Geometry of the San Joaquin River and Deep Water Ship Channel

Volume (acre-feet)

Downstream SJR Mile	Flow (cfs)	750	1000	1250	1500	2000	2500	3000	3500	4000	5000	6000	7000
118.2	Above Merced River	1,253	1,538	1,808	2,067	2,577	3,039	3,479	3,890	4,277	5,021	5,715	6,357
83.8	Merced to Tuolumne	2,592	3,098	3,586	4,047	4,936	5,782	6,597	7,377	8,138	9,629	11,071	12,470
72.2	Tuolumne to Vernalis	1,169	1,423	1,670	1,902	2,335	2,736	3,140	3,504	3,848	4,520	5,150	5,759
56.2	Vernalis to Mossdale	1,493	1,647	1,807	1,965	2,276	2,565	2,847	3,119	3,372	3,843	4,279	4,690
	Mossdale to DWSC	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
	DWSC to Turner Cut	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Reach 1	Merced to Vernalis	3,761	4,521	5,257	5,948	7,271	8,518	9,737	10,881	11,987	14,149	16,221	18,229
Reach 2	Vernalis to DWSC	3,993	4,147	4,307	4,465	4,776	5,065	5,347	5,619	5,872	6,343	6,779	7,190
Reach 3	DWSC to Turner Cut	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000

Velocity (ft/sec)

Downstream SJR Mile	Flow (cfs)	750	1000	1250	1500	2000	2500	3000	3500	4000	5000	6000	7000
118.2	Above Merced River	1.3	1.4	1.5	1.5	1.7	1.8	1.8	1.9	2.0	2.1	2.2	2.3
83.8	Merced to Tuolumne	1.5	1.6	1.7	1.8	1.9	2.1	2.1	2.2	2.3	2.4	2.5	2.6
72.2	Tuolumne to Vernalis	1.3	1.4	1.5	1.5	1.6	1.7	1.8	1.9	1.9	2.0	2.1	2.2
56.2	Vernalis to Mossdale	0.9	1.0	1.1	1.2	1.3	1.5	1.6	1.7	1.7	1.9	2.0	2.2
	Mossdale to DWSC	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7
	DWSC to Turner Cut	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5
Reach 1	Merced to Vernalis	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.0	2.1	2.2	2.3	2.4
Reach 2	Vernalis to DWSC	0.6	0.7	0.8	0.8	0.9	1.0	1.1	1.1	1.2	1.3	1.4	1.5
Reach 3	DWSC to Turner Cut	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5

Travel Time (hours)

Downstream SJR Mile	Flow (cfs)	750	1000	1250	1500	2000	2500	3000	3500	4000	5000	6000	7000
118.2	Above Merced River	20	19	18	17	16	15	14	14	13	12	12	11
83.8	Merced to Tuolumne	41	36	34	32	29	27	26	25	24	23	22	21
72.2	Tuolumne to Vernalis	19	17	16	15	14	13	13	12	12	11	10	10
56.2	Vernalis to Mossdale	24	20	18	16	14	12	12	11	10	9	9	8
	Mossdale to DWSC	40	30	24	20	15	12	10	9	8	6	5	4
	DWSC to Turner Cut	256	192	154	128	96	77	64	55	48	38	32	27
Reach 1	Merced to Vernalis	60	54	50	47	43	40	39	37	36	34	32	31
Reach 2	Vernalis to DWSC	64	50	42	36	29	24	22	19	18	15	14	12
Reach 3	DWSC to Turner Cut	256	192	154	128	96	77	64	55	48	38	32	27

Width (feet)

Downstream SJR Mile	Flow (cfs)	750	1000	1250	1500	2000	2500	3000	3500	4000	5000	6000	7000
118.2	Above Merced River	170	192	210	228	263	292	318	341	362	397	422	440
83.8	Merced to Tuolumne	166	183	197	209	232	253	274	293	311	342	370	396
72.2	Tuolumne to Vernalis	192	214	232	246	268	292	312	329	344	371	395	418
56.2	Vernalis to Mossdale	234	245	255	264	280	295	308	319	327	341	353	364
	Mossdale to DWSC	200	200	200	200	200	200	200	200	200	200	200	200
	DWSC to Turner Cut	750	750	750	750	750	750	750	750	750	750	750	750
Reach 1	Merced to Vernalis	179	198	214	227	250	273	293	311	327	356	383	407
Reach 2	Vernalis to DWSC	217	222	227	232	240	247	254	260	264	270	276	282
Reach 3	DWSC to Turner Cut	750	750	750	750	750	750	750	750	750	750	750	750

Surface Area (acres)

Downstream SJR Mile	Flow (cfs)	750	1000	1250	1500	2000	2500	3000	3500	4000	5000	6000	7000
118.2	Above Merced River	343	389	427	464	536	597	653	703	748	823	875	912
83.8	Merced to Tuolumne	728	794	851	902	995	1,083	1,170	1,249	1,323	1,453	1,573	1,687
72.2	Tuolumne to Vernalis	358	388	416	440	479	518	551	578	602	646	684	719
56.2	Vernalis to Mossdale	336	351	365	379	403	425	444	461	473	490	506	521
	Mossdale to DWSC	300	300	300	300	300	300	300	300	300	300	300	300
	DWSC to Turner Cut	850	850	850	850	850	850	850	850	850	850	850	850
Reach 1	Merced to Vernalis	1,086	1,182	1,266	1,342	1,475	1,601	1,721	1,827	1,925	2,099	2,257	2,406
Reach 2	Vernalis to DWSC	636	651	665	679	703	725	744	761	773	790	806	821
Reach 3	DWSC to Turner Cut	850	850	850	850	850	850	850	850	850	850	850	850

Maximum Depth (feet)

Downstream SJR Mile	Flow (cfs)	750	1000	1250	1500	2000	2500	3000	3500	4000	5000	6000	7000
118.2	Above Merced River	2.3	2.9	3.5	4.0	4.9	5.6	6.4	7.0	7.6	8.7	9.6	10.4
83.8	Merced to Tuolumne	6.8	7.6	8.3	8.9	9.9	10.7	11.5	12.1	12.7	13.8	14.7	15.5
72.2	Tuolumne to Vernalis	5.4	6.1	6.7	7.2	8.1	8.9	9.6	10.2	10.8	11.8	12.7	13.6
56.2	Vernalis to Mossdale	9.7	10.0	10.3	10.6	11.2	11.8	12.4	12.9	13.4	14.3	15.2	15.9
	Mossdale to DWSC	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
	DWSC to Turner Cut	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Reach 1	Merced to Vernalis	6.1	6.9	7.5	8.1	9.0	9.8	10.5	11.2	11.7	12.8	13.7	14.5
Reach 2	Vernalis to DWSC	12.4	12.5	12.6	12.8	13.1	13.4	13.7	14.0	14.2	14.7	15.1	15.4
Reach 3	DWSC to Turner Cut	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0

Average Depth (feet)

Downstream SJR Mile		Flow (cfs)	750	1000	1250	1500	2000	2500	3000	3500	4000	5000	6000	7000
118.2	Above Merced River		152.9	161.0	175.8	193.9	235.2	279.8	326.2	373.6	421.5	518.7	616.7	715.2
83.8	Merced to Tuolumne		492.3	535.4	576.2	615.5	691.2	765.0	837.1	906.6	973.9	1103.9	1230.0	1353.7
72.2	Tuolumne to Vernalis		131.5	173.6	215.6	257.6	341.5	425.3	509.1	592.9	676.6	843.9	1011.2	1178.4
56.2	Vernalis to Mossdale		20.7	20.9	21.0	21.2	21.4	21.6	21.8	22.0	22.2	22.5	22.8	23.0
	Mossdale to DWSC		8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
	DWSC to Turner Cut		22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Reach 1	Merced to Vernalis		311.9	354.5	395.9	436.6	516.3	595.2	673.1	749.7	825.3	973.9	1120.6	1266.0
Reach 2	Vernalis to DWSC		14.3	14.4	14.5	14.6	14.7	14.8	14.9	15.0	15.1	15.2	15.4	15.5
Reach 3	DWSC to Turner Cut		22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0