Appendix 29B

Climate Change Effects on Hydrology in the Study Area Used for CALSIM Modeling Analysis

Appendix 29B

Climate Change Effects on Hydrology in the Study Area Used for CALSIM Modeling Analysis

29B.1 Introduction

This appendix contains a summary of projected climate change modeling analyses of surface runoff conditions conducted for Chapter 5, *Water Supply*, and Chapter 6, *Surface Water*. This information was used to support the quantitative analysis of climate change effects on seasonal runoff patterns described in Chapter 29, *Climate Change*and used throughout the EIR/EIS resource impact chapters. Note that the results and findings presented in this appendix are based on projected future climate changes.

29B.2 Projected Climate Change Effects on CALSIM Runoff for BDCP/CWF EIR/EIS Analysis

CALSIM model was used to simulate how projected changes in runoff (i.e., reservoir inflows) for two future climate periods, 2025 and 2060 conditions, would affect existing reservoir operations and Delta inflows in the project area. These future changes in monthly runoff, reservoir releases, and Delta inflows might have some influence on the likely benefits and impacts that would result from the BDCP/CWF. The simulated projected changes in monthly and annual runoff from projected future climate change generally reflect the expected shift from snowpack runoff (in April, May, and June) to rainfall runoff (in January, February, and March). The overall effects of these projected changes in runoff patterns on reservoir operations might cause downstream river flows and Delta inflows to be slightly different. The effects of the proposed BDCP/CWF measures (new intakes and habitat restoration[1]) might also be slightly different. The projected changes in the major reservoir inflows with future climate change (2025 and 2060 conditions) are described in this appendix. These changes were developed from the combination of future climate modeling (i.e., GCM results) and a rainfall-runoff model (VIC). The methods used to process the GCM results into the adjusted CALSIM inflows for the major reservoirs are described in Appendix 5A, *BDCP EIR/EIS Modeling Technical Appendix,* Sections A.7 and A.8.

Existing and future projected runoff are summarized in monthly tables showing the cumulative distribution of flows with 10% increments. Because runoff varies considerably from year to year in California, the runoff for each month can best be characterized as the cumulative probability distribution of flows. The minimum, 10 percentile increments, and maximum monthly flow values and the monthly average flow are given for each inflow location. The CALSIM model used for the

[1] Note that the new proposed project (and new sub alternatives, 5A and 2D), Alternative 4A, introduced in the RDEIR/SDEIS, does not contain habitat restoration beyond what is required to mitigate environmental impacts associated with construction and operations of the new water conveyance facilities. Nevertheless, operations under Alternative 4A would be similar to those described under the previously preferred BDCP/HCP alternative, Alternative 4.

BDCP effects analysis and EIR/EIS uses the 82-year sequence of monthly flows from 1922 to 2003 to characterize historical monthly runoff from the upper watersheds that supply water to the SWP and CVP reservoirs. The historical runoff and projected future runoff were used to describe the monthly cumulative distributions for each major reservoir inflow from the north (Trinity River) to the south (San Joaquin River at Friant Dam). The tables of projected reservoir inflow have three parts; the first part gives the monthly cumulative distributions of CALSIM inflow (taf) for the Existing (Historical) (2010) timeframe. The second part gives the cumulative distribution of CALSIM inflow for 2025 conditions, and the third part gives the cumulative distribution of CALSIM inflow for 2060 conditions.

29B.3 Trinity Reservoir Inflow

Inflow from the upper Trinity River watershed in northern California to the Trinity Reservoir is included in CALSIM because water can be diverted to the Sacramento River as part of the Central Valley Project (CVP). There are no upstream diversions of water, so the historical inflow is the unimpaired runoff. Section “a” in Table 29B-1 shows the monthly distributions of measured Trinity Reservoir runoff for 1922–2003, taken to be the existing inflow distribution (2010). Section “b” shows the projected shifts in monthly inflow projected for the 2025 climate and Section “c” shows the projected shifts in monthly Trinity Reservoir inflow projected for 2060 climate conditions. Figure 29B-1 shows the monthly median (50%) historical Trinity Reservoir inflow compared to the monthly median inflows for the projected 2025 (ELT) and 2060 (LLT) conditions.

The annual inflow to Trinity Reservoir was projected to change very little during the 2025 and 2060 periods based on projections of expected climate change. Table 29B-1 indicates the average runoff for existing (historical) conditions was 1,277 taf, the projected average runoff for 2025 conditions would be 1,279 taf, and the projected average runoff for 2060 conditions would be 1,300 taf. The projected effects of 2060 climate change on the Trinity Reservoir inflow would be a slight increase of 2% (23 taf). The seasonal pattern of runoff would shift from the existing peak in April and May to a more uniform runoff in January–May in the future. Summarizing the monthly runoff in quarterly periods, the runoff fraction in October–December would increase by 3% from 13% to 16%. The runoff fraction in January–March would increase by 9% from 36% to 45%. The runoff fraction in April-June would decrease by 9% from 46% to 37%, and the runoff fraction in July-September would decrease by 2% from 5% to 3%.

The effects of climate change on Trinity River flows or exports to the Sacramento River likely will be small because the Trinity River flows are controlled (i.e., specified) by the Trinity River Restoration Plan. Flood control spills from Trinity Reservoir are infrequent. The CALSIM results indicate that only very infrequent shifts in the Trinity River flows would result from these projected shifts in Trinity Reservoir inflow.

29B.4 Shasta Reservoir Inflow

Inflow to Shasta Reservoir from the Upper Sacramento River Watershed, including the McCloud River and the Pitt River in northern California is the major CVP inflow. There are few upstream diversions of water, and only a couple of reservoirs on the Pit River, so the historical inflow is very close to unimpaired runoff. Section “a” of Table 29B-2 shows the monthly distributions of measured

Shasta Reservoir inflow for 1922–2003, taken to be the existing runoff distribution (2010). Section "b" shows the projected shifts in monthly inflow projected for 2025 conditions and Section "c" shows the projected shifts in monthly Shasta Reservoir inflow projected for 2060 conditions. Figure 29B-2 shows the monthly median (50%) historical Shasta Reservoir inflow compared to the monthly median inflows for the projected 2025 and 2060 conditions.

The annual inflow to Shasta Reservoir was projected to change very little during the 2025 and 2060 periods based on projections of expected climate change. Table 29B-2 indicates the average runoff for existing (historical) conditions was 5,690 taf, the projected average runoff for 2025 conditions would be 5,735 taf, and the projected average runoff for 2060 conditions would be 5,788 taf. The projected effects of 2060 climate change on the Shasta Reservoir inflow would be a slight increase of 2% (98 taf). The existing seasonal runoff is greatest in the months of January–April and runoff would increase in these high rainfall months. Summarizing the monthly runoff in quarterly periods, the runoff fraction in October–December would increase by 1% from 20% to 21 %. The runoff fraction in January–March would increase by 4% from 42% to 46%. The runoff fraction in April–June would decrease by 4% from 27% to 23%, and the runoff fraction in July–September would decrease by 1% from 11% to 10%. The seasonal shifting of about 5% of the annual runoff from April–June (snowmelt) to January–March (rainfall) may trigger slightly different reservoir releases in years when Trinity or Shasta reservoirs are at flood control storage levels.

29B.5 Sacramento River Tributaries Inflow

There are several Sacramento River tributary streams with fish populations that provide both flows and fish that are therefore important for the BDCP effects analysis. These tributary streams are: Clear Creek, Battle Creek, Mill Creek, Deer Creek, and Butte Creek. These inflows are included in CALSIM, but the projected climate change shifts were not evaluated. They were projected to be similar to the Shasta inflow adjustments. Most of the Clear Creek inflow is diverted from Whiskeytown Reservoir for power production and is included in the Keswick flow. Releases to Clear Creek below Whiskeytown Reservoir are regulated by DFG minimum flows and as part of the Anadromous Fish Restoration Program (AFRP) Central Valley Project Improvement Act (CVPIA) program. The historical average Clear Creek inflow to Whiskeytown Reservoir was about 150 taf/yr. The historical inflow from Battle Creek was about 365 taf/yr. The historical inflow from Mill Creek was about 200 taf/yr and the historical inflow from Deer Creek was also about 200 taf/yr. The historical inflow from Butte Creek was about 300 taf/yr. There are several smaller tributary streams that contribute to the Sacramento River flow and also supply water supply diversions between Keswick and the Feather River confluence. These inflows and water supply diversions are accurately accounted for in the CALSIM model, and the projected climate change shifts in runoff would have relatively small effects on the Sacramento River flows.

29B.6 Oroville Reservoir Inflow

The Oroville Reservoir inflow from the Upper Feather River watershed is the major State Water Project (SWP) supply in the CALSIM model. The major upstream reservoir is Lake Almanor (Pacific Gas & Electric Company [PG&E]) and is operated for seasonal storage for hydropower generation at the six PG&E North Fork Feather River hydropower stations. There are few upstream diversions of water for consumptive use, but the seasonal inflow pattern is quite different than the unimpaired flows. Section "a" in Table 29B-3 shows the monthly distributions of the existing Oroville Reservoir inflow for 1922–2003, assuming the current operations of Lake Almanor (2010). Section "b" shows the projected shifts in monthly inflow projected for 2025 conditions and Section "c" shows the projected shifts in monthly Oroville Reservoir inflow projected for 2060 conditions. Figure 29B-3 shows the monthly median (50%) existing Oroville Reservoir inflow compared to the monthly median inflows for the projected 2025 and 2060 conditions.

The annual inflow to Oroville Reservoir was projected to change very little during the 2025 and 2060 periods based on projections of expected climate change. Table 29B-3 indicates the average inflow for existing (historical) conditions was 3,967 taf, the projected average inflow for 2025 conditions would be 4,036 taf, and the projected average runoff for 2060 conditions would be 4,022 taf. The projected effects of 2060 climate change on the Oroville Reservoir inflow would be a slight increase of 1.5% (55 TAF). The existing seasonal pattern of runoff is greatest in the months of January–May and runoff would increase in the months of December to March (rainfall) and decrease in the months of April-June (snowmelt). About 25% of the watershed (with 970 taf average runoff) is upstream of Lake Almanor, so some of the increased rainfall runoff in December–March would be regulated for hydropower releases. Summarizing the monthly inflow in quarterly periods, the inflow fraction in October–December would increase by 2% from 16% to 18 %. The inflow fraction in January–March would increase by 8% from 39% to 47%. The inflow fraction in April–June would decrease by 7% from 34% to 27%, and the inflow fraction in July-September would decrease by 2% from 10% to 8%. The projected shifting of about 10% of the snowmelt runoff from April–June to rainfall runoff in December–March was greater than the projected shifting of the inflow to Shasta Reservoir, perhaps because the existing fraction of snowmelt runoff is greater in the Feather River watershed.

29B.7 Yuba River Inflow

The Yuba River is one of the major inflows, and is included in the Sacramento Four-River Runoff Index. The Yuba River flows and upstream reservoir operations were separately modeled and the flow at Marysville was specified for the CALSIM model. A similar shifting of the runoff patterns was likely projected. The average unimpaired runoff for the Yuba River at Engelbright Dam for 1922–2003 was about 2,170 taf/yr. Several water supply diversions are located below Engelbright Dam, so the inflow at Marysville would likely be about 1,500 taf/yr.

29B.8 Folsom Reservoir Inflow

The Folsom Reservoir inflow from the American River watershed is the fourth major river included in the Sacramento Four-River Runoff Index. Several major upstream reservoirs control the majority of inflow to Folsom Reservoir, so the CALSIM inflow is estimated from separate modeling of these upstream reservoir storage and hydropower projects. The projected inflows to Folsom Reservoir are therefore the combination of projected changes in rainfall and snowmelt runoff together with possible changes in the operations of these upstream storage projects. There are few upstream diversions of water for consumptive use, but the seasonal inflow pattern is quite different from the unimpaired flows. Section "a" in Table 29B-4 shows the monthly distributions of the existing Folsom Reservoir inflow for 1922–2003, assuming the current operations of upstream storage projects (2010). Section "b" shows the projected shifts in monthly inflow projected for 2025 conditions and

Section "c" shows the projected shifts in monthly Folsom Reservoir inflow projected for 2060 conditions. Figure 29B-4 shows the monthly median (50%) existing Folsom Reservoir inflow compared to the monthly median inflows for the projected 2025 and 2060 conditions.

The annual inflow to Folsom Reservoir was projected to change very little during the 2025 and 2060 periods based on projections of expected climate change. Table 29B-4 indicates the average inflow for existing (historical) conditions was 1,332 taf, the projected average inflow for 2025 conditions would be 1,336 taf, and the projected average runoff for 2060 conditions would be 1,302 taf. The projected effects of 2060 climate change on the Folsom Reservoir inflow would be a slight decrease of 2% (-30 taf). The existing seasonal pattern of runoff is greatest in the months of February–May and runoff would increase in the months of December to March (rainfall), remain constant in April, and decrease in the months of May–July (snowmelt). Summarizing the monthly inflow in quarterly periods, the inflow fraction in October-December would increase by 2% from 18% to 20 %. The inflow fraction in January–March would increase by 6% from 34% to 40%. The inflow fraction in April–June would decrease by 4% from 33% to 29%, and the inflow fraction in July–September would decrease by 3% from 15% to 12%. The projected shifting of about 5% of the runoff from April–June to rainfall runoff in December–March was less than the projected shifting of the inflow to Oroville Reservoir, perhaps because the existing fraction of snowmelt runoff is greater in the Feather River watershed.

The CALSIM-simulated monthly releases from Folsom will include the small effects caused by the projected climate change shifts, plus the effects of additional water supply diversions from Folsom Reservoir and the American River (i.e., Sacramento), as well as the effects of the BDCP north Delta intake operations. Therefore, the effects of climate change on reservoir operations (i.e., flood control) cannot be easily separated from these other sources of effects in the six CALSIM cases used for the BDCP effects analysis.

29B.9 Mokelumne and Cosumnes River Inflow

The Mokelumne River and Cosumnes River both enter the north Delta near Lodi. The Cosumnes River has only a few small reservoirs and the winter-spring runoff enters the Delta along with the Mokelumne River releases from Camanche Reservoir. The average annual unimpaired runoff for the Cosumnes River is about 350 taf/yr. The average annual Mokelumne River unimpaired runoff is about 700 taf/yr, but an average of about 200 taf/yr is diverted from Pardee Reservoir to the EBMUD aqueduct (Oakland) and about 200 taf/yr is diverted for irrigation along the river below Camanche Reservoir and at the Woodridge Dam. These inflows to the Delta are specified in the CALSIM model. The effects of climate change were likely small because the Cosumnes River watershed has little snowpack, and most of the Mokelumne runoff shifts would have been modified through reservoir operations; very little change in the CALSIM inflows were projected.

29B.10 New Melones Reservoir Inflow

The annual inflow to New Melones Reservoir (Stanislaus River) was projected to decrease slightly during the 2025 and 2060 periods based on projections of expected climate change. Table 29B-5 indicates the average inflow for existing (historical) conditions was 1,087 taf, the projected average inflow for 2025 conditions would be 1,066 taf, and the projected average runoff for 2060 conditions would be 1,018 taf. The projected effects of 2060 climate change on the New Melones Reservoir inflow would be a decrease of 6% (-69 taf). The existing seasonal pattern of runoff is greatest in the months of April–June and runoff would increase in the months of January to March (rainfall), remain constant in April and May, and decrease in the months of June–August. Summarizing the monthly inflow in quarterly periods, the annual inflow fraction in October–December would increase by 1% from 12% to 13%. The inflow fraction in January-March would increase by 6% from 27% to 33%. The inflow fraction in April–June would decrease by 2% from 46% to 44%, and the inflow fraction in July-September would decrease by 5% from 15% to 10%.

29B.11 New Don Pedro Reservoir Inflow

The annual inflow to New Don Pedro Reservoir (Tuolumne River) was projected to decrease slightly during the 2025 and 2060 periods based on projections of expected climate change. Table 29B-6 indicates the average inflow for existing (historical) conditions was 1,586 taf, the projected average inflow for 2025 conditions would be 1,559 taf, and the projected average runoff for 2060 conditions would be 1,474 taf. The projected effects of 2060 climate change conditions on the New Don Pedro Reservoir inflow would be a decrease of 7% (-112 taf). The existing seasonal pattern of runoff is greatest in the months of April–June and runoff would increase in the months of January to April (rainfall), and decrease in the months of May–August. Summarizing the monthly inflow in quarterly periods, the annual inflow fraction in October–December would increase by 1% from 9% to 10%. The annual inflow fraction in January–March would increase by 7% from 27% to 33%. The annual inflow fraction in April–June would decrease by 4% from 50% to 46%, and the annual inflow fraction in July–September would decrease by 4% from 11% to 7%.

29B.12 New Exchequer Reservoir Inflow

The annual inflow to New Exchequer Reservoir (Merced River) was projected to decrease slightly during the 2025 and 2060 periods based on projections of expected climate change. Table 29B-7 indicates the average inflow for existing (historical) conditions was 965 taf, the projected average inflow for 2025 conditions would be 942 taf, and the projected average runoff for 2060 conditions would be 878 taf. The projected effects of 2060 climate change on the New Exchequer Reservoir inflow would be a decrease of 9% (-112 taf). The existing seasonal pattern of runoff is greatest in the months of April–June and runoff would increase in the months of January to April (rainfall), and decrease in the months of May–August. Summarizing the monthly inflow in quarterly periods, the annual inflow fraction in October-December would increase by 2% from 7% to 9%. The annual inflow fraction in January–March would increase by 7% from 26% to 33%. The annual inflow fraction in April–June would decrease by 5% from 58% to 53%, and the annual inflow fraction in July–September would decrease by 4% from 9% to 5%.

29B.13 Millerton Reservoir Inflow

The projected future Millerton Reservoir inflow (San Joaquin River) with climate change would be the combination of shifted runoff and seasonal storage changes for hydropower in the upstream reservoirs. These upstream reservoirs are separately modeled, so the projected runoff shifts from climate cannot be determined from the projected CALSIM inflows. The average inflow was 1,730 taf for the Existing Conditions, and was reduced to 1,660 for 2025 conditions and to 1,561 taf for 2060 conditions. This is a reduction of about 10% (-169 taf). Summarizing the monthly inflow in quarterly periods, the annual inflow fraction in October-December would remain the same at 12%. The annual inflow fraction in January–March would increase by 6% from 21% to 27%. The annual inflow fraction in April–June would increase by 1% from 43% to 44%, and the annual inflow fraction in July–September would decrease by 7% from 24% to 17%. This decrease in inflow during the peak irrigation period of June, July, and August will be particularly difficult for the existing agricultural water supplies, and will likely require additional groundwater recharge in the spring with increased groundwater pumping in the summer months (i.e., conjunctive use operations).

Table 29B-1. Projected CALSIM Climate Change Effects on Trinity River, Trinity Reservoir Inflow

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
a. Existing (Historical) Monthly Distributions for Trinity Reservoir Inflow (taf)													
Min	6	7	9	9	16	20	38	27	7	3	3	2	225
10%	9	9	16	27	45	79	104	111	41	14	7	6	680
20%	9	11	24	34	57	95	145	152	59	19	9	7	781
30%	9	15	37	46	81	125	160	171	77	22	10	9	878
40%	11	23	43	69	110	144	188	198	84	24	10	9	1,039
50%	12	30	58	95	130	162	213	224	97	27	11	9	1,139
60%	14	43	80	119	153	174	231	264	109	34	13	10	1,421
70%	16	54	115	150	167	198	257	288	162	39	16	11	1,584
80%	18	80	164	211	233	229	262	336	204	55	19	13	1,678
90%	28	125	236	320	286	320	329	400	253	73	24	15	2,013
Max	133	407	535	539	645	472	377	554	501	239	73	36	2,885
Avg	19	52	100	130	151	178	210	244	129	40	14	10	1,277
b. Projected Early Long-Term (2025) Monthly Distributions for Trinity Reservoir Inflow (taf)													
Min	5	7	9	9	15	19	36	24	6	3	2	2	212
10%	9	9	17	27	47	81	94	91	31	11	6	6	612
20%	9	11	24	36	56	91	130	126	47	13	8	7	746
30%	9	15	37	50	92	127	151	152	59	16	9	8	834
40%	10	23	45	74	118	153	185	170	64	18	9	8	1,017
50%	12	32	60	113	145	161	203	193	75	19	10	9	1,100
60%	13	43	87	134	163	181	222	241	89	23	11	9	1,479
70%	16	57	142	172	201	209	236	275	120	27	12	10	1,616
80%	17	87	212	230	263	240	267	329	169	35	15	12	1,724
90%	42	137	295	362	357	324	308	397	203	50	20	14	2,065
Max	174	510	616	660	745	550	378	532	465	167	51	33	3,028
Avg	21	57	116	149	171	184	202	224	105	28	12	10	1,279

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
c. Projected Late Long-Term (2060) Monthly Distributions for Trinity Reservoir Inflow (taf)													
Min	5	7	8	9	16	20	37	23	6	2	2	2	211
10%	8	9	16	32	48	87	90	79	22	9	6	5	635
20%	9	11	25	42	69	100	127	112	35	10	8	7	756
30%	9	15	41	57	108	132	152	125	43	13	8	8	871
40%	10	22	53	85	133	162	180	145	49	14	9	8	1,017
50%	12	32	65	140	160	173	195	158	53	15	9	8	1,122
60%	13	44	96	171	198	192	212	202	63	16	10	9	1,491
70%	15	57	151	209	233	231	240	232	92	20	11	10	1,617
80%	17	85	247	276	300	281	271	293	122	23	14	12	1,768
90%	31	127	322	438	416	356	311	378	153	30	18	14	2,146
Max	174	518	576	737	962	614	403	516	389	107	24	32	3,054
Avg	20	56	127	180	200	201	201	197	79	19	10	9	1,300
d. Projected monthly ratios of 2025 to Existing (historical) Trinity Reservoir Inflows													
Min	0.87	0.88	0.80	0.93	0.87	0.83	0.82	0.72	0.57	0.53	0.51	0.69	0.88
10%	0.92	0.95	0.97	1.01	0.97	0.93	0.88	0.82	0.70	0.63	0.72	0.90	0.92
20%	0.94	0.96	1.00	1.03	1.00	0.96	0.90	0.85	0.73	0.64	0.83	0.92	0.95
30%	0.95	0.97	1.01	1.04	1.03	0.97	0.92	0.87	0.75	0.66	0.87	0.93	0.96
40%	0.96	0.98	1.03	1.08	1.04	1.01	0.94	0.87	0.76	0.67	0.89	0.94	0.98
50%	0.97	1.00	1.06	1.10	1.09	1.02	0.95	0.89	0.78	0.70	0.90	0.95	0.99
60%	0.97	1.03	1.10	1.13	1.12	1.04	0.96	0.91	0.80	0.73	0.92	0.96	1.01
70%	0.98	1.05	1.14	1.17	1.17	1.06	0.98	0.94	0.83	0.77	0.93	0.97	1.02
80%	1.00	1.09	1.17	1.21	1.20	1.07	1.00	0.96	0.86	0.82	0.94	0.98	1.02
90%	1.18	1.16	1.29	1.26	1.27	1.11	1.02	0.99	0.90	0.88	0.96	0.99	1.04
Max	1.63	1.54	1.54	1.34	1.47	1.27	1.11	1.05	1.01	0.97	0.99	1.01	1.10
Avg	1.01	1.03	1.10	1.12	1.10	1.02	0.95	0.90	0.79	0.73	0.87	0.94	0.99
e. Projected Monthly Ratios of 2060 to Existing (historical) Trinity Reservoir Inflows													
Min	0.79	0.84	0.89	0.95	0.87	0.84	0.67	0.57	0.39	0.31	0.30	0.59	0.89
10%	0.86	0.90	0.98	1.07	1.03	0.97	0.80	0.63	0.47	0.35	0.53	0.84	0.94
20%	0.91	0.93	1.01	1.11	1.09	1.01	0.85	0.70	0.51	0.37	0.74	0.87	0.95
30%	0.93	0.96	1.04	1.18	1.12	1.04	0.89	0.72	0.52	0.42	0.78	0.89	0.97
40%	0.94	0.98	1.08	1.22	1.19	1.09	0.90	0.75	0.57	0.47	0.82	0.91	0.99
50%	0.96	1.01	1.14	1.27	1.24	1.11	0.93	0.77	0.60	0.52	0.84	0.92	1.00
60%	0.97	1.02	1.22	1.33	1.29	1.13	0.96	0.80	0.62	0.57	0.86	0.94	1.01
70%	0.98	1.04	1.29	1.43	1.41	1.16	1.01	0.83	0.66	0.66	0.89	0.95	1.03
80%	1.00	1.08	1.37	1.54	1.48	1.21	1.06	0.86	0.71	0.74	0.91	0.96	1.05
90%	1.05	1.16	1.51	1.59	1.56	1.28	1.11	0.94	0.77	0.82	0.94	0.99	1.08
Max	1.37	1.49	2.20	2.10	2.08	1.45	1.16	1.10	0.89	0.94	0.99	1.01	1.12
Avg	0.97	1.02	1.21	1.33	1.28	1.11	0.95	0.78	0.61	0.56	0.80	0.91	1.00

Table 29B-2. Projected CALSIM Climate Change Effects on Sacramento River, Shasta Reservoir Inflow

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
a. Existing (Historical) Monthly Distributions for Shasta Reservoir Inflow (taf)													
Min	161	164	176	177	213	241	200	193	172	161	152	148	2,533
10%	184	188	224	249	307	382	363	279	206	183	170	167	3,543
20%	197	223	250	318	369	512	430	336	230	196	181	181	3,906
30%	213	234	297	341	493	593	467	367	261	208	197	191	4,117
40%	223	251	338	414	557	658	513	422	275	220	206	201	4,807
50%	232	276	359	553	666	717	604	469	290	234	209	210	5,209
60%	249	304	471	727	848	864	706	496	322	247	227	223	6,258
70%	262	348	632	795	961	943	833	574	348	257	233	229	6,834
80%	276	405	832	1,031	1,173	1,083	984	717	397	279	247	235	7,391
90%	292	563	1,093	1,430	1,494	1,372	1,189	807	491	300	258	260	8,730
Max	658	1,576	1,877	2,923	2,481	2,704	1,637	1,161	942	430	317	298	10,798
Avg	246	340	545	721	803	838	691	514	326	240	215	211	5,690
b. Projected Early Long-Term (2025) Monthly Distributions for Shasta Reservoir Inflow (taf)													
Min	155	158	177	181	195	232	189	178	159	142	143	141	2,433
10%	179	187	226	255	316	358	341	255	185	168	163	161	3,435
20%	190	220	255	327	359	497	407	307	202	179	174	177	3,809
30%	208	233	301	362	495	578	436	340	230	189	184	184	4,028
40%	217	255	353	427	562	643	479	370	242	202	191	193	4,693
50%	230	284	377	587	690	726	563	425	258	210	199	201	5,284
60%	242	326	488	776	880	844	654	460	283	218	211	211	6,485
70%	256	364	677	906	1,026	935	816	524	299	231	217	219	6,982
80%	271	426	987	1,096	1,331	1,117	946	647	346	246	227	224	7,407
90%	326	616	1,298	1,609	1,709	1,432	1,143	722	431	257	243	246	9,044
Max	765	1,902	2,056	3,306	2,852	2,995	1,681	1,019	813	344	288	277	11,286
Avg	248	356	613	783	872	838	657	465	287	213	201	202	5,735
c. Projected Late Long-Term (2060) Monthly Distributions for Shasta Reservoir Inflow (taf)													
Min	154	154	181	190	207	236	189	173	154	137	142	140	2,470
10%	180	185	230	272	355	354	335	246	175	157	158	160	3,433
20%	191	215	262	344	392	508	379	279	184	167	169	175	3,860
30%	207	230	309	389	503	580	415	322	210	177	175	181	4,112
40%	219	251	375	473	572	655	458	339	223	188	184	191	4,726
50%	228	278	428	645	743	756	535	383	230	196	191	197	5,305
60%	237	323	527	806	893	869	613	425	260	201	197	204	6,390
70%	255	363	730	1,008	1,099	969	761	474	276	208	203	214	6,951
80%	268	415	1,071	1,229	1,427	1,148	863	589	304	217	215	220	7,576
90%	314	595	1,369	1,978	1,796	1,474	1,115	669	377	233	223	234	8,952
Max	768	1,954	2,172	3,389	2,997	3,040	1,697	923	797	288	265	263	11,437
Avg	245	351	643	860	929	857	634	427	259	195	191	198	5,788

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
d. Projected Monthly Ratios of 2025 to Existing (historical) Shasta Reservoir Inflows													
Min	0.94	0.96	0.97	0.96	0.90	0.89	0.84	0.84	0.83	0.79	0.88	0.88	0.95
10%	0.96	0.98	1.00	1.00	0.96	0.93	0.89	0.87	0.85	0.84	0.90	0.94	0.96
20%	0.96	0.99	1.01	1.01	0.98	0.94	0.92	0.88	0.86	0.87	0.92	0.95	0.97
30%	0.96	1.00	1.02	1.03	0.99	0.95	0.93	0.89	0.87	0.88	0.93	0.95	0.98
40%	0.97	1.00	1.04	1.04	1.01	0.97	0.94	0.90	0.87	0.89	0.93	0.96	0.98
50%	0.97	1.02	1.05	1.05	1.04	0.98	0.95	0.91	0.89	0.90	0.94	0.96	1.00
60%	0.97	1.03	1.07	1.07	1.07	1.00	0.95	0.91	0.89	0.90	0.95	0.97	1.01
70%	0.98	1.04	1.10	1.10	1.10	1.01	0.96	0.92	0.90	0.91	0.95	0.97	1.02
80%	0.98	1.06	1.14	1.13	1.12	1.03	0.97	0.93	0.90	0.92	0.96	0.97	1.03
90%	1.14	1.08	1.21	1.15	1.18	1.05	0.99	0.94	0.91	0.93	0.97	0.97	1.04
Max	1.37	1.30	1.41	1.27	1.28	1.12	1.06	1.01	0.93	0.97	0.99	1.01	1.10
Avg	1.00	1.03	1.08	1.07	1.05	0.99	0.94	0.91	0.88	0.89	0.94	0.96	1.00
e. Projected Monthly Ratios of 2060 to Existing (historical) Shasta Reservoir Inflows													
Min	0.91	0.93	0.97	1.00	0.89	0.86	0.72	0.72	0.69	0.63	0.80	0.82	0.96
0.10	0.94	0.95	1.02	1.04	1.00	0.93	0.81	0.78	0.74	0.74	0.82	0.89	0.97
0.20	0.96	0.97	1.03	1.06	1.02	0.94	0.87	0.80	0.76	0.78	0.84	0.91	0.98
0.30	0.96	0.98	1.05	1.09	1.04	0.96	0.89	0.81	0.77	0.80	0.86	0.93	0.99
0.40	0.97	0.99	1.08	1.11	1.06	0.98	0.90	0.82	0.78	0.82	0.88	0.94	1.00
0.50	0.97	1.00	1.12	1.14	1.09	1.00	0.92	0.84	0.80	0.83	0.90	0.95	1.00
0.60	0.98	1.01	1.15	1.16	1.12	1.02	0.93	0.85	0.82	0.84	0.92	0.95	1.01
0.70	0.99	1.02	1.17	1.20	1.18	1.04	0.94	0.86	0.83	0.85	0.93	0.96	1.02
0.80	1.00	1.04	1.24	1.26	1.22	1.07	0.96	0.88	0.84	0.86	0.94	0.97	1.04
0.90	1.06	1.10	1.29	1.32	1.30	1.10	0.98	0.90	0.88	0.88	0.95	0.97	1.06
Max	1.24	1.24	1.54	1.54	1.42	1.20	1.08	0.98	0.94	0.97	0.97	1.00	1.07
Avg	0.99	1.01	1.14	1.16	1.12	1.01	0.91	0.84	0.80	0.82	0.89	0.94	1.01

Table 29B-3. Projected CALSIM Climate Change Effects on Feather River, Oroville Reservoir Inflow

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
a. Existing (Historical) Monthly Distributions for Oroville Reservoir Inflow (taf)													
Min	49	43	41	48	50	74	61	72	45	29	31	65	751
10%	54	61	83	147	169	248	236	166	108	84	88	76	1,823
20%	60	77	108	178	213	308	303	244	136	104	98	83	2,297
30%	62	98	156	203	271	348	369	300	177	111	107	89	2,675
40%	107	141	186	262	351	389	432	351	195	120	112	95	2,882
50%	122	155	208	320	430	443	510	407	227	139	128	104	3,457
60%	141	170	244	386	531	515	557	482	266	168	147	128	4,140
70%	154	188	312	527	630	623	670	566	307	186	161	150	4,953
80%	159	245	497	677	716	754	773	738	400	217	180	158	5,657
90%	173	294	738	1,139	1,012	1,165	991	944	558	270	197	167	6,659
Max	740	993	1,718	2,499	2,361	2,080	1,598	1,573	881	371	245	217	8,860
Avg	124	185	343	477	511	567	562	506	280	159	137	119	3,967
b. Projected Early Long-Term (2025) Monthly Distributions for Folsom Reservoir Inflow (taf)													
Min	44	38	39	47	47	69	55	62	38	26	28	56	690
10%	50	61	86	156	184	249	215	141	83	75	78	69	1,763
20%	54	74	111	190	235	315	296	207	114	87	87	76	2,239
30%	58	98	164	216	310	362	345	260	137	92	97	80	2,662
40%	105	136	194	289	366	417	411	299	153	100	101	87	2,852
50%	116	155	231	342	484	470	475	344	175	119	118	93	3,430
60%	133	169	266	413	601	520	542	413	202	139	136	118	4,343
70%	147	198	374	595	731	676	648	488	227	153	147	135	5,108
80%	153	240	595	755	938	805	760	685	295	174	160	145	5,803
90%	183	308	929	1,301	1,167	1,214	1,007	880	418	193	175	151	6,913
Max	792	1,238	1,988	2,798	2,729	2,454	1,706	1,404	711	239	190	237	9,441
Avg	119	194	397	544	598	608	551	449	217	127	122	108	4,036
c. Projected Late Long-Term (2060) Monthly Distributions for Folsom Reservoir Inflow (taf)													
Min	43	36	34	46	48	69	54	60	35	25	27	54	669
10%	47	53	81	159	200	266	203	131	71	66	75	65	1,759
20%	51	67	108	199	262	324	276	173	98	80	85	72	2,207
30%	55	95	163	248	340	376	327	228	112	85	90	76	2,591
40%	97	124	192	316	399	435	378	255	127	91	96	83	2,857
50%	112	142	241	379	518	485	446	282	144	102	109	88	3,411
60%	123	156	291	452	671	575	520	363	158	123	127	107	4,211
70%	138	187	401	690	783	692	618	402	177	135	136	129	5,152
80%	144	225	680	884	1,027	884	744	589	219	150	146	137	5,762
90%	175	293	938	1,486	1,253	1,213	982	720	319	158	157	142	7,026
Max	957	1,159	1,918	2,952	2,914	2,584	1,769	1,239	555	196	172	280	9,444
Avg	117	180	409	612	660	636	531	381	170	110	113	103	4,022

Table 29B-4. Projected CALSIM Climate Change Effects on American River, Folsom Reservoir Inflow

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
a. Existing (Historical) Monthly Distributions for Folsom Reservoir Inflow (taf)													
Min	22	21	9	12	11	11	14	17	11	6	9	14	201
10%	43	47	54	40	40	55	64	55	23	10	24	42	602
20%	47	54	57	50	53	77	80	70	36	15	47	62	698
30%	49	56	64	63	64	94	107	93	53	33	66	64	833
40%	51	61	73	75	80	105	134	132	61	48	70	66	1,077
50%	53	64	83	94	110	136	156	182	76	67	72	68	1,253
60%	54	72	89	116	156	158	176	204	96	88	73	70	1,419
70%	58	79	105	162	190	179	194	225	137	99	75	72	1,649
80%	65	89	135	230	231	217	225	243	175	109	81	74	1,955
90%	71	115	211	304	280	284	258	306	230	126	87	78	2,248
Max	131	350	491	832	705	521	484	403	415	229	113	119	3,216
Avg	56	78	112	144	146	158	157	172	107	70	66	66	1,332
b. Projected Early Long-Term (2025) Monthly Distributions for Folsom Reservoir Inflow (taf)													
Min	23	25	9	12	10	9	11	13	8	5	7	13	180
10%	40	46	54	40	39	54	60	47	17	9	22	38	580
20%	44	53	60	51	54	76	73	59	28	12	44	57	666
30%	47	56	64	66	65	95	104	83	43	24	56	59	797
40%	49	61	77	81	88	112	134	118	47	38	59	61	1,078
50%	51	68	92	97	127	138	154	169	63	50	62	63	1,222
60%	52	71	99	126	162	160	178	187	80	64	63	65	1,428
70%	56	84	115	176	215	187	192	204	106	73	65	66	1,720
80%	65	93	160	260	259	227	226	232	147	83	67	68	1,947
90%	72	132	311	332	356	296	258	299	191	97	70	72	2,337
Max	171	404	574	1,010	818	574	539	379	338	162	86	90	3,290
Avg	55	83	130	160	166	164	157	161	90	53	56	61	1,336
c. Projected Late Long-Term (2060) Monthly Distributions for Folsom Reservoir Inflow (taf)													
Min	22	22	7	10	8	9	11	12	8	4	7	13	165
10%	39	45	48	39	41	58	58	43	15	8	21	36	564
20%	44	49	53	51	57	81	72	53	23	11	41	55	642
30%	46	53	61	64	68	98	103	76	37	20	47	57	799
40%	47	55	72	86	90	117	128	106	41	33	52	58	1,009
50%	49	57	87	102	135	145	143	140	54	42	55	60	1,180
60%	51	63	104	129	170	171	175	161	65	48	57	62	1,388
70%	55	71	119	185	223	201	190	182	82	59	59	64	1,708
80%	63	81	161	291	287	241	227	199	119	62	62	65	1,963
90%	72	110	284	369	382	321	268	279	154	75	65	70	2,274
Max	205	349	583	1,061	866	634	533	359	260	117	80	106	3,345
Avg	55	73	127	174	177	173	157	143	73	41	50	59	1,302

Table 29B-5. Projected CALSIM Climate Change Effects on Stanislaus River, New Melones Reservoir Inflow

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
a. Existing (Historical) Monthly Distributions													
Min	2	7	13	11	12	17	28	21	25	20	19	19	271
10%	21	21	27	25	29	44	58	45	41	43	37	27	497
20%	26	26	31	29	36	58	74	84	55	45	39	30	594
30%	29	30	35	37	45	69	90	97	71	49	42	33	660
40%	31	32	36	44	59	75	105	164	117	52	43	35	857
50%	33	34	41	58	77	91	118	207	149	59	45	37	1,063
60%	34	36	48	70	96	106	128	247	184	67	47	40	1,196
70%	36	39	56	84	111	132	148	279	208	77	48	42	1,305
80%	38	44	68	114	139	149	181	317	235	92	55	46	1,533
90%	53	55	99	183	184	184	206	341	321	118	59	56	1,843
Max	86	283	393	601	474	397	361	510	625	285	98	71	2,900
Avg	34	41	62	85	95	112	128	204	164	75	47	39	1,087
b. Projected Early Long-Term (2025) Monthly Distributions for New Melones Reservoir Inflow (taf)													
Min	2	7	14	10	11	15	24	18	17	16	17	15	235
10%	19	20	25	24	28	44	55	37	33	29	28	24	446
20%	24	25	29	28	36	58	72	71	41	33	29	26	547
30%	26	28	34	37	46	68	85	91	54	34	31	28	605
40%	28	30	37	42	62	75	106	156	98	37	32	30	783
50%	30	32	40	57	80	92	113	196	139	42	34	31	1,014
60%	31	34	48	74	105	109	126	249	165	47	35	33	1,185
70%	34	38	55	89	127	135	151	285	191	53	37	36	1,299
80%	36	45	77	123	150	156	183	317	219	74	39	41	1,484
90%	46	57	120	210	223	191	207	365	329	96	48	47	1,900
Max	83	348	511	848	607	420	380	575	633	242	70	68	2,877
Avg	31	42	69	93	105	115	127	206	153	57	35	34	1,066
c. Projected Late Long-Term (2060) Monthly Distributions for New Melones Reservoir Inflow (taf)													
Min	2	6	14	10	11	15	23	15	14	15	15	12	223
10%	18	18	25	25	30	45	53	33	26	21	19	21	422
20%	22	23	29	29	37	62	72	63	32	23	21	24	516
30%	24	25	32	37	48	70	84	83	46	25	24	26	587
40%	26	27	36	43	62	77	104	138	74	29	27	27	728
50%	28	29	40	58	85	93	112	177	102	32	29	28	932
60%	30	31	47	75	107	117	126	221	141	34	32	30	1,089
70%	32	33	54	99	130	134	144	256	163	40	33	33	1,256
80%	36	41	73	131	158	169	181	305	191	50	35	38	1,427
90%	43	51	117	223	223	219	208	354	283	68	41	43	1,807
Max	88	286	506	874	596	478	390	574	582	203	52	97	2,880
Avg	29	37	67	100	110	121	129	191	132	42	29	31	1,018

Table 29B-6. Projected CALSIM Climate Change Effects on Tuolumne River, New Don Pedro Reservoir Inflow

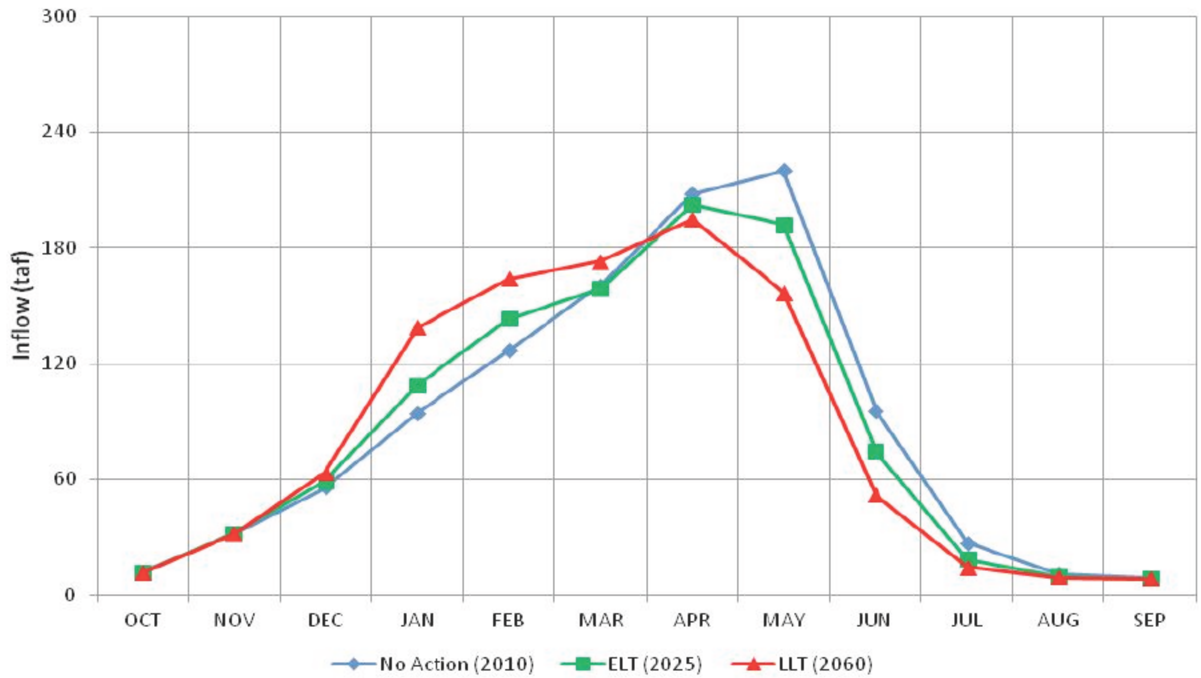
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
a. Existing (Historical) Monthly Distributions for New Don Pedro Reservoir Inflow (taf)													
Min	5	5	7	6	9	11	20	31	9	9	12	10	223
10%	9	9	18	23	44	73	99	105	40	18	16	21	601
20%	11	11	23	30	64	101	126	169	76	21	18	22	829
30%	13	13	38	39	79	116	154	215	156	26	21	23	902
40%	14	15	43	55	100	140	173	261	210	35	24	25	1,146
50%	16	17	54	67	141	163	191	286	279	52	28	28	1,496
60%	17	26	63	96	172	198	224	315	325	80	29	31	1,742
70%	19	29	82	134	205	230	247	354	371	119	32	33	1,931
80%	23	48	106	188	243	248	270	448	452	166	36	34	2,255
90%	29	66	191	262	313	306	290	528	555	278	41	38	2,804
Max	162	430	578	978	547	559	576	852	965	615	184	94	4,438
Avg	20	37	90	123	160	186	200	308	294	107	31	29	1,586
b. Projected Early Long-Term (2025) Monthly Distributions for New Don Pedro Reservoir Inflow (taf)													
Min	5	4	7	5	9	10	17	24	7	8	11	9	192
10%	8	8	17	22	44	72	82	79	34	15	15	19	549
20%	10	10	23	29	63	104	123	137	60	17	16	20	742
30%	11	12	36	38	83	117	150	183	124	23	18	21	834
40%	13	14	42	55	101	141	170	233	152	27	21	23	1,060
50%	14	16	54	65	156	172	199	280	215	43	23	25	1,444
60%	15	25	63	99	186	208	229	301	256	62	25	27	1,661
70%	18	28	87	137	235	248	254	348	290	97	28	29	1,941
80%	22	51	115	209	275	283	278	456	380	124	31	31	2,298
90%	29	72	222	318	367	335	297	509	465	216	32	33	2,793
Max	172	538	703	1,346	732	620	593	949	937	432	143	92	4,490
Avg	19	39	102	139	182	198	205	299	240	83	26	27	1,559
c. Projected Late Long-Term (2060) Monthly Distributions for New Don Pedro Reservoir Inflow (taf)													
Min	5	4	6	5	9	10	16	22	7	7	10	9	181
10%	8	7	16	23	45	76	80	63	30	14	14	18	514
20%	9	9	23	30	65	110	125	114	50	15	15	19	707
30%	11	11	35	41	85	120	145	144	87	19	16	19	797
40%	12	14	43	55	106	147	177	196	128	24	18	21	980
50%	13	14	53	69	159	177	197	226	148	34	21	23	1,340
60%	14	23	64	102	200	210	234	257	179	49	23	25	1,581
70%	17	26	88	157	239	250	265	288	206	72	24	27	1,880
80%	22	41	114	238	311	300	290	413	276	94	28	29	2,157
90%	28	62	231	356	394	361	316	493	325	162	29	32	2,769
Max	196	483	676	1,430	730	668	626	947	844	298	107	105	4,419
Avg	18	35	100	153	191	208	210	262	185	62	22	26	1,474

Table 29B-7. Projected CALSIM Climate Change Effects on Merced River, New Exchequer Reservoir Inflow

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
a. Existing (Historical) Monthly Distributions for New Exchequer Reservoir Inflow (taf)													
Min	0	2	1	3	3	5	30	37	14	3	0	0	142
10%	2	4	6	9	19	35	79	99	44	7	2	1	384
20%	3	5	8	13	24	49	89	123	56	14	3	2	507
30%	3	6	11	19	32	57	107	170	86	22	6	2	575
40%	4	7	16	24	42	63	124	200	119	30	7	3	680
50%	5	10	22	35	54	79	134	245	146	42	10	5	884
60%	7	12	27	46	69	91	159	269	166	50	14	6	1,054
70%	8	16	34	64	104	113	171	290	210	68	18	9	1,179
80%	10	22	53	95	148	147	185	321	273	98	29	12	1,399
90%	17	39	102	158	202	164	212	396	338	133	43	20	1,700
Max	61	259	372	616	359	390	445	565	649	359	103	71	2,871
Avg	8	19	43	65	84	98	145	240	173	62	19	9	965
b. Projected Early Long-Term (2025) Monthly Distributions for New Exchequer Reservoir Inflow (taf)													
Min	0	2	1	2	3	6	23	27	7	2	0	0	118
10%	1	3	5	9	18	32	77	68	24	6	2	1	319
20%	2	5	8	12	26	44	86	91	32	11	3	1	438
30%	3	6	10	18	30	57	110	138	58	13	5	2	519
40%	3	7	15	24	46	63	123	181	91	16	6	3	633
50%	5	9	22	36	56	77	140	238	111	20	8	5	811
60%	6	12	31	53	67	91	155	267	128	27	10	5	1,012
70%	8	15	37	68	114	115	176	303	165	38	12	7	1,216
80%	10	21	66	112	171	150	197	350	234	59	16	11	1,373
90%	15	46	149	196	222	171	227	433	317	96	18	16	1,734
Max	106	312	474	742	463	405	456	651	669	268	84	71	2,917
Avg	8	21	55	76	93	100	147	237	143	40	13	8	942
c. Projected Late Long-Term (2060) Monthly Distributions for New Exchequer Reservoir Inflow (taf)													
Min	0	2	1	2	3	7	23	26	6	2	0	0	113
10%	1	3	5	8	18	34	74	46	14	5	2	1	298
20%	2	5	7	13	26	49	92	73	21	7	3	1	412
30%	3	6	9	19	31	60	109	94	30	9	4	2	448
40%	3	7	14	25	46	72	130	150	59	11	5	3	569
50%	5	8	22	35	59	84	139	189	73	12	6	4	741
60%	6	11	28	47	73	100	160	219	83	14	8	5	954
70%	7	14	37	75	117	122	182	256	118	23	9	7	1,064
80%	9	19	61	100	182	153	211	325	166	32	13	10	1,321
90%	15	34	141	221	233	195	251	420	234	56	16	15	1,707
Max	167	306	430	797	467	440	479	672	581	184	86	83	2,872
Avg	8	18	51	82	97	108	155	210	104	25	11	9	878

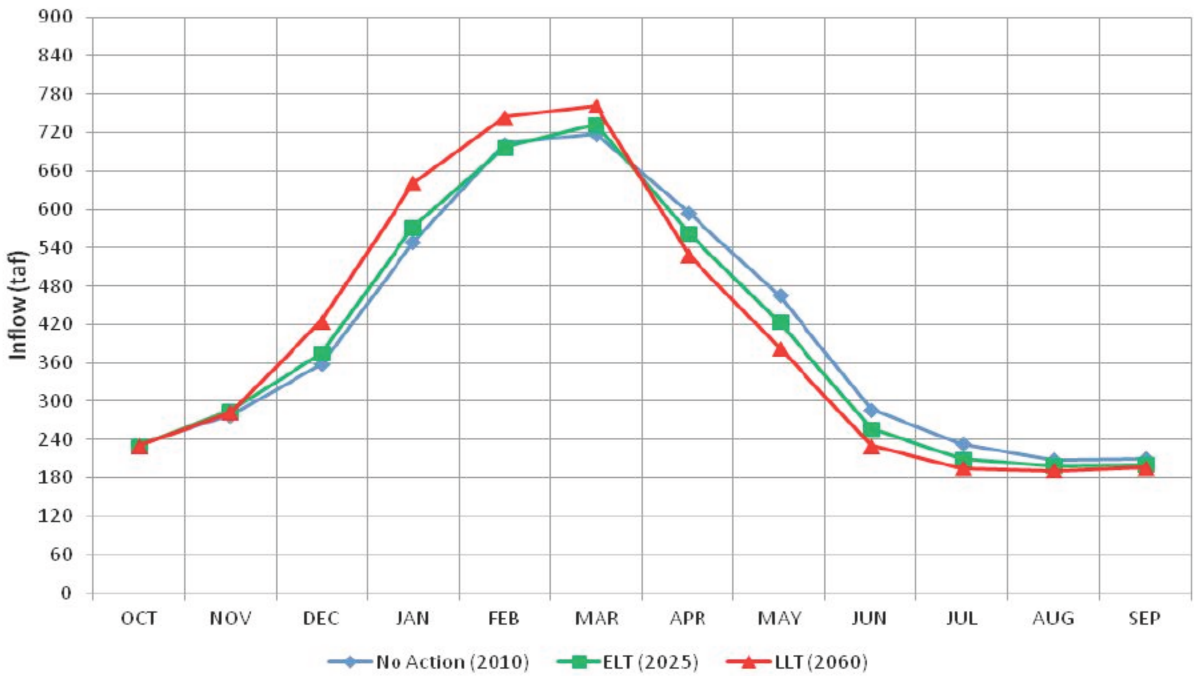
Table 29B-8. Projected CALSIM Climate Change Effects on San Joaquin River, Millerton Reservoir Inflow

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
a. Existing (Historical) Monthly Distributions for Millerton Reservoir Inflow (taf)													
Min	25	15	21	24	24	21	45	10	5	37	36	62	383
10%	32	29	34	37	47	76	100	81	67	68	77	80	855
20%	40	38	41	45	66	85	128	120	107	74	82	93	1,082
30%	49	43	45	59	74	103	140	148	138	82	91	98	1,220
40%	61	50	54	64	83	113	166	197	199	111	101	100	1,292
50%	67	56	61	72	95	129	195	223	228	138	110	103	1,528
60%	74	61	67	90	120	146	218	266	276	165	118	105	1,793
70%	77	66	76	107	135	169	243	316	363	192	127	107	2,022
80%	82	76	89	140	178	200	264	390	486	268	147	112	2,286
90%	90	109	145	199	235	241	284	465	588	347	215	123	2,922
Max	225	191	319	606	325	393	454	836	1,119	752	332	216	4,688
Avg	65	63	78	101	119	146	198	254	291	187	124	105	1,730
b. Projected Early Long-Term (2025) Monthly Distributions for Millerton Reservoir Inflow (taf)													
Min	23	14	19	21	21	20	40	8	3	26	31	54	328
10%	30	27	32	34	46	76	100	69	45	48	64	71	777
20%	37	36	37	41	67	87	126	99	74	53	68	79	948
30%	45	41	42	54	73	105	144	150	99	59	72	85	1,100
40%	56	46	50	61	84	118	167	178	166	68	78	88	1,188
50%	61	52	58	68	97	135	202	217	194	80	84	90	1,386
60%	66	56	66	89	130	152	231	277	237	104	89	93	1,690
70%	69	61	74	104	156	180	265	336	315	134	99	94	1,957
80%	73	76	93	152	210	212	292	399	440	227	104	98	2,263
90%	77	104	151	209	277	281	320	543	590	327	131	104	2,977
Max	219	215	352	723	447	455	493	985	1,123	638	279	234	4,791
Avg	59	60	78	106	134	158	210	266	263	142	92	92	1,660
c. Projected Late Long-Term (2060) Monthly Distributions for Millerton Reservoir Inflow (taf)													
Min	22	13	18	20	20	20	40	7	2	21	29	51	313
10%	28	26	30	33	45	79	109	61	31	37	53	58	724
20%	36	34	35	39	67	92	133	78	49	43	61	71	847
30%	43	38	39	56	73	108	151	127	70	46	64	77	1,015
40%	53	42	48	63	85	120	177	160	126	50	67	81	1,108
50%	57	47	57	67	100	140	206	194	150	55	72	84	1,254
60%	60	51	63	91	141	157	243	243	179	63	77	86	1,626
70%	63	56	73	110	160	200	274	305	250	90	81	88	1,797
80%	66	69	94	157	219	242	314	361	357	141	85	91	2,122
90%	72	98	163	242	290	307	361	529	518	255	92	97	2,778
Max	220	191	375	747	478	514	500	1,063	966	528	196	322	4,598
Avg	55	55	78	113	139	168	223	251	215	103	74	87	1,561



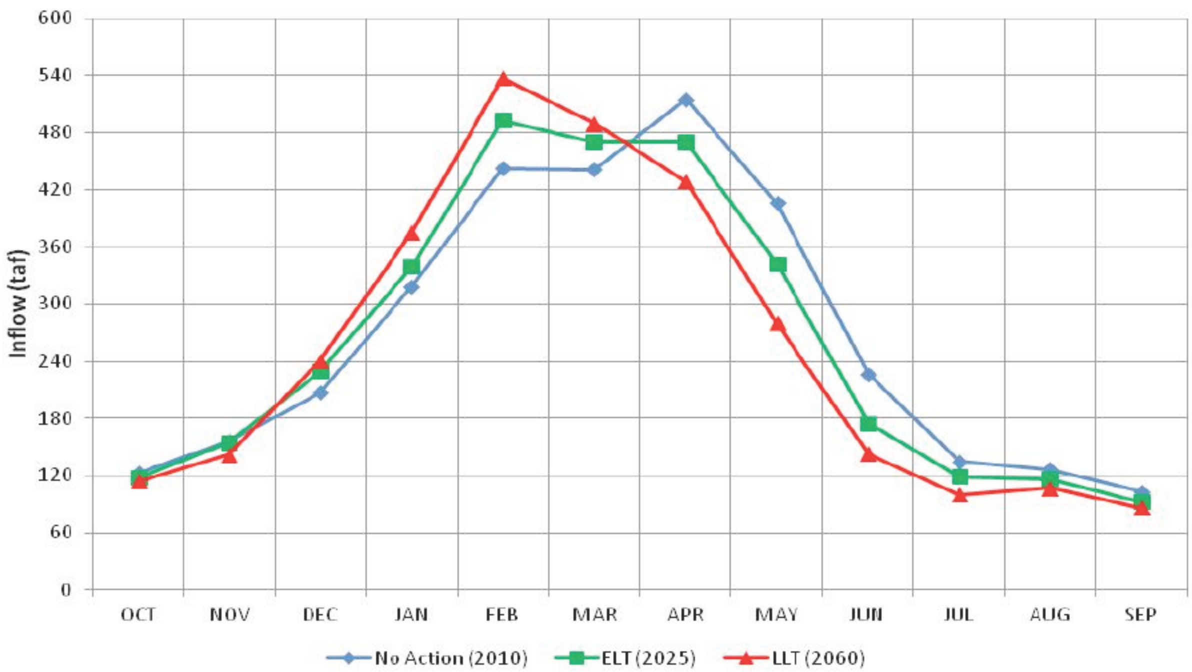
BDCP EIR/EIS 00293.12 (09/12/13) SS

Appendix 29B-1
Monthly Median (50%) Shifts in the Projected Trinity River- Trinity Reservoir Runoff (taf) from Existing (Historical) to Early Long-Term (2025) to Late Long-Term (2060)



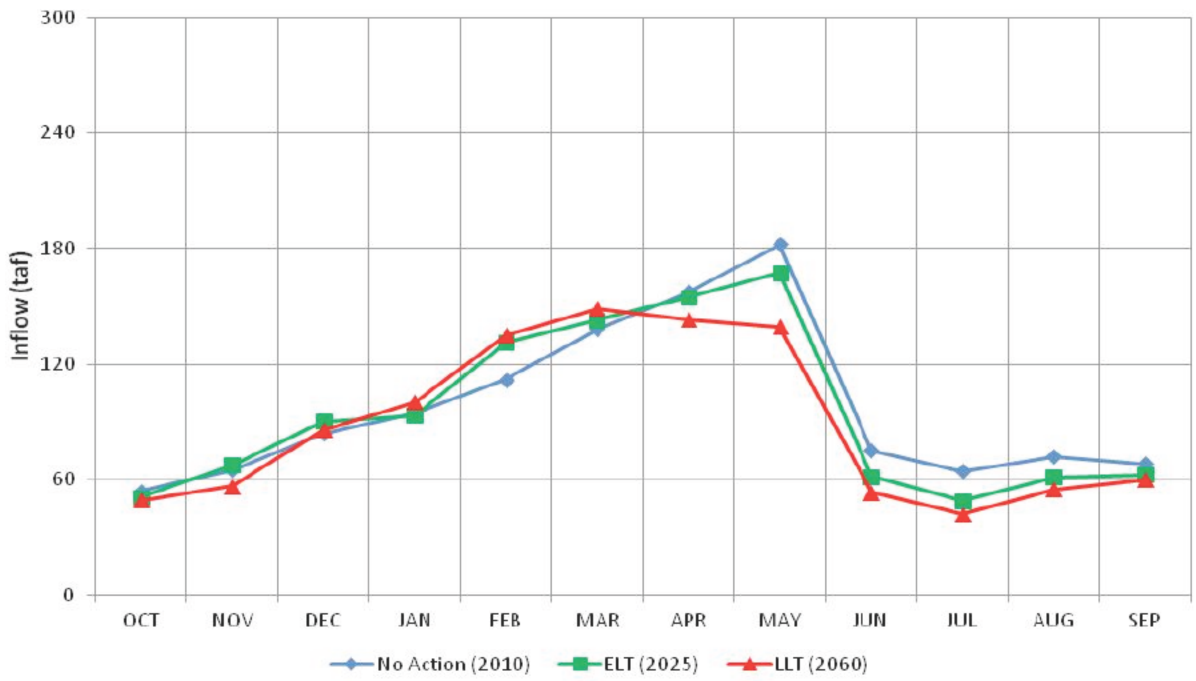
BDCP EIR/EIS 00293.12 (09/12/13) SS

Appendix 29B-2
Monthly Median (50%) Shifts in the Projected Sacramento River -Shasta Reservoir Runoff (taf) from Existing (Historical) to Early Long-Term (2025) to Late Long-Term (2060)



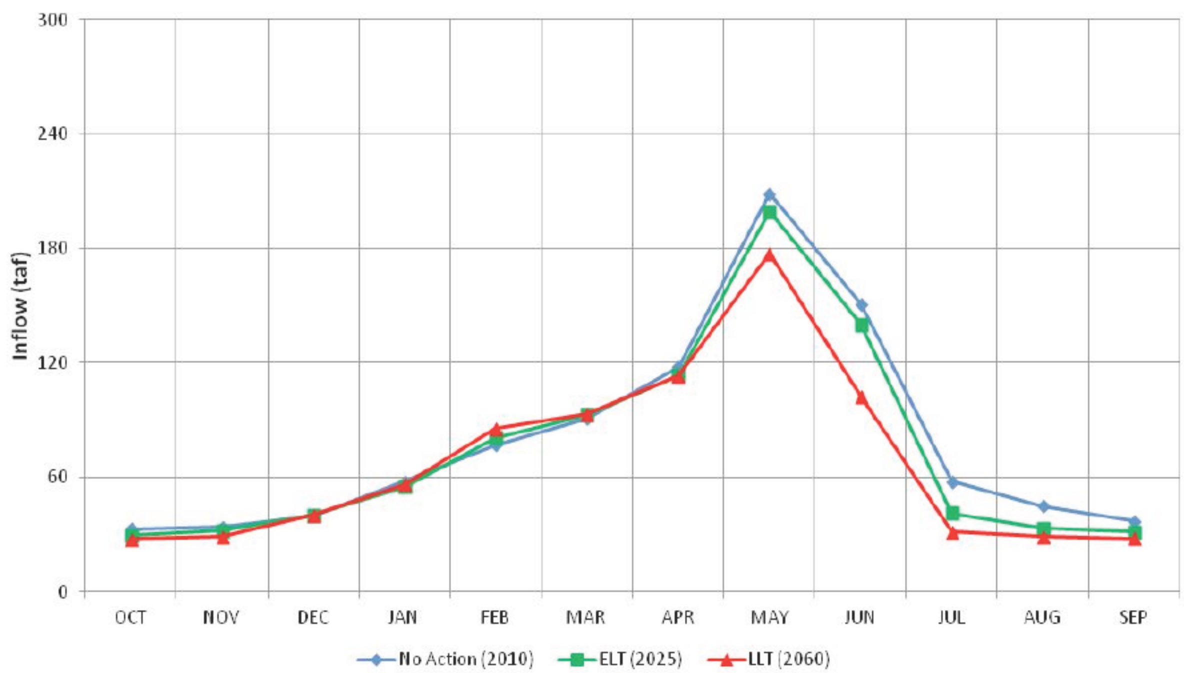
BDCP EIR/EIS 00293.12 (09/12/13) SS

Appendix 29B-3
Monthly Median (50%) Shifts in the Projected Feather River- Oroville Reservoir Inflow (taf) from Existing (Historical) to Early Long-Term (2025) to Late Long-Term (2060)

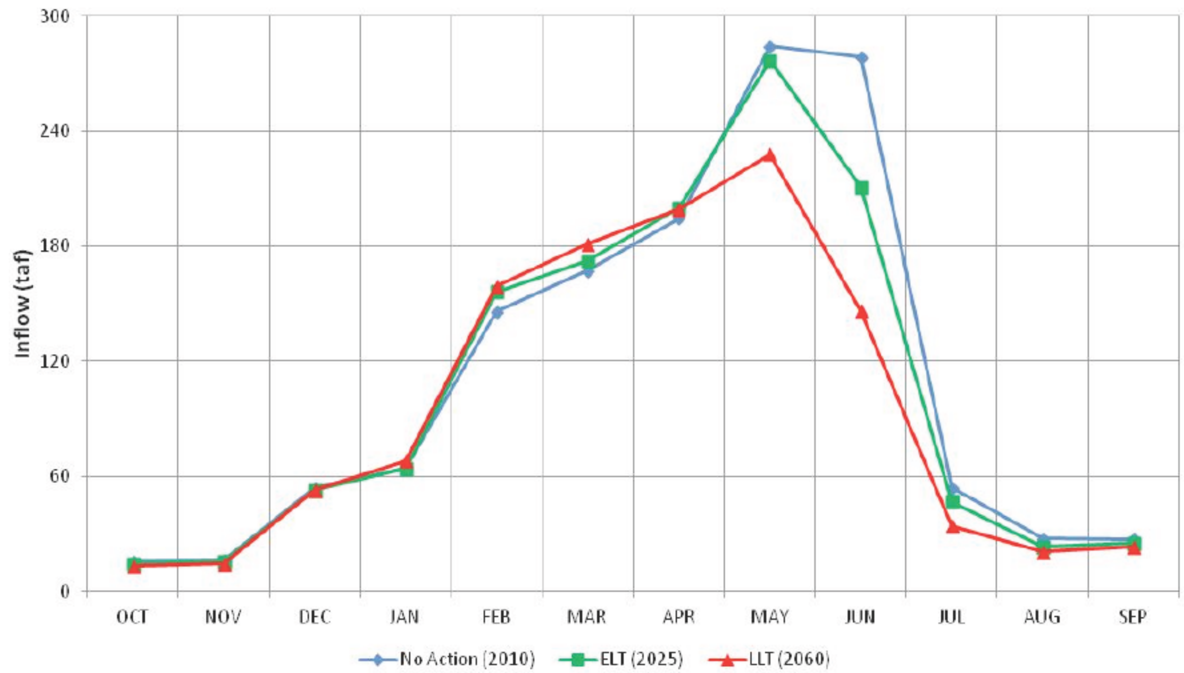


BDCP EIR/EIS 00293.12 (09/12/13) SS

Appendix 29B-4
Monthly Median (50%) Shifts in the Projected American River-Folsom Reservoir Inflow (taf) from Existing (Historical) to Early Long-Term (2025) to Late Long-Term (2060)

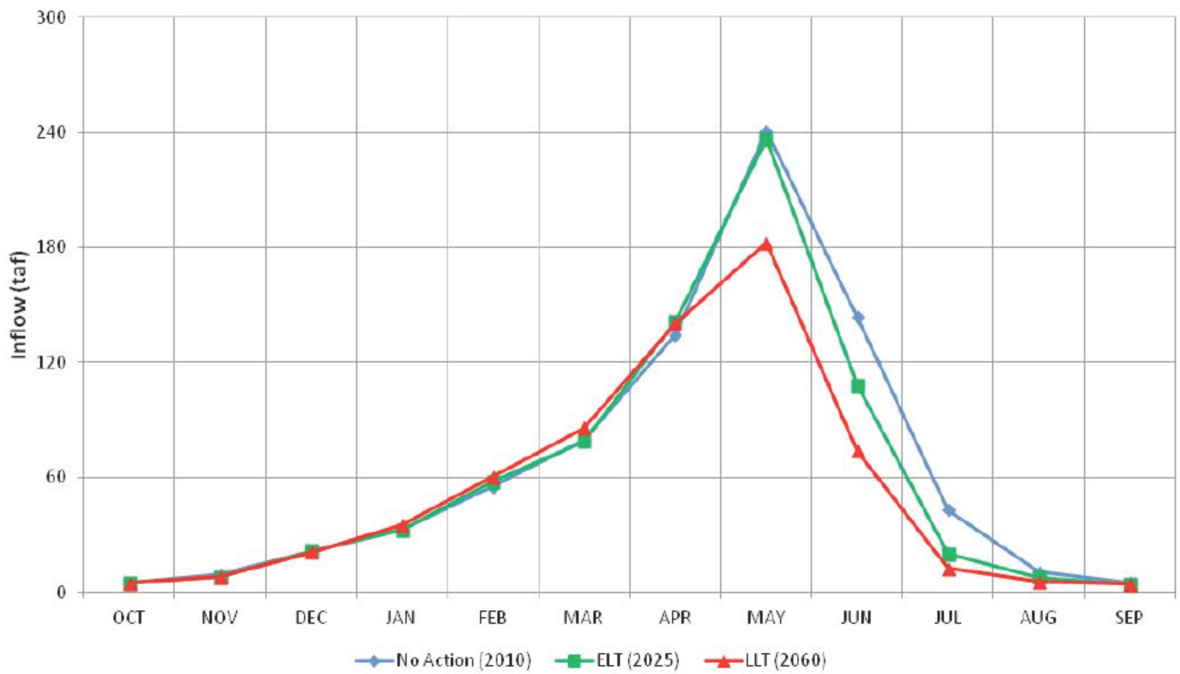


Appendix 29B-5
Monthly Median (50%) Shifts in the Projected Stanislaus River- New Melones Reservoir Inflow (taf) from Existing (Historical) to Early Long-Term (2025) to Late Long-Term (2060)



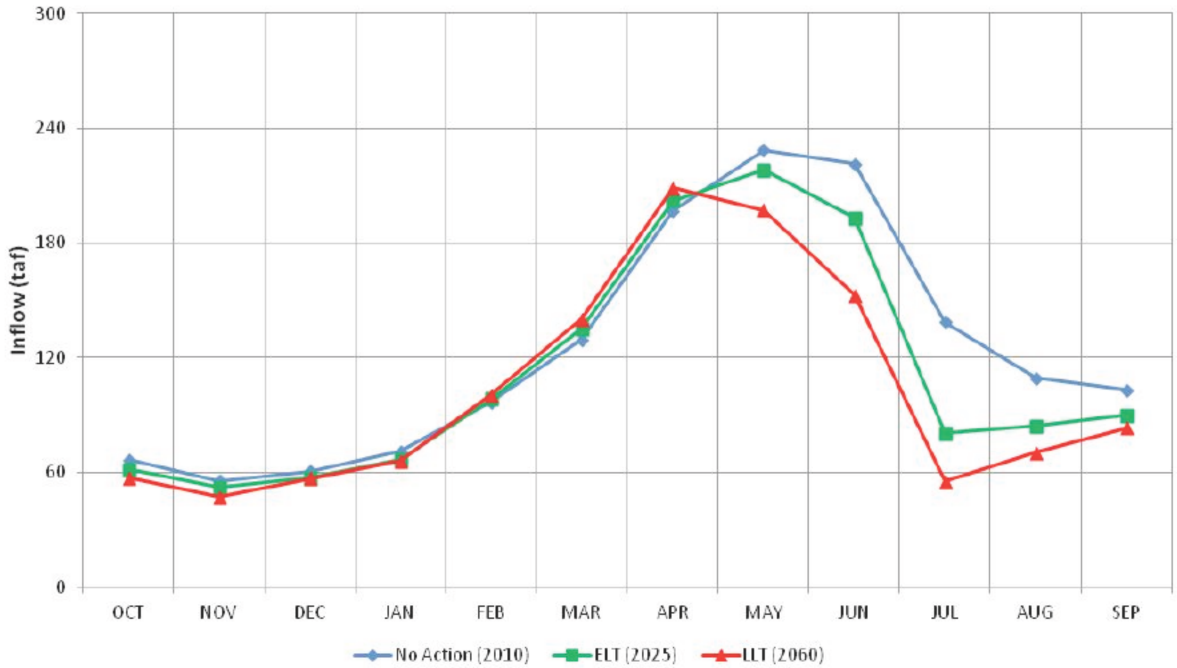
BDCP EIR/EIS 00293.12 (09/12/13) SS

Appendix 29B-6
Monthly Median (50%) Shifts in the Projected Tuolumne River- New Don Pedro Reservoir Inflow (taf) from Existing (Historical) to Early Long-Term (2025) to Late Long-Term (2060)



BDCP EIR/EIS 00293.12 (09/12/13) SS

Appendix 29B-7
Monthly Median (50%) Shifts in the Projected Merced River- New Exchequer Reservoir Inflow (taf) from Existing (Historical) to Early Long-Term (2025) to Late Long-Term (2060)



BDCP EIR/EIS 00293.12 (09/12/13) SS

Appendix 29B-8
Monthly Median (50%) Shifts in the Projected San Joaquin River- Millerton Reservoir Inflow (taf) from Existing (Historical) to Early Long-Term (2025) to Late Long-Term (2060)