		2,280	422	752	250	74	324	0	250	255	0	255	553	0		553		Apr 17
Apr 18	2,130	0	0		2,130	357	607	250	122	372	0	475	475	667	1,142	1,205	0	0	967		Apr 18
Apr 19	2,200	0	0		2,200	282	709	250	535	785	50	475	475	966	1,441	1,205	311	90	1,606		Apr 19
Apr 20	2,937	741	0	1.47	3,440	202	650	250	889	1,139	150	475	475	547	1,022	1,205	260	45	1,510	T	Apr 20
Apr 21	2,911	1,399	90	4.24	4,400	236	699	250	959	1,209	150	475	475	150	625	1,205	254	45	1,504	T	Apr 21
Apr 22	3,093	1,392	45	7.01	4,530	376	962	250	949	1,199	150	475	475	148	623	1,205	251	45	1,501	T	Apr 22
Apr 23	2,952	1,443	45	9.87	4,440	519	787	250	920	1,170	150	475	475	148	623	1,205	212	45	1,462	T	Apr 23
Apr 24	2,877	1,508	45	12.86	4,430	509	572	250	928	1,178	150	475	475	147	622	1,205	149	45	1,399	T	Apr 24
Apr 25	2,806	1,459	45	15.75	4,310	450	358	250	932	1,182	150	475	475	149	624	1,205	176	45	1,426	T	Apr 25
Apr 26	2,691	1,366	45	18.46	4,102	392	253	250	949	1,199	150	475	475	147	622	1,205	249	45	1,499	T	Apr 26
Apr 27	2,682	1,403	45	21.24	4,130	351	303	250	960	1,210	150	700	610	9	619	1,205	252	45	1,502	T	Apr 27
Apr 28	2,677	1,478	45	24.18	4,200	406	356	250	385	635	150	1,230	650	4	654	1,205	252	45	1,502		Apr 28
Apr 29	2,805	1,360	45	26.87	4,210	382	390	250	274	524	100	1,230	1,230	0	1,221	1,205	254	45	1,504		Apr 29
Apr 30	2,679	1,366	45	29.58	4,090	366	169	250	248	498	100	1,230	1,230	140	1,370	1,205	251	45	1,501		Apr 30
May 01	3,335	789	45	31.15	4,160	360	269	250	221	471	100	1,230	1,230	145	1,375	1,205	254	45	1,504		May 01
May 02	3,370	765	45	32.67	4,180	346	319	250	225	475	100	1,230	1,230	139	1,369	1,205	253	45	1,503		May 02
May 03	3,438	747	45	34.15	4,230	287	393	250	202	452	100	1,230	1,230	143	1,373	1,205	251	45	1,501		May 03
May 04	3,352	713	45	35.56	4,110	281	321	250	199	449	100	1,230	1,230	134	1,364	1,205	255	45	1,505		May 04
May 05	3,296	719	45	36.99	4,060	282	324	250	192	442	100	1,230	1,230	106	1,336	1,205	249	45	1,499		May 05
May 06	3,374	691	45	38.36	4,110	296	408	250	209	459	100	1,230	1,230	140	1,370	1,205	250	45	1,500		May 06
May 07	3,467	654	45	39.66	4,166	358	500	250	535	785	130	1,230	1,230	130	1,360	1,205	250	45	1,500		May 07
May 08	3,481	682	45	41.01	4,208	354	500	250	640	890	150	800	850	135	985	1,205	250	45	1,500		May 08
May 09	3,543	689	45	42.37	4,277	350	500	250	1,000	1,250	150	475	535	400	935	1,205	250	45	1,500	M	May 09
May 10	3,159	1,050	45	44.46	4,254	346	500	250	1,000	1,250	150	475	535	300	835	1,205	250	45	1,500	M	May 10
May 11	2,840	1,440	45	47.31	4,325	342	500	250	1,000	1,250	150	475	535	300	835	1,205	250	45	1,500	M	May 11
May 12	2,836	1,700	45	50.69	4,581	338	500	250	1,000	1,250	150	475	535	300	835	1,205	250	45	1,500	M	May 12
May 13	2,832	1,700	45	54.06	4,577	333	500	250	1,000	1,250	150	475	535	300	835	1,205	250	45	1,500	M	May 13
May 14	2,828	1,700	45	57.43	4,573	329	500	250	1,000	1,250	150	475	535	300	835	1,205	250	45	1,500	M	May 14
May 15	2,823	1,700	45	60.80	4,568	325	500	250	1,000	1,250	150	475	535	300	835	1,205	250	45	1,500	M	May 15
May 16	2,819	1,700	45	64.17	4,564	321	500	250	1,000	1,250	100	475	535	300	835	1,205	250	45	1,500	M	May 16
May 17	2,815	1,700	45	67.55	4,560	317	500	250	750	1,000	50	475	535	300	835	1,205	250	45	1,500		May 17
May 18	2,811	1,700	45	70.92	4,556	313	500	250	250	500		475	535	265	800	1,205	250	45	1,500		May 18
May 19	2,807	1,650	45	74.19	4,502	309	500	250		250		300	300		300	600			600		May 19
May 20	2,803	1,315	45	76.80	4,163	305	500	250		250			150		150	600			600		May 20
May 21	1,959	250			2,209	301	500	250		250			150		150	600			600		May 21
May 22	1,805	0			1,805	297	500	250		250			150		150	600			600		May 22
May 23	1,801	0			1,801	293	500	250		250			150		150	600			600		May 23
May 24	1,797	0			1,797	289	500	250		250			150		150	600			600		May 24
May 25	1,793	0			1,793	285	500	250		250			150		150	600			600		May 25
May 26	1,789	0			1,789	281	500	250		250			150		150	600			600		May 26
May 27	1,785	0			1,785	277	500	250		250			150		150	600			600		May 27
May 28	1,781	0			1,781	273	500	250		250			150		150	600			600		May 28
May 29	1,777	0			1,777	269	500	250		250			150		150	600			600		May 29
May 30	1,773	0			1,773	265	500	250		250			150		150	600			600		May 30
May 31	1,769	0			1,769	261	500	250		250			150		150	600			600		May 31
	VAMP period																				
Mean (cfs):	3,004	1,249			4,291	345	469		655	905	119		736	237	973	1,205	238	45	1,480		Mean (cfs):
Suppl. Water (TAF)																					Suppl. Water (TAF)
Provided		76.80							40.26		7.30			14.60			14.64	2.77			Provided
Target based on provided									40.30		7.30			14.60			14.60				Target based on provided
Target for perfect op		86.11							45.00		8.51			14.60			18.00				Target for perfect op

Pulse flow period

Period of desired flow stability

DAILY OPERATION PLAN, MAY 14

Pulse Period: April 20–May 20 • Flow Target: 4,450cfs

Ungaged Flow at Vernalis = 500cfs • 2.8 TAF "other" supplemetntal water on Stanislaus R.

	San Joaquin River near Vernalis							Merced River at Cressey			Exchange Contractors	Tuolumne River at LaGrange				Stanislaus R blw Goodwin (at Orange Blossom Bridge)					
	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	Cum. VAMP Suppl. Flow	VAMP Flow	SJR above Merced R. (2-day lag)	Ungaged Flow above Vernalis	Existing Flow	VAMP Suppl. Flow	VAMP Flow (3-day lag)	VAMP Suppl. Flow (3-day lag)	Desired FERC Pulse	Existing Flow – Adjusted FERC Pulse	VAMP Suppl. Flow	VAMP Flow (2-day lag)	Existing Flow	VAMP Suppl. Flow	Other Suppl. Flow	VAMP Flow (2-day lag)	Maintain Priority Flow Level M=Merced T=Tuol.	
	(cfs)	(cfs)	(cfs)	(TAF)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)		
	[calc]	[calc]		[calc]	[calc]					[calc]					[calc]				[calc]		
					2,070	515	663	220		220			347		347	407			407		Apr 01
					2,170	519	674	210		210			350		350	409			409		Apr 02
					2,160	527	687	180		180			345		345	411			411		Apr 03
2,040					2,040	534	542	193		193			339		339	439			439		Apr 04
1,980					1,980	515	487	218		218			328		328	558			558		Apr 05
2,080					2,080	493	588	240		240			317		317	556			556		Apr 06
2,330					2,330	461	736	266		266			325		325	551			551		Apr 07
2,610					2,610	454	1,026	246		246			323		323	561			561		Apr 08
2,660					2,660	490	1,083	240		240			318		318	347			347		Apr 09
2,580					2,580	541	976	232		232			327		327	548			548		Apr 10
2,480					2,480	546	1,079	241		241			326		326	551			551		Apr 11
2,430					2,430	547	774	245		245			328		328	551			551		Apr 12
2,430	0				2,430	545	775	253		253			329		329	550			550		Apr 13
2,420	0				2,420	499	753	255		255			319		319	555			555		Apr 14
2,420	0				2,420	469	751	263		263		250	256		256	548			548		Apr 15
2,490	0				2,490	453	864	261	0	261		250	255		255	552			552		Apr 16
2,280	0	0			2,280	422	752	250	74	324	0	250	255	0	255	553	0		553		Apr 17
2,130	0	0			2,130	357	607	250	122	372	0	475	475	667	1,142	1,205	0	0	967		Apr 18
2,200	0	0			2,200	282	709	250	535	785	50	475	475	966	1,441	1,205	311	90	1,606		Apr 19
2,937	741	0	1.47	3,440	202	650	250	889	1,139	150	475	475	547	1,022	1,205	260	45	1,510	T	Apr 20
2,911	1,399	90	4.24	4,400	236	699	250	959	1,209	150	475	475	150	625	1,205	254	45	1,504	T	Apr 21
3,093	1,392	45	7.01	4,530	376	962	250	949	1,199	150	475	475	148	623	1,205	251	45	1,501	T	Apr 22
2,952	1,443	45	9.87	4,440	519	787	250	920	1,170	150	475	475	148	623	1,205	212	45	1,462	T	Apr 23
2,877	1,508	45	12.86	4,430	509	572	250	928	1,178	150	475	475	147	622	1,205	149	45	1,399	T	Apr 24
2,806	1,459	45	15.75	4,310	450	358	250	932	1,182	150	475	475	149	624	1,205	176	45	1,426	T	Apr 25
2,691	1,366	45	18.46	4,102	392	253	250	949	1,199	150	475	475	147	622	1,205	249	45	1,499	T	Apr 26
2,682	1,403	45	21.24	4,130	351	303	250	960	1,210	150	700	610	9	619	1,205	252	45	1,502	T	Apr 27
2,677	1,478	45	24.18	4,200	406	356	250	385	635	150	1,230	650	4	654	1,205	252	45	1,502		Apr 28
2,805	1,360	45	26.87	4,210	382	390	250	274	524	100	1,230	1,230	0	1,221	1,205	254	45	1,504		Apr 29
2,679	1,366	45	29.58	4,090	366	169	250	248	498	100	1,230	1,230	140	1,370	1,205	251	45	1,501		Apr 30
3,335	789	45	31.15	4,160	360	269	250	221	471	100	1,230	1,230	145	1,375	1,205	254	45	1,504		May 01
3,370	765	45	32.67	4,180	346	319	250	225	475	100	1,230	1,230	139	1,369	1,205	253	45	1,503		May 02
3,438	747	45	34.15	4,230	287	393	250	202	452	100	1,230	1,230	143	1,373	1,205	251	45	1,501		May 03
3,352	713	45	35.56	4,110	281	321	250	199	449	100	1,230	1,230	134	1,364	1,205	255	45	1,505		May 04
3,296	719	45	36.99	4,060	282	324	250	192	442	100	1,230	1,230	106	1,336	1,205	249	45	1,499		May 05
3,374	691	45	38.36	4,110	296	408	250	209	459	100	1,230	1,230	140	1,370	1,205	250	45	1,500		May 06
3,411	654	45	39.66	4,110	261	444	250	556	806	130	1,230	1,230	134	1,364	1,205	252	45	1,502		May 07
3,423	682	45	41.01	4,150	196	442	250	671	921	150	800	850	137	987	1,205	253	45	1,503		May 08
3,390	695	45	42.39	4,130	134	444	250	994	1,244	150	475	535	377	912	1,205	254	45	1,504	M	May 09
2,899	1,076	45	44.52	4,020	152	398	250	1,040	1,290	150	475	535	302	837	1,205	254	45	1,504	M	May 10
2,664	1,452	45	47.40	4,160	182	540	250	1,069	1,319	150	475	535	316	851	1,205	255	45	1,505	M	May 11
2,446	1,700	45	50.77	4,190	194	304	250	1,075	1,325	150	475	535	306	841	1,205	256	45	1,506	M	May 12
2,511	1,761	45	54.27	4,320	195	340	250	1,091	1,341	150	475	535	304	839	1,205	253	45	1,503	M	May 13
2,684	1,781	45	57.80	4,510	329	500	250	1,000	1,250	150	475	535	300	835	1,205	250	45	1,500	M	May 14
2,685	1,782	45	61.33	4,512	325	500	250	1,000	1,250	150	475	535	300	835	1,205	250	45	1,500	M	May 15
2,819	1,791	45	64.89	4,655	321	500	250	1,000	1,250	100	475	535	300	835	1,205	250	45	1,500	M	May 16
2,815	1,700	45	68.26	4,560	317	500	250	750	1,000	50	475	535	300	835	1,205	250	45	1,500		May 17
2,811	1,700	45	71.63	4,556	313	500	250	250	500		475	535	265	800	1,205	250	45	1,500		May 18
2,807	1,650	45	74.90	4,502	309	500	250		250		300	300		300	600			600		May 19
2,803	1,315	45	77.51	4,163	305	500	250		250			150		150	600			600		May 20
1,959	250			2,209	301	500	250		250			150		150	600			600		May 21
1,805	0			1,805	297	500	250		250			150		150	600			600		May 22
1,801	0			1,801	293	500	250		250			150		150	600			600		May 23
1,797	0			1,797	289	500	250		250			150		150	600			600		May 24
1,793	0			1,793	285	500	250		250			150		150	600			600		May 25
1,789	0			1,789	281	500	250		250			150		150	600			600		May 26
1,785	0			1,785	277	500	250		250			150		150	600			600		May 27
1,781	0			1,781	273	500	250		250			150		150	600			600		May 28
1,777	0			1,777	269	500	250		250			150		150	600			600		May 29
1,773	0			1,773	265	500	250		250			150		150	600			600		May 30
1,769	0			1,769	261	500	250		250			150		150	600			600		May 31
	VAMP period																				
2,950	1,261			4,247	309	450		665	915	119			736	238	973	1,205	239	45	1,481		Mean (cfs):
																					Suppl. Water (TAF)
	77.51							40.90		7.30			14.62			14.70	2.77				Provided
								41.01		7.30			14.60			14.60					Target based on provided
	89.48							45.00		9.00			17.48			18.00					Target for perfect op

Pulse flow period

Period of desired flow stability

2001 VERNALIS ADAPTIVE MANAGEMENT PLAN (VAMP)

ACCOUNTING OF SUPPLEMEMTAL WATER CONTRIBTIONS

Hydrology Subgroup of the San Joaquin River Technical Committee

Pulse Flow Period: April 20–May 20

	Merced R. at Cresy (3 day Travel Time to Vernalis)			Tuolumne R. blw LaGrange Dam (2 day Travel Time to Vernalis)			Stanislaus R. blw Goodwin Dam (2 day Travel Time to Vernalis)				SJRECWA (3day)	San Joaquin River at Vernalis		
	Existing Flow	Observed Flow	VAMP Suppl. Water	Exisitng Flow	Observed Flow	VAMP Suppl. Water	Existing Flow	Observed Flow	Other Suppl. Water	VAMP Suppl. Water	VAMP Suppl. Water	Existing Flow	Observed Flow	VAMP Suppl. Water
	(cfs)		(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
Apr 01	220	225		347	343		407	407				2,070	2,070	
Apr 02	210	210		350	344		409	409				2,170	2,170	
Apr 03	180	177		345	336		411	411				2,160	2,160	
Apr 04	193	195		339	331		439	439				2,039	2,039	
Apr 05	218	224		328	319		558	558				1,980	1,980	
Apr 06	240	246		317	309		556	556				2,080	2,080	
Apr 07	266	267		325	316		551	551				2,330	2,330	
Apr 08	246	252		323	314		561	561				2,610	2,610	
Apr 09	240	247		318	307		347	347				2,650	2,650	
Apr 10	232	245		327	314		548	548				2,580	2,580	
Apr 11	241	255		326	315		551	551				2,480	2,480	
Apr 12	245	260		328	316		551	551				2,430	2,430	
Apr 13	253	270		329	316		550	550				2,430	2,430	
Apr 14	255	274		319	305		555	555				2,420	2,420	
Apr 15	263	285		256	245		548	548				2,418	2,420	
Apr 16	261	284		255	243		552	552				2,487	2,490	
Apr 17	250	404	154	255	243		553	553			0	2,272	2,280	
Apr 18	250	458	208	475	1,100	625	1,205	967	0	0	0	2,120	2,130	
Apr 19	250	876	626	475	1,400	925	1,205	1,606	90	311	67	2,189	2,200	
Apr 20	250	1,240	990	475	1,000	525	1,205	1,510	45	260	152	2,908	3,449	779
Apr 21	250	1,310	1,060	475	601	126	1,205	1,504	45	254	207	2,876	4,410	1,444
Apr 22	250	1,310	1,060	475	598	123	1,205	1,501	45	251	160	3,007	4,530	1,478
Apr 23	250	1,290	1,040	475	598	123	1,205	1,462	45	212	199	2,873	4,440	1,522
Apr 24	250	1,280	1,030	475	595	120	1,205	1,399	45	149	183	2,734	4,420	1,641
Apr 25	250	1,280	1,030	475	594	119	1,205	1,426	45	176	163	2,710	4,310	1,555
Apr 26	250	1,260	1,010	475	593	118	1,205	1,499	45	249	170	2,547	4,100	1,508
Apr 27	250	1,220	970	610	601	0	1,205	1,502	45	252	174	2,577	4,130	1,508
Apr 28	250	656	406	650	654	4	1,205	1,502	45	252	205	2,595	4,200	1,560
Apr 29	250	544	294	1,230	1,210	0	1,205	1,504	45	254	177	2,742	4,210	1,432
Apr 30	250	515	265	1,230	1,360	130	1,205	1,501	45	251	149	2,644	4,089	1,400
May 01	250	486	236	1,230	1,380	150	1,205	1,504	45	254	71	3,270	4,160	865
May 02	250	485	235	1,230	1,370	140	1,205	1,503	45	253	66	3,283	4,180	852
May 03	250	458	208	1,230	1,370	140	1,205	1,501	45	251	94	3,367	4,230	818
May 04	250	449	199	1,230	1,370	140	1,205	1,505	45	255	168	3,365	4,110	700
May 05	250	436	186	1,230	1,340	110	1,205	1,499	45	249	107	3,313	4,050	692
May 06	250	450	200	1,230	1,370	140	1,205	1,500	45	250	85	3,368	4,110	697
May 07	250	788	538	1,230	1,370	140	1,205	1,502	45	252	78	3,339	4,110	726
May 08	250	899	649	850	994	144	1,205	1,503	45	253	97	3,432	4,160	683
May 09	250	1,190	940	535	916	381	1,205	1,504	45	254	80	3,408	4,130	677
May 10	250	1,230	980	535	838	303	1,205	1,504	45	254	134	2,952	4,010	1,013
May 11	250	1,250	1,000	535	850	315	1,205	1,505	45	255	183	2,744	4,170	1,381
May 12	250	1,250	1,000	535	841	306	1,205	1,506	45	256	114	2,568	4,190	1,577
May 13	250	1,260	1,010	535	837	302	1,205	1,503	45	253	116	2,591	4,320	1,684
May 14	250	1,260	1,010	535	833	298	1,205	1,502	45	252	167	2,730	4,520	1,745
May 15	250	1,240	990	535	839	304	1,205	1,504	45	254	118	2,746	4,460	1,669
May 16	250	1,240	990	535	843	308	1,205	1,506	45	256	138	2,834	4,510	1,676
May 17	250	971	721	535	845	310	1,205	1,502	45	252	79	2,765	4,500	1,735
May 18	250	569		535	755	220	1,205	1,502	45	252		2,888	4,560	1,672
May 19	250	449		300	333		600	1,271				2,620	4,310	1,690
May 20	250	405		150	167		600	1,017				2,598	3,870	1,272
May 21	250	372		150	173		600	772				2,330	3,320	
May 22	250	356		150	170		600	603				2,124	2,740	
May 23	250	360		150	176		600	603				2,360	2,360	
May 24	250	341		150	177		600	603				2,140	2,140	
May 25	250	322		150	175		600	604				2,050	2,050	
May 26	250	294		150	160		600	604				2,010	2,010	
May 27	250	293		150	175		600	604				2,010	2,010	
May 28	250	283		150	165		600	605				2,070	2,070	
May 29	250	284		150	160		600	604				2,100	2,100	
May 30	250	286		150	171		600	604				1,980	1,980	
May 31	250	293		150	162		600	604				1,910	1,910	
Total Supplemental Water (TAF):			**42.12**			**14.06**			**2.77**	**14.73**	**7.74**			**78.65**
Pulse Period Average:												2,916	4,224	

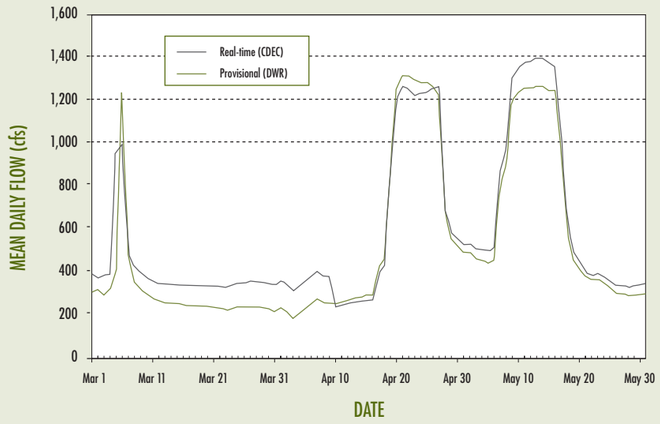
Observed Flow Sources:

Merced River at Cressey (CA DWR B05155): DWR San Joaquin District, provisional data received June 12, 2001. • Tuolumne River below LaGrange Dam near LaGrange (USGS 11289650): USGS, provisional data dated July 25, 2001.

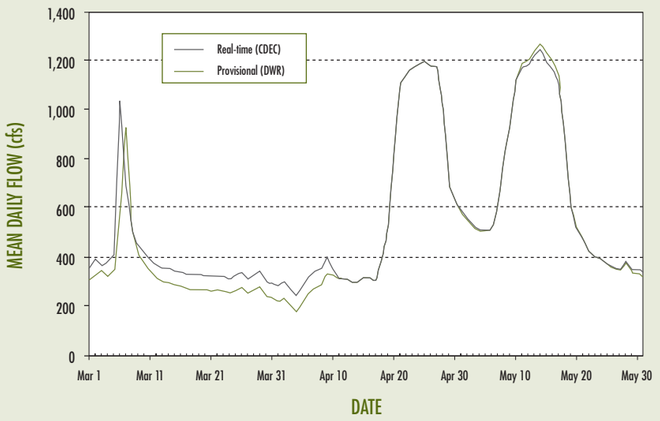
Stanislaus River below Goodwin Dam: Goodwin Reservoir Daily Operations report, OID/SSJID/Tri-Dams (published by USBR CVO) • San Joaquin River near Vernalis (USGS 11303500): USGS, provisional data dated July 25, 2001.

COMPARISON OF "REAL-TIME" AND PROVISIONAL FLOWS

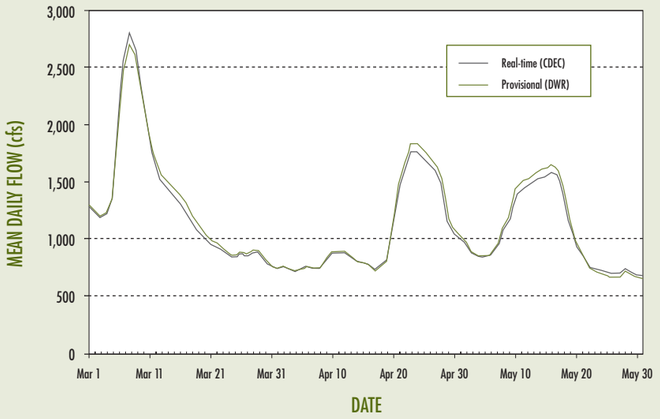
Merced River Near Cressey



Merced River Near Stevinson

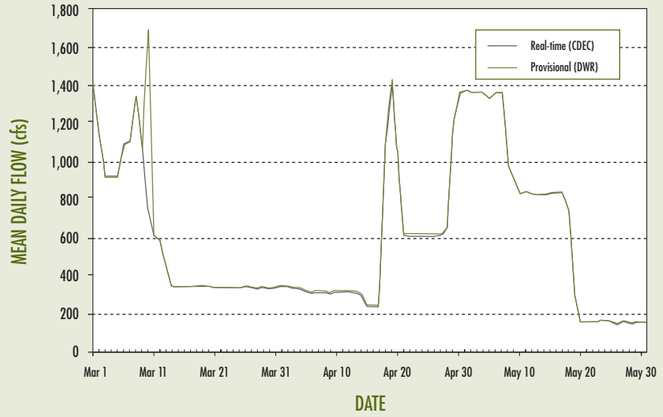


San Joaquin River Near Newman

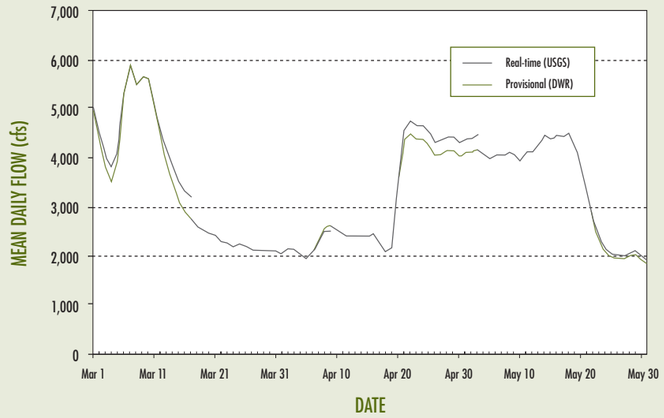


COMPARISON OF "REAL-TIME" AND PROVISIONAL FLOWS

Tuolumne River Below LaGrange Dam



San Joaquin River Near Vernalis



APPENDIX B

Fall Water Transfer and Delivery Information

MERCED IRRIGATION DISTRICT (PRELIMINARY)

2001 Fall SJRA and EWA Water Transfers • Initial Daily Flow Schedule

October 11, 2001

	SJRA Transfer Water			EWA Transfer Water						
	Shaffer Br/Cressey Base Flow for SJRA Transfer Water	SJRA Transfer Water Schedule	Cumulative SJRA Transfer Water Volume	Shaffer Br/Cressey Base Flow for EWA Transfer Water [1] + [2]	EWA Transfer Water Schdule – RIVER	Shaffer Br/Cressey Target Flow [4] + [5]	EWA Transfer Water Schedule – BYPASS	EWA Transfer Water [5] + [7]	EWA Transfer Balance	
	(cfs)	(cfs)	(acre-foot)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(acre-foot)	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	
Oct 01	30	0	0	30	0	30	0	0	0	
Oct 02	30	0	0	30	0	30	0	0	0	
Oct 03	30	0	0	30	0	30	0	0	0	
Oct 04	30	0	0	30	0	30	0	0	0	
Oct 05	30	0	0	30	0	30	0	0	0	
Oct 06	30	0	0	30	0	30	0	0	0	
Oct 07	30	0	0	30	0	30	0	0	0	
Oct 08	30	0	0	30	0	30	0	0	0	
Oct 09	30	0	0	30	0	30	0	0	0	
Oct 10	30	0	0	30	0	30	0	0	0	
Oct 11	30	0	0	30	0	30	0	0	0	
Oct 12	30	0	0	30	0	30	0	0	0	
Oct 13	30	0	0	30	0	30	0	0	0	
Oct 14	30	0	0	30	0	30	0	0	0	
Oct 15	30	0	0	30	0	30	0	0	0	
Oct 16	85	0	0	85	215	300	0	215	426	
Oct 17	85	0	0	85	615	700	0	615	1,646	
Oct 18	85	0	0	85	615	700	0	615	2,866	
Oct 19	85	0	0	85	615	700	0	615	4,086	
Oct 20	85	0	0	85	615	700	0	615	5,306	
Oct 21	85	0	0	85	615	700	0	615	6,526	
Oct 22	85	0	0	85	615	700	0	615	7,745	
Oct 23	85	0	0	85	615	700	0	615	8,965	
Oct 24	85	0	0	85	615	700	0	615	10,185	
Oct 25	85	0	0	85	615	700	0	615	11,405	
Oct 26	85	0	0	85	615	700	0	615	12,625	
Oct 27	85	0	0	85	615	700	0	615	13,845	
Oct 28	85	0	0	85	615	700	0	615	15,064	
Oct 29	85	0	0	85	615	700	0	615	16,284	
Oct 30	85	0	0	85	615	700	0	615	17,504	
Oct 31	85	0	0	85	615	700	0	615	18,724	
Nov 01	220	0	0	220	265	485	100	365	19,448	
Nov 02	220	0	0	220	180	400	100	280	20,003	
Nov 03	220	0	0	220	180	400	100	280	20,559	
Nov 04	220	0	0	220	180	400	100	280	21,114	
Nov 05	220	0	0	220	180	400	100	280	21,669	
Nov 06	220	0	0	220	180	400	100	280	22,225	
Nov 07	220	0	0	220	180	400	100	280	22,780	
Nov 08	220	0	0	220	180	400	100	280	23,336	
Nov 09	220	0	0	220	180	400	100	280	23,891	
Nov 10	220	0	0	220	180	400	100	280	24,446	
Nov 11	220	0	0	220	180	400	100	280	25,002	
Nov 12	220	140	278	360	0	360	0	0	25,002	
Nov 13	220	140	555	360	0	360	0	0	25,002	
Nov 14	220	140	833	360	0	360	0	0	25,002	
Nov 15	220	140	1,111	360	0	360	0	0	25,002	

MERCED IRRIGATION DISTRICT (PRELIMINARY)

2001 Fall SJRA and EWA Water Transfers • Initial Daily Flow Schedule

October 11, 2001

	SJRA Transfer Water			EWA Transfer Water						
	Shaffer Br/Cressey Base Flow for SJRA Transfer Water	SJRA Transfer Water Schedule	Cumulative SJRA Transfer Water Volume	Shaffer Br/Cressey Base Flow for EWA Transfer Water [1] + [2]	EWA Transfer Water Schdule – RIVER	Shaffer Br/Cressey Target Flow [4] + [5]	EWA Transfer Water Schedule – BYPASS	EWA Transfer Water [5] + [7]	EWA Transfer Balance	
	(cfs)	(cfs)	(acre-foot)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(acre-foot)	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	
	220	140	1,388	360	0	360	0	0	25,002	Nov 16
	220	140	1,666	360	0	360	0	0	25,002	Nov 17
	220	140	1,944	360	0	360	0	0	25,002	Nov 18
	220	140	2,221	360	0	360	0	0	25,002	Nov 19
	220	140	2,499	360	0	360	0	0	25,002	Nov 20
	220	140	2,777	360	0	360	0	0	25,002	Nov 21
	220	140	3,055	360	0	360	0	0	25,002	Nov 22
	220	140	3,332	360	0	360	0	0	25,002	Nov 23
	220	140	3,610	360	0	360	0	0	25,002	Nov 24
	220	140	3,888	360	0	360	0	0	25,002	Nov 25
	220	140	4,165	360	0	360	0	0	25,002	Nov 26
	220	120	4,403	340	0	340	0	0	25,002	Nov 27
	220	120	4,641	340	0	340	0	0	25,002	Nov 28
	220	120	4,879	340	0	340	0	0	25,002	Nov 29
	220	120	5,117	340	0	340	0	0	25,002	Nov 30
	220	120	5,355	340	0	340		0	25,002	Dec 01
	220	120	5,593	340	0	340		0	25,002	Dec 02
	220	120	5,831	340	0	340		0	25,002	Dec 03
	220	120	6,069	340	0	340		0	25,002	Dec 04
	220	120	6,307	340	0	340		0	25,002	Dec 05
	220	120	6,545	340	0	340		0	25,002	Dec 06
	220	120	6,783	340	0	340		0	25,002	Dec 07
	220	120	7,021	340	0	340		0	25,002	Dec 08
	220	120	7,260	340	0	340		0	25,002	Dec 09
	220	120	7,498	340	0	340		0	25,002	Dec 10
	220	120	7,736	340	0	340		0	25,002	Dec 11
	220	120	7,974	340	0	340		0	25,002	Dec 12
	220	120	8,212	340	0	340		0	25,002	Dec 13
	220	120	8,450	340	0	340		0	25,002	Dec 14
	220	120	8,688	340	0	340		0	25,002	Dec 15
	220	120	8,926	340	0	340		0	25,002	Dec 16
	220	120	9,164	340	0	340		0	25,002	Dec 17
	220	120	9,402	340	0	340		0	25,002	Dec 18
	220	120	9,640	340	0	340		0	25,002	Dec 19
	220	120	9,878	340	0	340		0	25,002	Dec 20
	220	120	10,116	340	0	340		0	25,002	Dec 21
	220	120	10,354	340	0	340		0	25,002	Dec 22
	220	120	10,592	340	0	340		0	25,002	Dec 23
	220	120	10,830	340	0	340		0	25,002	Dec 24
	220	120	11,068	340	0	340		0	25,002	Dec 25
	220	120	11,306	340	0	340		0	25,002	Dec 26
	220	120	11,544	340	0	340		0	25,002	Dec 27
	220	120	11,782	340	0	340		0	25,002	Dec 28
	220	120	12,020	340	0	340		0	25,002	Dec 29
	220	120	12,258	340	0	340		0	25,002	Dec 30
	220	120	12,496	340	0	340		0	25,002	Dec 31

	Oct	Nov	Dec	Total
SJRA Transfer Water (AF):	0	5,117	7,379	12,496
EWA Transfer Water (AF):	18,724	6,278	0	25,002

MERCED IRRIGATION DISTRICT (PRELIMINARY)

2001 Fall SJRA and EWA Water Transfers

Using data available as of Dec. 19, 2001 • Subject to change

	SJRA Transfer Water				EWA Transfer Water							
	Merced River at Cressey Flow (cfs)	Base Flow	SJRA Transfer Water Flow (cfs)		SJRA Transfer Water Cumulative Volume (ac-ft)	Base Flow	EWA Transfer Water Flow-RIVER (CFS)		EWA Transfer Water BYPASS - Livingston Spill (cfs)		Total EWA Transfer Water Flow (cfs)	Daily EWA Transfer Water Volume (ac-ft)	Cumulative EWA Transfer Water Volume (ac-ft)
	DWR Provisional		Scheduled	Observed			Scheduled	Observed	Scheduled	Observed			
Oct 01	111	30	0				0		0				
Oct 02	112	30	0				0		0				
Oct 03	105	30	0				0		0				
Oct 04	105	30	0				0		0				
Oct 05	102	30	0				0		0				
Oct 06	86	30	0				0		0				
Oct 07	111	30	0				0		0				
Oct 08	111	30	0				0		0				
Oct 09	115	30	0				0		0				
Oct 10	114	30	0				0		0				
Oct 11	113	30	0				0		0				
Oct 12	114	30	0				0		0				
Oct 13	116	30	0				0		0				
Oct 14	116	30	0				0		0				
Oct 15	119	30	0				0		0				
Oct 16	173	85	0	0	0	85	215	88	0		88	175	175
Oct 17	422	85	0	0	0	85	615	337	0		337	668	843
Oct 18	598	85	0	0	0	85	615	513	0		513	1,018	1,861
Oct 19	684	85	0	0	0	85	615	599	0		599	1,188	3,049
Oct 20	699	85	0	0	0	85	615	614	0		614	1,218	4,267
Oct 21	732	85	0	0	0	85	615	615	0		615	1,220	5,487
Oct 22	747	85	0	0	0	85	615	615	0		615	1,220	6,707
Oct 23	738	85	0	0	0	85	615	615	0		615	1,220	7,927
Oct 24	744	85	0	0	0	85	615	615	0		615	1,220	9,147
Oct 25	738	85	0	0	0	85	615	615	0		615	1,220	10,367
Oct 26	726	85	0	0	0	85	615	615	0		615	1,220	11,587
Oct 27	716	85	0	0	0	85	615	615	0		615	1,220	12,807
Oct 28	724	85	0	0	0	85	615	615	0		615	1,220	14,027
Oct 29	737	85	0	0	0	85	615	615	0		615	1,220	15,247
Oct 30	733	85	0	0	0	85	615	615	0		615	1,220	16,467
Oct 31	735	85	0	0	0	85	615	615	0		615	1,220	17,687
Nov 01	220	0				265		100	86				
Nov 02	220	0				180		100	111				
Nov 03	220	0				180		100	106				
Nov 04	220	0				180		100	91				
Nov 05	220	0				180		100	90				
Nov 06	220	0				180		100	96				
Nov 07	220	0				180		100	95				
Nov 08	220	0				180		100	101				
Nov 09	220	0				180		100	105				
Nov 10	220	0				180		100	107				
Nov 11	220	0				180		100	106				
Nov 12	220	140				0		0					
Nov 13	220	140				0		0					
Nov 14	220	140				0		0					
Nov 15	220	140				0		0					

MERCED IRRIGATION DISTRICT (PRELIMINARY)

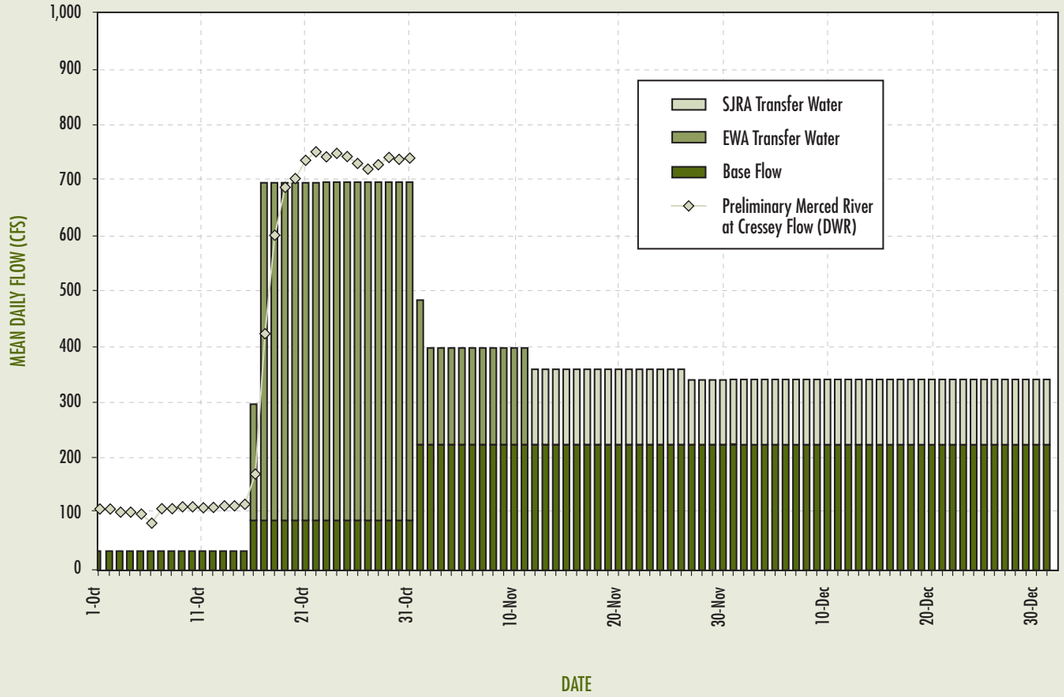
2001 Fall SJRA and EWA Water Transfers

Using data available as of Dec. 19, 2001 • Subject to change

	SJRA Transfer Water				EWA Transfer Water							
	Merced River at Cressey Flow (cfs)	Base Flow	SJRA Transfer Water Flow (cfs)		SJRA Transfer Water Cumulative Volume (ac-ft)	Base Flow	EWA Transfer Water Flow-RIVER (CFS)		EWA Transfer Water BYPASS - Livingston Spill (cfs)		Total EWA Transfer Water Flow (cfs)	Daily EWA Transfer Water Volume (ac-ft)	Cumulative EWA Transfer Water Volume (ac-ft)	
	DWR Provisional		Scheduled	Observed			Scheduled	Observed	Scheduled	Observed				
	220	140				0		0						Nov 16
	220	140				0		0						Nov 17
	220	140				0		0						Nov 18
	220	140				0		0						Nov 19
	220	140				0		0						Nov 20
	220	140				0		0						Nov 21
	220	140				0		0						Nov 22
	220	140				0		0						Nov 23
	220	140				0		0						Nov 24
	220	140				0		0						Nov 25
	220	140				0		0						Nov 26
	220	120				0		0						Nov 27
	220	120				0		0						Nov 28
	220	120				0		0						Nov 29
	220	120				0		0						Nov 30
	220	120				0		0						Dec 01
	220	120				0		0						Dec 02
	220	120				0		0						Dec 03
	220	120				0		0						Dec 04
	220	120				0		0						Dec 05
	220	120				0		0						Dec 06
	220	120				0		0						Dec 07
	220	120				0		0						Dec 08
	220	120				0		0						Dec 09
	220	120				0		0						Dec 10
	220	120				0		0						Dec 11
	220	120				0		0						Dec 12
	220	120				0		0						Dec 13
	220	120				0		0						Dec 14
	220	120				0		0						Dec 15
	220	120				0		0						Dec 16
	220	120				0		0						Dec 17
	220	120				0		0						Dec 18
	220	120				0		0						Dec 19
	220	120				0		0						Dec 20
	220	120				0		0						Dec 21
	220	120				0		0						Dec 22
	220	120				0		0						Dec 23
	220	120				0		0						Dec 24
	220	120				0		0						Dec 25
	220	120				0		0						Dec 26
	220	120				0		0						Dec 27
	220	120				0		0						Dec 28
	220	120				0		0						Dec 29
	220	120				0		0						Dec 30
	220	120				0		0						Dec 31

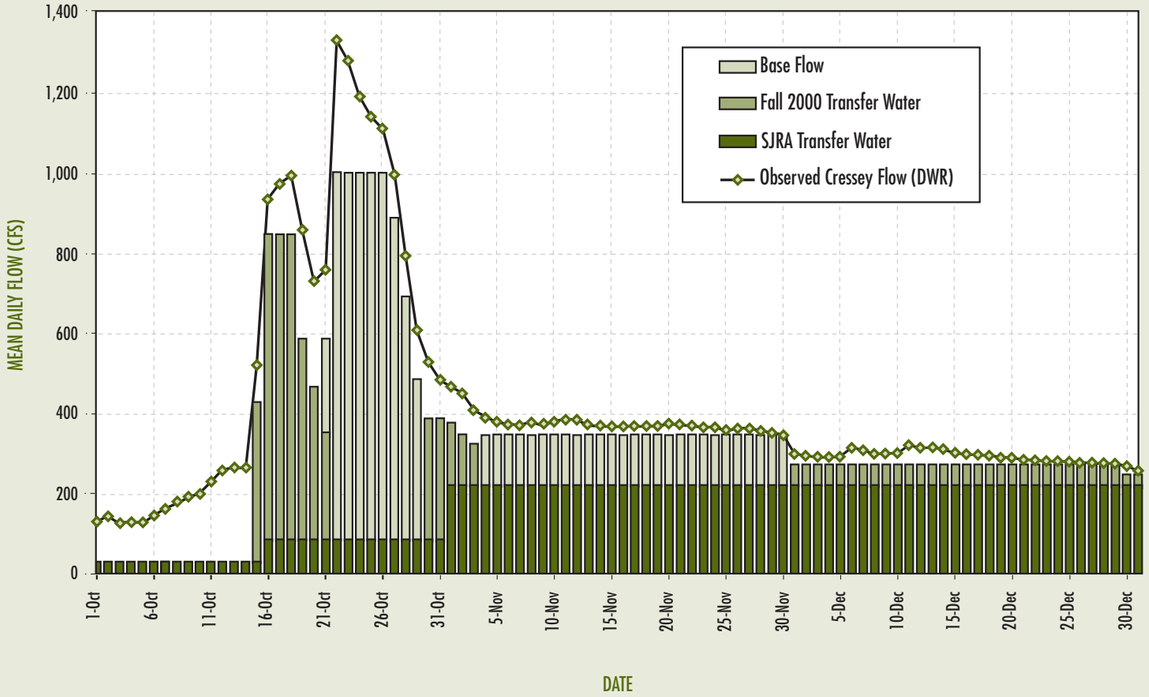
MERCED IRRIGATION DISTRICT FALL 2001 WATER TRANSFERS (PRELIMINARY)

Merced River Flow at Shaffer Bridge/Cressey



MERCED IRRIGATION DISTRICT FALL 2000 WATER TRANSFERS (FINAL)

Merced River Flow at Shaffer Bridge/Cressey



MERCED IRRIGATION DISTRICT (FINAL)

2000 Fall Water Transfers

	SJRA Transfer Water				Fall 2000 Transfer Water							
	Merced River at Cressey Flow (cfs)	Base Flow	SJRA Transfer Water Flow (cfs)		SJRA Transfer Water Cumulative Volume (ac-ft)	Base Flow	Fall 2000 Transfer Water Flow RIVER (cfs)		Fall 2000 Transfer Water-BYPASS - Livingston Spill (cfs)		Total Fall 2000 Transfer Water Flow (cfs)	Daily Fall 2000 Transfer Water Volume (ac-ft)	Cumulative Fall 2000 Transfer Water Volume (ac-ft)
	DWR		Scheduled	Observed			Scheduled	Observed	Scheduled	Observed			
Oct 01	130	30	0				0		0				
Oct 02	144	30	0				0		0				
Oct 03	129	30	0				0		0				
Oct 04	130	30	0				0		0				
Oct 05	129	30	0				0		0				
Oct 06	147	30	0				0		0				
Oct 07	164	30	0				0		0				
Oct 08	182	30	0				0		0				
Oct 09	195	30	0				0		0				
Oct 10	201	30	0				0		0				
Oct 11	232	30	0				0		0				
Oct 12	256	30	0				0		0				
Oct 13	266	30	0				0		0				
Oct 14	266	30	0				0		0				
Oct 15	518	30	397	397	787	427	0	0	0		0	0	0
Oct 16	933	85	760	760	2,295	845	0	0	0		0	0	0
Oct 17	972	85	760	760	3,802	845	0	0	0		0	0	0
Oct 18	993	85	760	760	5,310	845	0	0	0		0	0	0
Oct 19	859	85	500	500	6,301	585	0	0	0		0	0	0
Oct 20	731	85	380	380	7,055	465	0	0	0		0	0	0
Oct 21	758	85	265	265	7,581	350	235	235	0		235	466	466
Oct 22	1,310	85	0	0	7,581	85	915	915	0		915	1,815	2,281
Oct 23	1,260	85	0	0	7,581	85	915	915	0		915	1,815	4,096
Oct 24	1,180	85	0	0	7,581	85	915	915	0		915	1,815	5,911
Oct 25	1,140	85	0	0	7,581	85	915	915	0		915	1,815	7,726
Oct 26	1,100	85	0	0	7,581	85	915	915	0		915	1,815	9,540
Oct 27	993	85	0	0	7,581	85	800	800	0		800	1,587	11,127
Oct 28	793	85	0	0	7,581	85	605	605	0		605	1,200	12,327
Oct 29	606	85	0	0	7,581	85	400	400	0		400	793	13,121
Oct 30	527	85	300	300	8,176	385	0	0	0		0	0	13,121
Oct 31	484	85	300	300	8,771	385	0	0	0		0	0	13,121
Nov 01	462	220	155	155	9,078	375	0	0	0	51	0	0	13,121
Nov 02	450	220	125	125	9,326	345	0	0	0	34	0	0	13,121
Nov 03	407	220	100	100	9,525	320	0	0	0	10	0	0	13,121
Nov 04	392	220	0	0	9,525	220	125	125	0	6	125	248	13,369
Nov 05	382	220	0	0	9,525	220	125	125	0	37	125	248	13,617
Nov 06	379	220	0	0	9,525	220	125	125	100	94	219	434	14,051
Nov 07	376	220	0	0	9,525	220	125	125	100	123	225	446	14,497
Nov 08	381	220	0	0	9,525	220	125	125	100	122	225	446	14,943
Nov 09	382	220	0	0	9,525	220	125	125	100	115	225	446	15,390
Nov 10	384	220	0	0	9,525	220	125	125	100	113	225	446	15,836
Nov 11	391	220	0	0	9,525	220	125	125	100	114	225	446	16,282
Nov 12	393	220	0	0	9,525	220	125	125	100	113	225	446	16,729
Nov 13	380	220	0	0	9,525	220	125	125	100	111	225	446	17,175
Nov 14	368	220	0	0	9,525	220	125	125	100	111	225	446	17,621
Nov 15	363	220	0	0	9,525	220	125	125	100	110	225	446	18,067

MERCED IRRIGATION DISTRICT (FINAL)

2000 Fall Water Transfers

	SJRA Transfer Water				Fall 2000 Transfer Water							
Merced River at Cressey Flow (cfs)	Base Flow	SJRA Transfer Water Flow (cfs)		SJRA Transfer Water Cumulative Volume (ac-ft)	Base Flow	Fall 2000 Transfer Water Flow RIVER (cfs)		Fall 2000 Transfer Water-BYPASS - Livingston Spill (cfs)		Total Fall 2000 Transfer Water Flow (cfs)	Daily Fall 2000 Transfer Water Volume (ac-ft)	Cumulative Fall 2000 Transfer Water Volume (ac-ft)	
DWR		Scheduled	Observed			Scheduled	Observed	Scheduled	Observed				
363	220	0	0	9,525	220	125	125	100	111	225	446	18,514	Nov 16
363	220	0	0	9,525	220	125	125	100	112	225	446	18,960	Nov 17
359	220	0	0	9,525	220	125	125	100	110	225	446	19,406	Nov 18
359	220	0	0	9,525	220	125	125	100	111	225	446	19,853	Nov 19
364	220	0	0	9,525	220	125	125	100	111	225	446	20,299	Nov 20
362	220	0	0	9,525	220	125	125	100	111	225	446	20,745	Nov 21
359	220	0	0	9,525	220	125	125	100	111	225	446	21,191	Nov 22
362	220	0	0	9,525	220	125	125	100	111	225	446	21,638	Nov 23
361	220	0	0	9,525	220	125	125	100	111	225	446	22,084	Nov 24
353	220	0	0	9,525	220	125	125	100	113	225	446	22,530	Nov 25
357	220	0	0	9,525	220	125	125	100	114	225	446	22,977	Nov 26
355	220	0	0	9,525	220	125	125	100	111	225	446	23,423	Nov 27
348	220	0	0	9,525	220	125	125	100	111	225	446	23,869	Nov 28
344	220	0	0	9,525	220	125	125	100	112	225	446	24,315	Nov 29
336	220	0	0	9,525	220	125	118	100	112	218	432	24,748	Nov 30
306	220	50	50	9,624	270	0	0	0		0	0	24,748	Dec 01
295	220	50	50	9,723	270	0	0	0		0	0	24,748	Dec 02
291	220	50	50	9,822	270	0	0	0		0	0	24,748	Dec 03
290	220	50	50	9,921	270	0	0	0		0	0	24,748	Dec 04
287	220	50	50	10,020	270	0	0	0		0	0	24,748	Dec 05
289	220	50	50	10,120	270	0	0	0		0	0	24,748	Dec 06
310	220	50	50	10,219	270	0	0	0		0	0	24,748	Dec 07
304	220	50	50	10,318	270	0	0	0		0	0	24,748	Dec 08
295	220	50	50	10,417	270	0	0	0		0	0	24,748	Dec 09
295	220	50	50	10,516	270	0	0	0		0	0	24,748	Dec 10
297	220	50	50	10,616	270	0	0	0		0	0	24,748	Dec 11
317	220	50	50	10,715	270	0	0	0		0	0	24,748	Dec 12
311	220	50	50	10,814	270	0	0	0		0	0	24,748	Dec 13
311	220	50	50	10,913	270	0	0	0		0	0	24,748	Dec 14
306	220	50	50	11,012	270	0	0	0		0	0	24,748	Dec 15
297	220	50	50	11,111	270	0	0	0		0	0	24,748	Dec 16
294	220	50	50	11,211	270	0	0	0		0	0	24,748	Dec 17
294	220	50	50	11,310	270	0	0	0		0	0	24,748	Dec 18
291	220	50	50	11,409	270	0	0	0		0	0	24,748	Dec 19
288	220	50	50	11,508	270	0	0	0		0	0	24,748	Dec 20
283	220	50	50	11,607	270	0	0	0		0	0	24,748	Dec 21
280	220	50	50	11,706	270	0	0	0		0	0	24,748	Dec 22
279	220	50	50	11,806	270	0	0	0		0	0	24,748	Dec 23
277	220	50	50	11,905	270	0	0	0		0	0	24,748	Dec 24
276	220	50	50	12,004	270	0	0	0		0	0	24,748	Dec 25
274	220	50	50	12,103	270	0	0	0		0	0	24,748	Dec 26
273	220	50	50	12,202	270	0	0	0		0	0	24,748	Dec 27
273	220	50	50	12,301	270	0	0	0		0	0	24,748	Dec 28
272	220	50	50	12,401	270	0	0	0		0	0	24,748	Dec 29
263	220	25	25	12,450	245	0	0	0		0	0	24,748	Dec 30
255	220	25	25	12,500	245	0	0	0		0	0	24,748	Dec 31

OAKDALE IRRIGATION DISTRICT (PRELIMINARY)

Daily Tabulation of Additional Water Release • Additional Water Available: 18,635 acre-feet

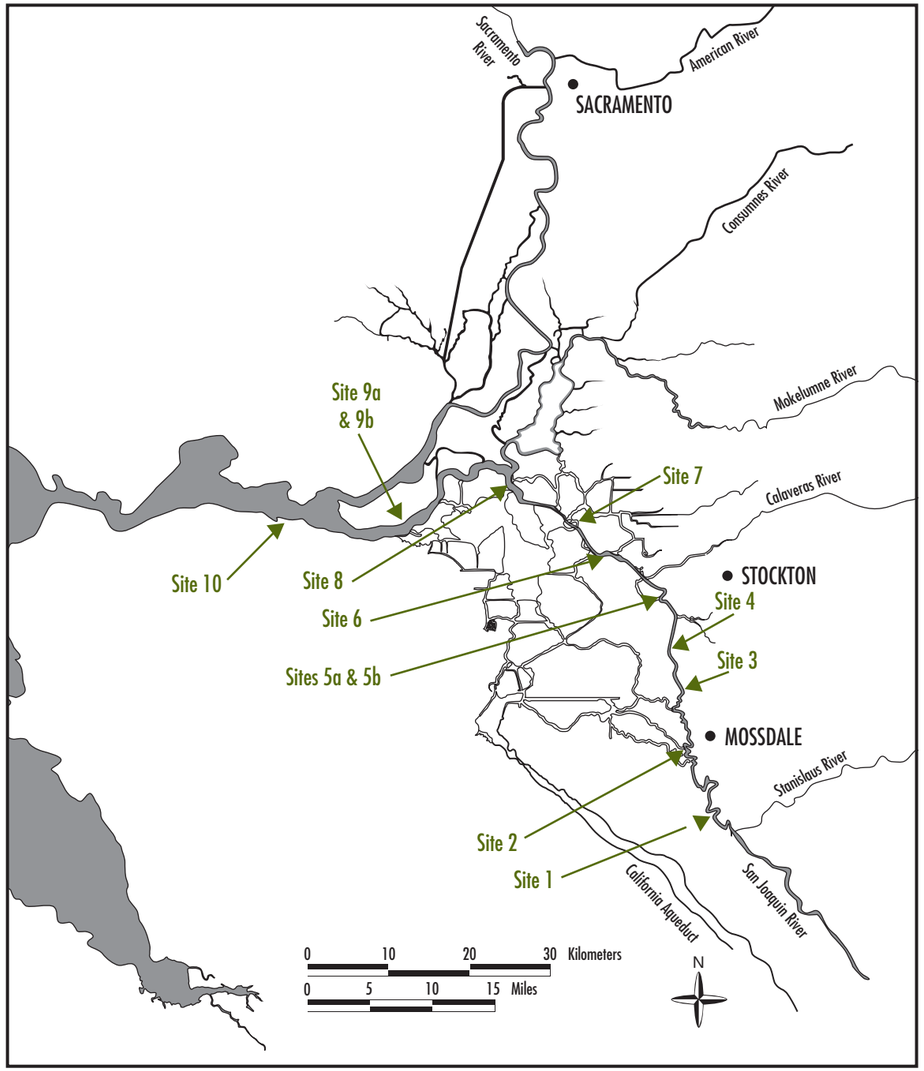
Using data available as of December 19, 2001 • Subject to change

	Pre CVPIA Base Condition Release (cfs)	Goodwin Dam Release (cfs)	B(2) Water (cfs)	Flow (cfs)	Cumulative Volume (ac-ft)
				Oakdale ID Additional Water	
	[1]	[2]		[2] - [1]	
Oct 19	355	235		0	0
Oct 20	355	942		587	1,164
Oct 21	355	1,009		654	2,461
Oct 22	355	1,009		654	3,759
Oct 23	355	1,011		656	5,060
Oct 24	355	1,011		656	6,361
Oct 25	355	1,008		653	7,656
Oct 26	355	1,002		647	8,939
Oct 27	355	1,003		648	10,225
Oct 28	355	913		558	11,332
Oct 29	200	363		163	11,655
Oct 30	200	349		149	11,950
Oct 31	200	351		151	12,250
Nov 01	200	347		147	12,541
Nov 02	200	349		149	12,837
Nov 03	200	352		152	13,139
Nov 04	200	354		154	13,444
Nov 05	200	364		164	13,769
Nov 06	200	363		163	14,093
Nov 07	200	354		154	14,398
Nov 08	200	354		154	14,703
Nov 09	200	357		157	15,015
Nov 10	200	357		157	15,326
Nov 11	200	355		155	15,634
Nov 12	200	355		155	15,941
Nov 13	200	353		153	16,245
Nov 14	200	357		157	16,556
Nov 15	200	356		156	16,865
Nov 16	200	354		154	17,171
Nov 17	200	354		154	17,476
Nov 18	200	353		153	17,780
Nov 19	200	353		153	18,083
Nov 20	200	355		155	18,391
Nov 21	200	354	31	123	18,635
Nov 22	200	353	153		

APPENDIX C

Chinook Salmon Survival Investigations

SACRAMENTO-SAN JOAQUIN ESTUARY

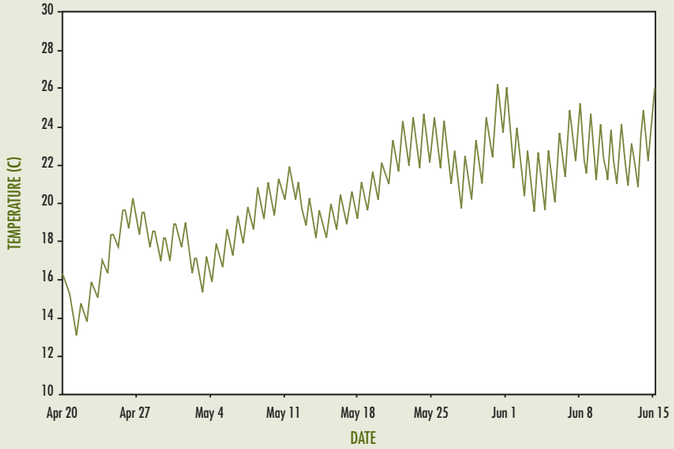


Water temperature monitoring locations during the VAMP 2001 experiment.

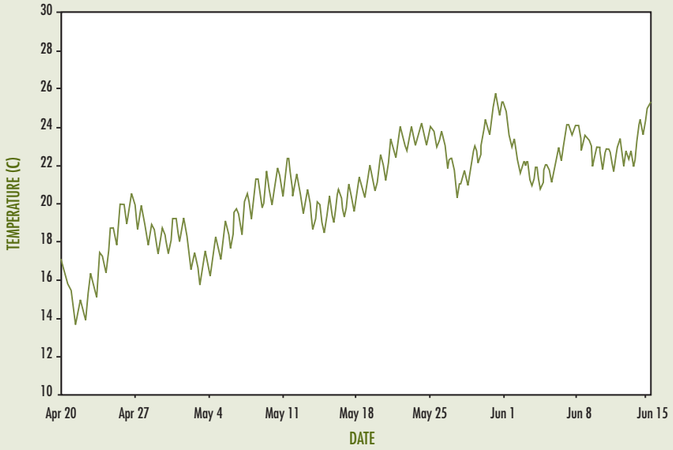
VAMP 2001 WATER TEMPERATURE MONITORING LOCATIONS

Site no.	Temperature Monitoring Location	Latitude	Longitude	Distance from Durham Ferry (mi)	Date Deployed	Date Retrieved	Notes
	Merced River Hatchery			n/a	March 21	May 3	In river April 30
1	Durham Ferry	N 37 41.381	W 121 15657	n/a	April 19	June 17	In 2.5 feet of water
2	Mossdale	N 37 47.180	W 121 18.425	11.2	April 19	June 17	In 2 feet of water
3	Dos Reis	N 37 49.808	W 121 18.665	16.4	April 19	June 17	In 2 feet of water
4	DWR Monitoring Station	N 37 51.869	W 121 19.376	19.4	April 19	June 17	In 1 foot of water
5a	Confluence – Top	N 37 56.818	W 121 20.285	26.5	April 19	June 17	2 feet below surface
5b	Confluence – Bottom	N 37 56.818	W 121 20.285	26.5	April 19	June 17	On river bottom
6	Downstream of Channel Marker 30	N 37 59.611	W 121 25.805	33.3	April 19	June 17	In 1.5 feet of water
7	1/2 mile Upstream of Channel Marker 13	N 38 01.940	W 121 28.769	37.3	April 19	June 17	In 1.5 feet of water
8	Downstream of Channel Marker 36	N 38 04.522	W 121 34.413	44.7	April 19	June 17	In 2 feet of water
9a	Jersey Point USGS Gauging Station – top	N 38 03.172	W121 41.637	56.0	April 19	June 17	In 3 feet of water
9b	Jersey Point USGS Gauging Station – bottom	N 38 03.172	W121 41.637	56.0	April 19	June 17	Completely on the bottom
10	Chipps Island	N 38 03.084	W 121 55.463	71.5	April 19		Logger lost

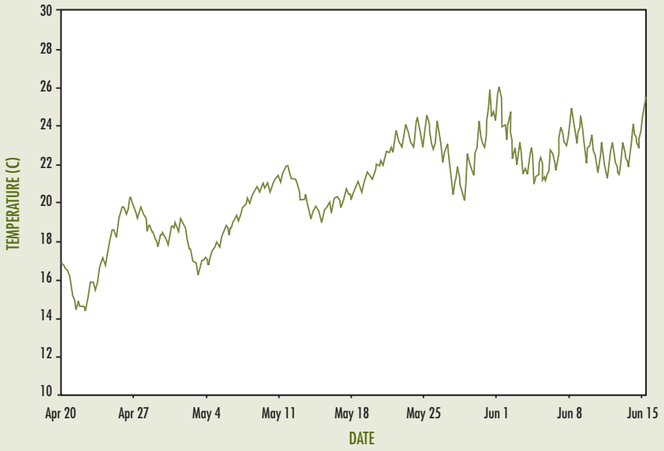
Site 1 • Durham Ferry



Site 2 • Mossdale

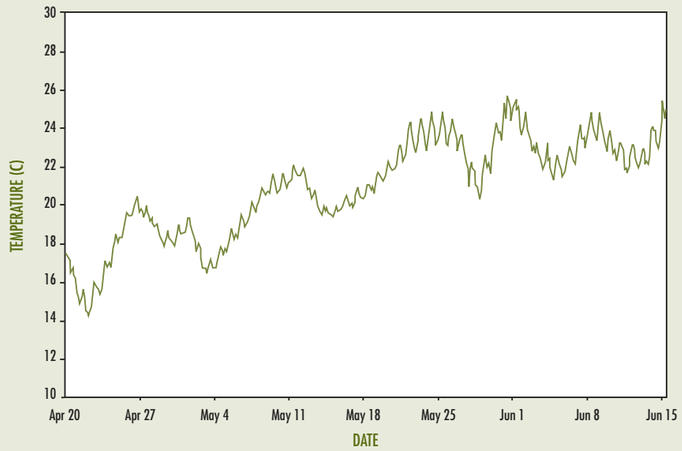


Site 3 • Dos Reis

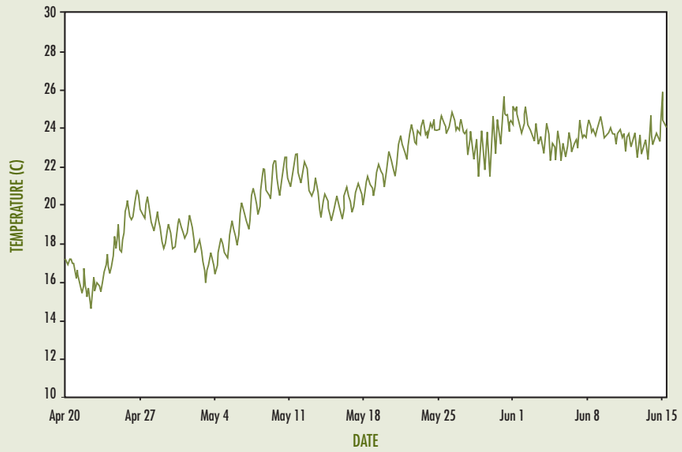


WATER TEMPERATURE MONITORING

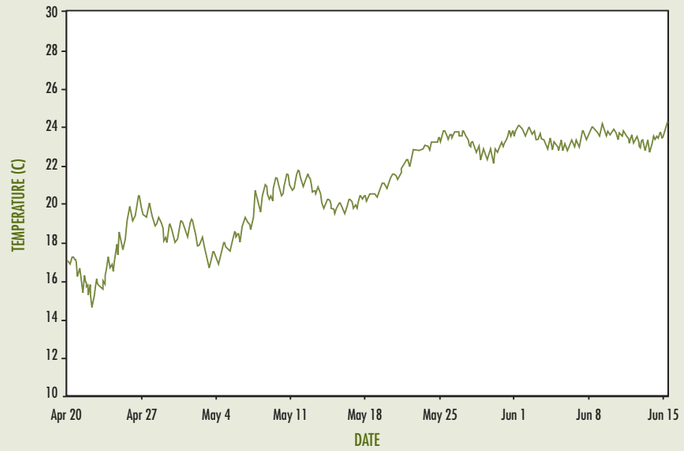
Site 4 • DWR Monitoring Station



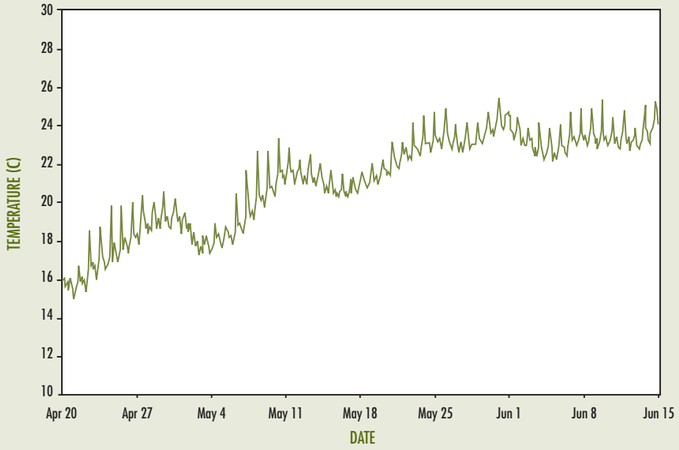
Site 5a • Confluence-Top



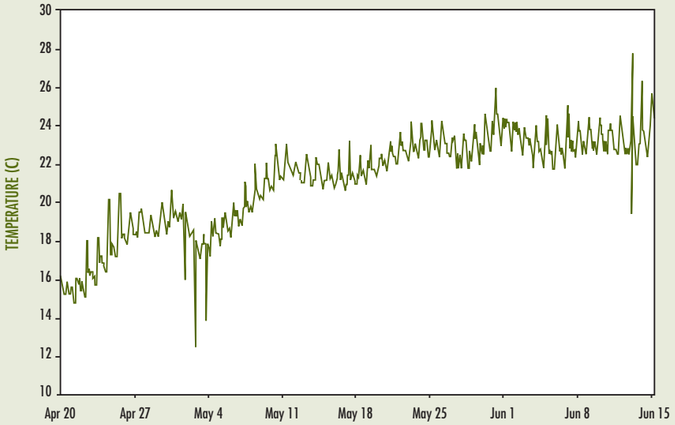
Site 5b • Confluence-Bottom



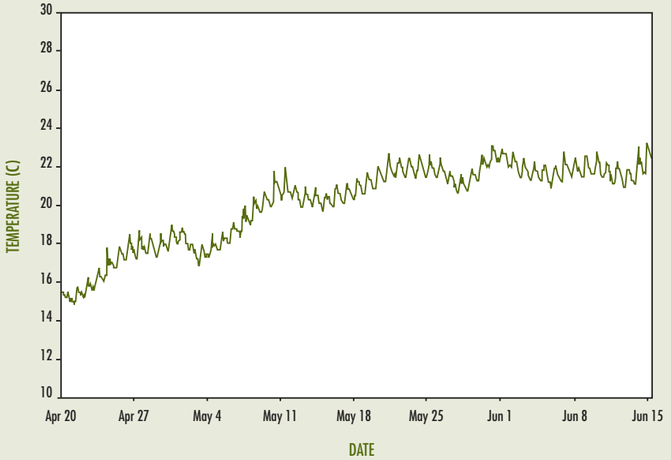
Site 6 • Downstream of Channel Marker 30



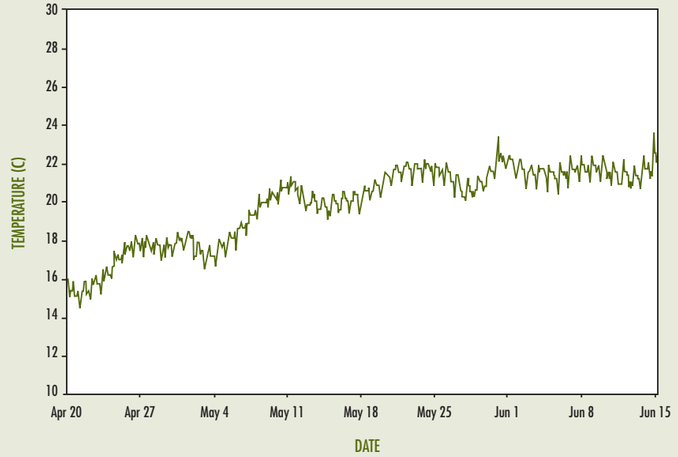
Site 7 • 1/2 Mile Upstream of Channel Marker 13



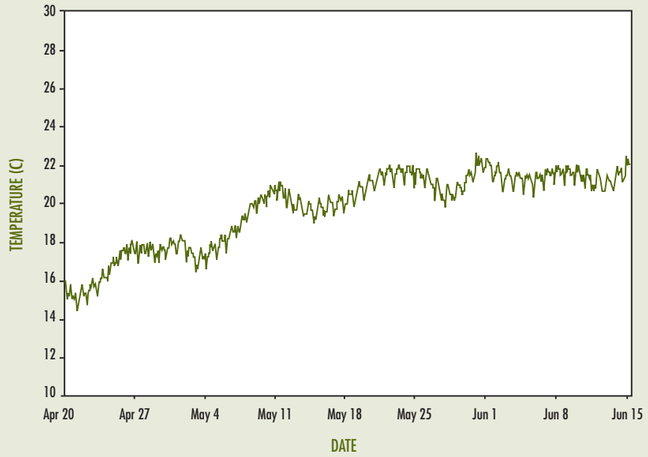
Site 8 • Downstream of Channel Marker 36



Site 9a • Jersey Point USGS Gauging Station



Site 9b • Jersey Point USGS Gauging Station



RESULTS OF NET PEN SAMPLING CONDUCTED IMMEDIATELY AFTER RELEASE AS PART OF VAMP STUDIES IN 2001

Release location, release date, tag code, number in sample	Mean fork length (and range in millimeters)	Mean weight (and range in grams)	Mean scale loss (and range) percent	Color	Fin hemorrhaging	Eyes	Gill color	Ad clips, comments
Durham Ferry I Apr 30 06-44-29, 30, 31 25 at release	88.7 (78-94)	7.3 (5.9-9.4)	3.3 (2-10)	Normal	None	Normal	1 with pale gill	
Mossdale I May 1 06-44-32 25 at release	88.4 (62-95)	7.2 (2-8.7)	3.2 (2-7)	Normal	None	Normal	Normal	All fish netted out of truck and placed in 2 separate net pens
Mossdale I May 1 06-44-33 25 at release	89.6 (77-103)	7.5 (5.4-10)	4.6 (2-8)	Normal	None	Normal	Normal	All fish netted out of truck and placed in 2 separate net pens
Jersey Point I May 4 06-44-35 25 at release	89.4 (79-98)	7.7 (5.3-9.7)	1.6 (1-6)	Normal	None	Normal	1 pale 4% pale gills	one poor ad clip
Jersey Point I May 4 06-44-34 25 at release	91.4 (84-100)	8.1 (5.3-11.2)	2.4 (1-4)	Normal	None	Normal	2 pale 8% pale gills	
Durham Ferry II May 7 06-44-36, 37, 38 25 at release	84.5 (77-91)	6.4 (5.3-7.7) only 11 fish weighed	5.3 (3-12)	Normal	None	Normal	3 pale 12% pale gills	
Mossdale II May 8 06-44-40 25 at release	87.9 (80-99)	7.7 (5.6-10.2)	3.2 (1-6)	Normal	one with anal and pelvic (pink)	Normal	5 pale 1 very pale 24% pale gills	2 poor ad clips All fish netted out of truck and placed in 2 separate net pens
Mossdale II May 8 06-44-39 25 at release	88.9 (86-97)	7.8 (5.7-9.6)	4.3 (2-8)	Normal	None	Normal	5 pale 20% pale gills	1 poor ad clip All fish netted out of truck and placed in 2 separate net pens
Jersey Point II May 11 06-44-41 25 at release	88.1 (80-105)	7.4 (5.1-11.8)	5 (3-9)	Normal	None	Normal	9 pale 40% pale gills	5 morts removed from pens immediately after release
Jersey Point II May 11 06-44-42 25 at release	87.5 (80-99)	7.2 (5-10.4)	5.9 (3-15)	Normal	None	Normal	8 pale 32% pale gills	5 morts removed from pens immediately after release

RESULTS OF NET PEN AFTER FISH WERE HELD FOR 48 HOURS, CONDUCTED AS PART OF VAMP STUDIES IN 2001

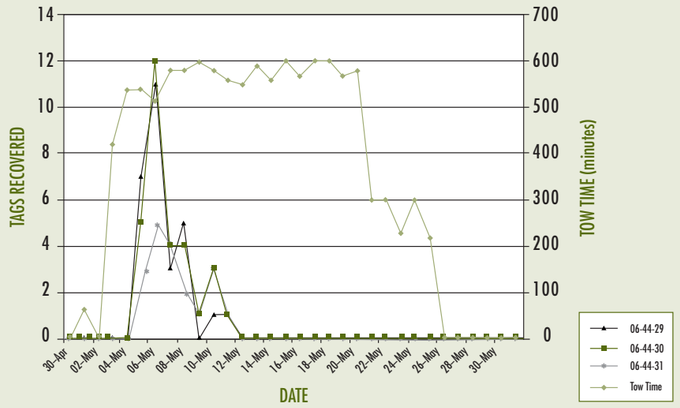
Release location, release date, tag code, number in sample	Mean fork length (and range in millimeters)	Mean weight (and range in grams)	Mean scale loss (and range) percent	Color	Fin hemorrhaging	Eyes	Gill color	Ad clips, comments and mortalities
Durham Ferry I Apr 30 06-44-29, 30, 31 200 processed	87.2 (75-96)	6.9 (3.8-9.8)	3.6 (2-15)	Normal	None	Normal	5 pale 20% pale gills	one fish bloated 4 mortalities
Mossdale I May 1 06-44-32 131 processed	88.7 (76-97)	7.2 (4.7-9.6)	3.6 (1-8)	Normal	None	Normal	3 pale 12% pale gills	
Mossdale I May 1 06-44-33 79 processed	90.3 (79-105)	7.6 (5.7-10.4)	3.8 (1-7)	Normal	None	Normal	3 pale 12% pale gills	
Jersey Point I May 4 06-44-35 92 processed	90.4 (70-104)	6.0 (3.8-12.2)	2.9 (1-8)	Normal	None	Normal	Normal	
Jersey Point I May 4 06-44-34 94 processed	91 (83-101)	7.8 (5.3-10.6)	3.2 (1-8)	Normal	None	Normal	3 pale 12% pale gills	1 mortality
Durham Ferry II May 7 06-44-36, 37, 38 185 processed	86.1 (74-97)	6.7 (4.1-8.9)	4.1 (2-10)	Normal	None	Normal	Normal	one w/partial operculum 3 mortalities
Mossdale II May 8 06-44-40 91 processed	88 (78-100)	7 (4.7-10.3)	3.7 (1-10)	Normal	None	Normal	Normal	one w/left pectoral eroded 1 mortality
Mossdale II May 8 06-44-39 102 processed	87.6 (74-102)	6.9 (4.4-11.3)	6.4 (3-12)	Normal	None	Normal	1 pale 4% pale gills	one with left pectoral eroded
Jersey Point II May 11 06-44-41 85 processed	89.1 (74-102)	7.4 (3-10.6)	5.6 (2-20)	Normal	None	Normal	2 pale 8% pale gills	
Jersey Point II May 11 06-44-42 88 processed	88.1 (73-101)	7.2 (3.9-12.2)	3.8 (1-8)	Normal	None	Normal	3 pale 12% pale gills	

2001 CODED WIRE TAG RECOVERY INFORMATION

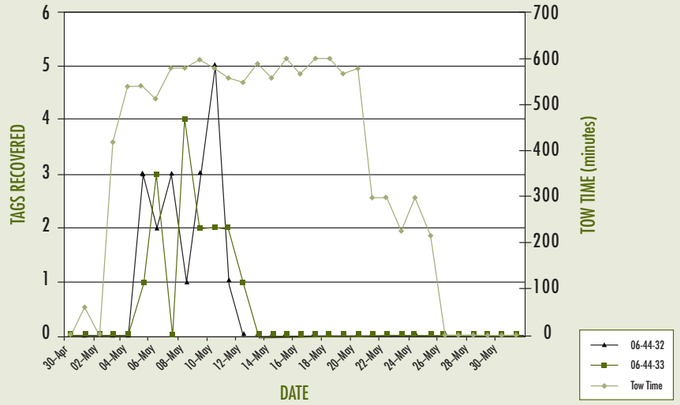
at Antioch and Chipps Island for Marked Fish Release as part of
the Vernalis Adaptive Management Program

Tag Code	Release Site/Stock	Date	First Day Recovered	Last Day Recovered	Number Recovered	Minutes Fished	Survival Index	Group Index	First Day Recovered	Last Day Recovered	Number Recovered	Minutes Fished	Survival Index	Group Index
		Antioch Recovery Information							Chipps Island Recovery Information					
06-44-29	Durham Ferry		May 05	May 11	28	3,955	0.220		May 06	May 10	14	1,994	0.281	
06-44-30	Durham Ferry		May 05	May 11	30	3,955	0.241		May 05	May 11	22	2,782	0.454	
06-44-31	Durham Ferry		May 05	May 10	18	3,395	0.147		May 05	May 10	17	2,384	0.356	
	Total	Apr 30	May 05	May 11	76	3,955		0.203	May 05	May 11	53	2,782		0.363
06-44--32	Mossdale		May 05	May 11	18	3,955	0.144		May 07	May 12	17	2,392	0.347	
06-44-33	Mossdale		May 05	May 12	15	4,505	0.125		May 05	May 11	14	2,782	0.297	
	Total	May 01	May 05	May 12	33	4,505		0.134	May 05	May 12	31	3,182		0.323
06-44-34	Jersey Point		May 04	May 09	156	3,355	1.183		May 05	May 11	50	2,782	0.964	
06-44-35	Jersey Point		May 04	May 14	173	6,195	1.274		May 05	May 11	61	2,782	1.150	
	Total	May 04	May 04	May 14	329	6,195		1.225	May 05	May 11	111	2,782		1.058
06-44-36	Durham Ferry		May 12	May 15	8	2,300	0.060		May 13	May 15	2	1,200	0.039	
06-44-37	Durham Ferry		May 11	May 21	11	6,080	0.086		May 12	May 17	4	3,593	0.078	
06-44-38	Durham Ferry		May 14	May 22	10	4,680	0.082		May14	May 20	2	2,800	0.039	
	Total	May 07	May 11	May 22	29	6,380		0.078	May 09	May 20	8	4,793		0.052
06-44-39	Mossdale		May 12	May 17	8	3,470	0.060		May 13	May 16	4	1,600	0.078	
06-44-40	Mossdale		May 13	May 20	11	4,670	0.077		May 14	May 18	4	2,000	0.074	
	Total	May 08	May 12	May 20	19	5,220		0.069	May 13	May 18	8	2,400		0.076
06-44-41	Jersey Point		May 12	May 20	43	5,220	0.297		May 12	May 17	17	2,400	0.307	
06-44-40	Jersey Point		May 12	May 23	53	6,050	0.428		May 12	May 22	27	4,400	0.496	
	Total	May 11	May 12	May 23	96	6,050		0.384	May 12	May 22	44	4,400		0.401

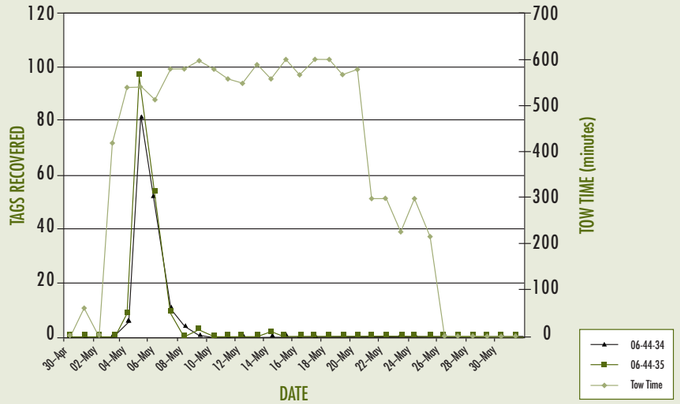
April 30th Durham Ferry Release Recovered at Antioch



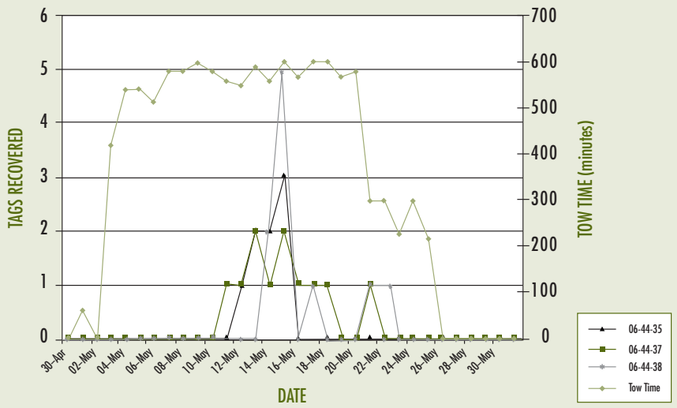
May 1st Mossdale Release Recovered at Antioch



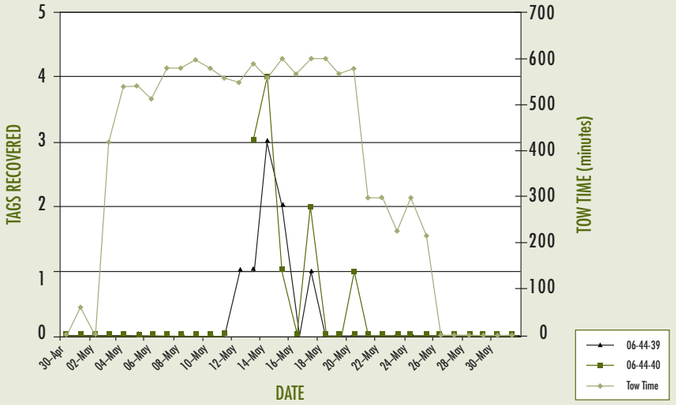
May 4th Jersey Point Release Recovered at Antioch



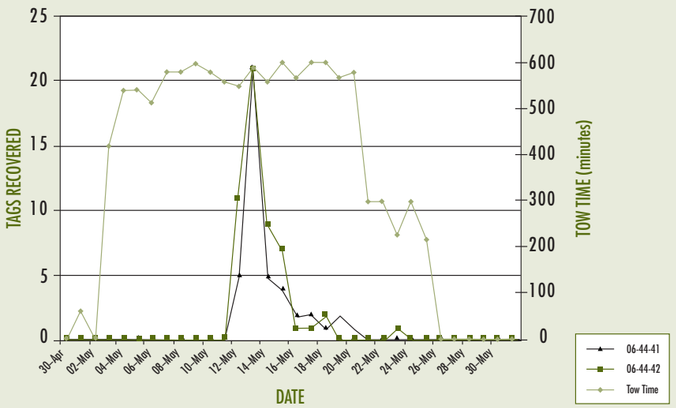
May 7th Durham Ferry Release Recovered at Antioch



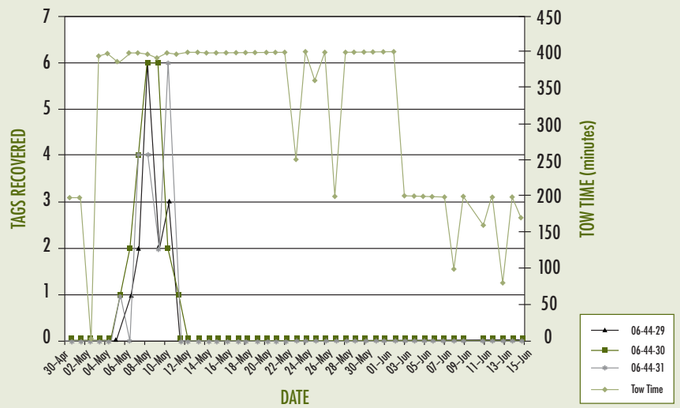
May 8th Mossdale Release Recovered at Antioch



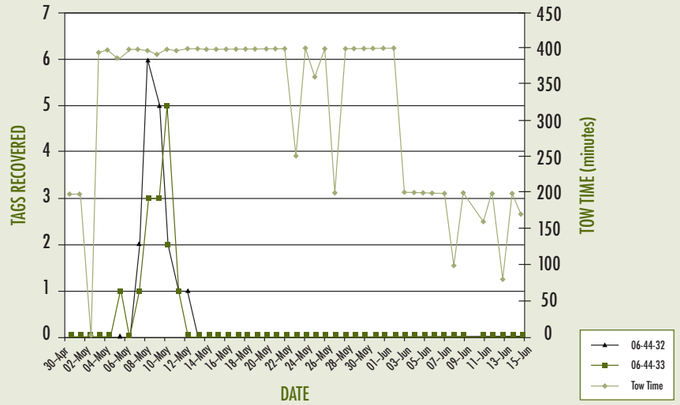
May 11th Jersey Point Release Recovered at Antioch



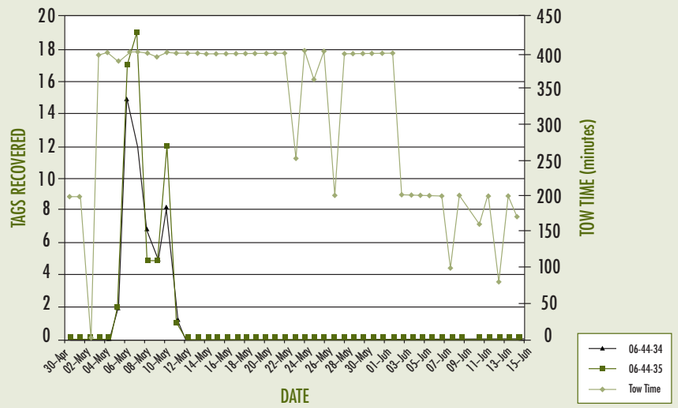
April 30th Durham Ferry Release Recovered at Chipps Island



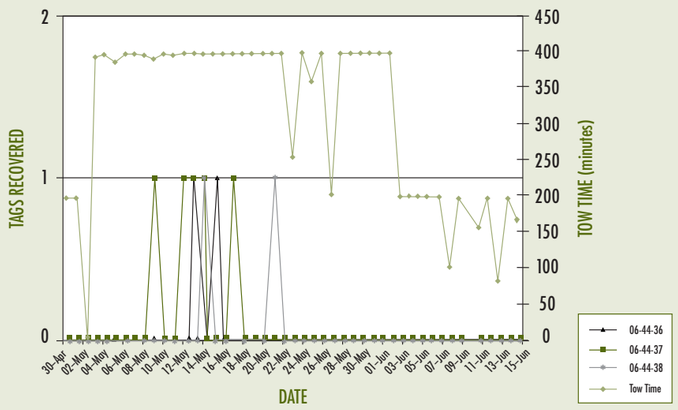
May 1st Mossdale Release Recovered at Chipps Island



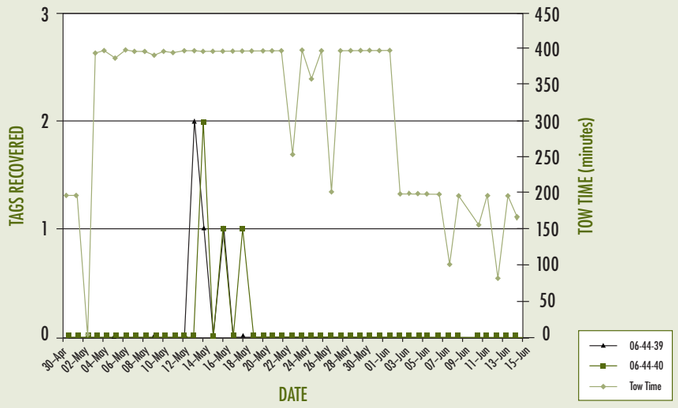
May 4th Jersey Point Release Recovered at Chipps Island



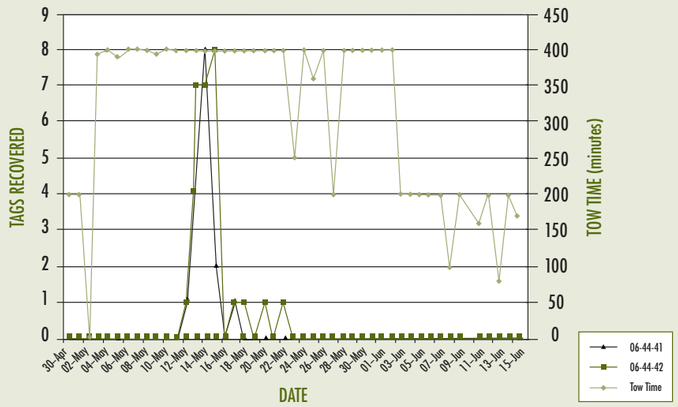
May 7th Durham Ferry Release Recovered at Chipps Island



May 8th Mossdale Release Recovered at Chipps Island



May 11th Jersey Point Release Recovered at Chipps Island



2001 CODED WIRE TAG RELEASE

Release and Recovery Information for Coded Wire-Tagged Smolts
Released in the San Joaquin River and Tributaries

							Antioch				Chipps Island				Salvage		Survival through tributary	
Tag Code	Release Site/ Stock	Date	Truck Temp C	River Temp C	No. Released	Average Size (mm)	No. Recovered	Percent Sampled	Survival Index	Group Survival	No. Recovered	Percent Sampled	Survival Index	Group Survival	Expanded CVP	Expanded SWP	Antioch	Chipps Island
Merced River																		
06-44-15	Merced River Fish Facility			10.0	25,029	81	3	0.369	0.023		3	0.275	0.057		0	20		
06-44-16	Merced River Fish Facility			10.0	24,077	81	10	0.378	0.079		3	0.276	0.059		0	51		
06-44-17	Merced River Fish Facility			10.0	24,342	81	1	0.375	0.008		1	0.278	0.019		0	41		
06-44-18	Merced River Fish Facility			10.0	24,034	81	7	0.378	0.055		0				0	47		
Total		Apr 21			97,482		21	0.378		0.041	7	0.276		0.034			0.32	0.17
06-44-19	Hatfield (lower Merced)		13.0	16.5	24,925	85	11	0.391	0.081		8	0.276	0.151		0	18		
06-44-20	Hatfield (lower Merced)		13.0	16.5	24,958	85	17	0.390	0.126		6	0.276	0.113		24	18		
06-44-21	Hatfield (lower Merced)		13.0	16.5	24,885	85	24	0.390	0.178		17	0.276	0.322		0	18		
Total		Apr 26			74,768		52	0.390		0.128	31	0.276		0.195				
06-44-22	Merced River Fish Facility				24,722	83	10	0.408	0.071		2	0.278	0.038		0	0		
06-44-23	Merced River Fish Facility				24,121	83	9	0.373	0.072		1	0.278	0.019		0	0		
06-44-24	Merced River Fish Facility				25,972	83	12	0.408	0.082		1	0.278	0.018		0	0		
06-44-25	Merced River Fish Facility				23,074	83	7	0.326	0.067		0				0	0		
Total		May 08			97,889		38	0.349		0.080	4	0.278		0.019			0.52	0.36
06-44-26	Hatfield (lower Merced)	May 11	13.0	18.0	23,038	85	19	0.299	0.199		1	0.278	0.020		0	0		
06-44-27	Hatfield (lower Merced)		13.0	18.0	23,227	85	20	0.341	0182		1	0.278	0.020		0	0		
06-44-28	Hatfield (lower Merced)		13.0	18.0	23,428	85	14	0.356	0.121		4	0.262	0.085		0	6		
Total		May 13			46,655		34	0.341		0.154	5	0.262		0.053				
Tuolumne River																		
06-44-12	La Grange		10.0	11.0	24,572	82	2	0.403	0.015		2	0.275	0.038		0	0		
06-44-12	La Grange				22,757	82	6	0.367	0.052		2	0.275	0.041		12	0		
06-44-13	La Grange				21,524	82	10	0.391	0.086		4	0.275	0.088		0	0		
Total		Apr 22			68,853		18	0.379		0.050	8	0.276		0.055			0.20	0.21
San Joaquin River																		
06-44-44	Old Fisherman's Club	Apr 26	14.0	21.0	24,303	85	25	0.390	0.190		12	0.275	0.233		12	12		
06-44-45	Old Fisherman's Club	Apr 28	12.5	19.0	21,965	91	35	0.388	0.295		13	0.277	0.278		0	0		
Stanislaus River																		
06-01-11-08-04	Knights Ferry		11.5	13.5	24,137	90	0				0				24	0		
06-01-11-08-05	Knights Ferry		11.0	13.0	24,037	91	0				0				24	0		
Total		May 22			48,174						0							
06-01-11-07-15	Two Rivers	May 25	10.0	20.0	23,630	94	0				0							
05-24-18	Head of Old River Barrier	May 12	15.0	20.0	24,401	84	1	0.396	0.007		4	0.278	0.077		390	267		

TIMING OF RECOVERY AT ANTIOCH AND CHIPPS ISLAND FOR CODED WIRE TAGGED SMOLTS RELEASED IN SAN JOAQUIN RIVER AND TRIBUTARIES IN THE SPRING OF 2001

							Antioch						Chipps Island					
Tag Code	Release Site/Stock	Date	Truck Temp C	River Temp C	Number Released	Average Size (mm)	First Day Recovered	Last Day Recovered	Number Recovered	Minutes Sampled	Survival Index	Group Index	First Day Recovered	Last Day Recovered	Number Recovered	Percent Sampled	Survival Index	Group Index
Merced River																		
06-44-15	Merced River Fish Facility			10.0	25,029	81	May 4	May 6	3	0.369	0.023		May 4	May 6	3	0.275	0.057	
06-44-16	Merced River Fish Facility			10.0	24,077	81	May 3	May 10	10	0.378	0.079		May 5	May 9	3	0.276	0.059	
06-44-17	Merced River Fish Facility			10.0	24,342	81	May 5	May 5	1	0.375	0.008		May 6	May 6	1	0.278	0.019	
06-44-18	Merced River Fish Facility			10.0	24,034	81	May 3	May 10	7	0.378	0.055				0	–	–	
	Total	Apr 21			97,482		May 3	May 10	21	0.378		0.041	May 4	May 9	7	0.276		0.034
06-44-19	Hatfield (lower Merced)		13.0	16.5	24,925	85	May 5	May 9	11.000	0.391	0.081		May 5	May 9	8	0.276	0.151	
06-44-20	Hatfield (lower Merced)		13.0	16.5	24,958	85	May 4	May 10	17.000	0.390	0.126		May 5	May 9	6	0.276	0.113	
06-44-21	Hatfield (lower Merced)		13.0	16.5	24,885	85	May 3	May 18	24.000	0.390	0.178		May 3	May 9	17	0.276	0.322	
	Total	Apr 26			74,768		May 3	May 18	52.000	0.390		0.128	May 3	May 9	31	0.276		0.195
06-44-22	Merced River Fish Facility				24,722	83	May 17	May 20	10	0.408	0.071		May 17	May 22	2	0.278	0.038	
06-44-23	Merced River Fish Facility				24,121	83	May 16	May 21	9	0.373	0.072		MAy 22	May 22	1	0.278	0.019	
06-44-24	Merced River Fish Facility				25,972	83	MAy 17	May 20	12	0.408	0.082		May 19	May 19	1	0.278	0.018	
06-44-25	Merced River Fish Facility				23,074	83	May 18	May 22	7	0.326	0.067				0	–	–	
	Total	May 8			97,889		May 16	May 22	38	0.349		0.080	May 17	May 22	4	0.278		0.019
06-44-26	Hatfield (lower Merced)	May 11	13.0	18.0	23,038	85	May 18	May 23	19	0.299	0.199		May 20	May 20	1	0.278	0.020	
06-44-27	Hatfield (lower Merced)		13.0	18.0	23,227	85	May 17	May 22	20	0.341	0.182		May 21	May 21	1	0.278	0.020	
06-44-28	Hatfield (lower Merced)		13.0	18.0	23,428	85	May 18	May 21	14	0.356	0.121		May 19	May 26	4	0.262	0.085	
	Total	May 13			46,655		May 17	May 22	34	0.341		0.154	May 19	May 26	5	0.262		0.053
Tuolumne River																		
06-44-12	La Grange		10.0	11.0	24,572	82	May 9	May 11	2	0.403	0.015		May 3	May 5	2	0.275	0.038	
06-44-13	La Grange				22,757	82	May 3	May 8	6	0.367	0.052		May 5	May 7	2	0.275	0.041	
06-44-14	La Grange				21,524	82	May 5	May 9	10	0.391	0.086		May 4	May 6	4	0.275	0.088	
	Total	Apr 22			68,853		May 3	May 11	18	0.379		0.050	May 3	May 7	8	0.276		0.055
San Joaquin River																		
06-44-44	Old Fisherman's Club	Apr 26	14.0	21.0	24,303	85	May 3	May 18	25	0.390	0.190		May 5	May 7	12	0.275	0.233	
06-44-43	Old Fisherman's Club	Apr 28	12.5	19.0	21,965	91	May 4	May 9	35	0.388	0.295		May 6	May 13	13	0.277	0.278	
06-01-11-08-04	Knights Ferry		11.5	13.5	24,137	90			0	–	–				0	–	–	
06-01-11-08-05	Knights Ferry		11.0	13.0	24,037	91			0	–	–				0	–	–	
	Total	May 22			48,174							–			0			–
06-01-11-07-15	Two Rivers	May 25	10.0	20.0	23,630	94			0	–	–				0	–	–	
05-24-18	Head of Old River Barrier	May 12	15.0	20.0	24,401	84	May 16	May 16	1	0.396	0.007		May 14	May 17	4	0.278	0.077	

*tag code 06-44-45 was released between 4/11/01 to 5/24/01; these fish were also spray-dyed

APPENDIX D

Errata

ERRATA FOR THE YEAR 2000 ANNUAL TECHNICAL REPORT

ON IMPLEMENTATION AND MONITORING OF THE SAN JOAQUIN RIVER AGREEMENT AND THE VERNALIS ADAPTIVE MANAGEMENT PLAN

Page 22, Paragraph 5, 4th sentence: Delete "further"

Page 31, Paragraph 1, last sentence should read: "Statistically, neither regression line is significant, although prior to adding the data from 1999, the without barrier relationship was significant (R2= 0.75, p=0.025, n=6)."

Page 32, First full paragraph, first and second sentences should read: "However, even given this noise, the data to date appears to show that smolt survival between Mossdale/Durham Ferry and Jersey Point increases as exports increase from 1600 to 2300 with the barrier in place (figure 5-2). This relationship is not statistically significant, likely because of small sample size."

Page 32, 3rd full paragraph, 3rd sentence: replace sentence 3 through 6 with: "One set of studies allows the approximation of the relative effects of flows and exports on smolt survival with a barrier in place, although the barrier was not installed during most of the releases. (Only one release had been made with the Barrier in place.) Marked fish released at Dos Reis (on the San Joaquin River downstream of the Upper Old River junction) and at Jersey Point were used to estimate survival between these two locations. Absolute survival was then compared with river flow and project exports. The results of this analysis indicated that there was a significant relationship of smolt survival from Dos Reis to Jersey Point with San Joaquin River flow at Stockton (R2 = 0.33, $p < 0.03$, n= 14), even with an obvious outlier from data obtained in 1999. There was not a significant relationship between survival and exports either alone or in combination with flow, although survival did appear to decrease as exports increased. The effect of exports is likely underrepresented using this approximation, since the effects of exports are likely less in this reach of the river when there is no Barrier.

A second set of studies evaluated the role of exports on smolt survival, without a barrier in place. The data for releases made at Mossdale and Jersey Point (absolute survival), were regressed against flow at Vernalis and CVP and SWP exports. The absolute survival estimate between Mossdale and Jersey Point was positively correlated to exports (R2= 0.71, p=0.017, n= 7) and flow and exports (R2= 0.84, p=0.025, n=7) and were statistically significant. These data appear to show that as exports and flows increase survival increases when there is no Barrier in place. However, data has only been gathered at exports between approximately 1500 and 4000 cfs.

Some data gathered in 1989 and 1990 may support the conclusion that survival between Mossdale and Jersey Point, without a barrier in place, is greater at higher exports. These data appeared to show that survival through Upper Old River relative to that at Jersey Point was higher during the higher export period, but overall still about half that of the survival of smolts released at Dos Reis (Brandes and McLain, forthcoming). Unfortunately, survival indices for the smolts released in Upper Old River in these years were all low making conclusions based on comparisons suspect. However, if these differences are true, and many of the smolts migrate through Upper Old River when there is no barrier in place, survival may be higher through this reach at higher exports.

Other confounding aspects to these data include using different stocks of hatchery fish to conduct the experiments, changing the level of sampling effort in recent years, getting biased results at times and not being able to measure survival at high flows with low exports with the barrier in place. For further explanation of these limitations see Brandes, 2000. These limitations may have lessened our ability to draw definitive conclusions from the past data. While future efforts will attempt to minimize changes in the study design, it is possible that confounding aspects of the data will continue and studies will need to be extended beyond the anticipated twelve years before relationships between smolt survival and flow and exports are definitive."

LITERATURE CITED:

Add: Brandes, P. 2000. 1999 South Delta Salmon Smolt Survival Studies. U.S. Fish and Wildlife Service, 4001 N. Wilson Way, Stockton CA. 95205. 5/26/00

Delete: Brandes, P and M. Pierce, 1998. 1997 Salmon smolt survival studies in the South Delta. Interagency Ecological Program for the Sacramento-San Joaquin estuary Newsletter., Vol 11, No. 1 - Winter 1998.

As a result of final revisions to the 2000 coded-wire tag database, a few calculations for the trawling effort and survival data from Chipps Island need to be updated. The following changes should be made to Table 5.2, pp. 24-25 and Appendix C, pg. 76.

Tag Code	Release Site	Release Date	Minutes Fished	Percent Sampled	Survival Index	Group Minutes Fished	Group Percent Sampled	Group Survival Index
06-01-11-08-14	Durham Ferry	4/28/00	6655	0.257	0.212	6955	0.254	0.151

In addition, the following changes should be made in Appendix C, pp. 82 and 84.

Tag Code	Release Site	Release Date	Minutes Fished	Percent Sampled	Survival Index	Group Minutes Fished	Group Percent Sampled	Group Survival Index
06-45-58	La Grange	4/15/00	10675	0.247	0.120	10675	0.247	0.072
06-44-07	Knights Ferry	5/19/00	1060	0.082	0.187	N/A	N/A	N/A
06-44-10	Two Rivers	5/20/00	980	0.136	0.149	980	0.136	0.076