APPENDIX A-2
Model Results for Cumulative With Project versus Cumulative without Project

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2) Model Results for Cumulative with Project versus Cumulative without Project

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Figure CWR-1(a). Pardee Storage - Cumulative with Project vs Cumulative without Project

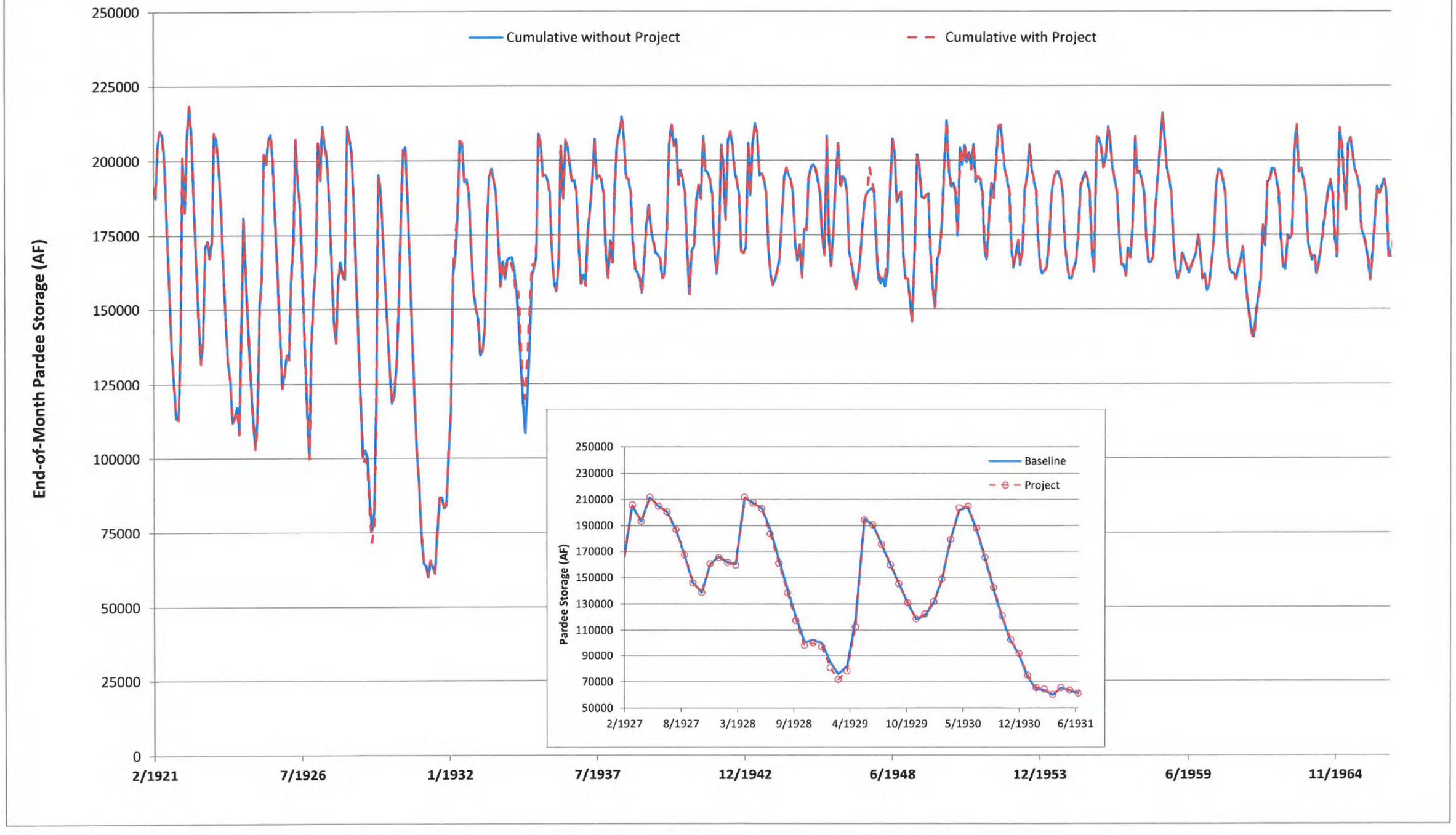

Figure CWR-1(b). Pardee Storage - Cumulative with Project vs Cumulative without Project

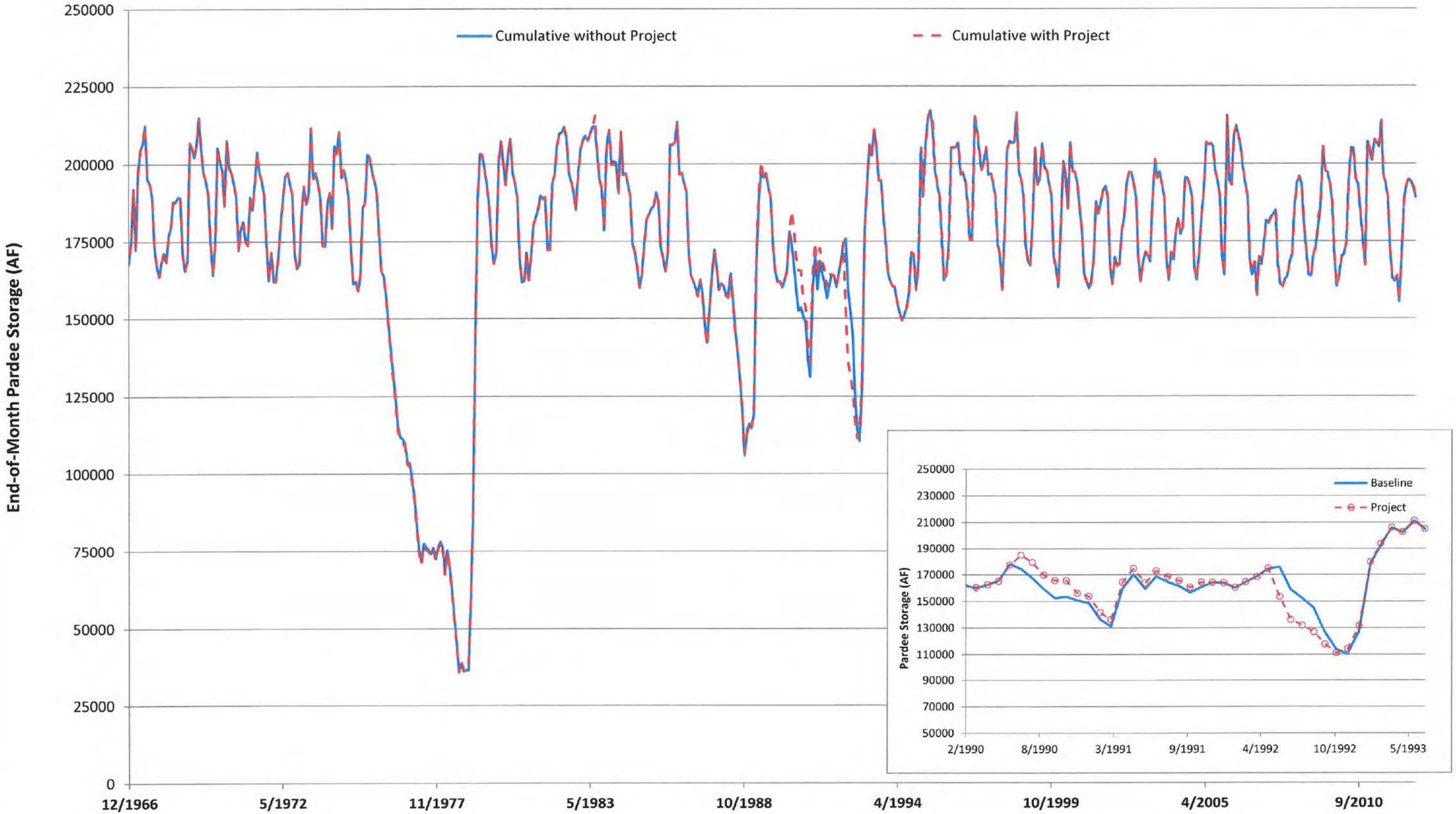

Figure CWR-2(a). Camanche Storage - Cumulative with Project vs Cumulative without Project

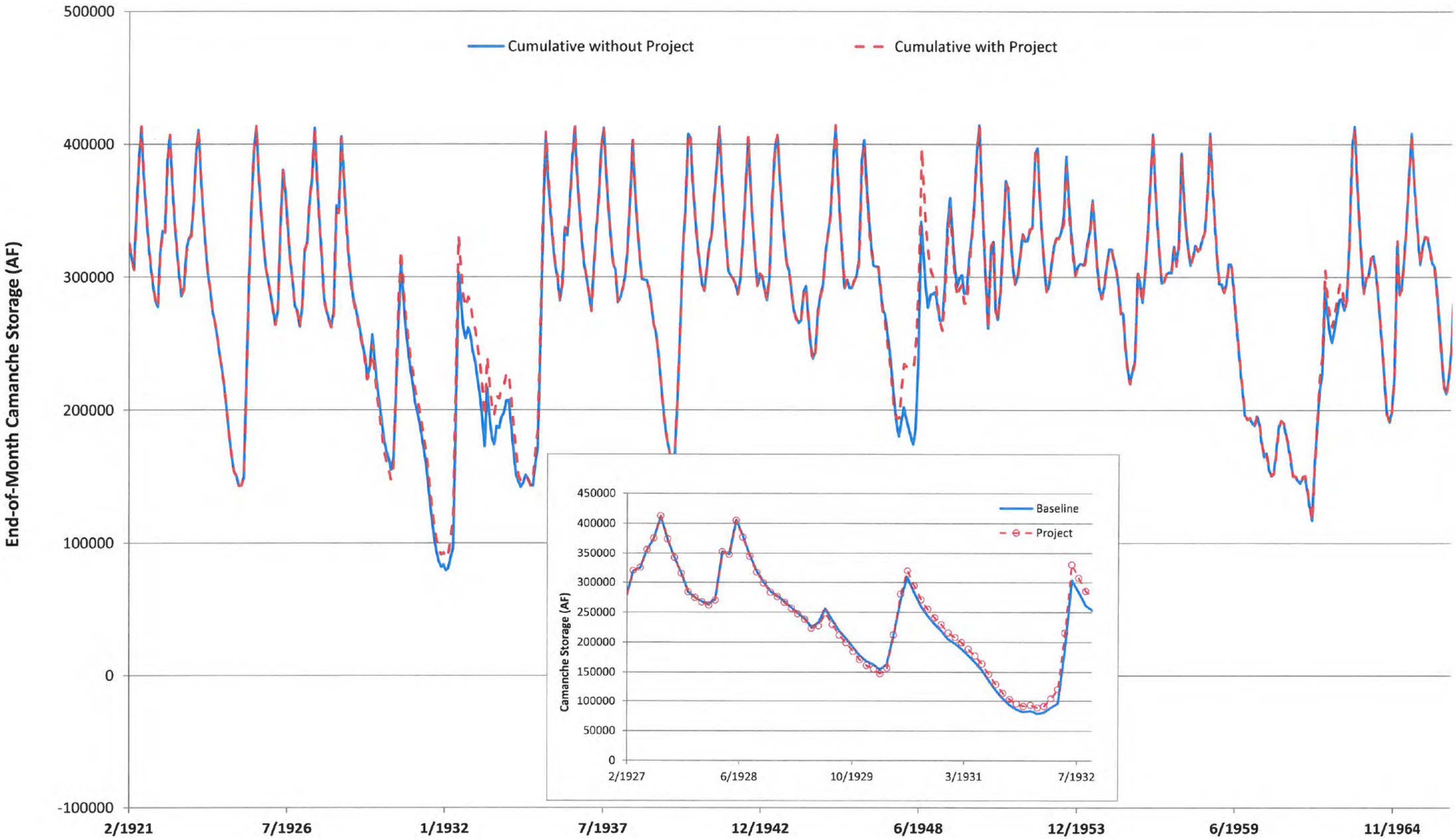

Figure CWR-2(b). Camanche Storage - Cumulative with Project vs Cumulative without Project

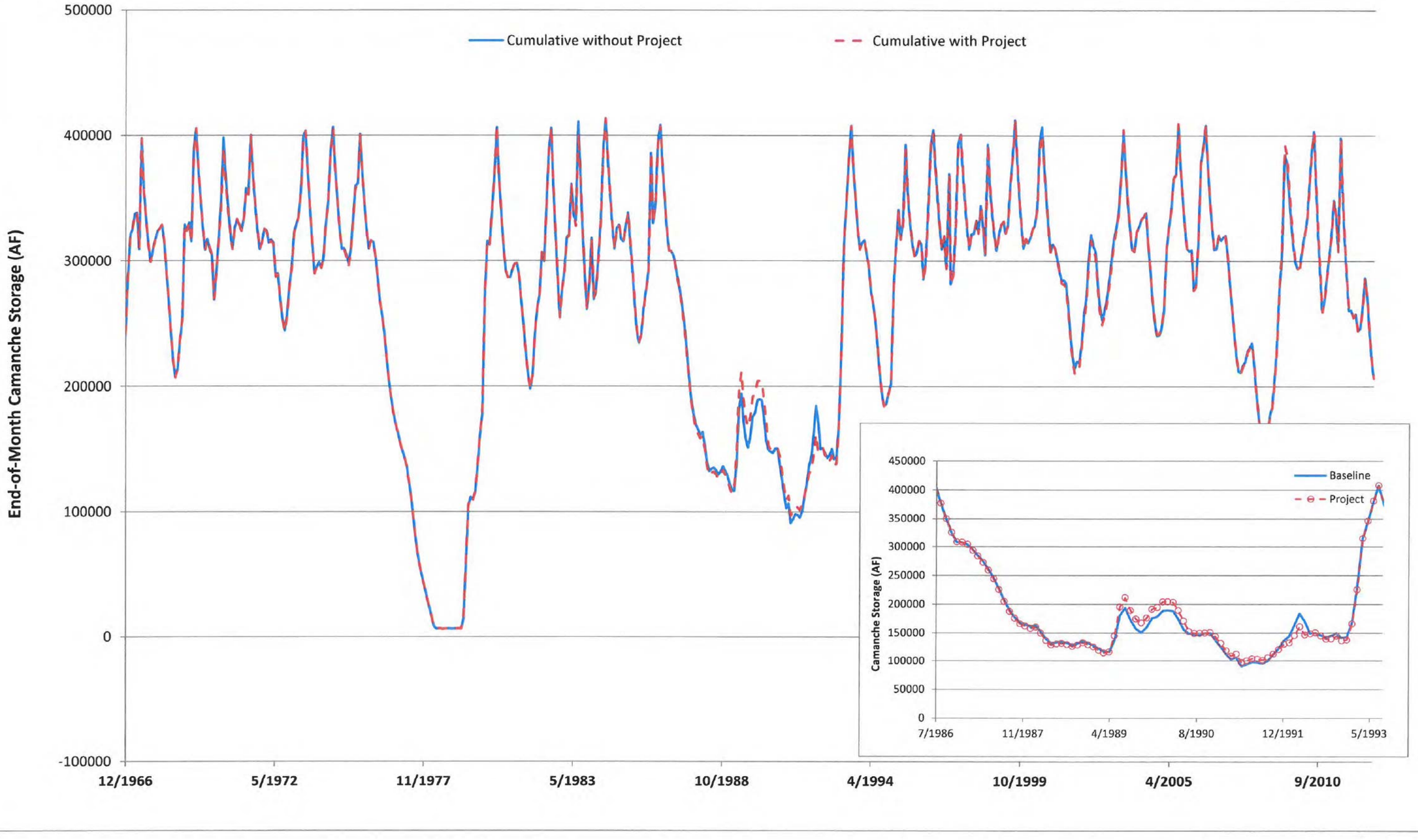

Figure CWR-3(a). End-of-September Total System Storage

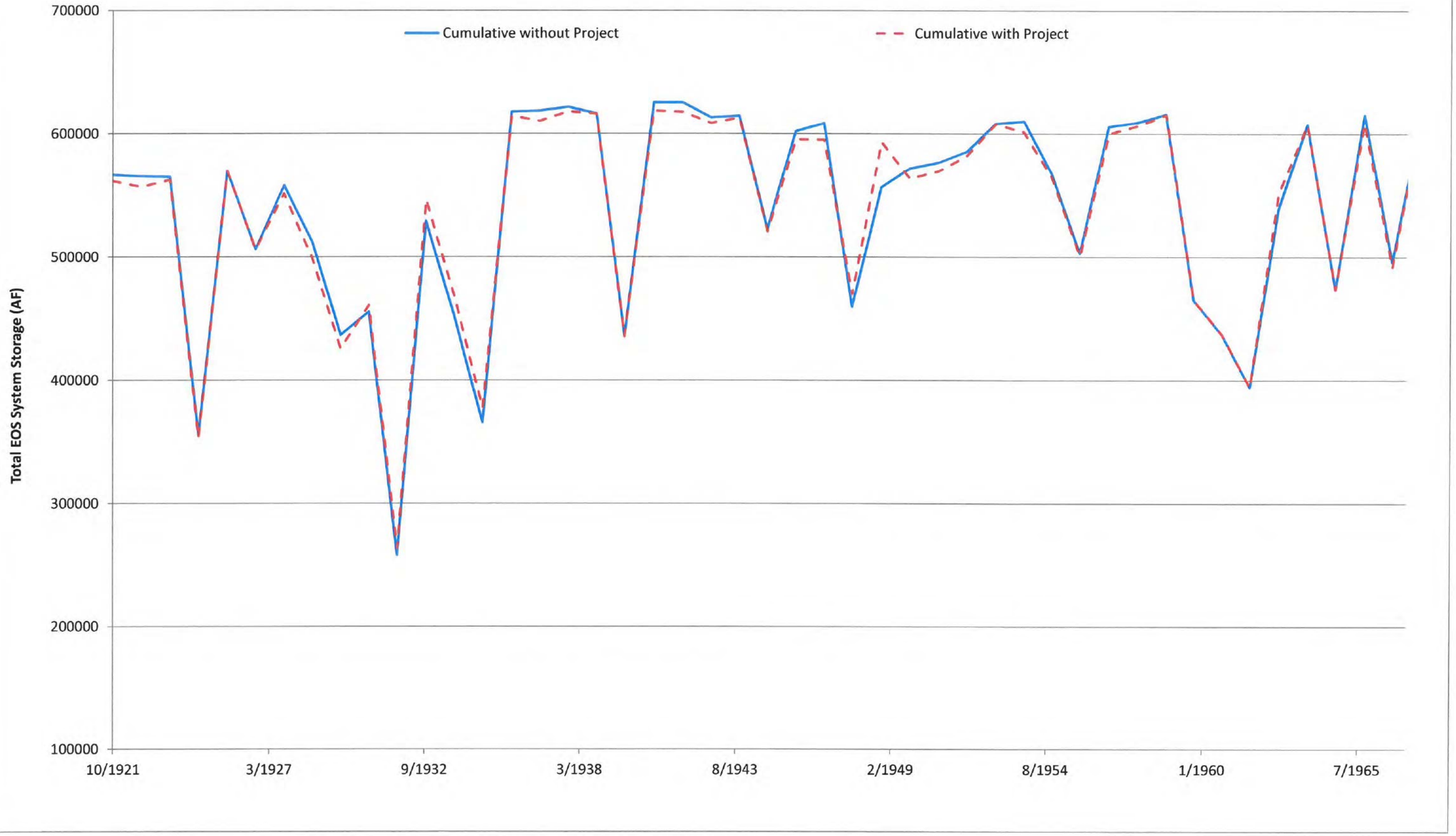

Figure CWR-3(b). End-of-September Total System Storage

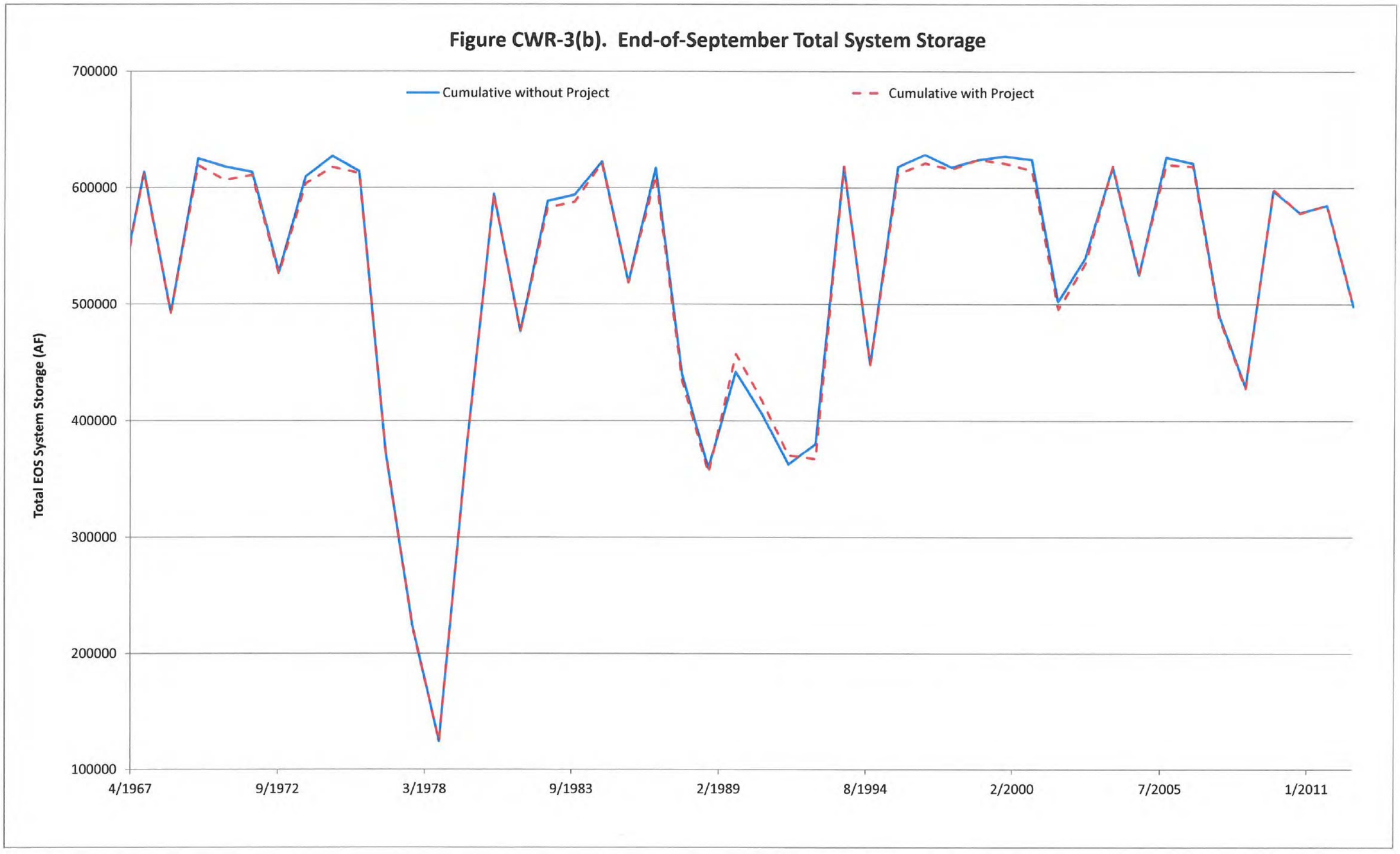

Figure CWR-4(a). Camanche Total Outflow - Cumulative with Project vs Cumulative without Project

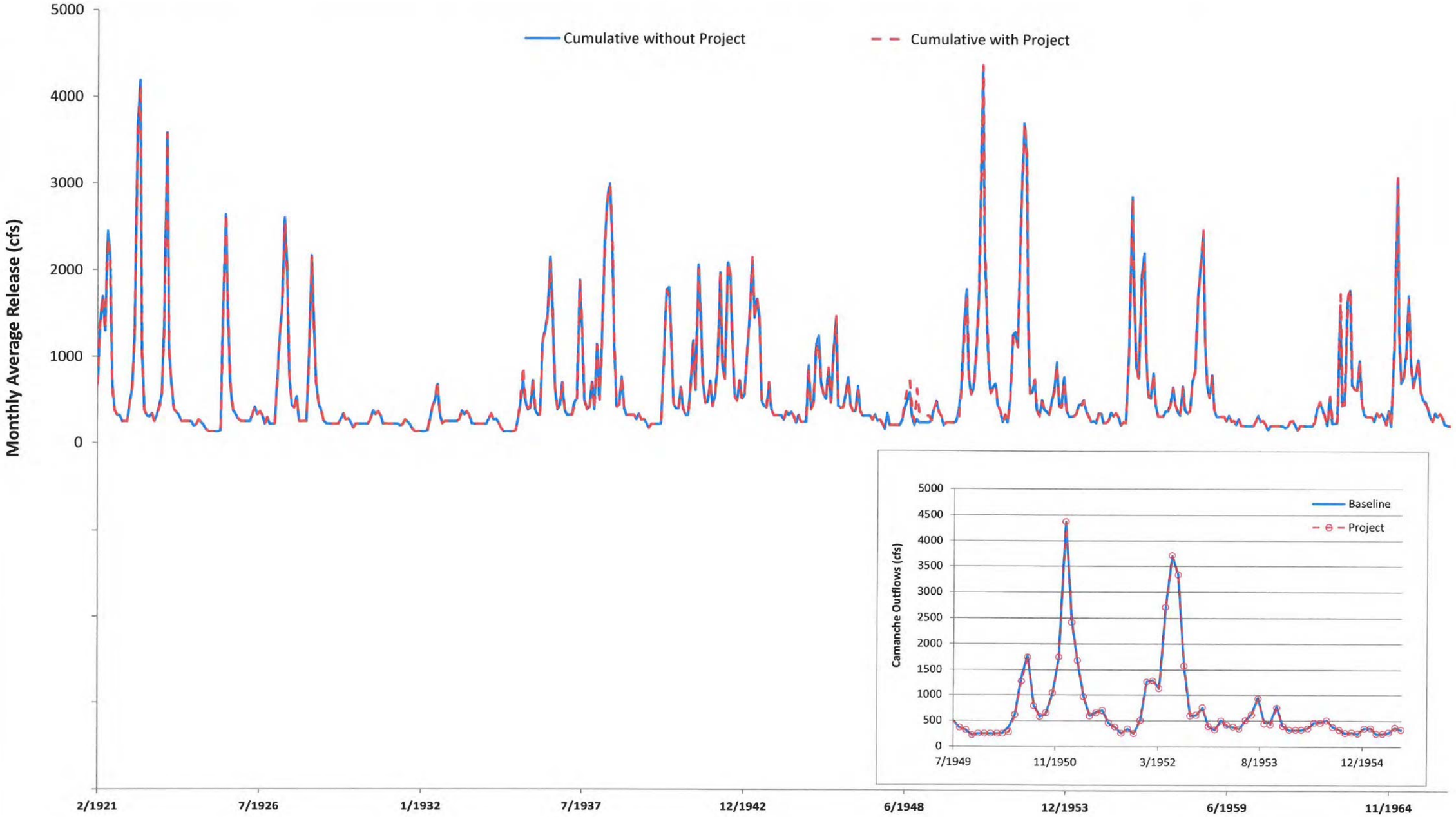

Figure CWR-4(b). Camanche Total Outflow - Cumulative with Project vs Cumulative without Project

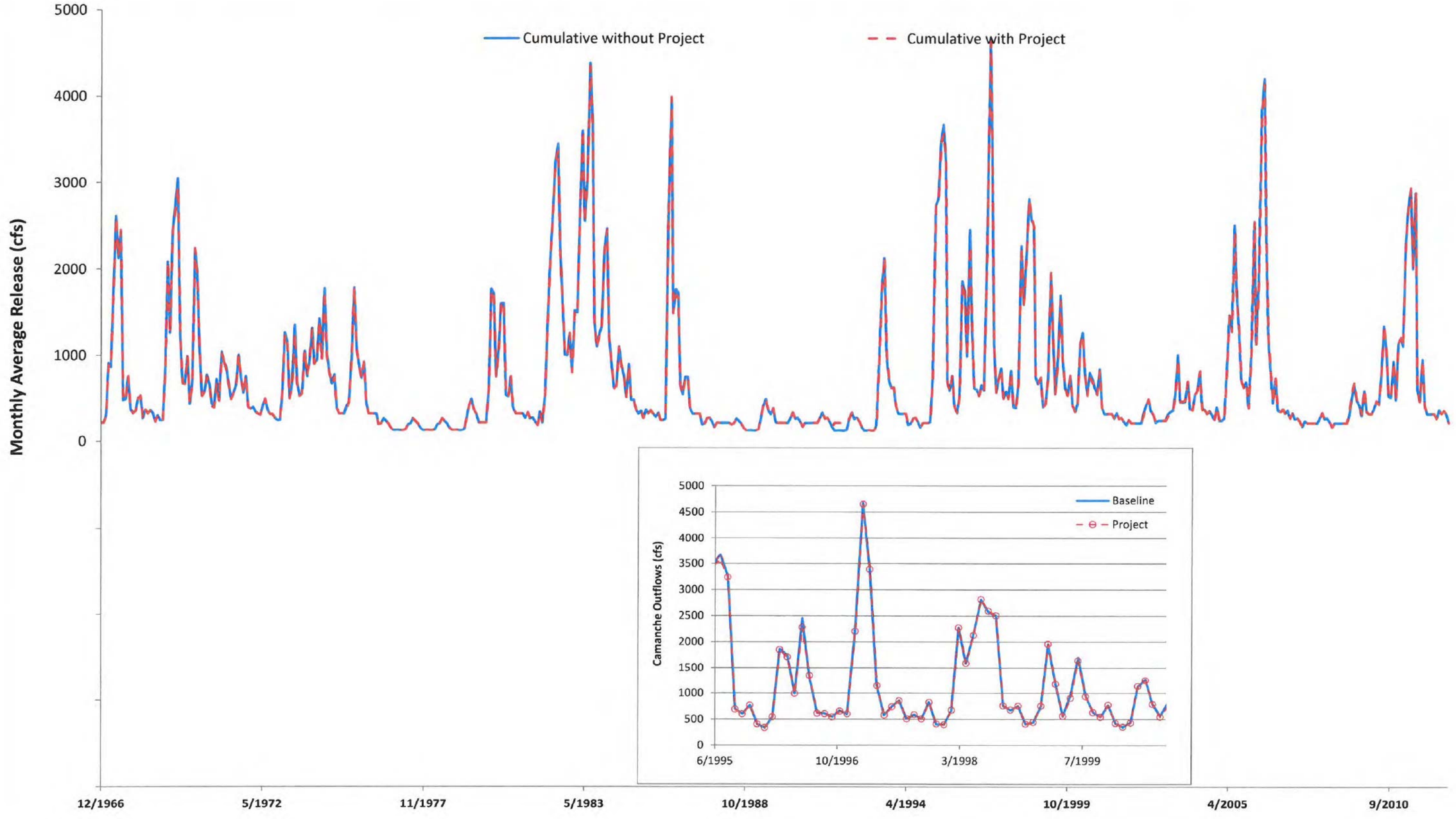

Figure CWR-5. Camanche Required Minimum Release

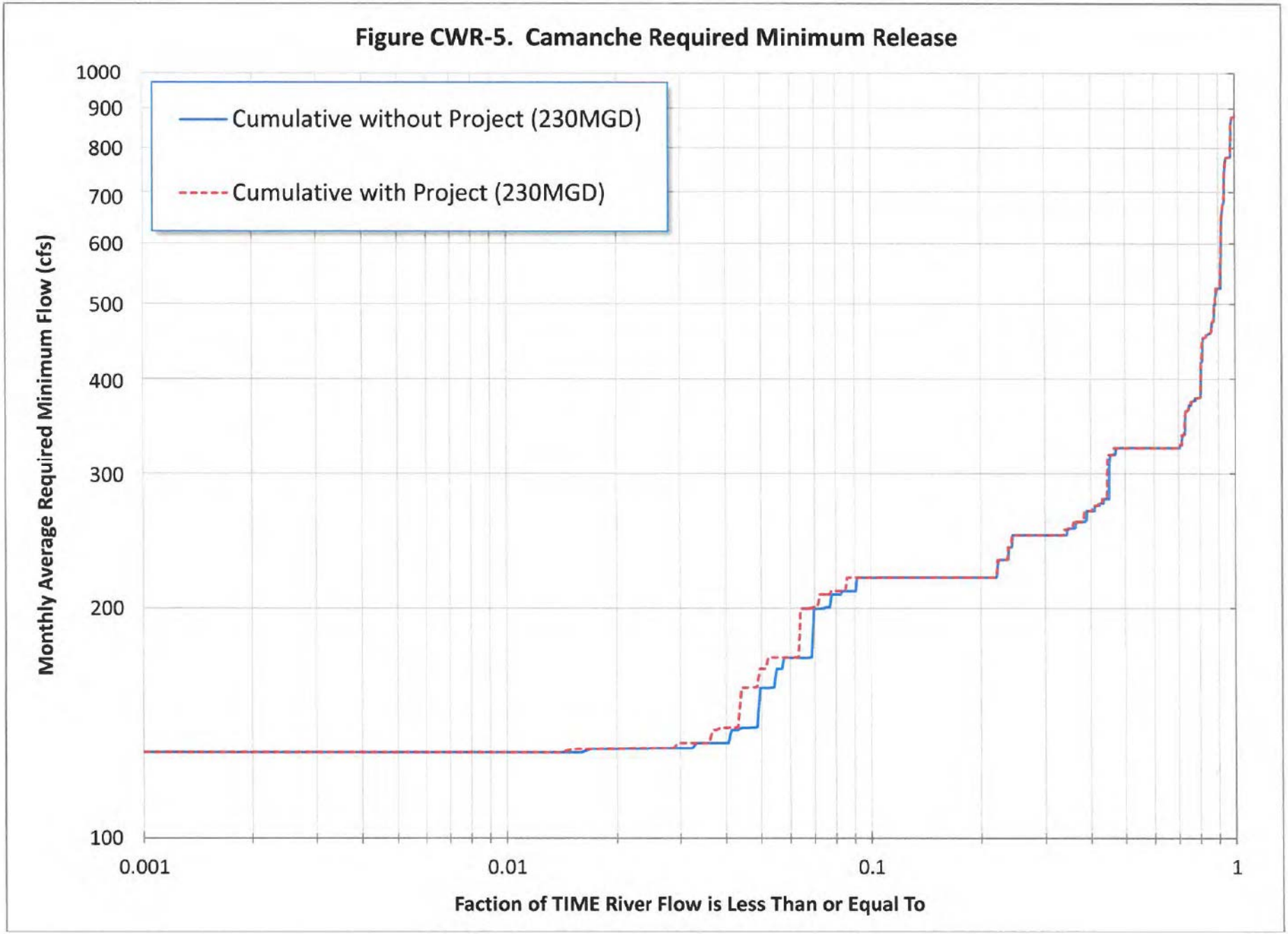

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Figure CWR-6(a). Camanche Flood Releases - Cumulative with Project vs Cumulative without Project

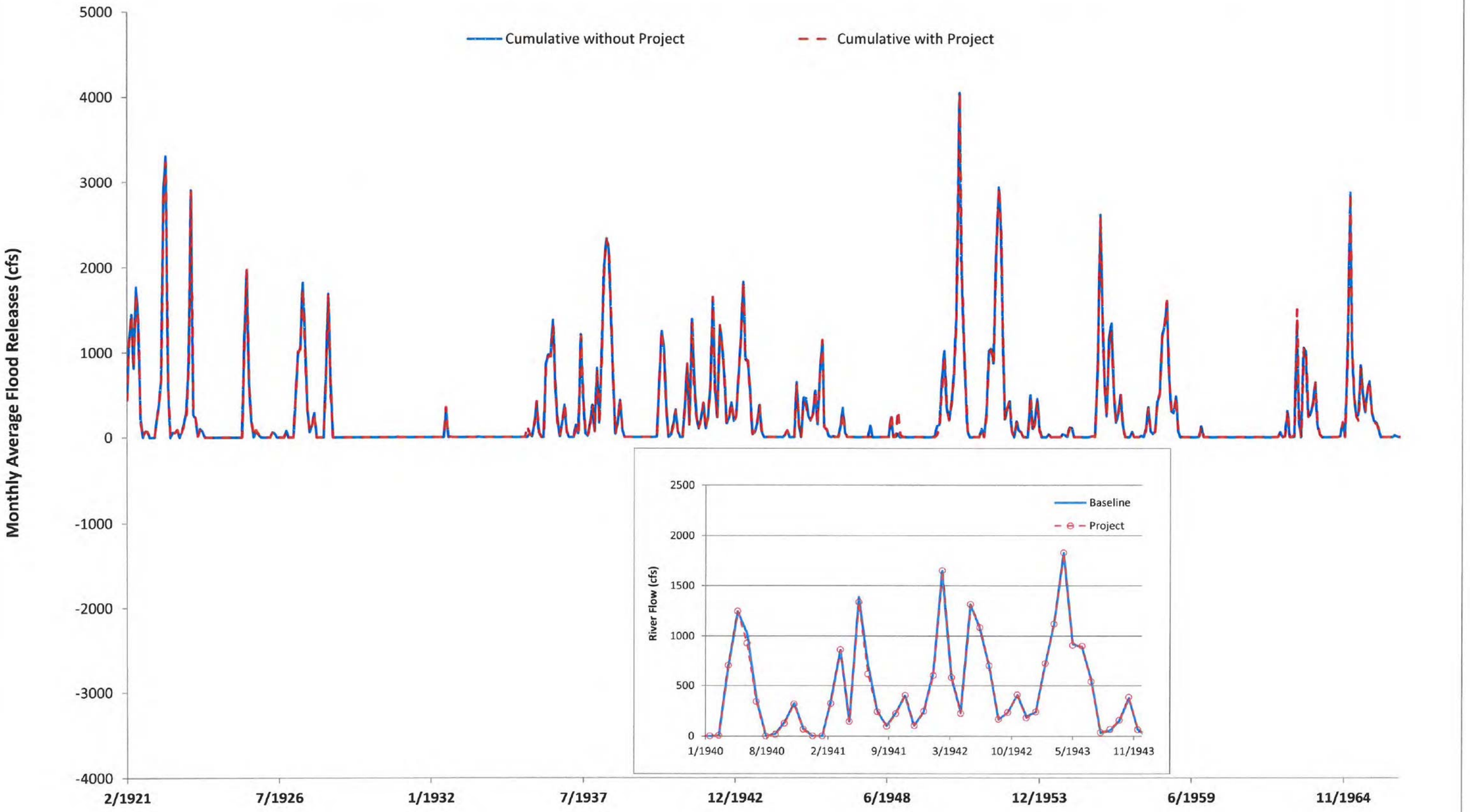


Figure CWR-6(b). Camanche Flood Releases - Cumulative with Project vs Cumulative without Project

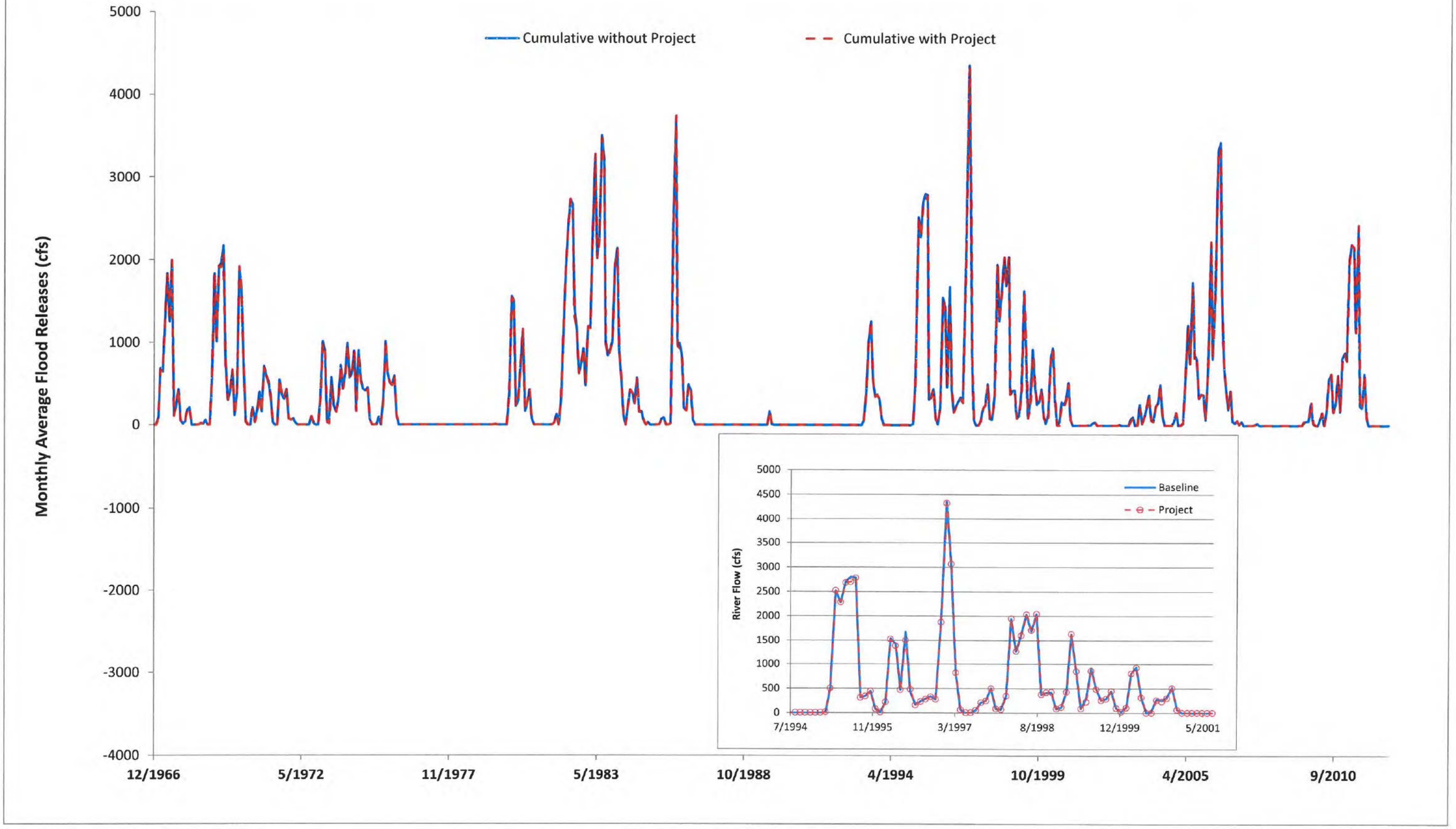


Figure CWR-7(a). Flows below WID - Cumulative with Project vs Cumulative without Project

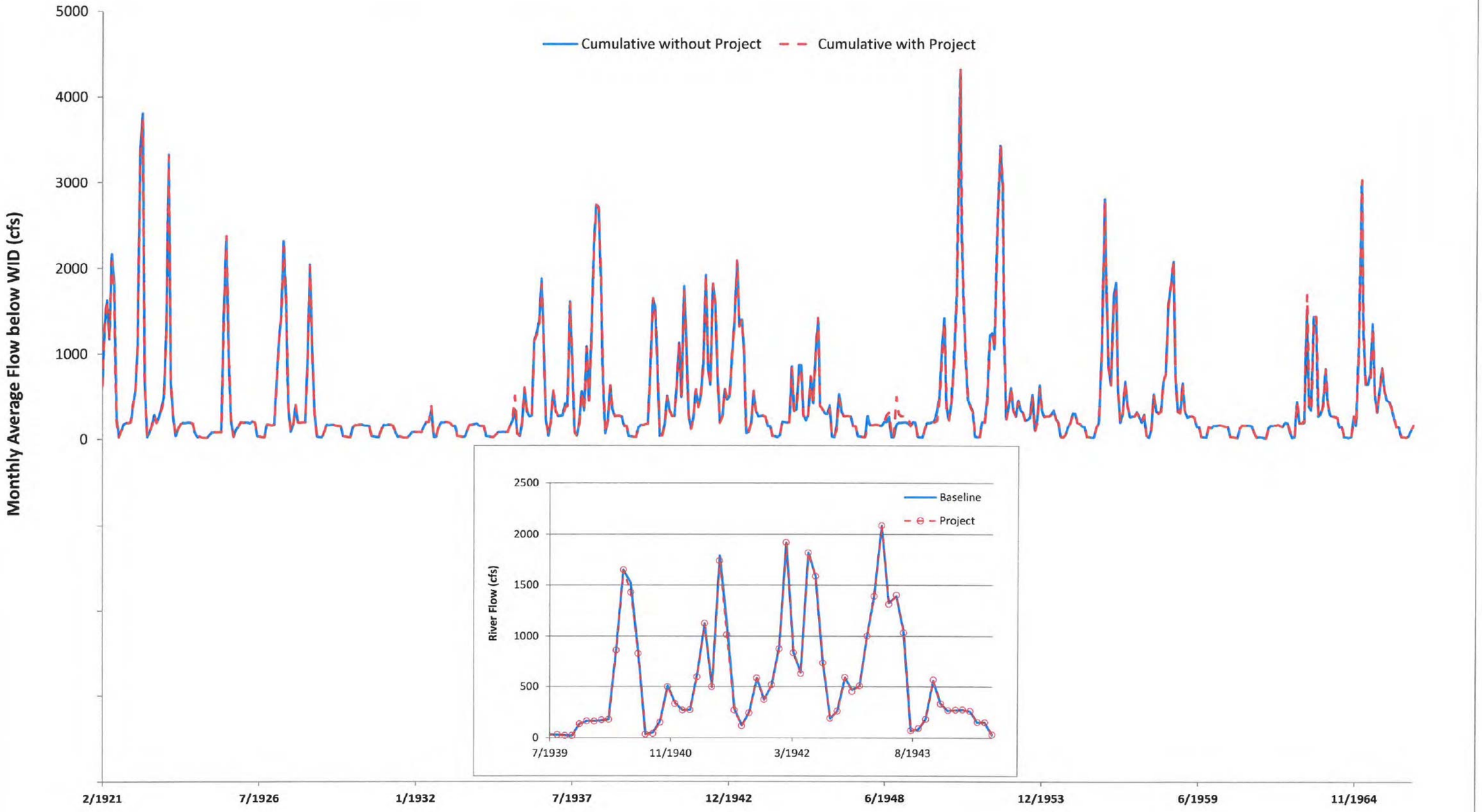
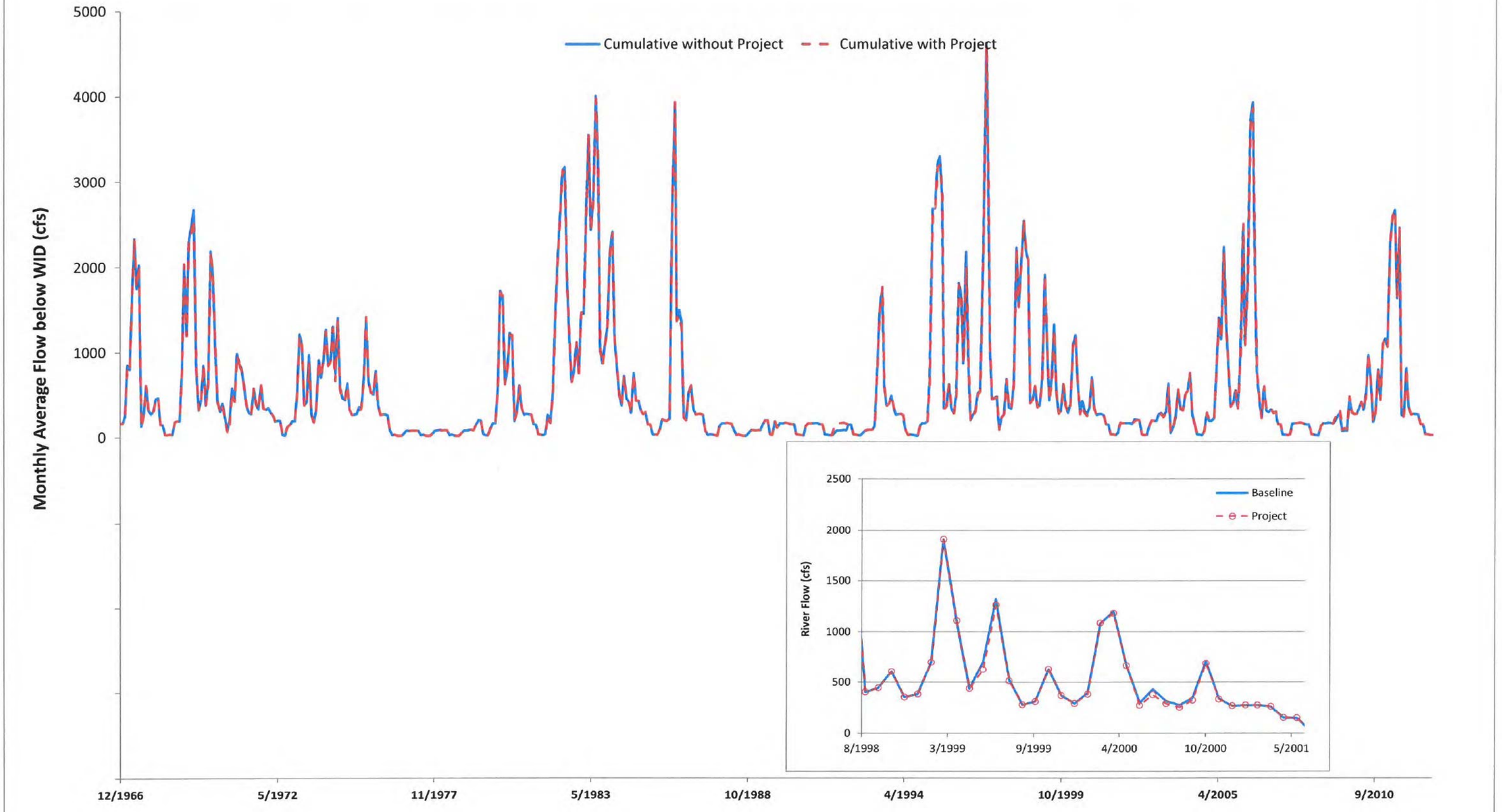


Figure CWR-7(b). Flows below WID - Cumulative with Project vs Cumulative without Project



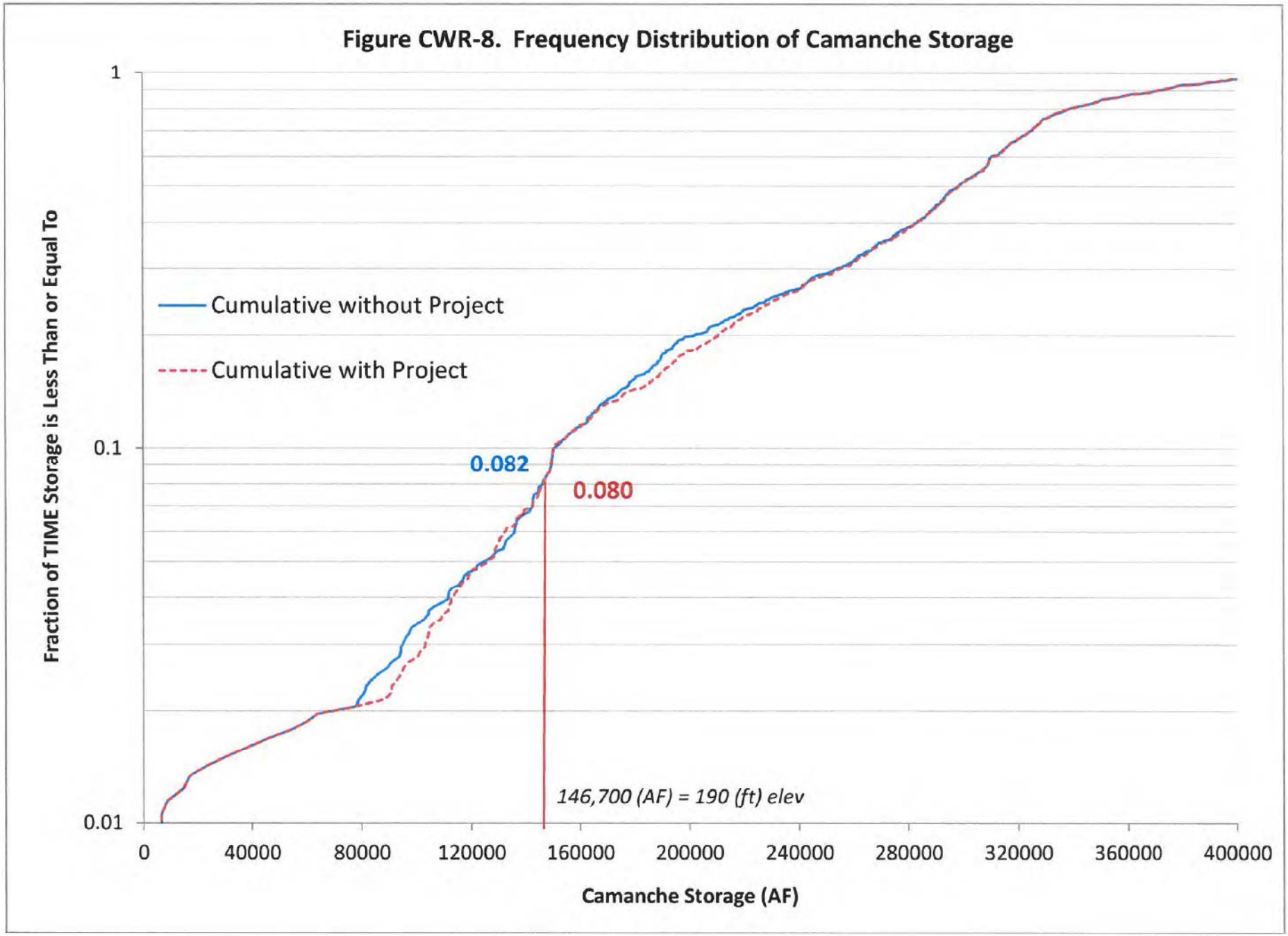
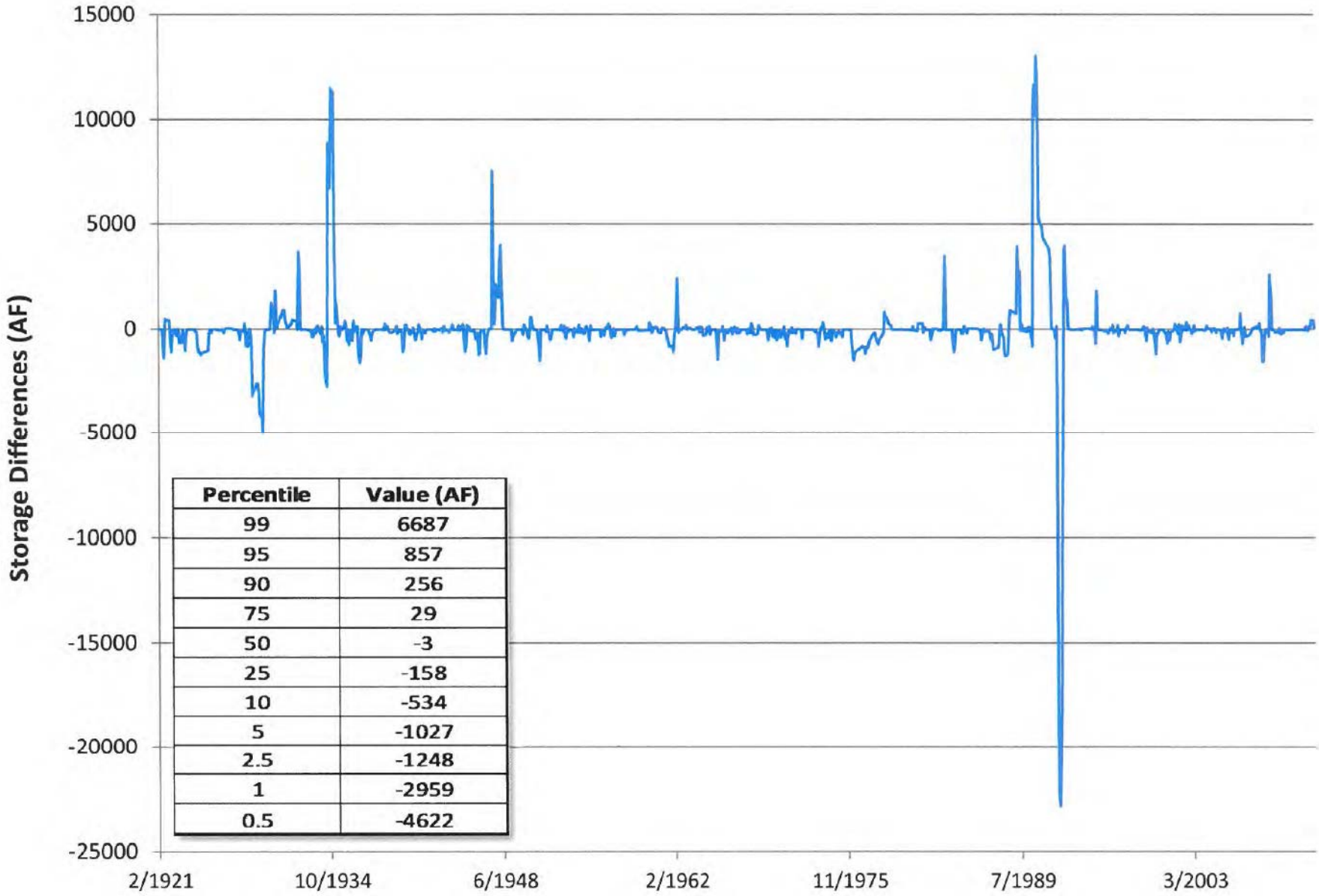


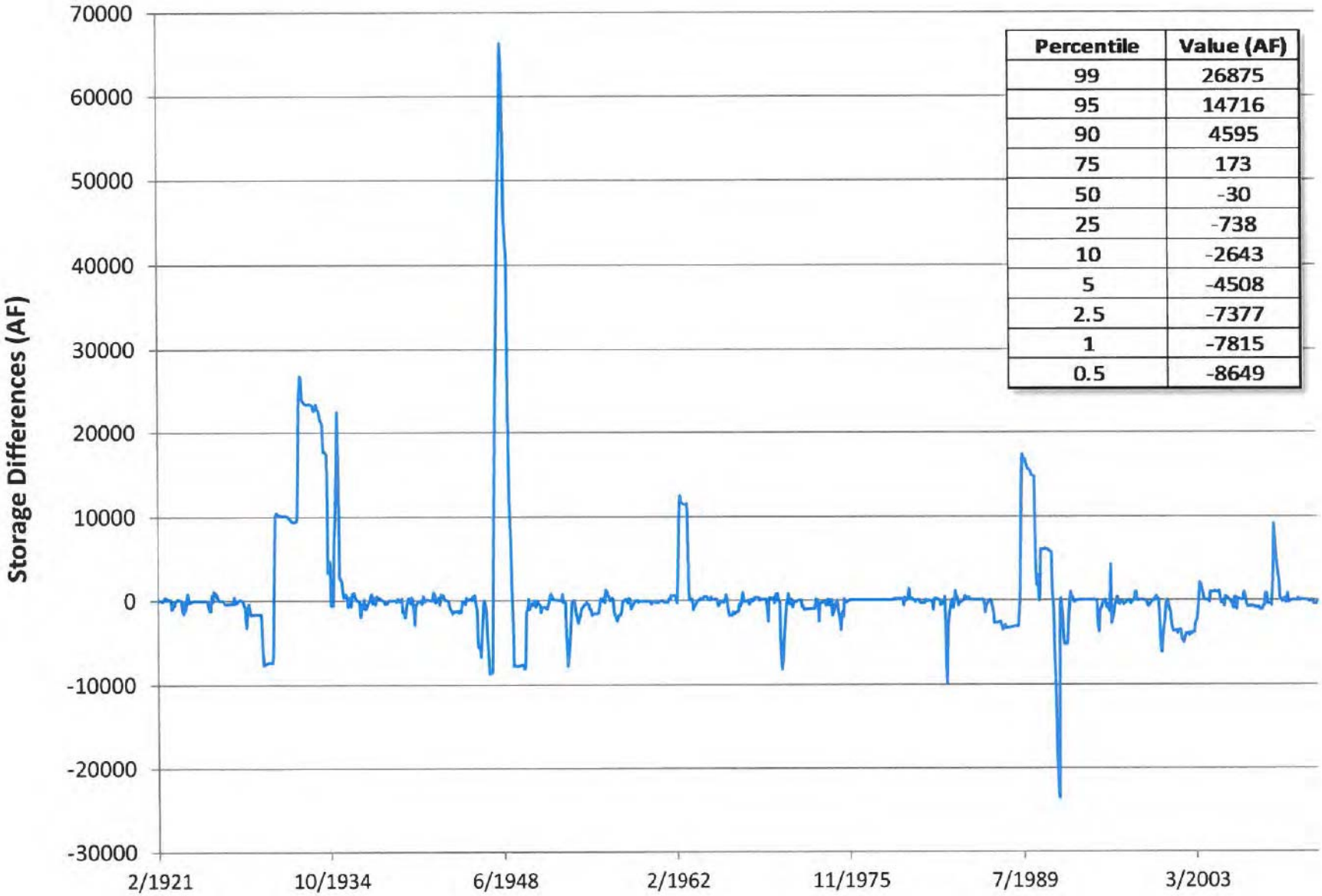
Figure CWR-8. Frequency Distribution of Camanche Storage
Fraction of TIME Storage is Less Than or Equal To
1
0.1
0.01
Cumulative without Project
Cumulative with Project
0.082
0.080
146,700 (AF) = 190 (ft) elev
0
40000
80000
120000
160000
200000
240000
280000
320000
360000
400000
Camanche Storage (AF)

Figure CF-1. Diff in Pardee Storage - Cumulative with Project vs. Cumulative without Project



Percentile	Value (AF)
99	6687
95	857
90	256
75	29
50	-3
25	-158
10	-534
5	-1027
2.5	-1248
1	-2959
0.5	-4622

Figure CF-2. Diff in Camanche Storage - Cum. with Project vs. Cum. without Project



Percentile	Value (AF)
99	26875
95	14716
90	4595
75	173
50	-30
25	-738
10	-2643
5	-4508
2.5	-7377
1	-7815
0.5	-8649

8028 Cumulative without Project

New DMP EOS-TSS triggers (325-390-425-500 TAF) and rationing schedule (20-15-10-0).

FRWP: First year July start at 110 cfs, 450 trigger. JSA, gainshare are active.

EBMUD demand at 230 MGD with 2040 LOD for diversions

8029 Cumulative with Project

New DMP EOS-TSS triggers (325-390-425-500 TAF) and rationing schedule (20-15-10-0).

FRWP: First year July start at 110 cfs, 450 trigger. JSA, gainshare are active.

EBMUD demand at 230 MGD with 2040 LOD for diversions

Definitions:

TRA = Terminal Reservoir Area

Below Lodi = below Woodbridge Irrigation District

Camanche Out Flow = Total Cmanche Release

JSA Yea Ty 0 = Above Normal

1 = Below Normal

2 = Dry

3 = Critically Dry

Date	Cumulative without Project (acre-ft) Pardee Storage	Cumulative with Project (acre-ft) Pardee Storage	Cumulative without Project (acre-ft) Camanche Storage	Cumulative with Project (acre-ft) Camanche Storage	Cumulative without Project (acre-ft) TRA Storage	Cumulative with Project (acre-ft) TRA Storage	Cumulative without Project (NA) JSA Year Type	Cumulative with Project (NA) JSA Year Type	Cumulative without Project (cfs) Camanche Outflow	Cumulative with Project (cfs) Camanche Outflow	Cumulative without Project (cfs) Required Minimum Flows	Cumulative with Project (cfs) Required Minimum Flows	Cumulative without Project (cfs) Camanche Flood Release	Cumulative with Project (cfs) Camanche Flood Release	Cumulative without Project (cfs) Flow below Lodi Lake	Cumulative with Project (cfs) Flow below Lodi Lake
1/1921	190756.3	190756.3	325201.9	325201.9	134330.0	134330.0	1	1	681.9	681.9	241.94	241.94	440.0	440.0	631.10	631.10
2/1921	187375.9	187375.9	315452.3	315452.3	139009.4	139009.4	1	1	1372.9	1372.9	250.00	250.00	1122.9	1122.9	1319.28	1319.28
3/1921	205668.2	205668.2	305539.8	305539.8	142133.5	142133.5	1	1	1695.5	1695.5	250.00	250.00	1445.5	1445.5	1631.25	1631.25
4/1921	209886.4	209886.4	346421.6	346421.6	141261.6	141261.6	1	1	1295.3	1295.3	474.84	474.84	820.5	820.5	1174.36	1174.36
5/1921	208317.5	207866.9	388274.2	388146.5	135401.5	133025.7	1	1	2447.1	2363.9	677.99	677.85	1769.1	1686.0	2169.26	2086.17
6/1921	199566.4	198183.3	413498.8	413581.8	127806.7	121796.7	1	1	2166.4	2109.1	778.42	776.67	1388.0	1332.4	1788.04	1730.76
7/1921	178581.9	179074.1	378509.9	378870.2	118776.6	112842.6	1	1	677.7	642.7	452.63	452.57	225.1	190.1	255.26	220.24
8/1921	157647.7	158089.5	350888.1	351223.2	109119.0	103311.1	1	1	374.5	374.8	374.04	374.04	0.4	0.8	21.99	22.35
9/1921	136973.7	137411.7	328471.4	328653.2	101098.8	95364.7	1	1	322.6	325.2	254.24	254.26	68.4	70.9	89.12	91.66
10/1921	125094.6	125529.4	308689.2	308806.9	95963.6	90297.4	1	1	318.8	319.8	250.00	250.00	68.8	69.8	177.10	178.13
11/1921	113289.7	113711.6	294581.1	294698.6	95260.2	89659.8	1	1	250.0	250.0	250.00	250.00	0.0	0.0	193.88	193.88
12/1921	112974.8	112706.6	282271.8	282389.3	107196.2	102309.8	1	1	250.0	250.0	250.00	250.00	0.0	0.0	192.89	192.89
1/1922	140917.2	139824.0	277658.1	277776.0	117241.1	113218.9	1	1	250.0	250.0	250.00	250.00	0.0	0.0	201.65	201.65
2/1922	201090.2	201013.9	317648.1	316636.3	130199.0	126602.2	1	1	452.9	447.5	250.00	250.00	202.9	197.5	411.96	406.63
3/1922	182834.2	182610.1	334735.5	333973.1	135155.0	132478.5	1	1	645.2	629.0	250.00	250.00	395.2	379.0	579.21	563.10
4/1922	207790.9	207801.0	333526.3	332963.7	136088.4	133749.7	0	0	1228.8	1216.3	525.00	525.00	703.8	691.3	1106.89	1094.42
5/1922	218375.7	218222.1	389110.5	388919.6	131823.8	126207.0	0	0	3664.5	3583.9	778.95	778.90	2885.6	2805.0	3386.06	3305.49
6/1922	208093.2	207770.1	407134.1	407141.6	124685.9	115481.7	0	0	4186.7	4116.7	880.30	880.22	3306.4	3236.4	3807.89	3737.95
7/1922	184491.4	184509.9	369696.4	369856.9	115768.9	106694.4	0	0	1068.9	1060.9	457.26	457.26	611.7	603.6	645.89	637.83
8/1922	165425.8	165238.4	341963.4	342122.7	106710.9	97973.7	0	0	377.5	377.5	377.51	377.51	0.0	0.0	25.04	25.04
9/1922	145838.1	145164.5	320041.0	320127.4	99415.2	91275.6	0	0	314.9	316.1	259.15	259.16	55.7	56.9	81.40	82.61
10/1922	132411.6	131773.3	300848.0	300897.3	96690.7	88604.1	1	1	304.4	305.0	250.00	250.00	54.4	55.0	162.49	163.09
11/1922	139473.2	138837.7	285687.7	285737.3	98666.9	90643.2	1	1	339.6	339.6	250.00	250.00	89.6	89.6	285.95	285.94
12/1922	171158.2	171124.5	292161.0	290921.1	112227.0	104926.7	1	1	250.0	250.0	250.00	250.00	0.0	0.0	193.31	193.31
1/1923	173031.4	172694.4	320868.9	319379.2	119852.3	113158.5	1	1	322.6	322.6	250.00	250.00	72.6	72.6	271.55	271.55
2/1923	168154.3	167135.5	328796.2	328496.2	125049.5	119092.9	1	1	421.4	400.0	250.00	250.00	171.4	150.0	369.01	347.60
3/1923	172826.5	172389.5	331678.5	330635.3	128378.9	124920.0	1	1	559.7	522.6	250.00	250.00	309.7	272.6	496.68	459.64
4/1923	209252.2	209236.0	354752.7	355036.3	132089.3	129073.4	1	1	1355.4	1319.1	473.08	471.35	882.4	847.8	1236.68	1200.41
5/1923	206602.8	206602.8	393804.3	394625.0	126858.8	124312.7	1	1	3583.9	3567.7	678.97	678.94	2904.9	2888.8	3325.96	3309.86
6/1923	198597.0	198597.0	410781.6	410531.3	119642.0	117125.2	1	1	1049.4	1067.4	777.06	777.11	272.3	290.3	672.34	690.29
7/1923	184583.9	184583.9	376788.4	376574.8	110703.9	108216.2	1	1	681.2	680.6	452.71	452.71	228.4	227.9	258.62	258.05
8/1923	164479.0	164479.0	348304.4	348154.0	101721.9	99266.1	1	1	388.8	387.8	374.29	374.27	14.5	13.5	36.06	35.08
9/1923	145861.7	145861.7	324037.7	323956.1	94972.4	92547.2	1	1	352.9	351.7	254.63	254.61	98.2	97.1	118.91	117.79
10/1923	132568.8	132568.8	303318.3	303299.0	91281.2	88884.5	1	1	318.4	317.4	250.00	250.00	68.4	67.4	176.08	175.09
11/1923	126386.9	126386.9	290271.8	290252.5	90106.1	87734.9	1	1	250.0	250.0	250.00	250.00	0.0	0.0	194.51	194.51
12/1923	111862.3	111725.1	274204.8	274185.5	94298.3	92085.7	1	1	250.0	250.0	250.00	250.00	0.0	0.0	190.73	190.73
1/1924	113592.3	113455.6	264985.8	264966.5	103905.5	101711.5	1	1	250.0	250.0	250.00	250.00	0.0	0.0	199.01	199.01
2/1924	117188.9	116325.9	254388.0	254368.7	113097.7	111645.0	1	1	250.0	250.0	250.00	250.00	0.0	0.0	197.62	197.62
3/1924	108968.9	107894.1	241243.7	241224.4	121238.4	120013.1	1	1	250.0	250.0	250.00	250.00	0.0	0.0	186.92	186.92
4/1924	143736.1	142623.8	229754.9	229735.7	124700.7	123534.2	3	3	199.8	199.8	199.79	199.79	0.0	0.0	77.72	77.72
5/1924	180727.0	179497.4	216048.5	216029.4	119830.7	118804.4	3	3	210.8	210.8	210.75	210.75	0.0	0.0	23.83	23.83
6/1924	160231.2	159073.3	198313.8	198294.9	111809.8	110737.9	3	3	268.5	268.5	268.51	268.51	## 0.0	0.0	31.00	31.00
7/1924	143742.9	142613.9	180343.3	180324.6	102860.9	101805.9	3	3	241.1	241.1	241.05	241.05	0.0	0.0	18.14	18.14
8/1924	127735.8	126641.0	164657.9	164639.4	94457.4	93414.5	3	3	208.5	208.5	208.46	208.46	0.0	0.0	15.03	15.03
9/1924	113731.2	112673.9	153319.1	153300.7	87796.3	86762.9	3	3	157.6	157.6	157.59	157.59	0.0	0.0	15.07	15.07
10/1924	103923.9	102840.9	149845.2	149827.0	85391.0	84425.9	3	3	131.4	131.4	131.36	131.36	0.0	0.0	47.03	47.03
11/1924	113056.6	112008.2	142600.9	142582.7	84537.8	83575.8	3	3	131.6	131.6	131.58	131.58	0.0	0.0	75.87	75.87
12/1924	150513.6	149486.1	142948.2	142930.0	92185.6	91228.9	3	3	133.6	133.6	133.62	133.62	0.0	0.0	80.68	80.68
1/1925	161724.0	161501.5	149079.2	148267.2	103399.5	102457.7	3	3	130.0	130.0	130.00	130.00	0.0	0.0	79.15	79.15
2/1925	202077.1	202072.6	214102.1	212929.8	124911.8	124123.1	3	3	130.0	130.0	130.00	130.00	0.0	0.0	79.36	79.36
3/1925	198845.1	198670.5	292793.5	291615.0	130767.4	130159.4	3	3	140.0	140.0	139.99	139.99	0.0	0.0	79.14	79.14
4/1925	206944.4	206938.4	350908.1	351601.1	135320.7	134897.5	1	1	1607.7	1570.4	475.03	475.00	1132.7	1095.4	1486.39	1449.08
5/1925	208687.1	208686.0	395991.0	395838.6	134040.6	133668.6	1	1	2636.8	2649.7	678.13	678.16	1958.6	1971.5	2358.84	2371.71
6/1925	198852.2	198852.2	412695.8	413760.7	126877.1	126510.7	1	1	1430.0	1409.6	777.72	777.68	652.3	631.9	1052.36	1031.92
7/1925	179959.8	179959.8	377291.2	378224.6	117969.7	117609.3	1	1	657.8	659.8	452.57	452.57	205.3	207.3	235.41	237.44
8/1925	161277.7	161277.7	349507.4	350277.9	108566.6	108212.0	1	1	377.2	379.8	374.04	374.04	3.2	5.7	24.77	27.33

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type	*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows		*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
9/1925	142607.3	142607.3	326393.9	326811.8	100669.5	100319.4	1	1	334.5	340.4	254.30	254.38		80.2	86.0	100.93	106.71
10/1925	123602.4	123543.5	306973.0	307071.5	95581.5	95294.4	1	1	283.0	288.1	250.00	250.00		33.0	38.1	140.34	145.50
11/1925	128221.4	128162.7	297607.7	297607.7	94780.7	94495.7	1	1	252.0	253.7	250.00	250.00		2.0	3.7	198.75	200.38
12/1925	134669.7	134611.3	286495.3	286495.3	99082.8	98799.9	1	1	250.0	250.0	250.00	250.00		0.0	0.0	193.58	193.58
1/1926	133198.2	133186.0	274678.7	274678.7	111480.9	111153.2	1	1	250.0	250.0	250.00	250.00		0.0	0.0	197.51	197.51
2/1926	159665.3	159615.1	263680.8	263680.8	121188.5	120900.7	1	1	250.0	250.0	250.00	250.00		0.0	0.0	197.09	197.09
3/1926	172052.8	171869.6	275397.4	275397.4	126351.5	126199.2	1	1	250.0	250.0	250.00	250.00		0.0	0.0	187.20	187.20
4/1926	207048.6	207047.0	336882.4	336623.7	131192.3	131119.2	2	2	332.1	332.1	273.10	273.10		59.0	59.0	210.66	210.66
5/1926	192006.3	192041.0	380687.1	380318.5	126339.1	126341.2	2	2	415.2	415.2	370.06	370.06		45.1	45.1	195.22	195.22
6/1926	184946.3	184980.9	363759.2	363392.1	118743.7	118745.6	2	2	328.1	328.1	328.08	328.08		0.0	0.0	32.49	32.49
7/1926	161458.1	161492.3	336814.3	336449.8	109448.4	109449.9	2	2	363.5	363.5	363.47	363.47		0.0	0.0	29.28	29.28
8/1926	138310.5	138344.3	312908.3	312546.4	100475.8	100477.2	2	2	318.5	318.5	318.52	318.52		0.0	0.0	21.59	21.59
9/1926	116104.8	116138.3	296735.1	296375.4	93704.2	93705.8	2	2	219.8	219.8	219.82	219.82	##	0.0	0.0	20.03	20.03
10/1926	99775.0	99808.2	278151.7	277793.6	88988.0	88989.8	2	2	294.7	294.7	220.00	220.00		74.7	74.7	172.38	172.38
11/1926	138108.9	138142.1	274753.8	274394.8	93224.4	93226.6	2	2	220.0	220.0	220.00	220.00		0.0	0.0	169.19	169.19
12/1926	154626.9	154614.1	262441.3	262082.9	97042.6	97090.7	2	2	220.0	220.0	220.00	220.00		0.0	0.0	161.81	161.81
1/1927	165899.5	165886.7	278665.8	278306.7	109661.1	109709.1	2	2	220.0	220.0	220.00	220.00		0.0	0.0	169.20	169.20
2/1927	205826.2	205826.0	319631.0	320051.6	123154.9	123203.2	2	2	697.1	682.9	220.00	220.00		477.1	462.9	647.52	633.23
3/1927	193232.0	193231.9	325662.8	325329.5	128569.0	128617.2	2	2	1216.1	1228.4	220.00	220.00		996.1	1008.4	1150.25	1162.47
4/1927	211561.4	211561.2	356438.1	356447.1	132890.0	132952.9	0	0	1567.3	1561.3	525.00	525.00		1042.3	1036.3	1444.11	1438.07
5/1927	205041.9	204885.2	375743.8	375493.6	127957.2	124616.4	0	0	2598.1	2529.0	778.32	778.24		1819.7	1750.8	2319.97	2251.03
6/1927	201018.6	200513.5	412425.5	412435.3	121037.3	114073.3	0	0	2027.2	1959.1	878.23	878.19		1149.0	1080.9	1649.41	1581.33
7/1927	186955.4	186844.6	373910.5	373997.9	112181.0	105310.0	0	0	797.8	790.2	456.72	456.72		341.1	333.5	375.25	367.58
8/1927	167224.9	167115.4	342361.9	342421.0	103233.6	96458.4	0	0	439.1	439.5	378.18	378.18		60.9	61.4	85.94	86.39
9/1927	146142.2	146033.7	315318.8	315350.9	96471.9	89784.7	0	0	405.9	406.3	259.94	259.94		145.9	146.4	171.76	172.21
10/1927	138796.6	138688.7	283781.0	283789.9	92867.6	86258.5	1	1	539.1	539.5	250.00	250.00		289.1	289.5	397.72	398.10
11/1927	160224.8	160492.1	274630.2	274264.3	93069.7	86524.0	1	1	250.0	250.0	250.00	250.00		0.0	0.0	196.14	196.14
12/1927	165934.1	165149.7	267815.1	267074.2	98698.1	93634.2	1	1	250.0	250.0	250.00	250.00		0.0	0.0	193.43	193.43
1/1928	161527.1	161367.0	263859.2	261773.7	109463.6	105162.0	1	1	250.0	250.0	250.00	250.00		0.0	0.0	197.01	197.01
2/1928	160361.5	159524.2	273497.7	270264.7	117215.6	114770.1	1	1	250.0	250.0	250.00	250.00		0.0	0.0	197.55	197.55
3/1928	211604.6	211611.9	353470.9	352651.3	126192.4	124465.9	1	1	1023.9	959.4	250.00	250.00		773.9	709.4	963.03	898.60
4/1928	207357.3	207363.2	348294.9	347871.2	128487.6	127373.2	1	1	2166.0	2149.3	475.79	475.76		1690.2	1673.6	2042.21	2025.57
5/1928	203523.4	203094.7	406089.5	404965.7	123868.3	118982.2	1	1	1328.6	1277.5	676.79	676.74		651.8	600.8	1051.84	1000.78
6/1928	186633.2	183411.0	378571.9	376915.8	116239.3	107755.3	1	1	684.4	671.0	684.41	671.02		0.0	0.0	308.39	295.05
7/1928	163768.6	160809.4	346070.3	344426.1	107069.0	98477.2	1	1	452.1	452.1	452.14	452.14		0.0	0.0	30.15	30.15
8/1928	141272.6	138343.2	318697.7	317065.2	98095.2	89626.3	1	1	374.0	374.0	374.02	374.02		0.0	0.0	21.59	21.59
9/1928	120162.6	117259.9	300457.9	298834.9	91361.5	82999.6	1	1	254.1	254.1	254.09	254.09		0.0	0.0	20.73	20.73
10/1928	100756.1	98107.8	284847.2	283231.5	85902.4	77386.0	2	2	222.7	222.7	222.65	222.65		0.0	0.0	80.08	80.08
11/1928	102564.0	99928.8	277381.1	275765.0	85385.6	76901.5	2	2	220.0	220.0	220.00	220.00		0.0	0.0	166.77	166.77
12/1928	100169.5	97042.9	268111.2	266494.9	91891.6	83964.7	2	2	220.0	220.0	220.00	220.00		0.0	0.0	163.58	163.58
1/1929	84613.9	80526.6	258137.2	256520.6	100773.6	93901.9	2	2	220.0	220.0	220.00	220.00		0.0	0.0	167.51	167.51
2/1929	75845.1	71640.5	248804.7	247188.0	109511.2	102839.0	2	2	220.0	220.0	220.00	220.00		0.0	0.0	167.09	167.09
3/1929	82097.7	78058.0	239659.6	238042.5	117042.6	110299.2	2	2	220.0	220.0	220.00	220.00		0.0	0.0	158.21	158.21
4/1929	117487.9	112448.9	224725.6	223112.9	121198.6	115562.2	2	2	274.8	274.8	274.76	274.76		0.0	0.0	151.64	151.64
5/1929	195253.9	194304.7	233089.3	227056.2	117234.4	112061.6	2	2	337.9	337.9	337.94	337.94		0.0	0.0	150.08	150.08
6/1929	190342.8	190342.9	256516.3	248883.9	110779.7	106361.2	2	2	268.5	268.5	268.49	268.49		0.0	0.0	32.47	32.47
7/1929	175283.5	175283.9	236926.9	229371.3	101330.6	97131.7	2	2	278.4	278.4	278.43	278.43		0.0	0.0	29.32	29.32
8/1929	159663.0	159663.4	219179.3	211700.1	92271.9	88321.3	2	2	232.1	232.1	232.09	232.09		0.0	0.0	21.55	21.55
9/1929	145227.3	145227.7	206477.5	199058.5	84889.7	81209.5	2	2	172.5	172.5	172.49	172.49		0.0	0.0	20.03	20.03
10/1929	130784.7	130785.0	191722.7	184347.6	81667.4	78259.0	2	2	220.0	220.0	220.00	220.00		0.0	0.0	134.13	134.13
11/1929	118465.0	118465.4	177734.9	170395.3	80573.1	77402.7	2	2	220.0	220.0	220.00	220.00		0.0	0.0	162.63	162.63
12/1929	120867.6	122127.4	168101.4	160761.9	87934.2	83704.0	2	2	220.0	220.0	220.00	220.00		0.0	0.0	163.37	163.37
1/1930	130904.0	131689.6	162476.6	155107.6	98442.6	94867.9	2	2	220.0	220.0	220.00	220.00		0.0	0.0	170.23	170.23
2/1930	147961.9	148818.8	154720.8	147341.1	108581.8	105112.4	2	2	220.0	220.0	220.00	220.00		0.0	0.0	168.21	168.21
3/1930	178973.2	178807.0	162881.5	156523.0	116962.0	113687.7	2	2	220.0	220.0	220.00	220.00		0.0	0.0	156.70	156.70

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type	*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows	*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
4/1930	201882.1	203727.7	210987.8	212273.2	122995.8	116812.1	2	2	272.8	272.8	272.80	272.80	0.0	0.0	158.13	158.13
5/1930	204444.2	204760.4	270212.8	280298.9	119031.4	112671.0	2	2	370.0	370.0	370.00	370.00	0.0	0.0	150.58	150.58
6/1930	187734.4	187818.1	309531.0	319980.1	111772.5	105629.2	2	2	328.1	328.1	328.08	328.08	0.0	0.0	30.59	30.59
7/1930	164998.7	165357.7	283734.3	294101.6	104163.4	98172.5	2	2	363.5	363.5	363.47	363.47	0.0	0.0	29.28	29.28
8/1930	141932.1	142229.1	260525.5	270805.7	96434.5	90918.1	2	2	318.5	318.5	318.52	318.52	0.0	0.0	21.75	21.75
9/1930	120373.4	120960.4	244960.8	255167.2	89862.6	84434.0	2	2	219.8	219.8	219.82	219.82	0.0	0.0	20.19	20.19
10/1930	102191.2	102735.2	230398.6	240550.6	85754.5	80607.0	2	2	223.6	223.7	220.00	220.00	3.6	3.7	100.99	101.06
11/1930	91211.0	91892.3	219274.3	229405.5	84798.5	79694.8	2	2	220.0	220.0	220.00	220.00	0.0	0.0	164.51	164.51
12/1930	73923.0	74846.4	205252.6	215352.6	88880.2	83676.8	2	2	220.0	220.0	220.00	220.00	0.0	0.0	160.73	160.73
1/1931	64564.7	65481.3	197751.7	207871.1	97015.0	91930.7	2	2	220.0	220.0	220.00	220.00	0.0	0.0	169.01	169.01
2/1931	63780.3	64376.5	189270.8	199396.6	101310.9	96670.0	2	2	220.0	220.0	220.00	220.00	0.0	0.0	167.68	167.68
3/1931	59992.3	60275.5	178048.6	188161.3	105018.4	100718.6	2	2	220.0	220.0	220.00	220.00	0.0	0.0	156.95	156.95
4/1931	65400.4	65491.1	166796.3	176867.8	104321.4	100251.7	3	3	199.8	199.8	199.76	199.76	0.0	0.0	77.73	77.73
5/1931	63407.3	63492.9	153512.1	163510.3	101686.8	97662.4	3	3	210.7	210.7	210.72	210.72	0.0	0.0	23.82	23.82
6/1931	61122.6	61248.0	136325.2	146229.4	94349.8	90334.4	3	3	268.5	268.5	268.48	268.48	0.0	0.0	31.00	31.00
7/1931	75107.5	75324.0	119159.7	128917.8	86828.1	82780.4	3	3	241.0	241.0	241.03	241.03	0.0	0.0	18.09	18.09
8/1931	86583.2	86779.0	104317.7	113916.3	81846.1	77875.2	3	3	208.5	208.5	208.48	208.48	0.0	0.0	15.02	15.02
9/1931	86878.7	87331.4	93669.9	103138.8	77157.9	72978.7	3	3	157.6	157.6	157.62	157.62	0.0	0.0	15.07	15.07
10/1931	83425.5	83853.5	85889.6	95271.6	74185.1	70872.1	3	3	131.4	131.4	131.37	131.37	0.0	0.0	46.64	46.64
11/1931	84291.6	84696.1	81676.2	91039.1	74919.6	71960.5	3	3	131.6	131.6	131.60	131.60	0.0	0.0	77.80	77.80
12/1931	100890.9	101275.2	83503.0	92958.2	85717.3	82770.0	3	3	133.7	133.7	133.66	133.66	0.0	0.0	81.97	81.97
1/1932	115147.8	115517.7	78955.6	88414.7	96581.3	93664.3	3	3	130.0	130.0	130.00	130.00	0.0	0.0	78.18	78.18
2/1932	161708.7	161698.6	80997.9	90897.9	107957.8	105058.3	3	3	130.0	130.0	130.00	130.00	0.0	0.0	81.08	81.08
3/1932	168553.2	172242.4	89290.0	104502.2	116584.8	111414.8	3	3	140.0	140.0	140.00	140.00	0.0	0.0	76.07	76.07
4/1932	181469.9	184067.9	96177.2	120695.3	122086.3	115181.7	1	1	272.8	272.8	272.80	272.80	0.0	0.0	151.16	151.16
5/1932	206519.9	206520.0	188520.0	215394.6	117819.6	111032.6	1	1	420.0	420.0	420.03	420.03	0.0	0.0	201.48	201.48
6/1932	206046.5	206046.5	303853.1	330535.3	110569.9	103875.5	1	1	498.5	498.5	498.48	498.48	0.0	0.0	199.97	199.97
7/1932	192648.3	192648.3	283153.3	307165.7	101813.0	95211.4	1	1	679.3	719.6	365.23	365.31	314.1	354.3	344.59	384.82
8/1932	193426.3	193426.3	261554.5	285367.3	92991.1	86475.8	1	1	318.5	318.5	318.50	318.50	0.0	0.0	21.60	21.60
9/1932	189024.6	189024.6	253710.0	277358.9	86345.6	79908.3	1	1	223.7	223.7	219.82	219.82	3.8	3.8	23.88	23.88
10/1932	169686.2	169686.2	261561.3	285091.6	82963.6	76599.0	1	1	250.0	250.0	250.00	250.00	0.0	0.0	126.89	126.89
11/1932	155935.8	155935.8	255982.4	279442.9	81962.3	75651.2	1	1	250.0	250.0	250.00	250.00	0.0	0.0	193.31	193.31
12/1932	150164.5	150118.5	243696.0	267145.3	87311.4	81083.9	1	1	250.0	250.0	250.00	250.00	0.0	0.0	192.89	192.89
1/1933	146466.3	146420.5	236016.7	259535.0	101114.8	94895.7	1	1	250.0	250.0	250.00	250.00	0.0	0.0	199.97	199.97
2/1933	134690.3	134591.2	223755.3	247255.0	109662.8	103533.5	1	1	250.0	250.0	250.00	250.00	0.0	0.0	196.27	196.27
3/1933	136223.5	136137.0	211631.0	235119.1	119895.4	113788.2	1	1	250.0	250.0	250.00	250.00	0.0	0.0	186.53	186.53
4/1933	143329.5	142972.3	194622.2	218005.1	123130.3	117365.0	2	2	272.8	272.8	272.80	272.80	0.0	0.0	150.22	150.22
5/1933	177881.2	177511.7	172132.0	195373.8	119358.4	113671.2	2	2	370.0	370.0	370.00	370.00	0.0	0.0	151.25	151.25
6/1933	194338.4	194343.6	216864.2	239533.8	111834.8	106232.8	2	2	328.1	328.1	328.08	328.08	0.0	0.0	30.65	30.65
7/1933	197243.6	197034.2	194312.6	217503.0	103791.3	97521.9	2	2	363.5	363.5	363.47	363.47	0.0	0.0	29.28	29.28
8/1933	193370.1	193445.3	179505.5	202967.6	96029.3	88767.8	2	2	318.5	318.5	318.52	318.52	0.0	0.0	21.59	21.59
9/1933	188994.3	189162.5	173509.8	196390.1	89437.4	82233.6	2	2	224.7	224.7	219.85	219.85	4.8	4.9	24.96	25.00
10/1933	173506.7	173427.4	187595.5	210328.3	86805.0	79637.4	2	2	220.7	220.7	220.00	220.00	0.7	0.7	99.26	99.26
11/1933	157652.2	157665.6	186253.2	208513.4	85827.6	78714.1	2	2	220.0	220.0	220.00	220.00	0.0	0.0	162.66	162.66
12/1933	166023.0	165791.4	194766.1	216546.9	92192.0	85699.3	2	2	220.0	220.0	220.00	220.00	0.0	0.0	167.69	167.69
1/1934	160239.5	160353.7	198374.3	219563.9	103348.9	96895.4	2	2	220.0	220.0	220.00	220.00	0.0	0.0	173.47	173.47
2/1934	166453.1	165819.6	206981.8	227849.2	114845.0	109327.8	2	2	220.0	220.0	220.00	220.00	0.0	0.0	181.44	181.44
3/1934	167257.7	166939.5	207488.2	225207.8	121497.2	118795.4	2	2	220.0	220.0	220.00	220.00	0.0	0.0	155.25	155.25
4/1934	167571.7	165305.4	190019.8	207654.3	124872.6	123975.7	2	2	274.8	274.8	274.76	274.76	0.0	0.0	149.99	149.99
5/1934	163697.2	161174.3	169307.7	186830.5	123076.2	122126.3	2	2	338.0	338.0	337.96	337.96	0.0	0.0	151.14	151.14
6/1934	157614.1	154816.5	151766.7	169129.2	118812.0	117801.5	2	2	268.5	268.5	268.49	268.49	0.0	0.0	30.87	30.87
7/1934	146980.6	155856.3	146290.3	149576.9	112078.8	112908.5	2	2	278.4	278.4	278.43	278.43	0.0	0.0	29.32	29.32
8/1934	132205.2	139172.6	141802.8	146423.6	107226.9	108085.8	2	2	232.1	232.1	232.09	232.09	0.0	0.0	21.55	21.55
9/1934	118832.5	125520.0	144880.3	149475.7	101474.7	102150.4	2	2	172.5	172.5	172.49	172.49	0.0	0.0	20.49	20.49
10/1934	108318.3	119812.6	150523.3	149938.1	97644.2	98377.9	3	3	131.4	131.4	131.42	131.42	0.0	0.0	46.94	46.94

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type	*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows	*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
11/1934	122050.0	133257.2	147737.2	147151.9	97377.2	98167.2	3	3	131.6	131.6	131.60	131.60	0.0	0.0	78.81	78.81
12/1934	137596.7	148915.4	143321.3	142736.2	104876.7	105371.4	3	3	133.6	133.6	133.64	133.64	0.0	0.0	77.66	77.66
1/1935	161568.3	165185.7	142737.5	149266.6	118576.9	119511.8	3	3	130.0	130.0	130.00	130.00	0.0	0.0	79.97	79.97
2/1935	163929.1	164204.5	158219.3	168066.3	126610.2	127439.5	3	3	130.0	130.0	130.00	130.00	0.0	0.0	79.00	79.00
3/1935	167346.2	168614.2	170357.3	185801.4	134612.4	135612.1	3	3	140.0	140.0	140.01	140.01	0.0	0.0	78.58	78.58
4/1935	208871.1	209138.8	243215.0	265793.4	139889.4	141327.5	1	1	272.8	272.8	272.78	272.78	0.0	0.0	156.07	156.07
5/1935	205663.3	205464.3	338475.5	354959.2	133805.5	132708.8	1	1	475.3	489.8	475.29	489.81	0.0	0.0	221.02	235.53
6/1935	194936.3	194606.6	406732.6	409382.7	126358.8	121607.3	1	1	721.3	885.6	721.26	756.65	0.0	128.9	344.96	508.86
7/1935	195164.0	195281.9	374165.3	376782.4	117468.5	112766.4	1	1	487.1	480.0	452.19	452.19	34.9	27.8	65.02	57.98
8/1935	193320.8	193313.4	348264.4	350408.4	108844.1	104194.4	1	1	383.4	392.9	374.13	374.27	9.3	18.6	30.86	40.17
9/1935	189185.3	189178.0	326899.9	328158.5	101794.7	97194.3	1	1	404.7	419.5	254.90	254.90	149.8	164.6	170.50	185.23
10/1935	169503.4	169578.4	309859.3	310217.6	97238.0	92353.1	0	0	728.5	747.1	325.00	325.00	403.5	422.1	585.67	604.27
11/1935	158864.3	159254.3	299415.7	300164.8	96400.1	90255.0	0	0	378.4	388.6	325.00	325.00	53.4	63.6	321.64	331.83
12/1935	156086.6	156382.9	282491.1	283239.8	101499.8	95499.9	0	0	325.0	325.0	325.00	325.00	0.0	0.0	267.29	267.29
1/1936	165102.6	164551.6	294820.4	295175.8	115254.3	110534.5	0	0	325.0	325.0	325.00	325.00	0.0	0.0	276.04	276.04
2/1936	204896.1	204896.1	337420.7	336688.0	132091.5	127921.4	0	0	1189.7	1189.7	325.00	325.00	864.7	864.7	1148.12	1148.12
3/1936	187088.1	186338.5	331408.9	331787.2	135153.2	131771.1	0	0	1298.1	1280.0	325.00	325.00	973.1	955.0	1232.33	1214.26
4/1936	206793.6	206757.2	355399.2	355278.7	136667.5	134212.7	0	0	1494.0	1475.3	525.00	525.00	969.0	950.3	1370.15	1351.49
5/1936	204517.9	204168.0	389668.7	389014.5	132812.8	127138.8	0	0	2151.6	2087.1	777.80	777.76	1373.8	1309.3	1874.35	1809.88
6/1936	198543.5	197985.2	412501.4	413320.3	125969.2	116710.3	0	0	1527.9	1437.0	877.76	877.62	650.1	559.4	1151.59	1060.89
7/1936	193057.7	193472.0	377577.6	378428.4	117050.0	107923.0	0	0	646.5	630.0	456.53	456.47	189.9	173.5	224.11	207.69
8/1936	193197.0	193083.1	350302.8	351203.8	108344.1	99127.2	0	0	387.2	398.5	377.58	377.66	9.6	20.8	34.67	45.85
9/1936	189026.7	189153.3	328313.5	328709.8	101388.9	92422.8	0	0	434.9	437.1	259.94	259.94	175.0	177.1	200.70	202.82
10/1936	171232.5	171358.7	309523.8	309566.7	97804.5	88943.6	0	0	705.3	711.0	325.00	325.00	380.3	386.0	562.61	568.34
11/1936	158578.1	158703.5	299765.3	299765.3	96567.5	87801.7	0	0	381.9	382.6	325.00	325.00	56.9	57.6	323.83	324.55
12/1936	161515.9	160399.0	287347.0	287347.0	101697.0	94239.9	0	0	325.0	325.0	325.00	325.00	0.0	0.0	269.67	269.67
1/1937	159487.9	157874.1	274804.8	274429.2	115746.7	109208.6	0	0	325.0	325.0	325.00	325.00	0.0	0.0	273.93	273.93
2/1937	176084.5	174969.6	305040.4	303123.9	128098.0	122629.1	0	0	325.0	325.0	325.00	325.00	0.0	0.0	277.32	277.32
3/1937	183850.0	183859.7	335243.7	334408.7	141859.2	137119.5	0	0	473.4	425.8	325.00	325.00	148.4	100.8	414.78	367.26
4/1937	193214.5	192971.5	358553.5	358021.4	140270.0	136568.6	1	1	516.1	498.6	473.54	470.18	42.6	28.4	402.44	384.92
5/1937	207016.7	207016.7	397456.1	397599.7	134651.7	131187.4	1	1	1885.8	1867.7	677.32	677.32	1208.5	1190.4	1608.51	1590.45
6/1937	193744.1	193744.1	412454.7	411455.9	128123.2	124704.1	1	1	1269.2	1288.4	777.42	777.42	491.7	511.0	892.21	911.45
7/1937	194911.6	194911.6	379341.7	378424.3	119188.1	115820.4	1	1	499.3	498.1	452.24	452.24	47.1	45.9	77.23	76.01
8/1937	193467.9	193467.9	352215.8	351501.1	110469.9	107149.5	1	1	390.6	387.4	374.29	374.27	16.3	13.2	37.90	34.72
9/1937	189094.4	189076.7	329211.6	328925.2	103374.6	100113.8	1	1	419.4	412.3	254.99	254.97	164.4	157.3	185.11	177.96
10/1937	169330.3	169203.5	310227.3	310189.9	99442.7	96815.1	0	0	704.4	692.3	325.00	325.00	379.4	367.3	561.16	549.07
11/1937	160459.5	160156.6	305695.5	305872.1	99901.8	97290.7	0	0	390.4	389.7	325.00	325.00	65.4	64.7	335.30	334.67
12/1937	172971.3	172425.6	281139.6	281940.7	108525.3	106615.9	0	0	1140.0	1122.6	325.00	325.00	815.0	797.6	1082.70	1065.31
1/1938	165700.6	165538.6	284560.0	284220.4	118946.0	117805.5	0	0	500.0	500.0	325.00	325.00	175.0	175.0	448.14	448.14
2/1938	191461.5	191369.8	290346.6	290748.7	136520.3	135362.1	0	0	1225.0	1210.7	325.00	325.00	900.0	885.7	1177.36	1163.08
3/1938	206379.1	206358.2	299690.1	299626.2	147813.8	147058.1	0	0	2327.1	2327.1	325.00	325.00	2002.1	2002.1	2264.80	2264.80
4/1938	209194.8	209178.1	319421.8	318959.7	148793.7	148438.5	0	0	2856.7	2856.7	525.00	525.00	2331.7	2331.7	2732.09	2732.09
5/1938	214790.7	214790.7	358628.9	359141.0	143056.1	142706.2	0	0	2990.3	2974.2	778.36	778.36	2212.0	2195.8	2712.22	2696.09
6/1938	207786.9	207786.9	402599.7	403009.8	135539.4	135195.6	0	0	2317.3	2318.9	866.95	868.62	1450.3	1450.3	1938.69	1940.36
7/1938	193981.8	193981.8	365874.3	366211.6	126535.4	126197.1	0	0	1118.8	1120.0	457.25	457.25	661.6	662.7	695.69	696.83
8/1938	193542.6	193542.6	339477.3	339743.6	117735.5	117402.5	0	0	417.3	418.4	377.80	377.80	39.5	40.6	64.48	65.59
9/1938	189162.5	189162.5	316685.5	316829.9	110572.0	110244.6	0	0	442.5	444.6	259.81	259.83	182.7	184.7	208.48	210.49
10/1938	172860.8	172860.8	298512.0	298537.9	105554.3	105232.1	0	0	770.0	772.0	325.00	325.00	445.0	447.0	627.87	629.78
11/1938	163570.0	163570.0	298008.5	298008.5	103437.5	103120.0	0	0	407.8	408.3	325.00	325.00	82.8	83.3	350.57	351.00
12/1938	162388.3	162342.3	297470.2	297470.2	107791.6	107524.7	0	0	325.0	325.0	325.00	325.00	0.0	0.0	266.62	266.62
1/1939	160180.3	160450.8	291658.5	291283.6	115073.8	114868.6	0	0	325.0	325.0	325.00	325.00	0.0	0.0	272.26	272.26
2/1939	155592.6	155586.3	279686.8	279311.8	121563.2	121635.3	0	0	325.0	325.0	325.00	325.00	0.0	0.0	272.09	272.09
3/1939	166245.7	166387.3	264274.2	263899.1	128537.6	128461.9	0	0	325.0	325.0	325.00	325.00	0.0	0.0	262.63	262.63
4/1939	178480.3	178533.9	257893.4	257717.6	130336.8	130151.5	2	2	274.8	274.8	274.78	274.78	0.0	0.0	150.47	150.47
5/1939	184979.4	184835.1	242258.4	242281.1	125902.2	125719.1	2	2	338.0	338.0	338.03	338.03	0.0	0.0	151.81	151.81

Date	Cumulative without Project (acre-ft) Pardee Storage	Cumulative with Project (acre-ft) Pardee Storage	Cumulative without Project (acre-ft) Camanche Storage	Cumulative with Project (acre-ft) Camanche Storage	Cumulative without Project (acre-ft) TRA Storage	Cumulative with Project (acre-ft) TRA Storage	Cumulative without Project (NA) JSA Year Type	Cumulative with Project (NA) JSA Year Type	Cumulative without Project (cfs) Camanche Outflow	Cumulative with Project (cfs) Camanche Outflow	Cumulative without Project (cfs) Required Minimum Flows	Cumulative with Project (cfs) Required Minimum Flows		Cumulative without Project (cfs) Camanche Flood Release	Cumulative with Project (cfs) Camanche Flood Release		Cumulative without Project (cfs) Flow below Lodi Lake	Cumulative with Project (cfs) Flow below Lodi Lake
6/1939	176976.8	176833.7	223650.1	223672.6	118259.9	118079.4	2	2	268.5	268.5	268.49	268.49	##	0.0	0.0	##	30.59	30.59
7/1939	172990.5	172850.1	203115.9	203138.2	108672.2	108496.7	2	2	278.4	278.4	278.43	278.43		0.0	0.0		29.32	29.32
8/1939	169095.6	168958.0	185720.9	185742.9	99589.4	99419.9	2	2	232.1	232.1	232.09	232.09		0.0	0.0		21.55	21.55
9/1939	168306.3	168171.2	174679.9	174701.8	92516.2	92352.9	2	2	172.5	172.5	172.49	172.49		0.0	0.0		20.92	20.92
10/1939	166901.7	166838.2	165614.8	165636.6	89287.3	89061.0	2	2	220.0	220.0	220.00	220.00		0.0	0.0		134.82	134.82
11/1939	160394.9	160332.6	164146.9	164168.5	89049.8	88830.1	2	2	220.0	220.0	220.00	220.00		0.0	0.0		163.07	163.07
12/1939	161971.3	162108.5	166621.2	166444.5	94389.9	94175.7	2	2	220.0	220.0	220.00	220.00		0.0	0.0		161.77	161.77
1/1940	177985.4	177774.9	209484.6	209655.5	116763.9	116553.6	2	2	220.0	220.0	220.00	220.00		0.0	0.0		173.81	173.81
2/1940	206183.4	206073.8	259560.6	259633.1	136408.8	136200.6	2	2	226.2	226.2	220.00	220.00		6.2	6.2		177.78	177.78
3/1940	212000.0	212000.0	321695.2	321598.4	146870.0	146722.1	2	2	926.5	926.5	220.00	220.00		706.5	706.5		864.03	864.03
4/1940	204751.2	204749.6	350501.8	350367.1	147311.1	147220.2	0	0	1771.3	1771.3	525.00	525.00		1246.3	1246.3		1646.70	1646.70
5/1940	206953.3	206717.4	407969.6	408195.4	141845.1	139390.1	0	0	1800.0	1705.2	777.38	777.24		1022.6	927.9		1522.73	1428.06
6/1940	192651.0	191579.4	404942.3	403551.7	134809.1	128721.1	0	0	1237.3	1209.0	870.63	867.27		366.7	341.7		860.06	831.72
7/1940	196859.4	195896.8	372650.8	371229.7	125810.2	119797.5	0	0	457.2	456.2	456.21	456.21		1.0	0.0		35.20	34.22
8/1940	193231.3	193444.7	347630.2	345677.3	117017.1	111083.7	0	0	402.8	392.5	377.86	377.71		24.9	14.8		49.95	39.85
9/1940	188954.0	189166.8	326598.4	325546.3	109903.1	104042.9	0	0	399.2	384.2	259.78	259.68		139.4	124.5		165.10	150.19
10/1940	168802.1	168766.9	309795.2	309649.3	104823.9	99031.0	0	0	651.3	640.6	325.00	325.00		326.3	315.6		508.52	497.93
11/1940	154875.6	154889.8	295081.8	295341.5	103131.8	97392.6	0	0	398.3	390.7	325.00	325.00		73.3	65.7		341.17	333.51
12/1940	169713.3	169497.3	289768.3	290028.6	113144.0	107671.1	0	0	325.0	325.0	325.00	325.00		0.0	0.0		270.75	270.75
1/1941	171226.4	170962.8	307773.8	307389.6	127429.7	122680.2	0	0	325.0	325.0	325.00	325.00		0.0	0.0		272.83	272.83
2/1941	185866.2	185804.6	324026.9	324385.8	138848.3	134314.0	0	0	667.0	646.4	325.00	325.00		342.0	321.4		614.58	594.07
3/1941	191644.1	191504.7	332423.4	332574.5	146395.6	142175.6	0	0	1189.7	1189.7	325.00	325.00		864.7	864.7		1126.14	1126.14
4/1941	186896.5	186968.6	360242.8	359502.1	148806.2	146528.2	1	1	617.4	617.4	473.75	473.75		143.7	143.7		497.53	497.53
5/1941	208036.6	207771.6	385654.5	382781.4	145200.8	140619.8	1	1	2064.4	2011.9	677.13	677.11		1387.3	1334.8		1787.39	1734.94
6/1941	196615.0	196101.6	413229.7	412415.7	137618.6	129430.0	1	1	1491.3	1391.3	777.67	777.52		713.7	613.8		1113.71	1013.86
7/1941	195903.4	195568.8	378051.0	377714.9	128533.0	120449.2	1	1	703.5	692.9	452.65	452.63		250.9	240.3		281.04	270.45
8/1941	193544.0	193397.8	349473.5	349246.6	119659.6	111681.5	1	1	474.8	470.0	374.69	374.69		100.1	95.3		121.63	116.83
9/1941	188493.3	188721.8	324553.4	324441.0	112420.6	104540.5	1	1	484.6	476.4	254.99	254.99		229.6	221.4		250.36	242.17
10/1941	170936.2	170966.1	304585.6	304569.5	107230.2	99439.5	0	0	725.6	727.2	325.00	325.00		400.6	402.2		582.15	583.80
11/1941	161922.0	161951.8	300904.9	300904.9	105681.7	97955.9	0	0	428.4	428.1	325.00	325.00		103.4	103.1		371.93	371.66
12/1941	171205.1	170745.9	298615.3	298168.3	116958.6	110003.8	0	0	567.7	571.0	325.00	325.00		242.7	246.0		513.38	516.61
1/1942	205124.3	205080.5	293980.4	294488.4	128468.2	122165.7	0	0	958.1	925.8	325.00	325.00		633.1	600.8		908.85	876.63
2/1942	198352.2	198236.3	286978.6	287155.7	137267.0	131397.6	0	0	1972.1	1972.1	325.00	325.00		1647.1	1647.1		1917.58	1917.58
3/1942	180181.1	179991.5	299121.5	298971.6	142799.9	137373.1	0	0	904.5	904.5	325.00	325.00		579.5	579.5		839.26	839.26
4/1942	206472.3	206431.0	328642.3	328748.4	146547.4	141495.9	0	0	761.0	748.5	525.00	525.00		236.0	223.5		640.99	628.52
5/1942	209587.7	209587.7	367548.9	367613.5	143118.6	138118.0	0	0	2091.0	2091.0	777.66	777.66		1313.3	1313.3		1815.27	1815.27
6/1942	205260.7	205260.7	405342.5	405406.8	135499.3	130571.0	0	0	1962.0	1962.0	878.28	878.28		1083.7	1083.7		1583.76	1583.76
7/1942	196404.1	196404.1	368920.7	368971.1	126427.1	121579.2	0	0	1159.7	1159.9	457.34	457.34		702.3	702.6		736.47	736.69
8/1942	192723.7	192723.7	339584.1	339618.1	117577.0	112804.5	0	0	543.7	544.0	378.19	378.19		165.5	165.8		190.55	190.82
9/1942	188383.8	188383.8	314530.7	314549.2	110413.4	105707.0	0	0	493.8	494.1	259.90	259.90		233.9	234.2		259.60	259.86
10/1942	169438.8	169438.8	293470.3	293472.8	105259.5	100606.0	0	0	732.4	732.7	325.00	325.00		407.4	407.7		588.58	588.84
11/1942	169042.5	168922.6	301796.7	302788.2	105801.8	101295.7	0	0	521.9	505.2	325.00	325.00		196.9	180.2		469.04	452.44
12/1942	170700.2	170736.0	299802.3	300545.6	111548.8	107167.4	0	0	564.5	564.5	325.00	325.00		239.5	239.5		507.07	507.07
1/1943	205903.2	205797.0	290501.7	290222.2	124579.8	121572.7	0	0	1054.2	1051.0	325.00	325.00		729.2	726.0		1004.17	1000.94
2/1943	188129.8	188099.7	282796.4	282717.8	129510.0	126529.2	0	0	1449.3	1444.3	325.00	325.00		1124.3	1119.3		1395.46	1390.49
3/1943	205940.2	205940.2	299951.3	299842.4	135096.0	132141.8	0	0	2149.7	2149.7	325.00	325.00		1824.7	1824.7		2087.85	2087.85
4/1943	212403.8	212396.6	358370.9	358733.4	136392.0	133839.4	0	0	1448.0	1434.0	525.00	525.00		923.0	909.0		1325.42	1311.38
5/1943	208942.9	208887.8	397401.7	396911.9	130584.5	128542.7	0	0	1670.5	1677.4	777.07	777.07		893.4	900.4		1393.40	1400.37
6/1943	194840.4	194840.4	406302.1	407035.2	122988.3	120981.0	0	0	1432.8	1411.3	872.49	872.44		560.3	538.8		1055.51	1034.05
7/1943	195603.1	195647.7	375222.8	375874.0	113957.7	111944.9	0	0	489.4	490.6	456.22	456.22		33.1	34.4		67.31	68.56
8/1943	193213.8	193053.9	348722.2	349363.0	105197.3	102927.2	0	0	434.0	442.2	377.80	377.82		56.2	64.3		81.21	89.38
9/1943	188973.8	189105.2	327486.5	327741.4	98272.0	96113.3	0	0	415.1	415.3	259.79	259.79		155.3	155.5		180.95	181.09
10/1943	170434.3	170367.7	309943.6	309994.9	94800.2	92666.7	0	0	702.6	709.1	325.00	325.00		377.6	384.1		559.46	565.97
11/1943	161691.9	161674.9	305000.9	305013.4	93731.6	91619.6	0	0	388.9	388.8	325.00	325.00		63.9	63.8		331.65	331.47
12/1943	158152.9	158135.9	290263.4	290275.9	98174.4	96080.8	0	0	325.0	325.0	325.00	325.00		0.0	0.0		267.05	267.05

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type		*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows		*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
1/1944	159977.1	159929.6	275060.0	275072.5	110036.8	107990.5	0	0		325.0	325.0	325.00	325.00		0.0	0.0	272.60	272.60
2/1944	163282.9	163126.0	269110.7	268371.9	121862.8	120685.7	0	0		325.0	325.0	325.00	325.00		0.0	0.0	274.95	274.95
3/1944	167092.1	167102.6	265170.2	264234.3	127996.4	126861.7	0	0		325.0	325.0	325.00	325.00		0.0	0.0	260.03	260.03
4/1944	181194.4	181168.5	267389.0	266256.4	131003.0	130113.8	2	2		272.9	272.9	272.86	272.86		0.0	0.0	152.56	152.56
5/1944	194562.3	194800.8	289184.9	287662.3	126606.0	125857.6	2	2		370.0	370.0	370.03	370.03		0.0	0.0	150.77	150.77
6/1944	197563.4	197553.9	293342.7	292076.1	119690.3	118950.9	2	2	##	328.1	328.1	328.11	328.11	##	0.0	0.0	30.67	30.67
7/1944	194834.1	194824.7	270191.6	268935.8	110750.2	110019.0	2	2		364.8	364.8	363.50	363.50		1.3	1.3	30.61	30.61
8/1944	193140.4	193131.0	249461.8	248217.9	101829.4	101107.2	2	2		318.5	318.5	318.50	318.50		0.0	0.0	21.60	21.60
9/1944	188918.3	188909.0	238754.0	237519.6	95029.8	94316.8	2	2		241.3	241.3	219.84	219.84		21.5	21.5	41.83	41.82
10/1944	171629.2	171570.2	243593.4	242415.7	91847.5	91142.3	1	1		327.1	327.1	250.00	250.00		77.1	77.1	205.29	205.26
11/1944	166364.2	166553.1	274355.5	272926.7	93944.5	93243.8	1	1		250.0	250.0	250.00	250.00		0.0	0.0	198.78	198.78
12/1944	171770.8	171712.1	286636.4	285455.7	100469.2	99774.1	1	1		250.0	250.0	250.00	250.00		0.0	0.0	193.22	193.22
1/1945	160602.7	160742.4	294598.0	293220.9	110145.0	109456.6	1	1		250.0	250.0	250.00	250.00		0.0	0.0	195.62	195.62
2/1945	176828.5	176857.8	317648.6	317465.0	121283.2	120583.8	1	1		902.5	883.2	250.00	250.00		652.5	633.2	851.45	832.20
3/1945	176387.6	176626.8	332065.2	331980.4	130779.1	130072.6	1	1		393.5	388.7	250.00	250.00		143.5	138.7	331.22	326.40
4/1945	194224.9	194132.0	345559.1	345276.0	131468.3	131298.7	1	1		473.5	473.5	473.49	473.49		0.0	0.0	350.84	350.84
5/1945	197974.9	196906.9	385767.1	385347.0	127751.6	124166.0	1	1		1147.0	1089.6	676.32	676.26		470.7	413.3	871.15	813.79
6/1945	198667.3	197896.8	414121.3	414432.2	120240.3	113034.6	1	1		1242.4	1155.5	777.37	777.18		465.0	378.3	866.46	779.76
7/1945	197086.1	197282.6	376926.6	377113.4	111306.3	104195.3	1	1		708.2	694.4	452.60	452.57		255.6	241.9	285.82	272.08
8/1945	193362.4	193461.0	345214.7	345261.9	102316.2	95303.9	1	1		573.8	577.6	374.71	374.71		199.1	202.9	220.64	224.46
9/1945	188745.2	188843.7	317755.3	317888.6	95529.4	88608.3	1	1		520.3	518.9	254.99	254.99		265.4	263.9	286.04	284.57
10/1945	174753.6	174653.5	291961.4	292116.9	92442.3	85600.5	0	0		874.6	877.5	325.00	325.00		549.6	552.5	733.20	736.05
11/1945	168285.3	168185.5	297908.8	297908.8	92740.0	85962.3	0	0		476.0	478.6	325.00	325.00		151.0	153.6	422.26	424.87
12/1945	208226.9	208115.5	292132.1	292595.2	104396.2	98988.4	0	0		1094.2	1065.2	325.00	325.00		769.2	740.2	1038.56	1009.55
1/1946	173742.6	173741.9	292258.8	292689.2	114090.8	108654.3	0	0		1467.7	1467.7	325.00	325.00		1142.7	1142.7	1412.15	1412.15
2/1946	164504.1	164428.1	296770.5	297399.3	121704.8	116188.7	0	0		442.9	442.9	325.00	325.00		117.9	117.9	389.44	389.44
3/1946	175426.8	174951.9	301265.1	300851.9	128549.8	124667.5	0	0		416.9	414.5	325.00	325.00		91.9	89.5	353.58	351.16
4/1946	192162.9	191964.3	313492.6	312388.1	130705.9	127578.2	1	1		425.3	420.3	410.20	405.20		15.1	15.1	301.99	296.99
5/1946	205705.4	205533.3	388499.5	383806.3	126825.9	120132.2	1	1		572.1	557.6	572.09	557.57		0.0	0.0	298.47	283.95
6/1946	191729.5	190512.2	403345.6	397720.1	119415.9	109145.0	1	1		770.4	734.6	758.08	734.57		12.3	0.0	393.96	358.29
7/1946	194544.4	193391.6	371022.1	365382.7	110564.6	100435.6	1	1		452.1	452.1	452.15	452.15		0.0	0.0	30.14	30.14
8/1946	193419.7	193399.5	344540.4	337873.7	101638.8	91652.7	1	1		375.0	374.0	374.04	374.04		0.9	0.0	22.51	21.58
9/1946	189020.4	189000.4	324777.3	321047.3	94898.1	85041.0	1	1		377.5	328.6	254.76	254.45		122.7	74.1	143.59	95.00
10/1946	169642.8	169622.9	309386.1	308828.9	91400.2	81648.5	0	0		671.5	620.1	325.00	325.00		346.5	295.1	528.70	477.45
11/1946	165526.9	165507.1	308115.6	308115.6	91629.0	81942.3	0	0		378.5	369.2	325.00	325.00		53.5	44.2	324.27	314.94
12/1946	161572.1	160721.9	307919.8	307325.1	97545.4	89364.6	0	0		325.0	325.0	325.00	325.00		0.0	0.0	266.82	266.82
1/1947	157342.1	156169.7	290361.1	289018.0	107110.7	100079.6	0	0		325.0	325.0	325.00	325.00		0.0	0.0	270.61	270.61
2/1947	160407.8	159948.9	276431.6	272840.8	116080.1	110632.7	0	0		325.0	325.0	325.00	325.00		0.0	0.0	270.85	270.85
3/1947	167269.3	167195.2	271889.2	265057.1	123418.0	120855.9	0	0		325.0	325.0	325.00	325.00		0.0	0.0	262.55	262.55
4/1947	178507.0	178532.4	258793.0	250115.7	126100.0	125329.0	2	2		274.8	274.8	274.78	274.78		0.0	0.0	150.57	150.57
5/1947	186951.6	186976.8	245557.8	236937.3	121503.0	120740.3	2	2		337.9	337.9	337.94	337.94		0.0	0.0	150.15	150.15
6/1947	189057.9	189082.9	227929.0	219372.1	114673.3	113919.7	2	2	##	268.5	268.5	268.49	268.49		0.0	0.0	30.98	30.98
7/1947	189942.3	197476.2	207349.5	199008.4	105745.9	103955.6	2	2		278.4	278.4	278.43	278.43		0.0	0.0	29.32	29.32
8/1947	190582.7	193277.8	189908.2	193681.6	96925.7	94439.0	2	2		232.1	232.1	232.09	232.09		0.0	0.0	21.55	21.55
9/1947	189155.3	189376.9	180069.6	193595.3	90221.5	86727.5	2	2		172.5	172.5	172.49	172.49		0.0	0.0	20.03	20.03
10/1947	171616.6	173760.1	191704.3	217649.9	88013.8	85088.7	2	2		356.6	220.0	220.00	220.00		136.6	0.0	273.23	136.98
11/1947	160339.3	162172.8	202276.1	234427.5	87342.6	84801.3	2	2		220.0	220.0	220.00	220.00		0.0	0.0	164.36	164.36
12/1947	158772.1	160282.8	193692.9	232377.9	91998.3	89790.6	2	2		220.0	220.0	220.00	220.00		0.0	0.0	161.95	161.95
1/1948	160425.4	161965.2	186765.7	233193.0	102689.1	99260.3	2	2		220.0	220.0	220.00	220.00		0.0	0.0	166.17	166.17
2/1948	157679.0	160732.4	180324.4	232072.4	112779.4	108721.5	2	2		220.0	220.0	220.00	220.00		0.0	0.0	167.64	167.64
3/1948	162779.7	166787.4	173821.8	231713.6	122653.4	118391.0	2	2		220.0	220.0	220.00	220.00		0.0	0.0	158.98	158.98
4/1948	188054.8	189578.1	185521.7	251875.6	126278.0	122656.8	1	1		272.8	272.8	272.83	272.83		0.0	0.0	154.92	154.92
5/1948	207190.2	207187.0	234941.7	299119.5	121902.6	118419.9	1	1		421.8	475.3	421.82	475.33		0.0	0.0	202.68	202.68
6/1948	202867.2	202867.2	341750.3	396447.1	114458.8	111023.7	1	1		501.0	654.2	500.98	654.24		0.0	0.0	200.01	278.34
7/1948	185858.1	185858.1	316847.2	362845.5	105479.8	102096.6	1	1		599.2	734.9	367.95	452.70		231.3	282.2	261.75	312.39

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type	*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows	*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
8/1948	188001.0	188001.0	292873.5	335360.4	96546.5	93206.4	1	1	322.1	374.0	320.32	374.02	1.8	0.0	23.42	21.59
9/1948	189214.1	189214.1	277429.1	317621.2	89817.1	86515.3	1	1	222.2	256.7	220.88	254.09	1.4	2.6	21.41	23.30
10/1948	168201.9	168201.9	286938.6	305319.2	86439.9	83173.0	1	0	288.1	641.0	250.00	325.00	38.1	316.0	165.00	497.97
11/1948	160245.2	160245.2	287646.3	299767.8	85453.2	82214.9	1	0	250.0	354.5	250.00	325.00	0.0	29.5	193.18	297.09
12/1948	160234.7	160217.5	289112.3	296231.5	92089.6	89278.3	1	0	250.0	325.0	250.00	325.00	0.0	0.0	194.17	268.57
1/1949	152602.2	152585.2	276797.3	279303.0	102991.3	100196.8	1	0	250.0	325.0	250.00	325.00	0.0	0.0	197.00	271.39
2/1949	145734.7	145171.8	267055.1	265396.0	113622.2	111382.2	1	0	250.0	325.0	250.00	325.00	0.0	0.0	197.90	272.30
3/1949	168303.7	167999.9	267152.6	259355.7	123653.9	122684.0	1	0	250.0	325.0	250.00	325.00	0.0	0.0	189.38	263.69
4/1949	202026.5	201799.5	293724.9	286062.5	126244.3	125406.6	1	1	277.9	272.8	277.87	272.83	0.0	0.0	154.97	149.99
5/1949	197500.9	197344.6	338708.0	331009.5	121931.8	121102.8	1	1	420.0	420.0	420.00	420.00	0.0	0.0	201.01	201.01
6/1949	187769.9	187773.1	359596.4	351781.4	114452.2	113632.3	1	1	498.4	498.4	498.45	498.45	0.0	0.0	199.97	199.97
7/1949	187117.6	187120.8	333005.3	325246.2	105588.7	104779.3	1	1	364.7	364.7	364.66	364.66	0.0	0.0	30.47	30.47
8/1949	188169.6	188172.8	309287.3	301585.1	96688.1	95890.2	1	1	318.5	318.5	318.52	318.52	0.0	0.0	21.68	21.68
9/1949	188784.1	188787.3	293135.5	285479.9	89972.1	89184.5	1	1	219.8	219.8	219.82	219.82	0.0	0.0	20.03	20.03
10/1949	169480.8	169483.9	298851.8	291231.2	86562.7	85784.9	1	1	250.0	250.0	250.00	250.00	0.0	0.0	126.88	126.88
11/1949	157196.7	157199.8	301740.1	294133.5	86008.0	85238.1	1	1	250.0	250.0	250.00	250.00	0.0	0.0	194.29	194.29
12/1949	150666.7	150394.4	287872.8	280276.2	91615.7	91127.8	1	1	250.0	250.0	250.00	250.00	0.0	0.0	192.00	192.00
1/1950	166672.6	166896.4	288518.3	280400.1	111159.7	110673.8	1	1	250.0	250.0	250.00	250.00	0.0	0.0	201.08	201.08
2/1950	169403.5	169497.9	313633.1	306103.1	120104.0	119750.5	1	1	260.7	250.0	250.00	250.00	10.7	0.0	208.81	198.13
3/1950	178353.6	178360.6	329592.0	328312.8	127928.4	127664.6	1	1	380.6	279.0	250.00	250.00	130.6	29.0	317.21	216.07
4/1950	197892.2	197693.6	352415.7	351338.6	129989.0	129933.6	1	1	615.7	612.3	473.71	470.35	141.9	141.9	493.34	489.98
5/1950	213430.4	213091.0	394067.9	394210.7	125860.5	122250.4	1	1	1356.0	1265.2	676.39	676.25	679.6	589.0	1079.93	989.32
6/1950	197463.2	197013.3	414559.0	413530.3	118479.1	111249.7	1	1	1791.3	1743.3	778.03	777.95	1013.2	965.3	1413.37	1365.45
7/1950	191169.5	191736.8	368527.6	367962.6	109657.5	102524.7	1	1	808.3	784.2	452.71	452.66	355.6	331.6	385.76	361.75
8/1950	192367.2	192930.0	328421.5	328039.9	100727.0	93693.5	1	1	579.3	576.4	374.71	374.71	204.6	201.7	226.18	223.25
9/1950	188926.2	189113.7	293851.6	293343.2	93973.3	87031.1	1	1	643.2	651.7	255.33	255.38	387.9	396.3	409.03	417.44
10/1950	174813.8	174802.8	261207.0	261149.6	91325.5	84456.6	0	0	1041.7	1037.6	325.00	325.00	716.7	712.6	900.77	896.66
11/1950	204214.8	204214.8	323380.8	323369.3	96767.7	89940.8	0	0	1745.1	1744.1	325.00	325.00	1420.1	1419.1	1692.50	1691.54
12/1950	198552.1	198550.6	326677.8	325931.2	108068.6	102015.6	0	0	4371.0	4371.0	325.00	325.00	4046.0	4046.0	4313.71	4313.71
1/1951	205062.9	205046.5	274721.8	274706.2	123234.9	117498.8	0	0	2432.3	2416.1	325.00	325.00	2107.3	2091.1	2380.24	2364.13
2/1951	199499.7	199304.1	268020.2	267675.3	131121.9	125936.6	0	0	1677.1	1677.1	325.00	325.00	1352.1	1352.1	1623.03	1623.03
3/1951	202614.9	201905.6	289554.1	289140.4	136435.1	132158.5	0	0	965.8	961.3	325.00	325.00	640.8	636.3	900.18	895.70
4/1951	198346.7	196839.5	327879.8	327269.2	137334.2	134298.8	0	0	595.0	591.7	520.00	516.67	75.0	75.0	472.39	469.05
5/1951	205330.5	205325.0	372782.8	371386.8	133532.6	130722.1	0	0	664.2	649.7	664.25	649.69	0.0	0.0	389.67	375.16
6/1951	192562.0	192556.4	366710.1	365915.0	126188.6	123416.5	0	0	704.3	694.3	704.30	694.30	0.0	0.0	328.29	318.29
7/1951	194532.0	194526.5	334302.1	333512.7	117340.4	114608.2	0	0	456.2	456.2	456.17	456.17	0.0	0.0	34.16	34.16
8/1951	193459.0	193453.5	307923.2	307139.6	108769.2	106075.6	0	0	377.5	377.5	377.51	377.51	0.0	0.0	25.04	25.04
9/1951	188933.0	188921.2	295057.4	294278.4	101737.6	99085.9	0	0	259.0	259.0	259.04	259.04	0.0	0.0	25.64	25.64
10/1951	169655.7	169520.1	300490.0	299522.4	98134.2	95879.2	1	1	343.1	342.2	250.00	250.00	93.1	92.2	201.91	200.99
11/1951	166724.7	166886.4	316179.6	315211.9	100267.4	98026.2	1	1	255.0	250.0	250.00	250.00	5.0	0.0	201.85	196.87
12/1951	181012.0	180915.0	332350.0	331925.5	117583.8	115855.4	1	1	516.1	503.2	250.00	250.00	266.1	253.2	461.68	448.79
1/1952	192203.3	192005.3	327112.3	327352.1	135308.7	133813.1	1	1	1265.2	1252.3	250.00	250.00	1015.2	1002.3	1214.25	1201.34
2/1952	187718.6	187225.1	327401.1	328187.0	140928.0	140260.8	1	1	1293.8	1275.2	250.00	250.00	1043.8	1025.2	1239.99	1221.40
3/1952	198718.0	198329.5	335537.0	336066.3	149272.6	148761.8	1	1	1122.6	1122.6	250.00	250.00	872.6	872.6	1059.61	1059.61
4/1952	211650.5	211648.5	337056.9	337168.7	148970.3	148494.6	0	0	2706.0	2706.0	525.00	525.00	2181.0	2181.0	2581.67	2581.67
5/1952	212000.0	212000.0	393373.2	393482.6	142919.8	142449.7	0	0	3709.7	3709.7	779.16	779.16	2930.5	2930.5	3430.77	3430.77
6/1952	203603.5	203603.5	396976.6	397039.2	136034.3	135569.2	0	0	3332.9	3333.7	879.50	879.50	2453.4	2454.2	2953.65	2954.42
7/1952	196441.9	196441.9	359228.1	359276.4	127259.4	126800.5	0	0	1574.7	1574.9	458.02	458.02	1116.7	1116.9	1150.83	1151.05
8/1952	193631.2	193631.2	332215.3	332248.0	118442.9	117989.9	0	0	592.2	592.4	378.19	378.19	214.0	214.2	239.02	239.27
9/1952	189088.9	189088.9	308034.5	308052.5	111255.2	110807.6	0	0	607.3	607.6	260.13	260.13	347.2	347.4	373.92	374.17
10/1952	170577.3	170577.3	289189.5	289192.0	105860.7	105418.0	0	0	752.7	752.9	325.00	325.00	427.7	427.9	608.81	609.07
11/1952	164031.3	164031.3	293354.2	293354.2	103956.0	103516.5	0	0	390.6	390.6	325.00	325.00	65.6	65.6	334.17	334.21
12/1952	168776.0	168730.0	310269.8	310269.8	116526.9	116133.4	0	0	325.0	325.0	325.00	325.00	0.0	0.0	270.38	270.38
1/1953	173068.5	173265.9	323986.4	324729.9	126455.0	126067.6	0	0	515.3	499.2	325.00	325.00	190.3	174.2	463.15	447.03
2/1953	164728.1	164866.6	329477.1	329229.3	129909.8	129583.5	0	0	403.6	421.4	325.00	325.00	78.6	96.4	348.00	365.83

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type		*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows		*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
3/1953	170228.6	170124.4	329127.1	329077.6	135928.1	135648.7	0	0		380.6	380.6	325.00	325.00		55.6	55.6	316.54	316.54
4/1953	190378.0	190542.1	333970.0	333523.6	139089.5	138941.7	1	1		345.0	345.0	345.00	345.00		0.0	0.0	224.49	224.49
5/1953	194658.0	194416.4	345161.0	340210.6	134617.6	131426.3	1	1		507.6	506.0	507.57	505.96		0.0	0.0	232.70	231.09
6/1953	205306.8	204866.1	391172.1	383406.6	127785.0	120972.1	1	1		630.8	612.5	630.82	612.46		0.0	0.0	255.86	237.53
7/1953	197313.9	197386.5	359659.7	352937.1	118807.2	112082.3	1	1		952.0	927.5	453.07	453.07		498.9	474.5	529.07	504.60
8/1953	193398.0	193269.3	336298.9	331589.1	110077.1	103443.6	1	1		470.8	442.0	374.60	374.60		96.2	67.4	117.76	88.97
9/1953	189906.6	189900.2	317461.6	314911.8	102992.3	96520.2	1	1		466.3	427.0	254.97	254.88		211.3	172.1	231.96	192.77
10/1953	174078.8	174072.5	301777.0	301372.8	99366.8	92971.2	0	0		781.2	746.4	325.00	325.00		456.2	421.4	638.43	603.66
11/1953	164115.2	164108.9	308481.8	308481.8	98875.0	92538.1	0	0		401.7	394.9	325.00	325.00		76.7	69.9	345.48	338.69
12/1953	162018.6	161966.5	310436.3	310436.3	102698.3	96470.2	0	0		325.0	325.0	325.00	325.00		0.0	0.0	266.80	266.80
1/1954	163324.9	162956.2	309611.7	309215.1	113640.3	108172.4	0	0		325.0	325.0	325.00	325.00		0.0	0.0	272.24	272.24
2/1954	164220.7	164264.0	311336.3	309749.8	121271.5	116621.7	0	0		325.0	325.0	325.00	325.00		0.0	0.0	271.28	271.28
3/1954	173094.4	173021.2	326087.5	324101.5	128665.8	125011.1	0	0		358.9	351.6	325.00	325.00		33.9	26.6	296.77	289.52
4/1954	188372.2	188255.5	334373.4	331697.1	131208.5	128424.5	1	1		463.5	461.8	463.49	461.83		0.0	0.0	341.86	340.20
5/1954	194133.4	193977.8	357904.3	355923.1	126305.2	123641.2	1	1		471.2	459.2	471.19	459.24		0.0	0.0	239.16	232.71
6/1954	195884.5	196097.2	336340.8	334457.6	118838.3	116203.6	1	1		515.9	508.2	515.86	508.19		0.0	0.0	200.44	200.44
7/1954	196286.7	196128.7	309033.7	308065.8	109821.9	107218.2	1	1		384.4	375.7	384.37	375.68		0.0	0.0	30.39	30.43
8/1954	193656.4	193695.1	291094.1	290274.9	100828.5	98259.4	1	1		331.0	325.5	330.99	325.49		0.0	0.0	21.59	21.59
9/1954	188980.0	189018.6	284459.1	283755.8	94024.5	91488.2	1	1		261.7	259.8	227.58	224.22		34.1	35.6	54.23	55.65
10/1954	171948.1	171739.4	293102.8	292649.6	90530.2	88025.1	1	1		272.6	272.6	250.00	250.00		22.6	22.6	144.98	146.92
11/1954	165519.4	165311.6	309231.2	308778.4	89943.5	87461.1	1	1		252.5	252.6	250.00	250.00		2.5	2.6	197.61	197.62
12/1954	160429.8	160388.1	321195.9	320941.5	96696.7	94459.2	1	1		361.3	351.6	250.00	250.00		111.3	101.6	306.50	296.86
1/1955	160279.9	160436.4	321139.8	320686.5	111266.9	109043.5	1	1		356.5	356.5	250.00	250.00		106.5	106.5	306.36	306.36
2/1955	163553.3	163510.6	313643.1	313189.8	119557.3	117550.8	1	1		250.0	250.0	250.00	250.00		0.0	0.0	197.17	197.17
3/1955	165883.7	165872.6	306053.9	305029.1	125899.7	124451.2	1	1		250.0	250.0	250.00	250.00		0.0	0.0	184.51	184.51
4/1955	175098.9	174533.0	293900.9	292876.9	129273.1	128390.9	2	2		272.8	272.8	272.80	272.80		0.0	0.0	153.32	153.32
5/1955	191219.9	191405.7	274116.2	272349.4	124950.7	124078.7	2	2		370.0	370.0	370.00	370.00		0.0	0.0	150.53	150.53
6/1955	193643.7	193631.2	272646.9	271088.9	117485.0	116622.0	2	2	##	328.1	328.1	328.08	328.08	##	0.0	0.0	30.59	30.59
7/1955	196007.6	195995.3	246501.3	244958.3	108602.4	107749.5	2	2		363.5	363.5	363.47	363.47		0.0	0.0	29.28	29.28
8/1955	193384.2	193371.9	229485.8	227958.3	99664.6	98823.4	2	2		318.5	318.5	318.52	318.52		0.0	0.0	21.59	21.59
9/1955	189049.5	189037.1	221255.5	219739.9	92922.7	92092.5	2	2		223.1	223.1	219.83	219.83		3.3	3.3	23.35	23.35
10/1955	169615.8	169603.5	229551.0	228043.9	89459.9	88640.0	1	1		260.1	260.1	250.00	250.00		10.1	10.1	137.05	137.04
11/1955	162654.5	162642.3	236701.6	235197.8	89009.4	88197.7	1	1		250.0	250.0	250.00	250.00		0.0	0.0	194.39	194.39
12/1955	207875.0	207875.0	303245.0	302482.1	108613.1	108032.1	1	1		1046.8	1030.6	250.00	250.00		796.8	780.6	996.61	980.49
1/1956	207384.9	207384.9	294784.1	295012.9	124326.4	123749.7	1	1		2861.3	2845.2	250.00	250.00		2611.3	2595.2	2807.13	2791.00
2/1956	204437.0	204431.3	281244.4	281160.3	132655.2	132084.2	1	1		1733.8	1739.3	250.00	250.00		1483.8	1489.3	1678.58	1684.10
3/1956	198007.6	197661.8	303249.9	303166.0	134993.7	134768.3	1	1		904.5	904.5	250.00	250.00		654.5	654.5	837.50	837.50
4/1956	200944.1	200853.0	331852.3	332184.5	136915.8	136766.1	0	0		775.0	762.5	525.00	525.00		250.0	237.5	652.88	640.40
5/1956	211501.2	211247.8	371316.1	371016.4	132796.7	129622.1	0	0		1965.8	1896.8	777.39	777.30		1188.4	1119.5	1690.94	1622.00
6/1956	206575.7	206282.8	407754.2	409025.4	125344.6	118548.7	0	0		2216.0	2120.7	878.54	878.44		1337.5	1242.2	1837.47	1742.23
7/1956	197215.8	197305.5	370116.2	371164.4	116450.0	109743.3	0	0		1013.9	1011.1	457.20	457.11		556.7	554.0	590.87	588.14
8/1956	193353.8	193387.2	341152.0	341733.1	107768.8	101155.1	0	0		554.2	562.6	378.15	378.18		176.0	184.4	201.07	209.45
9/1956	188967.5	188986.8	316213.0	316633.1	100765.7	94251.6	0	0		538.5	541.1	259.94	259.94		278.5	281.2	304.43	307.08
10/1956	174782.0	175049.0	295767.7	295702.9	97334.7	91282.7	0	0		827.0	824.4	325.00	325.00		502.0	499.4	684.52	681.91
11/1956	165049.6	165167.7	296750.2	296799.2	96141.8	90154.4	0	0		451.7	452.2	325.00	325.00		126.7	127.2	393.49	394.03
12/1956	164904.1	164774.9	302730.6	303027.1	99908.5	93982.7	0	0		325.0	325.0	325.00	325.00		0.0	0.0	266.43	266.43
1/1957	161658.7	161244.4	303904.4	303804.1	111105.2	105908.3	0	0		325.0	325.0	325.00	325.00		0.0	0.0	272.03	272.03
2/1957	170606.7	170485.2	303481.5	302211.9	121836.4	117549.6	0	0		325.0	325.0	325.00	325.00		0.0	0.0	272.40	272.40
3/1957	167205.6	167238.7	323319.5	321376.1	128786.9	125645.3	0	0		385.5	375.8	325.00	325.00		60.5	50.8	323.56	313.88
4/1957	178683.3	178362.6	310473.0	308479.4	130864.1	128852.2	1	1		388.5	376.8	388.47	376.78		0.0	0.0	267.03	255.36
5/1957	207956.0	207952.8	324753.6	322326.0	130388.1	128518.8	1	1		475.3	475.3	475.29	475.29		0.0	0.0	202.72	202.72
6/1957	195752.1	195752.1	393316.6	391492.8	122911.9	121064.6	1	1	##	669.2	659.2	669.25	659.24		0.0	0.0	293.37	283.37
7/1957	196387.4	196387.4	361553.8	359813.7	113969.8	112143.3	1	1		468.9	467.7	452.16	452.16		16.7	15.6	46.87	45.71
8/1957	193144.8	193144.7	337628.6	335921.6	105153.9	103349.3	1	1		374.5	374.2	374.04	374.04		0.5	0.1	22.06	21.71
9/1957	189376.4	189376.2	321326.5	320224.7	98678.2	96894.5	1	1		340.6	330.6	254.53	254.42		86.1	76.1	106.87	96.94

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type	*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows		*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
10/1957	173934.9	173934.8	309378.3	309212.0	96487.7	94722.2	0	0	680.4	665.2	325.00	325.00		355.4	340.2	537.58	522.41
11/1957	165809.7	165809.5	315441.9	315441.9	95671.2	93924.2	0	0	394.4	391.6	325.00	325.00		69.4	66.6	337.26	334.47
12/1957	165769.9	165769.7	323888.9	323888.9	103248.0	101514.6	0	0	363.7	363.7	325.00	325.00		38.7	38.7	306.89	306.89
1/1958	167786.1	167499.1	319672.9	319821.6	119100.4	117666.1	0	0	387.9	385.5	325.00	325.00		62.9	60.5	332.44	330.03
2/1958	183283.9	183292.7	321879.4	321730.9	137242.7	135815.1	0	0	739.3	739.3	325.00	325.00		414.3	414.3	683.26	683.26
3/1958	193989.8	193921.5	329373.8	329027.2	149455.0	148114.0	0	0	838.7	841.9	325.00	325.00		513.7	516.9	771.69	774.92
4/1958	204498.4	204482.0	334295.7	334542.8	150270.2	150036.5	0	0	1718.0	1702.0	525.00	525.00		1193.0	1177.0	1592.46	1576.50
5/1958	215920.9	215920.9	365186.1	365298.2	141980.3	141753.7	0	0	2089.7	2091.6	777.69	777.66		1312.0	1313.9	1811.94	1813.90
6/1958	207460.6	207460.6	408701.1	407742.2	134888.3	134665.5	0	0	2464.0	2482.0	878.82	878.78		1585.2	1603.2	2085.22	2103.21
7/1958	197703.2	197703.2	370854.0	370132.6	125891.4	125673.3	0	0	1192.3	1188.6	457.39	457.36		734.9	731.2	769.02	765.29
8/1958	193550.3	193550.3	341757.8	341270.3	117104.1	116890.7	0	0	687.7	683.9	378.49	378.46		309.2	305.5	334.21	330.49
9/1958	189573.5	189573.5	316471.4	316207.1	109946.9	109737.9	0	0	548.5	544.8	259.99	259.98		288.5	284.8	314.18	310.48
10/1958	172649.9	172649.9	295282.3	295245.8	104579.7	104374.7	0	0	809.7	806.0	325.00	325.00		484.7	481.0	665.72	662.03
11/1958	163824.2	163824.2	295037.9	295037.9	101775.9	101574.2	0	0	396.5	395.8	325.00	325.00		71.5	70.8	338.39	337.77
12/1958	160292.9	160338.9	288649.0	288649.0	105391.1	105146.2	0	0	325.0	325.0	325.00	325.00		0.0	0.0	265.07	265.07
1/1959	162851.5	162974.7	295378.3	295130.3	116263.9	116189.7	0	0	325.0	325.0	325.00	325.00		0.0	0.0	274.10	274.10
2/1959	169012.9	168956.5	309913.8	309864.1	124683.6	124591.1	0	0	325.0	325.0	325.00	325.00		0.0	0.0	274.33	274.33
3/1959	166636.4	166551.6	309942.6	309843.7	128412.5	128398.2	0	0	325.0	325.0	325.00	325.00		0.0	0.0	260.48	260.48
4/1959	164656.0	164596.7	293666.1	293567.5	130228.4	130189.8	2	2	274.8	274.8	274.78	274.78		0.0	0.0	150.98	150.98
5/1959	162311.0	162252.2	270461.3	270363.3	125369.6	125331.4	2	2	337.9	337.9	337.94	337.94		0.0	0.0	150.04	150.04
6/1959	164472.9	164414.7	251602.8	251505.4	116808.1	116770.1	2	2	268.5	268.5	268.49	268.49	##	0.0	0.0	30.57	30.57
7/1959	166573.6	166518.2	230780.2	230683.8	107847.2	107809.6	2	2	278.4	278.4	278.43	278.43		0.0	0.0	29.32	29.32
8/1959	168998.8	168946.9	212968.0	212872.7	98906.2	98869.5	2	2	234.2	234.2	232.09	232.09		2.1	2.1	23.61	23.61
9/1959	174964.3	174916.0	195949.3	195854.8	93872.9	93837.1	2	2	301.0	301.0	172.71	172.71		128.3	128.3	150.39	150.38
10/1959	168565.8	168521.4	192689.4	192595.5	90370.2	90335.2	2	2	220.0	220.0	220.00	220.00		0.0	0.0	133.96	133.96
11/1959	160178.2	160137.3	194066.4	193972.9	89161.2	89126.9	2	2	220.0	220.0	220.00	220.00		0.0	0.0	162.63	162.63
12/1959	161972.3	161934.5	190266.1	190172.8	93673.2	93639.5	2	2	220.0	220.0	220.00	220.00		0.0	0.0	161.50	161.50
1/1960	156360.0	156699.2	188347.6	187879.1	105861.3	105828.1	2	2	220.0	220.0	220.00	220.00		0.0	0.0	168.75	168.75
2/1960	158156.7	158334.8	195674.8	195403.4	116382.7	116314.8	2	2	220.0	220.0	220.00	220.00		0.0	0.0	168.90	168.90
3/1960	165412.8	165253.2	189515.3	189441.9	124644.0	124718.8	2	2	220.0	220.0	220.00	220.00		0.0	0.0	158.28	158.28
4/1960	172997.7	172886.7	175003.6	174930.4	127496.1	127525.2	2	2	274.8	274.8	274.79	274.79		0.0	0.0	151.82	151.82
5/1960	191895.6	191987.4	164540.7	164270.1	123617.0	123646.6	2	2	338.0	338.0	337.97	337.97		0.0	0.0	150.08	150.08
6/1960	197098.9	197192.6	167052.2	166782.5	116670.8	116703.3	2	2	268.5	268.5	268.52	268.52		0.0	0.0	30.57	30.57
7/1960	196780.3	196881.3	155456.7	155182.1	108860.3	108897.7	2	2	278.5	278.5	278.46	278.46		0.0	0.0	29.36	29.36
8/1960	193528.5	193624.3	150536.1	150268.8	101323.0	101365.2	2	2	232.1	232.1	232.08	232.08		0.0	0.0	21.57	21.57
9/1960	189394.8	189292.5	152186.8	152119.3	95316.5	95363.3	2	2	172.5	172.5	172.46	172.46		0.0	0.0	20.16	20.16
10/1960	171543.8	171393.1	167503.5	167486.1	91884.0	91932.9	2	2	220.0	220.0	220.00	220.00		0.0	0.0	134.22	134.22
11/1960	163951.9	163803.2	186713.8	186696.3	93613.7	93663.3	2	2	220.0	220.0	220.00	220.00		0.0	0.0	166.33	166.33
12/1960	162236.0	162090.0	191713.2	191695.8	99237.1	99286.3	2	2	220.0	220.0	220.00	220.00		0.0	0.0	161.45	161.45
1/1961	162057.9	162110.3	189825.7	189610.0	109585.8	109636.4	2	2	220.0	220.0	220.00	220.00		0.0	0.0	167.29	167.29
2/1961	159961.2	160012.7	182771.7	182556.2	117206.7	117259.2	2	2	220.0	220.0	220.00	220.00		0.0	0.0	166.61	166.61
3/1961	163624.4	163674.9	173367.4	173151.9	125279.1	125332.0	2	2	220.0	220.0	220.00	220.00		0.0	0.0	157.60	157.60
4/1961	166572.5	166552.0	163323.8	163109.0	127719.8	127844.6	3	3	199.8	199.8	199.76	199.76		0.0	0.0	76.80	76.80
5/1961	171066.5	171046.4	150143.4	149930.3	124397.5	124524.5	3	3	210.7	210.7	210.72	210.72		0.0	0.0	23.87	23.87
6/1961	162399.8	161913.9	149768.0	150025.0	119621.7	119749.2	3	3	268.5	268.5	268.48	268.48		0.0	0.0	30.62	30.62
7/1961	154031.1	153594.5	147092.0	147305.1	113565.3	113692.7	3	3	278.4	278.4	278.43	278.43		0.0	0.0	29.32	29.32
8/1961	147873.3	147060.4	144802.0	145400.9	107649.2	107771.8	3	3	232.1	232.1	232.09	232.09		0.0	0.0	21.62	21.62
9/1961	142477.8	141676.3	148732.6	149329.5	103076.2	103193.9	3	3	166.7	166.7	166.70	166.70		0.0	0.0	15.18	15.18
10/1961	140813.8	140018.3	149811.1	150407.8	98857.6	98972.0	2	2	220.0	220.0	220.00	220.00		0.0	0.0	134.12	134.12
11/1961	149029.1	148251.4	138801.9	139396.9	98357.3	98459.2	2	2	220.0	220.0	220.00	220.00		0.0	0.0	164.46	164.46
12/1961	154420.7	153342.2	127602.2	128196.2	106244.1	106651.1	2	2	220.0	220.0	220.00	220.00		0.0	0.0	162.35	162.35
1/1962	160182.8	159938.7	117207.9	117052.4	115311.5	115635.2	2	2	220.0	220.0	220.00	220.00		0.0	0.0	166.77	166.77
2/1962	178257.4	178213.0	156205.9	155848.3	132684.3	133007.8	2	2	220.0	220.0	220.00	220.00		0.0	0.0	174.27	174.27
3/1962	171447.0	172811.0	187031.5	191529.5	138292.3	139100.8	2	2	220.0	220.0	220.00	220.00		0.0	0.0	157.17	157.17
4/1962	192451.6	194871.6	215209.3	225136.7	137375.7	138198.7	1	1	272.8	272.8	272.80	272.80		0.0	0.0	150.99	150.99

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type	*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows	*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
5/1962	193561.1	193404.4	227650.4	240126.8	131549.2	132305.3	1	1	420.0	420.0	420.00	420.00	0.0	0.0	200.07	200.07
6/1962	197288.9	197288.9	292984.5	305218.2	124077.7	124821.2	1	1	498.4	498.4	498.45	498.45	0.0	0.0	199.99	199.99
7/1962	197101.5	197101.5	271397.5	283055.6	115182.2	115911.7	1	1	424.7	432.5	364.79	364.79	59.9	67.7	90.46	98.25
8/1962	193366.9	193366.9	257699.4	269254.0	106529.7	107245.3	1	1	318.5	318.5	318.52	318.52	0.0	0.0	21.59	21.59
9/1962	189027.8	189105.3	250734.7	262205.0	99637.9	100264.4	1	1	228.2	228.2	219.85	219.85	8.4	8.4	28.41	28.41
10/1962	173619.3	173696.6	260446.2	271885.9	104427.1	105049.5	1	1	564.8	565.3	250.00	250.00	314.8	315.3	445.95	446.41
11/1962	164441.3	164518.1	271864.1	283272.4	103033.0	103649.4	1	1	250.0	250.0	250.00	250.00	0.0	0.0	193.57	193.57
12/1962	163624.2	163828.2	283199.0	294761.4	110189.4	110524.8	1	1	250.0	250.0	250.00	250.00	0.0	0.0	193.93	193.93
1/1963	174910.8	174913.1	283814.3	294274.5	117572.2	117907.9	1	1	254.8	275.8	250.00	250.00	4.8	25.8	201.22	222.15
2/1963	173591.4	173594.5	275427.1	276419.7	128464.7	128767.5	1	1	1577.1	1748.6	250.00	250.00	1327.1	1498.6	1525.13	1696.31
3/1963	175461.2	175503.6	282381.7	282382.3	136081.7	136342.4	1	1	453.2	469.4	250.00	250.00	203.2	219.4	390.97	407.08
4/1963	203104.6	203177.7	324204.5	324254.6	142657.8	142836.5	1	1	466.8	466.8	466.83	466.83	0.0	0.0	348.46	348.46
5/1963	212004.6	212016.4	397834.1	397983.2	136939.6	137077.9	1	1	1711.5	1711.5	658.93	658.93	1052.5	1052.5	1435.60	1435.60
6/1963	196156.3	196156.3	413563.7	412456.6	129523.2	129659.6	1	1	1789.2	1810.6	778.12	778.12	1011.1	1032.4	1411.21	1432.54
7/1963	197395.2	197395.2	375286.3	374453.3	120565.5	120699.9	1	1	699.1	694.8	452.50	452.50	246.6	242.3	276.78	272.44
8/1963	193599.3	193599.3	342332.3	341769.5	111836.3	111968.7	1	1	649.9	645.6	374.91	374.91	275.0	270.7	296.58	292.26
9/1963	189218.8	189218.8	313611.1	313305.8	104760.4	104891.0	1	1	641.0	636.7	255.27	255.23	385.7	381.5	406.63	402.38
10/1963	173302.7	173366.4	288033.9	287989.9	100774.1	100839.7	0	0	973.8	969.5	325.00	325.00	648.8	644.5	832.02	827.77
11/1963	169180.5	169244.0	298925.2	298934.0	101775.6	101840.6	0	0	476.2	475.3	325.00	325.00	151.2	150.3	423.08	422.20
12/1963	166475.7	166584.8	301102.0	301110.7	105306.2	105324.6	0	0	354.0	354.0	325.00	325.00	29.0	29.0	294.48	294.48
1/1964	168110.4	167973.6	314410.8	314667.9	116881.1	116897.4	0	0	325.0	325.0	325.00	325.00	0.0	0.0	273.51	273.51
2/1964	161987.9	162078.9	316359.8	316418.2	121669.0	121656.4	0	0	325.0	325.0	325.00	325.00	0.0	0.0	269.66	269.66
3/1964	166012.9	166103.5	304631.0	304689.3	128077.0	128064.5	0	0	325.0	325.0	325.00	325.00	0.0	0.0	260.06	260.06
4/1964	171394.5	171112.1	287909.7	288341.4	129869.1	129856.6	2	2	272.9	272.9	272.86	272.86	0.0	0.0	150.63	150.63
5/1964	177844.5	177564.1	265228.6	265658.3	125218.6	125206.3	2	2	370.0	370.0	370.03	370.03	0.0	0.0	151.44	151.44
6/1964	183697.2	183418.9	244391.1	244818.0	118230.0	118217.9	2	2	328.1	328.1	328.11	328.11	0.0	0.0	31.52	31.52
7/1964	189502.1	189225.0	218437.8	218860.3	109312.7	109300.4	2	2	363.5	363.5	363.50	363.50	0.0	0.0	29.33	29.33
8/1964	193219.5	193317.0	196737.7	196781.4	100414.6	100402.5	2	2	318.5	318.5	318.50	318.50	0.0	0.0	21.61	21.61
9/1964	189042.5	188939.3	190866.4	191107.3	93670.8	93658.6	2	2	234.6	234.6	219.82	219.82	14.7	14.7	34.93	34.93
10/1964	174584.0	174726.7	198852.4	198844.2	90558.3	90546.1	2	2	396.7	396.7	220.00	220.00	176.7	176.7	276.15	276.15
11/1964	167536.9	167281.5	225008.7	225396.5	91053.4	91041.1	2	2	220.0	220.0	220.00	220.00	0.0	0.0	166.47	166.47
12/1964	211005.4	211005.2	327223.7	327355.3	100481.8	100469.4	2	2	1097.4	1097.4	220.00	220.00	877.4	877.4	1046.52	1046.52
1/1965	205221.7	205221.7	286856.0	286986.0	115017.2	115004.6	2	2	3090.3	3090.3	220.00	220.00	2870.3	2870.3	3034.94	3034.94
2/1965	195436.2	195434.7	290574.4	290703.5	121019.1	121006.8	2	2	1320.0	1320.0	220.00	220.00	1100.0	1100.0	1264.08	1264.08
3/1965	183127.1	183133.2	313478.6	313607.9	128028.4	128008.7	2	2	719.4	719.4	220.00	220.00	499.4	499.4	654.51	654.51
4/1965	205463.2	205467.7	340039.9	340224.3	133331.7	133258.8	0	0	775.0	775.0	525.00	525.00	250.0	250.0	654.39	654.39
5/1965	207540.3	207353.4	378136.0	378033.7	127753.2	124628.4	0	0	1044.0	970.3	776.31	776.13	267.7	194.2	767.61	694.12
6/1965	202776.3	201322.8	408390.2	407738.4	120336.7	113586.5	0	0	1728.7	1689.7	877.89	877.86	850.8	811.8	1350.78	1311.82
7/1965	196848.5	196782.7	376130.5	375698.8	111478.1	104815.3	0	0	966.9	940.9	457.13	457.09	509.8	483.8	543.92	517.93
8/1965	194559.7	194466.8	350127.2	350033.3	102561.4	95989.9	0	0	673.5	668.5	378.48	378.47	295.1	290.0	320.89	315.87
9/1965	191439.8	191347.4	328297.4	328141.4	95813.8	89327.0	0	0	814.7	815.7	260.63	260.63	554.0	555.1	579.70	580.77
10/1965	176944.8	176852.8	309850.7	309822.1	92327.9	85922.9	0	0	985.6	983.6	325.00	325.00	660.6	658.6	841.73	839.74
11/1965	174919.9	175076.0	323380.6	323132.7	94369.9	88011.4	0	0	624.0	623.6	325.00	325.00	299.0	298.6	570.26	569.78
12/1965	171546.5	171012.1	330481.5	330580.5	102044.0	97068.8	0	0	522.6	506.5	325.00	325.00	197.6	181.5	466.11	450.00
1/1966	166726.4	166639.6	328971.1	329615.4	113647.1	108706.8	0	0	500.0	483.9	325.00	325.00	175.0	158.9	447.04	430.92
2/1966	159875.9	159875.1	321429.9	321776.6	122828.6	117836.3	0	0	423.2	428.6	325.00	325.00	98.2	103.6	370.00	375.36
3/1966	167774.0	167611.1	310830.1	309810.9	127810.9	124388.6	0	0	325.0	325.0	325.00	325.00	0.0	0.0	258.99	258.99
4/1966	179158.7	178990.5	308475.2	306864.6	130275.9	127488.0	2	2	272.8	272.8	272.83	272.83	0.0	0.0	150.75	150.75
5/1966	191228.8	191236.0	289519.8	287742.8	125828.3	123072.0	2	2	370.0	370.0	370.00	370.00	0.0	0.0	150.27	150.27
6/1966	188730.1	188737.3	266994.4	265229.3	118475.4	115748.9	2	2	328.1	328.1	328.08	328.08	0.0	0.0	30.59	30.59
7/1966	191024.0	191079.6	240922.2	239174.5	109641.0	106955.2	2	2	363.5	363.5	363.47	363.47	0.0	0.0	29.35	29.35
8/1966	193523.7	193275.4	218220.9	216865.4	100711.3	98064.3	2	2	318.5	318.5	318.52	318.52	0.0	0.0	21.59	21.59
9/1966	189378.8	189406.1	212550.4	211009.7	93980.4	91374.2	2	2	240.3	240.3	219.92	219.92	20.4	20.4	40.46	40.46
10/1966	167848.1	167957.8	224134.4	222602.5	90524.8	87956.5	2	2	227.5	227.5	220.00	220.00	7.5	7.5	104.34	104.33
11/1966	167722.3	167706.4	242787.0	241452.8	91570.9	89030.8	2	2	220.0	220.0	220.00	220.00	0.0	0.0	167.03	167.03

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type	*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows	*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
12/1966	174219.2	174035.4	288111.1	286823.5	99754.5	97419.1	2	2	220.0	220.0	220.00	220.00	0.0	0.0	165.40	165.40
1/1967	191846.7	191899.5	321108.6	319924.5	124350.5	122099.7	2	2	304.5	298.7	220.00	220.00	84.5	78.7	257.24	251.45
2/1967	172514.7	172321.4	325037.3	324676.6	127921.7	126244.1	2	2	911.4	892.1	220.00	220.00	691.4	672.1	855.74	836.49
3/1967	197808.8	197652.3	337560.9	336923.3	139050.7	137744.6	2	2	869.0	867.1	220.00	220.00	649.0	647.1	807.22	805.27
4/1967	204465.9	204465.9	338290.8	338451.2	146753.8	145572.3	0	0	1754.0	1736.0	525.00	525.00	1229.0	1211.0	1636.40	1618.44
5/1967	206453.9	206442.9	309312.6	310255.5	140169.1	139221.2	0	0	2616.1	2600.0	778.31	778.31	1837.8	1821.7	2338.20	2322.07
6/1967	212526.8	212526.8	397594.0	397413.5	134832.6	133897.1	0	0	2130.7	2149.3	878.52	878.52	1252.1	1270.8	1753.18	1771.85
7/1967	195140.2	195140.2	356949.0	356809.9	125849.5	124928.2	0	0	2452.1	2451.4	459.17	459.17	1992.9	1992.3	2027.13	2026.47
8/1967	193617.1	193617.1	333505.2	333404.7	117071.7	116163.8	0	0	485.5	484.9	378.02	378.02	107.5	106.9	132.53	131.92
9/1967	189418.0	189418.0	314499.3	314444.8	109919.6	109024.5	0	0	496.5	495.7	259.94	259.94	236.5	235.8	262.22	261.46
10/1967	173113.7	172881.0	298925.2	298917.4	104688.6	104038.5	0	0	761.8	761.0	325.00	325.00	436.8	436.0	618.72	617.96
11/1967	167030.7	167047.9	308809.0	308312.8	103599.6	103200.7	0	0	377.3	377.2	325.00	325.00	52.3	52.2	322.39	322.26
12/1967	163762.3	163595.5	316998.3	316948.3	109352.5	109141.3	0	0	337.1	329.8	325.00	325.00	12.1	4.8	279.62	272.37
1/1968	168680.6	168518.6	323586.5	323685.4	119820.9	119607.1	0	0	363.7	361.3	325.00	325.00	38.7	36.3	313.21	310.79
2/1968	171300.1	171581.4	325591.0	325441.9	127789.7	127580.6	0	0	510.3	506.9	325.00	325.00	185.3	181.9	457.40	453.95
3/1968	168346.1	168477.7	328727.7	328677.9	134279.2	134072.8	0	0	537.1	537.9	325.00	325.00	212.1	212.9	473.61	474.42
4/1968	176543.2	176275.1	316854.1	317178.5	134377.2	134198.9	2	2	272.9	272.9	272.86	272.86	0.0	0.0	150.42	150.42
5/1968	179540.4	179279.9	292122.3	292445.1	128768.2	128587.1	2	2	370.0	370.0	370.03	370.03	0.0	0.0	150.34	150.34
6/1968	187754.1	187495.6	269577.7	269898.4	121240.6	121062.5	2	2	328.1	328.1	328.11	328.11	0.0	0.0	30.60	30.60
7/1968	187678.8	187423.9	243371.2	243688.7	112340.8	112166.5	2	2	363.5	363.5	363.50	363.50	0.0	0.0	29.33	29.33
8/1968	189238.1	189053.5	219843.2	220157.6	103476.0	103238.0	2	2	333.7	333.7	318.56	318.56	15.2	15.2	37.06	37.06
9/1968	188958.8	189152.0	206989.4	206926.8	96688.7	96454.0	2	2	231.8	231.8	219.82	219.82	12.0	12.0	32.02	32.02
10/1968	170325.7	170322.7	214601.0	214736.2	93298.5	93066.6	1	1	306.6	306.6	250.00	250.00	56.6	56.6	184.57	184.58
11/1968	165571.5	165570.5	236307.4	236442.8	93210.3	92980.5	1	1	250.0	250.0	250.00	250.00	0.0	0.0	197.28	197.28
12/1968	169102.7	169103.6	252844.3	252979.8	101362.5	101134.4	1	1	250.0	250.0	250.00	250.00	0.0	0.0	194.67	194.67
1/1969	206757.2	206757.2	328856.2	328994.6	122793.1	122567.0	1	1	859.4	859.4	250.00	250.00	609.4	609.4	812.23	812.23
2/1969	205099.9	205099.9	323902.8	324041.4	139667.2	139443.7	1	1	2087.1	2087.1	250.00	250.00	1837.1	1837.1	2037.75	2037.78
3/1969	202217.8	202217.8	330495.6	330634.1	144508.0	144286.6	1	1	1261.3	1261.3	250.00	250.00	1011.3	1011.3	1195.87	1195.87
4/1969	206000.8	206000.8	315719.4	315065.0	147005.6	146786.4	0	0	2438.0	2451.3	525.00	525.00	1913.0	1926.3	2315.14	2328.47
5/1969	214998.5	214815.3	390147.3	387664.1	140577.3	137995.7	0	0	2748.4	2688.4	778.17	778.17	1970.2	1910.2	2470.15	2410.15
6/1969	205015.3	204491.4	405509.4	405811.2	133186.3	126973.3	0	0	3053.7	2943.0	879.24	879.17	2174.4	2063.8	2674.53	2563.94
7/1969	197172.8	197192.5	373094.2	373397.8	124218.9	118083.3	0	0	1234.3	1225.4	457.59	457.59	776.7	767.8	810.79	801.91
8/1969	194329.0	194195.6	348416.6	348617.0	115456.9	109402.6	0	0	678.5	682.6	378.48	378.48	300.0	304.1	325.00	329.14
9/1969	190061.8	190126.7	326843.5	326956.9	108315.9	102337.9	0	0	675.1	673.2	260.40	260.40	414.7	412.8	440.42	438.54
10/1969	174093.3	173761.2	308985.5	309300.3	104281.6	98367.4	0	0	991.7	994.8	325.00	325.00	666.7	669.8	849.29	852.43
11/1969	164177.4	164161.0	317512.3	317166.0	102908.2	97131.6	0	0	437.8	442.3	325.00	325.00	112.8	117.3	382.37	386.81
12/1969	175508.0	175077.6	309759.5	310483.9	115395.1	110059.2	0	0	708.7	691.3	325.00	325.00	383.7	366.3	652.67	635.28
1/1970	205313.7	205288.4	304992.7	304939.1	134993.5	130053.2	0	0	2243.2	2243.2	325.00	325.00	1918.2	1918.2	2192.67	2192.67
2/1970	201144.5	200641.9	268893.4	269664.5	139492.4	135349.8	0	0	1975.0	1955.0	325.00	325.00	1650.0	1630.0	1919.31	1899.33
3/1970	198286.7	197903.5	291598.7	291569.4	143632.8	140202.2	0	0	1101.9	1101.9	325.00	325.00	776.9	776.9	1037.60	1037.60
4/1970	186415.1	186368.1	319559.7	319213.8	141597.6	138382.9	0	0	535.8	532.5	498.33	495.00	37.5	37.5	413.87	410.54
5/1970	207501.2	207228.2	348024.6	342382.1	135111.2	129504.9	0	0	581.8	580.2	581.77	580.15	0.0	0.0	306.41	304.80
6/1970	199011.4	198617.2	398164.9	390030.5	128649.4	119452.6	0	0	778.1	753.1	778.13	753.08	0.0	0.0	401.94	376.94
7/1970	197136.7	197022.1	368371.8	361655.5	119673.3	110604.4	0	0	669.7	642.9	456.61	456.58	213.0	186.3	247.17	220.43
8/1970	193502.0	193242.1	344772.3	340201.2	110922.6	101982.7	0	0	438.6	406.8	378.13	377.93	60.5	28.8	85.55	53.85
9/1970	189164.2	189279.0	325219.2	322543.5	103795.1	94973.1	0	0	432.8	395.0	259.90	259.84	172.9	135.1	198.55	160.81
10/1970	172242.8	171778.8	309706.4	309288.1	98682.2	91279.3	0	0	726.7	677.9	325.00	325.00	401.7	352.9	583.77	535.07
11/1970	178799.4	178580.3	326203.6	326104.6	103641.1	96419.7	0	0	488.1	476.1	325.00	325.00	163.1	151.1	436.71	424.68
12/1970	181356.5	180553.9	332512.6	333285.7	117669.9	111260.1	0	0	1040.0	1022.6	325.00	325.00	715.0	697.6	985.05	967.66
1/1971	174932.9	174853.3	328884.7	328418.5	124105.2	118263.8	0	0	921.9	921.9	325.00	325.00	596.9	596.9	867.38	867.38
2/1971	174042.4	173832.5	323705.7	323835.2	128457.4	123782.8	0	0	867.9	839.3	325.00	325.00	542.9	514.3	812.40	783.87
3/1971	189284.6	189293.0	334294.8	334375.2	135782.1	131967.4	0	0	674.2	658.1	325.00	325.00	349.2	333.1	611.61	595.50
4/1971	185173.8	185252.4	357779.1	356967.4	136467.3	133515.7	1	1	494.5	494.5	465.23	465.23	29.3	29.3	371.73	371.73
5/1971	193401.4	193232.3	352843.2	352480.5	130782.5	127871.7	1	1	570.5	567.3	570.48	567.25	0.0	0.0	295.86	292.64
6/1971	203862.0	203862.9	400284.4	400051.4	123282.9	120416.5	1	1	652.5	647.5	652.51	647.51	0.0	0.0	276.94	271.94

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type	*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows		*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
7/1971	197305.7	197305.4	368728.1	368549.2	114363.8	111545.5	1	1	1005.2	1004.3	453.18	453.18		552.0	551.2	582.10	581.26
8/1971	194348.7	194143.3	344881.8	344755.5	105673.9	102860.9	1	1	740.2	743.4	375.41	375.43		364.8	368.0	386.41	389.57
9/1971	189967.2	189980.4	325044.6	324979.7	98688.4	96089.0	1	1	570.8	563.1	255.07	255.04		315.7	308.1	336.62	328.98
10/1971	173938.6	173951.7	309531.2	309522.2	95159.0	92591.1	0	0	763.8	762.9	325.00	325.00		438.8	437.9	620.13	619.22
11/1971	162463.2	162476.2	315261.8	315261.8	94448.2	91904.2	0	0	397.0	396.8	325.00	325.00		72.0	71.8	341.64	341.49
12/1971	171534.6	171547.6	325279.8	325279.8	101549.9	99023.6	0	0	382.3	382.3	325.00	325.00		57.3	57.3	329.04	329.04
1/1972	162116.7	162106.4	323986.7	323193.2	111043.5	109354.1	0	0	400.0	400.0	325.00	325.00		75.0	75.0	345.69	345.69
2/1972	162461.6	162018.8	314811.4	314089.4	120064.8	119193.3	0	0	350.9	343.1	325.00	325.00		25.9	18.1	297.33	289.57
3/1972	169826.2	169826.6	317089.5	315972.8	126359.0	125451.3	0	0	325.0	325.0	325.00	325.00		0.0	0.0	258.73	258.73
4/1972	179797.1	179797.6	314819.1	313805.2	129241.8	128343.3	1	1	311.6	310.0	311.65	309.96		0.0	0.0	190.02	188.36
5/1972	188466.9	188467.4	288363.9	287355.4	124540.3	123652.4	1	1	420.0	420.0	420.03	420.03		0.0	0.0	200.04	200.04
6/1972	195959.6	195960.1	290149.0	289146.7	117455.8	116577.4	1	1	498.5	498.5	498.48	498.48	##	0.0	0.0	200.10	200.10
7/1972	197170.7	197171.2	269486.8	268493.2	108571.2	107703.1	1	1	364.7	364.7	364.66	364.66		0.0	0.0	30.49	30.49
8/1972	193423.9	193424.4	253204.9	252220.7	99657.5	98800.9	1	1	318.5	318.5	318.50	318.50		0.0	0.0	21.60	21.60
9/1972	190170.0	190170.4	244329.2	243352.4	93109.9	92263.6	1	1	320.0	320.0	220.00	220.00		100.0	100.0	121.46	121.44
10/1972	171256.3	171256.8	256598.1	255626.6	91923.5	91085.5	1	1	270.8	270.8	250.00	250.00		20.8	20.8	147.92	147.91
11/1972	166273.0	166273.5	279732.3	278759.7	97173.3	96340.2	1	1	250.0	250.0	250.00	250.00		0.0	0.0	197.51	197.51
12/1972	167614.1	167614.6	295562.8	294590.2	104097.8	103271.5	1	1	250.0	250.0	250.00	250.00		0.0	0.0	193.44	193.44
1/1973	184314.7	184287.2	322853.4	321876.6	126173.1	125377.6	1	1	583.9	583.9	250.00	250.00		333.9	333.9	535.81	535.81
2/1973	192706.2	192569.9	328801.2	328932.5	138771.2	138088.1	1	1	1261.4	1241.4	250.00	250.00		1011.4	991.4	1212.60	1192.61
3/1973	186986.2	186955.7	334742.7	334745.2	146269.2	145614.4	1	1	1153.5	1153.5	250.00	250.00		903.5	903.5	1090.07	1090.07
4/1973	190127.5	190005.0	355612.5	355615.0	144935.6	144378.9	1	1	502.8	502.8	473.54	473.54		29.3	29.3	379.81	379.81
5/1973	211713.1	211418.8	399245.7	396751.6	138583.6	135668.8	1	1	690.7	641.5	633.50	627.02		57.2	14.5	415.24	366.13
6/1973	195713.8	194905.4	403812.9	403306.4	131122.6	124581.4	1	1	1348.5	1254.1	769.07	767.18		579.4	486.9	971.10	876.92
7/1973	197121.1	196953.7	370619.9	370294.0	122182.2	115724.3	1	1	691.4	678.1	452.54	452.52		238.9	225.6	269.01	255.74
8/1973	193404.8	193501.0	340204.8	339892.0	113444.4	107073.5	1	1	537.6	533.1	374.71	374.71		162.9	158.4	184.45	179.98
9/1973	189009.2	189105.2	314278.9	314161.4	106510.0	100216.5	1	1	560.4	557.1	254.99	254.99		305.4	302.2	326.29	323.02
10/1973	173646.0	173990.3	290061.1	289877.2	101947.1	95722.2	0	0	1050.3	1047.3	325.00	325.00		725.3	722.3	909.93	906.95
11/1973	173493.5	173441.1	294932.9	294833.6	111840.4	105626.3	0	0	760.3	765.5	325.00	325.00		435.3	440.5	707.14	712.37
12/1973	187196.8	186719.6	298752.7	298156.2	122052.6	116803.8	0	0	952.3	952.3	325.00	325.00		627.3	627.3	898.05	898.05
1/1974	190654.8	190430.4	294109.1	294186.0	130922.3	125855.1	0	0	1314.2	1296.8	325.00	325.00		989.2	971.8	1260.97	1243.58
2/1974	179491.7	179268.9	302403.0	302479.8	137876.9	132842.6	0	0	900.0	900.0	325.00	325.00		575.0	575.0	845.35	845.35
3/1974	205754.1	205348.4	328665.4	328097.7	147541.4	143359.6	0	0	952.3	952.3	325.00	325.00		627.3	627.3	889.66	889.66
4/1974	203289.3	203254.5	347638.9	347635.3	150267.3	146815.0	0	0	1422.7	1404.0	525.00	525.00		897.7	879.0	1300.90	1282.23
5/1974	210394.0	210030.6	387201.0	387240.6	143505.4	137839.7	0	0	1030.6	942.7	776.20	776.13		254.4	166.6	754.30	666.50
6/1974	195526.5	194956.3	406869.9	405107.9	136001.1	126744.3	0	0	1777.3	1741.6	872.97	871.27		904.4	870.3	1400.24	1364.50
7/1974	198109.9	198096.7	374757.5	373545.8	127403.3	118259.5	0	0	1011.2	993.3	457.31	457.26		553.9	536.1	589.67	571.84
8/1974	194563.7	194532.3	349074.5	348311.8	118528.9	109509.9	0	0	816.2	809.3	378.89	378.89		437.3	430.4	462.36	455.47
9/1974	189175.7	189144.4	326793.6	326344.1	111295.5	102395.0	0	0	675.8	670.6	260.38	260.38		415.4	410.2	441.09	435.88
10/1974	172610.2	172441.9	309566.8	309553.3	106319.5	98850.0	0	0	780.8	753.6	325.00	325.00		455.8	428.6	638.56	611.33
11/1974	161343.3	160960.9	310235.8	309195.3	104261.7	98111.1	0	0	388.2	388.0	325.00	325.00		63.2	63.0	331.61	331.38
12/1974	162018.8	161863.4	305557.6	303923.7	109667.8	103934.9	0	0	325.0	325.0	325.00	325.00		0.0	0.0	266.85	266.85
1/1975	159226.6	159022.6	298179.8	295578.3	116085.9	111376.1	0	0	325.0	325.0	325.00	325.00		0.0	0.0	270.89	270.89
2/1975	163714.8	163621.2	308454.6	304954.9	125342.9	121440.1	0	0	325.0	325.0	325.00	325.00		0.0	0.0	274.47	274.47
3/1975	185873.5	185665.5	333523.4	332147.6	134898.6	131477.8	0	0	416.1	371.0	325.00	325.00		91.1	46.0	355.51	310.39
4/1975	187354.5	187211.3	359417.8	357449.8	136042.5	133786.6	1	1	466.8	460.2	466.83	460.16		0.0	0.0	345.49	338.82
5/1975	203049.3	202680.9	361349.5	361498.3	130202.4	128495.4	1	1	986.6	947.4	666.55	664.79		320.0	282.6	710.38	671.30
6/1975	202227.7	202227.6	401029.3	400713.9	122690.0	121004.2	1	1	1787.8	1789.4	774.57	772.91		1013.2	1016.5	1409.88	1411.56
7/1975	197592.0	197592.0	371403.8	371166.5	113695.3	112031.4	1	1	1084.2	1082.9	453.52	453.52		630.7	629.4	660.85	659.61
8/1975	194401.6	194401.6	345687.0	345522.5	104683.5	103040.8	1	1	888.5	887.4	375.53	375.53		513.0	511.8	535.86	534.70
9/1975	190954.3	190954.3	325611.5	325522.3	97861.4	96234.4	1	1	742.7	741.4	255.68	255.68		487.0	485.7	507.66	506.41
10/1975	177129.3	177129.2	309793.1	309771.1	96498.6	94874.9	0	0	924.6	923.6	325.00	325.00		599.6	598.6	783.38	782.29
11/1975	165481.7	165481.6	316243.6	316243.6	95849.6	94237.6	0	0	437.2	436.9	325.00	325.00		112.2	111.9	380.24	379.88
12/1975	163612.2	163612.2	314702.9	314702.9	99702.4	98101.8	0	0	325.0	325.0	325.00	325.00		0.0	0.0	265.50	265.50
1/1976	156633.2	156633.2	302643.2	302643.2	109249.1	107659.3	0	0	325.0	325.0	325.00	325.00		0.0	0.0	269.86	269.86

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type	*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows		*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
2/1976	148096.5	147309.1	286360.7	286360.7	117609.8	116816.4	0	0	325.0	325.0	325.00	325.00		0.0	0.0	271.17	271.17
3/1976	139485.9	138322.7	267423.0	267423.0	124183.8	123776.0	0	0	325.0	325.0	325.00	325.00		0.0	0.0	260.56	260.56
4/1976	132195.2	130698.7	256477.2	256477.2	126314.7	126249.7	3	3	200.6	200.6	200.63	200.63		0.0	0.0	77.27	77.27
5/1976	124297.9	123226.7	241487.6	241487.6	119803.6	119326.2	3	3	210.8	210.8	210.75	210.75		0.0	0.0	23.16	23.16
6/1976	114899.5	113838.8	222870.8	222870.8	109890.8	109418.5	3	3	268.5	268.5	268.51	268.51	##	0.0	0.0	30.58	30.58
7/1976	111619.4	110603.9	204631.0	204631.0	99975.8	99487.9	3	3	241.1	241.1	241.05	241.05		0.0	0.0	18.14	18.14
8/1976	111074.3	110101.4	190375.6	190375.6	91110.4	90611.4	3	3	208.5	208.5	208.46	208.46		0.0	0.0	16.08	16.08
9/1976	109567.2	108633.5	178944.7	178944.7	84146.1	83638.3	3	3	157.6	157.6	157.60	157.60		0.0	0.0	15.16	15.16
10/1976	103778.9	102883.6	169552.4	169552.4	81547.1	81026.4	3	3	131.3	131.3	131.30	131.30		0.0	0.0	46.01	46.01
11/1976	103384.2	102523.4	162797.2	162797.2	81421.8	80888.0	3	3	131.6	131.6	131.58	131.58		0.0	0.0	76.24	76.24
12/1976	97853.3	97030.5	154451.1	154451.1	86740.0	86190.2	3	3	133.6	133.6	133.62	133.62		0.0	0.0	75.17	75.17
1/1977	92647.2	91759.9	148140.9	148140.9	97260.4	96797.4	3	3	130.0	130.0	130.00	130.00		0.0	0.0	77.05	77.05
2/1977	83734.2	82880.5	142813.3	142813.3	106285.6	105810.5	3	3	130.0	130.0	130.00	130.00		0.0	0.0	77.20	77.20
3/1977	75496.5	74331.8	136209.5	136209.5	114778.8	114625.2	3	3	139.0	139.0	138.98	138.98		0.0	0.0	76.45	76.45
4/1977	71388.4	70540.8	123718.2	123718.2	118053.3	117596.3	3	3	199.7	199.7	199.73	199.73		0.0	0.0	75.05	75.05
5/1977	77446.6	76528.3	111714.4	111714.4	114723.1	114350.5	3	3	210.7	210.7	210.72	210.72		0.0	0.0	24.42	24.42
6/1977	76285.4	75555.2	94373.5	94373.5	109838.9	109294.3	3	3	268.5	268.5	268.48	268.48		0.0	0.0	30.56	30.56
7/1977	75481.0	74927.1	77974.4	77974.4	103858.3	103155.5	3	3	241.0	241.0	241.03	241.03		0.0	0.0	18.11	18.11
8/1977	74022.1	73603.5	63933.6	63933.6	97977.6	97158.0	3	3	208.5	208.5	208.48	208.48		0.0	0.0	15.02	15.02
9/1977	76080.7	75746.3	54545.6	54545.6	93683.5	92794.7	3	3	157.7	157.7	157.67	157.67		0.0	0.0	15.53	15.53
10/1977	72429.1	72175.7	46290.8	46290.8	90525.1	89570.7	3	3	131.3	131.3	131.33	131.33		0.0	0.0	46.01	46.01
11/1977	75675.0	75473.3	38703.0	38703.0	89387.7	88394.1	3	3	131.6	131.6	131.60	131.60		0.0	0.0	76.80	76.80
12/1977	78152.3	77983.8	30792.2	30792.2	93704.8	92690.2	3	3	133.6	133.6	133.64	133.64		0.0	0.0	80.04	80.04
1/1978	76309.0	75918.1	23338.4	23338.4	101549.2	100768.4	3	3	130.0	130.0	130.00	130.00		0.0	0.0	82.79	82.79
2/1978	68076.8	67455.0	16656.2	16656.2	108809.1	108267.6	3	3	130.0	130.0	130.00	130.00		0.0	0.0	79.26	79.26
3/1978	75343.7	74640.3	8705.7	8705.7	115924.6	115473.7	3	3	139.0	139.0	139.02	139.02		0.0	0.0	80.55	80.55
4/1978	69855.6	69332.0	6431.5	6431.5	119940.2	119321.8	3	3	199.7	199.7	199.73	199.73		0.0	0.0	80.36	80.36
5/1978	62756.8	62363.4	6497.1	6497.1	116393.6	115658.5	3	3	210.7	210.7	210.72	210.72		0.0	0.0	23.06	23.06
6/1978	53654.0	53316.7	6495.4	6495.4	107800.3	107024.6	3	3	268.5	268.5	268.48	268.48		0.0	0.0	30.58	30.58
7/1978	45693.8	45409.7	6180.5	6180.5	97863.1	97079.9	3	3	241.0	241.0	241.03	241.03		0.0	0.0	18.09	18.09
8/1978	35971.9	35828.7	6370.9	6370.9	88074.3	87300.3	3	3	208.5	208.5	208.48	208.48		0.0	0.0	15.02	15.02
9/1978	38650.6	39487.2	6394.3	6394.3	78994.2	78261.3	3	3	157.7	157.7	157.72	157.72		0.0	0.0	16.74	16.74
10/1978	36151.2	36713.8	6397.5	6397.5	70670.0	70052.7	3	3	131.3	131.3	131.33	131.33		0.0	0.0	45.99	45.99
11/1978	36579.6	37137.6	6312.7	6312.7	64344.9	63727.9	3	3	131.6	131.6	131.60	131.60		0.0	0.0	78.50	78.50
12/1978	36449.1	36861.6	6370.9	6370.9	59707.7	59090.9	3	3	133.6	133.6	133.64	133.64		0.0	0.0	76.23	76.23
1/1979	58990.0	59263.1	6333.0	6333.0	64540.6	63954.3	3	3	130.0	130.0	130.00	130.00		0.0	0.0	81.41	81.41
2/1979	84822.0	85020.6	6499.5	6499.5	75886.7	75374.5	3	3	130.0	130.0	130.00	130.00		0.0	0.0	83.62	83.62
3/1979	143616.0	143809.4	6316.3	6316.3	86715.8	86211.7	3	3	140.0	140.0	139.99	139.99		0.0	0.0	77.53	77.53
4/1979	188533.3	188527.2	14559.4	14757.0	92871.9	92376.8	1	1	272.8	272.8	272.78	272.78		0.0	0.0	150.61	150.61
5/1979	203240.0	203233.8	59988.4	60183.0	92671.5	92192.1	1	1	420.0	420.0	420.00	420.00		0.0	0.0	200.22	200.22
6/1979	202965.3	202959.2	104547.2	104738.6	87615.9	87154.8	1	1	498.4	498.4	498.45	498.45		0.0	0.0	199.97	199.97
7/1979	198354.0	198348.0	111508.7	111692.5	83181.4	82738.2	1	1	370.9	371.0	364.66	364.66		6.3	6.3	36.85	36.93
8/1979	192866.6	192860.6	109244.5	109425.2	78875.4	78450.0	1	1	318.5	318.5	318.52	318.52		0.0	0.0	21.64	21.64
9/1979	186182.8	186176.9	115394.3	115572.8	73667.8	73258.7	1	1	219.8	219.8	219.82	219.82		0.0	0.0	20.09	20.09
10/1979	173771.6	173766.3	136585.9	136763.5	71675.5	71274.6	2	2	220.0	220.0	220.00	220.00		0.0	0.0	98.80	98.80
11/1979	167682.2	167682.8	159963.8	160141.3	71897.8	71497.3	2	2	220.0	220.0	220.00	220.00		0.0	0.0	166.18	166.18
12/1979	171543.4	171549.0	178077.4	178254.9	82656.3	82254.2	2	2	220.0	220.0	220.00	220.00		0.0	0.0	163.42	163.42
1/1980	200805.9	200806.9	275619.9	275014.5	99322.1	98919.0	2	2	610.3	623.2	220.00	220.00		390.3	403.2	## 561.24	574.14
2/1980	207125.1	207109.4	315912.9	316220.7	117956.7	117734.6	2	2	1773.1	1754.5	220.00	220.00		1553.1	1534.5	1721.56	1702.97
3/1980	200328.3	200328.3	313043.5	312939.6	124357.6	124067.2	2	2	1718.7	1725.2	220.00	220.00		1498.7	1505.2	1652.63	1659.06
4/1980	193056.6	193056.7	339070.6	339244.0	128932.7	128645.5	0	0	754.7	750.0	525.00	525.00		229.7	225.0	632.26	627.63
5/1980	202738.0	202738.0	369032.4	369106.3	123799.6	123516.0	0	0	1060.9	1062.5	769.99	771.60		290.9	290.9	785.03	786.64
6/1980	207985.8	207985.8	406525.7	407908.3	116528.3	116248.6	0	0	1601.3	1579.3	877.76	877.80		723.6	701.5	1223.51	1201.50
7/1980	196977.5	196977.5	365960.8	366264.2	107807.4	107532.0	0	0	1605.9	1623.4	457.88	457.97		1148.0	1165.5	1183.20	1200.69
8/1980	193385.3	193385.3	337587.4	337792.4	99257.0	98985.6	0	0	546.7	548.3	378.15	378.15		168.6	170.1	193.59	195.16

Date	Cumulative without Project (acre-ft) Pardee Storage	Cumulative with Project (acre-ft) Pardee Storage	Cumulative without Project (acre-ft) Camanche Storage	Cumulative with Project (acre-ft) Camanche Storage	Cumulative without Project (acre-ft) TRA Storage	Cumulative with Project (acre-ft) TRA Storage	Cumulative without Project (NA) JSA Year Type	Cumulative with Project (NA) JSA Year Type	Cumulative without Project (cfs) Camanche Outflow	Cumulative with Project (cfs) Camanche Outflow	Cumulative without Project (cfs) Required Minimum Flows	Cumulative with Project (cfs) Required Minimum Flows	Cumulative without Project (cfs) Camanche Flood Release	Cumulative with Project (cfs) Camanche Flood Release	Cumulative without Project (cfs) Flow below Lodi Lake	Cumulative with Project (cfs) Flow below Lodi Lake
9/1980	189223.6	189194.5	313018.3	313230.4	92370.2	92131.1	0	0	526.1	525.9	259.94	259.94	266.1	266.0	291.81	291.68
10/1980	169660.2	169630.9	292728.8	292740.9	88923.4	88687.6	0	0	756.7	760.0	325.00	325.00	431.7	435.0	613.05	616.29
11/1980	161871.7	161842.5	286950.6	286950.6	87801.8	87568.6	0	0	394.8	395.0	325.00	325.00	69.8	70.0	337.12	337.32
12/1980	162269.4	162392.1	287006.0	286808.0	92374.7	92189.4	0	0	325.0	325.0	325.00	325.00	0.0	0.0	266.72	266.72
1/1981	171405.1	171328.9	293011.5	293011.8	105981.8	105797.6	0	0	325.0	325.0	325.00	325.00	0.0	0.0	275.26	275.26
2/1981	162527.3	162451.4	297440.8	297441.1	114838.7	114656.2	0	0	325.0	325.0	325.00	325.00	0.0	0.0	270.73	270.73
3/1981	170481.5	170431.1	298164.9	298164.7	123836.4	123629.8	0	0	325.0	325.0	325.00	325.00	0.0	0.0	265.31	265.31
4/1981	180545.9	180454.3	288114.0	288114.2	126579.9	126416.2	2	2	274.8	274.8	274.78	274.78	0.0	0.0	151.28	151.28
5/1981	182562.7	182844.1	267228.4	266855.6	121910.8	121749.5	2	2	338.0	338.0	337.96	337.96	0.0	0.0	150.27	150.27
6/1981	185608.4	185887.6	248394.0	248023.9	114314.0	114155.2	2	2	268.5	268.5	268.49	268.49	0.0	0.0	30.57	30.57
7/1981	189706.0	189985.6	227603.9	227237.6	105389.2	105233.5	2	2	278.4	278.4	278.43	278.43	0.0	0.0	29.32	29.32
8/1981	188498.5	188779.5	209950.6	209588.0	96478.8	96326.0	2	2	232.1	232.1	232.09	232.09	0.0	0.0	21.55	21.55
9/1981	188866.3	189150.0	198042.4	197682.3	89808.4	89658.2	2	2	189.6	189.6	172.52	172.52	17.0	17.0	37.22	37.22
10/1981	172334.8	172176.4	208469.2	208556.3	87320.4	87172.2	2	2	347.2	347.2	220.00	220.00	127.2	127.2	263.17	263.16
11/1981	172216.9	172310.8	240886.0	240724.4	91608.6	91461.5	2	2	220.0	220.0	220.00	220.00	0.0	0.0	169.37	169.37
12/1981	193569.1	193537.4	261711.7	261678.8	100457.5	100311.3	2	2	531.0	531.0	220.00	220.00	311.0	311.0	474.99	474.99
1/1982	196983.1	196984.6	273485.3	273422.5	122705.0	122558.9	2	2	1416.8	1416.8	220.00	220.00	1196.8	1196.8	1365.23	1365.23
2/1982	205931.5	205931.5	307004.8	306927.8	132956.8	132893.2	2	2	2111.4	2111.4	220.00	220.00	1891.4	1891.4	2058.52	2058.52
3/1982	209580.1	209580.1	299629.2	299549.7	145198.2	145069.4	2	2	2641.9	2641.9	220.00	220.00	2421.9	2421.9	2580.26	2580.26
4/1982	210127.1	210127.1	343223.0	343143.4	148068.4	147968.5	0	0	3253.3	3253.3	525.00	525.00	2728.3	2728.3	3131.63	3131.63
5/1982	211964.4	211457.0	388245.9	387137.5	139293.5	136924.2	0	0	3448.4	3380.6	778.98	778.87	2669.4	2601.8	3169.79	3102.15
6/1982	208152.0	207903.4	406241.5	406408.1	132223.7	126219.1	0	0	2274.0	2178.7	878.62	878.58	1395.4	1300.1	1895.54	1800.24
7/1982	197581.9	197615.9	360841.1	361089.0	123558.2	117627.6	0	0	1616.9	1610.9	458.19	458.17	1158.7	1152.8	1192.87	1186.96
8/1982	194107.1	194124.6	322619.1	322814.5	114959.7	109107.2	0	0	1007.5	1008.6	379.35	379.32	628.2	629.3	653.20	654.32
9/1982	190999.3	191016.7	289499.6	289615.8	108151.1	102368.4	0	0	1002.4	1003.7	260.97	260.97	741.4	742.8	770.48	771.80
10/1982	185120.2	185137.5	254202.0	254228.9	104680.4	98955.5	0	0	1252.2	1253.6	325.00	325.00	927.2	928.6	1112.24	1113.69
11/1982	196743.4	196760.7	276808.4	276806.8	111968.6	106254.9	0	0	806.2	806.7	325.00	325.00	481.2	481.7	753.95	754.43
12/1982	204854.4	204802.6	291741.3	291164.4	121307.1	116246.7	0	0	1517.4	1517.4	325.00	325.00	1192.4	1192.4	1460.88	1460.88
1/1983	207845.0	207844.0	319045.6	318519.8	137024.8	132070.3	0	0	1494.8	1492.9	325.00	325.00	1169.8	1167.9	1445.58	1443.63
2/1983	208959.1	208870.2	320295.8	320015.9	149195.8	146021.7	0	0	2639.3	2603.6	325.00	325.00	2314.3	2278.6	2586.51	2550.81
3/1983	207348.3	207348.3	360932.4	360448.9	153522.0	153103.9	0	0	3603.2	3603.2	325.00	325.00	3278.2	3278.2	3543.89	3543.89
4/1983	209768.4	209770.9	337071.8	337489.6	149278.8	149769.5	0	0	2556.7	2540.0	525.00	525.00	2031.7	2015.0	2434.83	2418.20
5/1983	212000.0	212000.0	332034.5	327750.9	141995.3	140390.5	0	0	3048.4	3032.3	778.36	778.33	2270.0	2253.9	2770.95	2754.85
6/1983	212000.0	215496.1	411135.8	401223.0	134737.3	129488.4	0	0	4383.3	4350.0	880.36	880.36	3503.0	3469.6	4003.06	3969.72
7/1983	203002.8	202989.3	367380.4	364341.7	125946.6	120757.6	0	0	3678.4	3624.3	460.37	460.36	3218.1	3163.9	3252.28	3198.13
8/1983	194891.5	194876.1	325817.9	323763.9	117368.1	112240.4	0	0	1379.6	1363.9	380.29	380.29	999.3	983.6	1024.46	1008.76
9/1983	191520.5	191505.1	291986.0	290907.9	110423.6	105354.5	0	0	1103.1	1086.8	261.35	261.34	841.7	825.5	868.05	851.80
10/1983	178529.3	178514.0	261308.3	261118.5	105259.1	100248.1	0	0	1242.5	1228.1	325.00	325.00	917.5	903.1	1098.47	1084.07
11/1983	205178.1	205178.0	279255.1	279335.2	109953.9	104968.6	0	0	1332.4	1327.6	325.00	325.00	1007.4	1002.6	1281.94	1277.15
12/1983	210979.2	210916.3	318348.0	317429.9	119173.5	115277.5	0	0	2258.1	2258.1	325.00	325.00	1933.1	1933.1	2203.76	2203.76
1/1984	199620.4	199620.4	269286.0	269296.9	125566.0	121706.7	0	0	2469.0	2452.9	325.00	325.00	2144.0	2127.9	2412.04	2395.93
2/1984	200753.4	200072.3	275982.9	277064.7	134011.5	130860.1	0	0	1226.2	1207.6	325.00	325.00	901.2	882.6	1172.88	1154.30
3/1984	200397.9	199314.6	301002.2	301548.0	139420.5	137234.6	0	0	900.0	900.0	325.00	325.00	575.0	575.0	834.85	834.85
4/1984	190699.5	190350.3	331584.8	331683.1	139689.4	137985.1	0	0	632.5	620.0	520.00	520.00	112.5	100.0	509.71	497.23
5/1984	210392.4	210391.6	387829.8	387218.6	134098.6	132778.1	0	0	649.7	649.7	649.68	649.68	0.0	0.0	374.34	374.34
6/1984	196430.8	196430.8	413755.5	413448.2	127546.2	126245.5	0	0	1100.9	1095.8	877.05	877.05	223.8	218.7	724.04	718.93
7/1984	196939.1	196939.1	381897.3	381666.1	118863.9	117585.3	0	0	887.7	886.5	457.06	457.06	430.7	429.4	464.81	463.60
8/1984	193347.7	193347.7	353521.8	353365.6	110353.6	109096.9	0	0	763.3	762.1	378.69	378.69	384.6	383.4	409.66	408.47
9/1984	189342.5	189342.5	329873.3	329788.6	103395.0	102158.5	0	0	521.7	520.5	259.94	259.94	261.8	260.6	287.43	286.24
10/1984	174083.7	173866.2	309902.8	309866.0	99752.1	99535.5	0	0	899.6	885.9	325.00	325.00	574.6	560.9	758.05	744.36
11/1984	171564.2	171346.5	325741.2	326237.2	107029.5	106813.9	0	0	489.0	480.1	325.00	325.00	164.0	155.1	436.40	427.45
12/1984	166115.8	166248.2	328585.5	328684.7	111956.1	111788.2	0	0	490.3	490.3	325.00	325.00	165.3	165.3	432.22	432.22
1/1985	159962.1	160091.2	317511.5	317610.5	117247.5	117083.9	0	0	373.4	373.4	325.00	325.00	48.4	48.4	319.09	319.09
2/1985	164246.6	164147.1	315638.3	315935.5	124217.5	124085.7	0	0	325.0	325.0	325.00	325.00	0.0	0.0	271.33	271.33
3/1985	173818.8	173627.4	327099.7	327397.3	133623.2	133584.4	0	0	356.5	356.5	325.00	325.00	31.5	31.5	294.54	294.54

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type	*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows	*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
4/1985	182093.9	182121.1	338416.9	338465.6	133271.4	133263.2	2	2	272.8	272.8	272.83	272.83	0.0	0.0	150.09	150.09
5/1985	183619.9	183649.4	316117.0	316165.4	127935.1	127924.5	2	2	370.0	370.0	370.00	370.00	0.0	0.0	149.94	149.94
6/1985	185510.2	185539.5	293922.1	293970.3	120683.5	120673.0	2	2	328.1	328.1	328.08	328.08	0.0	0.0	30.89	30.89
7/1985	186166.7	186195.8	267493.5	267541.3	111807.6	111797.3	2	2	363.5	363.5	363.47	363.47	0.0	0.0	29.28	29.28
8/1985	190561.6	190590.4	244090.4	244137.8	102804.7	102794.5	2	2	321.8	321.8	318.55	318.55	3.2	3.2	24.91	24.91
9/1985	187802.6	187831.3	234755.4	234802.2	96098.7	96088.6	2	2	288.8	288.8	219.99	219.99	68.9	68.9	89.62	89.62
10/1985	173081.6	173110.2	241456.7	241503.3	92883.6	92873.6	1	1	335.6	335.6	250.00	250.00	85.6	85.6	213.49	213.49
11/1985	169724.6	169753.1	261640.5	261687.1	94268.5	94258.6	1	1	250.0	250.0	250.00	250.00	0.0	0.0	197.25	197.25
12/1985	165231.9	165260.2	276530.2	276576.8	99364.8	99355.0	1	1	250.0	250.0	250.00	250.00	0.0	0.0	193.21	193.21
1/1986	171274.4	171302.6	291901.1	291947.8	111092.7	111083.1	1	1	269.4	269.4	250.00	250.00	19.4	19.4	217.55	217.55
2/1986	206178.6	206178.6	386194.5	386269.7	127040.9	127031.3	1	1	2720.7	2720.7	250.00	250.00	2470.7	2470.7	2674.25	2674.25
3/1986	206021.9	206021.9	330058.2	330133.6	136306.3	136296.8	1	1	3993.5	3993.5	250.00	250.00	3743.5	3743.5	3930.12	3930.12
4/1986	206937.5	206946.2	344673.1	344739.6	137070.5	137061.0	0	0	1485.3	1485.3	525.00	525.00	960.3	960.3	1361.90	1361.93
5/1986	213557.6	213048.1	394486.7	394366.4	131911.1	128708.7	0	0	1767.7	1700.0	777.12	777.05	990.6	923.0	1490.98	1423.31
6/1986	196629.0	196477.3	408706.5	407300.3	124540.2	117717.2	0	0	1728.2	1674.2	877.90	874.55	850.3	799.7	1350.39	1296.41
7/1986	197052.6	197090.5	377558.0	376774.7	115698.7	108965.3	0	0	665.8	652.7	456.55	456.54	209.2	196.2	243.38	230.31
8/1986	193560.3	193443.0	350369.7	349846.1	107053.3	100413.8	0	0	554.2	552.6	378.18	378.18	176.1	174.5	201.09	199.48
9/1986	190917.4	190865.3	325835.1	325761.2	100575.7	93900.1	0	0	753.8	747.1	260.18	260.18	493.6	486.9	522.64	515.94
10/1986	171373.3	171276.0	308285.3	308246.6	96989.5	90439.7	0	0	753.8	753.2	325.00	325.00	428.8	428.2	609.99	609.43
11/1986	164017.8	163921.1	307675.4	307675.4	95855.4	89374.5	0	0	385.7	385.0	325.00	325.00	60.7	60.0	328.12	327.47
12/1986	162121.4	162061.2	304308.1	304088.2	100191.5	93954.0	0	0	325.0	325.0	325.00	325.00	0.0	0.0	266.45	266.45
1/1987	159728.9	159450.0	294301.8	293508.8	110912.4	105514.3	0	0	325.0	325.0	325.00	325.00	0.0	0.0	271.98	271.98
2/1987	157776.6	157274.5	285303.0	283737.8	121928.2	117556.6	0	0	325.0	325.0	325.00	325.00	0.0	0.0	273.13	273.13
3/1987	162678.8	162436.9	275199.9	272507.9	128925.9	125454.0	0	0	325.0	325.0	325.00	325.00	0.0	0.0	263.96	263.96
4/1987	158046.2	157081.7	261959.1	259278.1	130623.0	127910.6	3	3	200.6	200.6	200.63	200.63	0.0	0.0	75.94	75.94
5/1987	148056.7	147117.9	246781.1	244117.7	125322.1	122622.4	3	3	210.7	210.7	210.72	210.72	0.0	0.0	23.06	23.06
6/1987	142289.4	141358.8	228104.8	225462.2	116748.7	114078.7	3	3	268.5	268.5	268.48	268.48	0.0	0.0	30.56	30.56
7/1987	153757.1	152850.9	207523.4	204908.8	106779.9	104209.6	3	3	278.4	278.4	278.43	278.43	0.0	0.0	29.32	29.32
8/1987	164153.7	163268.4	190080.3	187494.0	97501.9	95057.4	3	3	232.1	232.1	232.09	232.09	0.0	0.0	21.55	21.55
9/1987	172353.7	171484.9	177965.9	175403.0	90207.3	87902.5	3	3	166.7	166.7	166.70	166.70	0.0	0.0	15.06	15.06
10/1987	166873.7	166730.2	168952.6	165830.0	87053.9	84751.6	2	2	220.0	220.0	220.00	220.00	0.0	0.0	135.11	135.11
11/1987	159301.1	159531.8	165532.0	162043.6	87576.0	85407.6	2	2	220.0	220.0	220.00	220.00	0.0	0.0	164.27	164.27
12/1987	161353.6	161206.5	160980.1	157866.3	96783.3	94726.4	2	2	220.0	220.0	220.00	220.00	0.0	0.0	163.50	163.50
1/1988	160483.3	160160.3	163012.3	160070.2	109279.9	107323.0	2	2	220.0	220.0	220.00	220.00	0.0	0.0	168.44	168.44
2/1988	157789.3	157388.6	153018.7	149708.0	116320.1	114921.3	2	2	220.0	220.0	220.00	220.00	0.0	0.0	165.66	165.66
3/1988	158029.2	156781.5	140079.2	136778.9	123067.3	122530.3	2	2	220.0	220.0	220.00	220.00	0.0	0.0	155.79	155.79
4/1988	164655.3	163407.4	132099.3	128804.5	128286.1	127819.0	3	3	199.8	199.8	199.79	199.79	0.0	0.0	78.09	78.09
5/1988	156096.0	154873.9	133883.6	130617.3	126643.6	126282.8	3	3	210.8	210.8	210.75	210.75	0.0	0.0	23.75	23.75
6/1988	146710.9	145516.4	134901.9	131671.6	121714.2	121468.6	3	3	268.5	268.5	268.51	268.51	0.0	0.0	30.71	30.71
7/1988	139397.1	139843.3	132892.2	129708.6	116392.8	114663.9	3	3	241.1	241.1	241.05	241.05	0.0	0.0	18.14	18.14
8/1988	130777.0	131689.0	129403.8	126266.3	111669.1	109638.3	3	3	208.5	208.5	208.46	208.46	0.0	0.0	15.03	15.03
9/1988	121170.8	122052.8	131771.0	128668.4	105895.6	104045.0	3	3	157.6	157.6	157.59	157.59	0.0	0.0	15.07	15.07
10/1988	105859.7	106707.6	136062.1	132983.5	101782.5	100059.1	3	3	131.3	131.3	131.30	131.30	0.0	0.0	45.99	45.99
11/1988	112262.3	113086.6	132432.5	129356.3	101060.9	99429.2	3	3	131.6	131.6	131.58	131.58	0.0	0.0	78.24	78.24
12/1988	116056.6	116852.2	128493.1	125415.1	109737.3	108184.7	3	3	133.6	133.6	133.62	133.62	0.0	0.0	77.95	77.95
1/1989	114505.0	115275.1	122160.9	119088.3	120077.6	118599.8	3	3	130.0	130.0	130.00	130.00	0.0	0.0	77.01	77.01
2/1989	119056.3	119805.2	117576.7	114504.4	126770.1	125361.2	3	3	130.0	130.0	130.00	130.00	0.0	0.0	77.72	77.72
3/1989	167143.2	171091.4	116377.0	116354.8	135479.8	134627.5	3	3	140.0	140.0	139.99	139.99	0.0	0.0	80.00	80.00
4/1989	188993.1	191003.8	136933.0	144919.5	135893.9	135437.6	1	1	272.8	272.8	272.78	272.78	0.0	0.0	150.65	150.65
5/1989	197966.3	200756.4	180537.1	195240.0	130773.8	129388.0	1	1	420.0	420.0	420.00	420.00	0.0	0.0	199.97	199.97
6/1989	195477.1	195407.5	193983.4	211318.4	123549.6	122164.7	1	1	498.4	498.4	498.45	498.45	0.0	0.0	199.98	199.98
7/1989	197024.3	197262.4	172320.6	189062.2	115841.4	114458.2	1	1	364.7	364.7	364.66	364.66	0.0	0.0	30.47	30.47
8/1989	192172.9	192089.7	157371.8	174144.5	108381.8	106999.2	1	1	320.0	320.0	318.55	318.55	1.4	1.5	23.15	23.18
9/1989	189194.2	189228.3	150860.8	167277.0	101883.4	100498.4	1	1	385.8	386.8	220.12	220.12	165.7	166.7	188.34	189.31
10/1989	173956.5	173848.4	160004.6	175848.0	98278.5	97505.7	2	2	227.9	227.9	220.00	220.00	7.9	7.9	107.48	107.49

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type	*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows	*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
11/1989	165272.0	165317.5	175517.3	191121.8	98155.6	97386.9	2	2	220.0	220.0	220.00	220.00	0.0	0.0	164.43	164.43
12/1989	161923.9	161795.8	178688.0	194237.4	100852.9	100229.0	2	2	220.0	220.0	220.00	220.00	0.0	0.0	160.67	160.67
1/1990	162066.2	162130.5	188752.9	204150.0	112876.2	112228.0	2	2	220.0	220.0	220.00	220.00	0.0	0.0	169.65	169.65
2/1990	160170.0	160271.6	189537.1	204380.3	120821.7	120680.3	2	2	220.0	220.0	220.00	220.00	0.0	0.0	168.22	168.22
3/1990	162501.5	162462.3	188516.6	203342.5	127124.4	126977.9	2	2	220.0	220.0	220.00	220.00	0.0	0.0	157.02	157.02
4/1990	165332.7	164977.8	174344.3	189131.3	129017.5	128919.8	2	2	274.8	274.8	274.76	274.76	0.0	0.0	152.04	152.04
5/1990	178147.6	177330.2	155922.4	170638.6	126519.1	126358.3	2	2	338.0	338.0	338.00	338.00	0.0	0.0	152.52	152.52
6/1990	174383.8	184707.9	149247.3	152638.6	120965.8	120282.7	2	2	268.5	268.5	268.49	268.49	0.0	0.0	30.58	30.58
7/1990	167507.2	179162.0	147578.2	149381.9	114587.1	113411.6	2	2	278.4	278.4	278.43	278.43	0.0	0.0	29.35	29.35
8/1990	159367.0	169540.5	146629.7	149635.9	108359.0	106719.9	2	2	232.1	232.1	232.09	232.09	0.0	0.0	21.55	21.55
9/1990	152503.4	165515.0	150023.8	149921.0	103491.6	101459.1	2	2	172.5	172.5	172.49	172.49	0.0	0.0	20.03	20.03
10/1990	153477.9	165478.0	150160.5	150807.4	99227.6	97056.0	2	2	220.0	220.0	220.00	220.00	0.0	0.0	134.18	134.18
11/1990	150685.6	155983.4	137840.7	144000.3	97016.4	95728.0	2	2	220.0	220.0	220.00	220.00	0.0	0.0	163.60	163.60
12/1990	148572.7	153691.6	125665.9	131809.7	102648.1	101323.3	2	2	220.0	220.0	220.00	220.00	0.0	0.0	161.73	161.73
1/1991	136349.3	141353.6	112825.2	118951.1	110890.1	109481.8	2	2	220.0	220.0	220.00	220.00	0.0	0.0	165.65	165.65
2/1991	131302.9	136200.3	102960.4	109083.0	119217.1	117720.4	2	2	220.0	220.0	220.00	220.00	0.0	0.0	166.71	166.71
3/1991	159795.4	164342.6	106436.1	112663.5	130772.1	129635.0	2	2	220.0	220.0	220.00	220.00	0.0	0.0	166.64	166.64
4/1991	170347.9	174614.6	90761.9	96948.8	131867.2	130884.6	2	2	274.8	274.8	274.76	274.76	0.0	0.0	150.80	150.80
5/1991	159524.6	163709.9	94351.0	100466.8	129024.0	127884.0	2	2	337.9	337.9	337.94	337.94	0.0	0.0	150.65	150.65
6/1991	168721.2	172833.1	98140.6	104186.9	123508.6	122187.0	2	2	268.5	268.5	268.49	268.49	0.0	0.0	32.09	32.09
7/1991	164473.4	168493.8	97504.3	103442.4	116780.9	115272.0	2	2	278.4	278.4	278.43	278.43	0.0	0.0	29.32	29.32
8/1991	161596.1	165526.0	95440.5	101276.9	110284.6	108595.2	2	2	232.1	232.1	232.09	232.09	0.0	0.0	21.85	21.85
9/1991	156662.5	160508.9	100433.9	106192.0	105058.4	103205.8	2	2	172.5	172.5	172.49	172.49	0.0	0.0	20.03	20.03
10/1991	160870.9	164269.1	111897.6	112563.1	102900.2	100978.6	3	2	131.4	220.0	131.40	220.00	0.0	0.0	48.55	136.48
11/1991	164224.6	164249.8	121965.2	120718.4	101759.0	99764.4	3	2	131.6	220.0	131.60	220.00	0.0	0.0	75.58	163.18
12/1991	163898.6	163923.5	136923.0	130371.2	106589.5	104528.8	3	2	133.6	220.0	133.64	220.00	0.0	0.0	76.77	162.42
1/1992	160273.7	160298.2	144907.2	132832.3	115114.1	112993.8	3	2	130.0	220.0	130.00	220.00	0.0	0.0	77.53	166.82
2/1992	164590.1	164544.7	162819.1	145487.2	127931.7	125805.2	3	2	130.0	220.0	130.00	220.00	0.0	0.0	81.85	171.07
3/1992	168763.6	168327.1	184113.3	160962.6	134188.7	133416.1	3	2	139.0	220.0	139.01	220.00	0.0	0.0	77.71	157.90
4/1992	174587.5	174724.0	170502.9	146890.0	134665.3	134182.8	2	2	274.8	274.8	274.75	274.79	0.0	0.0	150.54	150.58
5/1992	175844.9	153462.0	149621.5	148846.6	131365.5	131326.7	2	2	338.0	338.0	337.97	337.97	0.0	0.0	149.96	149.96
6/1992	159173.0	136305.8	150370.5	150590.4	125551.8	125804.9	2	2	268.5	268.5	268.52	268.52	0.0	0.0	31.10	31.10
7/1992	152468.0	131914.0	146579.9	145094.6	120512.0	121035.2	2	2	278.5	278.5	278.46	278.46	0.0	0.0	29.42	29.42
8/1992	145007.7	126881.6	142687.3	139478.5	114307.5	115001.1	2	2	232.1	232.1	232.08	232.08	0.0	0.0	21.57	21.57
9/1992	126881.2	117732.2	145069.4	139831.8	108037.5	109094.2	2	2	172.5	172.5	172.46	172.46	0.0	0.0	20.04	20.04
10/1992	113967.8	111234.2	149872.9	144654.9	103839.9	105649.7	3	3	131.4	131.4	131.38	131.38	0.0	0.0	47.03	47.03
11/1992	110429.2	114202.9	141744.5	136552.3	101441.0	103545.7	3	3	131.6	131.6	131.60	131.60	0.0	0.0	75.31	75.31
12/1992	127371.2	131340.5	143200.8	137980.2	111210.1	113327.4	3	3	133.6	133.6	133.64	133.64	0.0	0.0	81.39	81.39
1/1993	178283.5	179543.8	167278.1	165859.9	132881.0	134069.9	3	3	130.0	130.0	130.00	130.00	0.0	0.0	83.92	83.92
2/1993	192260.2	193664.6	226047.5	225276.5	142701.5	143280.5	3	3	130.0	130.0	130.00	130.00	0.0	0.0	83.27	83.27
3/1993	206090.7	206096.6	313904.5	314890.4	146870.1	147087.0	3	3	190.3	190.3	140.25	140.25	50.1	50.1	129.19	129.19
4/1993	202615.7	202644.0	345858.3	346135.5	146829.3	146986.2	0	0	910.2	922.7	525.00	525.00	385.2	397.7	786.96	799.44
5/1993	211055.0	211055.0	380587.2	380891.7	141171.5	141326.7	0	0	1797.4	1797.4	777.29	777.29	1020.1	1020.1	1521.77	1521.77
6/1993	205054.7	205054.7	408105.7	407863.0	134255.0	134408.5	0	0	2133.6	2142.8	878.38	878.42	1255.2	1264.4	1756.27	1765.46
7/1993	194357.2	194357.2	374886.0	374693.9	125119.9	125271.0	0	0	1007.0	1006.2	457.19	457.16	549.8	549.1	583.97	583.20
8/1993	194560.0	194560.0	349180.6	349042.3	116214.4	116363.2	0	0	723.6	722.7	378.63	378.63	344.9	344.1	369.94	369.08
9/1993	183274.6	183274.6	326453.2	326378.1	108957.2	109103.9	0	0	628.7	627.6	260.24	260.24	368.4	367.4	394.09	393.04
10/1993	174918.8	174918.8	309394.0	309375.3	103657.2	103802.2	0	0	636.1	635.2	325.00	325.00	311.1	310.2	492.76	491.85
11/1993	165124.3	165124.3	314768.6	314768.6	102011.1	102155.2	0	0	403.0	402.7	325.00	325.00	78.0	77.7	347.98	347.67
12/1993	162005.8	162005.8	316750.9	316750.9	108833.4	108977.1	0	0	325.0	325.0	325.00	325.00	0.0	0.0	267.72	267.72
1/1994	160341.9	160341.9	305405.2	305405.2	115728.9	115871.8	0	0	325.0	325.0	325.00	325.00	0.0	0.0	272.02	272.02
2/1994	160316.2	160354.4	296463.5	296463.5	126363.5	126467.6	0	0	325.0	325.0	325.00	325.00	0.0	0.0	273.77	273.77
3/1994	155212.2	155250.1	275991.7	275991.7	129726.9	129829.7	0	0	325.0	325.0	325.00	325.00	0.0	0.0	259.72	259.72
4/1994	152249.4	152210.7	266182.5	266182.5	131411.6	131589.5	3	3	200.6	200.6	200.63	200.63	0.0	0.0	78.01	78.01
5/1994	149294.7	149328.7	252604.4	252604.4	127686.4	127790.0	3	3	210.7	210.7	210.72	210.72	0.0	0.0	24.02	24.02

Date	Cumulative without Project (acre-ft) Pardee Storage	Cumulative with Project (acre-ft) Pardee Storage	Cumulative without Project (acre-ft) Camanche Storage	Cumulative with Project (acre-ft) Camanche Storage	Cumulative without Project (acre-ft) TRA Storage	Cumulative with Project (acre-ft) TRA Storage	Cumulative without Project (NA) JSA Year Type	Cumulative with Project (NA) JSA Year Type	Cumulative without Project (cfs) Camanche Outflow	Cumulative with Project (cfs) Camanche Outflow	Cumulative without Project (cfs) Required Minimum Flows	Cumulative with Project (cfs) Required Minimum Flows		Cumulative without Project (cfs) Camanche Flood Release	Cumulative with Project (cfs) Camanche Flood Release	Cumulative without Project (cfs) Flow below Lodi Lake	Cumulative with Project (cfs) Flow below Lodi Lake
6/1994	150675.8	150709.5	233882.6	233882.6	119246.4	119348.5	3	3	268.5	268.5	268.48	268.48	##	0.0	0.0	30.56	30.56
7/1994	153093.2	153126.2	213240.9	213240.9	109225.4	109324.5	3	3	278.4	278.4	278.43	278.43		0.0	0.0	29.32	29.32
8/1994	157970.0	158002.2	195737.2	195737.2	99721.4	99817.1	3	3	232.1	232.1	232.09	232.09		0.0	0.0	21.55	21.55
9/1994	171442.8	171474.3	184078.1	184078.1	92180.3	92273.0	3	3	166.7	166.7	166.73	166.73		0.0	0.0	15.38	15.38
10/1994	170816.3	170847.4	185843.4	185843.4	89294.0	89383.6	2	2	220.0	220.0	220.00	220.00		0.0	0.0	134.69	134.69
11/1994	159209.9	159240.6	194339.0	194339.0	96575.3	96663.4	2	2	220.0	220.0	220.00	220.00		0.0	0.0	166.38	166.38
12/1994	166380.4	166410.5	202084.3	202084.3	105765.9	105852.1	2	2	220.0	220.0	220.00	220.00		0.0	0.0	164.29	164.29
1/1995	205100.3	205100.4	280880.8	280910.9	129953.2	130074.6	2	2	231.6	231.6	220.00	220.00		11.6	11.6	187.29	187.29
2/1995	189242.8	189369.0	311403.6	311385.4	132097.9	132130.4	2	2	721.4	721.4	220.00	220.00		501.4	501.4	666.15	666.15
3/1995	205747.0	205747.1	340926.7	340917.0	145376.9	145379.7	2	2	2738.7	2740.6	220.00	220.00		2518.7	2520.6	2678.79	2680.73
4/1995	214837.2	214837.2	317166.8	317157.2	147725.3	147728.2	0	0	2806.7	2806.7	525.00	525.00		2281.7	2281.7	2684.11	2684.11
5/1995	217185.5	216493.1	330940.9	327709.9	143850.4	141488.9	0	0	3483.9	3454.8	779.06	779.03		2704.8	2675.8	3207.33	3178.33
6/1995	212000.0	213845.9	392878.7	389116.7	138323.1	132325.5	0	0	3676.7	3573.3	880.01	879.95		2796.7	2693.4	3298.19	3194.91
7/1995	198269.0	198259.8	354176.6	352938.8	129167.9	123245.0	0	0	3246.6	3235.9	460.02	460.04		2786.6	2775.8	2820.80	2810.03
8/1995	193545.5	193535.2	332181.9	331324.2	120225.7	114381.5	0	0	693.1	687.0	378.69	378.64		314.4	308.4	339.47	333.48
9/1995	189443.3	189433.0	315943.3	315456.6	112936.4	107165.8	0	0	601.7	595.6	260.19	260.16		341.6	335.4	367.18	361.05
10/1995	176779.1	176768.9	304322.0	304254.6	107469.0	101768.6	0	0	771.5	764.7	325.00	325.00		446.5	439.7	627.64	620.84
11/1995	162418.5	162408.3	306248.5	306248.5	104623.3	98984.3	0	0	405.2	404.1	325.00	325.00		80.2	79.1	347.38	346.25
12/1995	164148.9	164092.7	316237.6	316237.6	115710.9	110146.0	0	0	334.7	334.7	325.00	325.00		9.7	9.7	279.89	279.89
1/1996	174140.7	174058.7	313517.7	312694.8	131262.6	126578.5	0	0	541.1	541.1	325.00	325.00		216.1	216.1	490.65	490.65
2/1996	205080.1	204979.8	285530.6	284606.8	146941.3	143467.7	0	0	1866.9	1848.3	325.00	325.00		1541.9	1523.3	1814.36	1795.77
3/1996	205135.7	205090.6	298665.6	298135.5	148139.8	146463.9	0	0	1744.5	1708.4	325.00	325.00		1419.5	1383.4	1679.41	1643.28
4/1996	205428.8	205401.5	342059.5	340721.4	147918.8	147047.7	0	0	994.7	994.7	525.00	525.00		469.7	469.7	872.51	872.51
5/1996	206711.9	206506.6	391047.4	395281.6	146247.4	143019.2	0	0	2456.4	2275.9	777.71	777.59		1678.7	1498.3	2179.51	1999.17
6/1996	196647.1	196556.6	404786.9	402037.4	138613.7	131763.3	0	0	1299.0	1344.9	869.05	865.75		430.0	479.1	921.67	967.48
7/1996	197272.3	197327.5	375870.6	373836.6	129468.6	122703.7	0	0	624.5	610.8	456.48	456.42		168.0	154.3	202.22	188.55
8/1996	194509.7	194482.5	350363.2	349028.0	120536.6	113860.4	0	0	612.6	602.8	378.31	378.29		234.3	224.5	259.33	249.51
9/1996	188094.0	188066.4	327174.6	326448.3	113256.8	106664.5	0	0	546.7	536.5	259.98	259.95		286.7	276.6	312.43	302.32
10/1996	175360.4	175580.2	309633.6	309514.0	108079.2	101563.5	0	0	663.4	649.5	325.00	325.00		338.4	324.5	521.11	507.25
11/1996	175404.1	175226.7	319509.6	319906.8	109410.1	102949.2	0	0	602.1	600.0	325.00	325.00		277.1	275.0	548.24	546.23
12/1996	215318.6	215206.2	294227.7	293915.8	129352.8	123557.5	0	0	2200.0	2200.0	325.00	325.00		1875.0	1875.0	2146.89	2146.89
1/1997	210553.4	210442.6	369687.9	369149.0	141288.8	137760.9	0	0	4680.6	4648.4	325.00	325.00		4355.6	4323.4	4630.45	4598.21
2/1997	204205.8	204165.2	281850.7	281769.4	138324.3	135630.4	0	0	3403.6	3385.7	325.00	325.00		3078.6	3060.7	3346.00	3328.14
3/1997	197953.3	198149.3	289271.5	289190.3	140905.9	138003.0	0	0	1141.9	1141.9	325.00	325.00		816.9	816.9	1074.63	1074.63
4/1997	200754.0	200429.1	324421.5	324182.2	140277.8	138179.3	0	0	577.5	575.8	515.00	513.33		62.5	62.5	454.50	452.84
5/1997	205223.2	205206.8	393031.1	392473.7	134356.5	132595.4	0	0	742.1	737.2	742.11	737.22		0.0	0.0	466.27	461.43
6/1997	196453.5	196453.3	400876.1	400503.2	126830.4	125093.8	0	0	858.3	855.0	858.31	854.97		0.0	0.0	482.00	478.67
7/1997	196861.8	196861.6	373378.9	373093.7	117765.2	116054.6	0	0	507.9	506.5	456.21	456.21		51.7	50.3	85.87	84.48
8/1997	193493.8	193493.6	347282.7	347085.7	109252.0	107564.9	0	0	587.5	586.1	378.36	378.36		209.2	207.8	234.29	232.89
9/1997	189120.2	189120.0	326596.1	326489.3	102063.5	100398.1	0	0	504.9	503.4	259.94	259.94		245.0	243.5	270.63	269.13
10/1997	173889.1	173733.0	309565.5	309564.3	97759.1	96662.2	0	0	829.3	821.2	325.00	325.00		504.3	496.2	687.22	679.05
11/1997	170568.8	170661.1	321529.3	321281.0	102257.8	101164.1	0	0	405.9	405.9	325.00	325.00		80.9	80.9	351.95	351.93
12/1997	159315.8	159506.7	321765.6	321291.4	109221.8	108409.3	0	0	395.2	392.7	325.00	325.00		70.2	67.7	337.36	334.94
1/1998	179043.9	179107.4	332379.6	332180.7	131034.9	130218.3	0	0	671.9	669.5	325.00	325.00		346.9	344.5	624.91	622.49
2/1998	204664.5	204660.7	322001.5	321971.9	150108.4	149410.6	0	0	2275.0	2271.4	325.00	325.00		1950.0	1946.4	2228.21	2224.64
3/1998	207258.9	207255.5	344004.8	343926.2	148779.2	148545.9	0	0	1589.0	1589.0	325.00	325.00		1264.0	1264.0	1525.28	1525.28
4/1998	206694.5	206695.4	328895.6	329835.5	147273.9	147320.3	0	0	2141.3	2124.7	525.00	525.00		1616.3	1599.7	2019.05	2002.41
5/1998	206853.1	206853.1	305107.7	306048.7	145865.0	145912.4	0	0	2812.9	2812.9	778.31	778.31		2034.6	2034.6	2539.28	2539.28
6/1998	216450.1	216450.1	393055.9	393003.5	138317.2	138365.3	0	0	2573.3	2590.0	878.86	878.89		1694.5	1711.1	2194.63	2211.26
7/1998	197751.7	197751.7	357676.9	357637.5	129130.5	129178.8	0	0	2501.5	2501.3	459.17	459.17		2042.3	2042.1	2076.50	2076.30
8/1998	194836.6	194836.6	337827.2	337800.6	120170.5	120218.4	0	0	755.5	755.3	378.83	378.83		376.7	376.5	401.71	401.51
9/1998	190107.8	190107.8	321254.2	321239.7	112899.0	112946.9	0	0	677.5	677.3	260.41	260.41		417.1	416.9	442.99	442.79
10/1998	173907.8	173907.8	308615.7	308613.5	107642.7	107691.0	0	0	749.8	749.6	325.00	325.00		424.8	424.6	606.49	606.29
11/1998	168696.9	168696.9	319998.5	319998.5	108533.2	108583.0	0	0	406.8	406.8	325.00	325.00		81.8	81.8	352.04	352.00
12/1998	167103.1	167057.2	329082.1	329081.5	113783.8	113880.5	0	0	438.7	438.7	325.00	325.00		113.7	113.7	380.87	380.87

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type	*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows		*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
1/1999	182655.6	182610.5	331666.8	331666.3	125603.5	125701.0	0	0	749.7	749.7	325.00	325.00		424.7	424.7	698.75	698.75
2/1999	204964.5	204964.5	322141.7	322096.1	140213.9	140557.1	0	0	1958.6	1958.6	325.00	325.00		1633.6	1633.6	1908.02	1908.02
3/1999	193107.6	193226.4	328498.8	328317.6	146978.6	147190.4	0	0	1176.1	1176.1	325.00	325.00		851.1	851.1	1108.44	1108.44
4/1999	194763.9	194871.7	359745.3	359564.5	148373.9	148350.1	1	1	558.8	558.8	473.61	473.61		85.2	85.2	436.25	436.25
5/1999	206493.9	206273.4	383555.5	382856.2	141501.7	138757.9	1	1	979.2	900.2	676.13	675.99		303.0	224.3	703.47	624.71
6/1999	199151.3	198597.8	412737.7	411999.5	133903.9	127532.8	1	1	1700.8	1637.4	778.03	777.96		922.8	859.5	1323.05	1259.78
7/1999	197627.4	197707.5	380128.6	379602.9	124743.5	118454.7	1	1	948.9	935.2	453.30	453.27		495.6	481.9	525.71	512.04
8/1999	193504.3	193399.4	351903.3	351602.4	115850.8	109647.5	1	1	631.7	631.1	375.02	375.04		256.7	256.0	278.29	277.66
9/1999	189521.1	189438.4	329257.2	329093.2	108615.4	102491.6	1	1	544.6	541.9	254.99	254.99		289.6	286.9	310.26	307.62
10/1999	170212.3	170080.6	310529.8	310503.6	103380.7	97332.6	0	0	772.5	771.1	325.00	325.00		447.5	446.1	629.00	627.57
11/1999	166282.1	166119.4	317813.1	317961.8	102563.5	96594.9	0	0	423.8	420.8	325.00	325.00		98.8	95.8	369.10	366.16
12/1999	160188.0	160224.3	314677.5	314627.7	106633.7	100726.0	0	0	349.2	349.2	325.00	325.00		24.2	24.2	289.63	289.63
1/2000	179623.1	179528.4	318617.3	319112.4	122819.9	117521.6	0	0	444.4	428.2	325.00	325.00		119.4	103.2	395.10	378.99
2/2000	200810.8	200315.0	325469.0	325568.0	143287.7	138795.4	0	0	1132.4	1132.4	325.00	325.00		807.4	807.4	1085.00	1085.00
3/2000	196691.4	195507.5	328473.7	328595.0	146948.0	144833.4	0	0	1265.8	1247.7	325.00	325.00		940.8	922.7	1199.37	1181.30
4/2000	185583.7	185365.6	342330.0	341232.4	146956.1	145116.8	1	1	787.2	787.2	474.07	474.07		313.1	313.1	664.88	664.88
5/2000	206752.6	206511.4	394270.4	388989.4	143295.2	139039.9	1	1	567.3	543.1	567.29	543.10		0.0	0.0	294.41	270.22
6/2000	197501.5	197482.8	407209.8	401000.4	135950.6	128085.9	1	1	806.9	749.6	769.89	749.65		37.0	0.0	430.69	373.72
7/2000	197314.8	197305.0	378031.5	373446.3	126758.3	118996.9	1	1	735.9	710.0	452.64	452.57		283.3	257.4	313.43	287.55
8/2000	193716.2	193716.0	351299.0	348204.5	117823.6	110168.4	1	1	627.9	603.9	374.87	374.83		253.0	229.1	274.55	250.63
9/2000	185841.9	185841.7	327910.4	326205.5	110626.2	103069.8	1	1	577.4	554.3	255.13	255.06		322.3	299.2	343.56	320.47
10/2000	178304.5	178304.3	307823.1	307365.7	107154.3	99670.6	0	0	848.3	828.0	325.00	325.00		523.3	503.0	709.16	688.89
11/2000	164372.7	164237.9	313640.7	313640.7	105383.3	98112.1	0	0	396.0	388.3	325.00	325.00		71.0	63.3	338.62	330.93
12/2000	162055.3	161923.2	309939.8	309741.8	110117.7	103113.1	0	0	325.0	325.0	325.00	325.00		0.0	0.0	265.73	265.73
1/2001	159873.8	159540.5	301216.1	300267.6	118031.6	112028.3	0	0	325.0	325.0	325.00	325.00		0.0	0.0	272.87	272.87
2/2001	161936.8	161260.5	291961.9	290615.2	131538.2	126288.1	0	0	325.0	325.0	325.00	325.00		0.0	0.0	273.57	273.57
3/2001	168729.6	168617.7	284705.4	282348.3	135891.3	131135.6	0	0	325.0	325.0	325.00	325.00		0.0	0.0	261.11	261.11
4/2001	187744.3	187218.6	284886.9	281588.0	136611.3	133261.9	2	2	274.8	274.8	274.78	274.78		0.0	0.0	151.98	151.98
5/2001	183876.5	183751.5	282464.0	278789.1	130788.5	127481.1	2	2	337.9	337.9	337.94	337.94		0.0	0.0	149.96	149.96
6/2001	187385.1	187261.0	263777.9	260128.0	123490.3	120231.7	2	2	268.5	268.5	268.49	268.49	##	0.0	0.0	30.73	30.73
7/2001	191275.4	191174.5	242709.1	239095.5	114562.7	111361.9	2	2	280.5	280.5	278.43	278.43		2.0	2.0	31.34	31.34
8/2001	192694.0	192691.0	224722.4	221144.8	105848.5	102637.9	2	2	235.1	235.1	232.09	232.09		3.0	3.0	24.53	24.53
9/2001	188912.9	189168.4	214621.0	210697.4	98861.8	95846.6	2	2	200.3	200.2	172.55	172.55		27.7	27.7	48.09	48.07
10/2001	167269.2	167366.3	220056.2	216351.9	95356.7	92377.4	2	2	256.0	255.9	220.00	220.00		36.0	35.9	170.62	170.56
11/2001	161120.2	161055.1	219054.3	215552.8	96436.6	93477.7	2	2	220.0	220.0	220.00	220.00		0.0	0.0	165.27	165.27
12/2001	169914.3	169696.4	232742.5	229227.4	110317.5	107549.4	2	2	220.0	220.0	220.00	220.00		0.0	0.0	166.71	166.71
1/2002	166831.5	167068.5	258574.8	253870.9	119932.6	117947.6	2	2	220.0	220.0	220.00	220.00		0.0	0.0	167.19	167.19
2/2002	168017.6	167410.4	269246.4	264738.2	126871.5	125575.8	2	2	220.0	220.0	220.00	220.00		0.0	0.0	167.70	167.70
3/2002	178712.8	178454.6	303220.5	298213.3	134745.9	133606.4	2	2	220.0	220.0	220.00	220.00		0.0	0.0	157.78	157.78
4/2002	182575.8	182748.3	321072.5	316734.6	134784.6	133871.8	1	1	336.8	315.0	336.80	314.95		0.0	0.0	213.93	192.27
5/2002	193764.5	193738.0	312117.4	308192.5	130299.9	129397.8	1	1	424.9	421.6	424.86	421.63		0.0	0.0	206.15	202.93
6/2002	197173.9	197272.5	307872.8	303846.3	122714.4	121824.2	1	1	498.4	498.4	498.45	498.45		0.0	0.0	199.97	199.97
7/2002	197196.6	197170.4	282427.9	278558.2	113684.6	112807.1	1	1	364.7	364.7	364.66	364.66		0.0	0.0	30.47	30.47
8/2002	193214.2	193569.9	263930.5	259720.1	104906.4	104034.7	1	1	318.5	318.5	318.52	318.52		0.0	0.0	21.59	21.59
9/2002	188955.8	188902.9	252827.4	249020.7	97989.1	97160.6	1	1	228.1	228.1	219.85	219.85		8.2	8.2	28.24	28.24
10/2002	169514.1	169709.3	259744.1	255710.2	94422.8	93603.6	1	1	250.0	250.0	250.00	250.00		0.0	0.0	126.86	126.86
11/2002	161944.6	161940.8	268437.0	264609.6	94091.1	93278.7	1	1	250.0	250.0	250.00	250.00		0.0	0.0	194.37	194.37
12/2002	168294.3	168290.4	284012.0	280174.3	111313.0	110481.7	1	1	250.0	250.0	250.00	250.00		0.0	0.0	196.13	196.13
1/2003	171618.3	171420.3	300949.6	297117.3	119629.1	118935.4	1	1	250.0	250.0	250.00	250.00		0.0	0.0	195.87	195.87
2/2003	170568.2	170459.8	317004.0	314264.5	127104.7	126722.9	1	1	325.0	298.2	250.00	250.00		75.0	48.2	271.23	244.55
3/2003	168526.6	168721.3	325957.1	323567.7	133891.1	133457.8	1	1	351.6	341.9	250.00	250.00		101.6	91.9	286.88	277.25
4/2003	187576.6	187486.6	337438.8	335940.8	140504.5	140187.8	1	1	366.8	355.1	366.80	355.14		0.0	0.0	248.46	236.80
5/2003	201448.0	201397.4	366068.9	365497.9	135694.5	135519.0	1	1	570.5	554.3	570.48	554.35		0.0	0.0	295.71	279.58
6/2003	195294.2	195294.3	402827.7	404881.8	128086.9	127912.5	1	1	1011.0	965.9	755.11	755.06		255.9	210.8	634.15	589.12
7/2003	197378.1	197378.2	372221.6	374118.9	119032.2	118859.2	1	1	471.1	473.4	452.15	452.15		18.9	21.3	49.09	51.40

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type	*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows	*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
8/2003	193363.5	193363.6	346958.4	348389.5	110215.0	110043.4	1	1	466.5	473.9	374.51	374.51	92.0	99.4	113.98	121.38
9/2003	189186.9	189188.3	325980.3	326776.0	103043.1	102871.2	1	1	476.0	486.6	254.92	254.92	221.1	231.7	241.78	252.36
10/2003	169543.4	169544.9	309304.6	309414.7	99416.5	99244.7	0	0	695.9	707.0	325.00	325.00	370.9	382.0	552.02	563.14
11/2003	162446.7	162448.1	307806.0	307806.0	98776.0	98604.2	0	0	386.5	388.3	325.00	325.00	61.5	63.3	330.30	332.15
12/2003	171474.6	171430.0	323349.9	323349.9	112793.7	112666.8	0	0	368.5	368.5	325.00	325.00	43.5	43.5	314.91	314.91
1/2004	169090.2	169047.0	327670.5	327670.5	121059.6	120930.9	0	0	558.1	558.1	325.00	325.00	233.1	233.1	504.54	504.54
2/2004	177875.1	177832.2	333342.6	333342.6	131972.3	131841.9	0	0	600.0	600.0	325.00	325.00	275.0	275.0	550.23	550.23
3/2004	182221.4	182395.1	335555.6	335307.9	135122.6	135022.5	0	0	822.6	822.6	325.00	325.00	497.6	497.6	756.49	756.49
4/2004	177246.1	177282.1	338413.7	339355.7	134754.8	134790.8	2	2	394.6	374.6	273.43	273.41	121.2	101.2	271.33	251.36
5/2004	179194.2	179229.1	313254.7	314192.2	128382.2	128417.4	2	2	370.0	370.0	370.03	370.03	0.0	0.0	150.16	150.16
6/2004	195654.5	195689.2	292712.6	293644.4	120616.4	120650.0	2	2	328.1	328.1	328.11	328.11	0.0	0.0	30.60	30.60
7/2004	195270.7	195305.0	268567.9	269491.6	111500.1	111532.2	2	2	363.5	363.5	363.50	363.50	0.0	0.0	29.33	29.33
8/2004	192766.2	192632.7	251126.8	252223.2	102676.8	102693.7	2	2	318.5	318.5	318.50	318.50	0.0	0.0	21.60	21.60
9/2004	188888.9	188932.4	240489.0	241401.0	95892.2	95907.8	2	2	262.1	262.2	219.88	219.88	42.3	42.3	62.84	62.85
10/2004	166119.2	166162.6	241013.9	241921.0	93399.9	93414.5	1	1	406.5	406.5	250.00	250.00	156.5	156.5	286.80	286.86
11/2004	162603.0	162646.6	246247.6	247152.8	93168.0	93181.6	1	1	250.0	250.0	250.00	250.00	0.0	0.0	194.77	194.77
12/2004	171270.5	171115.5	260272.0	261377.6	102790.0	102802.9	1	1	250.0	250.0	250.00	250.00	0.0	0.0	195.04	195.04
1/2005	183551.0	183544.7	309691.9	310353.9	118300.2	118312.5	1	1	274.2	279.0	250.00	250.00	24.2	29.0	224.88	229.70
2/2005	190877.3	190871.0	326131.6	325801.2	129667.8	129635.7	1	1	799.3	817.1	250.00	250.00	549.3	567.1	746.67	764.51
3/2005	206873.2	206873.1	340106.3	340047.6	140791.5	140759.2	1	1	1465.8	1461.3	250.00	250.00	1215.8	1211.3	1403.24	1398.74
4/2005	206009.4	206009.4	365718.8	365655.0	142087.4	142060.2	0	0	1277.3	1277.3	525.00	525.00	752.3	752.3	1153.55	1153.55
5/2005	206516.3	206329.6	369196.1	368461.9	139620.4	136353.1	0	0	2512.9	2448.4	778.10	778.02	1734.8	1670.4	2236.96	2172.53
6/2005	205443.6	205008.8	409274.1	409686.3	133942.8	127052.6	0	0	1734.0	1649.3	878.10	877.92	855.9	771.4	1357.38	1272.89
7/2005	197617.4	197626.0	376886.6	377282.7	124838.1	118035.9	0	0	1269.9	1262.9	457.74	457.64	812.1	805.2	846.31	839.32
8/2005	194429.9	194463.1	350444.2	350716.6	115958.6	109247.4	0	0	710.5	712.0	378.63	378.62	331.8	333.4	356.86	358.45
9/2005	189536.8	189546.9	328167.1	328318.1	108731.4	102129.7	0	0	634.7	636.7	260.25	260.23	374.4	376.4	400.47	402.50
10/2005	169693.3	169569.5	310062.7	310072.7	104523.7	98624.3	0	0	698.3	692.6	325.00	325.00	373.3	367.6	554.70	548.92
11/2005	164155.0	164229.7	308193.5	307995.4	104203.3	98356.2	0	0	391.3	391.4	325.00	325.00	66.3	66.4	334.03	334.19
12/2005	215600.4	215122.4	309151.2	308952.1	120036.1	114759.1	0	0	1016.1	1016.1	325.00	325.00	691.1	691.1	964.45	964.45
1/2006	194440.5	194440.5	277275.0	276597.3	133293.3	128055.1	0	0	2552.3	2552.3	325.00	325.00	2227.3	2227.3	2499.82	2499.82
2/2006	193122.7	192982.6	280094.3	279138.6	140916.7	135851.1	0	0	1136.4	1141.4	325.00	325.00	811.4	816.4	1081.57	1086.53
3/2006	209525.7	209521.4	314904.0	315221.4	155199.0	153303.8	0	0	1898.1	1845.8	325.00	325.00	1573.1	1520.8	1837.71	1785.47
4/2006	212442.8	212448.2	378257.3	378583.5	149138.3	149636.7	0	0	3850.0	3850.0	525.00	525.00	3325.0	3325.0	3730.74	3730.74
5/2006	208781.5	208485.5	391826.9	390736.1	138270.4	137846.2	0	0	4206.5	4141.9	779.28	779.24	3427.2	3362.7	3928.45	3863.98
6/2006	205331.2	205322.4	408464.2	408628.6	130424.8	127499.7	0	0	2431.2	2356.7	878.81	878.68	1552.4	1478.0	2052.43	1978.00
7/2006	198188.8	198195.7	376859.3	376989.9	121413.3	118513.1	0	0	1197.7	1197.9	457.60	457.60	740.1	740.3	774.24	774.52
8/2006	193538.3	193545.1	349526.1	349614.4	112609.5	109736.9	0	0	817.2	817.9	378.87	378.87	438.3	439.0	463.39	464.06
9/2006	188698.3	188705.1	327209.9	327259.0	105430.4	102585.8	0	0	457.5	458.2	259.68	259.68	197.8	198.5	223.49	224.14
10/2006	168731.6	168738.3	309632.7	309639.9	100161.3	97343.5	0	0	744.0	744.7	325.00	325.00	419.0	419.7	600.45	601.13
11/2006	164214.3	164986.9	309856.2	310054.5	99867.7	96111.6	0	0	372.4	372.6	325.00	325.00	47.4	47.6	315.83	315.95
12/2006	168364.0	168272.0	319833.9	320826.5	108705.2	105046.8	0	0	351.6	351.6	325.00	325.00	26.6	26.6	295.29	295.29
1/2007	158234.4	157542.0	316964.5	317361.1	114825.3	112392.5	0	0	380.6	380.6	325.00	325.00	55.6	55.6	325.90	325.90
2/2007	170103.5	169726.4	319138.8	318940.4	122642.9	120505.5	0	0	333.0	333.0	325.00	325.00	8.0	8.0	283.63	283.63
3/2007	167450.6	167555.7	320497.3	319754.0	128584.1	126680.0	0	0	368.5	366.1	325.00	325.00	43.5	41.1	303.79	301.37
4/2007	173932.7	173608.7	305863.6	305121.7	130721.5	129264.3	2	2	274.8	274.8	274.78	274.78	0.0	0.0	151.96	151.96
5/2007	181734.4	181412.9	283136.8	282398.7	126172.5	124731.3	2	2	337.9	337.9	337.94	337.94	0.0	0.0	150.35	150.35
6/2007	181004.3	180685.3	264187.8	263454.9	118443.8	117018.2	2	2	268.5	268.5	268.49	268.49	0.0	0.0	30.57	30.57
7/2007	182745.7	182458.4	243259.0	242533.2	109359.6	107952.1	2	2	278.4	278.4	278.43	278.43	0.0	0.0	29.33	29.33
8/2007	183632.6	183385.4	225448.0	224729.4	100284.1	98898.1	2	2	232.1	232.1	232.09	232.09	0.0	0.0	21.55	21.55
9/2007	184893.8	184691.2	212435.5	211722.7	93450.6	92085.9	2	2	180.9	180.9	172.52	172.52	8.3	8.3	28.52	28.52
10/2007	167475.3	167495.1	211435.2	210550.5	90384.3	89037.3	2	2	244.1	244.1	220.00	220.00	24.1	24.1	158.97	158.96
11/2007	161237.3	161299.4	216937.1	216055.2	89316.5	87985.5	2	2	220.0	220.0	220.00	220.00	0.0	0.0	163.65	163.65
12/2007	160249.2	160302.3	219902.9	219019.9	94953.5	93679.4	2	2	220.0	220.0	220.00	220.00	0.0	0.0	164.37	164.37
1/2008	162880.6	162968.3	228349.5	227463.8	112308.8	111040.7	2	2	220.0	220.0	220.00	220.00	0.0	0.0	171.02	171.02
2/2008	163525.9	163649.0	231284.3	230398.2	120975.2	119714.6	2	2	220.0	220.0	220.00	220.00	0.0	0.0	167.40	167.40

Date	*Cumulative without Project (acre-ft)* Pardee Storage	*Cumulative with Project (acre-ft)* Pardee Storage	*Cumulative without Project (acre-ft)* Camanche Storage	*Cumulative with Project (acre-ft)* Camanche Storage	*Cumulative without Project (acre-ft)* TRA Storage	*Cumulative with Project (acre-ft)* TRA Storage	*Cumulative without Project (NA)* JSA Year Type	*Cumulative with Project (NA)* JSA Year Type	*Cumulative without Project (cfs)* Camanche Outflow	*Cumulative with Project (cfs)* Camanche Outflow	*Cumulative without Project (cfs)* Required Minimum Flows	*Cumulative with Project (cfs)* Required Minimum Flows	*Cumulative without Project (cfs)* Camanche Flood Release	*Cumulative with Project (cfs)* Camanche Flood Release	*Cumulative without Project (cfs)* Flow below Lodi Lake	*Cumulative with Project (cfs)* Flow below Lodi Lake
3/2008	168222.4	168291.6	234597.8	233516.2	126411.3	125449.2	2	2	220.0	220.0	220.00	220.00	0.0	0.0	155.27	155.27
4/2008	170563.8	170754.2	217470.9	216394.2	128984.0	127941.8	2	2	274.8	274.8	274.79	274.79	0.0	0.0	150.05	150.05
5/2008	185582.1	185876.0	195512.1	194442.5	124487.5	123413.4	2	2	338.0	338.0	338.00	338.00	0.0	0.0	150.50	150.50
6/2008	193550.7	193474.9	177256.9	176562.3	117954.2	116960.3	2	2	268.5	268.5	268.52	268.52	0.0	0.0	30.57	30.57
7/2008	195903.4	195819.9	157255.6	156578.0	110550.2	109638.7	2	2	278.5	278.5	278.46	278.46	0.0	0.0	29.36	29.36
8/2008	193563.9	192022.0	149514.8	150304.9	103387.2	102557.0	2	2	232.1	232.1	232.08	232.08	0.0	0.0	21.57	21.57
9/2008	181402.7	179868.0	149801.7	150591.5	97710.0	96954.2	2	2	172.5	172.5	172.46	172.46	0.0	0.0	20.04	20.04
10/2008	172166.2	171858.2	158806.3	158379.1	94280.3	93566.8	2	2	220.0	220.0	220.00	220.00	0.0	0.0	134.55	134.55
11/2008	164193.7	164200.7	176262.7	175836.5	94714.9	93724.6	2	2	220.0	220.0	220.00	220.00	0.0	0.0	164.51	164.51
12/2008	163776.3	163783.2	183483.0	183056.9	102182.6	101223.3	2	2	220.0	220.0	220.00	220.00	0.0	0.0	163.05	163.05
1/2009	171092.1	171099.0	206689.1	206261.0	111707.3	110778.1	2	2	220.0	220.0	220.00	220.00	0.0	0.0	171.02	171.02
2/2009	173105.6	172771.7	231717.7	231039.8	126209.2	125892.7	2	2	220.0	220.0	220.00	220.00	0.0	0.0	169.81	169.81
3/2009	179539.2	182165.0	278393.4	280985.8	131856.9	132064.5	2	2	220.0	220.0	220.00	220.00	0.0	0.0	157.04	157.04
4/2009	185435.3	187042.7	301207.8	310319.5	132054.2	131188.9	1	1	311.7	346.8	311.67	346.80	0.0	0.0	189.27	224.25
5/2009	205433.4	205433.4	384645.5	392346.3	128377.9	127530.2	1	1	517.2	565.6	517.23	565.64	0.0	0.0	243.40	291.81
6/2009	197563.3	197563.3	379211.2	384593.6	120799.3	119964.9	1	1	659.2	697.6	659.24	697.62	0.0	0.0	283.48	321.81
7/2009	197178.2	197178.2	354243.2	358693.2	111788.2	110968.7	1	1	492.3	506.9	452.14	452.14	40.1	54.7	70.24	84.85
8/2009	193341.7	193213.1	332122.8	335217.1	102931.0	101916.5	1	1	427.3	454.4	374.56	374.64	52.8	79.8	74.32	101.32
9/2009	187823.5	187695.4	313601.6	315608.3	96163.5	95160.7	1	1	305.5	323.6	254.20	254.50	51.3	69.1	72.14	89.92
10/2009	169593.4	169465.5	299433.5	299800.3	94914.3	93919.5	0	0	596.3	623.0	325.00	325.00	271.3	298.0	454.38	480.97
11/2009	160496.2	160369.0	294003.0	294003.0	94379.6	93394.1	0	0	347.8	354.0	325.00	325.00	22.8	29.0	290.44	296.60
12/2009	164187.0	164258.4	295464.9	295266.6	101400.5	100422.2	0	0	325.0	325.0	325.00	325.00	0.0	0.0	268.82	268.82
1/2010	170276.8	170050.7	309673.9	309674.0	120325.0	119450.7	0	0	325.0	325.0	325.00	325.00	0.0	0.0	275.25	275.25
2/2010	170618.3	170385.9	320787.0	320936.0	128546.6	127684.5	0	0	386.6	383.9	325.00	325.00	61.6	58.9	334.30	331.62
3/2010	174514.3	174525.3	330896.5	330649.0	135539.7	134836.5	0	0	478.2	478.2	325.00	325.00	153.2	153.2	414.17	414.17
4/2010	194242.6	194078.0	358080.9	357783.5	141403.4	141075.6	1	1	440.2	436.8	440.16	436.83	0.0	0.0	321.62	318.29
5/2010	205102.2	205102.4	388191.7	388999.7	137877.4	137488.0	1	1	790.3	769.6	630.41	627.13	159.9	142.5	516.14	495.54
6/2010	204959.5	204959.5	403452.1	403151.0	130262.4	129879.6	1	1	1339.8	1358.4	777.48	777.48	562.3	581.0	962.34	981.01
7/2010	194790.3	194790.3	359579.9	359353.4	121169.0	120793.6	1	1	1081.9	1080.7	453.19	453.19	628.7	627.5	658.84	657.66
8/2010	193346.9	193346.9	322370.6	322217.6	112314.7	111946.3	1	1	533.3	532.1	374.71	374.71	158.6	157.4	180.15	178.97
9/2010	183960.9	183948.2	289582.8	289499.8	105158.3	104808.6	1	1	524.2	523.0	254.99	254.99	269.2	268.0	289.84	288.68
10/2010	176048.3	176035.7	259117.8	259103.2	101958.4	101613.4	0	0	936.7	935.6	325.00	325.00	611.7	610.6	794.97	793.86
11/2010	167207.3	167194.7	268471.7	268471.7	102757.1	102414.7	0	0	492.5	492.2	325.00	325.00	167.5	167.2	438.57	438.32
12/2010	207101.5	207099.1	287868.3	287811.9	117003.8	116708.2	0	0	1150.3	1150.3	325.00	325.00	825.3	825.3	1096.15	1096.15
1/2011	204347.1	204347.1	304157.9	304099.1	123027.5	122833.2	0	0	1209.7	1209.7	325.00	325.00	884.7	884.7	1155.78	1155.78
2/2011	201067.4	201067.4	320327.9	320268.9	134377.9	134184.0	0	0	1112.1	1112.1	325.00	325.00	787.1	787.1	1060.76	1060.76
3/2011	207702.8	207668.7	348355.0	348535.5	146978.1	146890.9	0	0	2331.6	2326.5	325.00	325.00	2006.6	2001.5	2269.02	2263.86
4/2011	206616.9	206616.9	336101.4	336049.6	145532.8	145446.5	0	0	2716.7	2720.0	525.00	525.00	2191.7	2195.0	2590.87	2594.21
5/2011	205431.3	205431.3	307915.0	307863.3	140606.1	140520.8	0	0	2938.7	2938.7	778.31	778.31	2160.4	2160.4	2662.18	2662.18
6/2011	214021.6	214021.6	398314.8	398379.2	135606.4	135522.1	0	0	2010.7	2008.7	878.16	878.20	1132.5	1130.5	1634.14	1632.10
7/2011	196021.7	196021.7	349686.8	349736.4	126673.3	126590.1	0	0	2885.1	2885.3	459.71	459.71	2425.4	2425.6	2459.59	2459.83
8/2011	193579.1	193579.1	314763.2	314796.8	117703.7	117621.5	0	0	618.1	618.4	378.38	378.38	239.7	240.0	264.81	265.07
9/2011	188778.1	188778.1	285940.5	285959.0	110401.0	110319.9	0	0	474.4	474.7	259.96	259.96	214.4	214.7	240.43	240.68
10/2011	172474.5	172474.5	260539.0	260541.8	105504.6	105424.4	0	0	954.8	955.1	325.00	325.00	629.8	630.1	812.62	812.88
11/2011	163173.7	163173.7	260712.8	260712.8	103659.8	103580.5	0	0	415.1	415.1	325.00	325.00	90.1	90.1	357.92	357.96
12/2011	162063.9	162022.4	254697.4	254697.4	106407.2	106370.2	0	0	325.0	325.0	325.00	325.00	0.0	0.0	265.13	265.13
1/2012	163716.2	163871.0	257590.4	257391.8	117017.2	116982.3	0	0	325.0	325.0	325.00	325.00	0.0	0.0	272.23	272.23
2/2012	155511.7	155637.0	244413.0	244214.5	123020.5	123014.7	0	0	325.0	325.0	325.00	325.00	0.0	0.0	270.86	270.86
3/2012	171322.4	171250.1	246093.4	246092.9	137468.8	137462.4	0	0	325.0	325.0	325.00	325.00	0.0	0.0	264.61	264.61
4/2012	188840.4	188966.1	262049.2	261850.4	141055.3	141049.4	2	2	272.9	272.9	272.86	272.86	0.0	0.0	154.52	154.52
5/2012	193075.6	193151.5	286748.7	286599.9	135073.7	135067.9	2	2	370.0	370.0	370.03	370.03	0.0	0.0	150.01	150.01
6/2012	194904.1	195348.4	271024.6	270507.8	127572.6	127566.8	2	2	328.1	328.1	328.11	328.11	0.0	0.0	30.92	30.92
7/2012	194026.6	194472.1	244862.7	244346.0	118499.7	118493.9	2	2	363.5	363.5	363.50	363.50	0.0	0.0	29.36	29.36
8/2012	191831.3	192273.1	221749.2	221237.6	109650.5	109644.7	2	2	318.5	318.5	318.50	318.50	0.0	0.0	21.60	21.60
9/2012	189007.5	189071.3	206716.5	206583.6	102521.8	102516.1	2	2	221.5	221.5	219.79	219.79	1.7	1.7	21.84	21.84

APPENDIX B
California WaterFix Sensitivity Study

This appendix provides a sensitivity analysis of how the impacts and benefits of the Preferred Alternative, Alternative 1B, would change if the California WaterFix (or CWF) were implemented. The Phase 2 Expansion Alternative 1B and the California WaterFix Proposed Action were evaluated using the CalSim II model developed for the 2016 Biological Assessment of the California WaterFix (Reclamation and California Department of Water Resources [DWR], 2016). A sensitivity analysis was performed for the Preferred Alternative rather than for all alternatives because the changes in impacts and benefits associated with the Phase 2 Expansion action alternatives are an order of magnitude smaller than the changes due to the California WaterFix and it was assumed that the relative changes would be similar for all of the action alternatives. This sensitivity analysis is considered in the cumulative effects analyses in Sections 4.2 and 4.3.

B.1 California WaterFix Modeling

The California WaterFix Proposed Action includes construction and operation of new north Delta intakes and associated conveyance, and changes in the operation of the existing south Delta export facilities. The intakes and associated conveyance allow for Central Valley Project (CVP)/State Water Project (SWP) diversions on the Sacramento River between Freeport and Courtland. The California WaterFix Proposed Action includes three intakes in this reach of the river with individual diversion capacity of 3,000 cubic feet per second (cfs), with a total, combined intake capacity not exceeding 9,000 cfs. The California WaterFix Proposed Action includes new bypass flow rules, which govern the amount of water required to remain in the river before any diversion at the intakes can occur. The California WaterFix Proposed Action includes an additional outflow requirement as an average over the March through May months to maintain Delta outflows. The California WaterFix Proposed Action requires the OMR flows to be the higher than the current criteria in the OCAP BOs. For additional information about the modeling see the Draft Biological Assessment (Reclamation and DWR, 2016).

In the evaluation of the California WaterFix Proposed Action at the year 2030, climate change and sea level rise were included. A sea-level rise projection of 15 cm at the Golden Gate Bridge was assumed; this is consistent with the projections developed by the California Water Commission (CWC) and that were used to evaluate Phase 2 Expansion action alternatives in Sections 4.2 and 4.3 and in Chapter 5. The hydrology used to evaluate the California WaterFix Proposed Action is different than what was projected by the CWC and used to evaluate the Phase 2 Expansion alternatives in Sections 4.2 and 4.3 and in Chapter 5. Despite the differences in the climate change projections, the 2016 Biological Assessment CalSim II model was used

because it was the most recent publicly available model of the California WaterFix Proposed Action.

B.2 CCWD's Settlement Agreement

In 2016, Contra Costa Water District (CCWD) and DWR entered into a settlement agreement for the mitigation of impacts to CCWD from the future construction and operation of the California WaterFix (CCWD and DWR, 2016). The mitigation measures required as part of the Settlement Agreement include the conveyance of water to CCWD that meets specified water quality requirements in specified quantities that depend upon the operations of the WaterFix project. The Settlement Agreement ensures that the quality of the water CCWD delivers to its customers is not impacted as a result of the California WaterFix. The Agreement does not increase the total amount of water that CCWD would otherwise divert, nor does it change the operational criteria for the California WaterFix, or the permitted operational criteria of the Freeport intake.

The water associated with this mitigation would be conveyed to CCWD in one of two ways: 1) through the existing Freeport Intake and the existing interconnection between EBMUD's Mokelumne Aqueduct and CCWD's Los Vaqueros Pipeline; or 2) through new Interconnection Facilities between the water conveyance facilities and existing CCWD facilities.

The Settlement Agreement requires construction of a new 150 cfs interconnection between California WaterFix Proposed Action water conveyance facilities and existing CCWD facilities. The Interconnection Pump Station would lift water from the California WaterFix Proposed Action conveyance facilities and deliver the water via the new Interconnection Pipeline to CCWD's facilities for delivery to either the Los Vaqueros Reservoir or the Contra Costa Canal.

B.3 Summary of Alternative 1B & California WaterFix Operations

The 2016 Biological Assessment (BA) CalSim II model for the Proposed Action was modified to include the 160-thousand acre-foot (TAF) No Project/No Action Alternative assumptions for the Los Vaqueros Reservoir as described in Section 4.2 and to include the terms of the Settlement Agreement as described below. The Phase 2 Expansion Alternative 1B was then simulated with the California WaterFix Proposed Action and compared to the California WaterFix Proposed Action. Results for Phase 2 Alternative 1B and the 160-TAF No Project/No Action Alternative under the Future, with Climate Change 2030 scenario as shown in Sections 4.2 and 4.3 are repeated here for comparison.

The option to convey mitigation water though the Freeport Intertie was not evaluated; only the method of conveying water through the 150 cfs Interconnection Facility was modeled. Since the quantity of mitigation water delivered to CCWD is based on the previous year's operation of the California WaterFix, the amount of mitigation water is known at the beginning of each new water year. Conveyance of mitigation water through the Interconnection Facility is primarily triggered when salinity at CCWD's intakes exceeds the threshold for filling Los Vaqueros Reservoir.

However, even if water quality at CCWD's intakes does not exceed the salinity threshold for filling Los Vaqueros Reservoir, conveyance of mitigation water is determined by the available conveyance capacity throughout CCWD's system and the time required to convey the full volume of water required to mitigate for the previous year's California WaterFix Proposed Action's operations.

Although the water conveyed through the Interconnection Facility is served to CCWD's customers and not available for Local Agency Partners under the Phase 2 Alternative 1B, it does enable the Local Agency Partners to benefit indirectly by freeing up some conveyance capacity in CCWD's system that otherwise would have been used to make water quality blending releases.

B.4 Potential Changes in Impacts of Alternative 1B with California WaterFix

Alternative 1B would not result in significant changes that would adversely affect deliveries to other water users and would not affect water supplies of other water users with or without the California WaterFix Proposed Action. Phase 2 Expansion Alternative 1B would not change CVP and SWP deliveries compared to the 160-TAF No Project/No Action Alternative and compared with the California WaterFix Proposed Action. Alternative 1B would not change carryover storage relative the 160-TAF No Project/No Action Alternative but would reduce carryover storage by a small amount (<0.1 percent) compared to the California WaterFix Proposed Action. **Table B-1** shows a summary of changes in water deliveries and carryover storage. Based on the results presented in Table B-1, changes to CVP/SWP deliveries and reservoir carryover storage under the Phase 2 Expansion would be less than significant and the water supplies of other water users would not be significantly impacted both with and without the California WaterFix Proposed Action.

TABLE B-1
INCREMENTAL PHASE 2 EXPANSION TO 160-TAF NO PROJECT/NO ACTION ALTERNATIVE AND THE CALIFORNIA WATERFIX PROPOSED ACTION: SUMMARY OF CHANGES USED TO EVALUATE WATER DELIVERY TO OTHER USERS (ALL YEARS)

		Annual CVP Deliveries[1] [TAF]	Annual SWP Deliveries[2] [TAF]	CVP and SWP Carry-over Storage[3] [TAF]
Future with Climate Change 2030	**160-TAF No Project/No Action Alt**	**4527**	**2611**	**6778**
Percent Change from 160-TAF No Project/ No Action Alt	Alt 1B	0.0%	0.0%	0.0%
Future with Climate Change 2030	**CWF Proposed Action**	**4519**	**2747**	**7035**
Percent Change from Proposed Action CWF	Alt 1B	0.0%	0.0%	-0.1%

The No Project/No Action Alternatives simulations show that there would be water quality standard violations; however, in reality, the CVP and SWP operate in such way that the standards are typically met. The water quality violations in the No Project/No Action Alternatives are likely due

to the different ways the CalSim II model estimates the amount of water required to meet water quality standards and the way the DSM 2 simulates water quality. The simulated water quality violations in the No Project/No Action Alternative are indicative that the modeling tools are best used in a comparative fashion to evaluate the relative effects of the action alternatives.

Table B-2 show a summary of the potential water quality standards violations simulated for the Phase 2 Expansion Alternative 1B with and without the California WaterFix Proposed Action. The Phase 2 Expansion Alternative 1B would reduce the number of potential water quality standard violations compared to the 160-TAF No Project/No Action Alternative and compared to the California WaterFix Proposed Action. Given that the number of water quality standards violations would decrease, the Phase 2 Expansion would not result in significant adverse changes in Delta water quality causing the violation of a water quality standard and would have a less than significant impact.

TABLE B-2
INCREMENTAL PHASE 2 EXPANSION COMPARED TO 160-TAF NO PROJECT/NO ACTION ALTERNATIVE AND TO THE CALIFORNIA WATERFIX PROPOSED ACTION: CHANGES IN THE FREQUENCY OF POTENTIAL WATER QUALITY STANDARDS VIOLATIONS AVERAGED OVER 82 YEARS

		Rock Slough [# of violations]	Sacramento River at Emmaton [# of violations]	San Joaquin River at Jersey Pt [# of violations]	San Joaquin at Brandt Bridge [# of violations]	Old River near Middle River [# of violations]	Old River at Tracy [# of violations]
Future with Climate Change 2030	**160-TAF No Project/No Action Alt**	**15.0**	**11.5**	**18.3**	**5.2**	**5.3**	**6.0**
Change from 160-TAF No Project/No Action Alt	Alt 1B	-0.2	-0.1	-0.6	0.0	0.0	0.0
Future with Climate Change 2030	**CWF Proposed Action**	**6.0**	**18.0**	**9.2**	**6.8**	**7.1**	**8.0**
Change from Proposed Action CWF	Alt 1B	-0.1	-0.5	-0.1	0.0	0.0	0.0

Table B-3 shows a summary of the changes to parameters currently regulated by SWRCB D-1641 for fish and wildlife beneficial use due to Phase 2 Expansion Alternative 1B with and without the California WaterFix Proposed Action. Phase 2 Expansion Alternative 1B would not affect Delta inflows compared to the 160-TAF No Project/No Action Alternative nor compared to the California WaterFix Proposed Action. Under the Phase 2 Expansion Alternative 1B, Delta outflow would be reduced by less than one half of one percent (<0.4 percent) on average compared to the 160-TAF No Project/No Action Alternative and to the California WaterFix Proposed Action. Simulated changes to Delta outflow would not cause a violation of the minimum Delta outflow standards as required in SWRCB D-1641. The Export/Inflow ratio would increase by less than six tenths of one percent (<0.6 percent) on average and would not exceed the standards set by SWRCB D-1641. Phase 2 Expansion Alternative 1B would not change net Old and Middle River flows compared to

the 160-TAF No Project/No Action Alternative and would increase them slightly compared to the California WaterFix Proposed Action.

Phase 2 Expansion Alternative 1B would not result in significant changes in Delta hydrologic conditions that affect Delta fish populations or quality and quantity of aquatic habitat within the Sacramento-San Joaquin River Delta system with and without California WaterFix Proposed Action.

TABLE B-3
INCREMENTAL PHASE 2 EXPANSION COMPARED TO THE 160 TAF NO PROJECT/ NO ACTION ALTERNATIVE AND THE CALIFORNIA WATERFIX PROPOSED ACTION: SUMMARY OF CHANGES USED TO EVALUATE HYDRODYNAMIC CONDITIONS

		Delta Inflow[1] [cfs]	Delta Outflow [cfs]	X2 Position [km]	Export /Inflow Ratio	OMR[2] [cfs]
Future with Climate Change 2030	**160-TAF No Project/ No Action Alt**	**31563**	**23370**	**74**	**0.31**	**-2214**
Percent Change from 160-TAF No Project/ No Action Alt	Alt 1B	0.0%	-0.3%	0.0%	0.4%	0.0%
Future with Climate Change 2030	**CWF Proposed Action**	**26999**	**22171**	**74**	**0.38**	**-755**
Percent Change from Proposed Action CWF	Alt 1B	0.0%	-0.4%	0.1%	0.6%	0.7%

B.5 Potential Changes in Benefits of Alternative 1B with California WaterFix

Alternative 1B would provide ecosystem improvement benefits while providing water supply reliability benefits for Local Agency Partners. The benefits of the Phase 2 Expansion Alternative 1B would continue if the California WaterFix Proposed Action were implemented. Drought emergency supply reliability would be 41 TAF/year on average over the drought periods defined in Chapter 3 and is similar to the magnitude of drought emergency benefits shown in Chapter 3 and Chapter 5. The supplemental water supply benefits would be 32 TAF/year and are similar to the magnitude of supplemental water supply benefits shown in Chapter 3 and Chapter 5. Ecosystem improvement benefits would be 52 TAF/year and are slightly greater than the ecosystem improvement benefits shown in Chapter 3 and Chapter 5. The delivered water quality improvements would continue if the California WaterFix Proposed Action were implemented. **Table B-4** contains a summary of the Alternative 1B benefits compared to the California WaterFix Proposed Action.

TABLE B-4
SUMMARY OF ALTERNATIVE 1B BENEFITS COMPARED TO THE CALIFORNIA WATERFIX PROPOSED ACTION

Water Supply Reliability: Non-Drought Emergency – Public Benefit	Additional storage, infrastructure interconnections among Local Agency Partners, and integrated operations could improve water supply reliability in the event of flood, earthquake, or levee failure in the Delta
Water Supply Reliability: Drought Emergency Supply Reliability [TAF/year] – Public Benefit	41
Water Supply Reliability: Supplemental Water Supply [TAF/year]	32
Ecosystem Improvement Benefit [TAF/year] – Public Benefit	52
Delivered Water Quality Improvement [reduction in mg/L Cl^-]	Up to 29
State-wide Water System Integration	Integration with CVP/SWP Delta export operations, conjunctive use operations of Local Partner Agencies, facilitation of storing, transferring, delivery water from Local Agency Partner to another
Recreation – Public Benefit	New marina, expanded interpretive center, upgraded interpretive facilities, new trail

References

Reclamation and DWR, 2016. Biological Assessment for the California WaterFix (Appendix 6.A), Bureau of Reclamation and California Department of Water Resources, July 2016. [http://cms.capitoltechsolutions.com/ClientData/CaliforniaWaterFix/uploads/FIX_BA_TOC_V6.pdf]

CCWD and DWR, 2016. Agreement for Mitigation of Impacts to Contra Costa Water District from Construction and Operation of Bay Delta Conservation Plan/California WaterFix. Contra Costa Water District and California Department of Water Resources, March 24, 2016. [http://www.water.ca.gov/news/docs/CCWD_DWR_Agreement_3-24-16.pdf]

APPENDIX C
Sensitivity Study re Partner Benefits with Water Transfers

In addition to the operations already described in this Supplement, Phase 2 Expansion facilities could be used to facilitate water transfers between willing north-of-Delta sellers and south-of-Delta buyers. This appendix presents the sensitivity analysis performed to evaluate the potential to convey transfer water generally for any of the Local Agency Partners or Refuges. Specific water transfers would need approval from Bureau of Reclamation (Reclamation), California Department of Water Resources (DWR), the State Water Resources Control Board, and other applicable parties and would need to be consistent with state and federal law.

C.1 Long-Term Water Transfers

In March 2015, Reclamation and the San Luis and Delta-Mendota Water Authority (SLDMWA) released a Final EIS/EIR for Long-Term Water Transfers (Reclamation and SLDWMA, 2015), which evaluated the potential impacts of voluntary water transfers over a 10-year period, 2015 through 2024, from willing sellers upstream of the Delta to Central Valley Project (CVP) contractors south of the Delta and in the San Francisco Bay Area.

The potential environmental impacts of the Long-Term Water Transfers project were found to be beneficial or less than significant after mitigation pursuant to the California Environmental Quality Act (CEQA) in all categories. SLDMWA filed a Notice of Determination in April 2015 (SLDMWA, 2015) and Reclamation issued a Record of Decision in May 2015 (Reclamation, 2015) for the Long-Term Water Transfers project. The alternative implemented does not directly approve any specific transfer, but approves a set of criteria that must be met to transfer water. In 2017, SLDMWA prepared an Addendum to the Long-Term Water Transfers Final EIS/EIR (Reclamation and SLDMWA, 2017) to add potential willing sellers not previously identified in the Final EIS/EIR and increase amounts of water for potential transfer for specific sellers already included in the Final EIS/EIR; these additions could shift the location or quantity of water made available for transfer, but would not increase the total amount of water or the types of transfers.

The potential buyers identified were East Bay Municipal Utilities District (EBMUD), Contra Costa Water District (CCWD), and certain member agencies of SLDMWA, including Byron Bethany Irrigation District (BBID) and Santa Clara Valley Water District (SCVWD). The analysis in this appendix assumes that other Local Agency Partners or the Refuge Water Supply Program could follow a similar process as described by the Long-Term Water Transfers program to secure approvals for similar transfers. The willing sellers include water agencies and entities in the

Sacramento River, American River, Yuba River, Feather River, Merced River, and Sacramento-San Joaquin River Delta watersheds. Measures to make transfer water available include:

1. Agricultural conservation in the seller's service area
2. Cropland idling of rice, field crops, grains, and alfalfa
3. Groundwater substitution
4. Crop shifting
5. Reservoir release

Table C-1 summarizes the maximum amount of water identified as potentially available for transfer in a year in the Long-Term Water Transfers Final EIS/EIR Table 2-5 (Reclamation and SLDMWA, 2015). Because of the unknown variability in actual hydrologic and operating conditions, it is likely that only a portion of this water supply would be available in any given year. The analysis in this appendix uses these maximum amounts of potentially available transfer water in order to provide an estimate of the upper limit of how much transfer water could be available to be conveyed through the Phase 2 Expansion facilities.

TABLE C-1
MAXIMUM AMOUNT OF TRANSFER WATER AVAILABLE BY TRANSFER TYPES AND PERIOD (TAF/YEAR)

	April-June	July-September	Total[1]
Groundwater Substitution	127	164	291
Cropland Idling/Crop Shifting	67	110	177
Reservoir Release	0	97	97
Conservation	0	3	3

NOTE:

[1] Note that the categories of measures that could make water transfers available should not be added together. Willing sellers could make water available through groundwater substitution, cropland idling, or a combination of the two methods; however, they would not be able to make the full quantity specified in each category available in the same year. The total maximum amount of water available for transfer in a year identified by the Long-Term Water Transfer Final EIS/EIR is 511,094 acre-feet (Reclamation and SLDMWA, 2015).

C.2 Water Transfer Operations

The Long-Term Water Transfers Final EIS/EIR addressed CVP and non-CVP sources of supply conveyed using existing CVP, State Water Project (SWP), and local facilities. This Appendix evaluates the use of Phase 2 Expansion facilities to convey the transfer water. This analysis considers Phase 2 Expansion facility capacity available after those facilities have been used to meet first CCWD's water supply and water quality needs and then the Local Agency Partner and Refuge operational priorities as described earlier in this Supplement.

Based on the quantities listed in Table C-1, sufficient volumes of transfer water are assumed to be available to allow diversions from April through September to maximize use of Phase 2 Expansion facility capacity. Transfer water would be diverted when the Delta is in balanced conditions through

Rock Slough, Old River, and/or Middle River Intakes if capacity at those intakes were available, subject to physical system as well as regulatory constraints. Use of the Freeport Intake is not evaluated, since EBMUD has indicated that Freeport Intake and/or the EBMUD facilities required for conveyance of water through the EBMUD-CCWD Intertie would not be available for use during the April through September time period that transfer water is generally available. If the EBMUD facilities were to become available for use to convey transfer water, additional analysis would be needed to determine potential operational or environmental impacts.

If pipeline and aqueduct capacity were available, transfer water would be delivered through the Transfer-Bethany Pipeline to the California Aqueduct and then either through the South Bay Aqueduct to Alameda County Water District (ACWD) or through San Luis Reservoir to SLDMWA or the Refuges. Delivery of transfer water to ACWD would occur if ACWD had unmet dry year demands from the Phase 2 Expansion. Delivery of transfer water to SLDMWA and the Refuges would occur whenever transfer water and facilities capacity were available, because the demands from SLDMWA member agencies and Refuges are large enough to be treated as unlimited in this analysis. If capacity in the Transfer-Bethany Pipeline were not available, transfer water would be stored in Los Vaqueros Reservoir, if storage capacity were available, to be delivered through the Transfer-Bethany Pipeline when capacity became available. The analysis specifically examines conveying transfer water for ACWD, SLDMWA, and the Refuges, at their request. The mechanism for conveying transfer water would be different for other Local Agency Partners that do not receive water through the Transfer-Bethany Pipeline, but the available capacity at Rock Slough, Old River, and Middle River Intakes would still be a relevant factor.

C.3 Potential Water Transfers in Alternative 1B

This analysis was conducted by post-processing the CalSim II operations model results for Alternative 1B under the Future No Climate Change scenario. **Table C-2** summarizes the maximum amount of water that could be delivered through Phase 2 Expansion facilities, using capacity available after Alternative 1B operations. The primary limiting factor on the total amount of transfer water that could be delivered is the available capacity at Rock Slough, Old River, and Middle River Intakes for diverting transfer water from the Delta.

TABLE C-2
TRANSFER WATER DELIVERED THROUGH PHASE 2 EXPANSION FACILITIES

Water Year Type	Average Transfers Delivered to ACWD (TAF/year)	Average Transfers Delivered to SLDMWA & Refuges (TAF/year)
Wet	0	23
Above Normal	1	39
Below Normal	2	47
Dry	7	43
Critically Dry	14	44
All Years	4	37

On average, 27 percent of the transfer water diverted would need to be stored in Los Vaqueros Reservoir for an average of two months before capacity became available in the Transfer-Bethany Pipeline to complete the delivery of the transfer water. "Spilling" of stored transfer water (where spilling is defined as replacement in storage with a higher priority diversion to storage by CCWD or other parties) is minimized to less than 1 percent of total transfer water stored by limiting storage of transfer water only to times when storage would be available in Los Vaqueros Reservoir. More transfer water could be stored in Los Vaqueros Reservoir, and therefore additional transfer water could be delivered, if water transfers were given a higher priority for storage under the Phase 2 Expansion operational rules (i.e., stored transfer water was not spilled in favor of storing a different type of water).

References

Reclamation, 2015. Record of Decision, Long-Term Water Transfers. Bureau of Reclamation, May 2015. [https://www.usbr.gov/mp/nepa/documentShow.cfm?Doc_ID=21522]

Reclamation and SLDMWA, 2015. Long-Term Water Transfers Final Environmental Impact Statement/Environmental Impact Report. Bureau of Reclamation and San Luis and Delta-Mendota Water Authority, March 2015. [https://www.usbr.gov/mp/nepa/documentShow.cfm?Doc_ID=21161]

Reclamation and SLDMWA, 2017. Addendum to Long-Term Water Transfers EIS/EIR. May 2017.

SLDMWA, 2015. Notice of Determination for the Long-Term Water Transfers project. San Luis and Delta-Mendota Water Authority, April 9, 2015. [https://www.usbr.gov/mp/nepa/documentShow.cfm?Doc_ID=21481]

APPENDIX D
NEPA Context and Intensity Statements

As discussed in Section 4.1, Introduction (to the Affected Environment, Environmental Consequences, and Mitigation chapter), the analytical methodology and thresholds for determining the significance of impacts presented in Chapter 4 are based on the environmental checklist in Appendix G of the State CEQA Guidelines, the professional judgment of the EIS/EIR preparers, and also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its effects. Throughout Chapter 4, the Final EIS/EIR, including this Supplement, uses an approach that addresses both lead agencies' requirements under CEQA and NEPA.

However, while the significance of impacts presented in Chapter 4 address both lead agencies' requirements, this appendix distinguishes NEPA context and intensity statements for each impact discussion, to support the Reclamation decision-making process.

It is noted that under NEPA, significance is used to determine whether an EIS, or some lower level of documentation, will be required. NEPA requires that an EIS is prepared when the proposed federal action (project) *as a whole* has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision to do an EIS is made, it is the magnitude of the impact that is evaluated and no judgment of its significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require the Lead Agency to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. A significant effect on any environmental resource triggers the preparation of an EIR. Each and every significant effect on the environment must be disclosed in the EIR and mitigated, if feasible. In addition, the CEQA Guidelines list a number of mandatory findings of significance, which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the mandatory findings of significance in CEQA.

TABLE D-1
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Delta Hydrology and Water Quality			
4.2.1: Neither the Phase 2 Expansion nor the Total Project would adversely alter deliveries of water to other users.	1A	Less than Significant	Negligible short- and long-term direct adverse impacts
	1B	Less than Significant	Negligible short- and long-term direct adverse impacts
	2A	Less than Significant	Negligible short- and long-term direct adverse impacts
	4A	Less than Significant	Negligible short- and long-term direct adverse impacts
4.2.2: Neither the Phase 2 Expansion nor the Total Project would result in significant adverse changes in Delta water quality causing the violation of a water quality standard.	1A	Less than Significant	Minor short- and long-term direct adverse impacts
	1B	Less than Significant	Minor short- and long-term direct adverse impacts
	2A	Less than Significant	Minor short- and long-term direct adverse impacts
	4A	Less than Significant	Minor short- and long-term direct adverse impacts
4.2.3: Neither the Phase 2 Expansion nor the Total Project would result in changes to Delta water quality that would result in significant adverse effects on beneficial uses.	1A	Less than Significant	Negligible short- and long-term indirect adverse impacts
	1B	Less than Significant	Negligible short- and long-term indirect adverse impacts
	2A	Less than Significant	Negligible short- and long-term indirect adverse impacts
	4A	Less than Significant	Negligible short- and long-term indirect adverse impacts
4.2.4: Diversions of Delta water under the Phase 2 Expansion or the Total Project would not result in a significant reduction of Delta water levels.	1A	Less than Significant	Minor short- and long-term direct adverse impacts
	1B	Less than Significant	Minor short- and long-term direct adverse impacts
	2A	Less than Significant	Negligible short- and long-term direct adverse impacts
	4A	Less than Significant	Minor short- and long-term direct adverse impacts
4.2.5: Neither the Phase 2 Expansion nor the Total Project would result in a cumulatively considerable contribution to significant adverse cumulative effects on deliveries of water to other users, changes in Delta water quality, or change in Delta water levels, changes in groundwater recharge due to changes in Mokelumne River flows, and changes in flooding potential due to changes in Mokelumne River flows	1A	Less than Significant	Minor short- and long-term cumulative adverse impacts
	1B	Less than Significant	Minor short- and long-term cumulative adverse impacts
	2A	Less than Significant	Minor short- and long-term cumulative adverse impacts
	4A	Less than Significant	Minor short- and long-term cumulative adverse impacts

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Delta Hydrology and Water Quality (cont.)			
4.2.6s: The Phase 2 Expansion would not result in changes in Mokelumne River flow that would significantly affect groundwater recharge.	1A	Less than Significant	Negligible long-term direct adverse impact
	1B	Less than Significant	Negligible long-term direct adverse impact
	2A	Less than Significant	Negligible long-term direct adverse impact
	4A	Less than Significant	Negligible long-term direct adverse impact
4.2.7s: The Phase 2 Expansion would not result in changes in Mokelumne River flow that would significantly increase the potential for flooding	1A	Less than Significant	Negligible long-term direct adverse impact
	1B	Less than Significant	Negligible long-term direct adverse impact
	2A	Less than Significant	Negligible long-term direct adverse impact
	4A	Less than Significant	Negligible long-term direct adverse impact
Delta Fisheries and Aquatic Resources			
4.3.1: In-channel construction activities associated with the new Delta Intake structure would increase short-term localized suspended sediment, turbidity, and possibly contaminant concentrations within Old River, which would increase exposure of various life stages and species of fish to temporarily degraded water quality conditions.	1A	No Impact	No Impact
	1B	No Impact	No Impact
	2A	No Impact	No Impact
	4A	No Impact	No Impact
4.3.2: Underwater sound-pressure levels generated during cofferdam installation for the new Delta Intake could result in behavioral avoidance or migration delays for special-status fish species.	1A	No Impact	No Impact
	1B	No Impact	No Impact
	2A	No Impact	No Impact
	4A	No Impact	No Impact
4.3.3: Dewatering of the cofferdam for the new Delta Intake could result in stranding of fish.	1A	No Impact	No Impact
	1B	No Impact	No Impact
	2A	No Impact	No Impact
	4A	No Impact	No Impact
4.3.4: The new Delta Intake structure and associated fish screens in Old River would physically exclude fish from a small area of existing aquatic habitat and modify existing aquatic habitat.	1A	No Impact	No Impact
	1B	No Impact	No Impact
	2A	No Impact	No Impact
	4A	No Impact	No Impact
4.3.5: The new Delta Intake structure and associated fish screens in Old River would modify hydraulic conditions next to the intake structure, but would not disorient special-status fish or attract predatory fish.	1A	No Impact	No Impact
	1B	No Impact	No Impact
	2A	No Impact	No Impact
	4A	No Impact	No Impact
4.3.6: Operation of the Total Project would not result in changes to Delta hydrologic or hydrodynamic conditions that affect Delta fish populations or quality and quantity of aquatic habitat within the Sacramento-San Joaquin River system, including the Delta.	1A	Less than Significant	Minor long-term direct and indirect adverse impacts
	1B	Less than Significant	Minor long-term direct and indirect adverse impacts
	2A	Less than Significant	Minor long-term direct and indirect adverse impacts
	4A	Less than Significant	Minor long-term direct and indirect adverse impacts

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Delta Fisheries and Aquatic Resources (cont.)			
4.3.7: Operation of the Total Project would not significantly affect direct entrainment or impingement of fish.	1A	Less than Significant	Negligible long-term direct adverse impacts
	1B	Less than Significant	Negligible long-term direct adverse impacts
	2A	Less than Significant	Negligible long-term direct adverse impacts
	4A	Less than Significant	Negligible long-term direct adverse impacts
4.3.8 Fish screen maintenance activities would not significantly increase fish entrainment at the new Delta Intake or the expanded Old River Intake.	1A	No Impact	No Impact
	1B	No Impact	No Impact
	2A	No Impact	No Impact
	4A	No Impact	No Impact
4.3.9: The Total Project, when combined with other planned projects or projects under construction in the area, could cumulatively contribute to substantial adverse impacts to Delta fisheries and aquatic resources.	1A	Less than Significant	Negligible long-term direct cumulative adverse impacts
	1B	Less than Significant	Negligible long-term direct cumulative adverse impacts
	2A	Less than Significant	Negligible long-term direct cumulative adverse impacts
	4A	Less than Significant	Negligible long-term direct cumulative adverse impacts
4.3.10s: Operation of the Total Project would not result in changes to Delta hydrologic or hydrodynamic conditions that affect the growth of algal blooms.	1A	Less than Significant	Minor short- or long-term indirect adverse impacts
	1B	Less than Significant	Minor short- or long-term indirect adverse impacts
	2A	Less than Significant	Minor short- or long-term indirect adverse impacts
	4A	Less than Significant	Minor short- or long-term indirect adverse impacts
4.3.11s: Operation of the Total Project would not significantly reduce migration habitat for adult fall-run Chinook salmon and steelhead in the lower Mokelumne River.	1A	Less than Significant	Minor long-term direct adverse impact
	1B	Less than Significant	Minor long-term direct adverse impact
	2A	Less than Significant	Minor long-term direct adverse impact
	4A	Less than Significant	Minor long-term direct adverse impact
4.3.12s: Operation of the Total Project would not significantly reduce spawning and rearing habitat for fall-run Chinook salmon and steelhead in the lower Mokelumne River.	1A	Less than Significant	Minor long-term direct beneficial impact
	1B	Less than Significant	Minor long-term direct beneficial impact
	2A	Less than Significant	Minor long-term direct beneficial impact
	4A	Less than Significant	Minor long-term direct beneficial impact

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Delta Fisheries and Aquatic Resources (cont.)			
4.3.13s: Operation of the Total Project would not significantly reduce outmigration for juvenile fall-run Chinook salmon and steelhead in the lower Mokelumne River.	1A	Less than Significant	Negligible long-term direct adverse impact
	1B	Less than Significant	Negligible long-term direct adverse impact
	2A	Less than Significant	Negligible long-term direct adverse impact
	4A	Less than Significant	Negligible long-term direct adverse impact
4.3.14s: Operation of the Total Project would not significantly reduce floodplain habitat for native fish species in the lower Mokelumne River.	1A	Less than Significant	Negligible long-term direct adverse impact
	1B	Less than Significant	Negligible long-term direct adverse impact
	2A	Less than Significant	Negligible long-term direct adverse impact
	4A	Less than Significant	Negligible long-term direct adverse impact
4.3.15s: Operation of the Total Project would not significantly reduce flows that support native fish species habitat in the lower Mokelumne River.	1A	Less than Significant	Negligible long-term direct adverse impact
	1B	Less than Significant	Negligible long-term direct adverse impact
	2A	Less than Significant	Negligible long-term direct adverse impact
	4A	Less than Significant	Negligible long-term direct adverse impact
4.3.16s: Operation of the Total Project would not significantly reduce fish habitat in Pardee and Camanche Reservoirs.	1A	Less than Significant	Minor long-term direct adverse impact
	1B	Less than Significant	Minor long-term direct adverse impact
	2A	Less than Significant	Minor long-term direct adverse impact
	4A	Less than Significant	Minor long-term direct adverse impact
4.3.17s: Operation of the Total Project would not significantly affect water temperature for coldwater fish species in Pardee and Camanche Reservoirs.	1A	Less than Significant	Minor long-term direct beneficial impact
	1B	Less than Significant	Minor long-term direct beneficial impact
	2A	Less than Significant	Minor long-term direct beneficial impact
	4A	Less than Significant	Minor long-term direct beneficial impact
4.3.18s: Operation of the Total Project would not significantly affect water temperature for migration, spawning and incubation of fall-run Chinook salmon in the lower Mokelumne River.	1A	Less than Significant	Minor long-term direct beneficial impact
	1B	Less than Significant	Minor long-term direct beneficial impact
	2A	Less than Significant	Minor long-term direct beneficial impact
	4A	Less than Significant	Minor long-term direct beneficial impact

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Delta Fisheries and Aquatic Resources (cont.)			
4.3.19s: Operation of the Total Project would not significantly affect water temperature for rearing, smoltification, and emigration of juvenile fall-run Chinook salmon in the lower Mokelumne River.	1A	Less than Significant	Minor long-term direct beneficial impact
	1B	Less than Significant	Minor long-term direct beneficial impact
	2A	Less than Significant	Minor long-term direct beneficial impact
	4A	Less than Significant	Minor long-term direct beneficial impact
4.3.20s: Operation of the Total Project would not significantly affect water temperature for migration, spawning and incubation of steelhead in the lower Mokelumne River.	1A	Less than Significant	Minor long-term direct beneficial impact
	1B	Less than Significant	Minor long-term direct beneficial impact
	2A	Less than Significant	Minor long-term direct beneficial impact
	4A	Less than Significant	Minor long-term direct beneficial impact
4.3.21s: Operation of the Total Project would not significantly affect water temperature for rearing, smoltification, and emigration of steelhead in the lower Mokelumne River.	1A	Less than Significant	Minor long-term direct beneficial impact
	1B	Less than Significant	Minor long-term direct beneficial impact
	2A	Less than Significant	Minor long-term direct beneficial impact
	4A	Less than Significant	Minor long-term direct beneficial impact
4.3.22s: Operation of the Total Project would not significantly affect water quality for fall-run Chinook salmon and steelhead in the lower Mokelumne River.	1A	Less than Significant	Minor long-term indirect adverse impact
	1B	Less than Significant	Minor long-term indirect adverse impact
	2A	Less than Significant	Minor long-term indirect adverse impact
	4A	Less than Significant	Minor long-term indirect adverse impact
Geology, Soils, and Seismicity			
4.4.1: The Phase 2 Expansion could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking or seismic-related ground failure, including liquefaction and landslides.	1A	Less than Significant	Minor long-term direct adverse impact
	1B	Less than Significant	Minor long-term direct adverse impact
	2A	Less than Significant	Minor long-term direct adverse impact
	4A	Less than Significant	Minor long-term direct adverse impact
4.4.2: During construction and operations, the Phase 2 Expansion could result in substantial soil erosion or the loss of topsoil.	1A	Less than Significant with Mitigation	Negligible long-term direct adverse impact
	1B	Less than Significant with Mitigation	Negligible long-term direct adverse impact
	2A	Less than Significant with Mitigation	Negligible long-term direct adverse impact
	4A	Less than Significant with Mitigation	Negligible long-term direct adverse impact

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Geology, Soils, and Seismicity (cont.)			
4.4.3: Phase 2 Expansion components could be located on expansive or corrosive soils or on a geologic unit or soil that is unstable or could become unstable as a result of the project or construction activities; with mitigation, those components would not likely result in onsite or offsite landslides, lateral spreading, subsidence, liquefaction, or collapse, and would not create substantial risks to life or property.	1A	Less than Significant with Mitigation	Minor long-term direct and indirect adverse impact
	1B	Less than Significant with Mitigation	Minor long-term direct and indirect adverse impact
	2A	Less than Significant with Mitigation	Minor long-term direct and indirect adverse impact
	4A	Less than Significant with Mitigation	Minor long-term direct and indirect adverse impact
4.4.4: The Phase 2 Expansion would not make a cumulatively considerable contribution to cumulative effects associated with erosion, topsoil loss or increased exposure to seismic or other geohazard risks.	1A	Less than Significant	Minor long-term cumulative adverse impact
	1B	Less than Significant	Minor long-term cumulative adverse impact
	2A	Less than Significant	Minor long-term cumulative adverse impact
	4A	Less than Significant	Minor long-term cumulative adverse impact
4.4.5s: The Phase 2 Expansion would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	1A	Less than Significant	No Impact
	1B	Less than Significant	No Impact
	2A	Less than Significant	No Impact
	4A	No Impact	No Impact
Local Hydrology, Drainage, and Groundwater			
4.5.1: During construction, the Phase 2 Expansion alternatives could violate water quality standards through increased erosion and sedimentation to local waterways, release of fuels or other hazardous materials during construction, or dewatering of excavated areas that could result in substantial water quality degradation.	1A	Less than Significant with Mitigation	Moderate short-term direct adverse impact
	1B	Less than Significant with Mitigation	Moderate short-term direct adverse impact
	2A	Less than Significant with Mitigation	Moderate short-term direct adverse impact
	4A	Less than Significant with Mitigation	Moderate short-term direct adverse impact
4.5.2: Construction and operation of the Phase 2 Expansion alternatives could deplete local groundwater supplies or interfere with groundwater recharge.	1A	Less than Significant	Minor short- and long-term direct adverse impacts
	1B	Less than Significant	Minor short- and long-term direct adverse impacts
	2A	Less than Significant	Minor short- and long-term direct adverse impacts
	4A	Less than Significant	Minor short- and long-term direct adverse impacts
4.5.3: Phase 2 Expansion alternatives could substantially alter drainage patterns and reservoir expansion would increase the reservoir shoreline area subject to erosion.	1A	Less than Significant	Negligible long-term direct adverse impact
	1B	Less than Significant	Negligible long-term direct adverse impact
	2A	Less than Significant	Negligible long-term direct adverse impact
	4A	Less than Significant	Long-term neutral direct and indirect impact

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Local Hydrology, Drainage, and Groundwater (cont.)			
4.5.4: Phase 2 Expansion alternatives could create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff during operation.	1A	Less than Significant with Mitigation	Minor long-term direct adverse impact
	1B	Less than Significant with Mitigation	Minor long-term direct adverse impact
	2A	Less than Significant with Mitigation	Minor long-term direct adverse impact
	4A	Less than Significant with Mitigation	Minor long-term direct adverse impact
4.5.5: Phase 2 Expansion could place structures within a 100-year flood hazard area as mapped on a federal Flood Insurance Rate Map, which could impede or redirect flood flows.	1A	Less than Significant	Minor short-term and negligible long-term direct adverse impacts
	1B	Less than Significant	Minor short-term and negligible long-term direct adverse impacts
	2A	Less than Significant	Minor short-term and negligible long-term direct adverse impacts
	4A	Less than Significant	Minor short-term and negligible long-term direct adverse impacts
4.5.6: The Phase 2 Expansion alternatives would not substantially increase the exposure of people and/or structures to risks associated with inundation by dam or levee failure.	1A	Less than Significant	Negligible long-term direct adverse impact
	1B	Less than Significant	Negligible long-term direct adverse impact
	2A	Less than Significant	Negligible long-term direct adverse impact
	4A	Less than Significant	Negligible long-term direct adverse impact
4.5.7: Construction and operation of the Phase 2 Expansion alternatives would not make a cumulatively considerate contribution to cumulative effects on drainage, flooding, groundwater recharge, or water quality degradation in the project area.	1A	Less than Significant	Negligible short- and long-term adverse cumulative impacts
	1B	Less than Significant	Negligible short- and long-term adverse cumulative impacts
	2A	Less than Significant	Negligible short- and long-term adverse cumulative impacts
	4A	Less than Significant	Negligible short- and long-term adverse cumulative impacts
Biological Resources			
4.6.1: Phase 2 Expansion construction may affect NCCP habitat types (CDFW sensitive plant communities in parentheses) Natural Seasonal Wetland (i.e., bulrush-cattail series, northern claypan vernal pool, bush seepweed and saltgrass series), Valley/Foothill Riparian (i.e., Fremont cottonwood series and valley oak series), and Grassland (i.e., purple needlegrass series).	1A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	1B	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	2A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	4A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Biological Resources (cont.)			
4.6.2: Phase 2 Expansion construction could affect potentially jurisdictional wetlands or water, and streambeds and banks regulated by CDFW.	1A	Less than Significant with Mitigation	Minor short-term and moderate long-term direct adverse impacts
	1B	Less than Significant with Mitigation	Minor short-term and moderate long-term direct adverse impacts
	2A	Less than Significant with Mitigation	Minor short-term and moderate long-term direct adverse impacts
	4A	Less than Significant with Mitigation	Negligible short-term and minor long-term direct adverse impacts
4.6.3: Phase 2 Expansion construction could affect populations of special-status plant species including brittlescale, San Joaquin spearscale, and Brewer's dwarf-flax	1A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	1B	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	2A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	4A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
4.6.4: Phase 2 Expansion construction would result in impacts on California red-legged frog and California tiger salamander, including aquatic breeding habitat and upland aestivation habitat for these species.	1A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	1B	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	2A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	4A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
4.6.5: Phase 2 Expansion construction would result in direct and indirect impacts on existing populations of and habitat for the western pond turtle.	1A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	1B	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	2A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	4A	Less than Significant with Mitigation	Moderate long-term indirect adverse impacts
4.6.6: Phase 2 Expansion construction would result in direct and indirect impacts on listed vernal pool fairy shrimp and their habitat, and on the non-listed midvalley fairy shrimp.	1A	Less than Significant with Mitigation	Minor long-term direct adverse impacts
	1B	Less than Significant with Mitigation	Minor long-term direct adverse impacts
	2A	Less than Significant with Mitigation	Minor long-term direct adverse impacts
	4A	Less than Significant with Mitigation	Minor long-term direct adverse impacts

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Biological Resources (cont.)			
4.6.7: Phase 2 Expansion construction would have temporary and permanent impacts on potential San Joaquin kit fox habitat and permanently reduce potential regional movement opportunities in one location for this species.	1A	Less than Significant with Mitigation/Less than Significant[1]	Moderate short-and long-term direct adverse impacts; minor long-term indirect adverse impacts
	1B	Less than Significant with Mitigation/Less than Significant[1]	Moderate short-and long-term direct adverse impacts; minor long-term indirect adverse impacts
	2A	Less than Significant with Mitigation/Less than Significant[1]	Moderate short-and long-term direct adverse impacts; minor long-term indirect adverse impacts
	4A	Less than Significant with Mitigation/No Impact[1]	Moderate short-term direct adverse impacts; negligible long-term indirect adverse impacts
4.6.8: Phase 2 Expansion construction would result in temporary and permanent loss of habitat for burrowing owls.	1A	Less than Significant with Mitigation	Moderate short- and long-term direct and indirect adverse impacts
	1B	Less than Significant with Mitigation	Moderate short- and long-term direct and indirect adverse impacts
	2A	Less than Significant with Mitigation	Moderate short- and long-term direct and indirect adverse impacts
	4A	Less than Significant with Mitigation	Minor long-term direct and indirect adverse impacts
4.6.9: Phase 2 Expansion construction and operation activities would result in direct and indirect impacts on existing populations of and habitat for the golden eagle, bald eagle, and Swainson's hawk.	1A	Less than Significant with Mitigation/Beneficial (bald eagle)	Moderate short-term direct and indirect adverse impact; moderate long-term beneficial impact (bald eagle foraging)
	1B	Less than Significant with Mitigation/Beneficial (bald eagle)	Moderate short-term direct and indirect adverse impact; moderate long-term beneficial impact (bald eagle foraging)
	2A	Less than Significant with Mitigation/Beneficial (bald eagle)	Moderate short-term direct and indirect adverse impacts; moderate long-term beneficial impact (bald eagle foraging)
	4A	Less than Significant with Mitigation/No Impact (bald eagle)	Moderate short-term direct and indirect adverse impacts

[1] As described in Impact 4.6.7 in Section 4.6, the Total Project impact on San Joaquin kit fox regional movement corridors is significant and unavoidable as a result of the significant and unavoidable effect that already occurred during Phase 1 implementation. The Phase 1 impact and the Total Project impact represent a major, long-term, indirect adverse impact on San Joaquin kit fox.

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Biological Resources (cont.)			
4.6.10: Phase 2 Expansion construction and increased reservoir water levels would result in temporary and permanent loss of potential and occupied habitat for Alameda whipsnake.	1A	Less than Significant with Mitigation	Moderate short-term direct adverse impacts; minor long-term indirect adverse impacts to habitat
	1B	Less than Significant with Mitigation	Moderate short-term direct adverse impacts; minor long-term indirect adverse impacts to habitat
	2A	Less than Significant with Mitigation	Moderate short-term direct adverse impacts; minor long-term indirect adverse impacts to habitat
	4A	Less than Significant with Mitigation	Moderate short-term direct adverse impacts; no indirect impacts to habitat
4.6.11: Phase 2 Expansion construction activities could result in direct and indirect impacts on the valley elderberry longhorn beetle and its habitat.	1A	Less than Significant with Mitigation	Minor short- and long-term direct and indirect adverse impacts
	1B	Less than Significant with Mitigation	Minor short- and long-term direct and indirect adverse impacts
	2A	Less than Significant with Mitigation	Minor short- and long-term direct and indirect adverse impacts
	4A	Less than Significant[2]	Negligible short-term indirect adverse impacts; no long-term direct or indirect impacts
4.6.12: Phase 2 Expansion construction activities could affect active breeding bird nest sites and new powerlines could affect migratory birds.	1A	Less than Significant with Mitigation	Moderate short-term direct and indirect adverse impacts; minor long-term direct adverse impacts
	1B	Less than Significant with Mitigation	Moderate short-term direct and indirect adverse impacts; minor long-term direct adverse impacts
	2A	Less than Significant with Mitigation	Moderate short-term direct and indirect adverse impacts; minor long-term direct adverse impacts
	4A	Less than Significant with Mitigation	Moderate short-term direct and indirect adverse impacts; minor long-term direct adverse impacts

[2] As described in Impact 4.6.11 in Section 4.6, the Total Project impact on valley elderberry longhorn beetle and its habitat under Alternative 4A is less than significant with mitigation as a result of the effect that already occurred during Phase 1 implementation. The Phase 1 impact and the Total Project impact represent a minor short- and long-term direct and indirect adverse impact on valley elderberry longhorn beetle.

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Biological Resources (cont.)			
4.6.13: Phase 2 Expansion construction activities could affect designated critical habitat for listed species (vernal pool fairy shrimp and Contra Costa goldfields).	1A	Less than Significant with Mitigation	Moderate short- and long-term direct adverse impacts
	1B	Less than Significant with Mitigation	Moderate short- and long-term direct adverse impacts
	2A	Less than Significant with Mitigation	Moderate short- and long-term direct adverse impacts
	4A	Less than Significant with Mitigation	Moderate short- and long-term direct adverse impacts
4.6.14: Phase 2 Expansion construction activities could affect nonlisted special-status reptile species (San Joaquin coachwhip and coast horned lizard).	1A	Less than Significant with Mitigation	Moderate short- and long-term direct and indirect adverse impacts
	1B	Less than Significant with Mitigation	Moderate short- and long-term direct and indirect adverse impacts
	2A	Less than Significant with Mitigation	Moderate short- and long-term direct and indirect adverse impacts
	4A	Less than Significant with Mitigation	Moderate short- and long-term direct and indirect adverse impacts
4.6.15: Phase 2 Expansion construction activities could affect nonlisted special-status mammal species (American badger, special-status bats, and San Joaquin pocket mouse).[3]	1A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts; minor short-and long-term indirect adverse impacts
	1B	Less than Significant with Mitigation	Moderate long-term direct adverse impacts; minor short-and long-term indirect adverse impacts
	2A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts; minor short-and long-term indirect adverse impacts
	4A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts; minor short-and long-term indirect adverse impacts
4.6.16: Draining the reservoir during Phase 2 Expansion construction could affect Pacific Flyway species, including waterfowl and shorebirds.	1A	Less than Significant	Minor short-term direct adverse impact
	1B	Less than Significant	Minor short-term direct adverse impact
	2A	Less than Significant	Minor short-term direct adverse impact
	4A	No Impact	No Impact

[3] When the Final EIS/EIR was published in 2010, the San Joaquin pocket mouse was identified by CFDW as a California Species of Special Concern. CDFW has since dropped this designation, leaving the mouse with no protective status.

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Biological Resources (cont.)			
4.6.17: The Phase 2 Expansion would not result in conflicts with local and regional conservation plans, or local plans or ordinances protecting biological resources.	1A	Less than Significant with Mitigation	Minor short-term direct and indirect adverse impacts
	1B	Less than Significant with Mitigation	Minor short-term direct and indirect adverse impacts
	2A	Less than Significant with Mitigation	Minor short-term direct and indirect adverse impacts
	4A	Less than Significant with Mitigation	Minor short-term direct and indirect adverse impacts
4.6.18: Phase 2 Expansion construction would not make a cumulatively considerable contribution to cumulative effects on special-status species and habitats.	1A	Less than Significant	Minor short-and long-term, direct and indirect adverse cumulative impacts
	1B	Less than Significant	Minor short-and long-term, direct and indirect adverse cumulative impacts
	2A	Less than Significant	Minor short-and long-term, direct and indirect adverse cumulative impacts
	4A	Less than Significant	Minor short-and long-term, direct and indirect adverse cumulative impacts
Land Use			
4.7.1: The Phase 2 Expansion alternatives would not physically divide an existing community.	1A	No Impact	No Impact
	1B	No Impact	No Impact
	2A	No Impact	No Impact
	4A	No Impact	No Impact
4.7.2: Facility siting and operation under the Phase 2 Expansion alternatives would not conflict with any applicable land use plans.	1A	Less than Significant	No Impact
	1B	Less than Significant	No Impact
	2A	Less than Significant	No Impact
	4A	Less than Significant	No Impact
4.7.3: Construction activities within designated Airport Land Use Compatibility Zones near the Byron Airport could cause potential temporary height impacts by conflicting with FAR Part 77 surfaces during construction.	1A	Less than Significant with Mitigation	Negligible short-term direct adverse impacts
	1B	Less than Significant with Mitigation	Negligible short-term direct adverse impacts
	2A	Less than Significant with Mitigation	Negligible short-term direct adverse impacts
	4A	Less than Significant with Mitigation	Minor short-and long-term, direct and indirect adverse cumulative impacts
4.7.4: Construction activities within the AIA for Byron Airport could cause potential temporary flight hazards through the creation of glare or distracting lights; the generation of dust or smoke, which could impair pilot visibility; or could attract an increased number of birds.	1A	Less than Significant with Mitigation	Minor short-term direct adverse impacts
	1B	Less than Significant with Mitigation	Minor short-term direct adverse impacts
	2A	Less than Significant with Mitigation	Minor short-term direct adverse impacts
	4A	Less than Significant with Mitigation	Minor short-term direct adverse impacts
4.7.5: The Phase 2 Expansion alternatives would not contribute to cumulative land use impacts.	1A	No Impact	No Impact
	1B	No Impact	No Impact
	2A	No Impact	No Impact
	4A	No Impact	No Impact

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Agricultural Resources			
4.8.1: Construction of Phase 2 Expansion Alternatives would temporarily impact the agricultural uses of Prime Farmland, Unique farmland, or Farmland of Statewide Importance.	1A	Less than Significant with Mitigation	Moderate short- and long-term, direct and indirect adverse impacts
	1B	Less than Significant with Mitigation	Moderate short- and long-term, direct and indirect adverse impacts
	2A	Less than Significant with Mitigation	Moderate short- and long-term, direct and indirect adverse impacts
	4A	Less than Significant with Mitigation	Moderate short- and long-term, indirect adverse impacts
4.8.2: Phase 2 Expansion alternatives would permanently convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.	1A	Significant and Unavoidable	Major long-term direct adverse impacts
	1B	Significant and Unavoidable	Major long-term direct adverse impacts
	2A	Significant and Unavoidable	Major long-term direct adverse impacts
	4A	Significant and Unavoidable	Major long-term direct adverse impacts
4.8.3: Phase 2 Expansion alternatives would not conflict with zoning for agricultural use or a Williamson Act contract.	1A	Less than Significant	Negligible short- and long-term direct adverse impacts
	1B	Less than Significant	Negligible short- and long-term direct adverse impacts
	2A	Less than Significant	Negligible short- and long-term direct adverse impacts
	4A	Less than Significant	Negligible short- and long-term direct adverse impacts
4.8.4: Phase 2 Expansion alternatives would involve changes in the environment that, due to their location or nature, could contribute to cumulative impacts from conversion of Important Farmland to non-agricultural uses.	1A	Less than Significant with Mitigation	Major long-term adverse cumulative impact
	1B	Less than Significant with Mitigation	Major long-term adverse cumulative impact
	2A	Less than Significant with Mitigation	Major long-term adverse cumulative impact
	4A	Less than Significant with Mitigation	Major long-term adverse cumulative impact
Transportation and Circulation			
4.9.1: Phase 2 Expansion construction activities would intermittently and temporarily increase traffic congestion due to vehicle trips generated by construction workers and construction vehicles on area roadways.	1A	Less than Significant with Mitigation	Minor short-term direct adverse impact
	1B	Less than Significant with Mitigation	Minor short-term direct adverse impact
	2A	Less than Significant with Mitigation	Minor short-term direct adverse impact
	4A	Less than Significant with Mitigation	Minor short-term direct adverse impact

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Transportation and Circulation (cont.)			
4.9.2: Phase 2 Expansion construction activities would intermittently and temporarily impede access to local streets or adjacent uses, including access for emergency vehicles and could substantially increase traffic hazards due to construction in or adjacent to roads or due to possible road wear.	1A	Less than Significant with Mitigation	Moderate short-term (and negligible long-term) direct and indirect adverse impacts
	1B	Less than Significant with Mitigation	Moderate short-term (and negligible long-term) direct and indirect adverse impacts
	2A	Less than Significant with Mitigation	Moderate short-term (and negligible long-term) direct and indirect adverse impacts
	4A	Less than Significant with Mitigation	Moderate short-term (and negligible long-term) direct and indirect adverse impacts
4.9.3: Traffic associated with operation of Phase 2 Expansion facilities, including the expanded recreation facilities, would not exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.	1A	Less than Significant	Negligible long-term direct and cumulative adverse impact
	1B	Less than Significant	Negligible long-term direct and cumulative adverse impact
	2A	Less than Significant	Negligible long-term direct and cumulative adverse impact
	4A	Less than Significant	Negligible long-term direct and cumulative adverse impact
4.9.4: Construction of Phase 2 Expansion alternatives, when combined with construction of other future projects, could contribute to construction-related short-term cumulative impacts to traffic and transportation (traffic congestion, access, and traffic safety).	1A	Less than Significant with Mitigation	Moderate short-term adverse cumulative impact
	1B	Less than Significant with Mitigation	Moderate short-term adverse cumulative impact
	2A	Less than Significant with Mitigation	Moderate short-term adverse cumulative impact
	4A	Less than Significant with Mitigation	Moderate short-term adverse cumulative impact
Air Quality			
4.10.1: Construction of Phase 2 Expansion alternatives would generate short-term emissions of criteria air pollutants: ROG, NOx, CO, PM2.5 and PM10 that could contribute to existing nonattainment conditions and further degrade air quality. However, Phase 2 Expansion alternatives would not exceed federal general conformity de minimis standards for emissions.	1A	Less than Significant with Mitigation	Minor short-term direct adverse impacts (ROG, NOx, PM2.5, and PM10)
	1B	Less than Significant with Mitigation	Minor short-term direct adverse impacts (ROG, NOx, PM2.5, and PM10)
	2A	Less than Significant with Mitigation	Minor short-term direct adverse impacts (ROG, NOx, PM2.5, and PM10)
	4A	Less than Significant with Mitigation	Minor short-term direct adverse impacts (NOx)

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Air Quality (cont.)			
4.10.2: Operation of the Phase 2 Expansion alternatives would not result in emissions of criteria air pollutants at levels that would substantially contribute to a potential violation of applicable air quality standards or to nonattainment conditions.	1A	Less than Significant	Negligible long-term direct adverse impacts
	1B	Less than Significant	Negligible long-term direct adverse impacts
	2A	Less than Significant	Negligible long-term direct adverse impacts
	4A	Less than Significant	Negligible long-term direct adverse impacts
4.10.3: Construction and/or operation of the Phase 2 Expansion alternatives would expose sensitive receptors to substantial pollutant concentrations.	1A	Less than Significant with Mitigation	Minor short-term direct adverse impacts (Pumping Plant #1 and Neroly High-Lift Pump Station); otherwise negligible short-term direct adverse impacts
	1B	Less than Significant with Mitigation	Minor short-term direct adverse impacts (Pumping Plant #1 and Neroly High-Lift Pump Station); otherwise negligible short-term direct adverse impacts
	2A	Less than Significant with Mitigation	Minor short-term direct adverse impacts (Pumping Plant #1 and Neroly High-Lift Pump Station); otherwise negligible short-term direct adverse impacts
	4A	Less than Significant with Mitigation	Minor short-term direct adverse impacts (Pumping Plant #1 and Neroly High-Lift Pump Station); otherwise negligible short-term direct adverse impacts
4.10.4: Operation of the Phase 2 Expansion alternatives would not create objectionable odors affecting a substantial number of people.	1A	Less than Significant	Negligible short-term direct adverse impacts (exposed Los Vaqueros riverbed); no adverse long-term impacts
	1B	Less than Significant	Negligible short-term direct adverse impacts (exposed Los Vaqueros riverbed); no adverse long-term impacts
	2A	Less than Significant	Negligible short-term direct adverse impacts (exposed Los Vaqueros riverbed); no adverse long-term impacts
	4A	Less than Significant	Negligible short-term direct adverse impacts (exposed Los Vaqueros riverbed); no adverse long-term impacts

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Air Quality (cont.)			
4.10.5: Construction and operation of the Phase 2 Expansion alternatives would not result in a cumulatively considerable increase in GHG emissions.	1A	Less than Significant	Minor short-term adverse cumulative impacts; minor long-term adverse cumulative impacts
	1B	Less than Significant	Minor short-term adverse cumulative impacts; minor long-term adverse cumulative impacts
	2A	Less than Significant	Minor short-term adverse cumulative impacts; moderate long-term adverse cumulative impacts
	4A	Less than Significant	Minor short-term adverse cumulative impacts; minor long-term adverse cumulative impacts
Impact 4.10.6: Construction and operation of the Phase 2 Expansion alternatives could result in cumulatively considerable increases of criteria pollutant emissions.	1A	Less than Significant with Mitigation	Negligible adverse cumulative impacts
	1B	Less than Significant with Mitigation	Negligible adverse cumulative impacts
	2A	Less than Significant with Mitigation	Negligible adverse cumulative impacts
	4A	Less than Significant with Mitigation	Negligible adverse cumulative impacts
Noise			
4.11.1: Construction of facilities under the Phase 2 Expansion alternatives could generate noise levels that exceed the Contra Costa County or Alameda County, or City of Antioch or Oakley noise standards at nearby sensitive receptors if construction activities are carried out during noise-sensitive hours, causing sleep disturbance and/or annoyance.	1A	Less than Significant with Mitigation	Moderate short-term direct adverse impact
	1B	Less than Significant with Mitigation	Moderate short-term direct adverse impact
	2A	Less than Significant with Mitigation	Moderate short-term direct adverse impact
	4A	Less than Significant with Mitigation	Moderate short-term direct adverse impact
4.11.2: Operation of the Phase 2 Expansion alternatives would generate traffic, stationary source, and area source noise similar to existing noise associated with operation of Los Vaqueros Reservoir system and would not exceed County noise requirements.	1A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	1B	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	2A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	4A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
4.11.3: Phase 2 Expansion construction would not expose persons to or generate excessive ground-borne vibration or ground-borne noise levels.	1A	Less than Significant	Negligible short-term direct adverse impacts
	1B	Less than Significant	Negligible short-term direct adverse impacts
	2A	Less than Significant	Negligible short-term direct adverse impacts
	4A	Less than Significant	Negligible short-term direct adverse impacts

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Noise (cont.)			
4.11.4: The Phase 2 Expansion alternatives would not make a cumulatively considerable contribution to noise levels during either construction or operation.	1A	Less than Significant	Negligible short- and long-term cumulative adverse impacts
	1B	Less than Significant	Negligible short- and long-term cumulative adverse impacts
	2A	Less than Significant	Negligible short- and long-term cumulative adverse impacts
	4A	Less than Significant	Negligible short- and long-term cumulative adverse impacts
Utilities and Public Service Systems			
4.12.1: Construction or operation of Phase 2 Expansion alternatives could temporarily disrupt utilities and public service systems such that a public health hazard could be created or an extended service disruption could result.	1A	Less than Significant with Mitigation	Moderate short-term direct adverse impacts
	1B	Less than Significant with Mitigation	Moderate short-term direct adverse impacts
	2A	Less than Significant with Mitigation	Moderate short-term direct adverse impacts
	4A	Less than Significant with Mitigation	Minor short-term direct adverse impacts
4.12.2: Phase 2 Expansion alternatives would not require or result in construction of new or expanded utility infrastructure or public service facilities that would result in substantial adverse physical impacts.	1A	Less than Significant	No Impact
	1B	Less than Significant	No Impact
	2A	Less than Significant	No Impact
	4A	Less than Significant	No Impact
4.12.3: Construction of the Phase 2 Expansion alternatives could increase solid waste generation such that the capacity of local landfills would be exceeded or the project would not comply with state regulations related to solid waste.	1A	Less than Significant with Mitigation	Moderate short-term direct adverse impacts
	1B	Less than Significant with Mitigation	Moderate short-term direct adverse impacts
	2A	Less than Significant with Mitigation	Moderate short-term direct adverse impacts
	4A	Less than Significant with Mitigation	Moderate short-term direct adverse impacts
4.12.4: Construction of the Phase 2 Expansion alternatives could make a cumulatively considerable contribution to cumulative effects on public services and utilities, or local landfill capacity.	1A	Less than Significant with Mitigation	Moderate short-term cumulative adverse impacts
	1B	Less than Significant with Mitigation	Moderate short-term cumulative adverse impacts
	2A	Less than Significant with Mitigation	Moderate short-term cumulative adverse impacts
	4A	Less than Significant with Mitigation	Moderate short-term cumulative adverse impacts
4.12.5s: The Phase 2 Expansion would not result in the wasteful, inefficient, or unnecessary consumption of energy or require the construction of additional energy infrastructure facilities that would have significant environmental effects.	1A	Less than Significant	Minor short- and long-term direct, indirect, and cumulative adverse impacts
	1B	Less than Significant	Minor short- and long-term direct, indirect, and cumulative adverse impacts
	2A	Less than Significant	Minor short- and long-term direct, indirect, and cumulative adverse impacts

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Utilities and Public Service Systems (cont.)			
4.12.5s (cont.)	4A	Less than Significant	Minor short- and long-term direct, indirect, and cumulative adverse impacts
Hazardous Materials/Public Health			
4.13.1: Construction of the Phase 2 Expansion alternatives would disturb subsurface soils and groundwater; if hazardous substances are present in the disturbed areas, construction workers and the public could be exposed to these substances	1A	Less than Significant	Minor short-term direct and indirect adverse impacts
	1B	Less than Significant	Minor short-term direct and indirect adverse impacts
	2A	Less than Significant	Minor short-term direct and indirect adverse impacts
	4A	Less than Significant	Minor short-term direct and indirect adverse impacts
4.13.2: Phase 2 Expansion construction and operation could, through routine transport, use or disposal, accidentally release hazardous materials, thereby exposing construction workers, project personnel, and the public to hazardous materials, or accidentally releasing hazardous materials into the soil, groundwater, and/or a nearby surface water body.	1A	Less than Significant with Mitigation	Minor short- and long-term direct and indirect adverse impacts
	1B	Less than Significant with Mitigation	Minor short- and long-term direct and indirect adverse impacts
	2A	Less than Significant with Mitigation	Minor short- and long-term direct and indirect adverse impacts
	4A	Less than Significant with Mitigation	Minor short- and long-term direct and indirect adverse impacts
4.13.3: Improper handling or use of flammable or combustible materials such as internal combustion equipment could result in wildland fires, exposing people or structures to a significant risk of loss, injury, or death.	1A	Less than Significant with Mitigation	Moderate short- and long-term direct adverse impacts
	1B	Less than Significant with Mitigation	Moderate short- and long-term direct adverse impacts
	2A	Less than Significant with Mitigation	Moderate short- and long-term direct adverse impacts
	4A	Less than Significant with Mitigation	Moderate short- and long-term direct adverse impacts
4.13.4: Construction and operation of power supply facilities would not locate electrical transmission facilities within 150 feet of a school.	1A	No Impact	No Impact
	1B	No Impact	No Impact
	2A	No Impact	No Impact
	4A	No Impact	No Impact
4.13.5: The Phase 2 Expansion alternatives would not contribute to cumulative impacts associated with release of hazardous materials or other hazards.	1A	Less than Significant	Minor short- and long-term cumulative adverse impacts
	1B	Less than Significant	Minor short- and long-term cumulative adverse impacts
	2A	Less than Significant	Minor short- and long-term cumulative adverse impacts
	4A	Less than Significant	Minor short- and long-term cumulative adverse impacts

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Hazardous Materials/Public Health (cont.)			
4.13.6s: The Phase 2 Expansion alternatives would emit hazardous emissions or involve the handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	1A	Less than Significant with Mitigation	Minor short- and long-term direct adverse impacts
	1B	Less than Significant with Mitigation	Minor short- and long-term direct adverse impacts
	2A	Less than Significant with Mitigation	Minor short- and long-term direct adverse impacts
	4A	Less than Significant with Mitigation	Minor short- and long-term direct adverse impacts
Visual/Aesthetic Resources			
4.14.1: The Phase 2 Expansion alternatives would not have a substantial, demonstrable negative aesthetic effect on a scenic vista or from a county-designated scenic highway or route.	1A	Less than Significant	Negligible long-term direct adverse impact
	1B	Less than Significant	Negligible long-term direct adverse impact
	2A	Less than Significant	Negligible long-term direct adverse impact
	4A	Less than Significant	Negligible long-term direct adverse impact
4.14.2: The Phase 2 Expansion alternatives would substantially degrade the existing visual character or quality of the site and its surroundings.	1A	Less than Significant with Mitigation	Minor short-term and negligible long-term direct adverse impacts
	1B	Less than Significant with Mitigation	Minor short-term and negligible long-term direct adverse impacts
	2A	Less than Significant with Mitigation	Minor short-term and negligible long-term direct adverse impacts
	4A	Less than Significant[4]	Negligible short- and long-term direct adverse impacts
4.14.3: The Phase 2 Expansion alternatives would not create a new source of substantial light or glare.	1A	Less than Significant	Negligible short- and long-term direct adverse impacts
	1B	Less than Significant	Negligible short- and long-term direct adverse impacts
	2A	Less than Significant	Negligible short- and long-term direct adverse impacts
	4A	Less than Significant	Negligible short- and long-term direct adverse impacts
4.14.4: The Phase 2 Expansion alternatives would not make a cumulatively considerable contribution to adverse effects on visual/aesthetic resources in the project area or broader region.	1A	Less than Significant	Negligible short- and long-term adverse cumulative impacts
	1B	Less than Significant	Negligible short- and long-term adverse cumulative impacts
	2A	Less than Significant	Negligible short- and long-term adverse cumulative impacts
	4A	Less than Significant	Negligible short- and long-term adverse cumulative impacts

[4] As described in Impact 4.14.2 in Section 4.14, the Total Project impact on visual character and quality under Alternative 4A is less than significant with mitigation as a result of the effect that already occurred during Phase 1 implementation. The Phase 1 impacts, and thus the Total Project impacts, represent minor short-term and negligible long-term direct adverse impacts on visual character and quality.

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Recreation			
4.15.1: The Phase 2 Expansion alternatives would result in a short-term reduction of recreational opportunities in the project area due to closure of the watershed to the public during the construction period and other construction activities outside the watershed, but would enhance recreational opportunities in the long-term.	1A	Less than Significant with Mitigation	Moderate short-term direct adverse impacts; long-term beneficial effects
	1B	Less than Significant with Mitigation	Moderate short-term direct adverse impacts; long-term beneficial effects
	2A	Less than Significant with Mitigation	Moderate short-term direct adverse impacts; long-term beneficial effects
	4A	Less than Significant with Mitigation	Negligible short-term direct adverse impacts; no long-term beneficial effects
4.15.2: The Phase 2 Expansion alternatives would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	1A	Less than Significant	Minor short-term direct adverse impacts; negligible long-term beneficial effects
	1B	Less than Significant	Minor short-term direct adverse impacts; negligible long-term beneficial effects
	2A	Less than Significant	Minor short-term direct adverse impacts; negligible long-term beneficial effects
	4A	Less than Significant	Negligible short-term direct adverse impacts; negligible long-term beneficial effects
4.15.3: No other reasonably foreseeable future projects would also reduce recreational opportunities in the project area, similar to those opportunities affected by the Phase 2 Expansion alternatives, or increase the use of existing neighborhood and regional parks or other recreational facilities; therefore, there does not appear to be the potential for the Phase 2 Expansion alternatives to contribute to a cumulative effect on recreation facilities, opportunities or experience.	1A	Less than Significant	Negligible short- and long-term cumulative impacts
	1B	Less than Significant	Negligible short- and long-term cumulative impacts
	2A	Less than Significant	Negligible short- and long-term cumulative impacts
	4A	Less than Significant	Negligible short- and long-term cumulative impacts
Cultural and Paleontological Resources			
4.16.1: Construction and management of Phase 2 Expansion components would cause a substantial adverse change in the significance of a historical and/or unique archaeological resource as defined in Section 15064.5 or historic property or historic district, as defined in Section 106 of the NHPA (36 CFR 800), or in a previously undiscovered cultural resource.	1A	Less than Significant with Mitigation	Major long-term direct adverse impacts
	1B	Less than Significant with Mitigation	Major long-term direct adverse impacts
	2A	Less than Significant with Mitigation	Major long-term direct adverse impacts
	4A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
4.16.2: Ground-disturbing activities could encounter and destroy paleontological resources in certain geologic formations underlying the Phase 2 Expansion area.	1A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	1B	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	2A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts
	4A	Less than Significant with Mitigation	Moderate long-term direct adverse impacts

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Cultural and Paleontological Resources (cont.)			
4.16.3: Construction and management of Phase 2 Expansion components could disturb human remains, including those interred outside of formal cemeteries.	1A	Less than Significant with Mitigation	Major long-term direct and indirect adverse impacts
	1B	Less than Significant with Mitigation	Major long-term direct and indirect adverse impacts
	2A	Less than Significant with Mitigation	Major long-term direct and indirect adverse impacts
	4A	Less than Significant with Mitigation	Moderate long-term direct and indirect adverse impacts
4.16.4: Construction and management of Phase 2 Expansion components would contribute to adverse cumulative impacts to cultural and/or paleontological resources.	1A	Less than Significant with Mitigation	Major long-term direct and indirect cumulative impacts
	1B	Less than Significant with Mitigation	Major long-term direct and indirect cumulative impacts
	2A	Less than Significant with Mitigation	Major long-term direct and indirect cumulative impacts
	4A	Less than Significant with Mitigation	Moderate long-term direct and indirect cumulative impacts
Socioeconomic Effects			
4.17.1: Phase 2 Expansion construction could temporarily generate new income and local employment that could benefit Contra Costa County's economy.	1A	Beneficial	Minor long-term direct and indirect beneficial effect
	1B	Beneficial	Minor long-term direct and indirect beneficial effect
	2A	Beneficial	Minor long-term direct and indirect beneficial effect
	4A	Beneficial	Minor long-term direct and indirect beneficial effect
4.17.2: Loss of agricultural land use associated with Phase 2 Expansion construction and development could affect Contra Costa County and Alameda County's economy.	1A	Less than Significant	Minor short-term direct adverse impact
	1B	Less than Significant	Minor short-term direct adverse impact
	2A	Less than Significant	Minor short-term direct adverse impact
	4A	Less than Significant	Minor short-term direct adverse impact
4.17.3: Short-term loss of recreation income associated with Phase 2 Expansion construction could affect Contra Costa County's economy.	1A	Less than Significant	Negligible short-term direct adverse impact
	1B	Less than Significant	Negligible short-term direct adverse impact
	2A	Less than Significant	Negligible short-term direct adverse impact
	4A	No Impact	No Impact
4.17.4: Construction of the Phase 2 Expansion alternatives, when combined with construction of other future projects, could have a potentially beneficial effect on income and local employment.	1A	Beneficial	Minor long-term cumulative beneficial impact
	1B	Beneficial	Minor long-term cumulative beneficial impact
	2A	Beneficial	Minor long-term cumulative beneficial impact
	4A	Beneficial	Minor long-term cumulative beneficial impact

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Socioeconomic Effects (cont.)			
4.17.5: Construction of the Phase 2 Expansion alternatives, when combined with construction of other future projects, could have a potential cumulative effect on Contra Costa County's economy as a result of permanent loss of agricultural land uses.	1A	Less than Significant	Negligible long-term direct adverse cumulative impact
	1B	Less than Significant	Negligible long-term direct adverse cumulative impact
	2A	Less than Significant	Negligible long-term direct adverse cumulative impact
	4A	Less than Significant	Negligible long-term direct adverse cumulative impact
4.17.6 Construction of the Phase 2 Expansion alternatives, when combined with construction of other future projects, could have a potential cumulative effect on Contra Costa County's economy as a result of temporary recreational impacts.	1A	Less than Significant	Minor short-term direct adverse impact
	1B	Less than Significant	Minor short-term direct adverse impact
	2A	Less than Significant	Minor short-term direct adverse impact
	4A	No Impact[5]	No Impact
Environmental Justice			
4.18.1: Construction and operation of the project alternatives would result in air quality, noise, and/or other environmental impacts related to traffic and other construction activities that would not disproportionately affect nearby minority and/or low-income communities.	1A	Less than Significant with Mitigation	Minor short-term direct adverse impact relating to air pollutant emissions (Pumping Plant #1 Replacement); no long-term impacts
	1B	Less than Significant with Mitigation	Minor short-term direct adverse impact relating to air pollutant emissions (Pumping Plant #1 Replacement); no long-term impacts
	2A	Less than Significant with Mitigation	Minor short-term direct adverse impact relating to air pollutant emissions (Pumping Plant #1 Replacement); no long-term impacts
	4A	Less than Significant with Mitigation	Minor short-term direct adverse impact relating to air pollutant emissions (Pumping Plant #1 Replacement); no long-term impacts
4.18.2: Construction and operation of the project alternatives would not disproportionately affect local employment opportunities for minority and/or low-income communities in the vicinity of the project.	1A	No Impact	No Impact
	1B	No Impact	No Impact
	2A	No Impact	No Impact
	4A	No Impact	No Impact

[5] As described in Impact 4.17.6 in Section 4.17, the Total Project contribution to cumulative impacts on the economy as a result of recreational impacts under Alternative 4A is less than significant as a result of the effect that already occurred during Phase 1 implementation. The Phase 1 impact, and thus the Total Project impact, represent a minor short-term direct adverse contribution to cumulative impacts on the economy.

TABLE D-1 (CONTINUED)
NEPA CONTEXT AND INTENSITY STATEMENTS

Impact	Alternative	Chapter 4 CEQA/NEPA Impact Determination	NEPA Context and Intensity Statement
Environmental Justice (cont.)			
4.18.3: Construction and operation of the project alternatives when combined with construction of other past, present, and probable future projects, would result in air quality, noise, and/or other environmental impacts related to traffic and other construction activities that would not disproportionately affect nearby minority and/or low-income communities.	1A	Less than Significant	Negligible short- and long-term cumulative adverse impacts
	1B	Less than Significant	Negligible short- and long-term cumulative adverse impacts
	2A	Less than Significant	Negligible short- and long-term cumulative adverse impacts
	4A	Less than Significant	Negligible short- and long-term cumulative adverse impacts
4.18.4: Construction and operation of the project alternatives, when combined with construction of other past, present, and probable future projects, would not disproportionately affect local employment opportunities for minority and/or low-income communities in the vicinity of the project.	1A	No Impact	No Impact
	1B	No Impact	No Impact
	2A	No Impact	No Impact
	4A	No Impact	No Impact

APPENDIX E

Los Vaqueros Reservoir Expansion Project Draft Supplement to the Final EIS/EIR – Draft Mitigation Monitoring and Reporting Program

E.1 Introduction

Section 21081.6 of the California Public Resources Code and Sections 15091(d) and 15097 of the State CEQA Guidelines require public agencies "to adopt a reporting or monitoring program for changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment." A Mitigation Monitoring and Reporting Project (MMRP) is required for the Project because the Supplement to the Final EIS/EIR for the Project identified potentially significant adverse impacts related to construction and implementation activities, and mitigation measures have been identified to reduce those impacts.

The mitigation measures relevant to Phase 1 of the project (expansion to 160 TAF) were adopted in a Mitigation Monitoring and Reporting Program (MMRP). Where these adopted mitigation measures are relevant to the Phase 2 Expansion with no revisions necessary, they are repeated below. In addition, mitigation measures described in the Final EIS/EIR but not adopted in the MMRP (e.g., because they were relevant only to components of the expansion to 275 TAF and not to 160 TAF), that are now considered relevant, as well as new mitigation measures required for components not previously analyzed, are listed below.

E.2 Purpose of the Draft MMRP

This draft MMRP has been prepared as part of the Supplement to the Final EIS/EIR, to collectively present measures adopted as part of Phase 1 of the project and applicable to Phase 2, as well as new or modified measures that apply to Phase 2 only. Should Phase 2 of the project be implemented, this draft MMRP would be completed to ensure that all required mitigation measures are implemented and completed according to schedule and maintained in a satisfactory manner during project design, construction, and implementation, as required. The MMRP may be modified by CCWD during project implementation, as necessary, in response to changing conditions or other refinements. A summary table (attached) has been prepared to assist the responsible parties in implementing the MMRP. The table identifies individual mitigation measures, and to the extent known at this time, the entity responsible for implementing each measure, the timing of implementation, and a record of implementation of the mitigation

measures. This table will be input into the Environmental Commitments database that will be used to track all mitigation and permit conditions for the Project. The numbering of mitigation measures follows the numbering sequence found in the EIS/EIR. CCWD's monitoring and reporting procedures, applicable to the program as a whole, are described below.

E.3 Roles and Responsibilities

Unless otherwise specified herein, CCWD would be responsible for taking all actions necessary to implement the mitigation measures according to the specifications provided for each measure and for demonstrating that the action has been successfully completed. CCWD at its discretion may delegate implementation responsibility or portions thereof to a licensed contractor.

CCWD would be responsible for overall administration of the MMRP and for verifying that CCWD staff or a qualified construction contractor has completed the necessary actions for each measure. CCWD will designate a project manager to oversee the MMRP during the construction period. Duties of the project manager include the following:

1. Ensure that routine inspections of the construction site are conducted by appropriate CCWD staff; and check plans, reports, and other documents required by the MMRP.

2. Serve as a liaison between CCWD and the construction contractor regarding the mitigation monitoring issues.

3. Complete forms and maintain records and documents required by the MMRP.

4. Coordinate and ensure that corrective actions or enforcement measures are taken, if necessary.

Monitoring and reporting requirements for mitigation measures that extend beyond the construction period would be overseen by the CCWD Watershed and Lands Manager or his designee.

E.4 Draft MMRP Summary Table

The Draft MMRP Summary Table that follows will guide CCWD in its monitoring and reporting of the mitigation implementation. The column categories identified in the MMRP Summary Table are described below:

1. **Mitigation Measure:** Provides the number and text of the mitigation measures, which are each a condition of project approval, identified in the EIS/EIR.

2. **Implementation Responsibility:** Identifies the entity responsible for complying with the requirements of each mitigation measure.

3. **Timing/Schedule:** Lists the timeframe for complying with the requirements of each mitigation measure.

4. **Record of Implementation:** Provides space to record the action taken and the date the action was taken to implement each mitigation measure.

TABLE E-1
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Local Hydrology, Drainage, and Groundwater			
Measure 4.5.1a: Prepare and Implement a Stormwater Pollution Prevention Plan that Minimizes the Potential Contamination of Surface Waters (SWPPP), and Complies with Regional Water Quality Control Board Requirements (RWQCB) to Protect Water Quality CCWD shall ensure that a Storm Water Pollution Prevention Plan (SWPPP) is prepared in accordance with the requirements of the RWQCB's NPDES General Construction Permit requirements. The SWPPP will be designed to identify and control pollutant sources that could affect the quality of stormwater discharges from the construction sites through the development of best management practices (BMPs). BMPs will include those that effectively target pollutants in stormwater discharges to prevent or minimize the introduction of contaminants into surface waters. To protect receiving water quality, the BMPs will include, but are not limited to, the following: 1. Temporary erosion control measures (fiber rolls, staked straw bales, detention basins, check dams, geofabric, sandbag dikes, or temporary revegetation or other ground cover) will be employed for disturbed areas. 2. No disturbed surfaces will be left without erosion control measures in place during the winter and spring months. 3. Sediment will be retained onsite by a system of sediment basins, traps, or other appropriate measures. 4. The construction contractor will prepare standard operating procedures for the handling of hazardous materials on the construction site to prevent discharge of materials to stream or storm drains. This will include the contractor establishing specific fueling areas for construction vehicles and equipment located at least 200 feet from drainages. Grading areas must be clearly marked and equipment and vehicles must remain within graded areas. The contractor will also identify and implement as appropriate specific procedures for handling and containment of hazardous materials, including catch basins and absorbent pads. 5. Wherever construction work is performed near a creek, reservoir, or drainage area (excluding work that is permitted for working in the drainage itself), a 100-foot vegetative or engineered buffer will be maintained between the construction zone and surface water body. Specific water bodies to be protected through implementation of this BMP include but are not limited to: Los Vaqueros Reservoir, Kellogg Creek, and/or other seasonal drainages. 6. Native and annual grasses or other vegetative cover will be established on construction sites immediately upon completion of work causing disturbance.	CCWD and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Local Hydrology, Drainage and Groundwater (cont.)			
Measure 4.5.1b: Treat and Discharge Groundwater Extracted During Construction to Comply with the Requirements of RWQCB Order No. 5-00- 175 and the SWPPP If groundwater cannot be contained onsite during construction, CCWD shall ensure that the water is pumped into multiple Baker tanks or approved equivalent with either a filter or gel coagulant system or other containment to remove sediment. The remaining water will then be discharged to a designated receiving water body or via land application in accordance with the requirements of RWQCB Order No. 5-00-175. On upland areas, sprinkler systems may be used to disperse the water in support of revegetation efforts. BMPs, as described in the SWPPP, will also be implemented to retain, treat, and dispose of groundwater. Measures will include but are not limited to: 1. Retaining pumped groundwater in surface facilities to reduce turbidity and suspended sediment concentrations; 2. Treating (i.e., flocculating) pumped groundwater to reduce turbidity and concentrations of suspended sediments if turbidity exceeds RWQCB effluent limitations as defined in General Order 5-00-175; 3. Directly conveying pumped groundwater to a suitable land disposal area capable of percolating flows; 4. If contamination is suspected, water collected during dewatering will be tested for contamination prior to disposal; 5. Discharges will comply with the RWQCB's requirements.	CCWD and construction contractor(s)	During construction	Date: _____ Action Taken:
Measure 4.5.2: CCWD and EBMUD shall design facilities with introduced impervious surfaces with stormwater control measures that are consistent with the Regional Water Quality Control Board's NPDES municipal stormwater runoff requirements. The stormwater control measures shall be designed and implemented to reduce the discharge of stormwater pollutants through such features as bioretention facilities, flow-through planters, detention basins, vegetative swales, covering pollutant sources, oil/water separators, retention ponds, etc. As required, CCWD and EBMUD shall prepare and implement a Stormwater Facility Operation and Management Plan that assigns responsibility for maintenance of stormwater facilities for the life of the project.	CCWD and EBMUD and their respective contractor(s)	Prior to construction of facilities with introduced impervious surfaces	Date: _____ Action Taken:
Biological Resources			
Comprehensive Biological Resources Mitigation and Compensation Program This mitigation program, governing all mitigation measures that include habitat compensation lands, is described at Volume 2, pages 4.6-178 through 4.6-188 of the Final EIS/EIR. The program includes a summary of impacts, habitat compensation required, the principles that will guide the acquisition program and findings regarding the availability of suitable lands to meet the mitigation requirements for habitat compensation.	CCWD	Compensation land shall be designated and management activities shall commence prior to construction on, or inundation of, the specific habitat for which the compensation is being provided	See measures for specific habitats below

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
Measure 4.6.1a: Implement Avoidance and Minimization Measures to Minimize Impacts to Sensitive Plant Communities Based on the documented distribution of sensitive plant communities, CCWD shall implement avoidance and minimization measures to minimize impacts on sensitive plant communities during project construction. To the extent feasible, project design shall minimize impacts on sensitive plant communities. Exclusion and/or silt fencing shall be installed to buffer avoided areas.	CCWD and construction contractor(s)	Prior to and during construction at each work site	Date: _____ Action Taken:
Measure 4.6.1b: Provide Compensation Through Habitat Creation where Avoidance of Sensitive Plant Communities is Not Possible Where avoidance of sensitive plant communities is not possible, CCWD shall provide compensation through habitat creation, enhancement, and preservation, both within and outside the watershed, for temporary and permanent impacts on the following sensitive plant communities that will be affected by the project: *Natural Seasonal Wetland (Bulrush-cattail Series and Saltgrass Series)* 1. CCWD shall implement Mitigation Measure 4.6.2, presented below, to minimize, and compensate for impacts to sensitive plant communities associated with jurisdictional wetlands and other waters of the United States. *Valley Oak, Blue Oak Woodlands, and Fremont Cottonwood Series* 1. CCWD shall develop an oak woodland mitigation and monitoring plan to outline mitigation and monitoring obligations for impacts resulting from increased reservoir levels and construction activities. This plan shall include restoration, enhancement, and/or preservation sites; thresholds of success; monitoring and reporting requirements; site-specific designs for site restoration/enhancement activities; and long-term maintenance activities as set forth in the following bullets. 2. Under the oak woodland mitigation and monitoring plan, CCWD shall acquire or dedicate land suitable for blue oak woodland and riparian woodland (valley oak and Fremont cottonwood series) restoration, enhancement, and preservation. If restoration is feasible, then a ratio of at least 2:1 shall be used. If preservation (with enhancement) is used, at least a 3:1 ratio shall be implemented to offset losses. 3. Due to the limited availability of suitable mitigation lands in the watershed, CCWD shall purchase blue oak mitigation lands outside of the watershed. 4. CCWD shall coordinate acquisition of woodland mitigation lands with USFWS to minimize potential conflicts with regional San Joaquin kit fox planning efforts, which seek to maintain open grasslands movement corridors. 5. CCWD shall submit the mitigation and monitoring plan to the appropriate regulatory agencies for approval.	CCWD and construction contractor(s)	Compensation land shall be designated and management activities shall commence prior to construction on, or inundation of, the existing sensitive plant community site for which the compensation is being provided	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
Purple Needlegrass Grasslands 1. CCWD shall seed disturbed areas within this habitat area with native grass seed collected within or in the vicinity of impacts. Additional seed could be used to supplement seed mixes, but seed shall be from locally collected (within the ecoregion) source material and shall be appropriately selected for site conditions. 2. Consistent with MSCS guidance (CALFED, 2000) and coordination with CDFG and USFWS, mitigation for loss of this plant community shall be provided by preservation and enhancement of mitigation lands at a minimum of a 2:1 mitigation ratio to compensate for permanent losses. 3. CCWD shall develop and implement a native grassland restoration and enhancement plan to identify potential seed collection sites, quantities of seed required, potential enhancement areas within the Los Vaqueros Watershed, potential enhancement activities, and other measures required to maintain the sustainability of native grassland restoration and enhancement areas.			
Measure 4.6.2a: Avoid and Minimize the Fill of Wetlands and Other Waters Final project design shall avoid and minimize the fill of wetlands and other waters to the greatest practicable extent. No access vaults would be installed within the jurisdictional drainages that occur along any pipeline corridors. Areas that are avoided shall be subject to best management practices under the General National Pollutant Discharge Elimination System Permit, as described in Measure 4.5.1.	CCWD and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:
Measure 4.6.2b: Provide Restoration and Compensation Where Avoidance of Jurisdictional Wetlands and Other Waters is Not Possible Where jurisdictional wetlands and other waters cannot be avoided, to offset temporary and permanent impacts that would occur as a result of the project, restoration and compensatory mitigation shall be provided through the following mechanisms: 1. Purchase or dedication of land to provide wetland preservation, restoration or creation. If restoration is available and feasible, then a ratio of at least 2:1 shall be used. If a wetland needs to be created, at least a 3:1 ratio shall be implemented to offset losses. Where practical and feasible, onsite mitigation shall be implemented. 2. A wetland mitigation and monitoring plan shall be developed by a qualified biologist in coordination with CDFG, USFWS, USACE, and/or RWQCB that details mitigation and monitoring obligations for temporary and permanent impacts to wetlands and other waters as a result of construction activities. The plan shall quantify the total acreage lost, describe mitigation ratios for lost habitat, annual success criteria, mitigation sites, monitoring and reporting requirements, and site specific plans to compensate for wetland losses resulting from the project. 3. The wetland mitigation and monitoring plan shall be submitted to the appropriate regulatory agencies for approval.	CCWD and a qualified biologist	Compensation land shall be designated and management activities shall commence prior to construction on, or inundation of, the existing wetland or water for which the compensation is being provided	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
Measure 4.6.3a: Design Facilities to Avoid Sensitive Plant Populations and Implement Protection Measures During Construction To the extent feasible, the final project design shall minimize impacts on known special-status plant populations within and next to the construction footprints. CCWD and its contractors will design facilities to avoid sensitive plant populations whenever feasible, and shall install exclusion fencing and/or silt fencing around sensitive plant populations with as large a buffer as possible to minimize the potential for direct and indirect impacts such as fugitive dust and accidental intrusion into sensitive areas. Dust and erosion control measures are described in Measure 4.5.1.	CCWD, a qualified biologist, and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:
Measure 4.6.3b: Develop and Implement a Restoration and Mitigation Plan to Provide Compensation for the Loss of Brewer's Dwarf-Flax Where avoidance is not feasible, CCWD shall compensate for the loss of Brewer's dwarf-flax through the following steps: 1. A qualified ecologist shall develop and implement a restoration and mitigation plan according to CDFG guidelines and in coordination with CDFG and USFWS. At a minimum, the plan shall include collection of reproductive structures from affected plants, a full description of microhabitat conditions necessary, seed germination requirements, restoration techniques for temporarily disturbed occurrences, assessments of potential transplant and enhancement sites, success and performance criteria, and monitoring programs, as well as measures to ensure long-term sustainability. 2. Land that supports known populations of affected Brewer's dwarf-flax shall be identified, enhanced, and protected within the watershed or acquired outside of the watershed at a ratio of 1.1:1 and protected in perpetuity with conservation easements.	CCWD and a qualified ecologist	Compensation land shall be designated and management activities shall commence prior to construction on the Brewer's dwarf-flax site for which the compensation is being provided	Date: _____ Action Taken:
Measure 4.6.4a: Conduct Surveys and Implement Protective Measures, if needed, to Minimize Potential Effects on California red-legged frog and California tiger salamander CCWD shall implement measures to minimize and avoid take of California red- legged frogs and California tiger salamanders. Before and during construction, the following actions shall minimize impacts on these species: 1. CCWD shall submit the name and credentials of a biologist qualified to act as construction monitor to USFWS for approval at least 15 days before construction work begins. General minimum qualifications are a 4-year degree in biological sciences or other appropriate training and/or experience in surveying, identifying, and handling California tiger salamanders and California red-legged frogs. 2. A USFWS-approved biologist shall survey the work sites 2 weeks before the onset of construction. If California tiger salamanders or California red-legged frogs (or their tadpoles or eggs) are found, the approved biologist shall contact USFWS to determine whether moving any of these life-stages is appropriate. If USFWS approves moving the animals, the approved	CCWD, a qualified biologist, and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
biologist shall be allowed sufficient time to move frogs and/or salamanders from the work sites before work begins. If these species are not identified, construction can proceed at these sites. The approved biologist shall use professional judgment to determine whether (and if so, when) the California tiger salamanders and/or California red-legged frogs are to be moved. The USFWS-approved biologist shall immediately inform the construction manager that work should be halted, if necessary, to avert avoidable take of listed species. 3. Areas will be monitored during construction to identify, capture, and relocate sensitive amphibians, if present. 4. A detailed California red-legged frog/California tiger salamander relocation plan will be prepared at least 3 weeks before the start of groundbreaking, and submitted to USFWS for review. The purpose of the plan is to standardize amphibian relocation methods and relocation sites. 5. A USFWS-approved biologist shall be present at the active work sites until California red-legged frogs and California tiger salamanders have been removed, and habitat disturbance has been completed. Thereafter, the contractor or CCWD shall designate a person to monitor onsite compliance with all minimization measures. A USFWS-approved biologist shall ensure that this individual receives training consistent with USFWS requirements. 6. CCWD and its contractors shall initiate all work within potential California red-legged frog aquatic breeding habitat between May 1 and November 1 (i.e., generally identified as the nonbreeding season). Project construction timing constraints are summarized in Section 4.6.3. 7. CCWD and its contractors shall install frog-exclusion fencing (i.e., silt fences) around all construction areas that are within 100 feet of potential California red-legged frog or California tiger salamander aquatic breeding habitat. 8. A USFWS-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include a description of the California red-legged frog and California tiger salamander and their habitat, the importance of these species and their habitat, the general measures that are being implemented to conserve the red-legged frog and tiger salamander as they relate to the project, and the boundaries within which the project construction shall occur. 9. During work activities, all trash that may attract predators shall be properly contained, removed from the work site, and disposed of regularly. After construction, the contractor shall remove all trash and construction debris from work areas on a daily basis. 10. All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 20 meters (65.6 feet) from any riparian habitat or water body. 11. Before the onset of work, CCWD shall prepare a stormwater pollution prevention plan and water pollution control plan as described in Measures 4.5.1a and 4.5.1b to allow prompt and effective response to any accidental spills.			

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
12. Before construction begins, CCWD shall prepare a plan describing pre- project conditions, restoration, and monitoring success criteria. CCWD or its contractors shall restore the contours and revegetate all areas disturbed by the project with an appropriate assemblage of native vegetation suitable to the area. 13. Where needed to maintain California red-legged frog and/or California tiger salamander breeding in existing mitigation wetlands that are presently supplemented with water, but are not directly disrupted by construction, CCWD shall continue to provide supplemental water to these ponds during and after construction according to the existing terms and conditions for these mitigation sites.			
Measure 4.6.4b: Provide Compensation for Permanent and Temporary Impacts on California tiger salamander and California red-legged frog CCWD shall provide compensation for permanent and temporary impacts on California tiger salamander and California red-legged frog aquatic habitat. In accordance with MSCS (CALFED, 2000) objectives, CCWD shall provide compensation for the permanent loss of California red-legged frog and California tiger salamander aquatic habitat at a minimum of a 3:1 ratio. The MSCS does not require compensation for loss of California red-legged frog and California tiger salamander aestivation habitat. To satisfy compensation guidelines, CCWD shall implement the following measures: 1. CCWD shall mitigate for the loss of aquatic breeding sites that will be filled or otherwise directly affected by the project (number to be confirmed by pre- construction surveys) as well as mitigate for impacts on associated California red-legged frog upland habitat by providing compensatory habitat. 2. CCWD shall develop and implement a mitigation, monitoring, and management plan, with input from regulatory agencies that shall outline long-term management strategies and performance standards to be attained to compensate for habitat losses resulting from the project. At a minimum, the plan shall include standards for mitigation site selection and construction specifications for mitigation sites, a description of site conditions including aerial maps, an analysis of local amphibian habitat (e.g., is another breeding habitat nearby?), and performance criteria by which site quality can be assessed over time (see below). A monitoring program shall be established to track the development of habitat conditions that are conducive to the establishment of the California red-legged frog and/or California tiger salamander breeding populations. Long-term monitoring (e.g., night surveys and aquatic dipnet surveys) shall be performed on an annual basis to determine if these species are present. The plan shall provide that monitoring be performed to ensure that mitigation ponds that are dependent upon artificial water function as designed. 3. Performance criteria shall be used to assess the success of aquatic habitat created for California red-legged frogs and California tiger salamander aquatic habitat. These criteria shall be outlined in the mitigation, monitoring and management plan and shall include:	CCWD and construction contractor(s)	Compensation land shall be designated and management activities shall commence prior to construction on, or inundation of, the existing aquatic habitat site for which the compensation is being provided	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
a. A description of the type of habitat to be created (e.g., permanent marsh consisting of open water and emergent vegetation; semipermanent marsh); b. The total area, size and number of California red-legged frog and California tiger salamander mitigation ponds to be created based on a comparable loss of breeding sites (e.g., 1:1 replacement ratio) as a result of the project. These ponds shall concurrently satisfy wetland mitigation requirements identified in Measure 4.6.2b;[1] c. Constructed permanent marsh ponds that are designed to support California red-legged frog breeding shall provide: i. at least 75% absolute vegetation cover of wetland plant species within shallow water emergent vegetation zones; ii. year-round inundation with depths of at least 1.5 feet in the vegetation zone and 4 feet in open water. d. Constructed semipermanent marsh ponds that are designed to support California tiger salamander or California red-legged frog breeding habitat shall provide: i. water regimes similar to affected features, with semi- permanent water ranging from depths of 1.5 to 2.5 feet or greater during a typical rainfall year and an inundation period that exceeds 120 consecutive days; a predominance of seasonal wetland plants (at least 75% absolute vegetation cover) during the winter/spring monitoring period (though may support upland species later in the year when pools dry). 4. To the greatest practicable extent, CCWD or its contractors shall construct and manage compensation habitat (i.e., replacement ponds) for California red-legged frogs and California tiger salamanders prior to project implementation. A qualified biologist shall ensure that ponds are functioning before the removal and/or inundation of existing California tiger salamander and California red-legged frog aquatic breeding sites. 5. Construction within the Kellogg Creek corridor (i.e., creek crossing sites) shall be designed to impact the smallest area required to provide for the installation of pipelines, particularly in the area below Los Vaqueros Dam. 6. CCWD and its contractors shall restore and enhance Kellogg Creek and adjacent natural upland environs in the project area (about 4.0 linear miles) to restore suitable aquatic breeding habitat for California red-legged frogs and restore disturbed upland areas as close as possible to pre-project conditions. Methods of enhancement and restoration could include, but are not limited to, reducing erosion; installing breeding ponds; excluding cattle from sensitive areas; and managing, salvaging, and seeding with grasses, forbs, and other species that are native to the site, as well as other measures to increase water quality within the enhancement and restoration reach.			

NOTE:
[1] Note that final mitigation acreage requirements and compensation ratios may be adjusted by the USFWS or USACE based on actual wetland impacts, which will be identified during the permitting process.

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
New mitigation ponds that are created for California red-legged frog and California tiger salamander shall be hydrologically self-sustaining and shall not require a supplemental water supply. Because few natural drainages in the Los Vaqueros Watershed could maintain self-sustaining mitigation ponds, a portion of the pond mitigation locations will likely be identified outside of the watershed.			
Measure 4.6.5: Conduct Surveys and Implement Protective Measures to Minimize Potential Effects on Western Pond Turtle Before construction activities begin, a qualified biologist shall conduct western pond turtle surveys within creeks and in other ponded areas affected by the project. Upland areas shall also be examined for evidence of nests as well as individual turtles. The project biologist shall be responsible for the survey and for the relocation of turtles. Construction shall not proceed until a reasonable effort has been made to capture and relocate as many western pond turtles as possible to minimize take. However, some individuals may be undetected or enter sites after surveys, and would be subject to mortality. If a nest is observed, a biologist with the appropriate permits and prior approval from CDFG shall move eggs to a suitable location or facility for incubation, and release hatchlings into the creek system the following autumn. In addition, concurrent with mitigation commitments to create and enhance aquatic sites for California red-legged frog (Measure 4.6.4b), CCWD shall include habitat elements in the aquatic habitat and tiger salamander plan that benefit western pond turtle. Such elements may include logs or rafts for emergent basking sites where needed and the maintenance of upland areas adjacent to ponds in a relatively open condition.	CCWD and a qualified biologist	Prior to construction	Date: _____ Action Taken:
Measure 4.6.6a: CCWD shall assume the presence of listed vernal pool branchiopods in all suitable habitat for which CCWD chooses not to perform protocol-level surveys. Preliminary branchiopod surveys have documented the general distribution of and habitat for vernal pool fairy shrimp in the project area. Longhorn fairy shrimp are not expected in the project areas based on this species' narrow habitat requirements, restricted range, and available habitat. CCWD shall minimize impacts on listed vernal pool branchiopods. To avoid and minimize direct and indirect impacts on listed vernal pool branchiopods, standard water quality protection measures shall be implemented as established in Mitigation Measure 4.5.1. Additional measures to minimize and avoid habitat for listed vernal pool branchiopods shall be implemented as required by USFWS and include: 1. Avoidance of potential habitat by narrowing work corridors near potential vernal pool branchiopod habitat to the greatest extent practicable. 2. Establishment of 250-foot buffers around potential branchiopod habitat, which is a typical avoidance distance that is recommended by the USFWS to minimize and avoid direct and indirect impacts.	CCWD and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
For the Kellogg Creek vernal pool complex the following protection measures shall be implemented: 1. Land uses in the easternmost portion of the Los Vaqueros Watershed shall remain restricted to activities associated with wind energy generation, dry-land farming, grazing, and administration by CCWD. 2. East of Los Vaqueros Reservoir, public access shall be restricted from CDFW conservation easement lands at the Kellogg Creek vernal pool complex and lands within 500 feet. Public access shall be restricted to research and occasional educational activities conducted under the supervision of CCWD staff or other designated land management agencies. 3. The eastside trail and other public access trails located in proximity to the vernal pool complex shall be 500 feet or farther from the CDFW conservation easement and beyond direct line of sight to rock outcrop features. 4. The eastern boundary of the public access area shall be fenced to prevent human access to the vernal pool complex and this fence and the Kellogg Creek vernal pools area shall be patrolled to ensure that no trespassing happens and that the fence remains intact. 5. Before opening the eastside trail to public access, a biological evaluation shall be prepared by CCWD that establishes baseline environmental conditions at the vernal pool complex. Elements to be assessed include signs of trespass (e.g., trash, fires, site trampling, wear marks, rocks or other features in pools, or bicycle tire tracks), an evaluation of water quality during winter months to include at a minimum total dissolved solids, pH, and alkalinity, and documentation of any site damage. These conditions will be used as a basis for later site evaluations. An assessment of branchiopod populations shall also be provided as a component of the baseline evaluation. 6. If excessive trespass, defined here as noticeable site deterioration relative to baseline conditions, is identified at the vernal pool complex CCWD shall immediately coordinate with USFWS. If site damage is identified, corrective remedies shall be implemented to prevent further harm to the complex. Such actions may include removing trash or debris from the complex, closing portions of the eastside trail to public access, enhancing site fencing, or other remedies to prevent trespass. 7. While the eastside trail remains open to public access, annual reports shall be prepared to document site conditions relative to baseline conditions. 8. Permanent signage shall be installed within 50 feet of the Kellogg Creek vernal pool complex (or on the surrounding fence) that specifies that, “This area is habitat of the vernal pool fairy shrimp, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment. 9. A USFWS-approved construction monitor shall be present during construction within 0.5 mile of the Kellogg Creek vernal pool complex, as identified in the 1995 BO (USFWS, 1995).			

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
Measure 4.6.6b: CCWD shall mitigate for impacts to vernal pool fairy shrimp habitat through one or more of the following steps to provide compensatory habitat: (a) salvage of cysts and creation of replacement pool habitat in the local area at a replacement ratio of at least 3:1, (b) restoration of affected pools onsite after construction completion, or (c) acquisition of credits from a local mitigation bank(s). To mitigate for the loss of aquatic sites on the Delta-Transfer Pipeline and Transfer-Bethany Pipeline alignments where vernal pool branchiopods are presumed present, CCWD shall implement the following measures: 1. CCWD shall mitigate for the loss of branchiopod habitat that will be filled or otherwise directly affected by the project (estimated to be 17 pools) by providing compensatory habitat. 2. For portions of the Transfer-Bethany Pipeline alignment near Byron Airport (e.g., adjacent to Wildlands' Byron Conservation Bank and Contra Costa County lands at Byron Airport) that support vernal pools, CCWD shall conduct a preconstruction land survey of the pipeline construction area to document current conditions of topography and existing drainage patterns, and to document shallow soil lithology within the construction area footprint as a baseline for restoring vernal pool hydrology following construction. In areas where claypan soils are encountered within critical habitat for vernal pool fairy shrimp (and Contra Costa goldfields) the upper clay soil layer shall be locally stockpiled and reestablished in place following pipeline installation. Upon completion of construction activities, final grading shall be completed to maintain surface flow conditions, local hydrology and similar compaction of surface soils to that of the documented current conditions prior to construction activities. 3. CCWD shall develop and implement a mitigation, monitoring, and management plan, with input from regulatory agencies that shall outline long-term management strategies and performance standards to be attained to compensate for habitat losses resulting from the project. At a minimum, the plan shall include standards for mitigation site selection and construction specifications for mitigation sites, a description of site conditions including aerial maps, an analysis of local branchiopod habitat, and performance criteria by which site quality can be assessed over time (e.g., size, vegetation species present, date of initial ponding, ponding duration, and wildlife usage). A monitoring program will be established to track the development of habitat conditions that are conducive to the establishment of vernal pool branchiopods. 4. To the greatest practicable extent, CCWD or its contractors shall construct compensation habitat (i.e., replacement pools) before habitat disturbances are incurred; or directly within the project footprint after construction. A qualified biologist shall ensure that ponds are functioning as designed. 5. CCWD shall submit the name and credentials of a biologist qualified to act as construction monitor to USFWS for approval at least 15 days before construction work begins.	CCWD and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
6. With concurrence from the USFWS, a USFWS-approved biologist shall salvage soils from sites that are known to support vernal pool branchiopods at least 2 weeks before the onset of construction, or during the preceding dry season if pools are anticipated to hold water when construction begins. The salvaged soil samples will be stored and used to inoculate created pools once minimum performance standards are met at these locations. 7. A USFWS-approved biologist shall be present at each active work site within 0.5 mile of potential fairy shrimp habitat until habitat disturbance has been completed. Thereafter, the contractor or CCWD shall designate a person to monitor onsite compliance with all minimization measures. A USFWS-approved biologist shall ensure that this individual receives training consistent with USFWS requirements. 8. A USFWS-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include a description of the vernal pool fairy shrimp and their habitat, the importance of these species and their habitat, the general measures that are being implemented to conserve fairy shrimp as they relate to the project, and the boundaries within which the project construction shall occur. 9. All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 100 feet from any fairy shrimp habitat.			
Measure 4.6.7a: Implement Protection Measures to Minimize Impacts on San Joaquin Kit Fox Habitat and Potential Regional Movement Opportunities CCWD shall implement San Joaquin kit fox protection measures. The following measures, which are intended to reduce direct and indirect project impacts on San Joaquin kit foxes, are derived from the San Joaquin Kit Fox Survey Protocol for the Northern Range (USFWS, 1999a) and the Standardized Recommendations for Protection of the San Joaquin Kit Fox (USFWS, 1999b). These measures shall be implemented for construction areas along pipeline corridors, staging areas, and facilities within the watershed: 1. Preconstruction surveys shall be conducted within 200 feet of work areas to identify potential San Joaquin kit fox dens or other refugia in and surrounding workstations. A qualified biologist shall conduct the survey for potential kit fox dens 14 to 30 days before construction begins. All identified potential dens shall be monitored for evidence of kit fox use by placing an inert tracking medium at den entrances and monitoring for at least 3 consecutive nights. If no activity is detected at these den sites, they shall be closed following guidance established in USFWS Standardized Recommendations document. 2. If kit fox occupancy is determined at a given site, the construction manager should be immediately informed that work should be halted within 200 feet of the den and the USFWS contacted. Depending on the den type, reasonable and prudent measures to avoid effects to kit foxes could include seasonal limitations on project construction at the site (i.e., restricting the construction period to avoid spring-summer pupping season), and/or establishing a construction exclusion zone around the identified site, or resurveying the den a week later to determine species presence or absence.	CCWD, a qualified biologist and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
3. To minimize the possibility of inadvertent kit fox mortality, project-related vehicles shall observe a maximum 20 miles per hour speed limit on private roads in kit fox habitat. Nighttime vehicle traffic shall be kept to a minimum on nonmaintained roads. Off-road traffic outside the designated project area shall be prohibited in areas of kit fox habitat. 4. To prevent accidental entrapment of kit fox or other animals during construction, all excavated holes or trenches greater than 2 feet deep shall be covered at the end of each work day by suitable materials, fenced, or escape routes constructed of earthen materials or wooden planks shall be provided. Before filling, such holes shall be thoroughly inspected for trapped animals. 5. All food-related trash items (such as wrappers, cans, bottles, and food scraps) shall be disposed of in closed containers and removed daily from the project area. 6. To prevent harassment and mortality of kit foxes or destruction of their dens, no pets shall be allowed in the project area.			
Measure 4.6.7b: Provide Compensation for Affected Kit Fox Habitat Outside of Dedicated CDFG Conservation Easements To compensate for impacts on San Joaquin kit fox habitat outside of dedicated CDFG conservation easements, CCWD shall provide mitigation either through acquiring and dedicating lands into conservation easements or purchasing mitigation credits at compensation ratios that have been approved by state and federal resource agencies. Consistent with MSCS and USFWS guidance, mitigation ratios applied for impacts on San Joaquin kit fox habitat shall be 1:1 to 1.1:1 for temporary impacts; 1:1 to 2:1 for long-term temporary impacts; and 1:1 to 3:1 for permanent impacts. San Joaquin kit fox mitigation obligations may concurrently satisfy burrowing owl mitigation obligations identified in Mitigation Measure 4.6.8, below, if suitable habitat is present for both species in mitigation lands. The availability of mitigation lands to satisfy mitigation requirements for these species is discussed in the Comprehensive Biological Resources Mitigation and Compensation Program.	CCWD	Compensation land shall be designated and management activities shall commence prior to construction on, or inundation of, the kit fox habitat for which the compensation is being provided	Date: _____ Action Taken:
Measure 4.6.7c: Provide Compensation for Affected Acreage Within Existing Kit Fox Easement CCWD shall replace any acreage of existing kit fox easement affected by the project with an equivalent amount of acreage within the watershed to maintain under conservation easement the full amount required for the original Los Vaqueros Reservoir Expansion Project. In addition, CCWD shall provide compensation for conservation easement acreage affected at a ratio of up to 3:1, including conservation easement lands that are isolated by the project. Compensation for temporary impacts to lands within conservation easements shall be provided at a ratio of 1:1 to 1.1:1.	CCWD	Compensation land shall be designated and management activities shall commence prior to construction on, or inundation of, the kit fox habitat for which the compensation is being provided	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
Measure 4.6.8a: Conduct Surveys and Implement Protective Measures to Minimize Potential Effects on Burrowing Owl The implementation of Mitigation Measure 4.6.8a, which requires preconstruction surveys and protection measures to avoid burrowing owls during the breeding season, and Measure 4.6.8b, which includes the establishment of mitigation lands for loss of habitat as required by regulatory permits, would reduce potential impacts on burrowing owls to a less-than-significant level. CCWD shall implement the measures listed below for grassland habitats to reduce potential impacts to a less-than-significant-level and to avoid incidental take of burrowing owls. In advance of construction, CCWD shall follow the current CDFG burrowing owl survey guidance, presently the Burrowing Owl Consortium multi- phase approach to evaluate burrowing owl use. Measures shall apply to all construction activities near active nests or within potential burrowing owl nesting habitat, to avoid, minimize, or mitigate impacts on burrowing owls: *Breeding season surveys* shall be performed to determine the presence of burrowing owls for the purposes of inventory, monitoring, avoidance of take, and determining appropriate mitigation. In California the breeding season begins as early as February 1 and continues through August 31. Under the Burrowing Owl Consortium's multi-phase survey methodology, for areas within 500 feet of construction boundaries, CCWD shall: 1) perform a habitat assessment to identify essential components of burrowing owl habitat, including artificial nest features; 2) perform intensive burrow surveys in areas that are identified to provide suitable burrowing owl habitat, and; 3) perform at least four appropriately-timed breeding season surveys (four survey visits spread evenly [roughly every 3 weeks] during the peak of the breeding season, from April 15 to July 15) to document habitat use. *Pre-construction surveys* shall be used to assess the owl presence before site modification is scheduled to begin. Initial pre-construction surveys should be conducted outside of the owl breeding season (February 1–August 31), but as close as possible to the date that ground-disturbing activities will begin. Generally, initial pre-construction surveys should be conducted within 7 days, but no more than 30 days prior to ground-disturbing activities. Additional surveys may be required when the initial disturbance is followed by periods of inactivity or the development is phased spatially and/or temporally over the project area. Up to four or more survey visits performed on separate days may be required to assure with a high degree of certainty that site modification and grading will not take owls. The full extent of the pre-construction survey effort shall be described and mapped in detail (e.g., dates, time periods, area[s] covered, and methods employed) in a biological report that will provided for review to CDFG. In addition to the above survey requirements, the following measures shall be implemented to reduce project impacts to burrowing owls:	CCWD, a qualified biologist and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
1. Construction exclusion areas (e.g., orange exclusion fence or signage) shall be established around occupied burrows, where no disturbance shall be allowed. During the nonbreeding season (September 1 through January 31), the exclusion zone shall extend at least 160 feet around occupied burrows. During the breeding season (February 1 through August 31), exclusion areas shall extend 250 feet around occupied burrows (or farther if warranted to avoid nest abandonment). 2. If work or exclusion areas conflict with owl burrows, passive relocation of onsite owls could be implemented as an alternative, but only during the nonbreeding season and only with CDFG approval. The approach to owl relocation and burrow closure will vary depending on the number of occupied burrows. Passive relocation shall be accomplished by installing one-way doors on the entrances of burrows within 160 feet of the project area. The one-way doors shall be left in place for 48 hours to ensure the owls have left the burrow. The burrows shall then be excavated with a qualified biologist present. Construction shall not proceed until the project area is deemed free of owls. 3. Unoccupied burrows within the immediate construction area shall be excavated using hand tools, and then filled to prevent reoccupation. If any burrowing owls are discovered during the excavation, the excavation shall cease and the owl shall be allowed to escape. Excavation could be completed when the biological monitor confirms the burrow is empty. 4. Artificial nesting burrows will be provided as a temporary measure when natural burrows are lacking. To compensate for lost nest burrows, artificial burrows shall be provided outside the 160-foot buffer zone (CDFG, 1995). The alternate burrows shall be monitored daily for 7 days to confirm that the owls have moved in and acclimated to the new burrow.			
Measure 4.6.8b: Provide Compensation for Permanent Loss of Burrowing Owl Habitat CCWD shall compensate for permanent habitat losses at a minimum 2:1 ratio (possibly concurrent with other mitigation commitments, such as those for San Joaquin kit fox, provided habitat is present for both species). Compensation could consist of purchasing and enhancing suitable habitat, converting it to a conservation easement, and conveying the easement to a managing agency or institution in perpetuity; participating in a resource agency-approved mitigation bank that provides offset mitigation credits for loss of burrowing owl habitat; or a combination of both. Burrowing owl mitigation areas shall support burrowing owl populations in similar or greater densities to those on impacted burrowing owl habitat.	CCWD	Compensation land shall be designated and management activities shall commence, or mitigation credits shall be obtained, prior to construction on, or inundation of, the burrowing owl habitat site for which compensation is being provided	Date: _____ Action Taken:
Measure 4.6.9a: Conduct Surveys and Implement Protective Measures to Minimize Potential Effects on the Golden Eagle, Bald Eagle, and Swainson's Hawk CCWD shall ensure that nesting golden eagles, bald eagles, and Swainson's hawks are protected. The following measures address potential impacts on nesting golden eagles and Swainson's hawks in the project vicinity. Measures that pertain to golden eagles and their nests would apply to nesting bald eagles, were they found in the Los Vaqueros Watershed prior to construction.	CCWD, a qualified biologist and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
1. Whenever feasible, construction near recently active nest sites shall start outside the active nesting season. The nesting period for golden eagles is between March 1 and August 15. Bald eagles and Swainson's hawks nest between March 15 and August 15. 2. If groundbreaking activities begin during the nesting period, a qualified biologist shall perform a preconstruction survey 14 to 30 days before the start of each new construction phase to search for golden eagle and Swainson's hawk nest sites within 0.5 mile of proposed activities. If active nests are not identified, no further action is required and construction may proceed. If active nests are identified, the avoidance guidelines identified below shall be implemented. 3. For golden eagles, construction contractor(s) shall observe CDFG avoidance guidelines, which stipulate a minimum 500-foot buffer zone around active golden eagle nests. Buffer zones shall remain until young have fledged. For activities conducted with agency approval within this buffer zone, a qualified biologist shall monitor construction activities and the eagle nest(s) to monitor eagle reactions to activities. If activities are deemed to have a negative effect on nesting eagles, the biologist shall immediately inform the construction manager that work should be halted, and CDFG will be consulted. The resource agencies do not issue take authorization for this species. 4. If construction begins during the Swainson's hawk nesting period, a qualified biologist shall conduct preconstruction surveys at least 2 weeks prior to construction following CDFG guidance (e.g., CDFG, 2000) in areas that potentially provide nesting opportunities to verify species presence or absence. If the survey indicates presence of nesting Swainson's hawks within a 0.5-mile radius, the results shall be coordinated with CDFG to develop and implement suitable avoidance measures that include construction buffers and nest monitoring. 5. Consistent with the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California (CDFG, 1994), mitigation shall include the following approach: a. No intensive new disturbances or other project-related activities that could cause nest abandonment or forced fledging shall be initiated within 0.25 mile (buffer zone) of an active nest between March 15 and September 15. b. Nest trees shall not be removed unless no feasible avoidance exists. If a nest tree must be removed, CCWD shall obtain a management authorization (including conditions to offset the loss of the nest tree) from CDFG. The tree removal period specified in the management authorization is generally between October 1 and February 1. c. Monitoring of the nest by a qualified biologist may be required if the project-related activity has the potential to adversely impact the nest. 6. CDFG often allows construction activities that are initiated outside the nesting season to continue without cessation even if raptors such as golden eagles choose to nest within 500 feet of work activities. Thus, work at the dam construction site may continue without delay if surveys verify the local absence of nesting golden eagles, or if groundbreaking begins outside the nesting period (August 16 through February 28).			

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
7. After construction, CCWD shall survey for and monitor golden eagle and bald eagle nesting sites in the Los Vaqueros Watershed to ensure that recreational activity and other beneficial uses of the watershed do not disrupt eagle nest sites. Surveys will be performed at the beginning of the nesting season and continue through the nesting season. Consistent with present policy, recreational access and other disruptive activities will be suspended within 500 feet of active eagle nests until the young eagles have fledged.			
Measure 4.6.9b: Provide Restoration and Compensation for the Loss of Golden Eagle, Bald Eagle, and Swainson's Hawk Foraging Habitat CCWD shall acquire and/or restore foraging habitat for Swainson's hawks and golden eagles in accordance with CALFED and CDFG guidelines, set forth in Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California (CDFG, 1994), as follows: 1. Compensate for permanent foraging habitat losses (e.g., agricultural lands and annual grasslands) within 1 mile of active Swainson's hawk nests (acreage to be determined during preconstruction surveys) at a ratio of 1 acre of mitigation lands for each acre of permanent development (i.e., 1:1 replacement ratio). Foraging habitat impacts will be largely limited to valve structures (roughly 10-foot square) every few hundred feet along pipeline routes, with less than an acre of anticipated foraging habitat loss. 2. Consistent with MSCS guidance, impacts to golden eagle foraging habitat will be provided by enhancing or restoring foraging habitat at ratio from ratio of 1:1 to 5:1.	CCWD	Compensation land shall be designated and restoration activities shall commence prior to construction on the golden eagle, bald eagle or Swainson's hawk foraging habitat site for which compensation is being provided	Date: _____ Action Taken:
Measure 4.6.10a: Development and Implementation of An Alameda Whipsnake Protection and Monitoring Plan CCWD shall minimize and/or avoid construction-related impacts on Alameda whipsnakes through the development and implementation of an Alameda whipsnake protection and monitoring plan. USFWS shall approve this plan during formal consultation under FESA Section 7, and shall establish a program of preconstruction surveys and construction supervision to identify and prevent potential hazards to individual Alameda whipsnakes that could be present during construction. The plan shall prohibit or restrict activities that could harm or harass this species. Habitat restoration and compensation shall also be included in the plan. Measures in this plan shall include, but are not limited to, the following: 1. A description of the species habitat requirements and movement patterns applicable to the project area. 2. A procedure for conducting preconstruction surveys and/or trapping surveys before the onset of initial ground-disturbing activities in areas with high quality habitat, as well as monitoring to be conducted before construction and/or restoration begin each day that these activities shall occur.	CCWD, a qualified biologist and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
3. Direct monitoring by a qualified biologist of the clearing of occupied or potentially occupied coastal scrub in the project area that would be directly affected by project construction (not by inundation). Construction shall not proceed until areas have been surveyed to capture and relocate as many Alameda whipsnakes as reasonably possible to minimize take. However, some individuals may be undetected or move in following surveys and would be subject to take. 4. A protocol for the selection of USFWS-approved biological monitors who have experience with Alameda whipsnakes to monitor construction activities (such as initial clearing and grading, excavation, and the installation of silt fencing) within and next to Alameda whipsnake habitat. 5. Worker education materials and procedures for informing construction crews about the potential presence of Alameda whipsnakes, equipment operation procedures to minimize impacts to whipsnakes, responsibilities of project personnel (such as reporting observations of Alameda whipsnakes within or next to the construction area to the biological monitor), observing speed limits, avoiding use of the haul road until cleared by the biological monitor, and other measures to avoid mortality of whipsnakes during construction; and the role of the monitoring staff in advising construction crews of compliance with take-avoidance measures for Alameda whipsnakes, documenting compliance in monitoring reports, and notifying USFWS within 24 hours of observation of whipsnakes within or next to a construction area. 6. Limit stockpiling and staging activities and vehicle and equipment refueling and maintenance to occur in nonsensitive areas. 7. CCWD shall prepare and implement a revegetation plan that describes pre- project conditions and available habitats for Alameda whipsnakes, invasive species control measures, and restoration and monitoring success criteria for undeveloped areas disturbed during project construction. The plan will provide the basis for the reestablishment of scrub habitat in disturbed areas and mitigation sites, and will include at a minimum an identification of mitigation areas, site preparation requirements, specifications for planting and/or seeding (e.g., what species and how many plantings), seasonal considerations for planting and site maintenance, the proposed irrigation strategy, performance criteria (e.g., 70 percent survival of plantings 5 years following installation, and 70 percent of plants exhibiting fair or better condition), any contingency measures that may be anticipated, and a provision for semi-annual monitoring and reporting.			

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
Measure 4.6.10b: Provide Compensation for Loss of Upland Scrub Habitat That May Support the Alameda Whipsnake Consistent with MSCS guidelines, CCWD shall provide compensation for permanent and temporary loss of upland scrub habitat that may support Alameda whipsnakes by either (1) compensating for permanent habitat losses by acquiring, protecting, and managing 2 to 5 acres of existing occupied habitat for every acre within the same area of occupied habitat that would be affected, and/or (2) enhancing or restoring 2 to 5 acres of suitable habitat near the affected areas for every acre of occupied habitat affected (CALFED, 2000). Concurrent with other project requirements to mitigate for impacts to grasslands and oak woodland habitat, a portion of the total grassland and oak woodland mitigation requirement shall be chosen and preserved in perpetuity to provide linkages between other chaparral and scrub habitat, or to serve as foraging and movement habitat for Alameda whipsnake near existing scrub habitat patches. Mitigation shall be provided at a 1.1:1 mitigation ratio for all areas within 2,500 feet of core scrub habitat. Under Alternative 4, about 173.9 acres of grassland mitigation lands would be provided for this purpose.	CCWD	Compensation land shall be designated and management activities shall commence prior to construction on, or inundation of, the Alameda whipsnake habitat site for which compensation is being provided	Date: _____ Action Taken:
Measure 4.6.11: Avoid, Minimize, and Mitigate Effects on the Valley Elderberry Longhorn Beetle CCWD shall implement USFWS guidelines (1999 or more current) for avoiding, minimizing, and mitigating project impacts on valley elderberry longhorn beetles. If avoidance is not feasible, USFWS general compensation guidelines call for replacement of elderberry plants in designated mitigation areas at a ratio from 2:1 to 5:1 for each stem greater than 1 inch in diameter. Note that replacement ratios are by stem and not by elderberry shrub. Replacement stock shall be obtained from local sources. Plants are generally replaced at a 2:1 ratio for stems greater than 1 inch in diameter at ground level with no adult emergence holes, 3:1 for stems where emergence holes are evident in less than 50 percent of the shrubs, and 5:1 for stems greater than 1 inch in diameter with emergence holes.	CCWD and a qualified biologist	Prior to and during construction	Date: _____ Action Taken:
Measure 4.6.12a: Conduct Surveys and Implement Protective Measures to Minimize Effects on Breeding and Migratory Birds CCWD shall ensure that active nests of raptors and other special-status nesting birds are not disturbed during construction. If active construction work (i.e., ground clearing and grading, including removal of trees or shrubs) is scheduled to take place during the nonbreeding season (September 1 through January 31), no mitigation is required. If such construction activities are scheduled during the breeding season (February 1 through August 31), the following measures shall be implemented to avoid impacts on nesting raptors and other protected birds: 1. Within 30 days of construction, a qualified wildlife biologist shall conduct preconstruction surveys of all potential nesting habitat within 500 feet of construction sites where access is available.	CCWD, a qualified biologist and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
2. If active nests are found during preconstruction surveys, a no-disturbance buffer (acceptable in size to CDFG) shall be created around active raptor nests and nests of other special-status birds during the breeding season, or until it is determined that all young have fledged. Typical buffers include 500 feet for raptors and 250 feet for other nesting birds (e.g., shorebirds, waterfowl, and passerine birds). The size of these buffer zones and types of construction activities restricted in these areas could be further modified during construction in coordination with CDFG and shall be based on existing noise and human disturbance levels in the project area. 3. If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation shall be required. Trees and shrubs within the construction footprint determined to be unoccupied by special-status birds, or that are outside the no-disturbance buffer for active nests, could be removed. 4. If construction commences during the nonbreeding season and continues into the breeding season, most songbirds that choose to nest next to active construction sites are generally considered to acclimate to construction activities, though nest abandonment may occur in some instances. However, nesting site monitoring shall be conducted by CCWD and no-disturbance buffer zones established in coordination with CDFG around active nests to prevent impacts on nesting birds and their young.			
Measure 4.6.12c: Conduct Surveys and Implement Protective Measures to Reduce Impacts on Nesting Raptors Measures to reduce noise and vibration impact on nesting raptors near the dam. As identified in Measure 4.6.12a, a qualified biologist will conduct preconstruction surveys and establish suitable avoidance buffers around active bird nests. If it appears that noise or vibration from ongoing blasting or jack-hammering at the dam could affect nesting raptors that arrive after the start of construction, specific measures shall be implemented to reduce noise levels. During blasting or jack-hammering, a noise level of no greater than 85 decibels (measured at the nest) will be used as general guidance for raptor nests that are established after construction. This parameter may be met through a variety of standard noise-reducing procedures for construction equipment, including the use of noise dissipaters and blasting mats. Contract specifications will include requirements for the use of blasting methods, including qualifications for the blasting contractor, the use of noise control methods and threshold noise levels, and other limitations. The specifications will also require the submittal of a blasting plan by the contractor that will cover the proposed noise control techniques, blasting charge size and limits, and hours of blasting.	CCWD, a qualified biologist and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
Measure 4.6.14: Conduct Surveys and Implement Protective Measures to Reduce Impacts on Nonlisted Special-Status Reptile Species (San Joaquin Coachwhip and Coast Horned Lizard CCWD shall ensure that habitat disturbances are minimized in areas that are known or suspected to support San Joaquin coachwhip and coast horned lizard. Within 30 days before surface-disturbing activities, concurrent with other preconstruction wildlife surveys, a qualified biologist shall survey for special-status reptile populations. If individuals of these species are found in the project area, they shall be relocated to suitable habitat 0.5 mile or farther from the project area. Some individuals may be undetected or enter sites after surveys and would be subject to harm.	CCWD, a qualified biologist and construction contractor(s)	Prior to construction	Date: _____ Action Taken:
Measure 4.6.15a: Conduct Pre-Construction Surveys and Implement Mitigation Measures as Needed to Reduce Impacts on Nonlisted Special- Status Mammal Species (American Badger, Special-Status Bats, and San Joaquin Pocket Mouse) CCWD shall minimize impacts on badgers through a combination of worker training, preconstruction surveys, and passively or actively relocating animals. 1. A qualified biologist shall conduct a training session for all construction personnel focused on the protection and conservation of protected, nonlisted special-status wildlife species, including American badgers. At a minimum, the training shall include a species and habitat description for the American badger (in addition to other nonlisted special-status species). The training session shall identify the general measures that are being implemented to minimize impacts on these species as they relate to the project, and the boundaries within which the project could be accomplished. 2. Concurrent with other required surveys (e.g., as required for Mitigation Measure 4.7), during winter/spring months before new project activities, and concurrent with other preconstruction surveys (e.g., kit fox and burrowing owl), a qualified biologist shall perform a pre-activity survey to identify the presence of American badgers. If this species is not found, no further mitigation shall be required. If badgers are identified, they shall be passively relocated using burrow exclusion (e.g., installing one-way doors on burrows) or similar CDFG- approved exclusion methods. In unique situations it might be necessary to actively relocate badgers (e.g., using live traps) to protect individuals from potentially harmful situations. Such relocation could be performed with advance CDFG coordination and concurrence. When unoccupied dens are encountered outside of work areas but within 100 feet of proposed activities, vacated dens shall be inspected to ensure they are empty and temporarily covered using plywood sheets or similar materials.	CCWD, a qualified biologist and Construction Contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
3. If badger occupancy is determined at a given site within the work area, the construction manager should be informed that work should be halted. Depending on the den type, reasonable and prudent measures to avoid harming badgers will be implemented and may include seasonal limitations on project construction near the site (i.e., restricting the construction period to avoid spring-summer pupping season), and/or establishing a construction exclusion zone around the identified site, or resurveying the den a week later to determine species presence or absence. 4. To minimize the possibility of inadvertent badger mortality, project-related vehicles shall observe a maximum 20 miles per hour speed limit on private roads. 5. To prevent accidental entrapment of badgers or other animals during construction, all excavated holes or trenches greater than 2 feet deep shall be covered at the end of each work day by suitable materials, or escape routes constructed of earthen materials or wooden planks shall be provided. Before filling, such holes shall be thoroughly inspected for trapped animals. 6. All food-related trash items (such as wrappers, cans, bottles, and food scraps) shall be disposed of in closed containers and removed daily from the project area. 7. To prevent harassment and mortality of badgers or destruction of their dens, no pets shall be allowed in the project area. The implementation of Measure 4.6.7b, which provides habitat compensation for temporary and permanent impacts to annual grasslands that are potentially occupied by San Joaquin kit fox, would additionally benefit American badgers and San Joaquin pocket mice.			
Measure 4.6.15b: Conduct Pre-Construction Surveys and Implement Mitigation Measures as Needed to Reduce Impacts on Special-Status Bats CCWD shall minimize impacts on special-status bats by performing preconstruction surveys and creating no-disturbance buffers around active bat roosting sites. Before construction activities (i.e., ground clearing and grading, including trees or shrub removal) within 200 feet of trees that could support special-status bats, a qualified bat biologist shall survey for special-status bats. If no evidence of bats (i.e., direct observation, guano, staining, or strong odors) is observed, no further mitigation shall be required. If evidence of bats is observed, CCWD and its contractors shall implement the following measures to avoid potential impacts on breeding populations: 1. A no-disturbance buffer of 250-feet shall be created around active bat roosts during the breeding season (April 15 through August 15). Bat roosts initiated during construction are presumed to be unaffected by the indirect effects of noise and construction disturbances. However, the direct take of individuals will be prohibited.	CCWD, a qualified biologist and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Biological Resources (cont.)			
2. Removal of trees showing evidence of active bat activity shall occur during the period least likely to affect bats, as determined by a qualified bat biologist (generally between February 15 and October 15 for winter hibernacula, and between August 15 and April 15 for maternity roosts). If the exclusion of bats from potential roost sites is necessary to prevent indirect impacts due to construction noise and human activity adjacent, bat exclusion activities (e.g., installation of netting to block roost entrances) shall also be conducted during these periods. If special status bats are identified in the dam or special allowances must be made to relocate bats, CCWD will coordinate the effort in advance with CDFG. Implementation of Mitigation Measure 4.6.1b requires the creation, enhancement and preservation of a variety of habitat types, including valley oak, blue oak woodlands and Fremont cottonwood series. These habitats and this mitigation would additionally benefit special status bats and provide potential roosting habitat.			
Land Use			
Mitigation Measure 4.7.3: Pursuant to ALUCP policy 4.3.4, CCWD shall notify the FAA, as required by FAR Part 77, Subpart B, of its proposed project to determine whether the proposed construction equipment and the location of construction activities and staging areas have the potential to intrude into protected airspace associated with Byron Airport. To facilitate FAA coordination, CCWD shall consult with County Airport staff. If necessary, CCWD will ensure that appropriate notes or modifications are made on all applicable design plans and specifications to ensure that construction activities would not conflict with the airport height limitations.	CCWD	Prior to construction	Date: _____ Action Taken:
Measure 4.7.4a: Consult with Contra Costa County Airport Staff to Minimize Light and Glare Impacts to Byron Airport During project design, CCWD shall consult with Contra Costa County Airport staff regarding the location of illuminated equipment staging, storage, and construction areas, and the need to provide a potential Notice to Airmen (NOTAM) during construction activities. CCWD shall instruct its engineer to make appropriate notations on construction drawings and specifications to indicate that illuminated work areas shall incorporate the use of downward facing lights with amber lumens to prevent confusion to pilots.	CCWD	Prior to construction	Date: _____ Action Taken:
Measure 4.7.4b: Prohibit Use of Temporary Sediment Ponds and Use Appropriate Seed Mixtures for Revegetation and Sediment/Erosion Control Measures During Construction to Minimize Attraction for Birds During project design, CCWD shall instruct its engineer to prohibit the use of temporary sediment ponds that could create open water to attract potentially hazardous wildlife. To ensure that an appropriate seed mixture is used during construction, CCWD shall instruct its engineer to make appropriate notations on construction drawings and specifications to indicate that all seed mixtures used for revegetation or for sediment and erosion control purposes should not contain rice, barely, millet, rye, or other potential food sources for avian wildlife.	CCWD	Prior to construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Agricultural Resources			
Mitigation Measure 4.8.1: To minimize temporary construction impacts to agricultural activities on Important Farmland, CCWD (and where applicable, responsible agencies) shall ensure that the following measures are incorporated into the project construction plans and specifications: 1. Ensure that the existing drainage systems at proposed project sites needed for farming activities function as necessary to avoid disrupting agriculture 2. Design dewatering operations to maximize dewatering in the immediate area of trench and to minimize drawdown area outside of trench during dewatering of construction trenches and other excavated areas; monitor soil moisture in adjacent crop fields to ensure adequate crop moisture and assist with irrigation scheduling 3. Locate construction access and staging areas in areas that are fallow and use existing roads to access construction areas to the extent possible 4. Coordinate construction scheduling as practicable to minimize disruption of agricultural operations by scheduling excavation before or after the growing season 5. Minimize construction dust on crops by implementing Air Quality Mitigation Measure 4.10.1	CCWD and applicable responsible agencies	Prior to and during construction	Date: _____ Action Taken:
Mitigation Measure 4.8.2a: To support the continued productive use of Important Farmlands in the project area, CCWD shall ensure that the following measures are taken during project construction activities in Important Farmland: 1. Replace soils over pipelines in a manner that will minimize any negative impacts on crop productivity. The surface and subsurface soil layers will be stockpiled separately and returned to their appropriate locations in the soil profile. 2. Monitor pre-construction soil densities and return the surface soil (approximately the top 3 feet) to within 5 percent of original density so that over-compaction of the top layers of soil is avoided. 3. Rip the top soil layers, where necessary, to achieve the appropriate soil density. Ripping may also be used in areas, such as in construction staging locations, where vehicle and equipment traffic have compacted the top soil layers. 4. Minimize compaction and loss of soil structure by not working or traveling on wet soil. Before construction begins, geotechnical testing will be done to determine the moisture content limit above which work should not occur. Where working or driving on wet soil cannot be avoided, roadways will be capped with spoils that will be removed at the end of construction and/or ripped and amended with organic material as needed. 5. Remove all construction-related debris from the soil surface. This will prevent rock, gravel, and construction debris from interfering with agricultural activities.	CCWD and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Agricultural Resources (cont.)			
6. Perform soil density monitoring during backfill and ripping to minimize excessive compaction and minimize effects on future agricultural land use. 7. Remove topsoil before excavating in fields. Return topsoil to top of fields to avoid detrimental inversion of soil profiles. 8. Control compaction to minimize changes to lateral groundwater flow, which could affect both irrigation and internal drainage.			
Mitigation Measure 4.8.2b: For each acre of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance that is permanently converted to nonagricultural use, the responsible agency for conversion of the land shall obtain 1.5 acres of agricultural conservation easement. An agricultural conservation easement is a voluntary, recorded agreement between a landowner and a holder of the easement that preserves the land for agriculture. The easement places legally enforceable restrictions on the land. The exact terms of the easement are to be negotiated in coordination with a local agriculture land trust, but restricted activities will include subdivision of the property, non-farm development, and other uses that are inconsistent with agricultural production. The mitigation lands must be of equal or better quality (according to the latest available FMMP data) and have an adequate water supply. In addition, the mitigation lands must be within the same county. Information presented in Impact 4.8.2 indicates that this compensatory mitigation would require acquisition of easements on about 0.75 acre (0.5 acre of impact x 1.5:1 mitigation ratio) of Prime Farmland within Contra Costa County.	CCWD or Parter Agency responsible for land conversion (e.g., EBMUD)	Record conservation easement prior to ground disturbance causing permanent conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use	Date: _____ Action Taken:
Transportation and Circulation			
Measure 4.9.1a: CCWD shall schedule project-generated construction truck trips on Vasco Road, Byron Highway, SR 4, and SR 4 Bypass outside the peak morning and evening commute hours such that the frequency of construction truck trips on these roads would be no greater than one every two minutes (i.e., 30 trucks per hour) during these peak commute periods.	CCWD and construction contractor(s)	During construction	Date: _____ Action Taken:
Measure 4.9.1b: When more than one facility site is under construction concurrently, CCWD shall develop and implement a construction truck hauling plan that designate specific routes to be used to access the project facilities under simultaneous construction so that project-generated construction traffic is dispersed over a number of roads (i.e., no greater than 30 trucks per hour on any road).	CCWD and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:
Measure 4.9.2a: Maintain alternative property access or trench plates on site to restore access for emergency vehicles at all times.	CCWD and construction contractor(s)	During construction	Date: _____ Action Taken:
Measure 4.9.2b: Provide pre-notification to local police, fire and emergency service providers of the timing, location, and duration of construction activities that could affect the movement of emergency vehicles on area roadways.	CCWD and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Transportation and Circulation (cont.)			
Measure 4.9.2c: Install traffic control devices as specified in Caltrans' Manual of Traffic Controls for Construction and Maintenance Work Zones where needed to maintain safe driving conditions. This measure includes the use of signage to alert motorists of construction activities, potential hazards and travel detours as well as the use of flaggers when appropriate.	CCWD and construction contractor(s)	During construction	Date: _____ Action Taken:
Measure 4.9.2d: Prior to construction, CCWD or its contractors will survey and describe the pre-construction roadway conditions on rural roadways and residential streets (including, but not limited to, Walnut Boulevard and Camino Diablo). Within 30 days after construction is completed, CCWD will survey these same roadways and residential streets in order to identify any damage that has occurred. Roads damaged by construction will be repaired to a structural condition equal to the condition that existed prior to construction activity.	CCWD and construction contractor(s)	Prior to and following construction	Date: _____ Action Taken:
Mitigation Measure 4.9.4: Prior to construction, CCWD shall coordinate with the appropriate local government departments in Oakley, Antioch, Brentwood, Contra Costa County, Alameda County, and Caltrans, and with utility districts and agencies regarding the timing of construction projects that would occur near project sites. Specific measures to mitigate potential significant impacts shall be determined as part of the interagency coordination, and shall include measures to achieve the performance standards of 1) reducing potential traffic impacts such that no more than 30 trucks per hour would be added to any road (e.g., by scheduling construction truck trips and designating alternate haul routes to disperse truck trips); 2) reducing potential traffic safety impacts (e.g., by employing flaggers to manage traffic flow at conflict locations); and 3) providing outreach and community noticing for locations where multiple projects will be creating construction traffic at one time (e.g., via the web, utility bill inserts, and other methods).	CCWD	Prior to construction	Date: _____ Action Taken:
Air Quality			
Measure 4.10.1: Implement BAAQMD Measures to Control Construction- Generated Fugitive Dust Emissions During construction, CCWD will require the construction contractor(s) to implement the measures that are specified under BAAQMD's basic and enhanced dust control procedures. These include: 1. Basic Control Measures – CCWD and its contractors will implement the following controls at all construction sites: a. Water all active construction areas at least twice daily. b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard. c. Pave, apply water three times daily, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.	CCWD and construction contractor(s)	During construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Air Quality (cont.)			
d. Sweep daily (with water sweepers) all paved access roads, parking areas, and staging area at construction sites. e. Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets. 2. Enhanced Control Measures – CCWD and its contractors will implement the following measures during project construction for project facility sites of 4 acres or greater: a. Hydroseed or apply (nontoxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more). b. Enclose, cover, water twice daily, or apply (nontoxic) soil stabilizers to exposed stockpiles (such as dirt and sand). c. Limit traffic speeds on unpaved roads to 15 miles per hour. d. Install sandbags or other erosion control measures to prevent silt runoff to public roadways. e. Replant vegetation in disturbed areas as quickly as possible. 3. CCWD and its contractors will implement the following additional control measure during reservoir expansion construction due to the large area of disturbance: a. Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site onto public roads.			
Measure 4.10.3: Require Tier 4 engines or diesel particulate filters on Construction Equipment for the Pumping Plant #1 Replacement and the Neroly High-Lift Pump Station. This measure would require all contractors, as a condition of contract, to further reduce construction-related exhaust emissions by ensuring that all off-road equipment greater than 25 horsepower (hp) and operating for more than 20 total hours over the entire duration of construction activities shall operate on a USEPA-approved Tier 4 engine. Construction equipment with Tier 4 engines comprised 22 percent of the statewide construction equipment fleet in 2014 and CARB Regulations will result in the percentage increasing over the next several years. Alternatively, equipment with Tier 2 or Tier 3 engines may be retrofitted with diesel particulate filters to achieve a similar reduction in DPM emissions. Tier 4 engines reduce DPM emissions by 80 percent or more over Tier 2 engines.	CCWD and construction contractor(s)	During construction	Date: _____ Action Taken:
Noise			
Mitigation Measure 4.11.1a: To avoid noise-sensitive hours of the day and night, construction shall be limited to the hours between 7 a.m. to 7 p.m. Monday through Friday, and 8 a.m. to 5 p.m. on Saturday and Sunday for the construction of any facilities in those areas that are 3,000 feet or less from sensitive residences.	CCWD and construction contractor(s)	During construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Noise (cont.)			
Mitigation Measure 4.11.1b: To further address the impact of construction for all alternatives, construction contractors shall implement the following: 1. Signs shall be posted at all construction site entrances to the property when project construction begins to inform all contractors/subcontractors, their employees, agents, material haulers, and all other persons at the applicable construction sites of the basic requirements of **Mitigation Measures 4.11.1a, 4.11.1c,** and **4.11.1d**. 2. Signs shall be posted at the construction sites that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number in the event of problems. 3. An onsite complaint and enforcement manager shall respond to and track complaints and questions related to noise.	CCWD and construction contractor(s)	During construction	Date: _____ Action Taken:
Mitigation Measure 4.11.1c: To reduce noise impacts due to construction for all alternatives, construction contractors shall be required to implement the following measures: 1. During construction, the contractor shall outfit all equipment, fixed or mobile, with properly operating and maintained exhaust and intake mufflers, consistent with manufacturers' standards. 2. Impact tools (e.g., jackhammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. External jackets on the tools themselves shall be used where feasible. Quieter procedures, such as use of drills rather than impact tools, shall be used whenever construction occurs within 3,000 feet of sensitive residences. 3. Stationary noise sources shall be located as far from adjacent sensitive receptors as possible.	CCWD and construction contractor(s)	During construction	Date: _____ Action Taken:
Mitigation Measure 4.11.1d: For all alternatives, no amplified sources shall be used in the vicinity of residences during project construction.	CCWD and construction contractor(s)	During construction	Date: _____ Action Taken:
Mitigation Measure 4.11.2: Noise control for Variable Frequency Drives. To ensure that noise from operation of variable frequency drives is consistent with the land use compatibility standards of the Walnut Creek General Plan, CCWD shall enclose variable frequency drives sufficiently to maintain a 60 dBA, Ldn performance standard at the nearest property line. Compliance with this standard shall be demonstrated within two weeks of commencement of operations.	CCWD and construction contractor(s)	Prior to construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Utilities and Public Service Systems			
Measure 4.12.1a: Conduct a Detailed Survey to Identify Utilities Along the Proposed Alignments Prior to construction of project facilities and once pipeline alignments have been finalized, a detailed survey identifying utilities along the proposed alignments will be conducted. The survey results and the following measures will be incorporated into final design plans and specifications to avoid or minimize potential conflicts with utilities: a. Utility excavation and encroachment permits will be acquired from the appropriate agencies, including the Public Works Departments of Contra Costa County. CCWD will incorporate permit conditions in contract specifications that are designed to ensure no disruptions in service occur during construction. Contractors will be required to comply with permit conditions contained in contract specifications. b. CCWD shall ensure that Underground Service Alert is notified at least 14 days prior to initiation of construction activities of the underground portions of each transmission lines and utility structures. Underground Service Alert verifies the location of all existing underground utilities and alerts the other utilities to mark their facilities in the area of anticipated construction activities. c. A detailed engineering and construction plan will be prepared as part of the design plans and specifications. This plan will include procedures for the excavation, support, and fill of areas around utility cables and pipes to ensure that utility cables are not damaged. All affected utility service providers will be notified of the construction plans and schedule, and arrangements will be made with these entities regarding the protection, relocation, or temporary disconnection of services. d. In shared utility easement areas where a project pipeline might parallel wastewater mains, the engineering and construction plans will include trench- wall support measures to guard against potential trench wall failure and the resulting loss of structural support for the wastewater main. e. The California Department of Health Services standards will be observed; these standards require: (1) a 10-foot horizontal separation between parallel sewer and water mains (gravity or force mains); (2) a 1-foot vertical separation between perpendicular water and sewer line crossings; and (3) encasing sewer mains in protective sleeves where a new water line crosses under or over an existing wastewater main. If the separation requirements cannot be maintained, a variance will be obtained from the Department of Health Services through the provision of sewer encasement or other means the department deems suitable. f. Final construction plans and specifications will be coordinated with affected utilities including PG&E, Western, and the California Department of Health Services Sanitary Engineering Branch. g. Emergency response plans and protocols, as required under construction permit conditions, shall be incorporated into project construction specifications.	CCWD and construction contractor(s)	Prior to construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Utilities and Public Service Systems (cont.)			
Mitigation Measure 4.12.1b: CCWD shall phase construction to minimize the potential for water supply emergencies and complete formal arrangements with EBMUD for water supply backup prior to draining the Los Vaqueros Reservoir and initiating construction.			
Measure 4.12.3: Require the Contractor to Implement Solid Waste Reduction and Debris Recovery Practices CCWD will incorporate into the contract plans and specifications the requirement that the contractor implement solid waste reduction and debris recovery practices as developed by CCWD. The solid waste reduction / debris recovery specifications will include the following items. a. describe the planned management methods for all types of construction and demolition debris (e.g., reuse, recycling, or disposal), and indicate the types of debris expected to be generated by the project (e.g., wood, drywall, concrete, cardboard, and metal) b. name all service providers and/or facilities to be used for debris management (or indicate that the debris, such as dirt, will be reused onsite) c. demonstrate that at least 50 percent (by weight) of jobsite debris is diverted from disposal in a landfill by providing receipts and/or gate-tags from all facilities and service providers used to recycle, reuse, or dispose of jobsite debris. Project waste generation would be avoided or minimized in a number of ways, which would be outlined in the project's solid waste reduction / debris recovery plan, and incorporated into project plans and specifications for implementation by contractors selected to complete project construction. To reduce solid waste generation, a series of practices would be developed, as follows: *Re-use of excavation backfill.* Fill materials excavated during project grading and drilling would be reused as fill materials during project construction, while soils excavated during pipeline construction would be used to backfill trenches after pipeline installation; *Recycling of materials.* Some construction materials, including some wood scraps, metals, and packaging materials could be recycled for later resale e.g. – wood scraps sold as landscape mulch. *Re-Use of excess fill.* Clean fill could be accepted for use at other construction sites, or stored at existing sand and gravel facilities until (re)used as clean fill. *Roadway sub-base or surface material.* Larger waste rock from excavation of tunnels would be placed along project access roads as a roadway sub-base or surface. *Divert waste to non-landfill locations.* Additional amounts of the larger waste rock could be disposed of at a 22-acre area near the terminus of Byron Hot Springs Road.	CCWD and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Hazardous Materials / Public Health			
Measure 4.13.2: Require Contractor to Enforce Strict Onsite BMPs to Minimize the Potential for Hazardous Materials Release CCWD will incorporate into the contract specifications that require the contractor to enforce strict onsite best management practices (BMPs) to keep hazardous materials from accidental release. These practices will include, without limitation, designating a central storage area to keep hazardous materials away from any waterways and storm drain inlets; refueling equipment in designated areas; containing contaminants away from any waterways or storm drain inlets; preparing a spill prevention, control, and countermeasure plan; and regularly inspecting construction vehicles for leaks.	CCWD and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:
Measure 4.13.3: Require Contractor to Enforce Strict Onsite BMPs to Minimize the Potential for Accidental Fires CCWD will incorporate into contract specifications the requirement that the contractor enforce strict onsite BMPs to reduce the potential for accidental fires. 1) All equipment used during construction must have an approved spark arrestor. 2) The contractor/staff responsible for construction will submit a Fire Safety Plan for review by the Contra Costa County Fire Prevention Bureau. This plan will include precautions to carry out during high-fire danger, a list of fire- suppression equipment and tools to have on hand, a description of available communications, specifications for the supply of water to have on hand, and descriptions of other actions that will reduce the risk of ignition and facilitate immediate control of an incipient fire. 3) Ensuring easily accessible fire-suppression equipment is available at all work locations.	CCWD and construction contractor(s)	Prior to construction	Date: _____ Action Taken:
Visual / Aesthetic Resources			
Measure 4.14.2a: Develop and Implement a Site Restoration Plan for Borrow Areas CCWD shall develop and implement a site restoration plan specifically for the shell and core borrow areas that shall provide for finished topography that, while not restored to prior condition, shall blend in with the surrounding landscape, minimizing the visual contrast. The plan shall include a revegetation plan that includes a native seed mix typical of the surrounding area and a target of 70 percent vegetative cover within 5 years of planting.	CCWD	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Recreation			
Measure 4.15.1a: Prepare and Implement a Public Outreach Program to Inform Current and Potential Recreational Users of Temporary Closures Before any recreational facilities are closed in the watershed, CCWD shall prepare and implement a public outreach program and promote the program via the web, billing inserts, and other methods to inform current and potential recreational users of the temporary closure of the Los Vaqueros Reservoir day-use facilities and inform customers of other recreational opportunities in the area.	CCWD	Prior to and during construction	Date: _____ Action Taken:
Mitigation Measure 4.15.1b: If EBRPD's proposed Byron Vernal Pools Regional Preserve is developed and open to the public before or during construction of the Transfer-Bethany Pipeline, CCWD shall provide EBRPD with an anticipated construction schedule; prepare and implement a public outreach program and promote the program via the web, billing inserts, and other methods to inform potential recreational users of the temporary construction near Byron Vernal Pools Regional Preserve and of other recreational opportunities in the area; and place signage to the north and south of Byron Vernal Pools Regional Preserve along Armstrong Road; to inform recreational users of the preserve closure, alternative recreational options, and anticipated timing for the reopening.	CCWD	Prior to and during construction	Date: _____ Action Taken:
Measure 4.15.1c: Replace Recreational Facilities Displaced By Reservoir Expansion Within One Year of Construction Completion CCWD shall construct proposed recreational facilities to replace those displaced by reservoir expansion within one year of completion of construction activities associated with all major facility components.	CCWD	Prior to and during construction	Date: _____ Action Taken:
Mitigation Measure 4.15.1d: Before any portion(s) of the Delta de Anza Regional Trail is closed for work related to the Brentwood Pipeline, and/or if EBRPD's proposed Marsh Creek Trail extension to Discovery Bay is developed and open to the public before or during construction of the ECCID Intertie Pipeline, CCWD shall consult with EBRPD to prepare and implement a public outreach program to inform current and potential future trail users of the temporary closure of the Delta de Anza Trail and/or Marsh Creek Trail extension, and inform potential trail users of detours accessible to pedestrian, bicyclists, and wheelchair users. The outreach program for the Delta de Anza Trail and/or Marsh Creek Trail extension closures shall be coordinated with EBRPD and shall include provisions for the posting of signage in the vicinity of the subject trail segment notifying users of impending trail closure and construction activities. The signs shall include information regarding the nature of construction activities, dates and duration of closure, and detour information. Signage shall be composed of or encased in weatherproof material, posted in conspicuous locations (e.g., park message boards, existing wayfinding signage, or kiosks), and maintained in good condition for the duration of the closure period. At the end of the closure period, CCWD or its contractors shall retrieve all notice materials.	CCWD	Prior to and during construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Cultural and Paleontological Resources			
Measure 4.16.1a: If Feasible, Avoid Impacts to Known Cultural Resources through Project Design Modification *Los Vaqueros Reservoir Expansion; Dam Modification; and Other Sites Where Cultural Resources Can Be Avoided*. The preferred mitigation measure under CEQA is site avoidance. If feasible, avoid impacts to known cultural resources through project design modification. Using GIS mapping techniques, overlay project design plans on boundary maps of known cultural resources and redesign project components to avoid significant cultural resources by ensuring they fall into areas designated as open space or otherwise undeveloped areas. This is the least costly mitigation measure and is favored by archaeologists, local historical societies, and Native American groups.	CCWD	During project design	Date: _____ Action Taken:
Measure 4.16.1b: Protect Cultural Resources In Place, If Feasible; Implement Data Recovery Where Resources Cannot Be Protected In Place *Los Vaqueros Reservoir Expansion; Dam Modification; and Other Sites Where Cultural Resources Cannot Be Avoided*. If feasible, protect cultural resources in place. If resources cannot be protected in place, implement data recovery consistent with 14 CCR § 15126.4(b)(3)(c) and with the guidelines set forth in the Secretary of Interior's standards and guidelines (Standards I through IV). CCR § 15126.4(b)(3)(c) states that a data recovery plan shall be prepared and adopted prior to any excavation being undertaken. Because the historical significance of most archaeological sites lies in their potential to contribute to scientific research, the data recovery plan shall make provision for adequately recovering the scientifically consequential data from and about the historical resource. Similarly geared toward scientific inquiry, the Secretary of Interior's standards include following an explicit statement of objectives and employing methods that respond to needs identified in the planning process; using methods and techniques of archaeological documentation (data recovery) selected to obtain the information required by the statement of objectives; assessing the results of the archaeological documentation against the statement of objectives and integrating them into the planning process; and reporting and making public the results of the archaeological documentation. To this end, data recovery findings shall be documented in a data recovery report, which shall follow guidelines set forth by SHPO for such reports.	CCWD and construction contractor(s)	Prior to, during and following construction	Date: _____ Action Taken:
Measure 4.16.1c: Conduct Subsurface Investigations Prior to Ground Disturbing Activities *Los Vaqueros Reservoir Expansion; Dam Modification; Marina Access Road; Inlet/Outlet Pipelines; and Western Hiking Trail/Access Road.* Prior to ground-disturbing activities, conduct subsurface investigations (i.e., archeological testing) for undiscovered cultural resources in the portions of the APE for the project elements that are identified as having moderate to high potential for undiscovered subsurface cultural resources. Conduct data recovery as described in Mitigation Measure 4.16.1b.	CCWD and a qualified archaeologist	Prior to construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Cultural and Paleontological Resources (cont.)			
Measure 4.16.1d: Restrict Ground-Disturbing Activities During Construction and Implement Protection Measures *All Project Elements Near Known Cultural Resources Or In Areas With High Potential For Undiscovered Cultural Resources.* During construction, restrict ground-disturbing activities to the minimum area feasible and fence off known cultural resources and high-potential areas that are outside but near the construction area. To prevent construction-related adverse impacts on historic properties within the APE, CCWD shall instruct its contractors to place fencing or other barriers around sites that could be affected. CCWD shall prepare and implement a cultural resource construction monitoring plan to ensure that monitoring and/or physical barriers adequately protect sites from incidental construction activities.	CCWD and construction contactor(s)	Prior to and during construction	Date: _____ Action Taken:
Measure 4.16.1e: Provide Training For All Construction Personnel Regarding Cultural Resources and Relevant Regulations and Procedures *All Project Elements.* All construction personnel who work on the project shall undergo a training session to inform them of the presence and nature of cultural resources and human remains within the project area; of the laws protecting these resources and associated penalties; and of the procedures to follow if they discover cultural resources during project-related work.	CCWD and construction contractor(s)	Prior to and during construction	Date: _____ Action Taken:
Measure 4.16.1f: Stop Work If Previously Undiscovered Cultural Resources are Discovered During Ground-Disturbing Activities *All Project Elements.* If previously undiscovered cultural resources (e.g., unusual amounts of shell, animal bone, bottle glass, ceramics, structure/building remains, etc.) are discovered during ground-disturbing activities, CCWD shall authorize the construction contractor(s) to stop work in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find according to NRHP and CEQA (including CRHR) criteria, and, if necessary, develop appropriate treatment measures in consultation with CCWD. Potential treatment measures for significant and potentially significant resources may include, but would not be limited to, no action (i.e., resources determined not to be significant), avoidance of the resource through changes in construction methods or project design, and implementation of a program of testing and data recovery, in accordance with PRC § 21083.2. Implementation of this mitigation measure would ensure proper identification and treatment of any significant cultural resources uncovered as a result of project- related ground disturbance and would reduce the potential impact resulting from inadvertent damage or destruction of unknown cultural resources during construction to a less-than-significant level.	CCWD and construction contractor(s)	During construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Cultural and Paleontological Resources (cont.)			
Measure 4.16.1g: Update the Cultural Resources Management Plan Impacts on some sites from increased access and vandalism can be minimized by updating the existing Cultural Resources Management Plan. The plan was developed for the original Los Vaqueros Project and it should be updated for the proposed project. To ensure the long-term protection of these sites, the existing plan provides guidelines to prevent impacts on historic properties, such as restrictions for use in areas of sensitivity, and a long-term monitoring program to ensure that cultural resources are protected in the future. The plan states that should vandalism be detected during the long-term monitoring program, a plan should be in place to organize the documentation and investigation of the endangered resource. Such an HPTP would entail elements including complete photographic and mapping documentation of the resource, as well as a phased archaeological testing and data recovery program. Such an HPTP shall be developed for each historic property that is determined to be visible from trails, exposure due to erosion, and vulnerable to vandalism for the proposed project.	CCWD	Prior to reopening the Los Vaqueros Watershed to public access	Date: _____ Action Taken:
Measure 4.16.1h: Prepare a Comprehensive Study of the Prehistory and History of CCWD Results from the recordation, testing, and data recovery of the prehistoric and historic-era resources within the District shall be synthesized into a comprehensive scholarly study of the prehistory and history of CCWD. Particular attention shall be paid to the change in use through time of the lower elevations of the watershed and resources therein within the context of the greater watershed. Additionally, the same information shall be synthesized into a document for public education that can be easily accessed and understood by members of the public including children of grade-school age.	CCWD	Within 1 year of completion of construction	Date: _____ Action Taken:
Measure 4.16.1i: In the Event of Inadvertent Archaeological or Burial Discovery within a State Right-of-Way, Contact Caltrans' Office of Cultural Resources Studies, District 4, Oakland, CA *Los Vaqueros Reservoir Expansion; Dam Modification; and Other Sites Where Cultural Resources Cannot Be Avoided.* In the event there is an inadvertent archaeological or burial discovery within State ROW, the Caltrans Office of Cultural Resources Studies, District 4, Oakland, shall be immediately contacted at (510)286-5618. A staff archaeologist will evaluate the finds within one business day of being contacted by CCWD representatives. A data recovery plan and all subsequent reports for investigations within State ROW will need to be approved by the Office of Cultural Resources Studies, District 4.	CCWD and a qualified archaeologist	During construction	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Cultural and Paleontological Resources (cont.)			
Measure 4.16.2a: Construction-Related Earth-Moving Activities in Areas Sensitive for Paleontological Resources Shall be Monitored by a Trained Paleontologist A trained paleontologist shall monitor the earth disturbing activities in areas of high and very high sensitivity. If a paleontological resource is encountered during excavation monitoring, the onsite monitor shall halt or divert excavations within 50 feet of the find until the discovery is examined by the monitor in accordance with Society of Vertebrate Paleontology standards. If the resource is determined not to be significant, construction shall resume. If the resource is determined to be significant, construction shall remain halted and the paleontologist shall prepare and implement a salvage plan in accordance with Society of Vertebrate Paleontology standards to recover, remove and/or mold exposed paleontological resources and conduct sampling where necessary to recover microfossil remains (Society of Vertebrate Paleontology, 1995). The paleontologist shall notify CCWD and Reclamation if the find is determined to be significant.	CCWD and a qualified paleontologist and construction contractor(s)	During construction	Date: _____ Action Taken:
Measure 4.16.2b: Provide Training for Construction Personnel Involved with Earth-Moving Activities in Areas with Low to Moderate Sensitivities Regarding Fossils and Notification Procedures Prior to the start of construction on project elements that would require earth disturbing activities in areas of low or moderate paleontological sensitivities, construction personnel involved with earth-moving activities shall be trained regarding the appearance of fossils and proper notification procedures. This worker training shall be prepared and presented by a qualified paleontologist. If workers discover paleontological resources during ground-disturbing activities, work shall stop within 50 feet of the find until a qualified paleontologist can assess the significance of the find and determine the appropriate next steps, depending on the significance of the find as described in Measure 4.16.2a.	CCWD, a qualified paleontologist and construction contractor(s)	At the beginning of and during construction	Date: _____ Action Taken:
Measure 4.16.3: Stop Work If Human Remains are Discovered During Construction *Stop Potentially Damaging Work if Human Remains Are Uncovered During Construction, as a Result of Erosion, or of Vandalism, Assess the Significance of the Find, and Pursue Appropriate Management*. California law recognizes the need to protect interred human remains, particularly Native American burials and associated items of patrimony, from vandalism and inadvertent destruction. The procedures for the treatment of discovered human remains are contained in California Health and Safety Code §7050.5 and §7052 and California PRC §5097. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, including construction, erosion, or vandalism, all such activities within a 100-foot radius of the find shall be halted immediately and CCWD's designated representative shall be notified. CCWD shall immediately notify the county coroner and a qualified professional archaeologist. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If death appears to have resulted from homicide, suicide,	CCWD, a qualified paleontologist and construction contractor(s)	During construction and operations	Date: _____ Action Taken:

TABLE E-1 (CONTINUED)
DRAFT MITIGATION MONITORING AND REPORTING PROGRAM FOR THE LOS VAQUEROS RESERVOIR EXPANSION PROJECT DRAFT SUPPLEMENT TO THE FINAL EIS/EIR

Mitigation Measure	Implementation Responsibility	Timing/Schedule	Record of Implementation
Cultural and Paleontological Resources (cont.)			
poisoning, accident, violence, or certain contagious diseases and hazards, the coroner is required to investigate as specified in Government Code Section 27491. If the coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). CCWD's responsibilities for acting upon notification of a discovery of Native American human remains are identified in detail in the California PRC Section 5097.98. CCWD or its appointed representative and the professional archaeologist shall contact the Most Likely Descendent (MLD), as determined by the NAHC, regarding the remains. The MLD, in cooperation with the property owner and the lead agencies, shall determine the ultimate disposition of the remains in accord with the provisions of Section 5097.98. If NAHC cannot identify any MLDs, if the MLD fails to make a recommendation, or CCWD disagrees with the MLDs recommendation and mediation fails to resolve the issue, then CCWD must reinter the human remains with appropriate dignity on a part of the property not subject to further subsurface disturbance, as is specified in Section 5097.98(b) and 14 Cal. Code Regs § 1064.5(e)(2).			

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