

## **APPENDIX A-1**

# **Model Study Description and Assumptions; Model Results for Project at 190MGD versus Baseline at 190MGD**

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## APPENDIX A

Model Study Description and Assumptions

Model Results for Project at 190MGD versus Baseline at 190MGD

Model Results for Cumulative with Project versus Cumulative without Project

## Model Study Description and Assumptions

Four case studies are modeled in Riverware: 1) a baseline at 190MGD, 2) a Project at 190MGD, 3) Cumulative without project, 4) and Cumulative with Project. Below is a summary of the assumptions common to all model runs, a summary of the assumptions made to define the LVE project, and a summary of the model cases and comparisons made to conduct this environmental assessment.

### Common Assumptions

The common assumptions for all the simulations are the following:

- ◆ Hydrologic Period: 1921-2012. Model applies the actual measured daily Mokelumne River inflows to Pardee Reservoir, with typical daily fluctuations. Model applies daily runoff into reservoirs computed from daily rainfall volume, with typical fluctuations.
- ◆ Drought Planning Sequence: 1976 thru 1978, Active
- ◆ New Drought Management Plan (adopted April 2015): Active

Drought Stage	End-of-September Total System Storage (TAF)	Rationing Goal
Normal	500 TAF or more	None
Moderate	500 – 425 TAF	0 to 10% - Voluntary
Significant	425 – 390 TAF	10% to 15% - Voluntary
Severe	390 – 325 TAF	15% to 20% - Mandatory
Critical	Less than 325 TAF	20% - Mandatory

- ◆ JSA In-Stream Flow Requirements: Active
- ◆ Freeport Regional Water Project (FRWP) CVP Supply
  - Eligible to divert CVP water when EOS-TSS drops to 450 TAF or below.
  - CVP supply subject to the North of Delta M&I cutbacks and cannot exceed 133 TAF in any contract year. Three year cumulative CVP delivery cannot exceed 165 TAF.
  - 20 TAF of water is added to the dead storage of Pardee reservoir for gainshare.
  - Restricted during concurrent flood control release from Camanche Reservoir.
- ◆ North San Joaquin Water Conservation District: Active
  - NSJWCD is delivered their 20TAF before any water is moved to LVE.
- ◆ ACE Flood Control Requirements: Active

### Los Vaqueros Reservoir Assumptions

The common assumptions for the Los Vaqueros Reservoir expansion are the following:

- ◆ Delivery to LV rate = 85 MGD, draft rate = 50 MGD. 5% loss rate per year applied to stored water.

- ◆ Moving partner water from FRWP to LV thru Aqueduct #2 is limited to October thru February.
- ◆ Moving Mokelumne water to LV is limited to May and June, at 15 TAF/year, for two years in a row. At least three years of system recovery time must be provided before moving more water to LV and before using aqueducts.
- ◆ Volume available to fill LV is computed as the excess volume above that which can be stored by EBMUD. This water is otherwise released to meet flood reserve requirements.
- ◆ When CCWD/partners want to fill LV, both Aqueducts #1 and #2 are encumbered, and assumed not available to EBMUD to convey water to the East Bay.

## **Summary of Model Cases Used in Analysis**

A summary list of the model runs completed includes the following:

### **Case 1: Baseline at 190MGD**

- EBMUD customer demand is set at 190MGD
- Other diversions in the watershed assigned to 2015 level of development (LOD)

### **Case 2: Project at 190MGD**

- EBMUD customer demand is set at 190MGD
- Other diversions in the watershed assigned to 2015 level of development (LOD)
- LVE Active

### **Case 3: Cumulative without Project**

- EBMUD customer demand is set at 230MGD
- Other diversions in the watershed assigned to 2040 level of development (LOD)

### **Case 4: Cumulative with Project**

- EBMUD customer demand is set at 230MGD
- Other diversions in the watershed assigned to 2040 level of development (LOD)
- LVE Active

## **Summary of Model Comparisons performed for this Assessment**

A summary list of the model comparisons completed includes the following:

Comparison 1: Baseline at 190MGD vs. Project at 190MGD

Comparison 2: Cumulative without Project vs. Cumulative with Project

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1) Model Results for Project at 190MGD versus Baseline at 190MGD

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Figure WR-1(a). Pardee Storage - Project at 190MGD vs Baseline at 190MGD

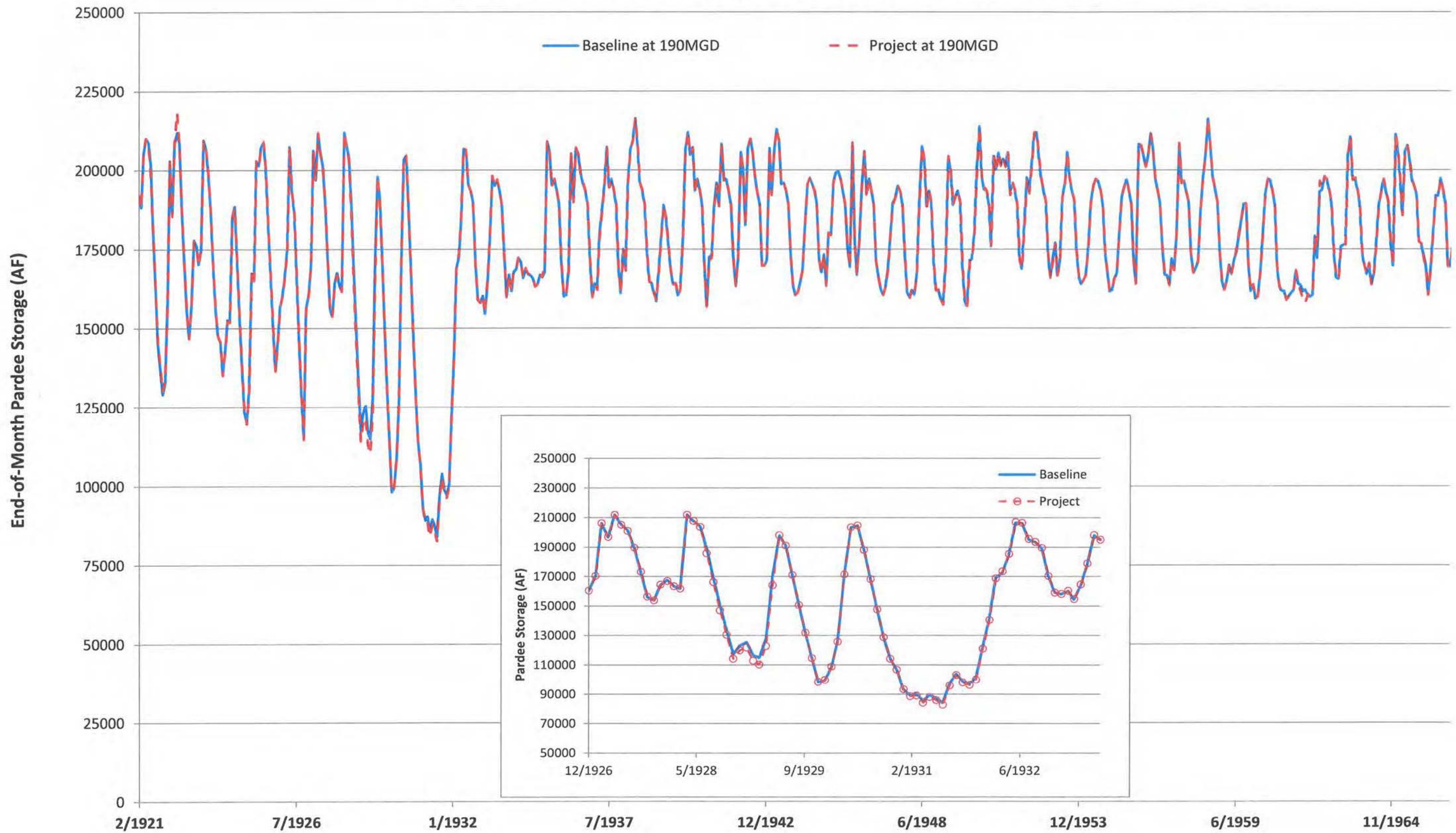


Figure WR-1(b). Pardee Storage - Project at 190MGD vs Baseline at 190MGD

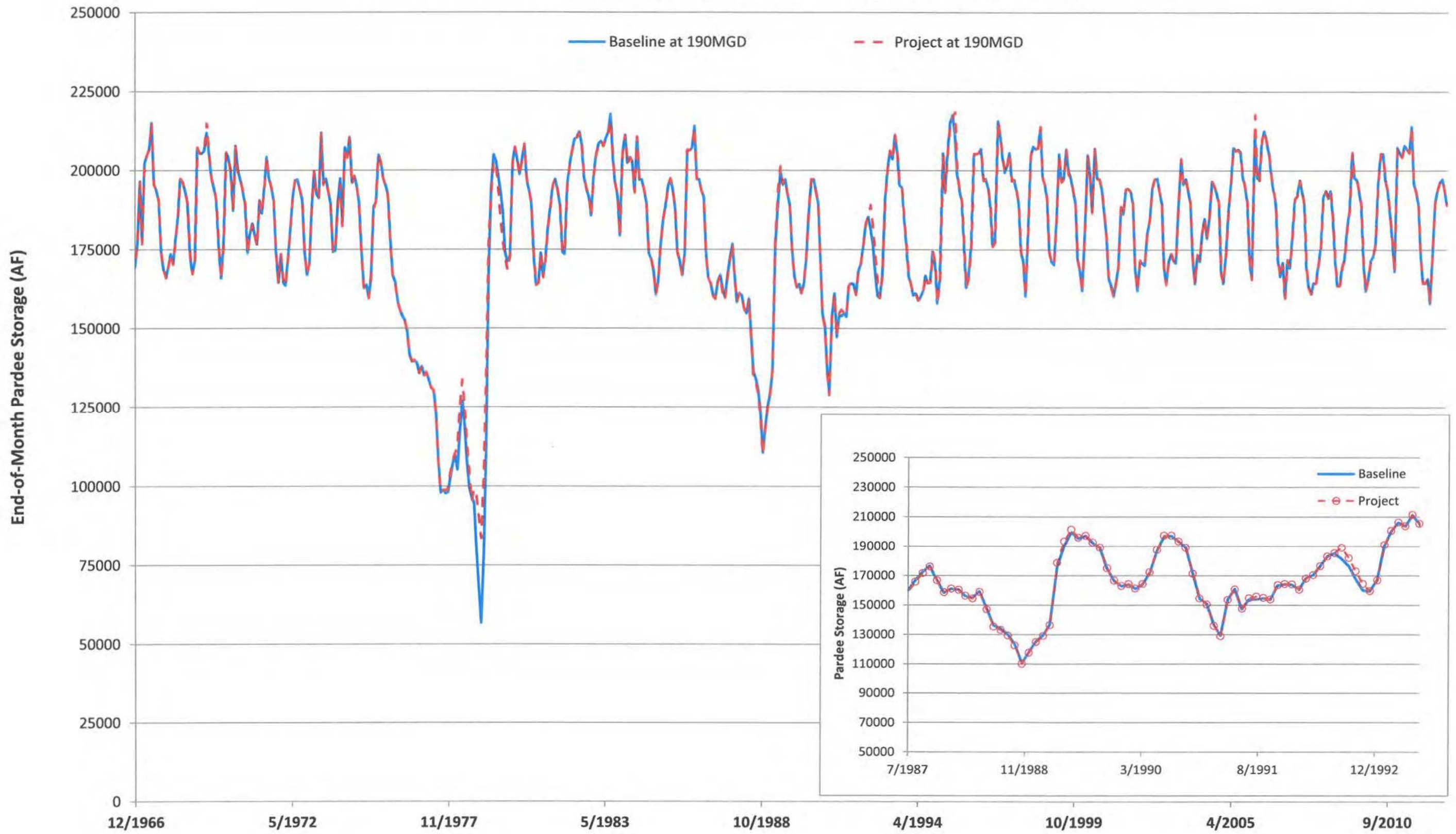


Figure WR-2(a). Camanche Storage - Project at 190MGD vs Baseline at 190MGD

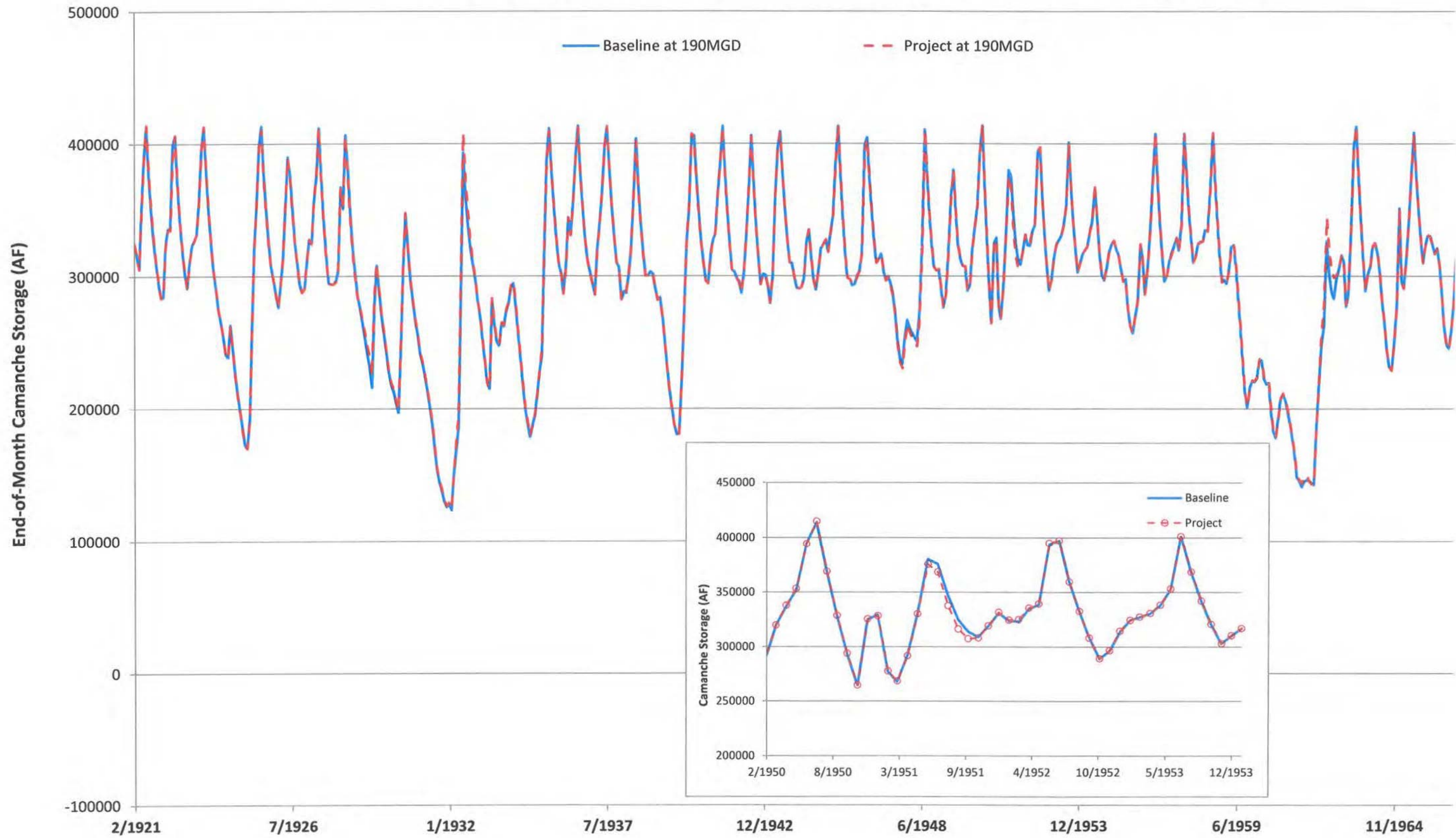


Figure WR-2(b). Camanche Storage - Project at 190MGD vs Baseline at 190MGD

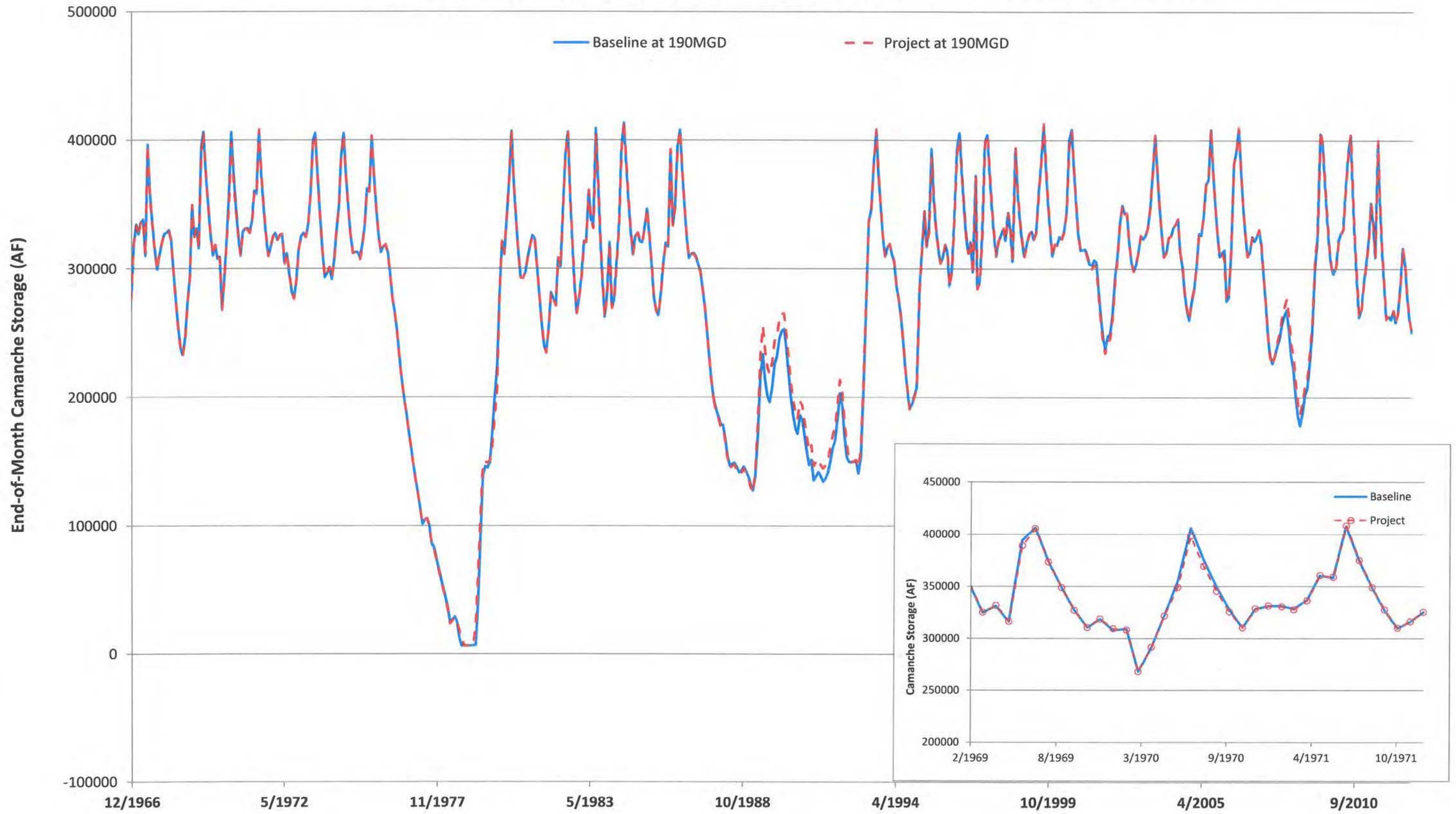


Figure WR-3(a). End-of-September Total System Storage

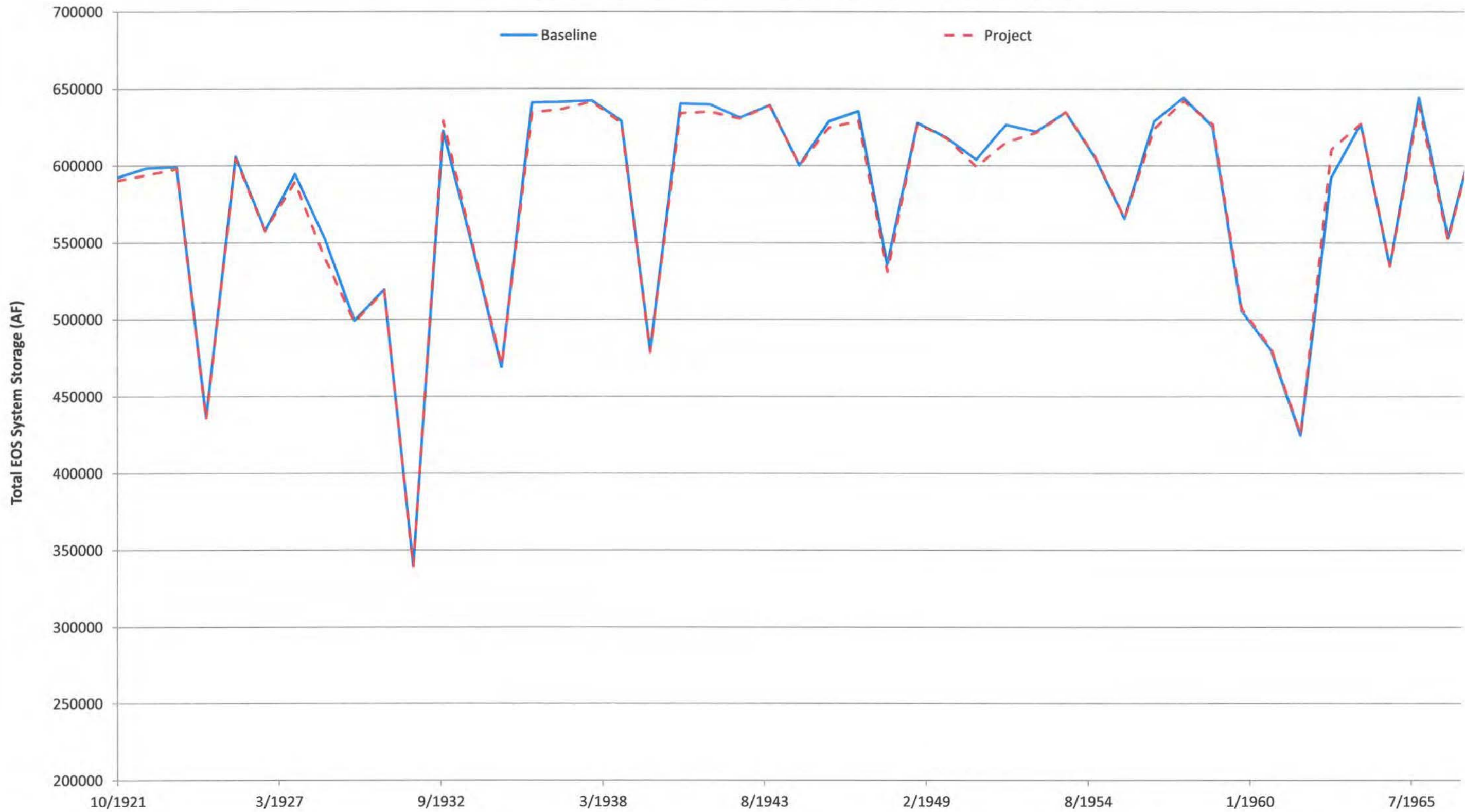


Figure WR-3(b). End-of-September Total System Storage

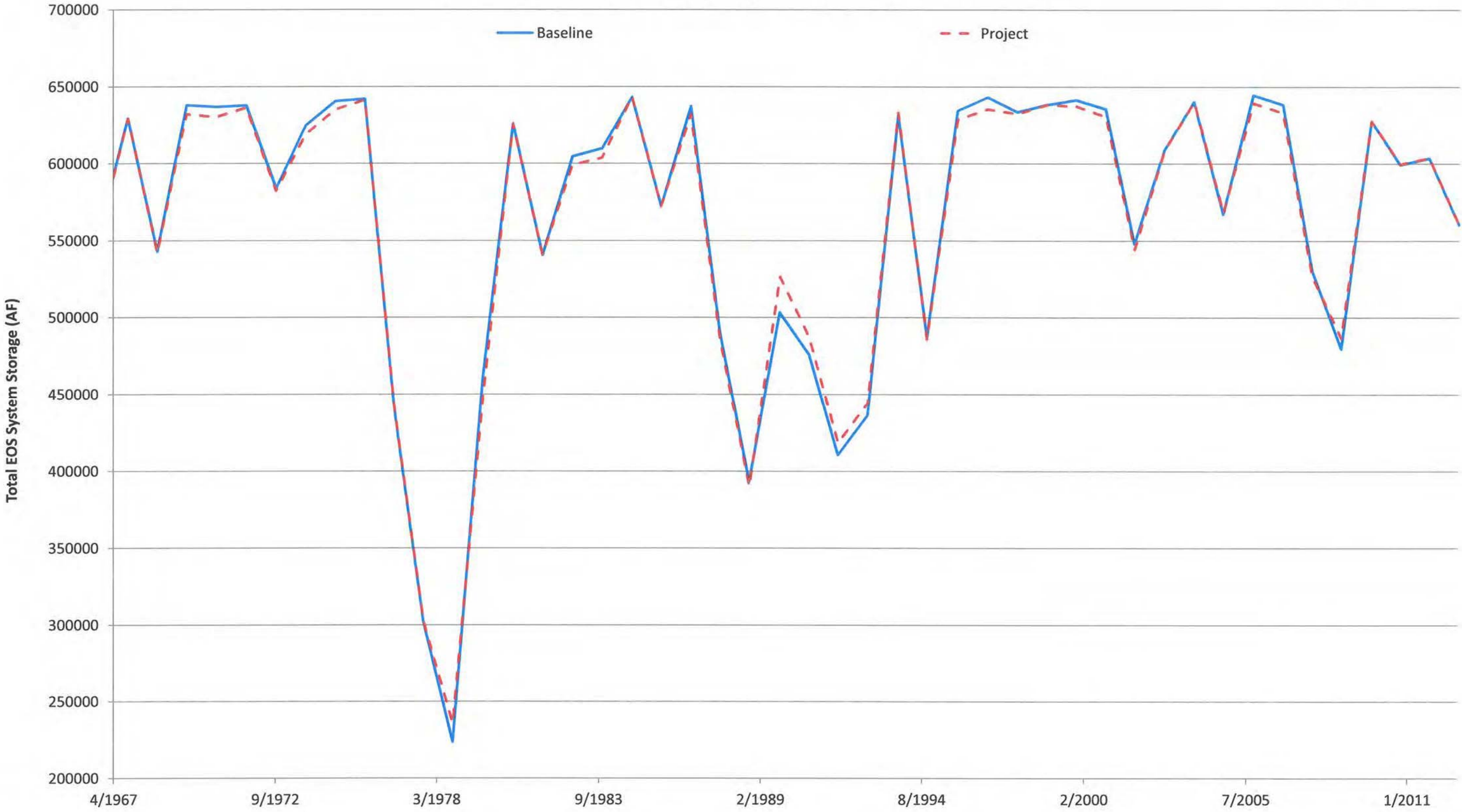


Figure WR-4(a). Camanche Total Outflow - Project at 190MGD vs Baseline at 190MGD

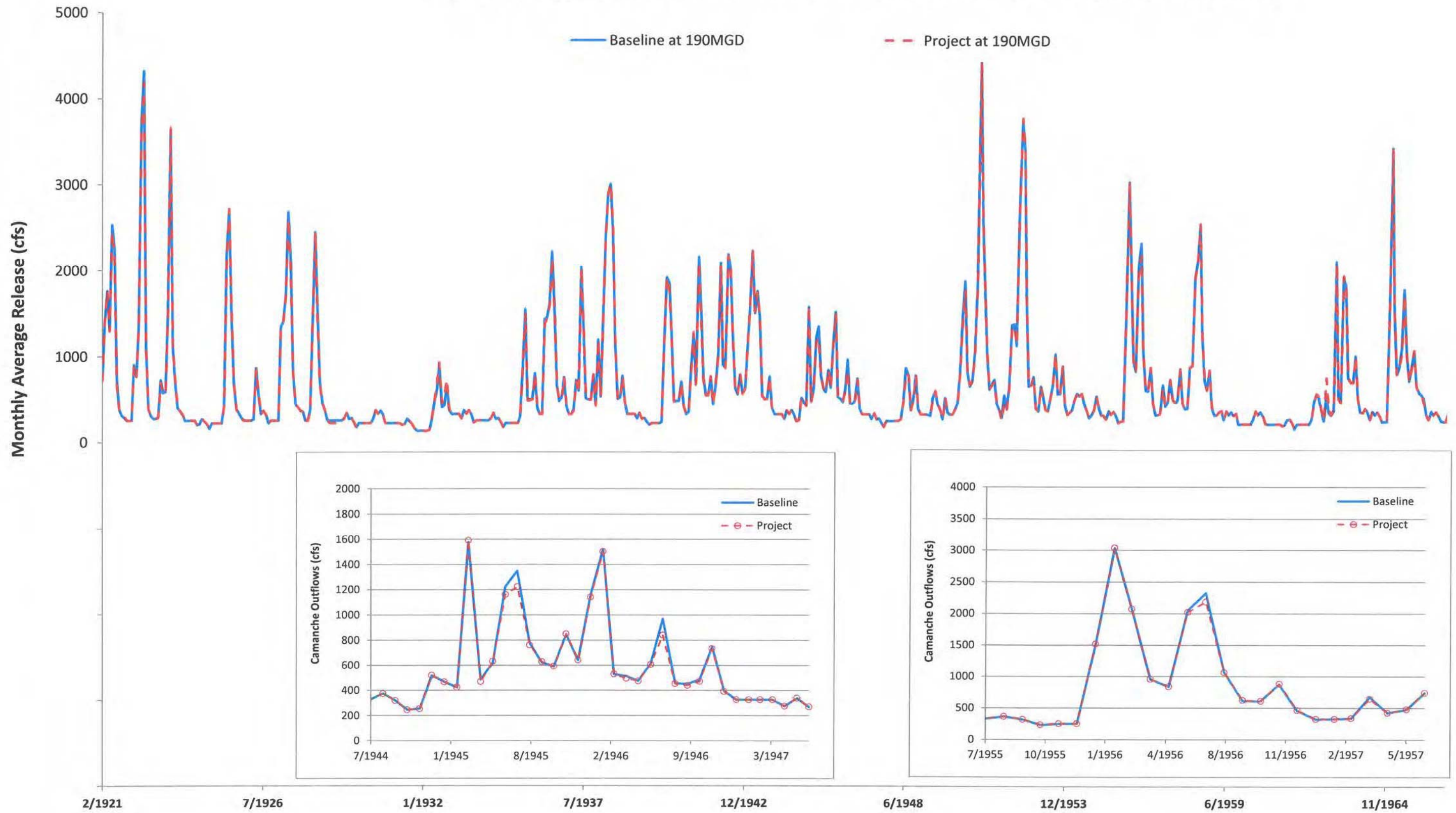


Figure WR-4(b). Camanche Total Outflow - Project at 190MGD vs Baseline at 190MGD

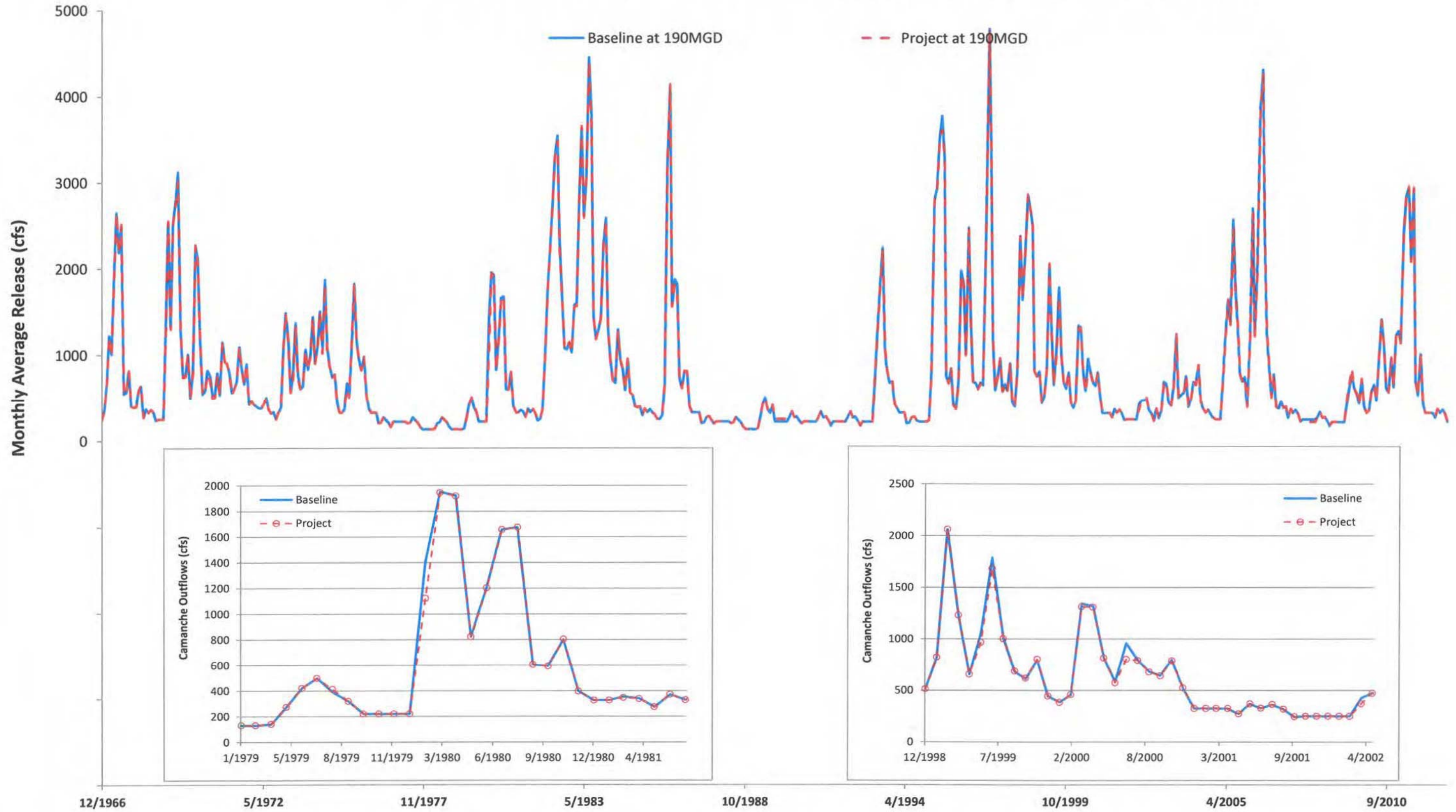
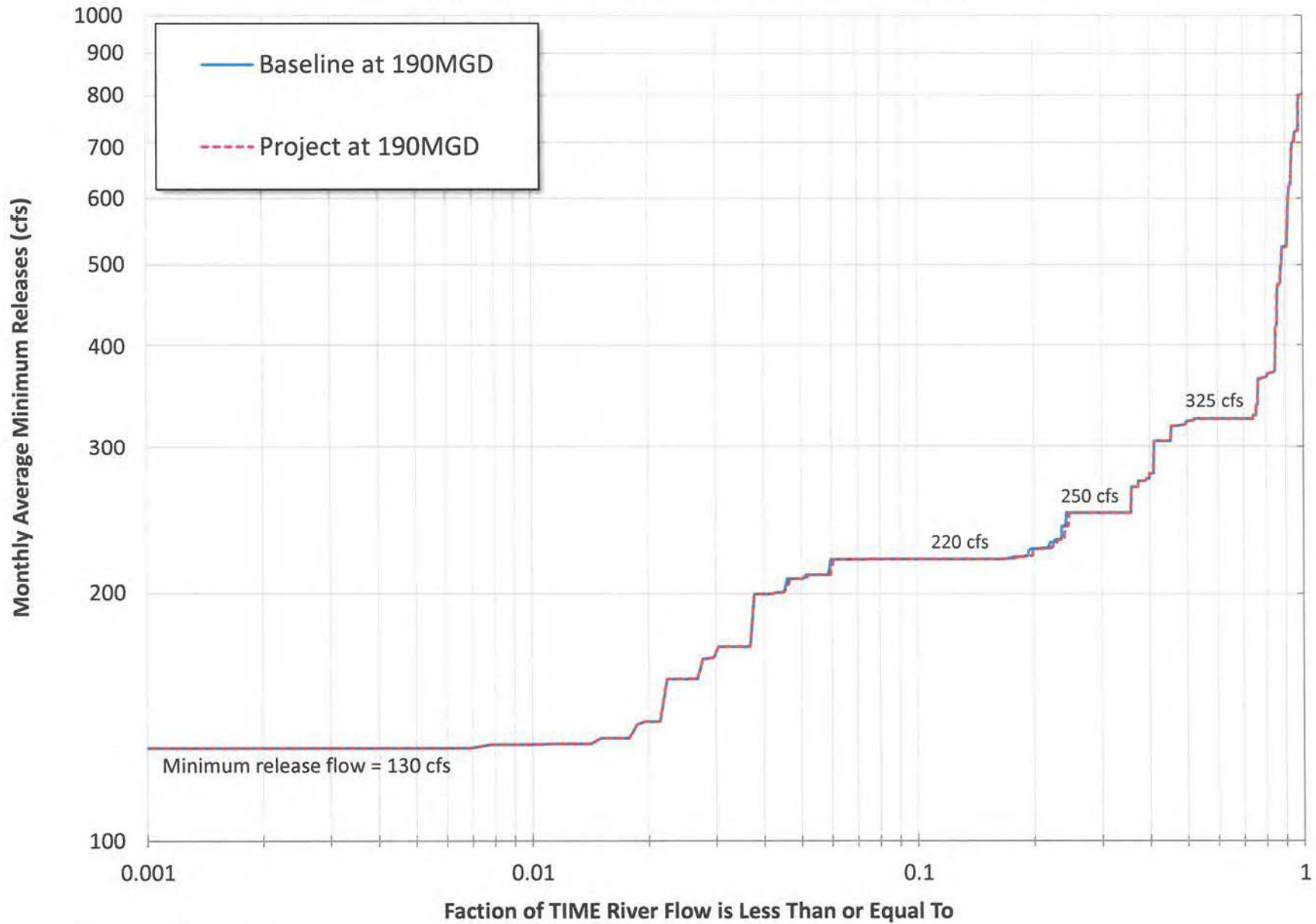




Figure WR-5. Camanche Required Minimum Release



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Figure WR-6(a). Camanche Flood Releases - Project at 190MGD vs Baseline at 190MGD

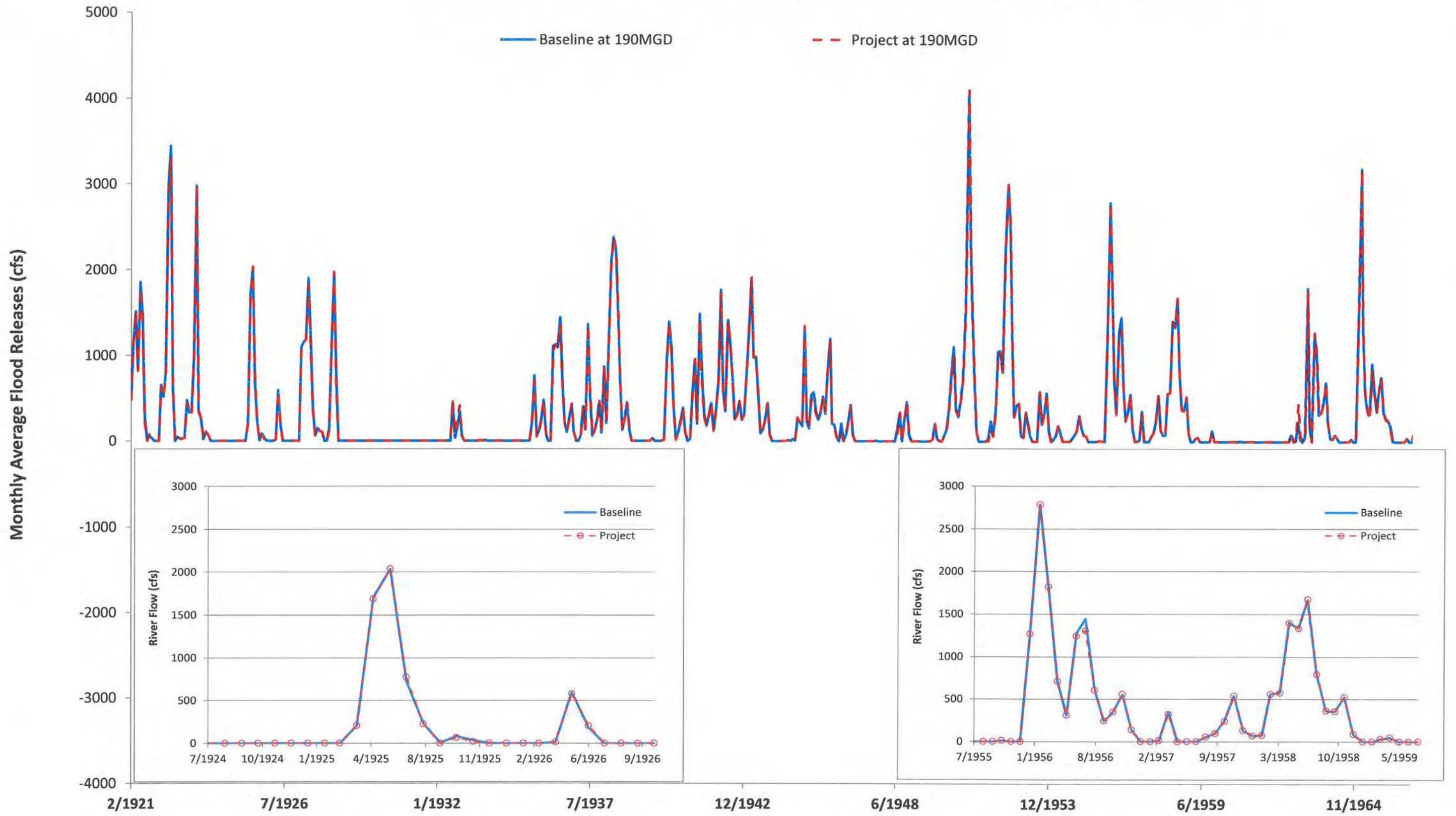


Figure WR-6(b). Camanche Flood Releases - Project at 190MGD vs Baseline at 190MGD

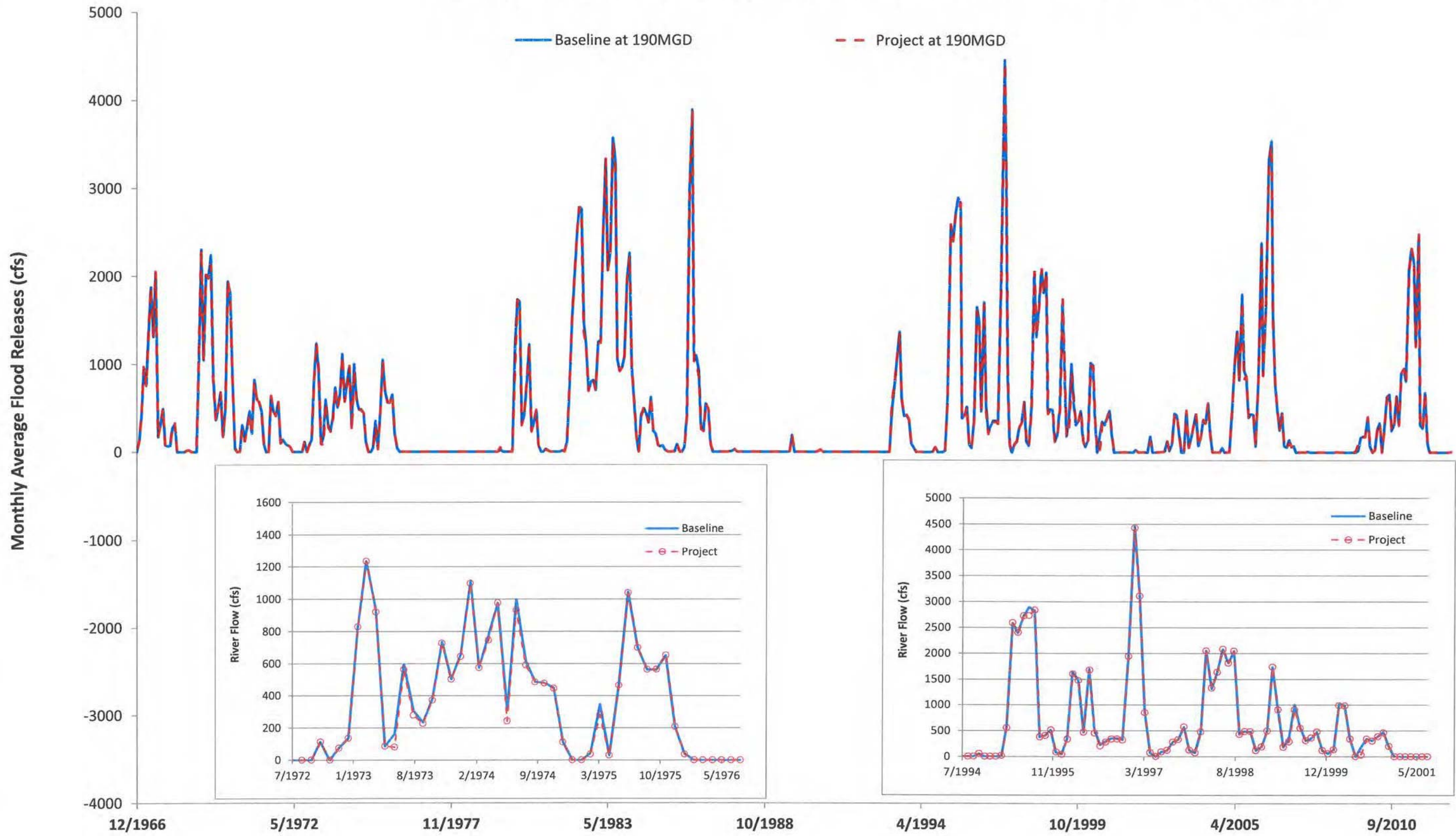


Figure WR-7(a). Flows below WID - Project at 190MGD vs Baseline at 190MGD

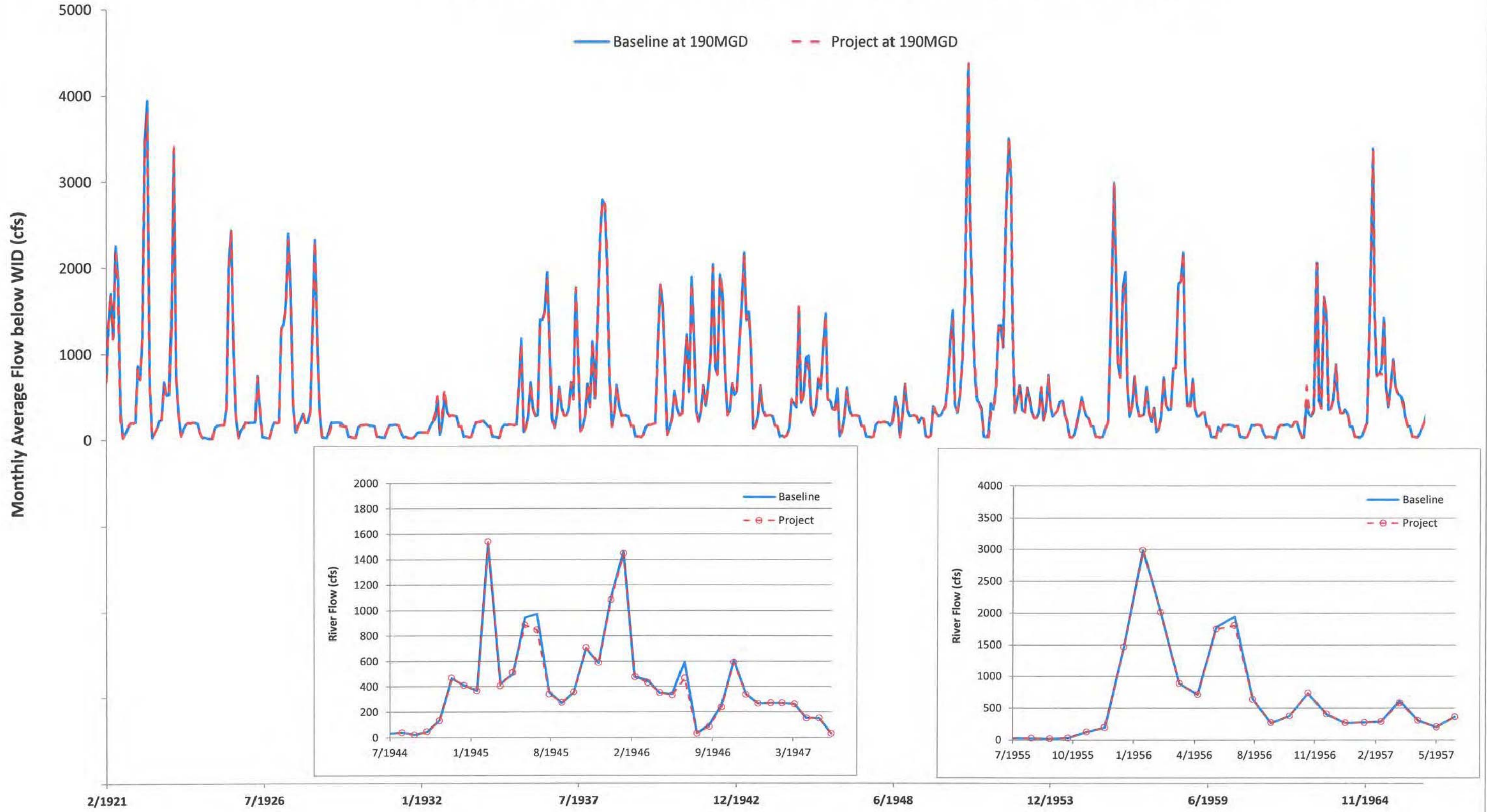


Figure WR-7(b). Flows below WID - Project at 190MGD vs Baseline at 190MGD

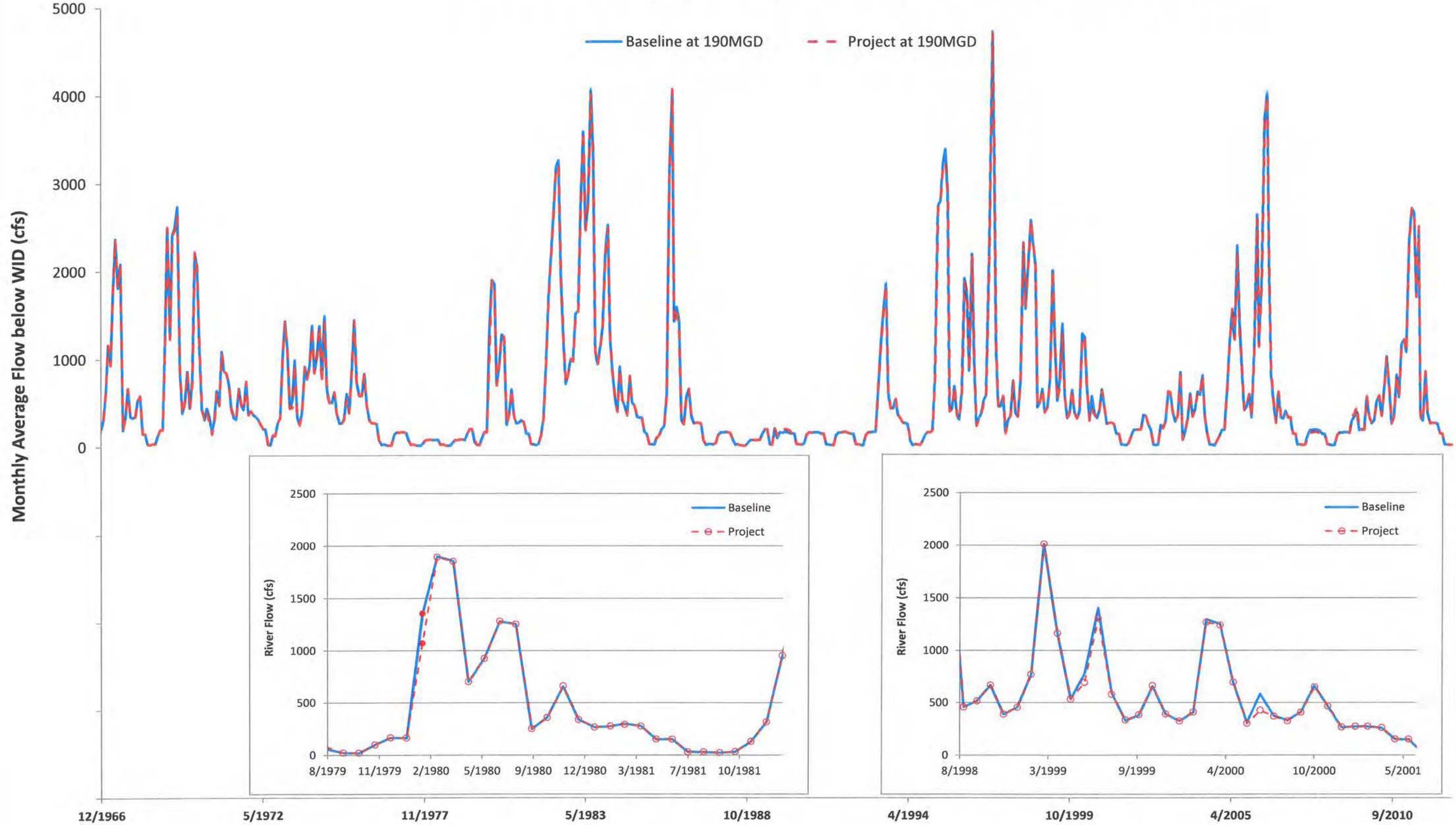
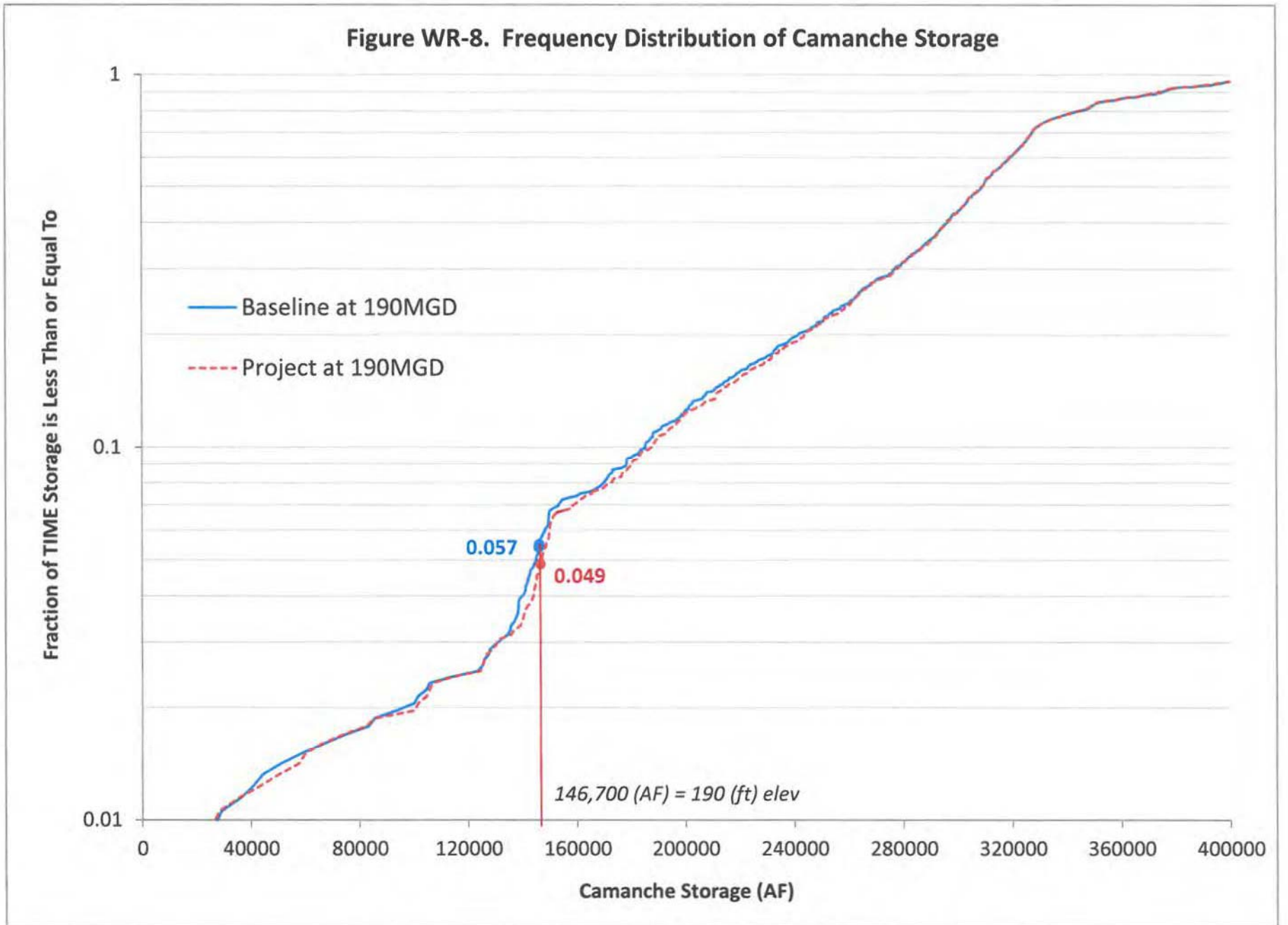


Figure WR-8. Frequency Distribution of Camanche Storage



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## 8026 Baseline at 190MGD

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 190 MGD with 2015 LOD for diversions

## 8027 Project at 190MGD

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 190 MGD with 2015 LOD for diversions

### Definitions:

TRA = Terminal Reservoir Area

Below Lodi = below Woodbridge Irrigation District

Camanche Out Flow = Total Cmanche Release

JSA Yea Type: 0 = Above Normal

1 = Below Normal

2 = Dry

3 = Critically Dry

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Date	Baseline at 190MGD (acre-ft) Pardee Storage	Project at 190MGD (acre-ft) Pardee Storage	Baseline at 190MGD (acre-ft) Camanche Storage	Project at 190MGD (acre-ft) Camanche Storage	Baseline at 190MGD (acre-ft) TRA Storage	Project at 190MGD (acre-ft) TRA Storage	Baseline at 190MGD (NA) JSA Year Type	Project at 190MGD (NA) JSA Year Type	Baseline at 190MGD (cfs) Camanche Outflow	Project at 190MGD (cfs) Camanche Outflow	Baseline at 190MGD (cfs) Required Minimum Flows	Project at 190MGD (cfs) Required Minimum Flows	Baseline at 190MGD (cfs) Camanche Flood Release	Project at 190MGD (cfs) Camanche Flood Release	Baseline at 190MGD (cfs) Flow below Lodi Lake	Project at 190MGD (cfs) Flow below Lodi Lake
1/1921	191952.6	191952.6	324369.1	324369.1	134534.2	134534.2	1	1	726.1	726.1	241.94	241.94	484.2	484.2	675.19	675.19
2/1921	188287.4	188287.4	316801.3	316801.3	139030.0	139030.0	1	1	1387.1	1387.1	250.00	250.00	1137.1	1137.1	1333.56	1333.56
3/1921	205793.3	205793.3	305326.5	305326.5	144403.2	144403.2	1	1	1762.6	1762.6	250.00	250.00	1512.6	1512.6	1698.33	1698.33
4/1921	210010.1	210010.1	348775.1	348775.1	145617.1	145617.1	1	1	1295.3	1295.3	474.84	474.84	820.5	820.5	1174.36	1174.36
5/1921	208634.4	208176.2	389037.2	388828.6	141819.3	139454.7	1	1	2532.9	2451.0	678.12	677.94	1854.8	1773.0	2254.94	2173.18
6/1921	201687.8	198990.3	411858.5	413980.3	136326.7	131700.5	1	1	2248.2	2154.1	778.53	778.42	1469.7	1375.7	1869.70	1775.70
7/1921	180750.0	182025.2	376932.2	379028.4	130429.5	125867.8	1	1	733.4	668.7	452.71	452.63	280.7	216.1	310.84	246.22
8/1921	162593.9	163833.5	349347.6	351367.8	124687.6	120182.0	1	1	374.0	375.0	374.04	374.04	0.0	1.0	21.58	22.56
9/1921	145218.4	146447.5	327635.7	328731.6	119565.0	115112.8	1	1	310.9	326.3	254.17	254.27	56.7	72.0	77.45	92.75
10/1921	136822.3	138043.0	310031.2	310201.2	116190.2	111788.6	1	1	283.3	298.3	250.00	250.00	33.3	48.3	141.74	156.72
11/1921	129088.6	130302.0	295917.7	295977.8	115725.4	111364.6	1	1	250.0	251.9	250.00	250.00	1.8	1.9	193.93	195.77
12/1921	132885.2	133678.3	283607.7	283667.8	127258.0	123335.5	1	1	250.0	250.0	250.00	250.00	0.0	0.0	192.89	192.89
1/1922	159145.8	158691.3	284551.0	284986.5	136116.7	133097.2	1	1	250.0	250.0	250.00	250.00	0.0	0.0	201.65	201.65
2/1922	202890.2	202760.1	322255.0	322049.7	144194.5	142651.6	1	1	905.0	885.7	250.00	250.00	655.0	635.7	863.52	844.28
3/1922	185640.3	185422.0	335848.9	335148.2	148458.8	147511.8	1	1	766.5	766.5	250.00	250.00	516.5	516.5	700.27	700.27
4/1922	208446.1	208397.6	335729.0	334871.6	148843.0	148634.7	0	0	1332.2	1319.7	525.00	525.00	807.2	794.7	1210.09	1197.62
5/1922	212000.0	218347.0	398156.8	389210.2	145643.1	143036.7	0	0	3745.2	3680.6	779.00	778.98	2966.2	2901.7	3466.66	3402.16
6/1922	208435.2	207991.9	405798.4	406065.6	140505.5	135640.4	0	0	4320.0	4186.7	880.38	880.30	3439.6	3306.4	3941.10	3807.89
7/1922	186837.2	186814.2	368474.0	368887.4	134615.4	129809.0	0	0	1091.8	1082.5	457.30	457.30	634.5	625.2	668.70	659.43
8/1922	170996.7	170974.0	340751.7	341162.2	128857.7	124108.9	0	0	377.5	377.5	377.51	377.51	0.0	0.0	25.04	25.04
9/1922	155344.4	155321.9	319383.8	319606.4	123669.9	118976.7	0	0	305.7	308.8	259.09	259.11	46.6	49.7	72.23	75.33
10/1922	146716.0	146693.6	302135.4	302173.8	121389.9	116742.6	1	1	272.7	275.7	250.00	250.00	22.7	25.7	130.96	133.95
11/1922	156816.4	156794.2	291001.0	291001.0	122778.0	118164.4	1	1	272.0	272.6	250.00	250.00	22.0	22.6	218.28	218.92
12/1922	177888.1	177548.0	310027.6	309630.8	134898.2	131321.4	1	1	288.7	283.9	250.00	250.00	38.7	33.9	231.86	227.05
1/1923	176229.7	175781.6	323148.2	323295.2	135884.4	133706.3	1	1	725.8	696.8	250.00	250.00	475.8	446.8	674.14	645.14
2/1923	170370.1	169871.3	326961.1	326661.8	137492.6	136025.7	1	1	578.6	575.0	250.00	250.00	328.6	325.0	525.98	522.41
3/1923	175016.1	175063.7	331775.2	331823.2	140919.5	139565.2	1	1	590.3	574.2	250.00	250.00	340.3	324.2	527.24	511.13
4/1923	209466.7	209458.5	355869.0	355830.7	145052.2	143850.0	1	1	1441.3	1441.3	474.87	474.87	966.4	966.4	1322.43	1322.43
5/1923	206823.3	206823.3	395292.4	395595.3	140698.0	139160.6	1	1	3658.1	3658.1	679.01	679.01	2979.1	2979.1	3400.11	3400.11
6/1923	198765.3	198765.3	412339.8	413033.2	135463.5	133944.9	1	1	1120.9	1114.3	777.15	777.20	343.8	337.1	743.80	737.15
7/1923	186789.8	186777.0	377945.7	378526.6	129563.7	128080.2	1	1	711.1	712.8	452.75	452.75	258.3	260.1	288.50	290.25
8/1923	169977.8	169965.1	349092.5	349484.9	123807.4	122343.8	1	1	394.7	397.7	374.42	374.49	20.3	23.2	41.84	44.78
9/1923	155825.0	155812.4	324465.2	324678.1	118719.3	117272.4	1	1	358.9	361.9	254.74	254.79	104.1	107.1	124.80	127.74
10/1923	147437.2	147424.7	303735.0	303764.4	115301.0	113868.6	1	1	318.5	321.5	250.00	250.00	68.5	71.5	176.10	179.00
11/1923	145539.6	145527.1	290659.9	290677.6	114076.8	112656.0	1	1	250.5	250.7	250.00	250.00	0.5	0.7	194.97	195.17
12/1923	135280.0	135037.9	274591.9	274609.5	117488.6	116305.7	1	1	250.0	250.0	250.00	250.00	0.0	0.0	190.73	190.73
1/1924	143146.5	142913.2	265373.5	265391.1	124352.9	123167.7	1	1	250.0	250.0	250.00	250.00	0.0	0.0	199.01	199.01
2/1924	152647.3	152267.7	254775.9	254793.6	130781.6	129748.2	1	1	250.0	250.0	250.00	250.00	0.0	0.0	197.62	197.62
3/1924	152252.4	151868.5	241631.1	241648.8	134776.1	133756.7	1	1	250.0	250.0	250.00	250.00	0.0	0.0	186.92	186.92
4/1924	185400.4	185511.0	239037.0	238261.7	135285.9	134579.1	3	3	199.8	199.8	199.79	199.79	0.0	0.0	77.72	77.72
5/1924	188524.0	188277.8	263039.8	262268.7	132094.1	131751.4	3	3	210.8	210.8	210.75	210.75	0.0	0.0	23.83	23.83
6/1924	170352.4	170112.8	244955.2	244189.7	127090.9	126748.8	3	3	268.5	268.5	268.51	268.51	0.0	0.0	31.00	31.00
7/1924	153666.0	153431.9	226486.7	225728.9	122055.7	121730.1	3	3	241.1	241.1	241.05	241.05	0.0	0.0	18.14	18.14
8/1924	137376.3	137148.5	210290.3	209540.3	117241.8	116935.5	3	3	208.5	208.5	208.46	208.46	0.0	0.0	15.03	15.03
9/1924	123678.0	123457.0	198543.1	197799.2	113654.1	113368.3	3	3	157.6	157.6	157.59	157.59	0.0	0.0	15.07	15.07
10/1924	119767.9	119554.3	185257.5	184517.3	112242.3	111975.4	2	2	220.0	220.0	220.00	220.00	0.0	0.0	135.03	135.03
11/1924	130503.2	130295.0	172626.1	171888.7	112456.3	112207.6	2	2	220.0	220.0	220.00	220.00	0.0	0.0	163.50	163.50
12/1924	167536.8	167706.9	171080.0	169964.3	119528.3	119294.7	2	2	220.0	220.0	220.00	220.00	0.0	0.0	166.35	166.35
1/1925	165067.0	164987.3	191238.4	190369.0	127127.7	126913.3	2	2	220.0	220.0	220.00	220.00	0.0	0.0	168.44	168.44
2/1925	202887.1	202886.4	257373.1	256423.8	144290.0	144290.2	2	2	220.0	220.0	220.00	220.00	0.0	0.0	168.56	168.56
3/1925	201396.4	201394.4	321667.0	320715.8	145265.6	145273.6	2	2	425.2	425.2	220.00	220.00	205.2	205.2	362.85	362.85

Date	Baseline at 190MGD (acre-ft) Pardee Storage	Project at 190MGD (acre-ft) Pardee Storage	Baseline at 190MGD (acre-ft) Camanche Storage	Project at 190MGD (acre-ft) Camanche Storage	Baseline at 190MGD (acre-ft) TRA Storage	Project at 190MGD (acre-ft) TRA Storage	Baseline at 190MGD (NA) JSA Year Type	Project at 190MGD (NA) JSA Year Type	Baseline at 190MGD (cfs) Camanche Outflow	Project at 190MGD (cfs) Camanche Outflow	Baseline at 190MGD (cfs) Required Minimum Flows	Project at 190MGD (cfs) Required Minimum Flows	Baseline at 190MGD (cfs) Camanche Flood Release	Project at 190MGD (cfs) Camanche Flood Release	Baseline at 190MGD (cfs) Flow below Lodi Lake	Project at 190MGD (cfs) Flow below Lodi Lake
4/1925	207121.9	207121.9	352996.0	353308.8	148537.5	148547.5	1	1	2182.7	2161.3	475.73	475.69	1706.9	1685.6	2060.71	2039.41
5/1925	208856.6	208856.6	396939.8	397250.7	149514.1	149524.5	1	1	2714.2	2714.2	678.22	678.22	2036.0	2036.0	2436.17	2436.17
6/1925	199744.3	199744.3	413359.3	410453.4	144337.0	144347.2	1	1	1494.6	1548.7	777.77	777.81	716.8	770.9	1116.83	1170.96
7/1925	182858.3	182858.3	377814.3	375267.3	138397.3	138407.5	1	1	685.4	679.9	452.63	452.63	232.8	227.2	262.91	257.38
8/1925	167074.9	167074.9	349944.3	347682.3	132611.3	132621.4	1	1	378.6	374.2	374.04	374.04	4.5	0.2	26.13	21.75
9/1925	151690.6	151690.6	326630.8	325403.8	127520.7	127530.7	1	1	337.8	320.6	254.31	254.23	83.5	66.4	104.24	87.09
10/1925	136434.6	136434.6	307031.5	306682.0	123891.3	123901.2	1	1	285.9	271.6	250.00	250.00	35.9	21.6	143.22	129.03
11/1925	145170.6	145170.6	297607.7	297435.6	123288.0	123298.0	1	1	253.0	250.0	250.00	250.00	3.0	0.0	199.71	196.75
12/1925	156686.7	156686.7	286495.3	286323.1	125711.0	125669.5	1	1	250.0	250.0	250.00	250.00	0.0	0.0	193.58	193.58
1/1926	160428.9	160428.4	276375.8	276203.5	133937.3	133678.9	1	1	250.0	250.0	250.00	250.00	0.0	0.0	197.51	197.51
2/1926	166088.4	166056.8	292268.4	292096.2	140711.5	140486.8	1	1	250.0	250.0	250.00	250.00	0.0	0.0	197.09	197.09
3/1926	174821.8	174939.0	312728.4	312357.7	143726.6	143555.0	1	1	264.5	264.5	250.00	250.00	14.5	14.5	201.65	201.65
4/1926	207290.8	207290.8	350202.8	351020.4	147651.9	147483.6	2	2	869.3	851.3	274.12	274.08	595.2	577.2	746.79	728.83
5/1926	192777.2	192777.2	389888.9	389636.1	143392.0	143228.2	2	2	557.5	574.9	370.35	370.39	187.1	204.5	337.24	354.62
6/1926	186638.6	186638.6	376214.5	375962.8	137746.2	137586.8	2	2	328.1	328.1	328.08	328.08	0.0	0.0	32.49	32.49
7/1926	166128.1	166128.1	349215.2	348965.2	131710.4	131555.6	2	2	363.5	363.5	363.47	363.47	0.0	0.0	29.28	29.28
8/1926	146333.9	146333.9	325220.4	324972.2	125910.2	125759.7	2	2	318.5	318.5	318.52	318.52	0.0	0.0	21.59	21.59
9/1926	128318.9	128318.9	308975.6	308728.7	120705.1	120558.3	2	2	219.8	219.8	219.82	219.82	0.0	0.0	20.03	20.03
10/1926	114715.7	114715.7	293088.9	292843.0	117991.8	117847.8	1	1	250.0	250.0	250.00	250.00	0.0	0.0	127.74	127.74
11/1926	156224.9	156224.9	287937.7	287691.2	123040.8	122906.0	1	1	250.0	250.0	250.00	250.00	0.0	0.0	199.19	199.19
12/1926	160286.2	160332.0	290566.4	290320.2	123818.1	123738.3	1	1	250.0	250.0	250.00	250.00	0.0	0.0	191.81	191.81
1/1927	170261.8	170285.0	312496.6	312250.1	133077.7	132912.9	1	1	250.0	250.0	250.00	250.00	0.0	0.0	199.20	199.20
2/1927	206154.4	206154.5	327889.6	327660.1	144049.1	143889.3	1	1	1343.9	1343.9	250.00	250.00	1093.9	1093.9	1293.37	1293.37
3/1927	196848.0	196846.8	324733.3	324503.9	147283.3	147248.7	1	1	1403.2	1403.2	250.00	250.00	1153.2	1153.2	1337.15	1337.15
4/1927	211844.3	211844.3	356676.8	356446.3	148704.6	148711.3	0	0	1703.3	1703.3	525.00	525.00	1178.3	1178.3	1579.90	1579.90
5/1927	205252.4	205040.9	375936.4	375533.0	144697.5	141545.6	0	0	2677.4	2598.1	778.41	778.32	1899.0	1819.7	2399.24	2319.97
6/1927	201564.4	200860.0	412111.7	412280.3	139742.2	134343.4	0	0	2102.0	2007.9	878.35	878.24	1223.6	1129.6	1724.06	1630.06
7/1927	189439.1	189454.3	373593.8	373811.7	133896.4	128571.8	0	0	823.1	810.5	456.77	456.76	366.3	353.8	400.46	387.89
8/1927	172984.9	173000.3	342147.6	342295.0	128154.6	122898.1	0	0	437.5	438.6	378.18	378.18	59.3	60.4	84.32	85.44
9/1927	156254.2	156269.5	315202.6	315282.5	122984.3	117793.0	0	0	404.2	405.4	259.94	259.94	144.3	145.4	170.12	171.25
10/1927	153671.8	153686.9	294580.8	294591.9	119812.8	114678.8	1	1	361.7	362.8	250.00	250.00	111.7	112.8	220.45	221.55
11/1927	164274.0	164289.1	293910.2	293910.2	120687.7	115599.1	1	1	351.0	351.2	250.00	250.00	101.0	101.2	296.84	297.01
12/1927	167579.8	166766.6	293904.9	293904.9	125265.6	121199.6	1	1	250.0	250.0	250.00	250.00	0.0	0.0	193.43	193.43
1/1928	163389.2	163252.2	296141.0	295319.8	129859.6	126424.2	1	1	250.0	250.0	250.00	250.00	0.0	0.0	197.01	197.01
2/1928	161686.3	161596.2	304188.1	303515.6	135329.3	132612.3	1	1	381.0	363.8	250.00	250.00	131.0	113.8	328.25	311.03
3/1928	211975.5	211853.9	367107.9	366965.0	142559.3	139362.5	1	1	1409.7	1409.7	250.00	250.00	1159.7	1159.7	1348.20	1348.20
4/1928	207657.9	207647.4	351001.8	350274.4	143792.7	141254.1	1	1	2444.7	2442.0	475.94	475.98	1968.7	1966.0	2320.68	2317.98
5/1928	204003.5	203536.0	406585.0	406083.2	139282.3	134405.5	1	1	1454.4	1365.4	677.03	676.94	777.4	688.4	1177.45	1088.51
6/1928	189099.4	185603.9	380547.6	378467.4	133624.1	126516.1	1	1	697.8	682.7	697.80	682.73	0.0	0.0	321.72	306.72
7/1928	169403.6	165966.0	348032.0	345966.6	127614.8	120589.6	1	1	452.1	452.1	452.14	452.14	0.0	0.0	30.15	30.15
8/1928	150275.0	146903.3	320645.5	318594.7	121841.3	114907.4	1	1	374.0	374.0	374.02	374.02	0.0	0.0	21.59	21.59
9/1928	133619.6	130277.4	302394.3	300355.5	116717.3	109866.7	1	1	254.1	254.1	254.09	254.09	0.0	0.0	20.73	20.73
10/1928	117396.2	114081.4	285097.2	284745.2	113143.1	106372.2	1	2	250.0	222.7	250.00	222.65	0.0	0.0	107.43	80.08
11/1928	123156.9	119856.8	275846.6	277279.2	112862.1	106143.3	1	2	250.0	220.0	250.00	220.00	0.0	0.0	196.77	166.77
12/1928	125467.1	121676.5	264731.6	268009.2	118121.0	111950.9	1	2	250.0	220.0	250.00	220.00	0.0	0.0	193.58	163.58
1/1929	116640.8	112823.5	252912.5	258035.2	123560.2	117486.8	1	2	250.0	220.0	250.00	220.00	0.0	0.0	197.51	167.51
2/1929	114894.3	110154.3	241914.9	248702.7	128246.3	123157.7	1	2	250.0	220.0	250.00	220.00	0.0	0.0	197.09	167.09
3/1929	127959.0	122678.2	230923.9	239557.6	132608.5	128129.5	1	2	250.0	220.0	250.00	220.00	0.0	0.0	188.21	158.21
4/1929	170740.7	163922.9	216014.3	224623.9	133706.7	130845.5	2	2	274.8	274.8	274.76	274.76	0.0	0.0	151.64	151.64
5/1929	197887.9	198017.6	279484.3	281231.2	130752.5	127843.2	2	2	337.9	337.9	337.94	337.94	0.0	0.0	150.08	150.08
6/1929	190870.9	190951.7	308082.3	309869.2	127264.6	124392.6	2	2	268.5	268.5	268.49	268.49	0.0	0.0	32.47	32.47

Date	Baseline at 190MGD	Project at 190MGD	Baseline at 190MGD	Project at 190MGD	Baseline at 190MGD	Project at 190MGD	Baseline at 190MGD	Project at 190MGD	Baseline at 190MGD	Project at 190MGD	Baseline at 190MGD	Project at 190MGD	Baseline at 190MGD	Project at 190MGD	Baseline at 190MGD	Project at 190MGD
	(acre-ft)	(acre-ft)	(acre-ft)	(acre-ft)	(acre-ft)	(acre-ft)	(NA)	(NA)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
	Pardee Storage	Pardee Storage	Camanche Storage	Camanche Storage	TRA Storage	TRA Storage	JSA Year Type	JSA Year Type	Camanche Outflow	Camanche Outflow	Required Minimum Flows	Required Minimum Flows	Camanche Flood Release	Camanche Flood Release	Flow below Lodi Lake	Flow below Lodi Lake
7/1929	170872.8	170962.2	288154.3	289917.1	121385.3	118557.6	2	2	278.4	278.4	278.43	278.43	0.0	0.0	29.32	29.32
8/1929	150447.7	150528.3	269920.4	271668.5	115725.2	112938.9	2	2	232.1	232.1	232.09	232.09	0.0	0.0	21.55	21.55
9/1929	131676.1	131756.0	256830.8	258566.4	110647.5	107896.3	2	2	172.5	172.5	172.49	172.49	0.0	0.0	20.03	20.03
10/1929	114502.3	114581.5	241799.6	243526.0	107096.4	104376.0	2	2	220.0	220.0	220.00	220.00	0.0	0.0	134.13	134.13
11/1929	98187.7	98266.4	227595.7	229315.1	105802.1	103106.5	2	2	220.0	220.0	220.00	220.00	0.0	0.0	162.63	162.63
12/1929	99530.0	99562.2	217961.4	219680.8	109929.1	107293.0	2	2	220.0	220.0	220.00	220.00	0.0	0.0	163.37	163.37
1/1930	108915.8	108745.7	212518.1	214243.2	117030.1	114604.9	2	2	220.0	220.0	220.00	220.00	0.0	0.0	170.23	170.23
2/1930	126081.0	125591.8	204831.2	206558.4	123356.0	121264.5	2	2	220.0	220.0	220.00	220.00	0.0	0.0	168.21	168.21
3/1930	171771.7	171291.4	196762.3	198290.5	129627.9	127743.7	2	2	220.0	220.0	220.00	220.00	0.0	0.0	156.70	156.70
4/1930	203344.1	203316.3	242801.1	243430.8	132736.2	131315.1	2	2	272.8	272.8	272.80	272.80	0.0	0.0	158.13	158.13
5/1930	204585.5	204610.9	305588.1	306890.4	130623.6	128496.4	2	2	370.0	370.0	370.00	370.00	0.0	0.0	150.58	150.58
6/1930	187919.0	187921.2	346546.3	347864.4	126044.4	123948.1	2	2	328.1	328.1	328.08	328.08	0.0	0.0	30.59	30.59
7/1930	167964.1	167966.4	320534.7	321843.2	120152.7	118090.6	2	2	363.5	363.5	363.47	363.47	0.0	0.0	29.28	29.28
8/1930	147519.3	147521.5	297033.4	298332.2	114502.3	112471.9	2	2	318.5	318.5	318.52	318.52	0.0	0.0	21.75	21.75
9/1930	128654.9	128657.1	281224.2	282515.1	109462.8	107459.1	2	2	219.8	219.8	219.82	219.82	0.0	0.0	20.19	20.19
10/1930	114089.6	114091.8	266711.3	267996.5	105944.5	103965.0	2	2	220.0	220.0	220.00	220.00	0.0	0.0	97.40	97.40
11/1930	106604.9	106607.1	255514.0	256796.8	104980.9	103018.1	2	2	220.0	220.0	220.00	220.00	0.0	0.0	164.51	164.51
12/1930	93291.4	93201.6	241383.9	242662.9	107960.6	106106.7	2	2	220.0	220.0	220.00	220.00	0.0	0.0	160.73	160.73
1/1931	89231.4	88539.6	233951.2	235232.7	113674.9	112430.6	2	2	220.0	220.0	220.00	220.00	0.0	0.0	169.01	169.01
2/1931	90470.7	88945.1	225493.0	226775.2	118438.1	118042.0	2	2	220.0	220.0	220.00	220.00	0.0	0.0	167.68	167.68
3/1931	85647.3	84064.4	214225.4	215506.0	124116.3	123791.8	2	2	220.0	220.0	220.00	220.00	0.0	0.0	156.95	156.95
4/1931	89549.9	87964.8	202833.1	204109.2	126078.7	125773.6	3	3	199.8	199.8	199.76	199.76	0.0	0.0	77.73	77.73
5/1931	87324.2	85795.5	189296.3	190564.2	123132.7	122791.2	3	3	210.7	210.7	210.72	210.72	0.0	0.0	23.82	23.82
6/1931	84117.9	82744.1	171783.3	173040.0	116124.7	115650.1	3	3	268.5	268.5	268.48	268.48	0.0	0.0	31.00	31.00
7/1931	97070.2	95774.4	154137.4	155378.4	110394.1	109870.1	3	3	241.0	241.0	241.03	241.03	0.0	0.0	18.09	18.09
8/1931	103922.5	102910.3	144210.4	145197.7	105803.4	105262.3	3	3	208.5	208.5	208.48	208.48	0.0	0.0	15.02	15.02
9/1931	98843.6	97857.8	138199.3	139181.2	102869.5	102320.9	3	3	157.6	157.6	157.62	157.62	0.0	0.0	15.07	15.07
10/1931	97199.8	96261.0	130057.6	131032.7	101632.9	101058.9	3	3	131.4	131.4	131.37	131.37	0.0	0.0	46.64	46.64
11/1931	100723.1	99813.3	125765.9	126739.5	103037.4	102450.9	3	3	131.6	131.6	131.60	131.60	0.0	0.0	77.80	77.80
12/1931	121819.5	120933.7	127982.8	128963.8	112547.6	111947.0	3	3	133.7	133.7	133.66	133.66	0.0	0.0	81.97	81.97
1/1932	141297.4	140432.9	123454.2	124435.6	121086.8	120478.6	3	3	130.0	130.0	130.00	130.00	0.0	0.0	78.18	78.18
2/1932	169067.8	168611.1	149625.4	150216.0	130160.8	129551.1	3	3	130.0	130.0	130.00	130.00	0.0	0.0	81.08	81.08
3/1932	172501.9	173428.0	168708.4	173756.4	135002.4	135307.9	3	3	140.0	140.0	140.00	140.00	0.0	0.0	76.07	76.07
4/1932	184346.8	185074.1	185492.9	195522.9	135751.1	137772.4	1	1	272.8	272.8	272.80	272.80	0.0	0.0	151.16	151.16
5/1932	206692.8	206948.7	281256.0	298196.0	132568.1	134812.1	1	1	475.3	475.3	475.33	475.33	0.0	0.0	201.48	201.48
6/1932	206294.0	206353.6	393054.1	407566.8	127648.8	129507.0	1	1	612.5	661.0	612.50	660.97	0.0	0.0	236.63	284.94
7/1932	195367.8	195474.0	359473.1	371999.5	122002.9	123719.2	1	1	894.3	926.1	452.92	453.02	441.4	473.1	471.52	503.29
8/1932	193345.8	193477.8	338055.9	347423.4	116404.5	118092.6	1	1	405.4	455.1	374.29	374.53	31.2	80.6	52.72	102.15
9/1932	189469.1	189402.6	321602.2	326651.0	111373.3	113034.3	1	1	427.8	503.1	254.97	254.99	172.8	248.1	193.55	268.79
10/1932	170357.2	170291.1	308966.8	309665.0	107888.8	109524.0	0	0	661.8	732.4	325.00	325.00	336.8	407.4	518.00	588.50
11/1932	159004.6	158938.8	297939.4	297939.4	106835.0	108448.9	0	0	372.5	384.2	325.00	325.00	47.5	59.2	315.16	326.86
12/1932	158107.3	158041.8	281020.8	281020.8	110906.3	112503.0	0	0	325.0	325.0	325.00	325.00	0.0	0.0	267.29	267.29
1/1933	160170.4	160204.6	269200.6	269200.6	122119.0	123608.1	0	0	325.0	325.0	325.00	325.00	0.0	0.0	274.36	274.36
2/1933	154507.7	154553.5	252749.8	252749.8	127627.2	129091.2	0	0	325.0	325.0	325.00	325.00	0.0	0.0	270.67	270.67
3/1933	164139.7	164379.1	235999.9	235999.9	133554.2	134812.7	0	0	325.0	325.0	325.00	325.00	0.0	0.0	260.84	260.84
4/1933	178133.9	178698.1	218880.7	218880.7	134272.1	135180.5	2	2	272.8	272.8	272.83	272.83	0.0	0.0	150.24	150.24
5/1933	198088.2	198133.8	215126.9	215675.3	131818.3	132682.9	2	2	370.0	370.0	370.00	370.00	0.0	0.0	151.25	151.25
6/1933	195006.5	194930.3	282346.3	283356.4	127108.9	127618.2	2	2	328.1	328.1	328.08	328.08	0.0	0.0	30.65	30.65
7/1933	196924.3	196950.1	263378.0	264206.9	121400.6	121900.7	2	2	368.6	369.7	363.47	363.47	5.1	6.3	34.37	35.54
8/1933	193632.5	193604.2	250905.7	251780.5	115760.0	116252.0	2	2	318.5	318.5	318.52	318.52	0.0	0.0	21.59	21.59
9/1933	189453.7	189425.6	247627.6	248495.8	110738.8	111223.7	2	2	227.3	227.3	219.85	219.85	7.4	7.4	27.55	27.55

Date	Baseline at	Project at	Baseline at	Project at	Baseline at	Project at	Baseline at	Project at	Baseline at	Project at	Baseline at	Project at	Baseline at	Project at	Baseline at	Project at
	190MGD	190MGD	190MGD	190MGD	190MGD	190MGD	190MGD	190MGD	190MGD	190MGD	190MGD	190MGD	190MGD	190MGD	190MGD	190MGD
	(acre-ft)	(acre-ft)	(acre-ft)	(acre-ft)	(acre-ft)	(acre-ft)	(NA)	(NA)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
	Pardee	Pardee	Camanche	Camanche	TRA Storage	TRA Storage	JSA Year Type	JSA Year Type	Camanche	Camanche	Required	Required	Camanche Flood	Camanche Flood	Flow below	Flow below
	Storage	Storage	Storage	Storage					Outflow	Outflow	Minimum Flows	Minimum Flows	Release	Release	Lodi Lake	Lodi Lake
10/1933	173967.7	173939.7	263883.9	264749.0	108193.4	108673.4	1	1	250.0	250.0	250.00	250.00	0.0	0.0	128.54	128.54
11/1933	159826.3	159798.4	262057.6	262919.5	107318.5	107792.9	1	1	250.0	250.0	250.00	250.00	0.0	0.0	192.66	192.66
12/1933	166916.6	166888.8	273859.0	274724.7	113143.5	113615.5	1	1	250.0	250.0	250.00	250.00	0.0	0.0	197.69	197.69
1/1934	161782.4	161755.5	280331.6	281196.7	121655.0	122122.4	1	1	250.0	250.0	250.00	250.00	0.0	0.0	203.47	203.47
2/1934	167902.0	167954.2	292151.5	293018.9	131173.8	131560.0	1	1	250.0	250.0	250.00	250.00	0.0	0.0	211.44	211.44
3/1934	168651.9	168527.1	294521.9	295563.5	135057.0	135439.4	1	1	250.0	250.0	250.00	250.00	0.0	0.0	185.25	185.25
4/1934	172242.5	172298.3	277787.6	278825.3	135904.5	136103.1	2	2	274.8	274.8	274.76	274.76	0.0	0.0	149.99	149.99
5/1934	171026.4	171134.9	256572.7	257605.2	132045.2	132188.2	2	2	338.0	338.0	337.96	337.96	0.0	0.0	151.14	151.14
6/1934	165838.6	165980.2	238315.8	239340.6	127531.3	127638.2	2	2	268.5	268.5	268.49	268.49	0.0	0.0	30.87	30.87
7/1934	168883.6	169010.1	217628.3	218642.6	122402.5	122496.0	2	2	278.4	278.4	278.43	278.43	0.0	0.0	29.32	29.32
8/1934	167115.4	167239.3	200078.6	201082.3	117606.5	117682.5	2	2	232.1	232.1	232.09	232.09	0.0	0.0	21.55	21.55
9/1934	166659.8	166777.9	188248.5	189244.3	114192.8	114249.4	2	2	172.5	172.5	172.49	172.49	0.0	0.0	20.49	20.49
10/1934	165866.8	165807.5	178419.9	179586.4	112665.2	112701.4	2	2	220.0	220.0	220.00	220.00	0.0	0.0	134.87	134.87
11/1934	163119.0	163081.8	186991.4	188136.5	114353.4	114370.2	2	2	220.0	220.0	220.00	220.00	0.0	0.0	166.40	166.40
12/1934	163800.3	163763.8	193845.4	194990.4	122131.6	122131.8	2	2	220.0	220.0	220.00	220.00	0.0	0.0	163.31	163.31
1/1935	166844.4	166808.5	210457.7	211605.3	134689.7	134674.6	2	2	220.0	220.0	220.00	220.00	0.0	0.0	169.26	169.26
2/1935	166102.5	166067.1	227127.6	228364.9	136736.7	136706.9	2	2	220.0	220.0	220.00	220.00	0.0	0.0	168.20	168.20
3/1935	167666.6	170117.6	239552.8	245161.9	141336.1	141113.6	2	2	220.0	220.0	220.00	220.00	0.0	0.0	157.79	157.79
4/1935	209025.4	209034.0	314996.2	322543.8	147381.3	147054.0	1	1	287.9	297.9	287.90	297.94	0.0	0.0	171.07	181.07
5/1935	205802.6	205614.0	388398.4	388139.3	144245.6	140493.5	1	1	873.4	927.8	654.84	663.02	218.5	264.8	618.53	672.87
6/1935	195207.7	194706.3	411673.7	409707.3	138849.5	132851.9	1	1	1545.3	1486.6	777.69	777.60	767.6	709.0	1167.66	1108.97
7/1935	197150.3	197121.9	379647.0	378336.5	133083.7	127148.9	1	1	506.3	488.2	452.24	452.21	54.0	36.0	84.20	66.14
8/1935	193579.7	193447.9	352382.3	351456.8	127453.8	121588.0	1	1	492.2	487.8	374.71	374.71	117.5	113.1	139.08	134.64
9/1935	189196.4	189065.0	329417.4	328913.9	122351.8	116550.1	1	1	506.9	499.9	254.99	254.99	251.9	244.9	272.63	265.60
10/1935	170670.3	170786.4	310443.0	310375.5	119217.1	113475.4	0	0	804.2	793.1	325.00	325.00	479.2	468.1	661.35	650.24
11/1935	160033.9	160149.4	302728.4	302728.3	118557.6	112868.2	0	0	402.8	401.7	325.00	325.00	77.8	76.7	346.01	344.88
12/1935	160360.0	160357.5	287676.8	286552.1	122325.5	117921.3	0	0	325.0	325.0	325.00	325.00	0.0	0.0	267.29	267.29
1/1936	167975.6	167085.5	306645.9	305517.0	134460.8	130970.8	0	0	325.0	325.0	325.00	325.00	0.0	0.0	276.04	276.04
2/1936	205179.8	205146.6	344304.0	344314.3	147438.7	145667.9	0	0	1430.7	1375.0	325.00	325.00	1105.7	1050.0	1388.83	1333.19
3/1936	190086.2	189797.8	331405.5	330790.4	145812.8	145276.6	0	0	1451.0	1451.0	325.00	325.00	1126.0	1126.0	1385.07	1385.07
4/1936	206988.5	206984.4	355499.6	355066.1	147343.4	147415.9	0	0	1616.0	1598.0	525.00	525.00	1091.0	1073.0	1491.90	1473.94
5/1936	204733.7	204447.4	390246.9	389643.2	144778.2	142313.6	0	0	2218.1	2135.5	777.86	777.77	1440.2	1357.7	1940.74	1858.25
6/1936	199188.2	198349.5	413463.7	412427.0	139973.1	135248.6	0	0	1586.1	1509.9	877.87	877.75	708.2	632.1	1209.70	1133.60
7/1936	195840.4	196404.9	378358.6	377534.6	134127.9	129461.3	0	0	671.5	645.2	456.55	456.53	214.9	188.7	249.09	222.85
8/1936	193570.6	193281.8	351314.8	350820.3	128382.8	123772.2	0	0	481.4	490.0	377.95	378.00	103.4	112.0	128.49	137.01
9/1936	189239.6	189347.4	328998.4	328686.0	123211.2	118654.4	0	0	516.7	507.0	259.94	259.94	256.7	247.0	282.44	272.76
10/1936	171893.8	171753.9	311842.4	311786.5	119714.1	115209.2	0	0	757.7	757.6	325.00	325.00	432.7	432.6	615.07	614.94
11/1936	159861.8	159722.7	303519.1	303519.1	118458.7	114001.3	0	0	420.8	419.9	325.00	325.00	95.8	94.9	362.78	361.85
12/1936	164026.8	163954.7	294352.3	293778.1	122794.0	118880.8	0	0	325.0	325.0	325.00	325.00	0.0	0.0	269.67	269.67
1/1937	162191.6	162009.7	286748.4	285797.5	135242.9	131638.0	0	0	325.0	325.0	325.00	325.00	0.0	0.0	273.93	273.93
2/1937	179208.6	178331.8	319343.7	318634.8	143194.2	142143.8	0	0	386.6	365.2	325.00	325.00	61.6	40.2	338.91	317.50
3/1937	186902.6	186788.2	340055.1	338845.4	152961.3	152255.8	0	0	722.6	709.7	325.00	325.00	397.6	384.7	663.70	650.82
4/1937	194874.2	194985.6	362936.7	363223.1	147964.2	147404.7	1	1	603.2	573.9	473.70	473.66	129.5	100.3	489.39	460.12
5/1937	207186.0	207186.0	397603.4	398437.2	144198.9	143453.7	1	1	2037.4	2030.3	677.56	677.55	1359.9	1352.8	1759.89	1752.81
6/1937	194388.8	194388.8	413220.7	413174.2	139742.2	139005.4	1	1	1322.7	1337.4	777.45	777.46	545.2	560.0	945.70	960.46
7/1937	197126.9	197125.2	381205.7	381166.3	133983.1	133256.7	1	1	511.6	511.5	452.24	452.24	59.4	59.2	89.51	89.40
8/1937	193522.4	193520.7	353362.6	353336.0	128266.1	127548.6	1	1	496.4	496.1	374.71	374.71	121.6	121.4	143.20	142.99
9/1937	189276.2	189274.5	329882.2	329867.8	123125.1	122414.9	1	1	496.6	496.4	254.99	254.99	241.6	241.4	262.32	262.12
10/1937	169459.2	169457.5	310301.2	310299.2	119905.1	119201.7	0	0	789.9	789.7	325.00	325.00	464.9	464.7	646.62	646.42
11/1937	161097.5	161095.8	306987.2	306987.2	121243.9	120545.3	0	0	421.2	421.2	325.00	325.00	96.2	96.2	366.06	366.03
12/1937	175032.2	174663.0	282129.3	282129.3	129115.8	128788.2	0	0	1192.3	1192.3	325.00	325.00	867.3	867.3	1134.92	1134.92

Date	Baseline at 190MGD (acre-ft) Pardee Storage	Project at 190MGD (acre-ft) Pardee Storage	Baseline at 190MGD (acre-ft) Camanche Storage	Project at 190MGD (acre-ft) Camanche Storage	Baseline at 190MGD (acre-ft) TRA Storage	Project at 190MGD (acre-ft) TRA Storage	Baseline at 190MGD (NA) JSA Year Type	Project at 190MGD (NA) JSA Year Type	Baseline at 190MGD (cfs) Camanche Outflow	Project at 190MGD (cfs) Camanche Outflow	Baseline at 190MGD (cfs) Required Minimum Flows	Project at 190MGD (cfs) Required Minimum Flows	Baseline at 190MGD (cfs) Camanche Flood Release	Project at 190MGD (cfs) Camanche Flood Release	Baseline at 190MGD (cfs) Flow below Lodi Lake	Project at 190MGD (cfs) Flow below Lodi Lake
1/1938	168361.4	168185.3	288279.7	288031.6	134812.0	134566.3	0	0	532.3	532.3	325.00	325.00	207.3	207.3	480.37	480.37
2/1938	196343.1	196330.0	287129.1	287785.8	146717.7	146618.3	0	0	1432.9	1412.9	325.00	325.00	1107.9	1087.9	1385.04	1365.04
3/1938	206504.8	206504.7	301106.2	301729.5	149325.9	149029.3	0	0	2411.0	2411.0	325.00	325.00	2086.0	2086.0	2348.58	2348.60
4/1938	209296.9	209297.6	320453.9	321290.0	146989.2	146240.6	0	0	2903.3	2900.0	525.00	525.00	2378.3	2375.0	2778.73	2775.42
5/1938	216420.3	216420.3	359991.7	360824.4	144151.8	143411.2	0	0	3003.2	3003.2	778.36	778.36	2224.9	2224.9	2725.12	2725.12
6/1938	208113.9	208114.5	403853.4	401718.5	139153.3	138412.6	0	0	2407.3	2457.3	870.34	867.05	1536.9	1590.2	2028.63	2078.60
7/1938	195890.6	195890.4	366722.0	364966.4	133521.3	132786.2	0	0	1154.6	1148.7	457.35	457.35	697.3	691.3	731.37	725.44
8/1938	193699.0	193698.8	340279.1	339069.8	127854.0	127126.3	0	0	505.5	496.8	378.11	378.09	127.4	118.7	152.38	143.69
9/1938	188983.5	188983.3	317343.4	316687.4	122760.5	122039.6	0	0	522.0	512.7	259.94	259.94	262.0	252.8	287.76	278.55
10/1938	174845.9	174845.7	300251.9	300161.0	119699.7	118982.8	0	0	775.0	765.8	325.00	325.00	450.0	440.8	632.89	623.74
11/1938	164563.9	164563.7	300336.8	300336.9	119237.1	118522.6	0	0	462.1	460.5	325.00	325.00	137.1	135.5	404.63	403.11
12/1938	164224.3	164224.1	303363.3	303363.3	122859.3	122146.6	0	0	325.0	325.0	325.00	325.00	0.0	0.0	266.62	266.62
1/1939	160889.2	160889.0	301390.0	301390.0	130978.6	130268.8	0	0	325.0	325.0	325.00	325.00	0.0	0.0	272.26	272.26
2/1939	158519.8	158538.3	291295.7	291295.7	136564.0	135839.8	0	0	325.0	325.0	325.00	325.00	0.0	0.0	272.09	272.09
3/1939	168336.9	168207.7	282124.6	281926.2	142054.5	141680.9	0	0	325.0	325.0	325.00	325.00	0.0	0.0	262.63	262.63
4/1939	179015.0	178973.4	283870.0	283622.9	141733.2	141326.9	2	2	274.8	274.8	274.78	274.78	0.0	0.0	150.47	150.47
5/1939	188950.4	188909.1	270251.5	270005.4	137569.4	137168.6	2	2	338.0	338.0	338.03	338.03	0.0	0.0	151.81	151.81
6/1939	184988.0	184871.6	251428.3	251184.0	132127.2	131808.2	2	2	268.5	268.5	268.49	268.49	0.0	0.0	30.59	30.59
7/1939	176373.3	176260.4	230607.4	230365.7	126255.4	125946.9	2	2	278.4	278.4	278.43	278.43	0.0	0.0	29.32	29.32
8/1939	168081.1	167977.4	212923.3	212684.0	120530.5	120228.8	2	2	232.1	232.1	232.09	232.09	0.0	0.0	21.55	21.55
9/1939	163891.5	163797.8	199943.1	199705.6	115578.8	115283.0	2	2	201.7	201.7	172.59	172.59	29.1	29.1	50.01	50.01
10/1939	164128.0	164044.9	186732.0	186495.8	112259.8	111969.0	2	2	220.0	220.0	220.00	220.00	0.0	0.0	134.82	134.82
11/1939	160343.8	160270.6	180203.1	179967.9	111160.4	110873.3	2	2	220.0	220.0	220.00	220.00	0.0	0.0	163.07	163.07
12/1939	161954.8	162088.4	180881.8	180449.0	114306.0	114021.7	2	2	220.0	220.0	220.00	220.00	0.0	0.0	161.77	161.77
1/1940	177771.1	177891.6	222973.1	222488.6	133956.4	133741.0	2	2	220.0	220.0	220.00	220.00	0.0	0.0	173.81	173.81
2/1940	206185.5	206196.1	272559.3	272082.2	150059.7	149967.3	2	2	232.4	232.4	220.00	220.00	12.4	12.4	183.96	183.96
3/1940	212000.0	212000.0	327244.2	327767.0	154315.4	154408.1	2	2	1143.2	1127.1	220.00	220.00	923.2	907.1	1080.57	1064.46
4/1940	204849.5	204853.7	350476.2	351326.2	147609.4	147892.8	0	0	1916.0	1911.3	525.00	525.00	1391.0	1386.3	1791.22	1786.56
5/1940	207076.4	206877.4	407422.2	407691.5	144357.5	141048.1	0	0	1852.9	1791.0	777.38	777.35	1075.5	1013.6	1575.64	1513.73
6/1940	193536.6	192491.4	405756.3	403439.2	139566.7	133928.2	0	0	1272.1	1238.5	870.73	869.01	401.4	369.5	894.74	861.17
7/1940	197152.7	197109.0	376001.6	373458.8	133890.8	128315.3	0	0	480.7	468.5	456.21	456.21	24.5	12.3	58.69	46.54
8/1940	193550.2	193584.7	349798.0	348060.5	128208.2	122699.5	0	0	480.4	466.3	378.11	378.11	102.3	88.2	127.36	113.24
9/1940	189178.2	189212.5	328011.5	327069.0	123146.7	117699.7	0	0	484.7	471.5	259.92	259.91	224.8	211.6	250.47	237.24
10/1940	169653.5	169688.5	310729.1	310612.0	119897.7	114510.2	0	0	706.6	693.2	325.00	325.00	381.6	368.2	563.76	550.37
11/1940	156713.2	156747.9	296362.2	296362.2	119814.5	114495.7	0	0	423.4	421.5	325.00	325.00	98.4	96.5	366.15	364.18
12/1940	172574.0	171532.3	294631.2	294233.9	128933.6	125262.0	0	0	325.0	325.0	325.00	325.00	0.0	0.0	270.75	270.75
1/1941	173102.5	172305.1	316707.7	315020.1	139750.6	138050.8	0	0	349.2	344.4	325.00	325.00	24.2	19.4	297.03	292.19
2/1941	188298.6	187871.2	327179.0	327432.6	143613.3	142248.1	0	0	865.0	808.6	325.00	325.00	540.0	483.6	812.26	755.93
3/1941	195995.6	195190.9	332018.1	332133.0	150506.2	149339.1	0	0	1278.7	1278.7	325.00	325.00	953.7	953.7	1215.07	1215.07
4/1941	188706.4	188480.1	362217.2	361688.2	151035.7	151101.1	1	1	673.4	673.4	473.82	473.82	199.6	199.6	553.41	553.41
5/1941	208163.6	207951.4	386538.0	385030.4	148549.7	145918.5	1	1	2159.7	2095.3	677.34	677.22	1482.4	1418.1	1882.55	1818.22
6/1941	197371.2	196410.0	413239.8	412317.4	143116.3	138234.0	1	1	1567.3	1477.3	777.81	777.69	789.5	699.7	1189.57	1099.69
7/1941	196961.2	197036.6	378384.5	377889.0	137254.5	132409.1	1	1	750.2	727.0	452.77	452.70	297.5	274.3	327.64	304.42
8/1941	193348.2	193450.6	349954.5	349530.1	131480.5	126695.3	1	1	551.9	550.3	374.71	374.71	177.2	175.6	198.71	197.15
9/1941	188953.2	189055.4	324608.2	324436.0	126279.6	121550.2	1	1	552.2	548.0	254.99	254.99	297.2	293.0	317.90	313.68
10/1941	172370.9	172472.5	304535.1	304511.3	122846.1	118238.1	0	0	769.2	766.8	325.00	325.00	444.2	441.8	625.78	623.37
11/1941	163204.1	163107.1	303134.2	303332.5	122840.9	118351.1	0	0	440.1	439.7	325.00	325.00	115.1	114.7	383.59	383.18
12/1941	172001.3	171881.3	298514.6	298515.0	133284.3	130621.7	0	0	680.6	661.3	325.00	325.00	355.6	336.3	626.17	606.83
1/1942	205615.3	205555.4	295383.5	294525.9	139280.9	138259.1	0	0	1022.6	1022.6	325.00	325.00	697.6	697.6	973.30	973.30
2/1942	200405.2	200112.1	287096.4	287720.7	142145.9	140953.6	0	0	2085.7	2047.9	325.00	325.00	1760.7	1722.9	2031.05	1993.24
3/1942	182601.0	182413.4	302906.2	302935.1	146886.7	146339.6	0	0	904.5	904.5	325.00	325.00	579.5	579.5	839.26	839.26

Date	Baseline at 190MGD	Project at 190MGD	Baseline at 190MGD	Project at 190MGD	Baseline at 190MGD	Project at 190MGD	Baseline at 190MGD	Project at 190MGD	Baseline at 190MGD	Project at 190MGD	Baseline at 190MGD	Project at 190MGD	Baseline at 190MGD	Project at 190MGD	Baseline at 190MGD	Project at 190MGD
	(acre-ft) Pardee Storage	(acre-ft) Pardee Storage	(acre-ft) Camanche Storage	(acre-ft) Camanche Storage	(acre-ft) TRA Storage	(acre-ft) TRA Storage	(NA) JSA Year Type	(NA) JSA Year Type	(cfs) Camanche Outflow	(cfs) Camanche Outflow	(cfs) Required Minimum Flows	(cfs) Required Minimum Flows	(cfs) Camanche Flood Release	(cfs) Camanche Flood Release	(cfs) Flow below Lodi Lake	(cfs) Flow below Lodi Lake
4/1942	206836.1	206821.5	331739.6	331576.6	150919.4	150381.2	0	0	866.5	866.5	525.00	525.00	341.5	341.5	746.29	746.29
5/1942	209858.6	209858.6	367603.4	368418.6	150193.3	149660.9	0	0	2187.1	2171.0	777.66	777.66	1409.4	1393.3	1911.39	1895.27
6/1942	205639.5	205639.5	406194.7	405225.9	144679.5	144155.0	0	0	2018.7	2048.7	878.32	878.34	1140.4	1170.3	1640.39	1670.36
7/1942	197572.7	197573.1	369784.4	369048.3	138720.5	138203.2	0	0	1204.4	1200.7	457.40	457.39	747.0	743.3	781.14	777.46
8/1942	192760.3	192760.8	339961.1	339463.7	132922.4	132412.5	0	0	629.1	625.3	378.42	378.42	250.7	246.9	275.73	271.92
9/1942	188989.0	188989.4	314598.4	314328.7	127761.0	127257.4	0	0	560.9	557.1	260.01	260.00	300.9	297.1	326.54	322.77
10/1942	169779.0	169779.5	293637.8	293600.5	124471.3	124033.3	0	0	792.9	789.1	325.00	325.00	467.9	464.1	649.03	645.26
11/1942	169833.1	169833.5	301600.0	301600.0	126341.6	125887.2	0	0	568.0	567.4	325.00	325.00	243.0	242.4	515.15	514.52
12/1942	171563.2	171410.3	300696.7	300696.7	130159.0	129790.2	0	0	619.4	619.4	325.00	325.00	294.4	294.4	561.86	561.86
1/1943	206799.0	206792.8	292518.7	292253.9	139030.3	138908.1	0	0	1130.3	1130.3	325.00	325.00	805.3	805.3	1080.24	1080.24
2/1943	192172.0	192018.1	279414.0	279937.5	141057.9	140947.3	0	0	1591.4	1577.1	325.00	325.00	1266.4	1252.1	1537.54	1523.25
3/1943	206083.5	206099.6	299882.8	300435.4	146304.1	146195.4	0	0	2229.0	2225.8	325.00	325.00	1904.0	1900.8	2167.17	2163.96
4/1943	212972.9	212973.6	358911.6	358726.5	147896.4	147790.1	0	0	1502.7	1515.3	525.00	525.00	977.7	990.3	1380.00	1392.63
5/1943	209211.5	209211.7	397081.6	397924.5	143651.4	143513.1	0	0	1759.0	1742.9	777.13	777.13	981.8	965.7	1481.86	1465.73
6/1943	195481.7	195481.7	409274.5	408541.4	138059.1	137924.2	0	0	1442.9	1469.5	877.47	875.87	565.5	593.6	1065.68	1092.15
7/1943	195954.7	195954.4	378453.7	377879.4	132144.7	132013.5	0	0	545.4	542.8	456.25	456.25	89.1	86.6	123.28	120.77
8/1943	193362.4	193362.1	351359.2	350968.4	126320.0	126191.9	0	0	505.7	502.8	378.08	378.07	127.6	124.7	152.69	149.76
9/1943	189232.3	189232.0	329005.2	328793.2	121095.1	120969.8	0	0	506.7	503.7	259.94	259.94	246.8	243.8	272.41	269.43
10/1943	172877.3	172877.0	310532.1	310502.7	117592.6	117469.7	0	0	768.4	765.5	325.00	325.00	443.4	440.5	625.34	622.38
11/1943	163465.0	163464.7	310004.4	310004.4	116533.6	116412.7	0	0	398.8	398.3	325.00	325.00	73.8	73.3	341.54	341.04
12/1943	160424.4	160378.1	299275.0	299275.0	120108.2	120034.9	0	0	325.0	325.0	325.00	325.00	0.0	0.0	267.05	267.05
1/1944	161225.6	161178.8	291201.2	291201.3	129397.3	129325.6	0	0	325.0	325.0	325.00	325.00	0.0	0.0	272.60	272.60
2/1944	164219.9	164171.1	290416.4	290416.4	139766.1	139697.3	0	0	325.0	325.0	325.00	325.00	0.0	0.0	274.95	274.95
3/1944	168360.2	168311.0	291592.0	291592.0	144283.2	144216.7	0	0	325.0	325.0	325.00	325.00	0.0	0.0	260.03	260.03
4/1944	182704.5	182654.8	298504.2	298504.3	146839.5	146774.9	2	2	272.9	272.9	272.86	272.86	0.0	0.0	152.56	152.56
5/1944	195707.0	195657.2	325691.2	325691.6	143057.7	142995.0	2	2	370.0	370.0	370.03	370.03	0.0	0.0	150.77	150.77
6/1944	197480.8	197519.4	335124.7	335037.0	138096.4	138035.7	2	2	328.1	328.1	328.11	328.11	0.0	0.0	30.67	30.67
7/1944	195570.5	195647.8	313741.1	313686.1	132145.1	132086.8	2	2	374.2	373.0	363.50	363.50	10.7	9.5	40.03	38.86
8/1944	193571.7	193269.1	296329.9	296654.5	126345.7	126289.4	2	2	318.5	318.5	318.50	318.50	0.0	0.0	21.60	21.60
9/1944	189323.9	189417.7	289653.5	289581.6	121141.0	121086.3	2	2	244.4	244.4	219.88	219.88	24.5	24.5	44.89	44.89
10/1944	171873.7	171967.1	304120.4	304187.8	117991.4	117938.0	1	1	255.4	253.1	250.00	250.00	5.4	3.1	133.69	131.42
11/1944	167703.7	167549.7	320905.9	321153.5	121681.8	121629.1	1	1	517.2	518.3	250.00	250.00	267.2	268.3	465.28	466.39
12/1944	173354.8	173399.4	324102.7	324152.0	127386.9	127335.2	1	1	466.1	466.1	250.00	250.00	216.1	216.1	408.70	408.70
1/1945	163337.7	163382.1	327603.1	327652.2	133129.8	133079.1	1	1	422.6	422.6	250.00	250.00	172.6	172.6	367.58	367.58
2/1945	180212.8	180214.7	318749.8	318088.4	140975.7	141003.9	1	1	1577.1	1590.7	250.00	250.00	1327.1	1340.7	1525.30	1538.84
3/1945	179398.2	179400.0	333615.3	333946.0	148699.2	148715.1	1	1	483.9	467.7	250.00	250.00	233.9	217.7	421.40	405.29
4/1945	196202.3	196204.1	345327.5	344917.6	147957.2	147972.9	1	1	620.1	632.5	473.75	473.77	146.3	158.8	497.21	509.63
5/1945	199230.6	197818.7	386875.2	385916.1	144794.7	142418.0	1	1	1221.6	1160.8	676.41	676.32	545.2	484.5	945.68	884.99
6/1945	199520.4	198462.0	413570.5	414238.6	139225.6	134588.3	1	1	1348.9	1222.8	777.46	777.32	571.5	445.5	972.92	846.95
7/1945	197103.3	197122.4	376348.2	376988.0	133328.3	128745.3	1	1	778.4	761.2	452.68	452.63	325.7	308.6	355.87	338.78
8/1945	193318.7	193340.8	344967.6	345315.2	127532.2	123004.1	1	1	623.4	628.0	374.80	374.81	248.6	253.2	270.11	274.75
9/1945	188873.4	188895.4	317704.9	317945.1	122331.8	117856.8	1	1	590.1	591.8	255.02	255.03	335.0	336.8	355.72	357.48
10/1945	175531.9	175553.8	298231.0	298264.3	119296.8	114884.0	0	0	846.1	849.5	325.00	325.00	521.1	524.5	704.76	708.12
11/1945	169420.6	169442.4	297561.8	297561.8	120347.5	115971.0	0	0	642.1	642.7	325.00	325.00	317.1	317.7	588.21	588.77
12/1945	208586.7	208516.3	293015.3	293269.7	131283.9	127729.6	0	0	1155.5	1139.4	325.00	325.00	830.5	814.4	1099.79	1083.68
1/1946	177782.6	177033.0	293839.1	294566.2	133596.0	131224.4	0	0	1519.4	1501.9	325.00	325.00	1194.4	1176.9	1463.72	1446.33
2/1946	166814.1	166825.9	299937.2	299028.7	137930.6	136632.1	0	0	528.6	528.6	325.00	325.00	203.6	203.6	475.05	475.05
3/1946	177232.5	177207.9	303786.0	303770.8	143913.4	142908.4	0	0	512.9	494.4	325.00	325.00	187.9	169.4	449.47	430.94
4/1946	194324.1	194336.9	318426.4	318411.2	144915.8	143883.1	1	1	473.7	473.7	430.25	430.25	43.5	43.5	350.38	350.38
5/1946	205894.9	205683.4	398234.3	393240.6	141427.2	138039.7	1	1	614.0	606.0	614.04	605.96	0.0	0.0	340.41	332.34
6/1946	192792.6	191197.1	404627.8	403228.0	135995.9	130357.4	1	1	969.5	839.7	766.75	761.53	202.7	78.1	592.68	463.09