Appendix 5A2

Chloride

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This appendix is entirely new for the Final Environmental Impact Report (FEIR) and was not included as part of the Draft Environmental Impact Report. This appendix replaces Appendix 5A1 in its entirety in the FEIR. It is presented without strikethrough and underline for clarity and readability.

5A.1 Appendix Overview

The information contained in this appendix supports the quantitative assessment of the Proposed Project's effects on chloride concentrations at Sacramento–San Joaquin Delta (Delta) assessment locations presented in Chapter 5, "Surface Water Quality." Specifically, this appendix presents the following information.

- The source water concentrations used in the mass-balance modeling of chloride at the Delta assessment locations.
- Tables and figures presenting modeled concentrations at the Delta assessment locations for Baseline Conditions and the Proposed Project.

Chapter 5, "Surface Water Quality," summarizes information contained in the tables and figures presented in this appendix to make determinations regarding the potential for the Proposed Project to result in significant impacts on chloride at Delta assessment locations.

5A.2 Source Water Concentrations

An input to the mass-balance calculation of chloride concentrations at the Delta assessment locations is the concentration of chloride in the primary source waters to the Delta: SAC, SJR, YOL, EST, BAY, and AGR. The concentrations of chloride for all source waters except the San Joaquin River were based on historical data. Table 5A-1 provides summary statistics for the primary source water concentrations, as well as information on the source of the data. Due to data availability, Yolo Bypass concentrations were set equal to Sacramento River concentrations, which is the source of flows to the Yolo Bypass.

Table 5A-1. Source Water Concentrations for Chloride (in milligrams per liter)

Data Parameter	Sacramento River	San Joaquin River	San Francisco Bay	Eastside Tributaries	Delta Agriculture Return Waters
Average	6.4	76	6,507	2.4	156
Minimum	1.0	1.0	8.0	0.3	3.0
Maximum	33	221	12,600	10	2,010
75th percentile	8.0	106	9,255	3.0	184
99th percentile	12	181	12,464	8.7	1,148
Data source	CEDEN, DWR	CEDEN, DWR	CEDEN	CEDEN, USGS	DWR
Station(s)	Sacramento River at Greene's Landing, Sacramento River at Hood	San Joaquin River at Vernalis	Suisun Bay at Bulls Head near Martinez	Mokelumne River, Cosumnes River	Multiple – see narrative description below
Date range	1980–2020	1980–2020	1980–2007	1952–2015	1985–2004
Non-detect results replaced with reporting limit for statistics	No	No	No	None	None
Data omitted	None	None	None	Single <0.1 value from each dataset, 0 values from Cosumnes River	Yes – see narrative description below
Number of data points	1,330	1,232	319	481	1,576

Sources: California Environmental Data Exchange Network 2020; California Department of Water Resources 2020; U.S. Geological Survey 2020.

CEDEN = California Environmental Data Exchange Network; DWR = California Department of Water Resources; USGS = U.S. Geological Survey.

Each source water dataset was evaluated to determine whether the primary source water concentration should be represented by a single value or a different value for each month. Analysis of the Sacramento River (Kruskal Wallis; $p<0.05$), eastside tributaries (Kruskal Wallis; $p<0.05$), and Delta agricultural return waters (Kruskal Wallis; $p<0.05$) datasets indicated significant differences in concentration by month. Due to the presence of a distinct monthly pattern in Sacramento River, eastside tributaries, and Delta agricultural return waters, monthly average concentrations were used for these locations in the mass-balance calculation. Table 5A-2, Table 5A-3, and Table 5A-4 present monthly average chloride concentrations for the Sacramento River, eastside tributaries, and Delta agriculture return waters used in the mass-balance calculation, respectively.

The source water concentrations for the San Joaquin River and San Francisco Bay were calculated in a different manner. Because San Joaquin River and San Francisco Bay chloride concentrations are closely related to flow, in addition to time of year, concentrations were calculated from DSM2-modeled electrical conductivity (EC). The EC-chloride regression equations defined below were applied to each modeled monthly average EC value for water years 1922–2021 to develop monthly average chloride concentrations for the modeled period, resulting in a time-series of monthly average chloride concentrations consisting of 1,188 values (i.e., 12 months times 99 water years). In the following equation, Cl is the chloride concentration in milligrams per liter (mg/L) and EC is in micromhos per centimeter (μmhos/cm).

$$San\ Joaquin\ River\ at\ Vernalis\ Cl = 0.1845 * EC\ at\ Vernalis - 23$$

$$San\ Francisco\ Bay\ at\ Martinez\ Cl = 0.285 * EC\ at\ Martinez - 50$$

The monthly average chloride concentrations were input as C_{SJR} and C_{BAY} in the mass-balance equation.

Table 5A-2. Monthly Average Source Water Chloride Concentrations for the Sacramento River (in milligrams per liter)

Data Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average concentration	7.1	6.9	6.0	5.8	6.5	6.1	5.0	5.7	7.2	6.1	7.1	7.0
Number of data points	107	109	112	110	112	113	112	117	116	114	104	104

Table 5A-3. Monthly Average Source Water Chloride Concentrations for the Eastside Tributaries (in milligrams per liter)

Data Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average concentration	2.7	2.6	2.4	2.0	1.9	2.0	1.8	2.1	2.0	2.5	3.1	2.7
Number of data points	40	30	51	36	34	42	35	25	54	31	31	43

Table 5A-4. Monthly Average Source Water Chloride Concentrations for Delta Agricultural Return Waters (in milligrams per liter)

Data Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average concentration	198	223	175	188	133	123	115	121	170	170	144	120
Number of data points	235	55	100	233	65	183	221	184	26	186	37	51

Agricultural return drains are distributed unevenly throughout the Delta. Water quality associated with these drains varies depending on the specific location of the drain within the Delta and largely coincides with the water quality of the water that is withdrawn from the Delta for application onto agricultural lands. To characterize chloride concentrations in agricultural drain water as a whole, the following process was followed.

1. All agricultural drain data from the DWR Water Data Library, which had historical chloride data, were compiled.
2. All agricultural drain data were pooled, and the results summarized in Table 5A-1.

Data for the Byron Tract #2 (16,800 mg/L on May 29, 1996) and Byron Tract #3 (24,000 micrograms per liter [µg/L] on May 29, 1996) agricultural drains in the west Delta were omitted from the database due to their reported values being substantially outside the distribution of all other values.

5A.3 Modeling Results

The modeled monthly average concentrations of chloride at each Delta assessment location are presented on the following pages in tables and figures, in the following formats.

- Tables
  - Probability of exceedance of the monthly average concentration for water years 1922–2021.
  - Average of monthly average concentrations for water years 1922–2021 and by water year type: Wet, Above Normal, Below Normal, Dry, and Critical.
  - Results shown for Baseline Conditions and the Proposed Project, and the Proposed Project minus Baseline Conditions.
- Monthly Average Plots
  - Average of monthly average concentrations for water years 1922–2021 and by water year type: Wet, Above Normal, Below Normal, Dry, and Critical.
  - Baseline Conditions and the Proposed Project shown on the same plot.
- Exceedance Plots
  - Probability exceedance of the monthly average concentrations for water years 1922–2021.
  - Baseline Conditions and the Proposed Project shown on the same plot.

Table 5A-5a. Barker Slough at North Bay Aqueduct, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	26	28	30	50	68	52	39	24	20	19	20	26
1%	26	28	27	49	63	42	38	23	20	17	19	26
5%	25	27	27	44	50	39	36	22	19	17	18	26
10%	25	26	26	40	47	38	35	22	18	16	18	24
25%	23	24	24	34	42	34	31	20	16	14	15	21
50%	21	22	22	25	28	26	27	18	15	14	14	20
75%	20	20	20	20	21	20	25	18	14	13	14	20
99.9%	18	19	18	16	17	17	18	15	13	11	13	18

Table 5A-5b. Barker Slough at North Bay Aqueduct, Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	21	23	22	28	31	27	28	19	16	14	15	21
Wet Water Years	21	23	23	24	25	23	26	18	14	13	14	20
Above Normal Water Years	22	23	23	31	35	28	28	18	15	13	14	20
Below Normal Water Years	21	23	22	27	30	25	26	19	16	14	14	21
Dry Water Years	21	22	22	28	33	30	29	20	16	14	15	21
Critical Water Years	23	23	22	35	41	34	32	21	19	17	18	25

Table 5A-6a. Barker Slough at North Bay Aqueduct, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	26	28	30	50	68	52	39	24	20	19	20	26
1%	26	28	27	49	63	42	38	23	20	17	19	26
5%	25	26	27	44	50	39	36	22	19	17	18	26
10%	24	26	26	40	47	38	35	22	18	16	18	24
25%	23	24	24	34	42	34	31	20	16	14	15	21
50%	21	22	22	25	28	26	27	18	15	14	14	20
75%	20	20	20	20	21	20	25	18	14	13	14	20
99.9%	18	19	18	16	17	17	18	15	13	11	13	18

Table 5A-6b. Barker Slough at North Bay Aqueduct, Monthly Average Chloride (in milligrams per liter), Proposed Project

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	21	23	22	28	31	27	28	19	16	14	15	21
Wet Water Years	21	23	23	24	25	23	27	18	14	13	14	20
Above Normal Water Years	22	23	23	31	35	28	28	18	15	13	14	20
Below Normal Water Years	21	23	22	27	30	25	26	19	16	14	14	21
Dry Water Years	21	22	22	28	34	30	29	20	16	14	15	21
Critical Water Years	23	23	22	35	40	34	32	21	19	17	18	25

Table 5A-6c. Barker Slough at North Bay Aqueduct, Difference in Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	0	0	0	0	0	0	0	0	0	0	0	0
1%	0	0	0	0	0	0	0	0	0	0	0	0
5%	0	0	0	0	0	0	0	0	0	0	0	0
10%	0	0	0	0	0	0	0	0	0	0	0	0
25%	0	0	0	0	0	0	0	0	0	0	0	0
50%	0	0	0	0	0	0	0	0	0	0	0	0
75%	0	0	0	0	0	0	0	0	0	0	0	0
99.9%	0	0	0	0	0	0	0	0	0	0	0	0

Table 5A-6d. Barker Slough at North Bay Aqueduct, Difference in Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	0	0	0	0	0	0	0	0	0	0	0	0
Wet Water Years	0	0	0	0	0	0	0	0	0	0	0	0
Above Normal Water Years	0	0	0	0	0	0	0	0	0	0	0	0
Below Normal Water Years	0	0	0	0	0	0	0	0	0	0	0	0
Dry Water Years	0	0	0	0	0	0	0	0	0	0	0	0
Critical Water Years	0	0	0	0	0	0	0	0	0	0	0	0

Table 5A-7a. San Joaquin River at Empire Tract, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	99	115	136	129	112	67	56	44	51	60	70	94
1%	99	109	133	107	90	62	56	44	50	48	65	84
5%	88	98	122	94	75	51	50	40	47	44	53	70
10%	77	90	102	88	58	47	46	39	40	40	49	62
25%	55	56	86	68	51	42	44	36	32	28	40	54
50%	44	48	67	50	43	35	38	32	28	23	30	46
75%	25	33	33	34	34	29	25	22	24	17	20	21
99.9%	9	22	9	5	5	4	3	2	2	3	6	18

Table 5A-7b. San Joaquin River at Empire Tract, Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	44	50	64	53	43	34	33	28	27	25	32	41
Wet Water Years	38	43	43	36	28	22	17	15	16	17	20	21
Above Normal Water Years	48	57	75	47	45	38	36	28	26	19	19	21
Below Normal Water Years	41	46	67	53	46	39	38	30	29	23	34	54
Dry Water Years	42	47	77	66	50	37	41	36	29	29	41	49
Critical Water Years	61	70	76	71	54	44	44	37	41	39	46	63

Table 5A-8a. San Joaquin River at Empire Tract, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	103	116	134	128	112	67	57	45	55	59	70	94
1%	100	109	131	102	85	61	56	44	50	48	62	84
5%	86	98	120	95	71	52	50	39	46	44	54	69
10%	74	89	102	88	60	49	46	38	40	40	50	61
25%	54	57	86	69	53	44	44	36	32	28	41	55
50%	46	48	68	50	43	36	38	31	29	22	31	46
75%	26	33	34	34	35	29	25	22	24	18	21	22
99.9%	9	22	9	5	5	4	3	2	2	3	6	17

Table 5A-8b. San Joaquin River at Empire Tract, Monthly Average Chloride (in milligrams per liter), Proposed Project

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	44	50	65	53	43	35	34	27	27	24	33	42
Wet Water Years	38	43	43	36	28	22	17	14	16	17	21	22
Above Normal Water Years	49	57	76	48	45	39	36	27	27	19	21	22
Below Normal Water Years	42	47	67	53	47	41	39	29	29	23	35	53
Dry Water Years	40	46	77	65	50	38	42	35	29	28	43	52
Critical Water Years	61	70	77	72	54	44	44	37	41	39	46	63

Table 5A-8c. San Joaquin River at Empire Tract, Difference in Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	3	1	-3	0	0	0	1	1	4	-1	0	0
1%	0	0	-2	-5	-5	-1	0	0	1	0	-4	0
5%	-2	0	-2	0	-4	1	0	-2	0	0	1	-1
10%	-3	-2	0	0	3	2	0	-1	0	0	1	0
25%	0	1	0	1	1	2	0	-1	0	0	1	1
50%	1	0	1	1	1	1	1	-1	0	0	1	1
75%	0	0	0	0	1	0	0	0	1	0	1	0
99.9%	0	0	0	0	0	0	0	0	0	0	0	0

Table 5A-8d. San Joaquin River at Empire Tract, Difference in Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	0	0	0	0	1	1	0	-1	0	0	1	1
Wet Water Years	0	0	0	0	0	0	0	0	0	0	1	1
Above Normal Water Years	1	0	1	1	1	1	0	-1	0	0	2	1
Below Normal Water Years	0	0	0	0	1	2	0	-1	0	0	1	-1
Dry Water Years	-1	0	-1	-1	0	2	1	0	0	0	2	3
Critical Water Years	0	0	1	1	1	0	0	0	0	0	0	0

Table 5A-9a. Banks Pumping Plant, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	166	185	196	194	140	110	80	67	97	144	155	183
1%	166	177	194	169	134	105	78	64	83	112	149	174
5%	156	163	178	155	116	95	70	59	73	96	121	160
10%	148	157	160	146	103	83	68	56	62	87	108	146
25%	134	124	142	123	85	74	64	53	46	53	91	127
50%	115	106	121	93	70	65	57	42	41	41	62	105
75%	33	49	65	63	53	39	27	25	33	26	36	47
99.9%	11	26	7	2	1	2	0	0	0	2	7	22

Table 5A-9b. Banks Pumping Plant, Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	90	93	109	91	68	57	46	38	39	45	66	92
Wet Water Years	80	80	75	59	41	30	19	17	19	22	32	40
Above Normal Water Years	95	94	126	83	70	60	44	34	34	28	37	48
Below Normal Water Years	81	87	111	93	72	62	49	38	42	45	77	133
Dry Water Years	88	91	126	114	82	70	63	53	45	59	94	116
Critical Water Years	122	125	134	123	91	82	68	57	67	81	94	132

Table 5A-10a. Banks Pumping Plant, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	167	185	196	194	134	109	79	66	108	144	147	183
1%	166	177	193	169	123	106	78	64	83	113	141	169
5%	154	164	177	155	116	94	71	59	74	92	125	151
10%	148	155	160	148	103	86	68	56	61	83	115	144
25%	137	126	142	122	91	76	64	52	45	54	92	132
50%	118	107	121	95	71	67	58	41	42	40	62	109
75%	34	48	66	64	56	40	28	24	34	26	39	53
99.9%	11	26	7	2	1	2	0	0	0	2	7	21

Table 5A-10b. Banks Pumping Plant, Monthly Average Chloride (in milligrams per liter), Proposed Project

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	91	93	109	92	69	59	46	37	39	44	68	95
Wet Water Years	81	82	75	59	41	30	20	16	19	22	35	44
Above Normal Water Years	97	94	127	85	72	61	44	32	35	28	43	53
Below Normal Water Years	82	87	111	94	74	65	49	39	41	43	78	131
Dry Water Years	88	91	126	113	85	73	64	52	45	58	98	124
Critical Water Years	124	126	134	127	92	83	67	57	67	82	94	132

Table 5A-10c. Banks Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	0	0	0	0	-7	-1	-1	0	11	0	-8	-1
1%	0	0	-1	1	-11	1	0	0	0	0	-8	-5
5%	-2	1	-2	0	0	-1	0	0	1	-4	4	-9
10%	0	-2	0	2	0	3	0	0	0	-4	7	-2
25%	3	2	0	-1	5	2	1	-1	-1	2	1	5
50%	2	1	0	2	1	2	1	-1	1	-1	0	5
75%	2	-1	1	1	2	0	1	-1	1	-1	3	6
99.9%	0	0	0	0	0	0	0	0	0	0	0	-1

Table 5A-10d. Banks Pumping Plant, Difference in Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	1	0	0	1	2	1	0	0	0	-1	3	3
Wet Water Years	1	1	0	0	0	0	0	-1	1	0	3	5
Above Normal Water Years	2	-1	1	2	2	1	1	-2	1	0	6	5
Below Normal Water Years	1	0	0	1	2	3	1	0	0	-2	1	-2
Dry Water Years	0	0	-1	-1	3	2	1	0	1	-1	4	8
Critical Water Years	2	1	0	3	1	1	0	0	0	1	0	0

Table 5A-11a. Jones Pumping Plant, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	159	178	185	184	143	115	78	66	95	138	153	179
1%	158	170	178	162	137	112	77	64	83	112	147	167
5%	144	155	166	151	118	102	72	61	73	96	120	150
10%	141	151	154	138	105	90	70	59	63	87	108	143
25%	125	124	136	123	91	80	68	54	49	56	91	121
50%	107	107	117	97	75	71	59	42	45	45	62	103
75%	42	60	72	70	58	40	26	24	37	34	42	50
99.9%	10	30	8	3	1	2	1	1	1	1	5	23

Table 5A-11b. Jones Pumping Plant, Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	89	98	107	93	71	61	47	38	41	48	67	91
Wet Water Years	79	86	78	63	43	31	19	17	20	26	36	44
Above Normal Water Years	93	102	123	88	75	63	44	34	38	36	43	52
Below Normal Water Years	80	93	107	95	76	67	51	39	45	49	77	127
Dry Water Years	87	95	122	114	86	77	66	54	49	61	93	114
Critical Water Years	116	126	128	122	95	90	70	58	68	81	93	129

Table 5A-12a. Jones Pumping Plant, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	159	178	185	184	144	115	78	66	105	140	145	179
1%	159	170	177	162	134	113	78	64	83	112	138	162
5%	146	162	165	153	118	101	72	61	74	92	125	144
10%	138	151	156	144	104	92	70	59	63	82	115	139
25%	128	126	134	121	96	81	67	54	49	58	91	127
50%	109	108	118	98	76	73	59	41	45	45	63	107
75%	42	60	72	71	59	40	27	24	37	33	45	56
99.9%	10	30	8	3	1	2	1	1	1	1	5	22

Table 5A-12b. Jones Pumping Plant, Monthly Average Chloride (in milligrams per liter), Proposed Project

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	89	98	107	94	73	62	47	38	41	48	70	94
Wet Water Years	79	87	78	63	43	31	19	16	20	26	38	48
Above Normal Water Years	95	103	124	90	77	64	44	33	38	36	48	56
Below Normal Water Years	81	93	107	96	78	69	51	39	45	47	78	125
Dry Water Years	87	95	121	114	89	78	67	54	49	60	97	121
Critical Water Years	117	127	128	125	96	91	70	58	68	82	94	129

Table 5A-12c. Jones Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	0	0	0	0	0	-1	0	0	10	2	-8	-1
1%	0	1	-1	0	-3	1	0	0	0	0	-8	-5
5%	1	7	-1	2	0	-1	0	0	1	-4	5	-6
10%	-3	0	2	5	-1	3	0	0	-1	-5	7	-4
25%	3	2	-2	-2	5	1	-1	0	0	2	1	6
50%	2	1	1	1	1	2	0	-1	1	-1	1	3
75%	1	0	0	1	1	0	0	0	1	-1	3	5
99.9%	0	0	0	0	0	0	0	0	0	0	0	-1

Table 5A-12d. Jones Pumping Plant, Difference in Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	1	0	0	1	1	1	0	0	0	0	2	3
Wet Water Years	0	1	0	0	0	0	0	-1	0	0	2	4
Above Normal Water Years	1	1	1	2	2	1	0	-1	1	0	4	5
Below Normal Water Years	1	0	0	1	2	2	0	0	0	-2	1	-2
Dry Water Years	0	0	-1	0	2	2	0	0	1	-1	4	7
Critical Water Years	1	1	0	3	1	1	0	0	0	1	0	0

Table 5A-13a. San Joaquin River at Antioch, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	2109	2160	1633	1455	686	553	553	803	1231	1394	1464	1891
1%	2062	2033	1630	1353	631	528	521	791	1139	1270	1437	1876
5%	2025	1900	1525	1029	543	292	329	654	985	1170	1354	1778
10%	1882	1793	1404	885	325	196	221	380	788	1074	1281	1731
25%	1585	1552	1160	554	143	53	95	177	369	718	1115	1568
50%	1259	1088	734	175	28	24	26	36	224	445	832	1194
75%	247	678	223	24	22	21	21	20	32	196	461	338
99.9%	17	18	17	14	15	13	11	11	11	13	17	17

Table 5A-13b. San Joaquin River at Antioch, Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	998	1082	725	332	121	71	84	141	289	497	791	995
Wet Water Years	825	807	285	65	24	20	19	23	49	133	357	275
Above Normal Water Years	1020	1065	703	125	25	22	23	29	106	214	484	316
Below Normal Water Years	868	1017	835	334	83	32	40	65	254	489	862	1242
Dry Water Years	967	1171	915	561	196	90	112	179	381	752	1101	1547
Critical Water Years	1518	1573	1159	657	317	227	269	489	783	1032	1296	1727

Table 5A-14a. San Joaquin River at Antioch, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	2107	2161	1630	1458	629	534	549	926	1336	1406	1467	1893
1%	2062	2033	1626	1357	623	518	523	775	1142	1280	1446	1865
5%	2004	1916	1478	1020	507	284	336	665	991	1177	1345	1797
10%	1882	1798	1409	860	349	158	231	404	821	1079	1267	1723
25%	1607	1569	1156	581	144	49	82	168	359	720	1185	1599
50%	1370	1122	741	177	27	24	26	41	205	441	802	1278
75%	253	663	224	24	22	21	21	20	28	187	502	365
99.9%	17	18	17	14	15	13	11	11	11	13	17	18

Table 5A-14b. San Joaquin River at Antioch, Monthly Average Chloride (in milligrams per liter), Proposed Project

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	1021	1087	723	331	117	67	82	145	283	491	808	1027
Wet Water Years	852	815	281	60	23	20	19	26	45	130	395	307
Above Normal Water Years	1027	1047	698	128	25	22	22	32	95	206	522	331
Below Normal Water Years	893	1026	832	329	80	30	37	69	241	468	824	1302
Dry Water Years	988	1183	914	563	191	81	100	178	372	750	1140	1586
Critical Water Years	1547	1572	1166	662	303	218	272	498	792	1037	1300	1727

Table 5A-14c. San Joaquin River at Antioch, Difference in Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	-1	1	-3	3	-57	-19	-4	122	105	12	3	2
1%	0	0	-4	4	-8	-9	2	-16	3	11	8	-11
5%	-21	17	-47	-9	-36	-8	8	11	7	7	-10	19
10%	0	5	5	-25	24	-38	10	24	33	4	-14	-7
25%	23	17	-4	27	1	-4	-13	-9	-10	2	70	31
50%	111	34	6	2	0	0	0	5	-19	-5	-30	84
75%	7	-14	0	0	0	0	0	0	-4	-9	41	27
99.9%	0	0	0	0	0	0	0	0	0	0	0	1

Table 5A-14d. San Joaquin River at Antioch, Difference in Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	23	5	-2	-1	-4	-4	-3	4	-5	-6	17	33
Wet Water Years	27	7	-4	-5	-1	0	0	4	-4	-2	38	32
Above Normal Water Years	7	-18	-5	3	0	0	0	4	-11	-8	38	15
Below Normal Water Years	24	9	-3	-5	-2	-2	-3	3	-13	-21	-38	60
Dry Water Years	22	12	-2	2	-4	-9	-12	0	-8	-2	39	39
Critical Water Years	29	-1	7	5	-14	-9	2	9	9	4	4	0

Table 5A-15a. San Joaquin River at Antioch, Frequency that Monthly Average Chloride Concentration Exceeds 250 milligrams per liter

Month	Baseline Conditions	Proposed Project
January	39%	39%
February	16%	14%
March	8%	8%
April	10%	10%
May	17%	17%
June	45%	45%
July	62%	63%
August	93%	93%
September	91%	93%
October	71%	77%
November	91%	91%
December	71%	71%

Table 5A-16a. Contra Costa Water District Pumping Plant #1, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	237	261	250	292	175	98	84	83	106	169	167	212
1%	230	250	247	221	172	84	83	81	93	122	164	187
5%	218	233	237	187	126	73	74	73	80	100	129	172
10%	196	217	224	171	109	56	60	64	52	88	121	166
25%	168	160	206	149	71	39	49	50	29	51	96	142
50%	136	132	163	88	39	32	38	37	26	34	60	115
75%	23	46	88	32	28	28	30	26	21	21	30	37
99.9%	17	19	20	8	9	7	6	6	6	12	14	16

Table 5A-16b. Contra Costa Water District Pumping Plant #1, Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	106	115	147	95	54	36	41	39	30	43	66	97
Wet Water Years	90	96	96	45	37	29	27	20	17	19	28	33
Above Normal Water Years	112	123	159	78	41	35	43	31	23	22	32	38
Below Normal Water Years	93	101	153	102	48	33	49	47	26	41	79	144
Dry Water Years	99	111	175	127	73	37	42	47	32	59	98	129
Critical Water Years	158	171	190	144	80	54	53	55	64	82	103	153

Table 5A-17a. Contra Costa Water District Pumping Plant #1, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	237	263	251	292	173	94	84	76	121	165	156	212
1%	227	250	247	221	140	87	83	75	93	122	150	184
5%	219	228	234	190	126	72	71	66	83	100	139	169
10%	196	217	226	176	108	58	62	56	54	88	123	162
25%	168	168	205	149	72	40	53	46	29	51	97	147
50%	139	136	164	86	41	33	40	36	25	32	64	124
75%	24	45	88	32	29	28	28	23	21	21	35	46
99.9%	17	19	20	8	9	7	6	6	6	12	14	16

Table 5A-17b. Contra Costa Water District Pumping Plant #1, Monthly Average Chloride (in milligrams per liter), Proposed Project

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	108	116	148	95	55	37	42	36	30	42	69	101
Wet Water Years	92	98	96	45	37	30	26	19	17	19	30	39
Above Normal Water Years	114	122	160	81	42	37	40	27	23	22	37	45
Below Normal Water Years	95	101	154	102	49	36	54	42	26	40	81	142
Dry Water Years	99	112	175	124	73	38	44	45	32	58	103	138
Critical Water Years	161	173	191	147	80	53	53	54	64	83	104	153

Table 5A-17c. Contra Costa Water District Pumping Plant #1, Difference in Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	0	2	1	0	-2	-4	-1	-6	15	-4	-11	0
1%	-3	0	0	-1	-31	2	0	-6	0	1	-13	-3
5%	1	-4	-3	3	0	0	-3	-7	3	0	11	-3
10%	-1	0	2	5	-1	3	2	-8	2	0	2	-3
25%	0	8	0	0	1	1	3	-4	-1	0	1	5
50%	3	4	1	-2	2	1	2	-1	-1	-2	4	10
75%	1	-1	0	0	1	1	-2	-3	0	0	5	8
99.9%	0	0	0	0	0	0	0	0	0	0	0	0

Table 5A-17d. Contra Costa Water District Pumping Plant #1, Difference in Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	1	1	0	0	1	1	1	-3	0	0	3	4
Wet Water Years	2	2	0	0	0	1	-1	-1	0	0	2	6
Above Normal Water Years	2	-1	1	3	2	2	-3	-4	0	0	6	7
Below Normal Water Years	1	1	1	0	1	3	5	-5	-1	-2	1	-2
Dry Water Years	0	1	0	-3	0	1	2	-2	0	-1	5	9
Critical Water Years	2	1	0	3	1	-1	-1	-1	0	1	1	1

Table 5A-18a. Old River at State Route 4, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	186	207	216	248	176	116	111	98	94	137	140	170
1%	181	202	213	192	176	112	108	97	92	105	135	152
5%	169	192	204	183	134	98	94	89	81	93	107	139
10%	154	179	191	171	116	74	87	86	68	79	101	133
25%	138	136	178	148	89	60	79	74	41	49	81	113
50%	117	113	146	107	62	52	60	57	33	36	50	90
75%	26	39	96	50	44	44	50	32	26	23	28	36
99.9%	18	22	18	6	6	5	4	4	4	14	15	18

Table 5A-18b. Old River at State Route 4, Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	89	98	133	102	70	54	60	54	37	41	57	80
Wet Water Years	78	84	95	61	50	41	38	27	21	21	27	32
Above Normal Water Years	94	103	146	96	61	57	64	48	28	24	29	37
Below Normal Water Years	80	87	134	108	67	53	63	58	35	38	65	116
Dry Water Years	85	94	152	127	87	55	70	71	41	52	82	105
Critical Water Years	127	142	169	144	94	74	79	75	71	77	88	121

Table 5A-19a. Old River at State Route 4, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	186	207	216	248	175	114	112	99	105	135	130	170
1%	177	203	213	196	168	114	107	97	90	105	126	148
5%	169	191	201	180	132	95	95	89	82	89	116	135
10%	156	181	194	169	117	76	89	83	67	80	102	128
25%	139	141	177	147	92	65	83	73	40	50	83	118
50%	117	114	147	103	64	54	63	57	32	34	54	101
75%	27	39	98	51	45	46	43	29	27	23	30	43
99.9%	18	22	18	6	6	6	4	4	4	14	15	17

Table 5A-19b. Old River at State Route 4, Monthly Average Chloride (in milligrams per liter), Proposed Project

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	91	99	133	103	72	56	61	53	37	40	59	84
Wet Water Years	79	86	95	61	50	41	35	24	21	21	28	37
Above Normal Water Years	96	102	146	99	64	61	67	41	28	24	33	43
Below Normal Water Years	81	88	135	108	70	60	70	66	34	36	66	114
Dry Water Years	86	94	152	124	89	58	74	71	41	51	85	112
Critical Water Years	129	143	169	147	96	75	79	75	71	78	88	121

Table 5A-19c. Old River at State Route 4, Difference in Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	0	0	0	0	-1	-2	1	1	10	-2	-10	0
1%	-4	1	0	4	-8	2	-1	1	-2	0	-9	-3
5%	0	-1	-2	-3	-2	-2	1	0	2	-3	9	-5
10%	3	2	3	-2	1	2	2	-2	-1	1	1	-6
25%	1	6	-1	-2	4	5	4	-2	-2	1	2	5
50%	1	1	1	-4	3	3	3	1	-1	-2	4	10
75%	1	0	2	1	1	2	-6	-3	0	0	2	7
99.9%	0	0	0	0	0	0	0	0	0	0	0	0

Table 5A-19d. Old River at State Route 4, Difference in Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	1	1	0	0	2	3	2	0	0	0	2	3
Wet Water Years	1	2	0	0	1	0	-3	-4	0	0	1	5
Above Normal Water Years	2	-1	0	3	3	4	2	-8	0	0	4	6
Below Normal Water Years	1	0	1	1	3	6	7	7	-1	-1	1	-2
Dry Water Years	0	0	0	-3	2	3	4	0	0	-1	3	7
Critical Water Years	2	1	0	3	2	1	-1	0	0	1	0	0

Table 5A-20a. Victoria Canal, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	130	151	163	186	171	155	128	113	81	73	82	111
1%	125	149	158	181	164	131	119	106	74	71	73	82
5%	102	137	141	147	133	115	109	100	72	69	68	76
10%	94	124	130	137	121	104	103	97	66	60	63	72
25%	75	83	115	123	103	85	94	80	48	32	46	60
50%	63	66	99	101	87	75	75	66	41	28	30	47
75%	32	34	73	67	63	61	51	34	30	25	25	28
99.9%	20	29	21	7	6	6	4	4	4	11	13	20

Table 5A-20b. Victoria Canal, Monthly Average Chloride (in milligrams per liter), Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	59	67	95	97	86	74	70	59	40	32	37	46
Wet Water Years	51	56	78	79	66	55	40	29	23	22	24	27
Above Normal Water Years	64	74	105	103	93	87	81	56	35	26	24	28
Below Normal Water Years	55	60	90	95	90	82	75	65	41	28	32	52
Dry Water Years	57	61	99	103	95	77	86	81	47	33	47	56
Critical Water Years	80	98	121	120	100	89	88	79	66	60	61	74

Table 5A-21a. Victoria Canal, Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	130	152	163	186	173	157	133	111	80	73	76	111
1%	125	148	158	180	172	142	124	104	74	72	72	88
5%	102	137	142	146	137	114	114	96	72	69	67	76
10%	92	122	130	136	122	106	108	91	65	61	63	70
25%	77	84	113	124	107	90	96	80	47	32	47	61
50%	66	67	99	100	91	80	78	66	42	28	30	48
75%	32	34	72	67	66	63	50	37	31	25	25	29
99.9%	20	29	22	7	6	6	4	4	4	11	13	19

Table 5A-21b. Victoria Canal, Monthly Average Chloride (in milligrams per liter), Proposed Project

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	60	67	95	97	88	77	73	59	40	32	37	47
Wet Water Years	52	57	78	79	67	54	39	26	23	22	24	27
Above Normal Water Years	65	74	105	106	96	90	81	50	35	26	25	29
Below Normal Water Years	55	61	91	96	93	87	85	72	40	28	33	52
Dry Water Years	56	60	99	101	98	81	90	80	47	33	47	59
Critical Water Years	81	98	120	122	103	91	88	79	65	60	61	74

Table 5A-21c. Victoria Canal, Difference in Exceedance Probabilities for Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	0	1	0	0	2	3	4	-2	-1	1	-5	1
1%	0	0	0	0	8	11	5	-3	0	1	-1	5
5%	0	0	1	-1	4	-1	5	-4	0	0	0	0
10%	-1	-1	0	-1	1	3	5	-6	-1	0	0	-2
25%	1	1	-2	1	3	5	2	0	-1	0	1	0
50%	4	1	0	-1	4	5	3	0	0	0	0	1
75%	0	0	-1	0	3	2	-1	3	1	0	0	1
99.9%	0	0	0	0	0	1	0	0	0	0	0	0

Table 5A-21d. Victoria Canal, Difference in Monthly Average Chloride (in milligrams per liter), Proposed Project minus Baseline Conditions

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	0	0	0	1	2	3	3	0	0	0	0	1
Wet Water Years	0	1	0	0	1	-1	-1	-3	0	0	0	0
Above Normal Water Years	1	0	0	2	3	3	0	-5	0	0	1	1
Below Normal Water Years	1	0	0	1	3	6	10	7	-1	0	0	0
Dry Water Years	-1	-1	0	-2	3	5	4	-2	0	0	1	3
Critical Water Years	1	1	0	2	3	2	0	0	-1	0	0	0

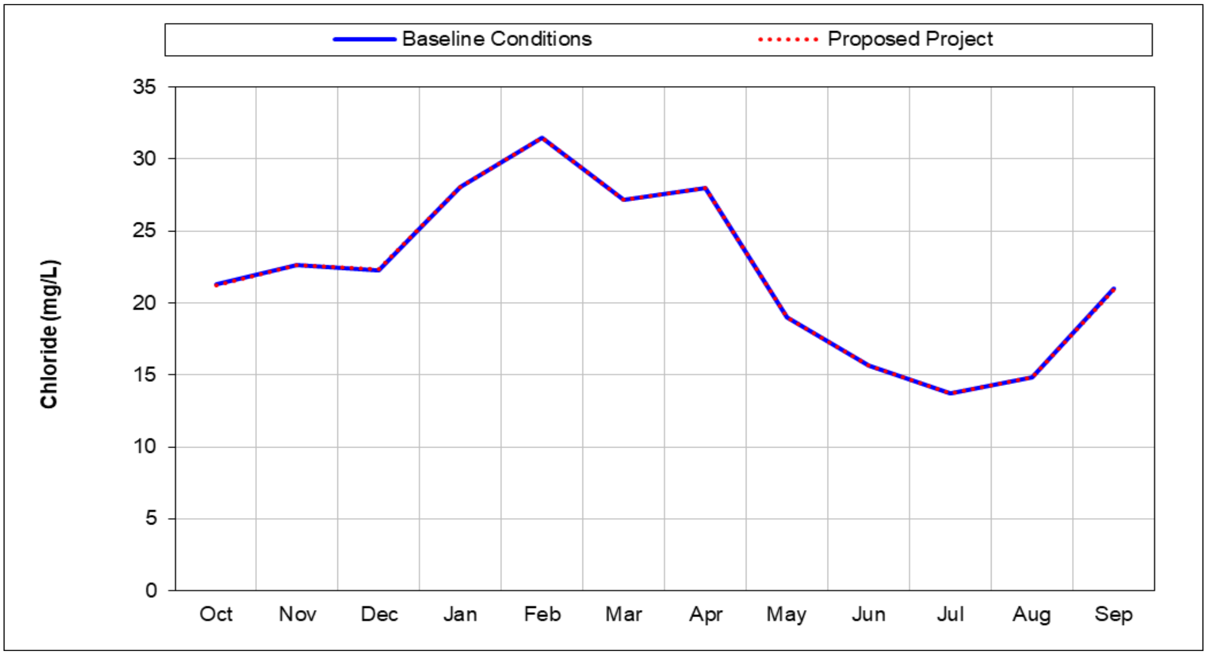

Figure 5A-1a. Barker Slough at North Bay Aqueduct, Long term Monthly Average Chloride (in milligrams per liter)

Figure 5A-1a shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

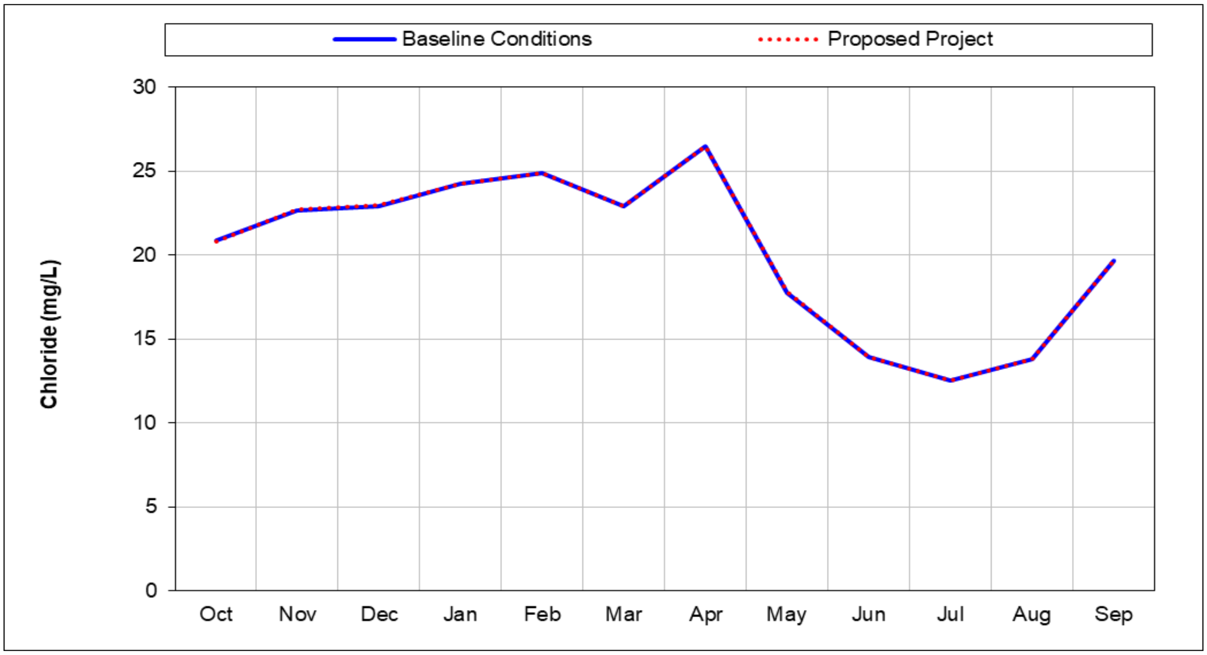

Figure 5A-1b. Barker Slough at North Bay Aqueduct, Wet Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-1b shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model during wet years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

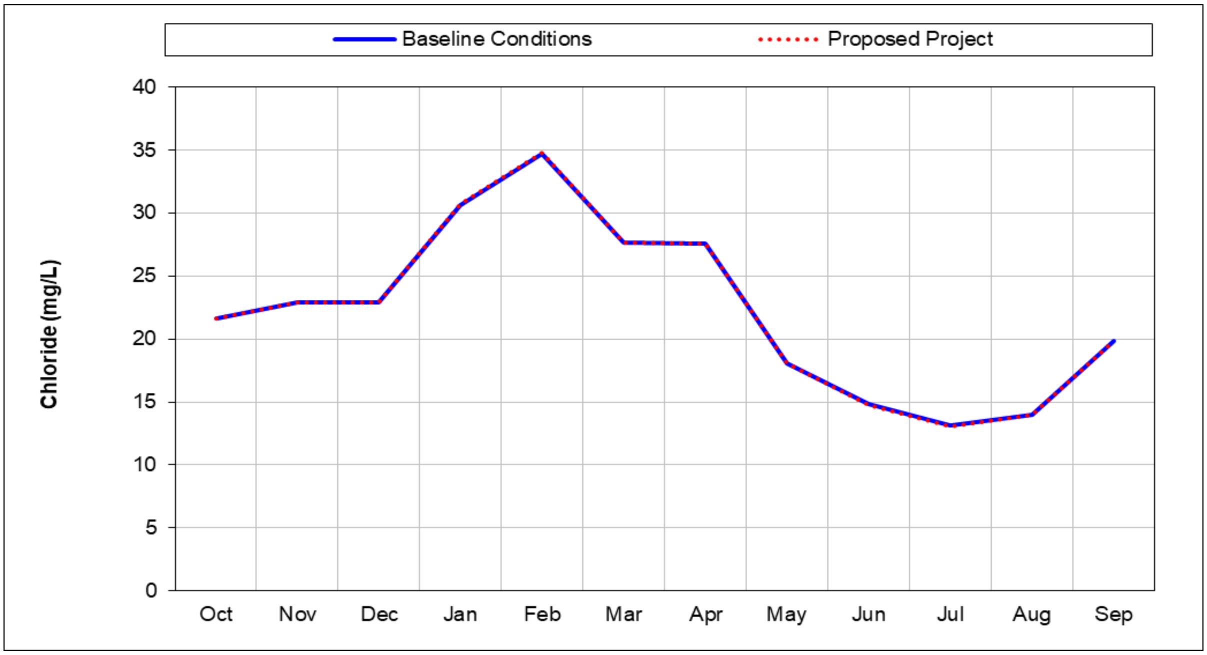

Figure 5A-1c. Barker Slough at North Bay Aqueduct, Above Normal Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-1c shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model during above normal years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

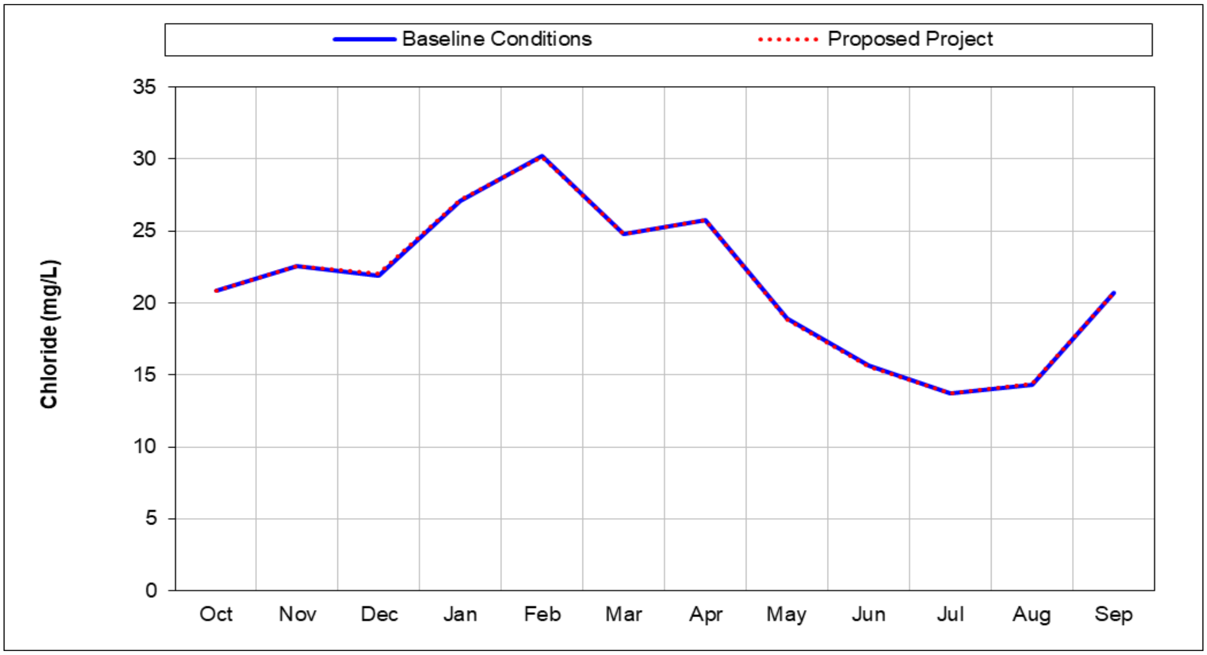

Figure 5A-1d. Barker Slough at North Bay Aqueduct, Below Normal Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-1d shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model during below normal years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

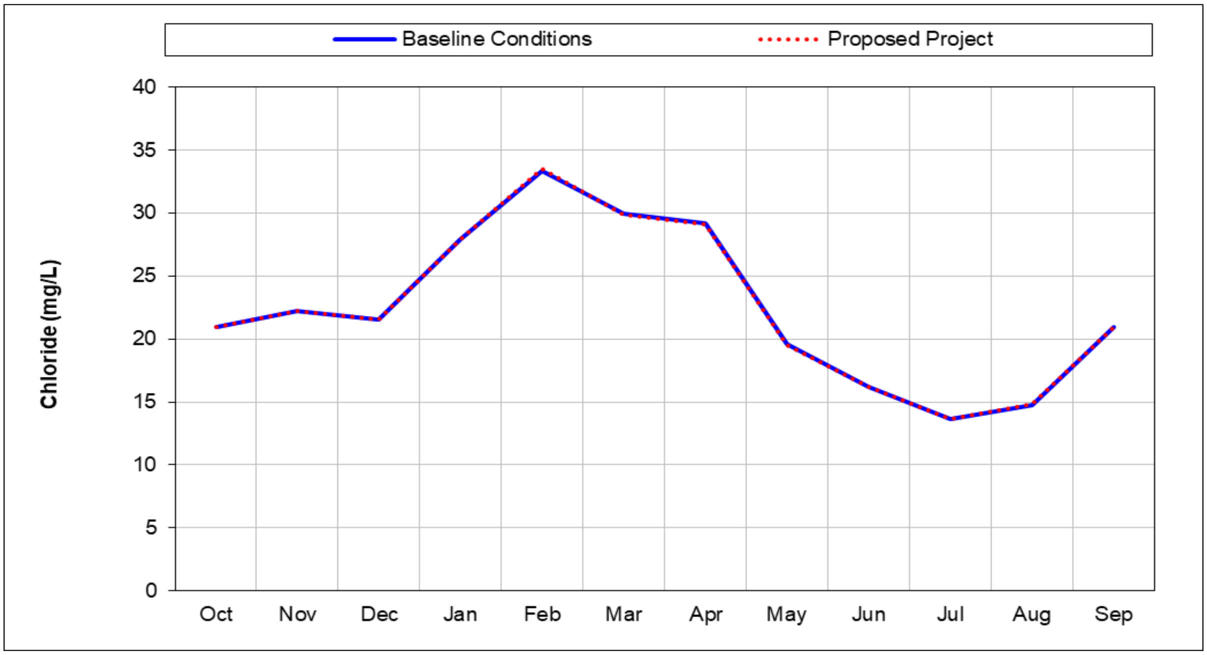

Figure 5A-1e. Barker Slough at North Bay Aqueduct, Dry Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-1e shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model during dry years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

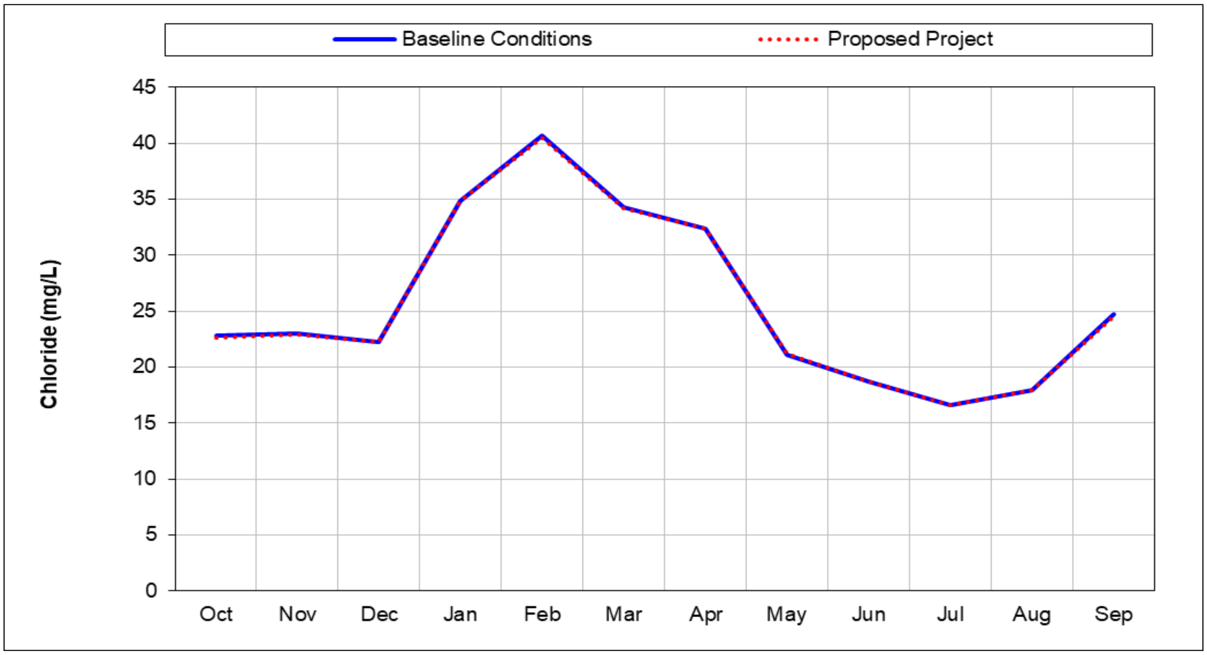

Figure 5A-1f. Barker Slough at North Bay Aqueduct, Critical Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-1f shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model during critical years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

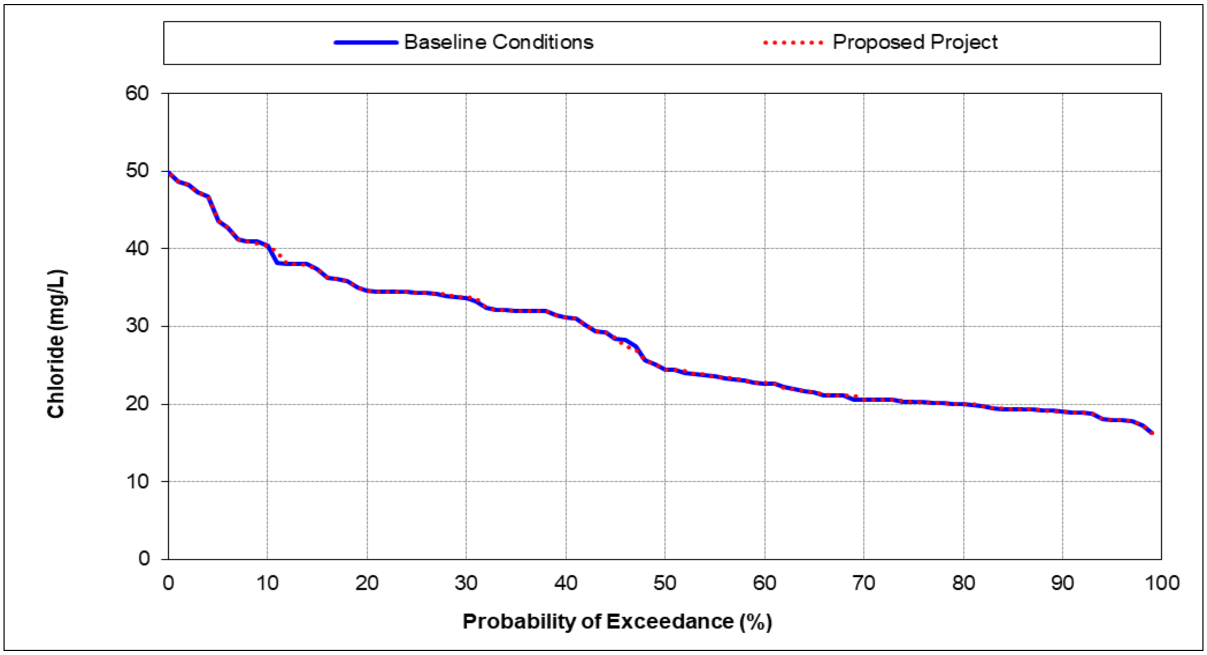

Figure 5A-1g. Barker Slough at North Bay Aqueduct, Monthly Average Chloride (in milligrams per liter), January

Figure 5A-1g shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model in January. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

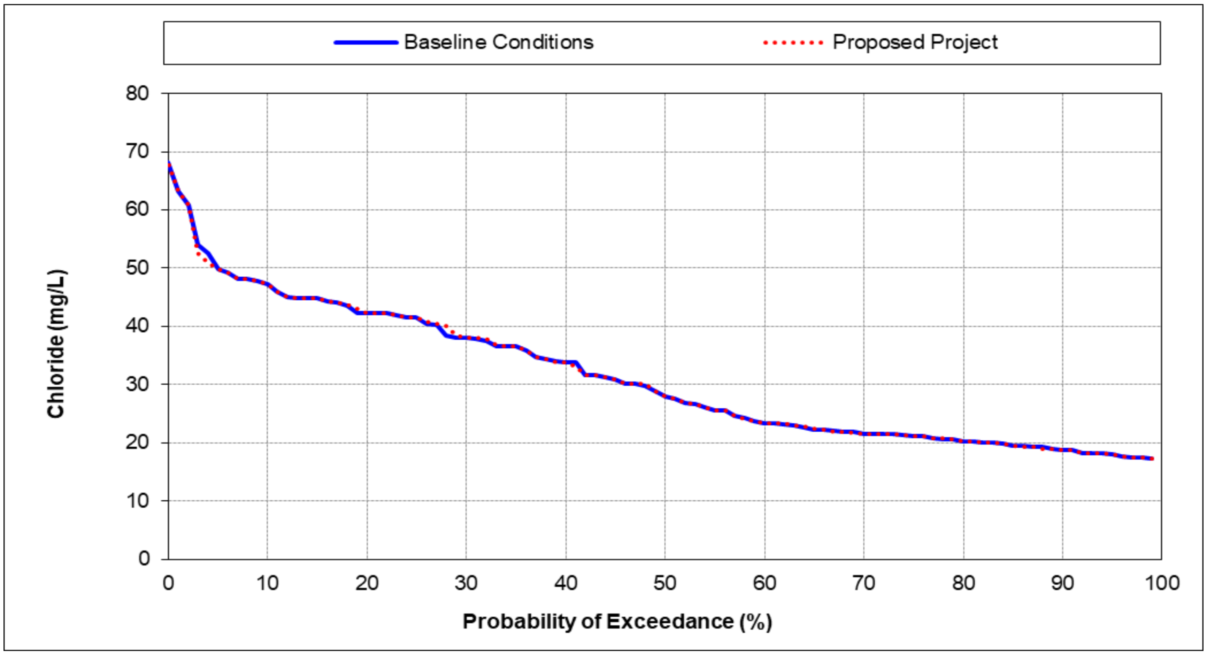

Figure 5A-1h. Barker Slough at North Bay Aqueduct, Monthly Average Chloride (in milligrams per liter), February

Figure 5A-1h shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model in February. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

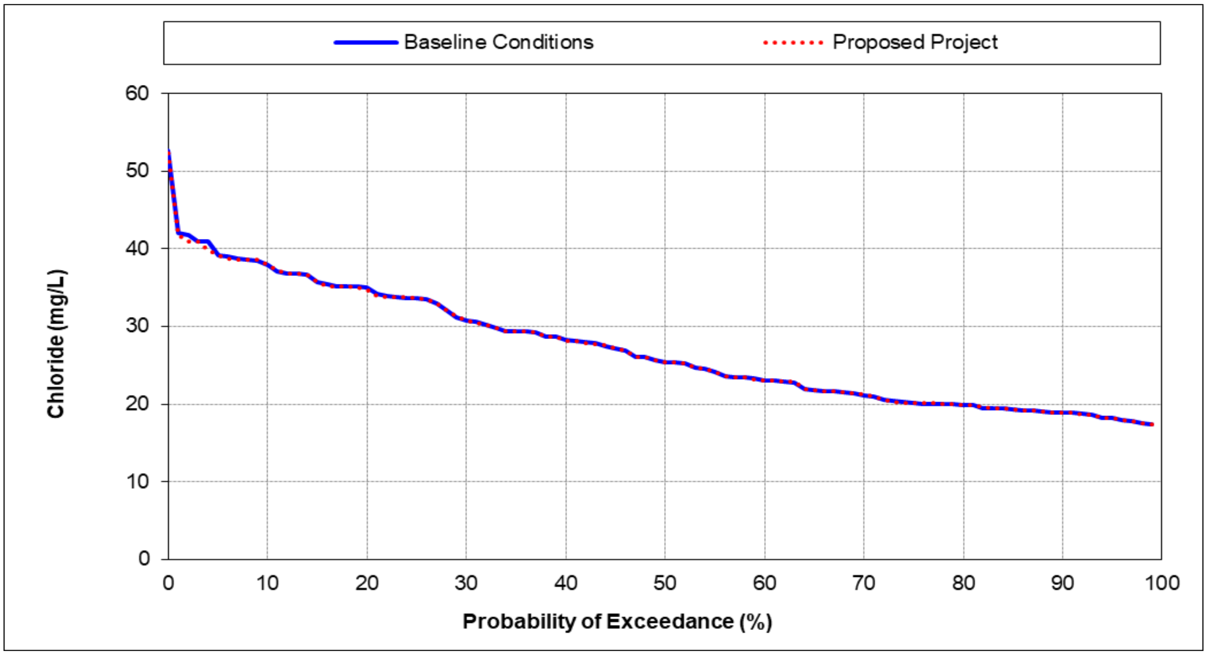

Figure 5A-1i. Barker Slough at North Bay Aqueduct, Monthly Average Chloride (in milligrams per liter), March

Figure 5A-1i shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model in March. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

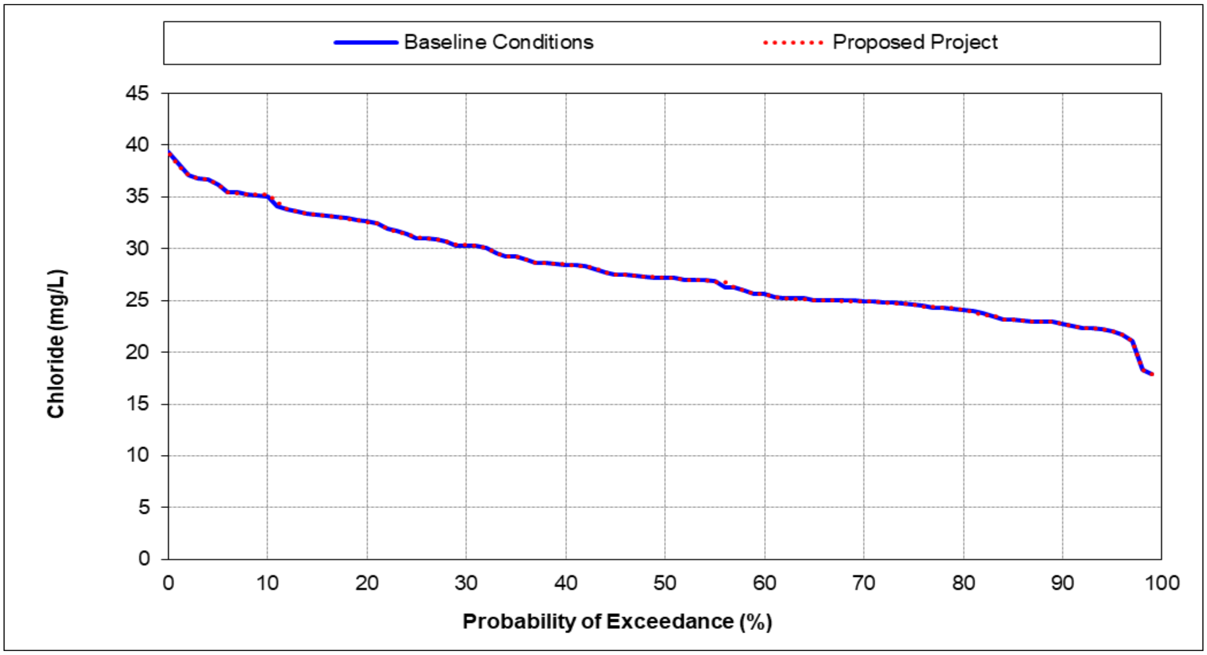

Figure 5A-1j. Barker Slough at North Bay Aqueduct, Monthly Average Chloride (in milligrams per liter), April

Figure 5A-1j shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model in April. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

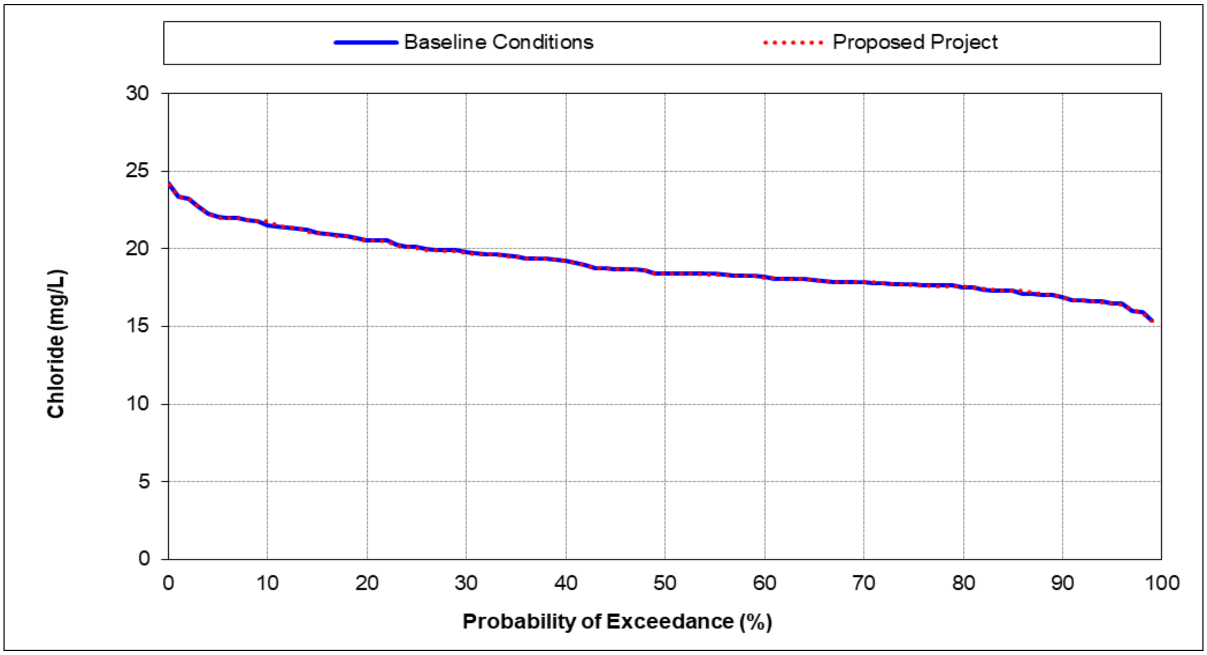

Figure 5A-1k. Barker Slough at North Bay Aqueduct, Monthly Average Chloride (in milligrams per liter), May

Figure 5A-1k shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model in May. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

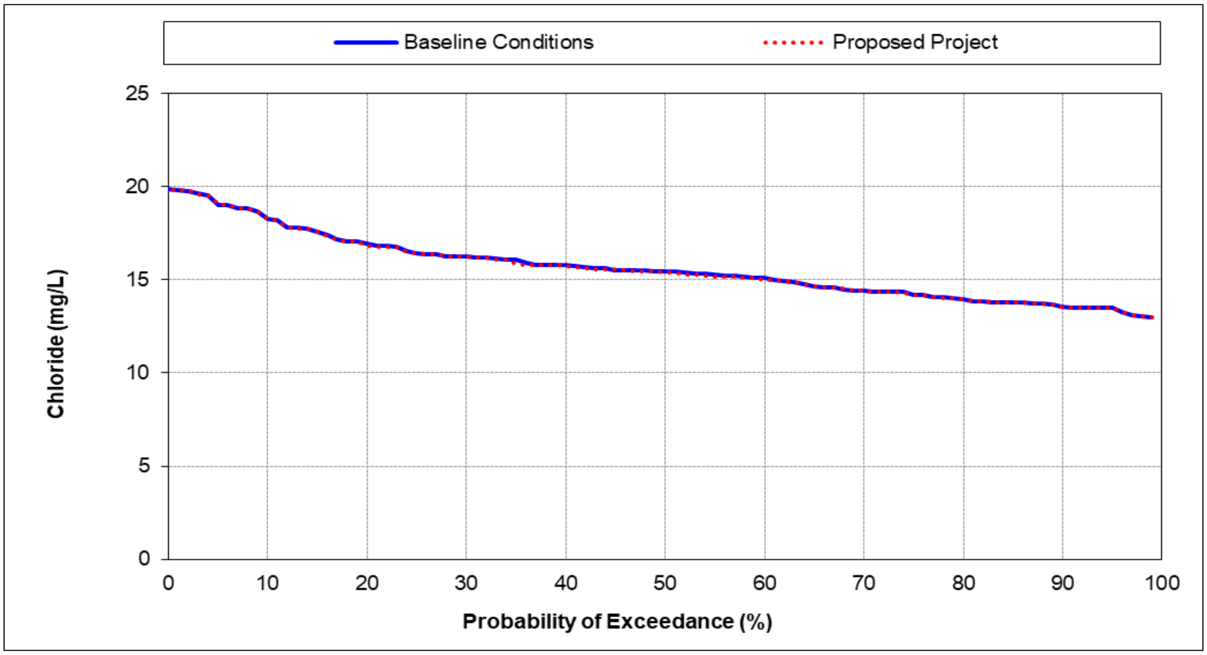

Figure 5A-1l. Barker Slough at North Bay Aqueduct, Monthly Average Chloride (in milligrams per liter), June

Figure 5A-1l shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model in June. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

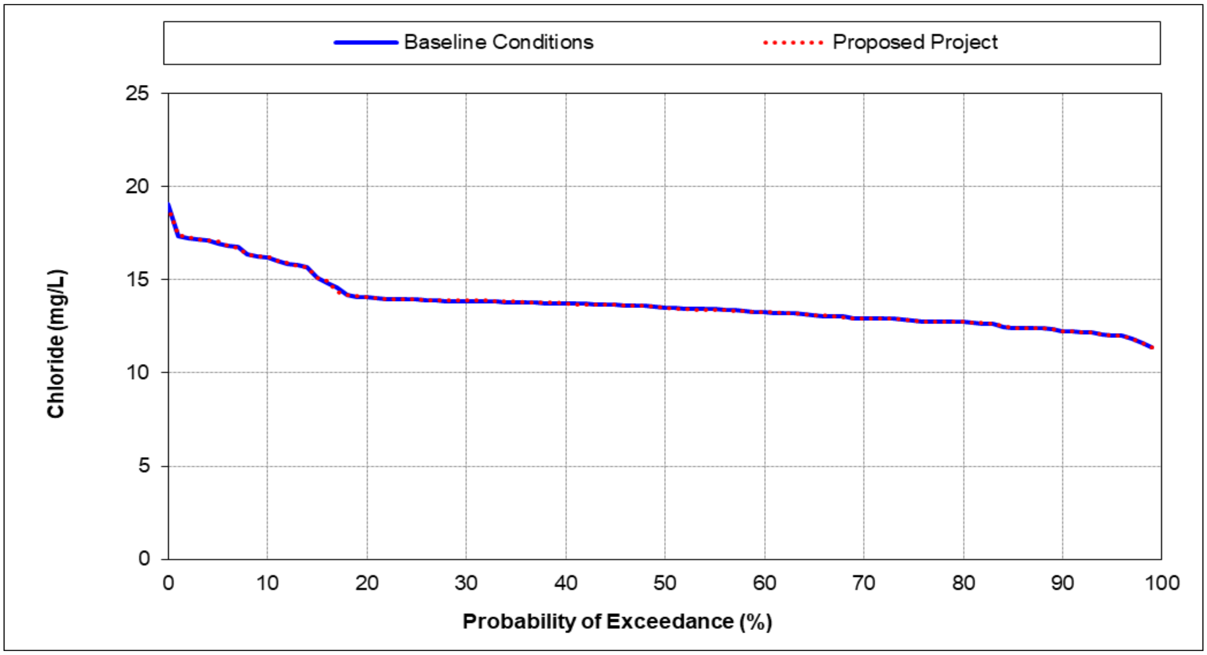

Figure 5A-1m. Barker Slough at North Bay Aqueduct, Monthly Average Chloride (in milligrams per liter), July

Figure 5A-1m shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model in July. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

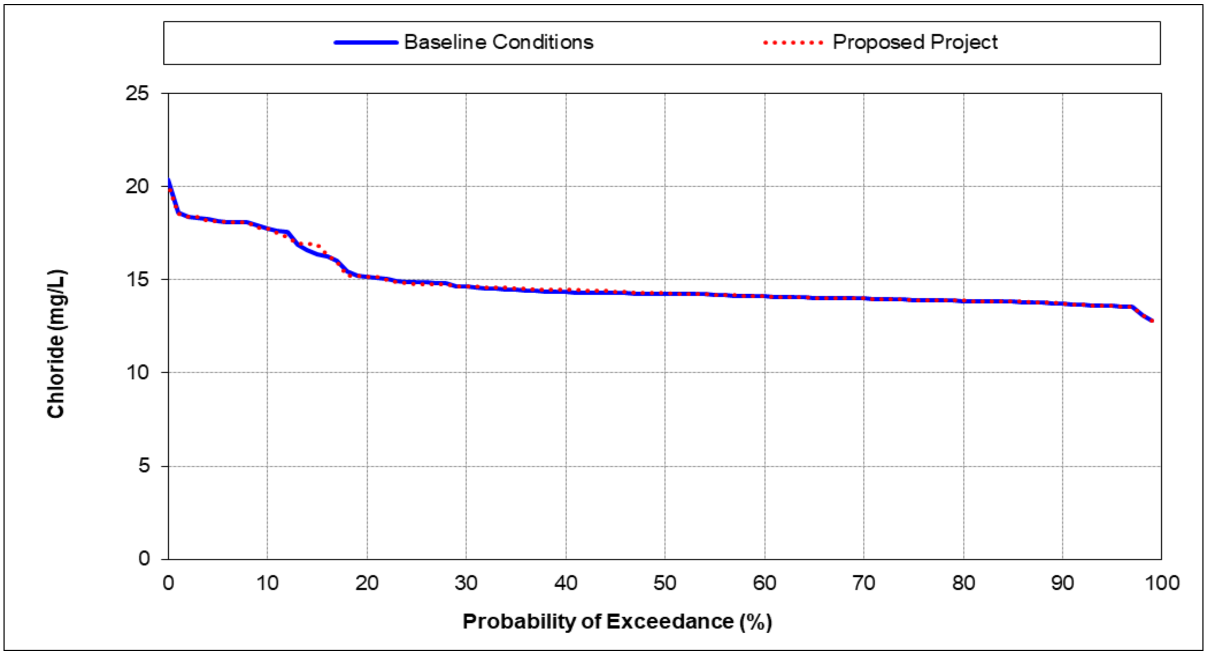

Figure 5A-1n. Barker Slough at North Bay Aqueduct, Monthly Average Chloride (in milligrams per liter), August

Figure 5A-1n shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model in August. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

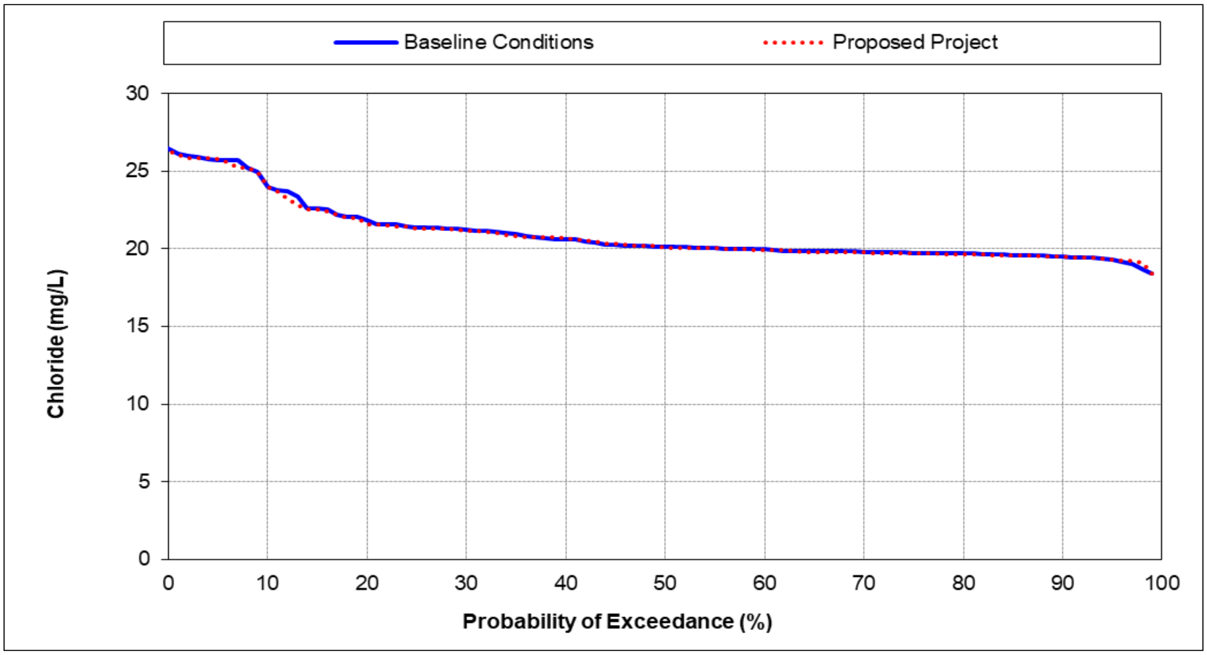

Figure 5A-1o. Barker Slough at North Bay Aqueduct, Monthly Average Chloride (in milligrams per liter), September

Figure 5A-1o shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model in September. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

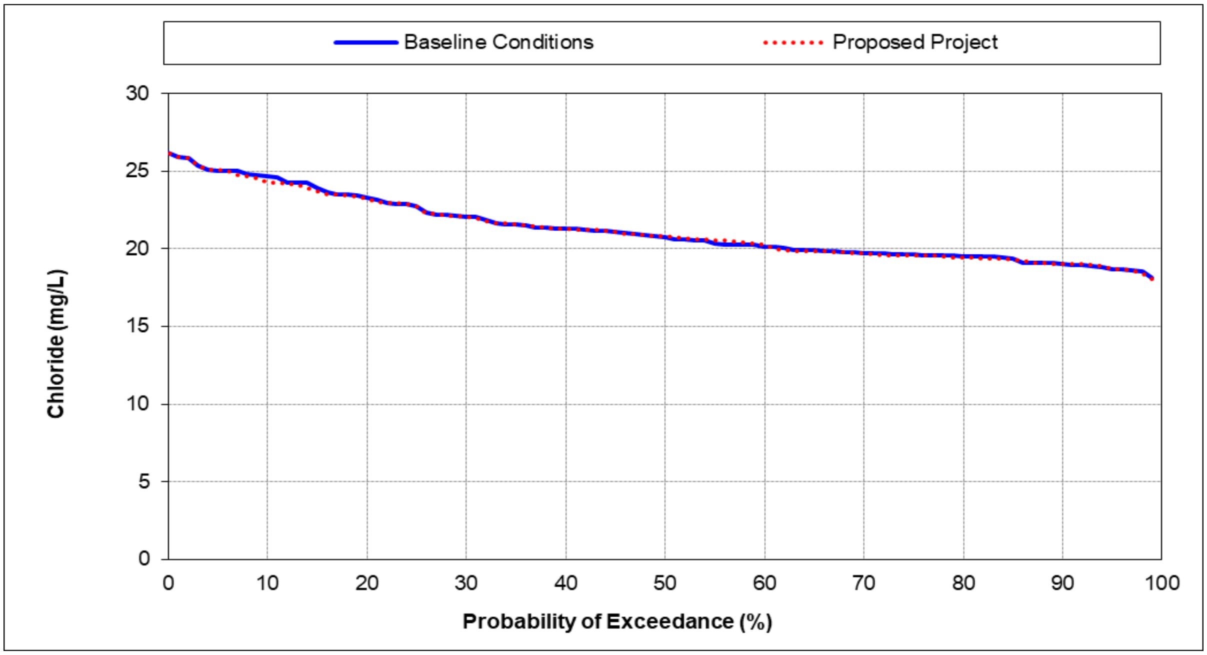

Figure 5A-1p. Barker Slough at North Bay Aqueduct, Monthly Average Chloride (in milligrams per liter), October

Figure 5A-1p shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model in October. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

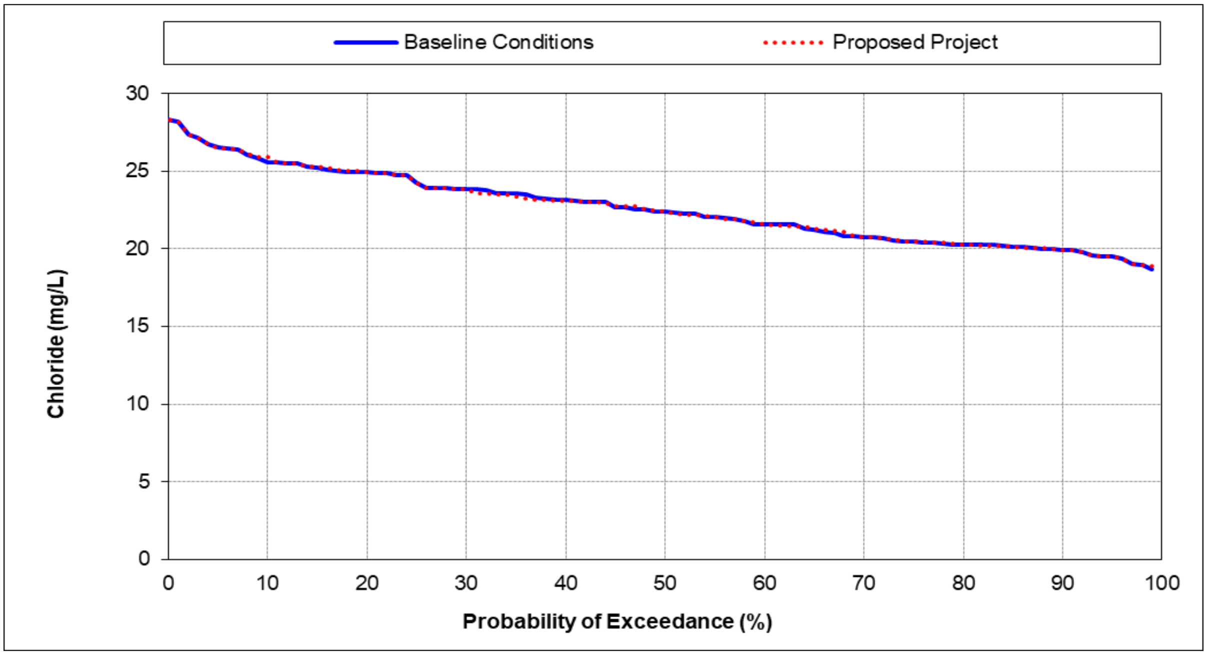

Figure 5A-1q. Barker Slough at North Bay Aqueduct, Monthly Average Chloride (in milligrams per liter), November

Figure 5A-1q shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model in November. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

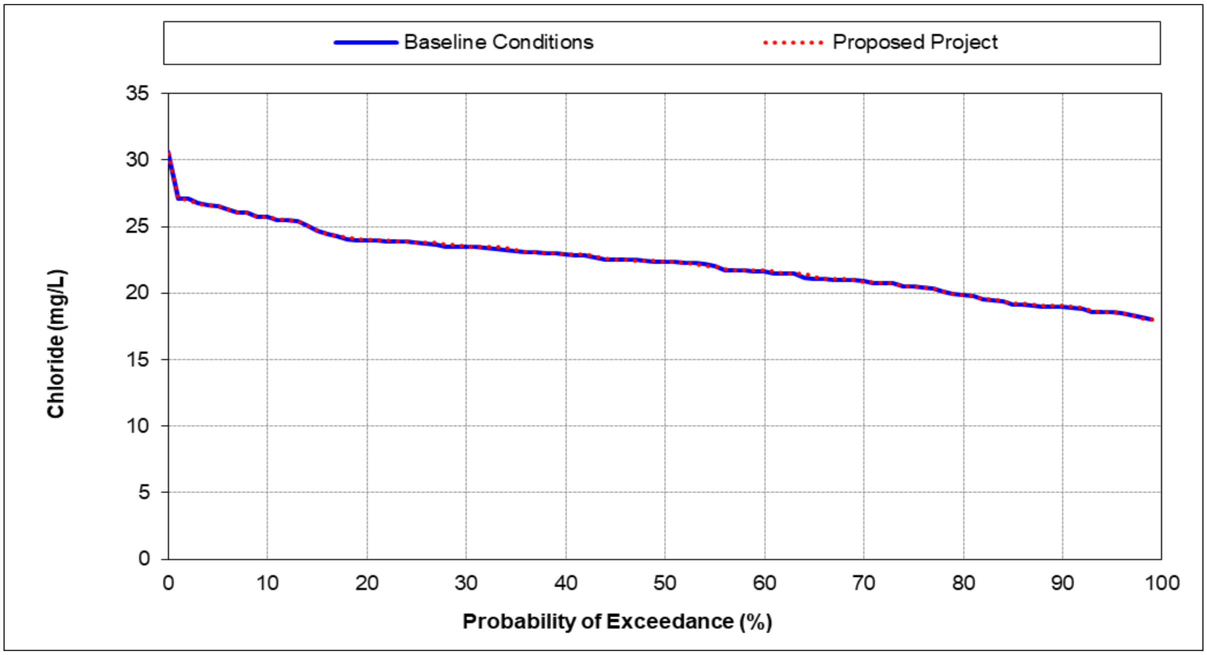

Figure 5A-1r. Barker Slough at North Bay Aqueduct, Monthly Average Chloride (in milligrams per liter), December

Figure 5A-1r shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Barker Slough at North Bay Aqueduct under the Proposed Project compared to the CalSim 3 100-year model in December. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight increase at 0% probability of exceedance.

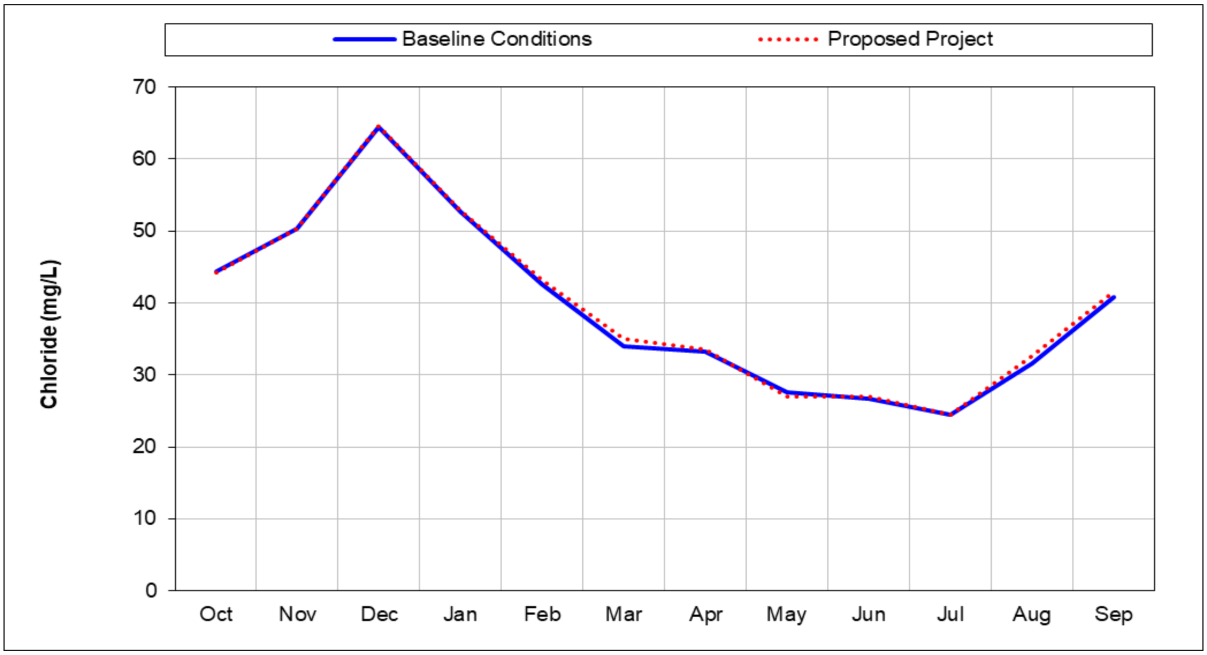

Figure 5A-2a. San Joaquin River at Empire Tract, Long term Monthly Average Chloride (in milligrams per liter)

Figure 5A-2a shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

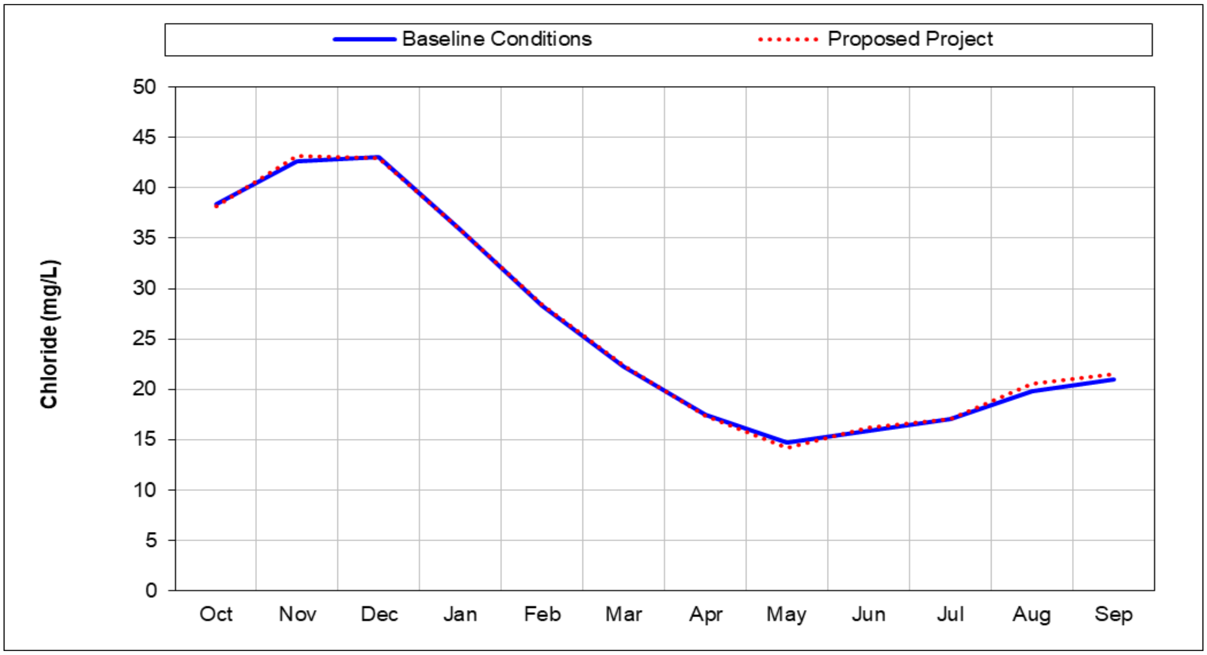

Figure 5A-2b. San Joaquin River at Empire Tract, Wet Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-2b shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model during wet years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight increase in December and slight decrease in May.

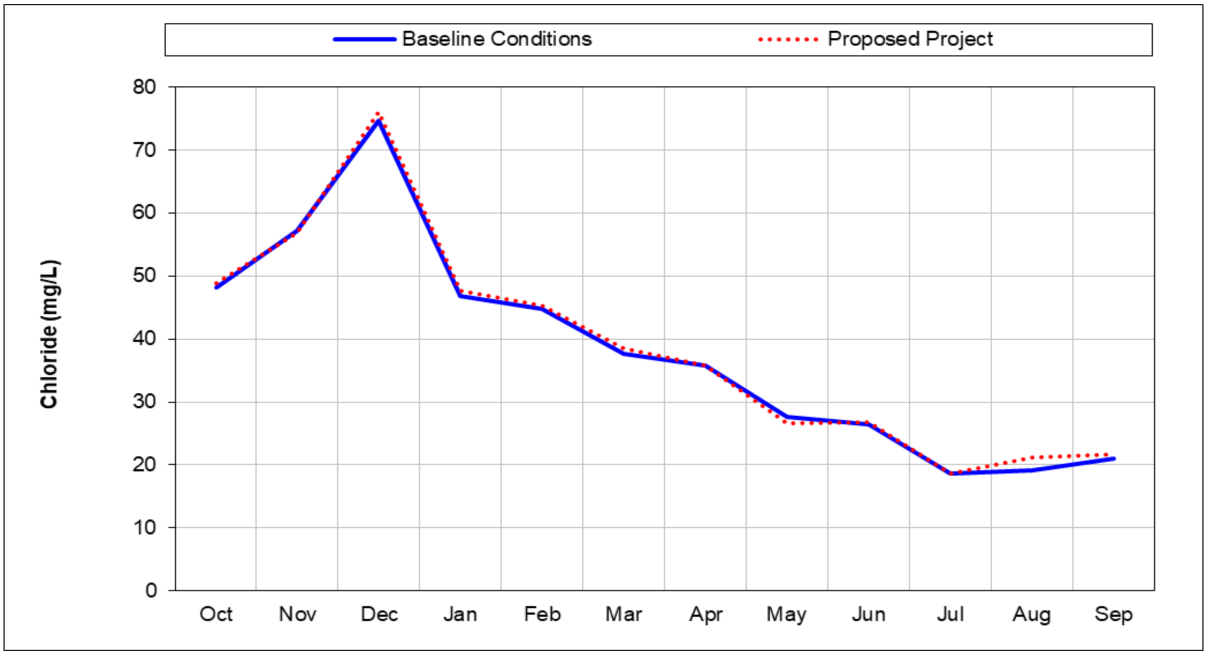

Figure 5A-2c. San Joaquin River at Empire Tract, Above Normal Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-2c shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model for above normal years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with slight deviations with a decrease in November and an increase in May and August.

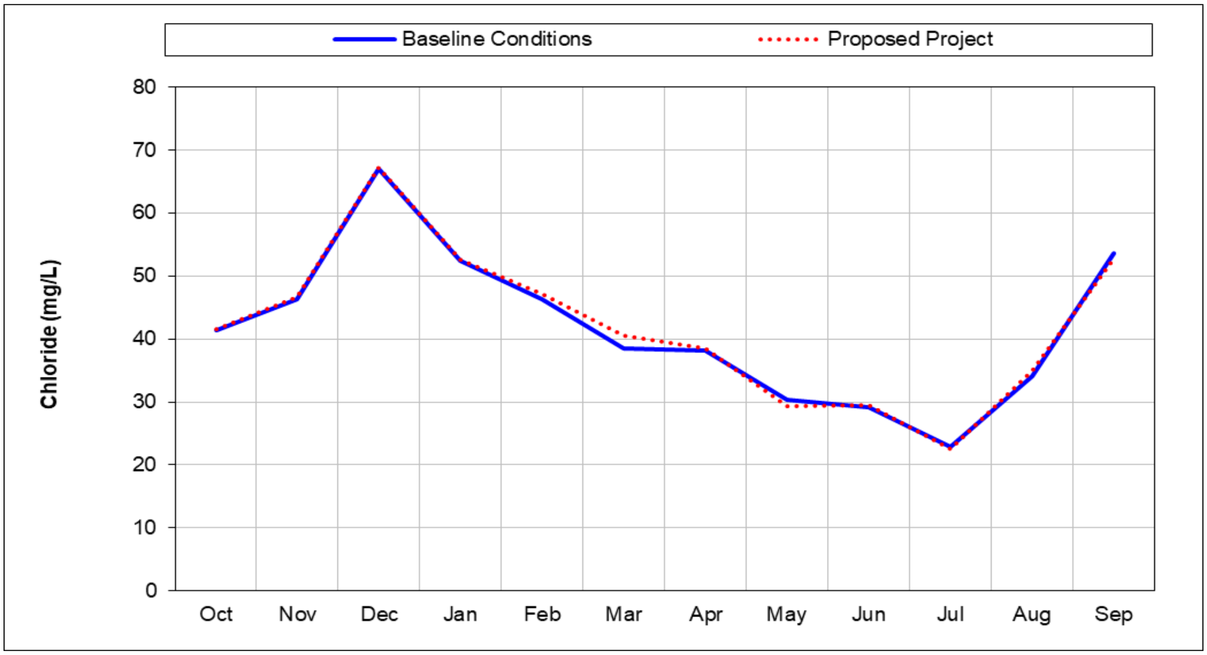

Figure 5A-2d. San Joaquin River at Empire Tract, Below Normal Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-2d shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model for below normal years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with slight deviations with a decrease in October and an increase in March.

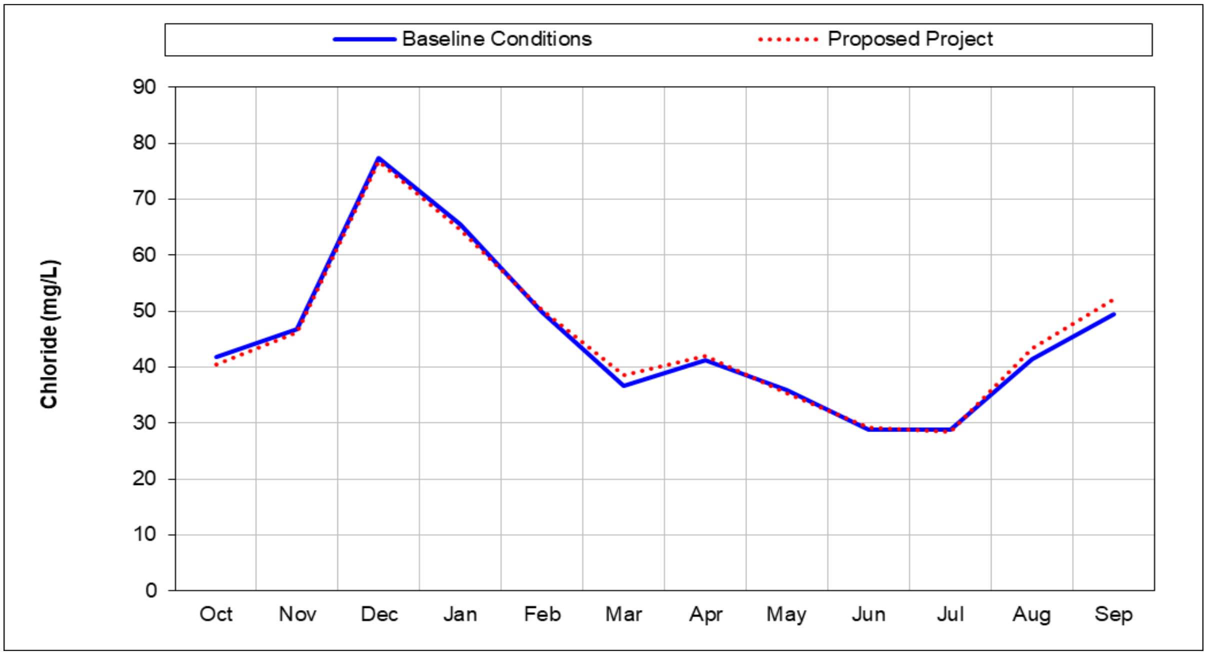

Figure 5A-2e. San Joaquin River at Empire Tract, Dry Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-2e shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model for dry years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with slight deviations with a decrease in October and an increase in August and September.

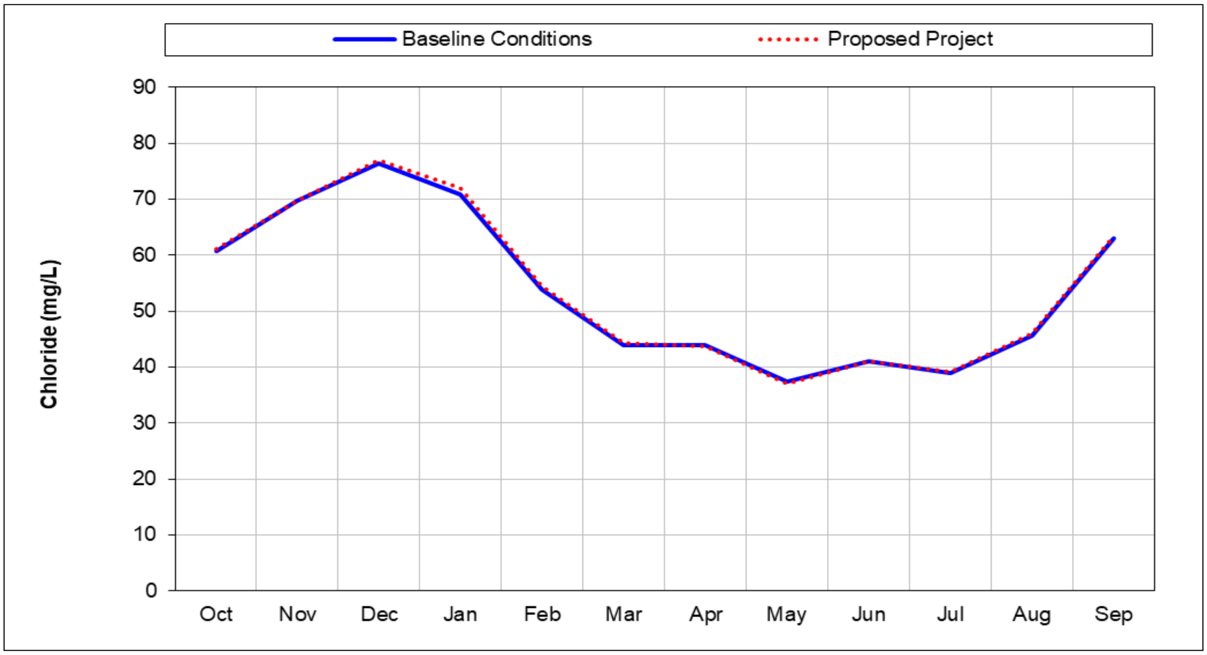

Figure 5A-2f. San Joaquin River at Empire Tract, Critical Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-2f shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model for critical years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with slight deviations with a decrease from November and to March.

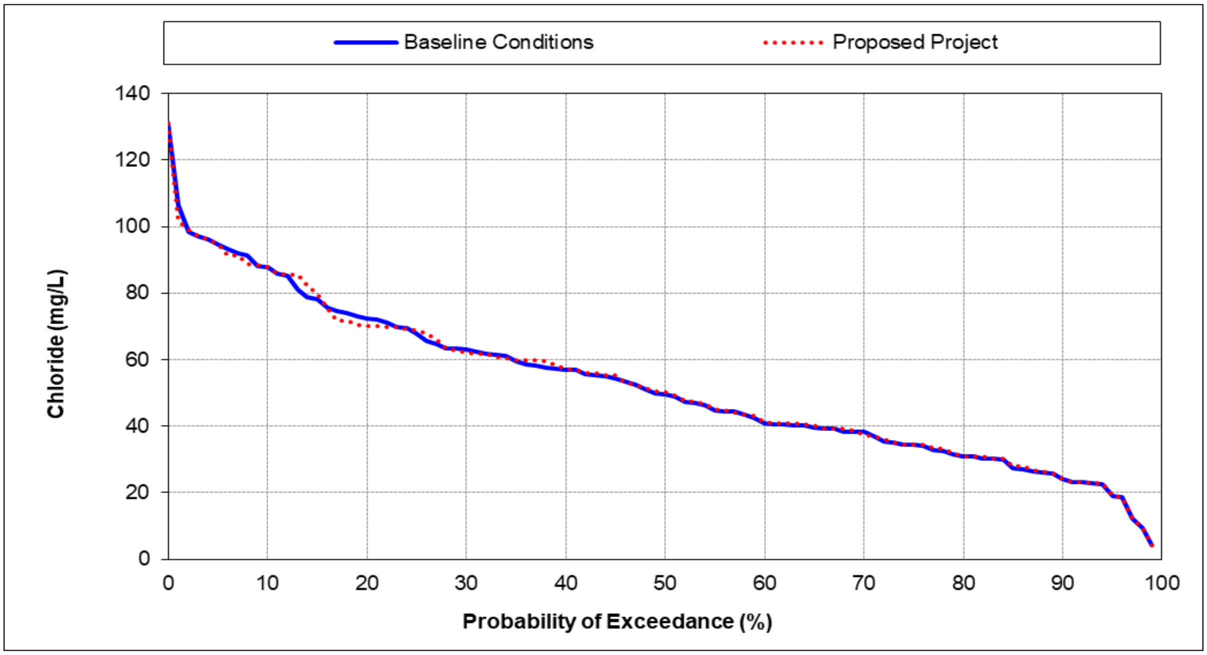

Figure 5A-2g. San Joaquin River at Empire Tract, Monthly Average Chloride (in milligrams per liter), January

Figure 5A-2g shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model in January. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight decrease from about 3% to 35% exceedance.

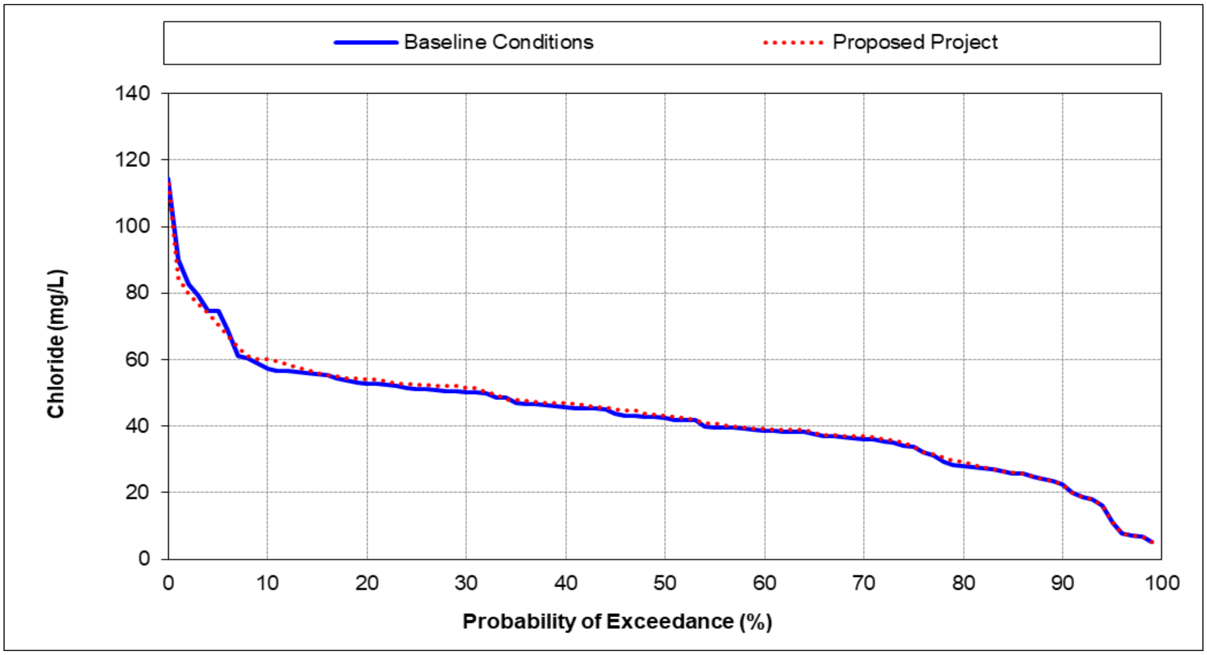

Figure 5A-2h. San Joaquin River at Empire Tract, Monthly Average Chloride (in milligrams per liter), February

Figure 5A-2h shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model in February. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight decrease from about 0% to 10% exceedance.

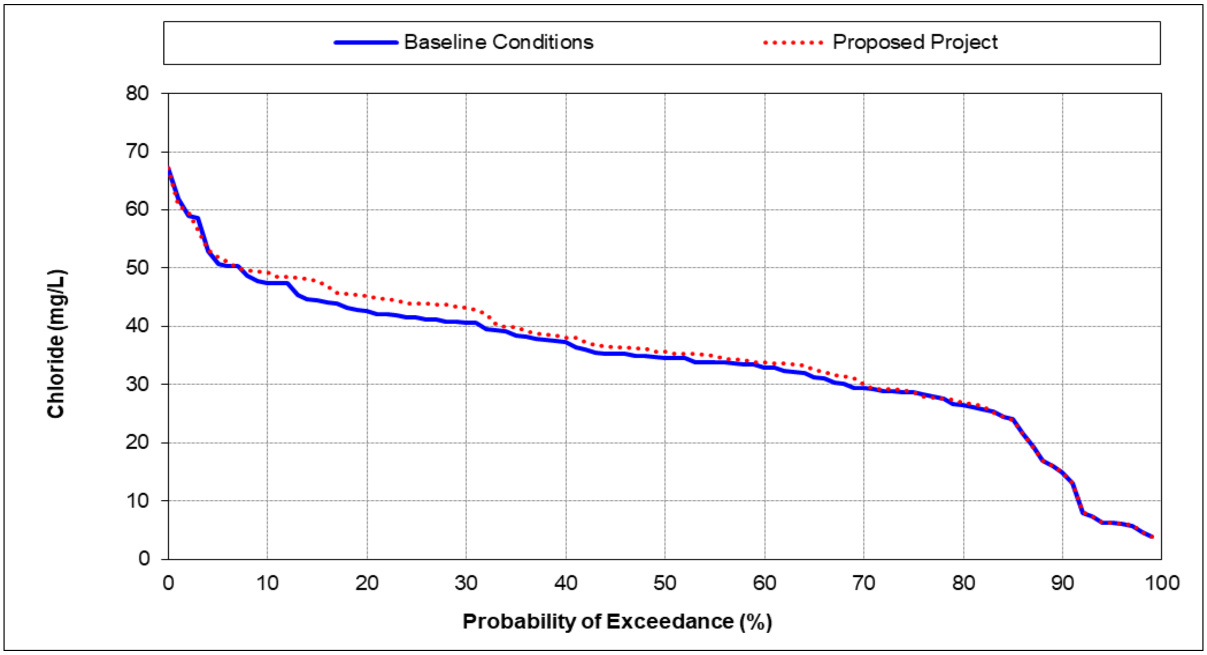

Figure 5A-2i. San Joaquin River at Empire Tract, Monthly Average Chloride (in milligrams per liter), March

Figure 5A-2i shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model in March. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight increase from about 8% to 25% exceedance.

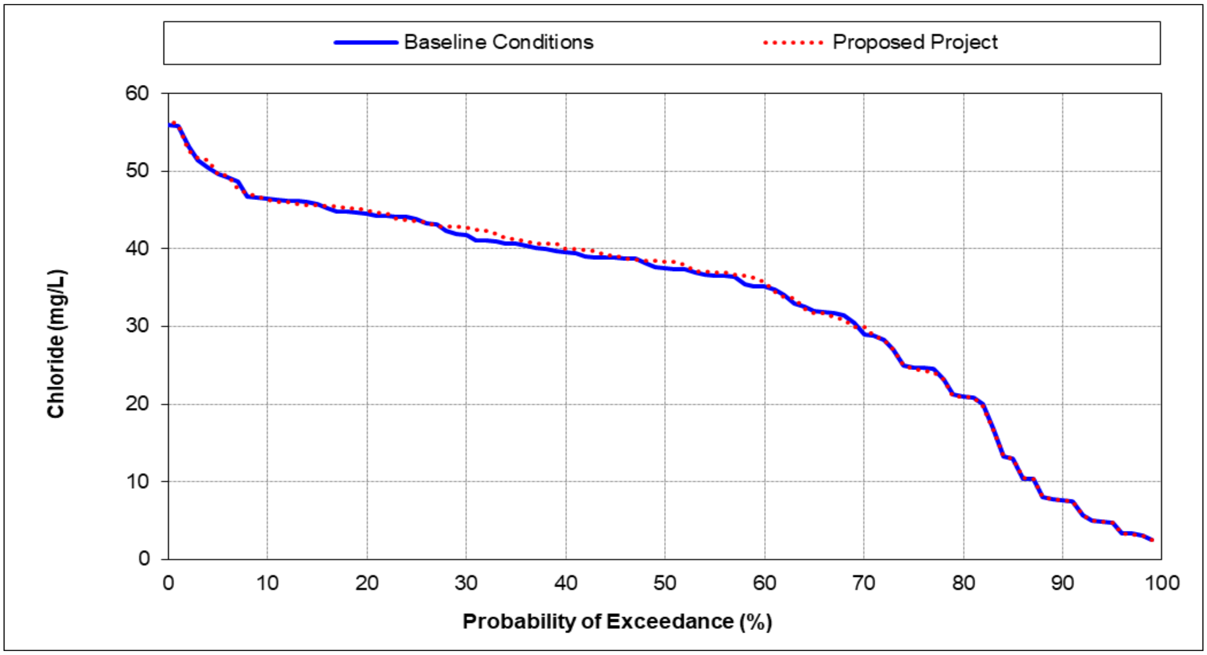

Figure 5A-2j. San Joaquin River at Empire Tract, Monthly Average Chloride (in milligrams per liter), April

Figure 5A-2j shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model in April. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight decrease from about 2% to 5% exceedance.

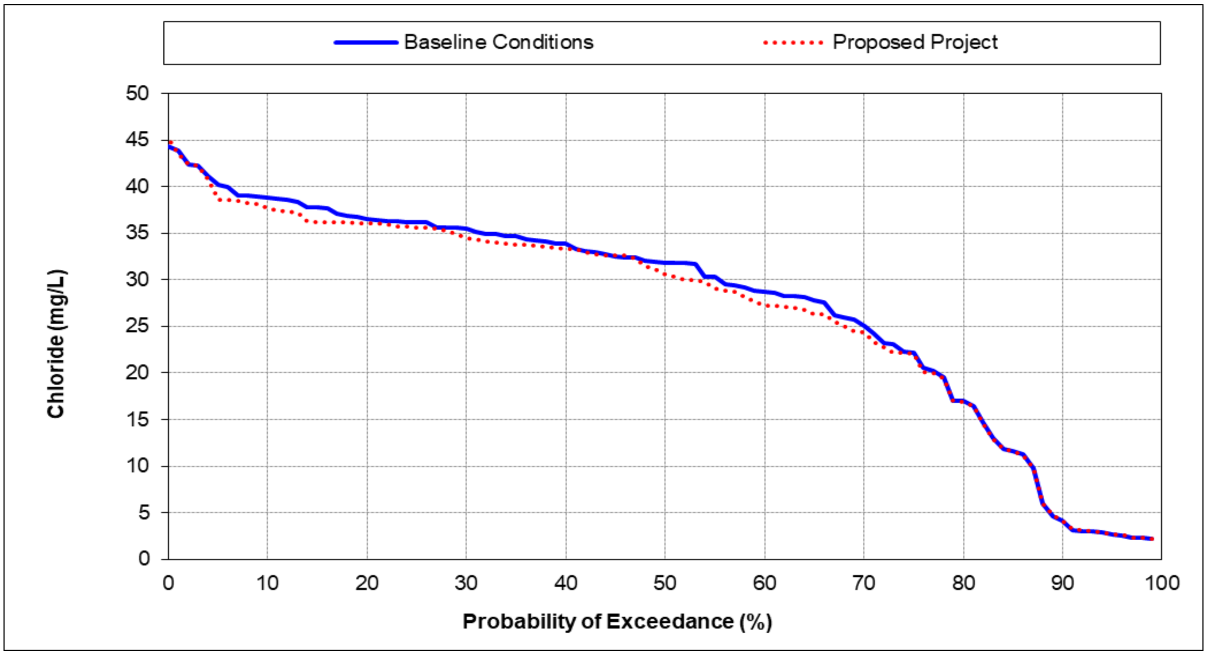

Figure 5A-2k. San Joaquin River at Empire Tract, Monthly Average Chloride (in milligrams per liter), May

Figure 5A-2k shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model in May. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a slight decrease from about 0% to 78% exceedance.

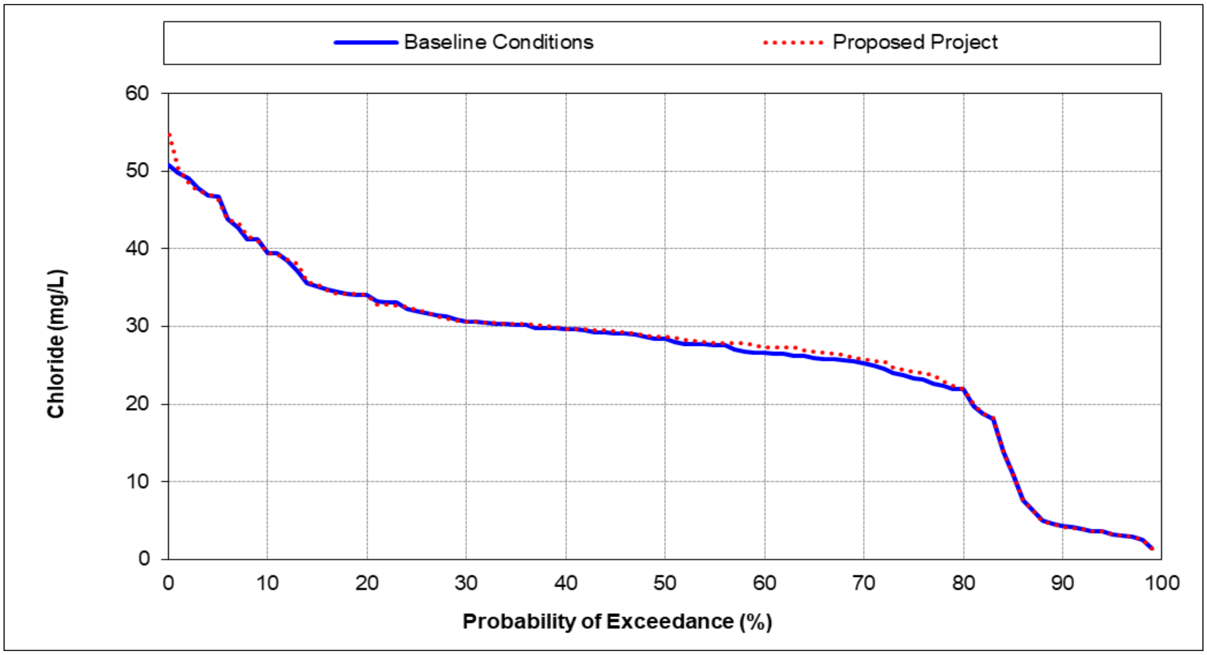

Figure 5A-2l. San Joaquin River at Empire Tract, Monthly Average Chloride (in milligrams per liter), June

Figure 5A-2l shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model in June. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions.

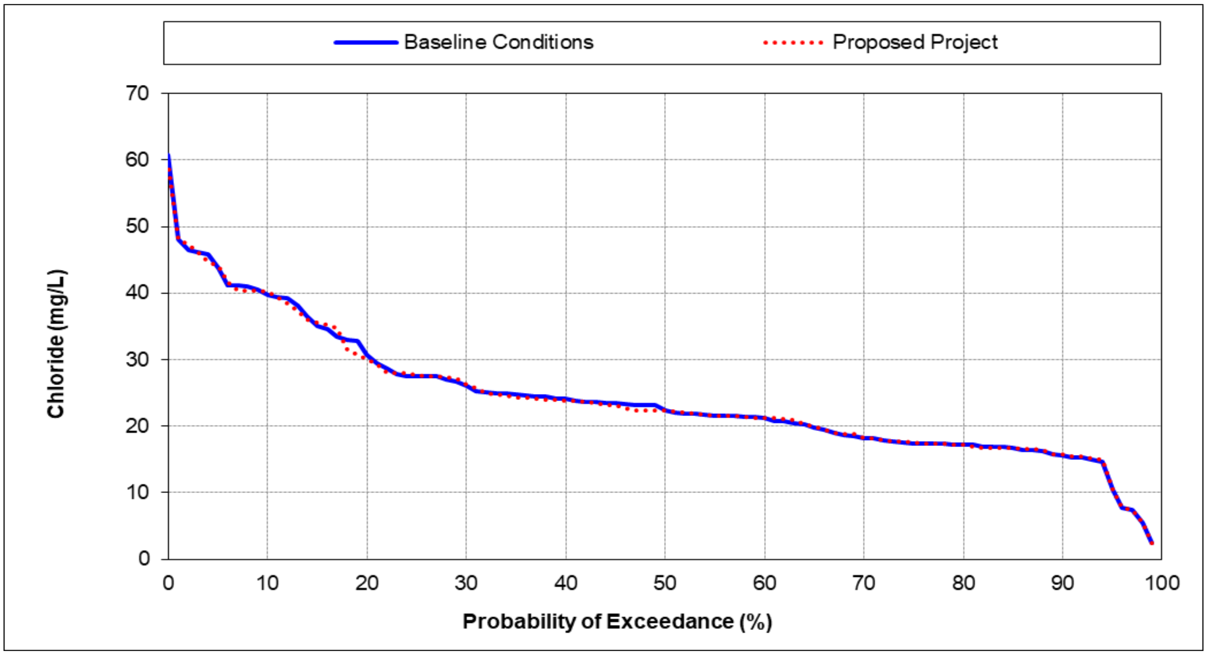

Figure 5A-2m. San Joaquin River at Empire Tract, Monthly Average Chloride (in milligrams per liter), July

Figure 5A-2m shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model in July. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight increase from about 3% to 12% exceedance.

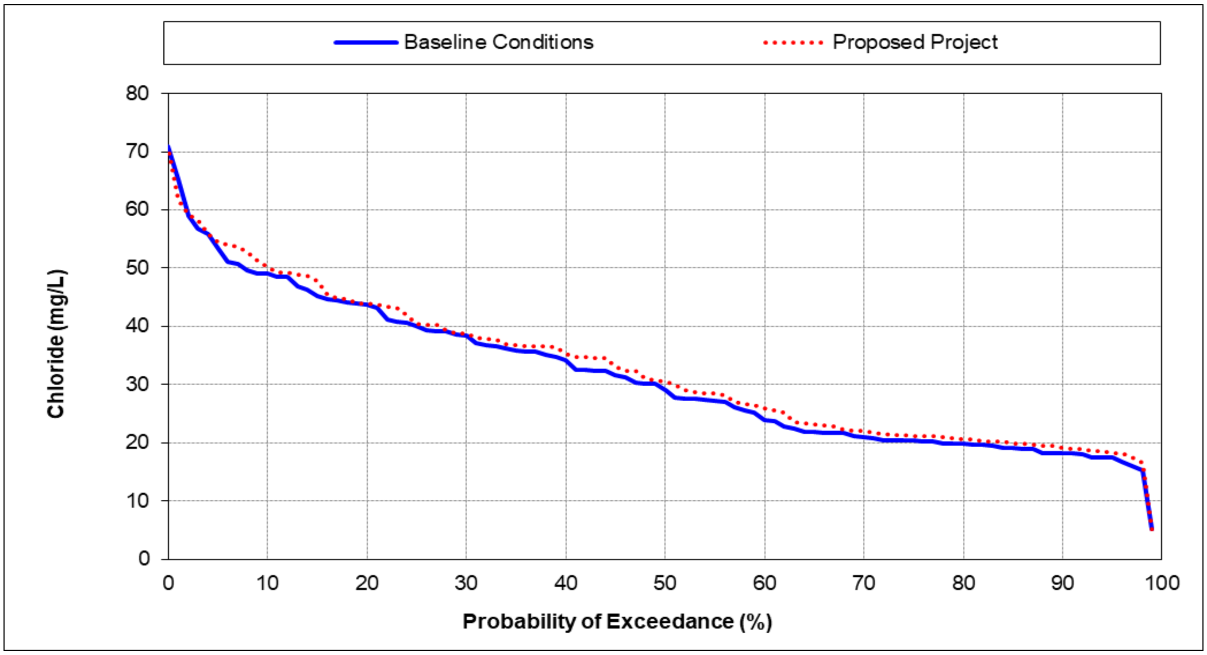

Figure 5A-2n. San Joaquin River at Empire Tract, Monthly Average Chloride (in milligrams per liter), August

Figure 5A-2n shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model in August. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a slight increase from about 3% to 40% exceedance.

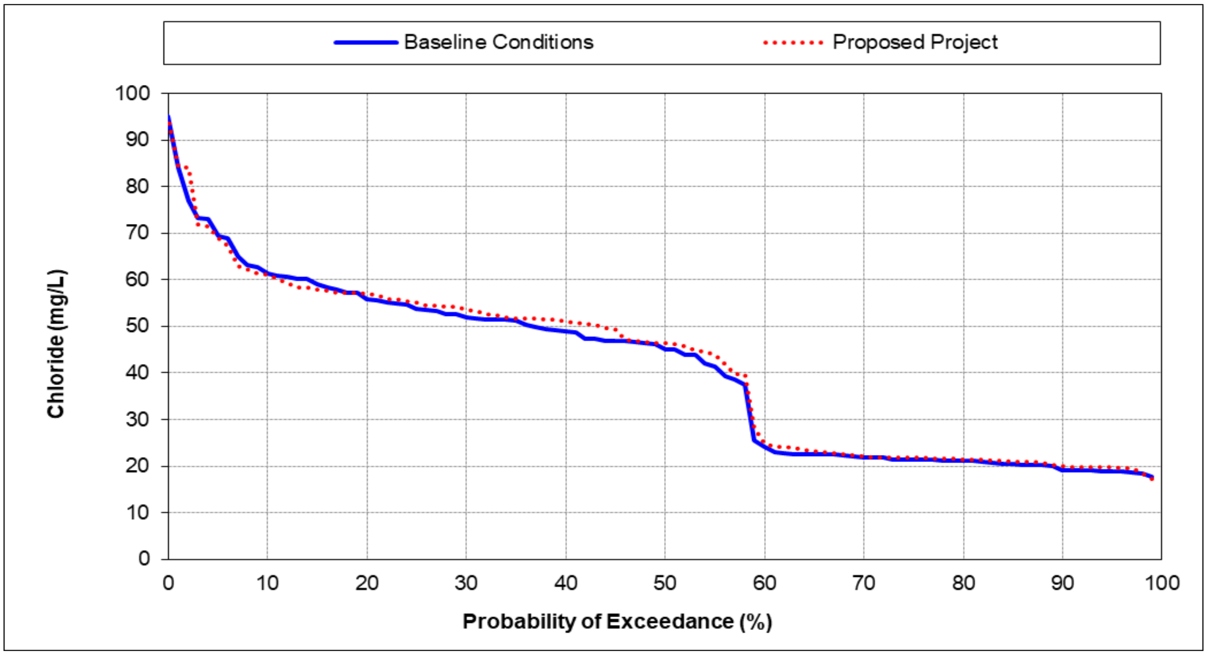

Figure 5A-2o. San Joaquin River at Empire Tract, Monthly Average Chloride (in milligrams per liter), September

Figure 5A-2o shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model in September. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a slight increase from about 40% to 60% exceedance.

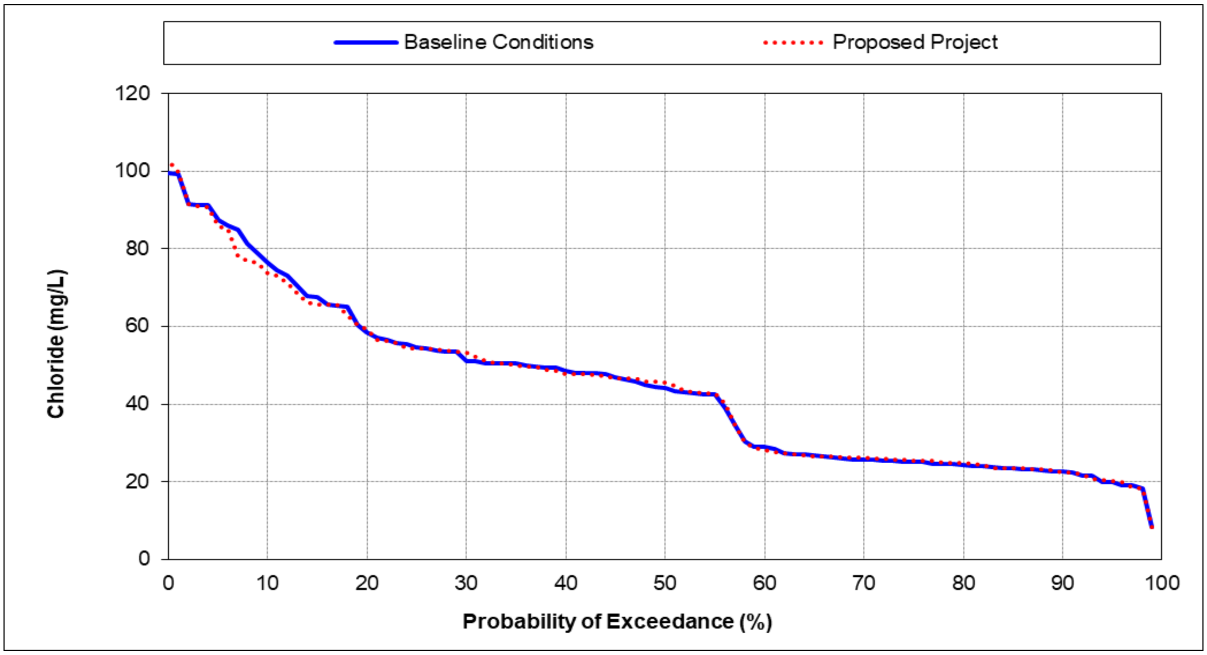

Figure 5A-2p. San Joaquin River at Empire Tract, Monthly Average Chloride (in milligrams per liter), October

Figure 5A-2p shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model in October. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a slight decrease from about 18% to 50% exceedance.

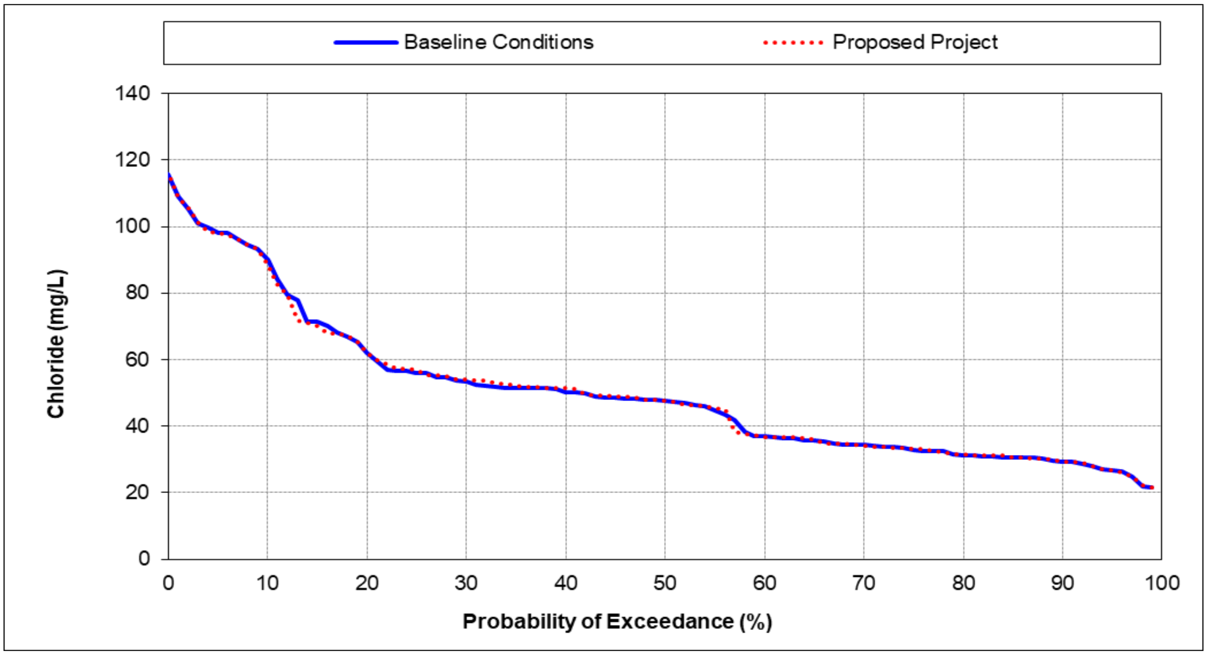

Figure 5A-2q. San Joaquin River at Empire Tract, Monthly Average Chloride (in milligrams per liter), November

Figure 5A-2q shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model in November. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a slight decrease from about 20% to 35% exceedance.

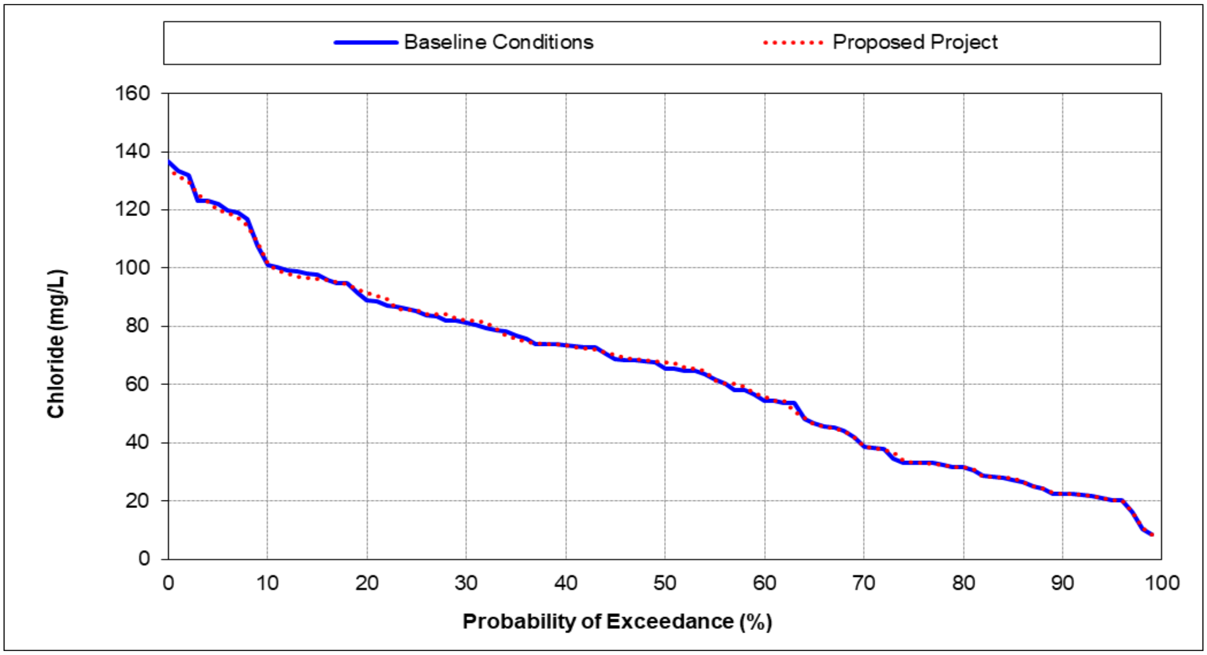

Figure 5A-2r. San Joaquin River at Empire Tract, Monthly Average Chloride (in milligrams per liter), December

Figure 5A-2r shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from San Joaquin River at Empire Tract under the Proposed Project compared to the CalSim 3 100-year model in December. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

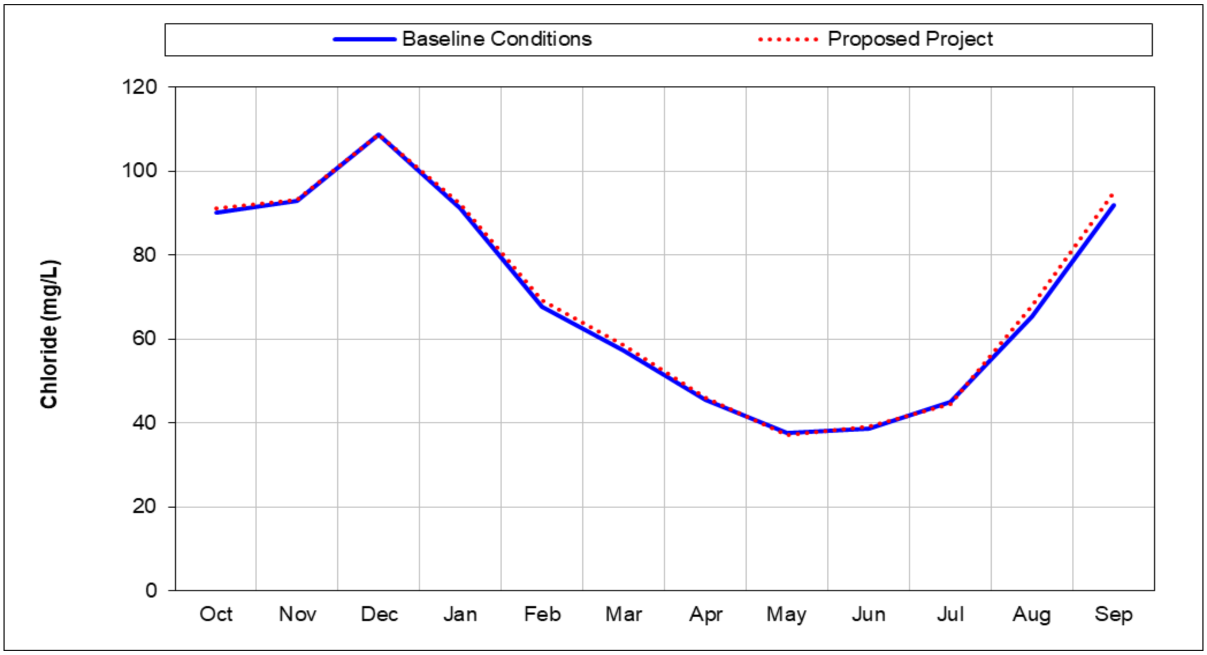

Figure 5A-3a. Banks Pumping Plant, Long term Monthly Average Chloride (in milligrams per liter)

Figure 5A-3a shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

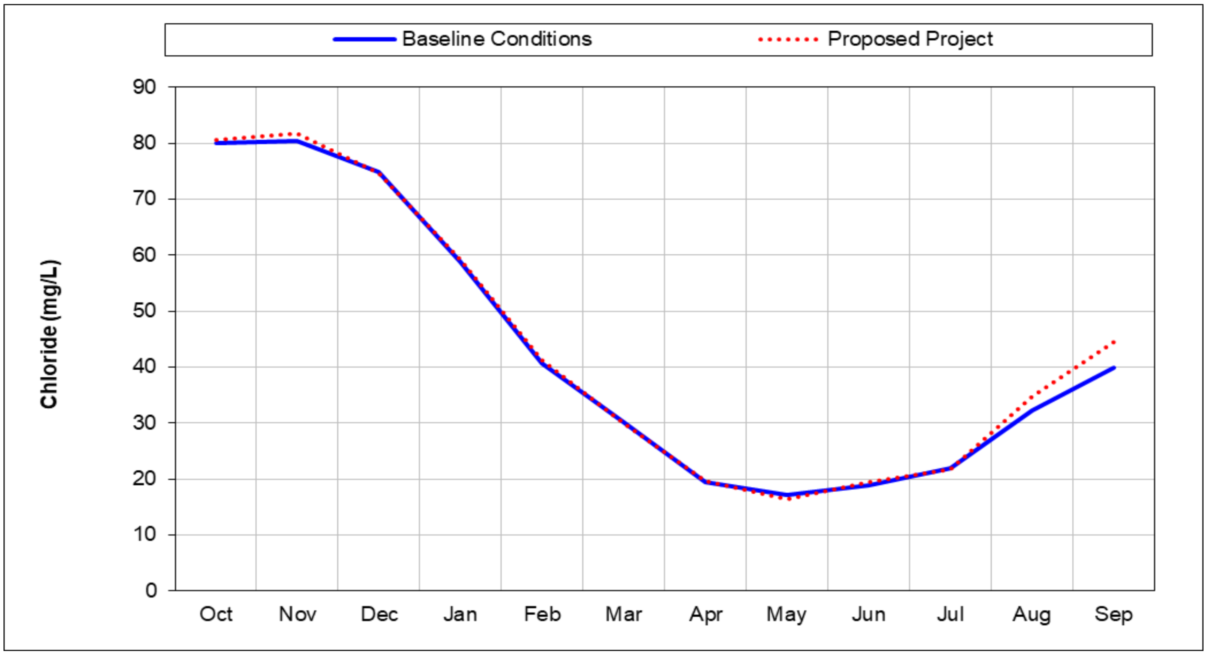

Figure 5A-3b. Banks Pumping Plant, Wet Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-3b shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model during wet years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight increase in August and September.

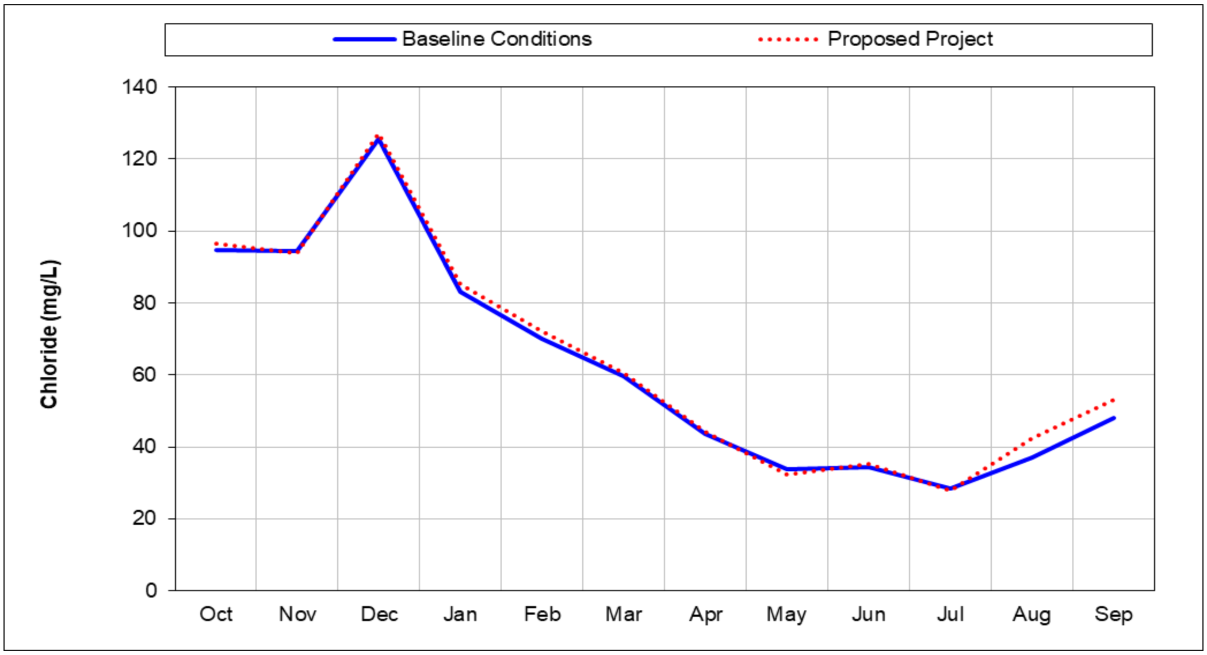

Figure 5A-3c. Banks Pumping Plant, Above Normal Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-3c shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model during above normal years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight increase in August and September.

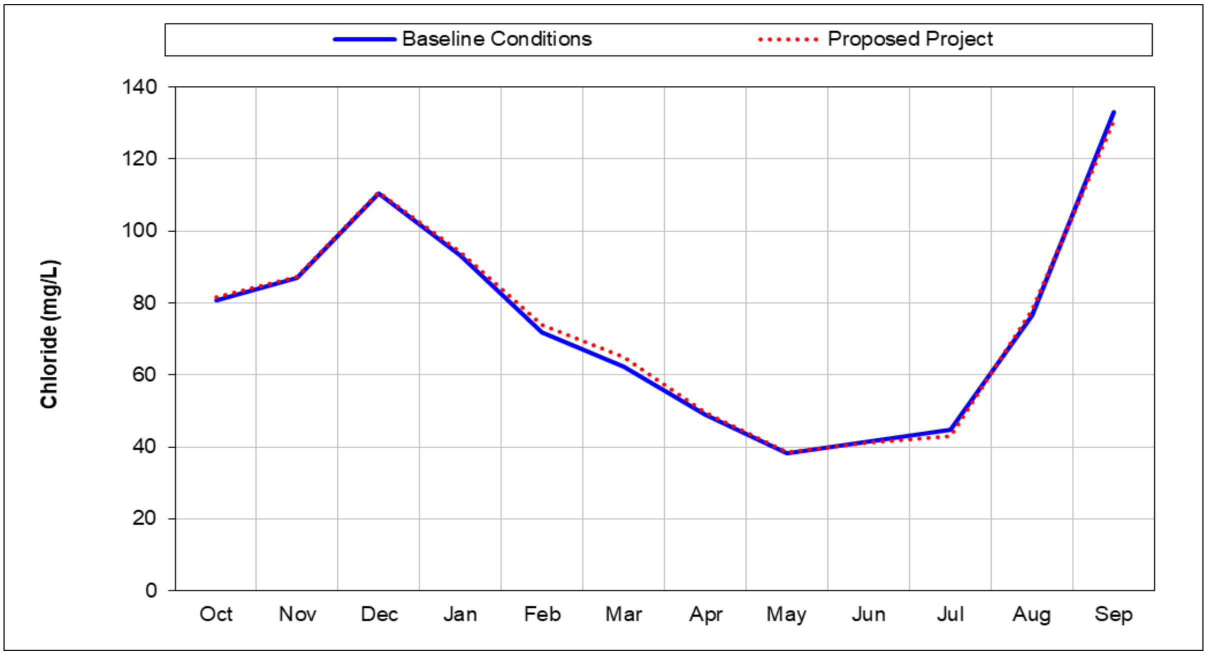

Figure 5A-3d. Banks Pumping Plant, Below Normal Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-3d shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model during below normal years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

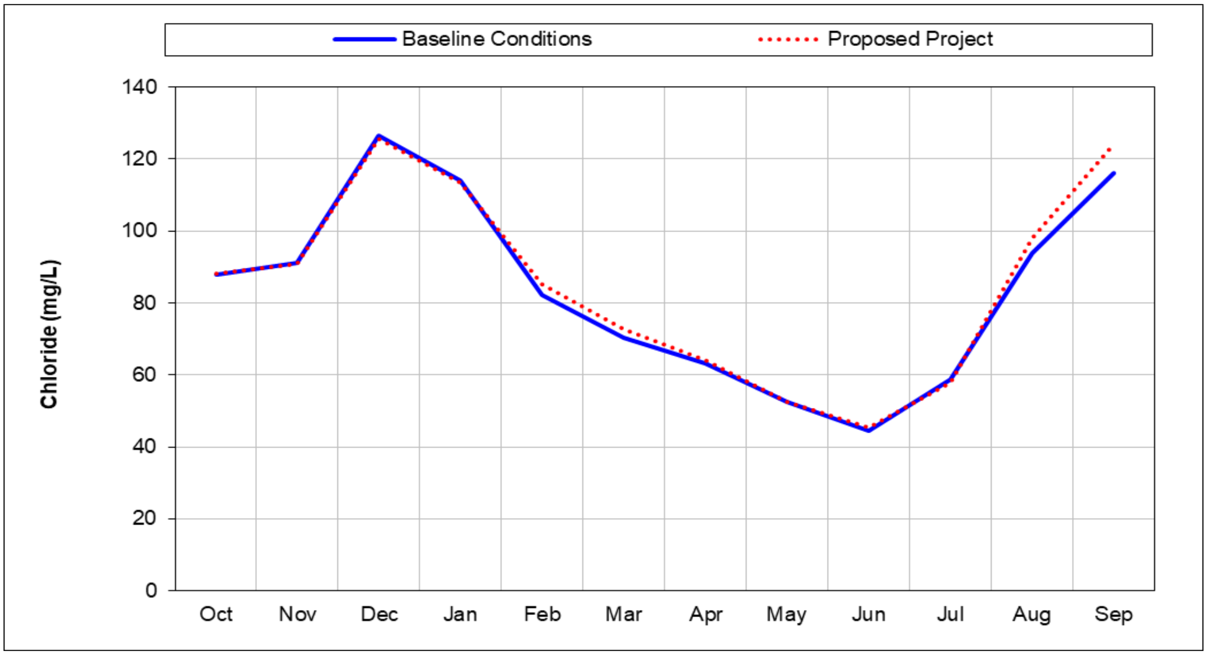

Figure 5A-3e. Banks Pumping Plant, Dry Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-3e shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model during dry years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight increase in August and September.

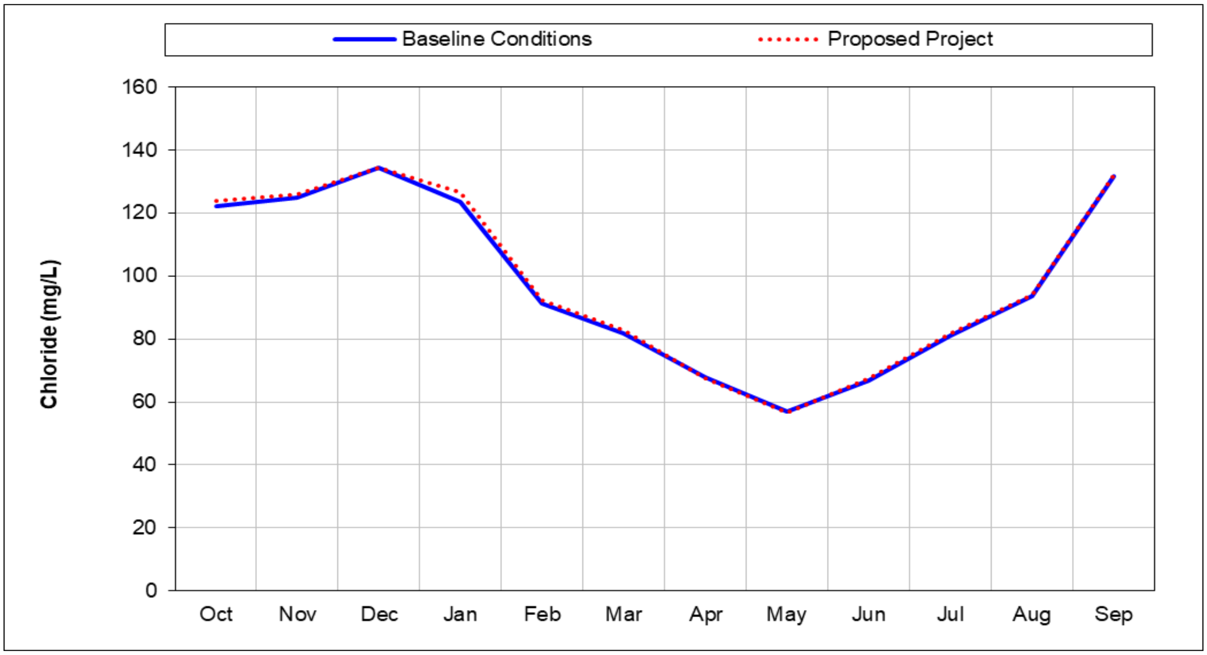

Figure 5A-3f. Banks Pumping Plant, Critical Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-3f shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model during critical years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight decrease in December to February.

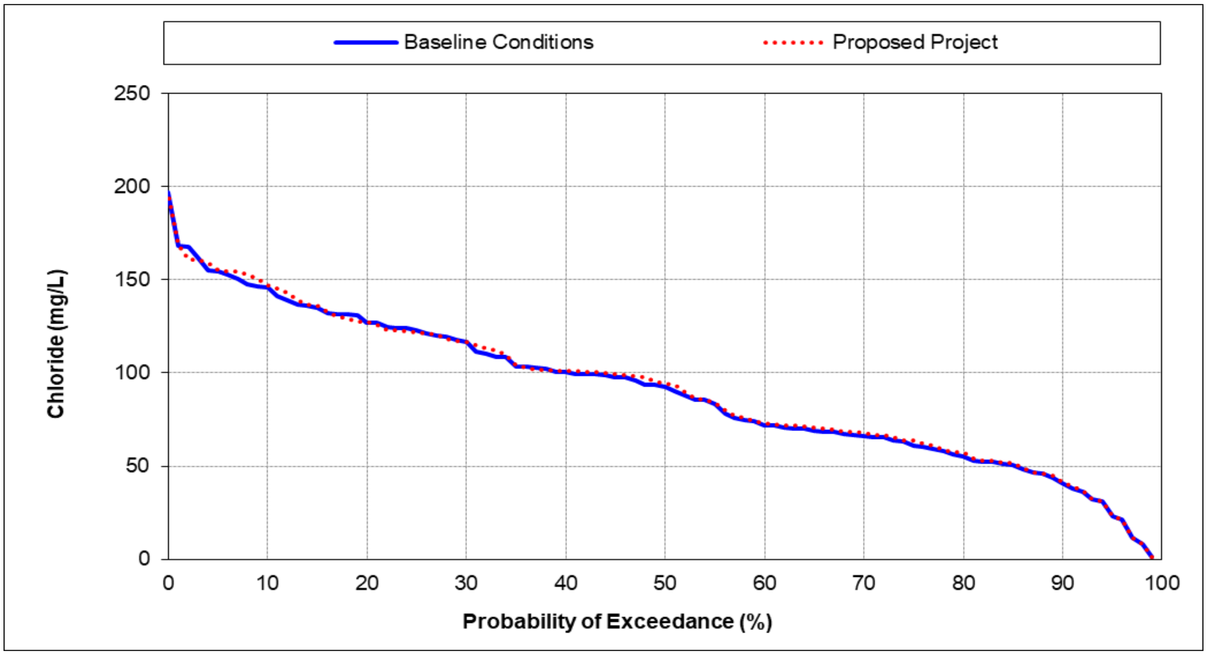

Figure 5A-3g. Banks Pumping Plant, Monthly Average Chloride (in milligrams per liter), January

Figure 5A-3g shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in January. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a slight decrease from about 10% to 25% exceedance.

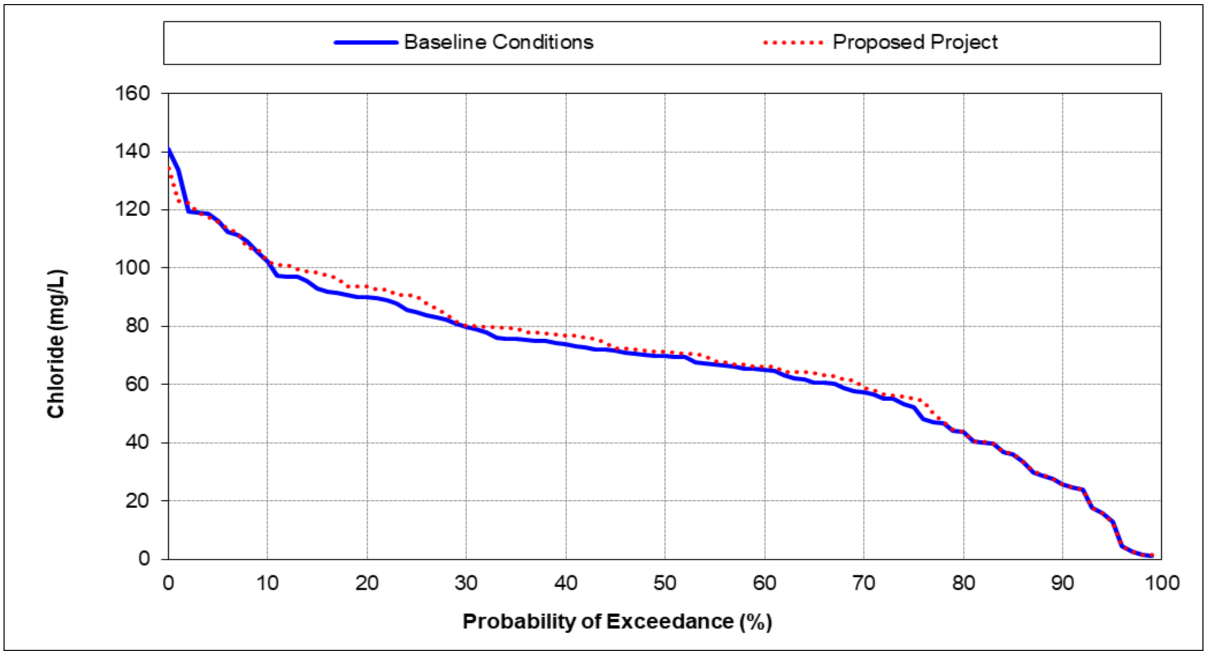

Figure 5A-3h. Banks Pumping Plant, Monthly Average Chloride (in milligrams per liter), February

Figure 5A-3h shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in February. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a quick decline at about 2% to 5 % exceedance and follows the model from there.

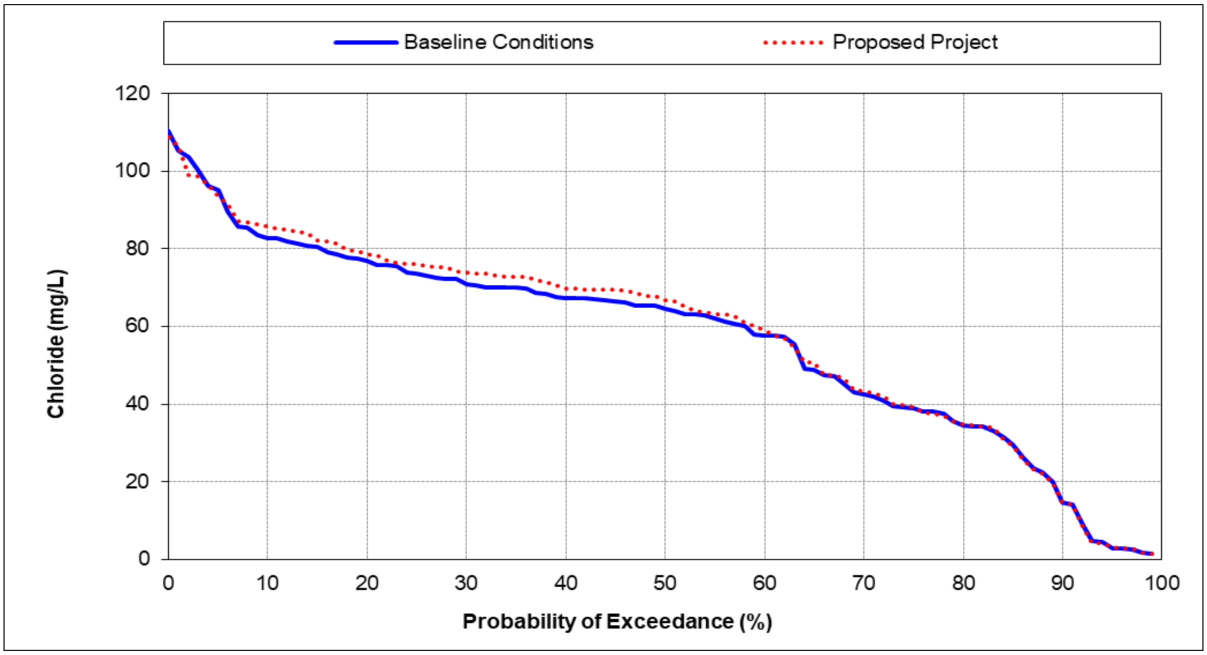

Figure 5A-3i. Banks Pumping Plant, Monthly Average Chloride (in milligrams per liter), March

Figure 5A-3i shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in March. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

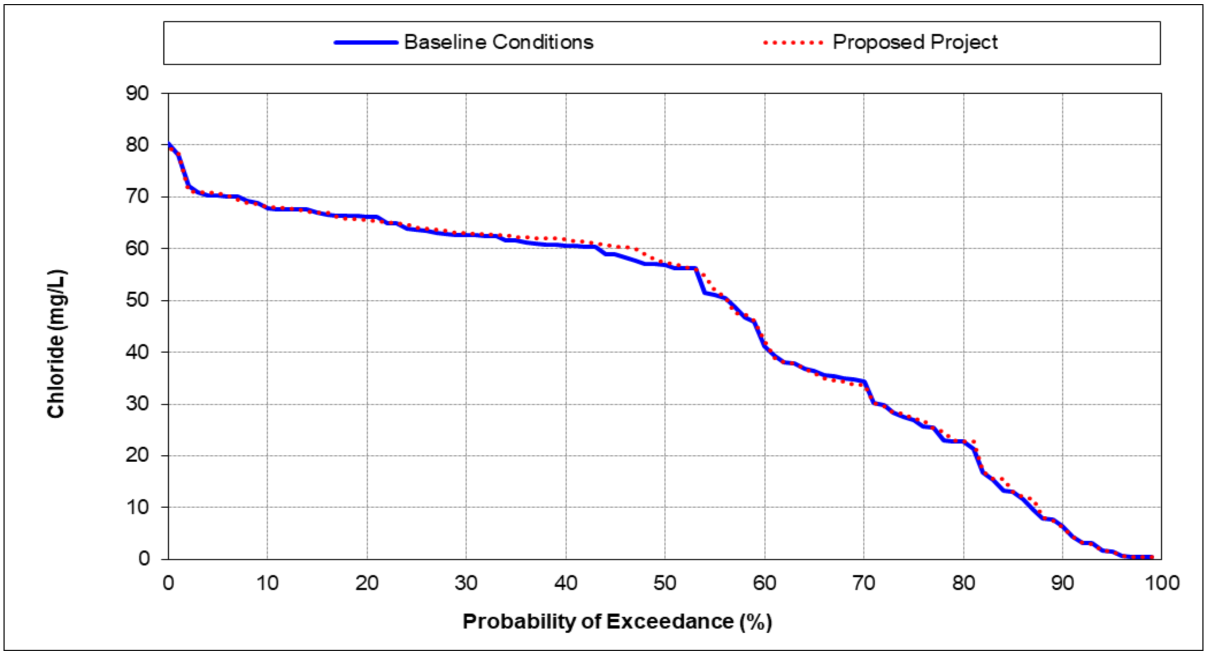

Figure 5A-3j. Banks Pumping Plant, Monthly Average Chloride (in milligrams per liter), April

Figure 5A-3j shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in April. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

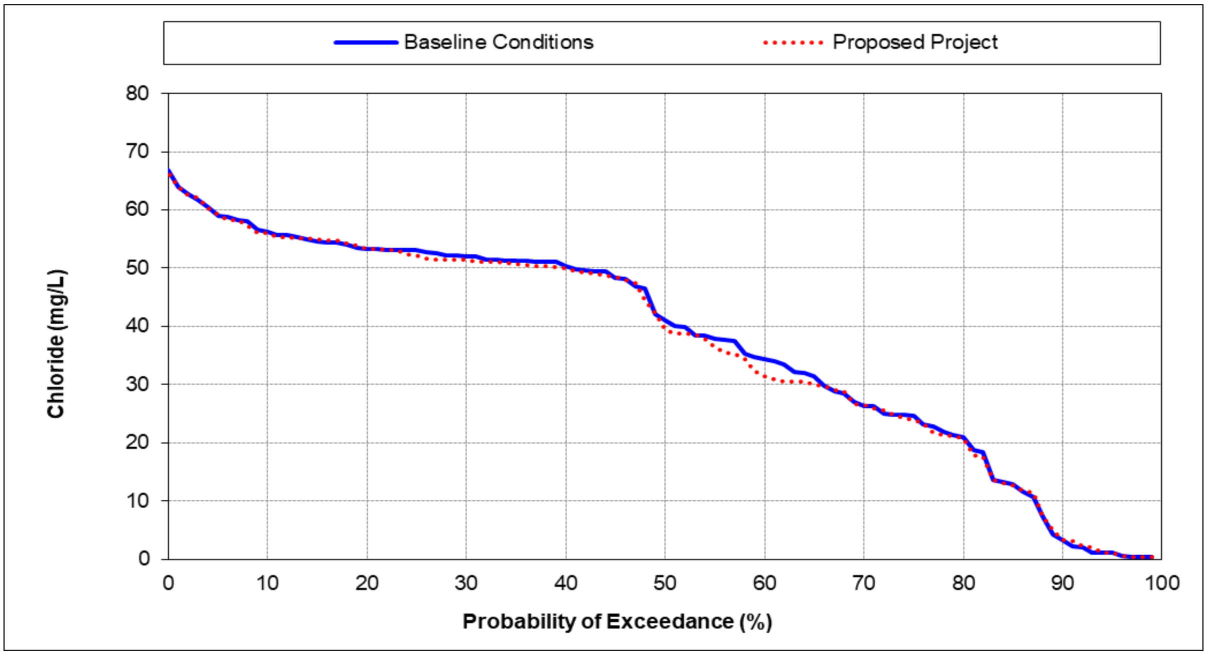

Figure 5A-3k. Banks Pumping Plant, Monthly Average Chloride (in milligrams per liter), May

Figure 5A-3k shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in March. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a slight decrease around 52% to 65% exceedance.

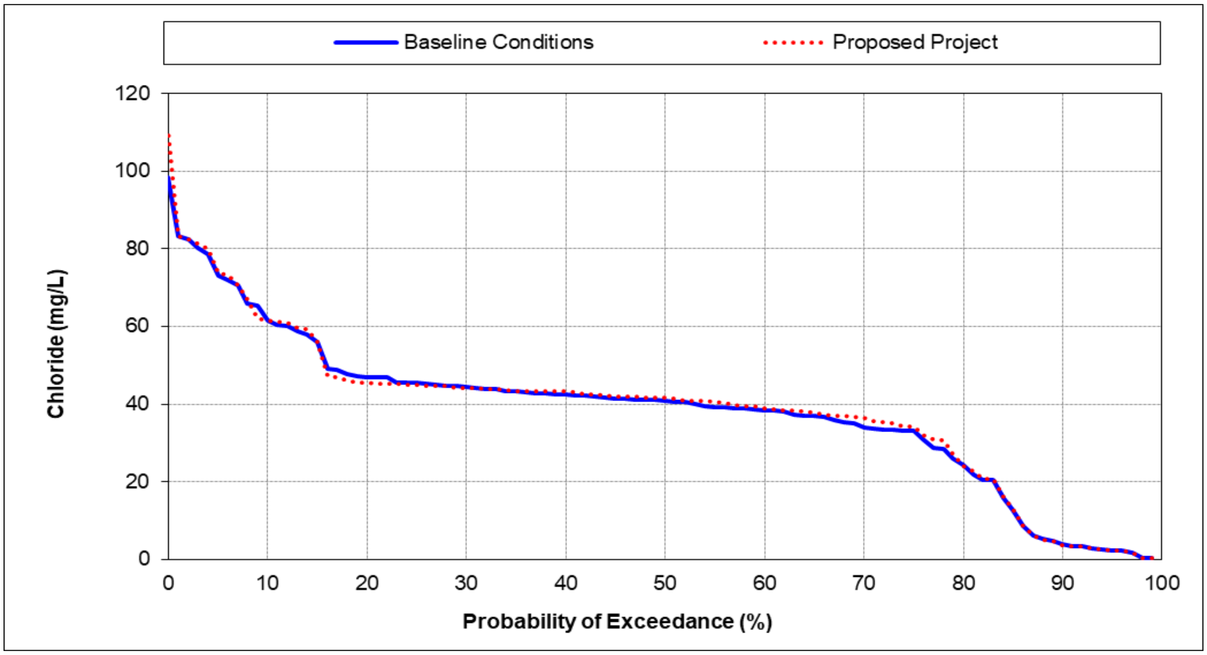

Figure 5A-3l. Banks Pumping Plant, Monthly Average Chloride (in milligrams per liter), June

Figure 5A-3l shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in March. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

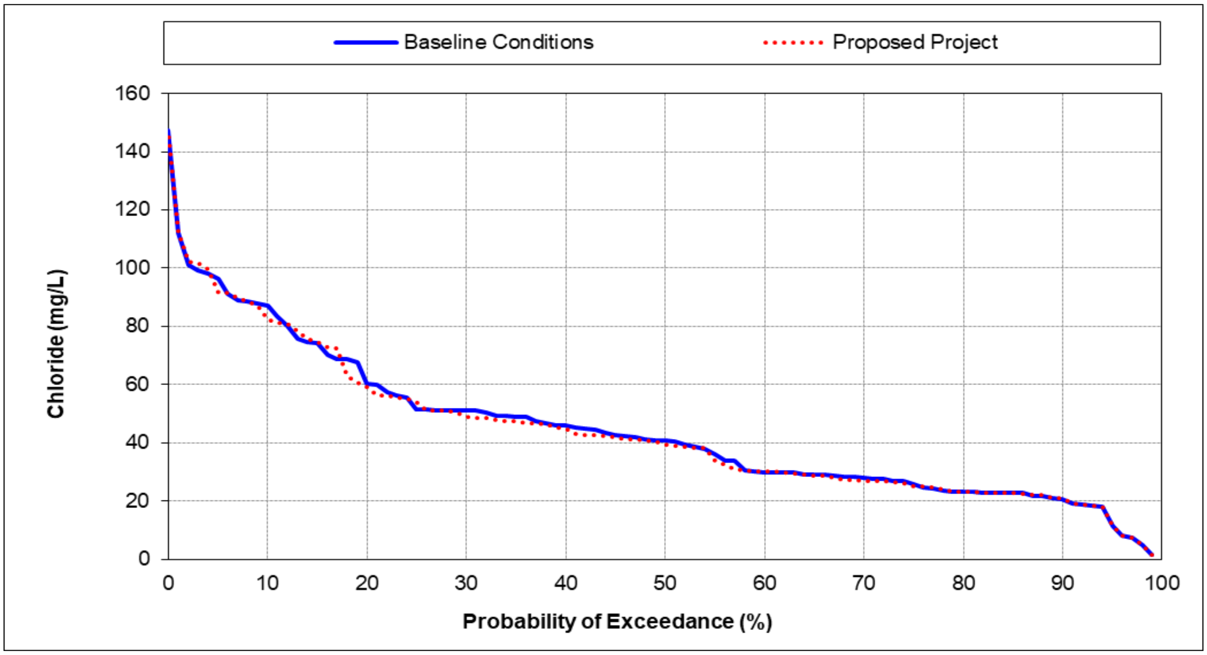

Figure 5A-3m. Banks Pumping Plant, Monthly Average Chloride (in milligrams per liter), July

Figure 5A-3k shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in March. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

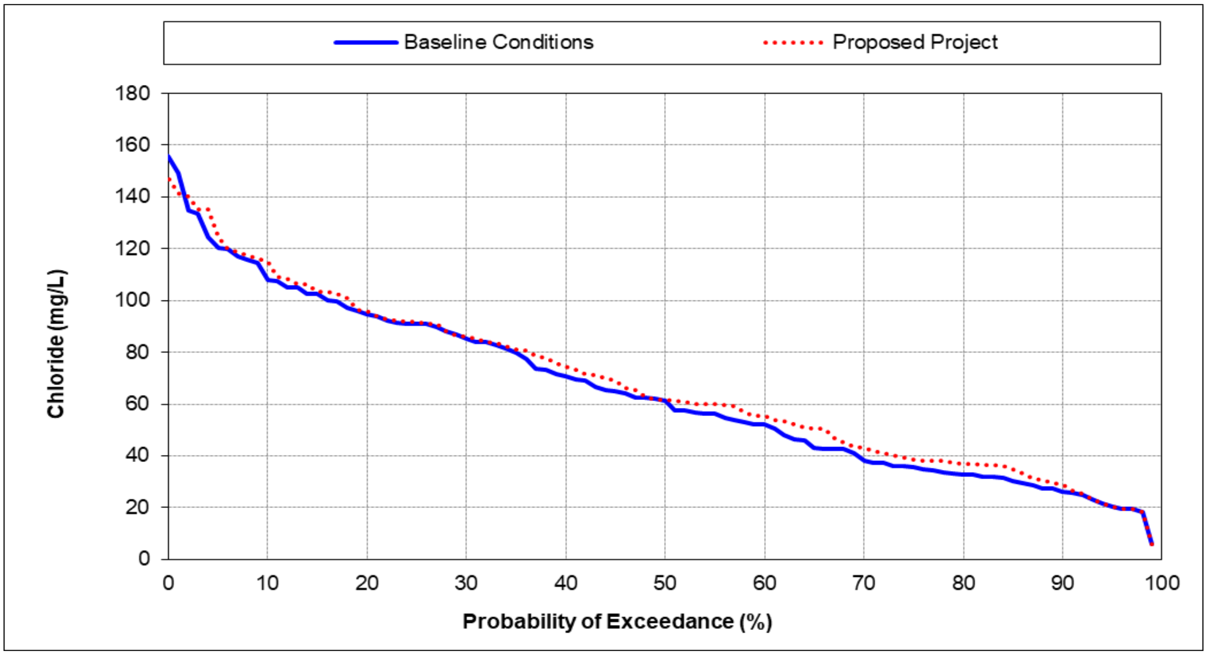

Figure 5A-3n. Banks Pumping Plant, Monthly Average Chloride (in milligrams per liter), August

Figure 5A-3n shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in August. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a slight increase from 5% to 15% exceedance and 55% to 85% exceedance.

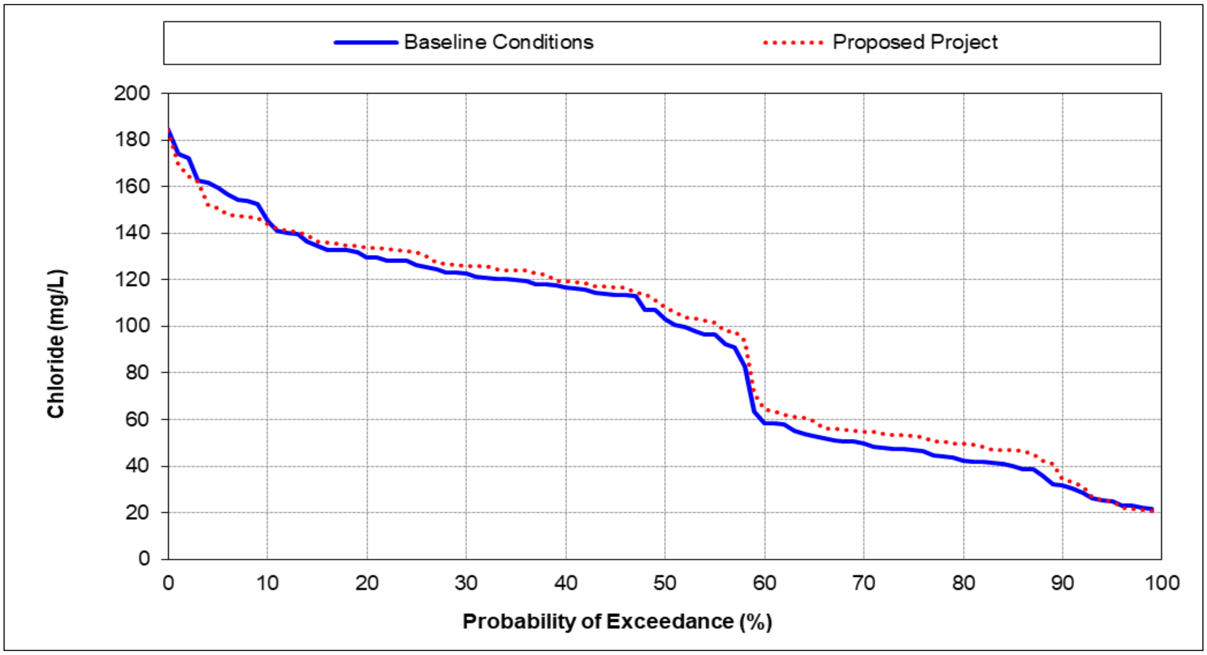

Figure 5A-3o. Banks Pumping Plant, Monthly Average Chloride (in milligrams per liter), September

Figure 5A-3o shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in September. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a slight increase around 50% to 58% exceedance and 60% to 90% exceedance.

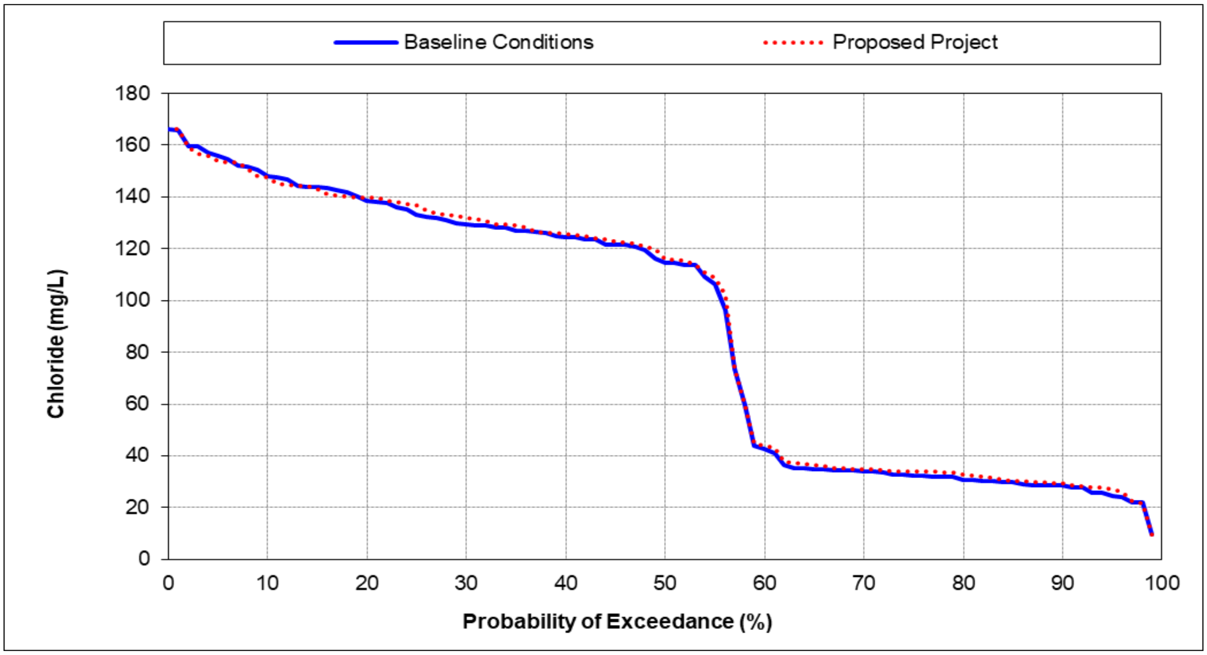

Figure 5A-3p. Banks Pumping Plant, Monthly Average Chloride (in milligrams per liter), October

Figure 5A-3p shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in October. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

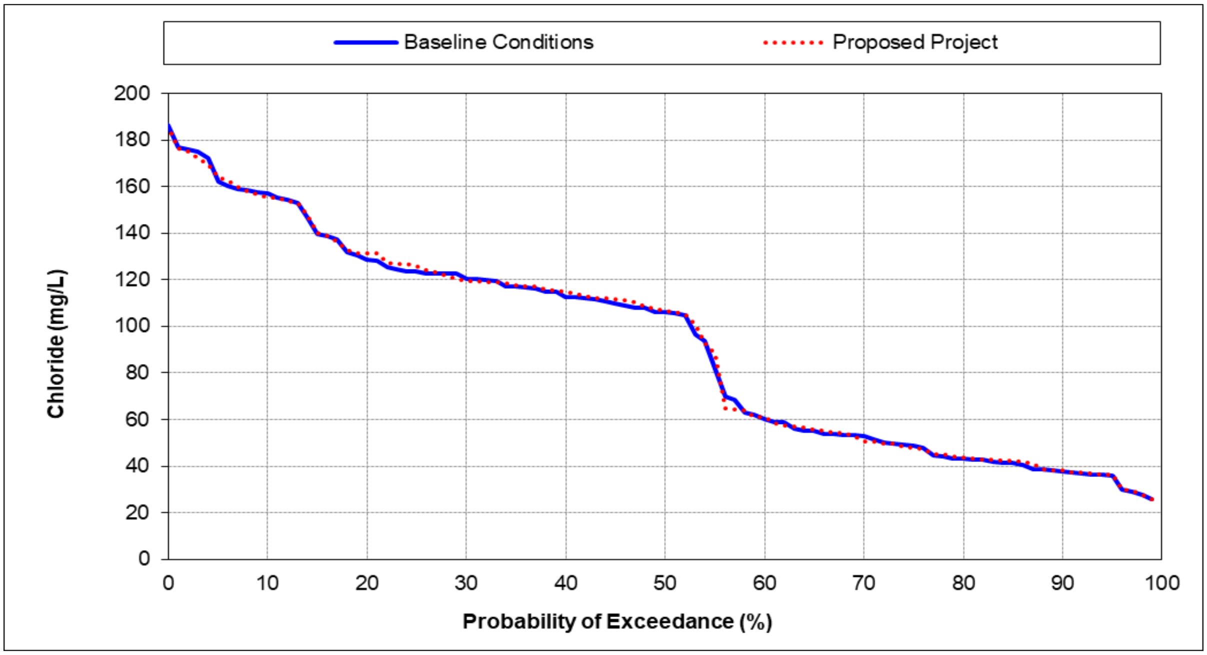

Figure 5A-3q. Banks Pumping Plant, Monthly Average Chloride (in milligrams per liter), November

Figure 5A-3q shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in November. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

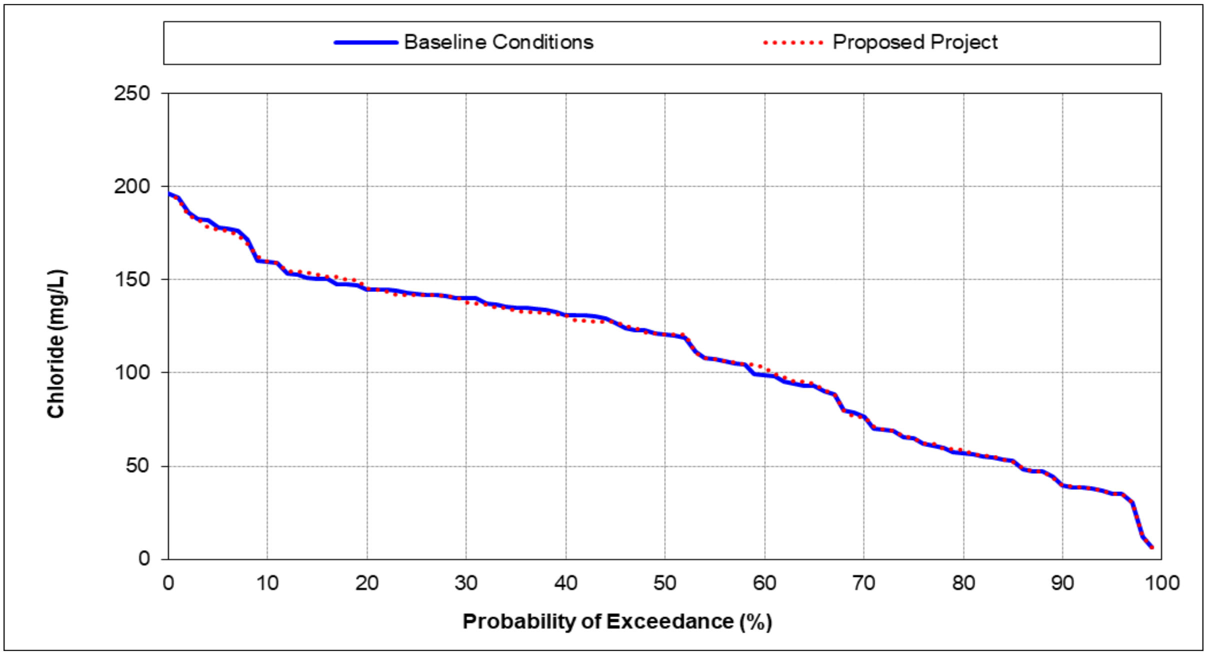

Figure 5A-3r. Banks Pumping Plant, Monthly Average Chloride (in milligrams per liter), December

Figure 5A-3r shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Banks Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in December. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

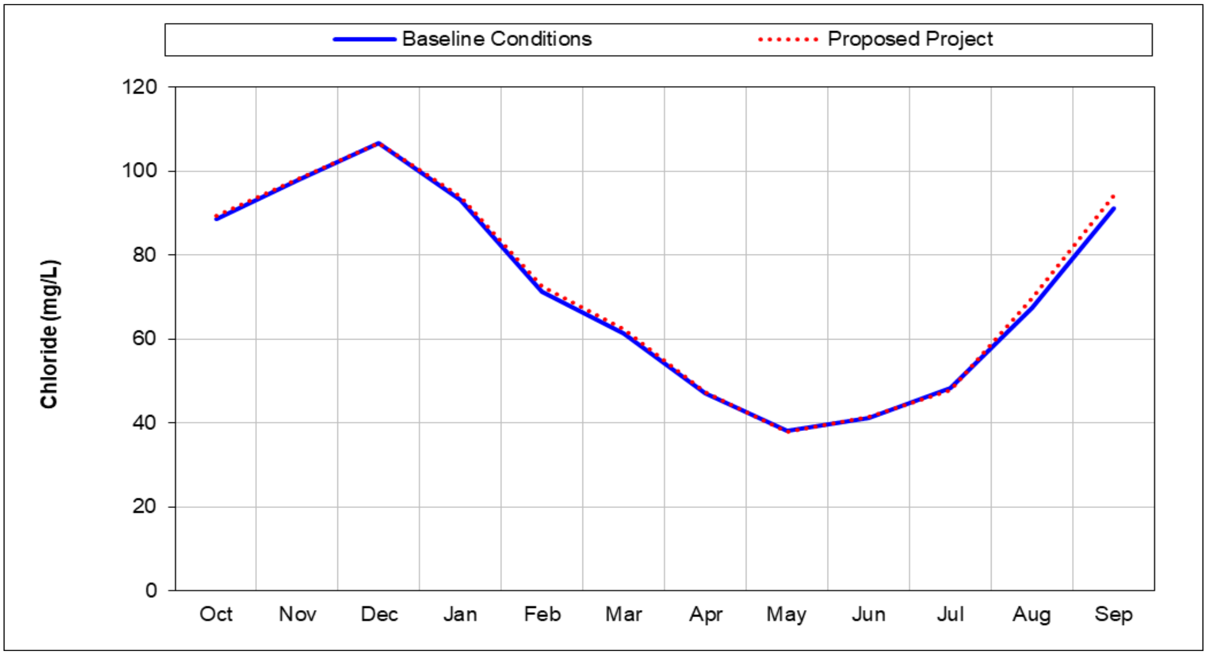

Figure 5A-4a. Jones Pumping Plant, Long term Monthly Average Chloride (in milligrams per liter)

Figure 5A-4a shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

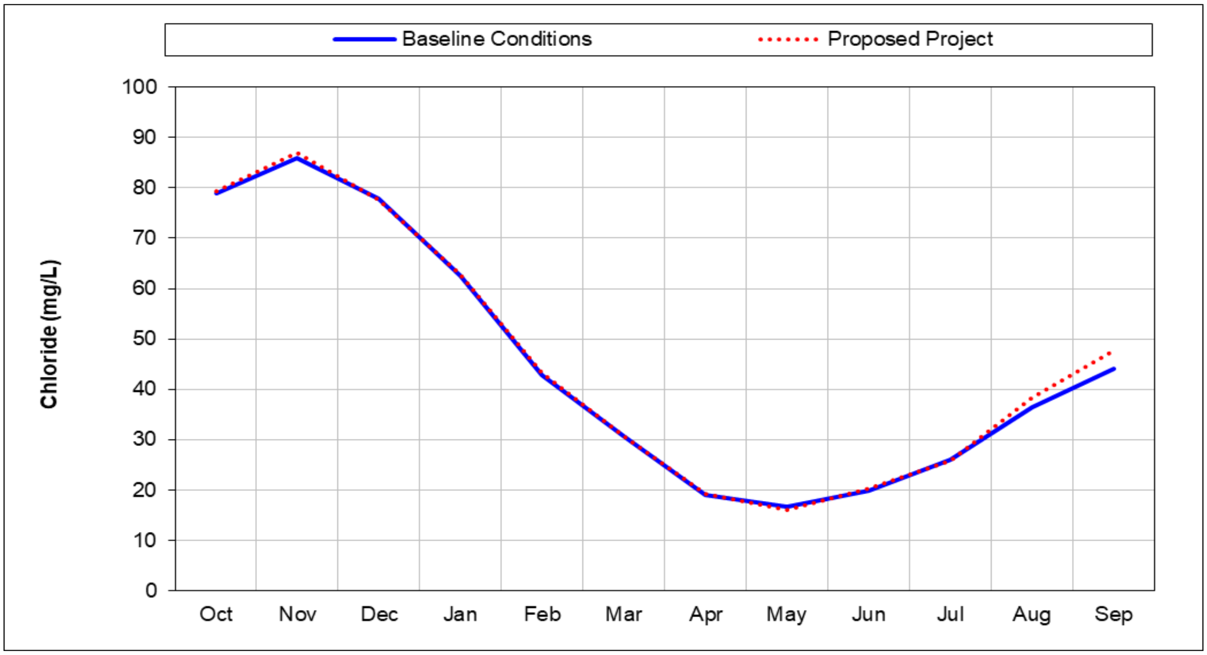

Figure 5A-4b. Jones Pumping Plant, Wet Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-4b shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model during wet years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight increase in August to September.

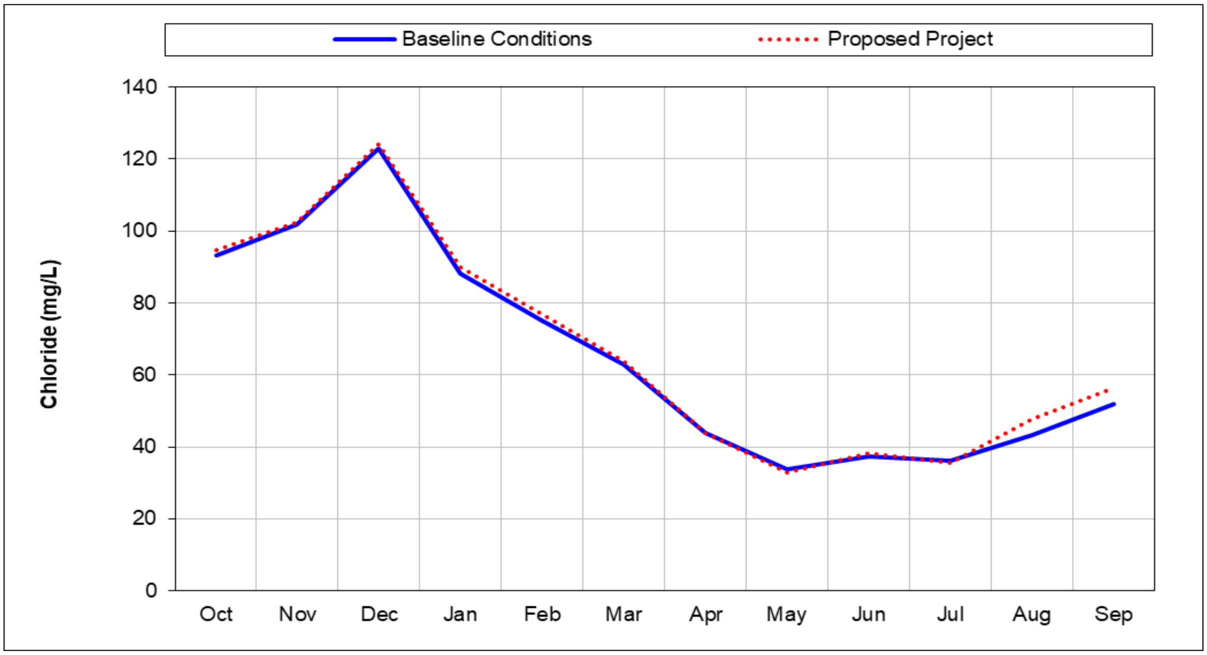

Figure 5A-4c. Jones Pumping Plant, Above Normal Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-4c shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model during above normal years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight increase in August to September.

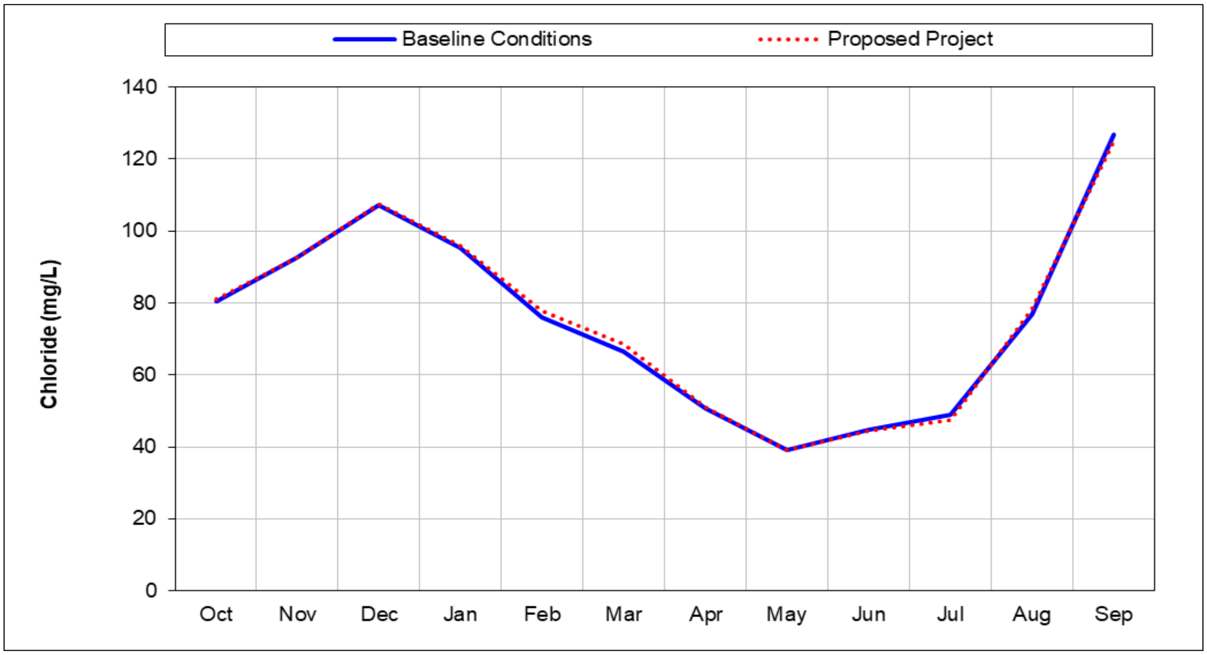

Figure 5A-4d. Jones Pumping Plant, Below Normal Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-4d shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model during below normal years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions in all months.

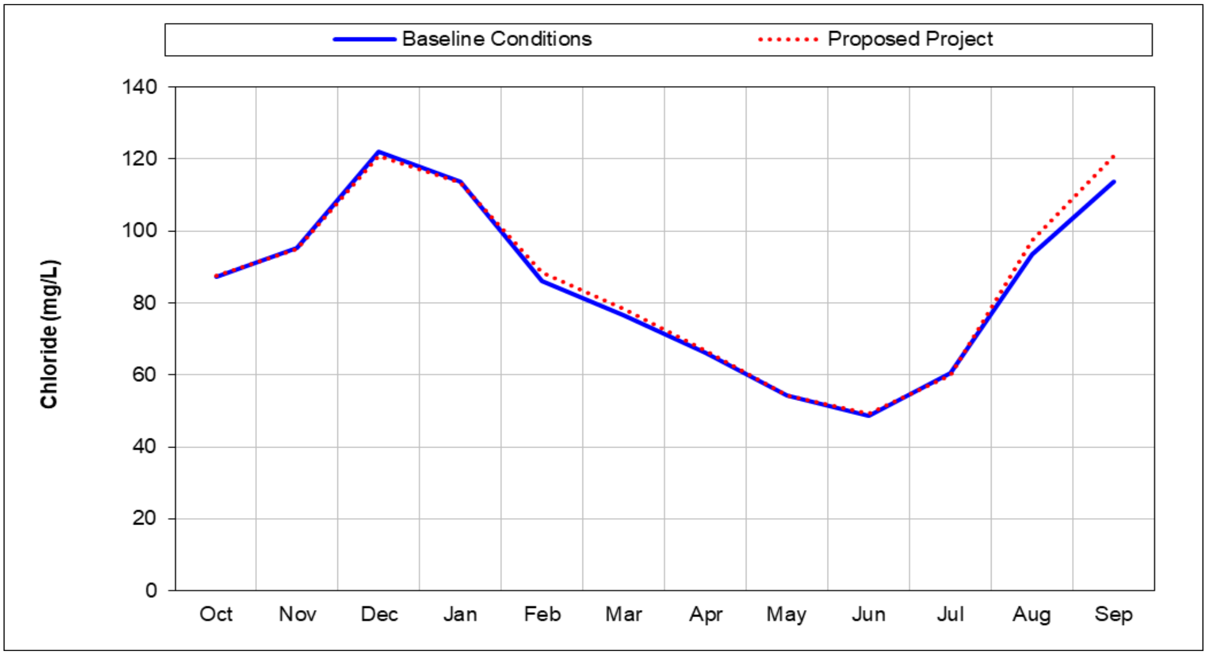

Figure 5A-4e. Jones Pumping Plant, Dry Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-4e shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model during dry years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight increase in August to September.

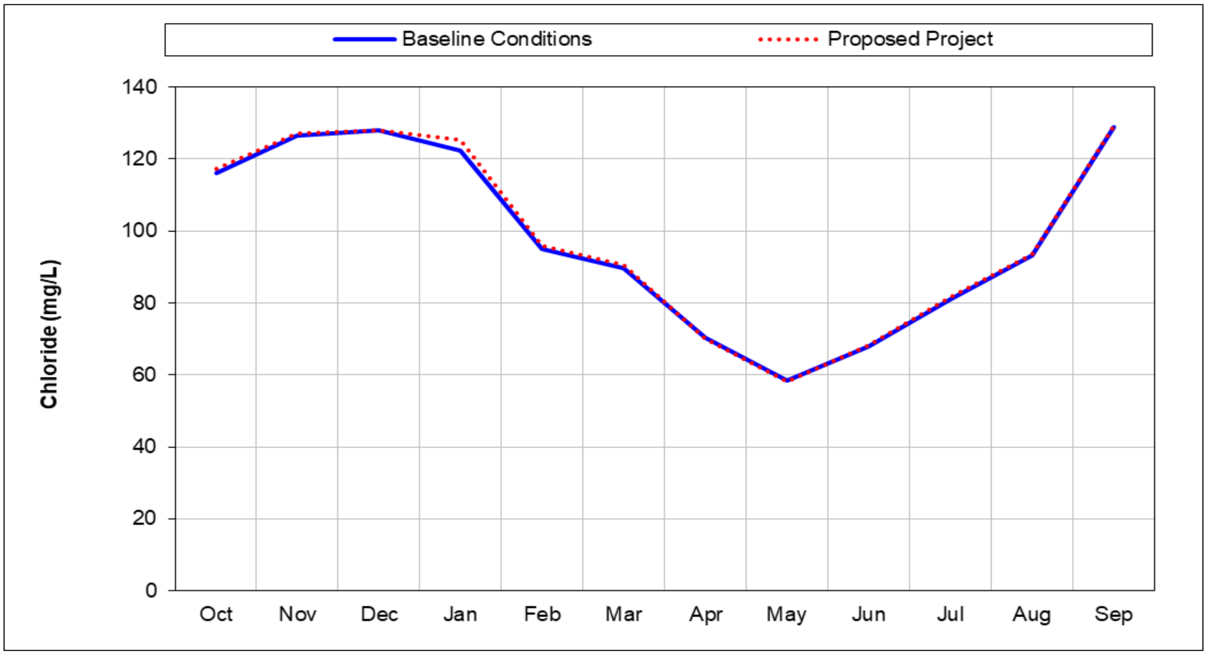

Figure 5A-4f. Jones Pumping Plant, Critical Year Monthly Average Chloride (in milligrams per liter)

Figure 5A-4f shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model during critical years. Concentrations are depicted from October (left) to September (right). The line graph shows that the Proposed Project would generally remain like chloride concentrations under the Baseline Conditions with a slight decrease from December to February.

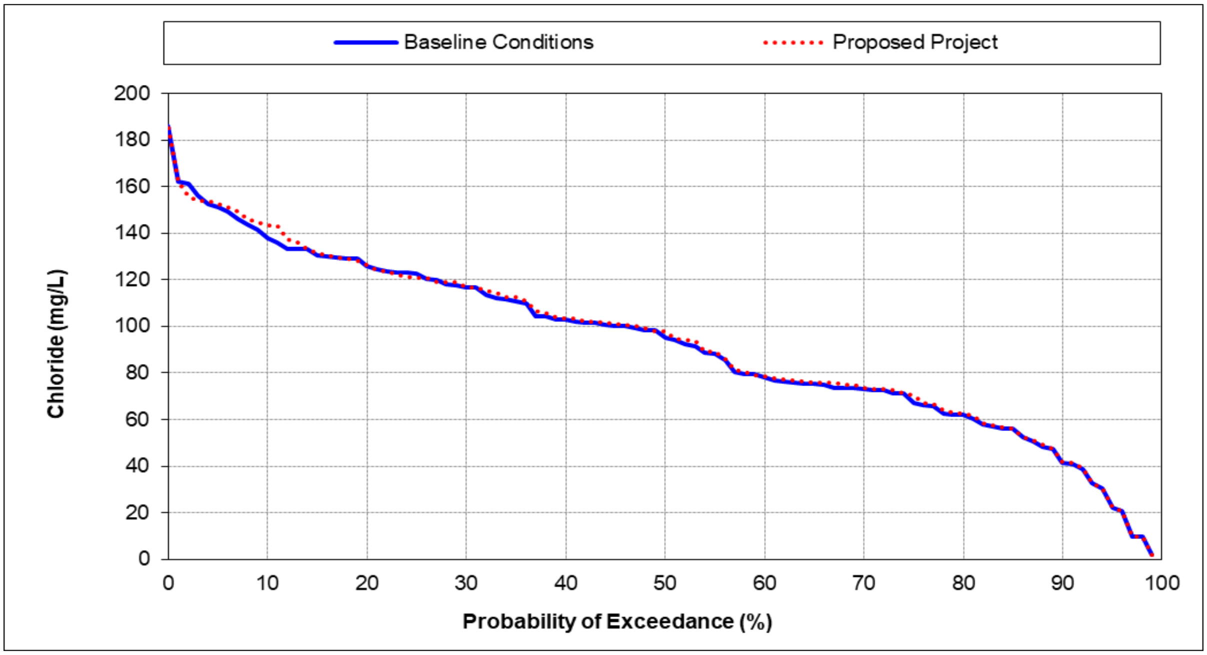

Figure 5A-4g. Jones Pumping Plant, Monthly Average Chloride (in milligrams per liter), January

Figure 5A-4g shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in January. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a slight decrease from about 8% to 20% exceedance.

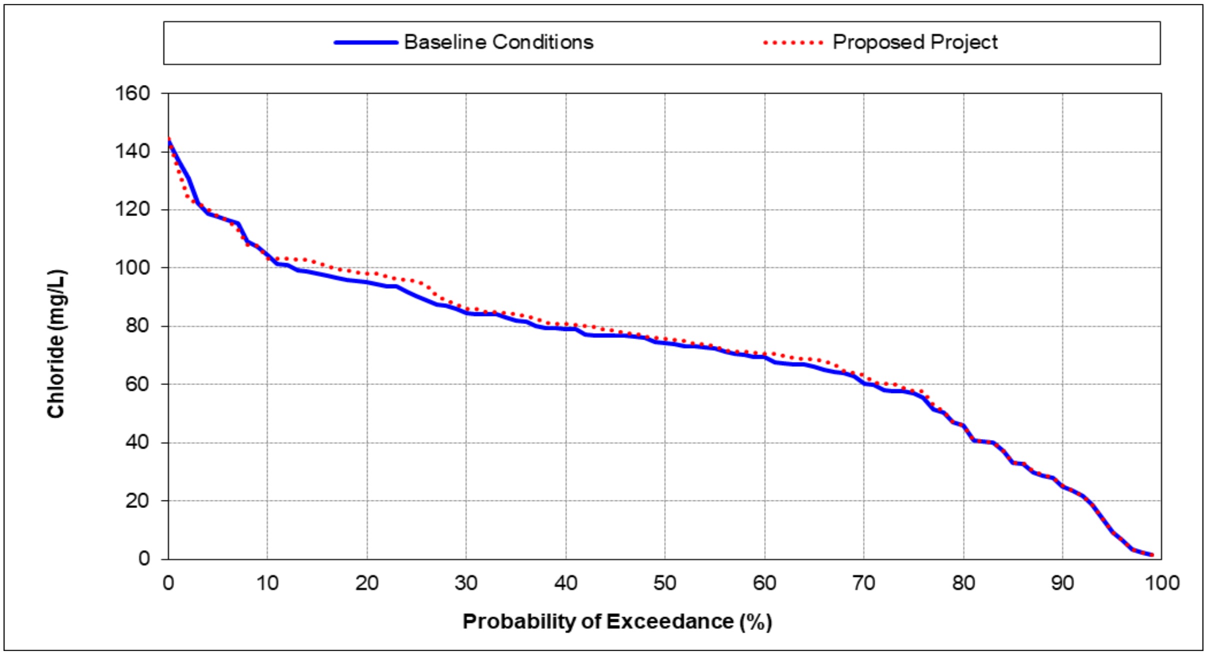

Figure 5A-4h. Jones Pumping Plant, Monthly Average Chloride (in milligrams per liter), February

Figure 5A-4h shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in February. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a slight decrease from about 2% to 7% exceedance.

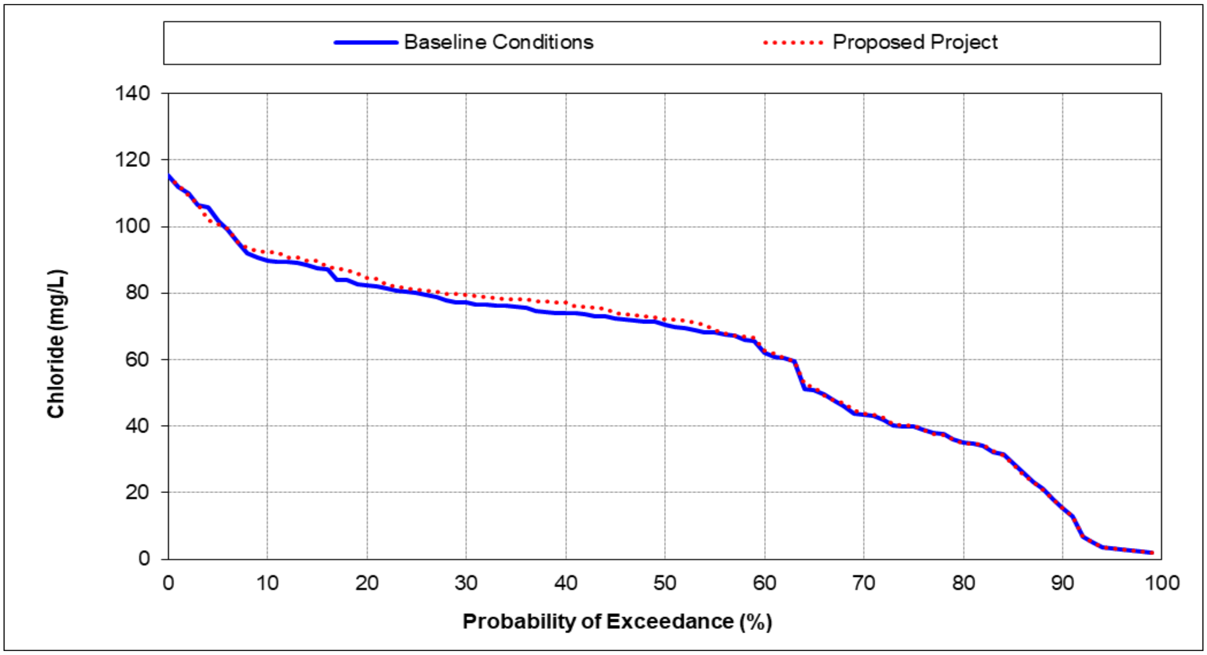

Figure 5A-4i. Jones Pumping Plant, Monthly Average Chloride (in milligrams per liter), March

Figure 5A-4i shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in March. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

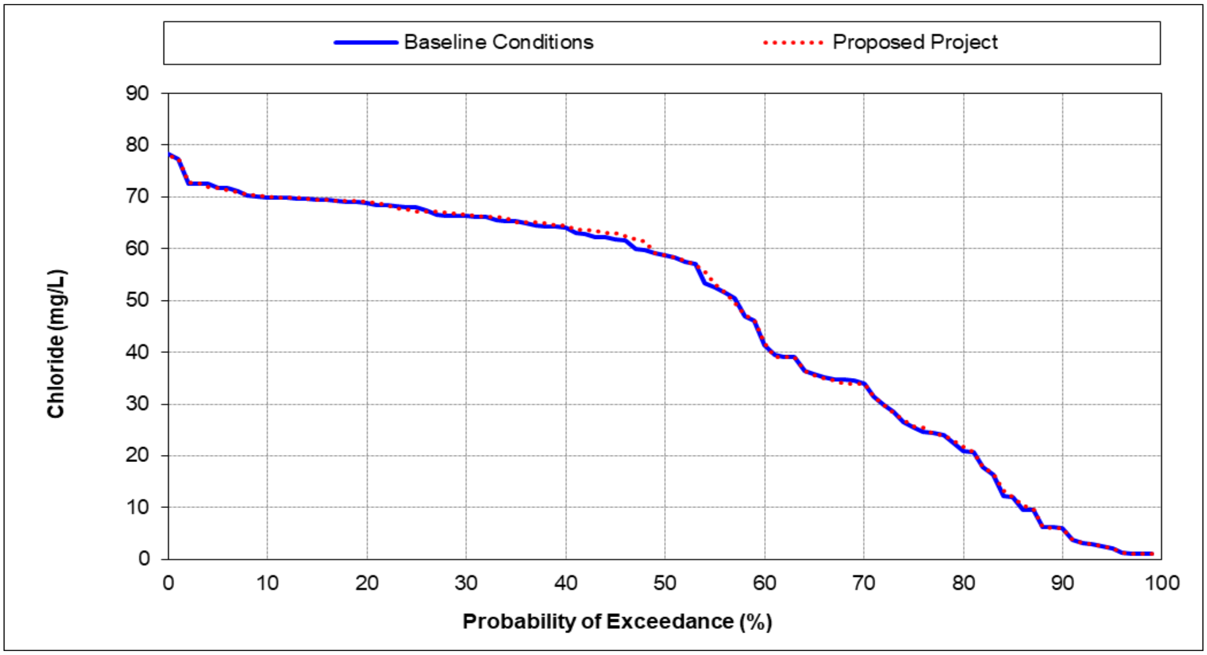

Figure 5A-4j. Jones Pumping Plant, Monthly Average Chloride (in milligrams per liter), April

Figure 5A-4j shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in April. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

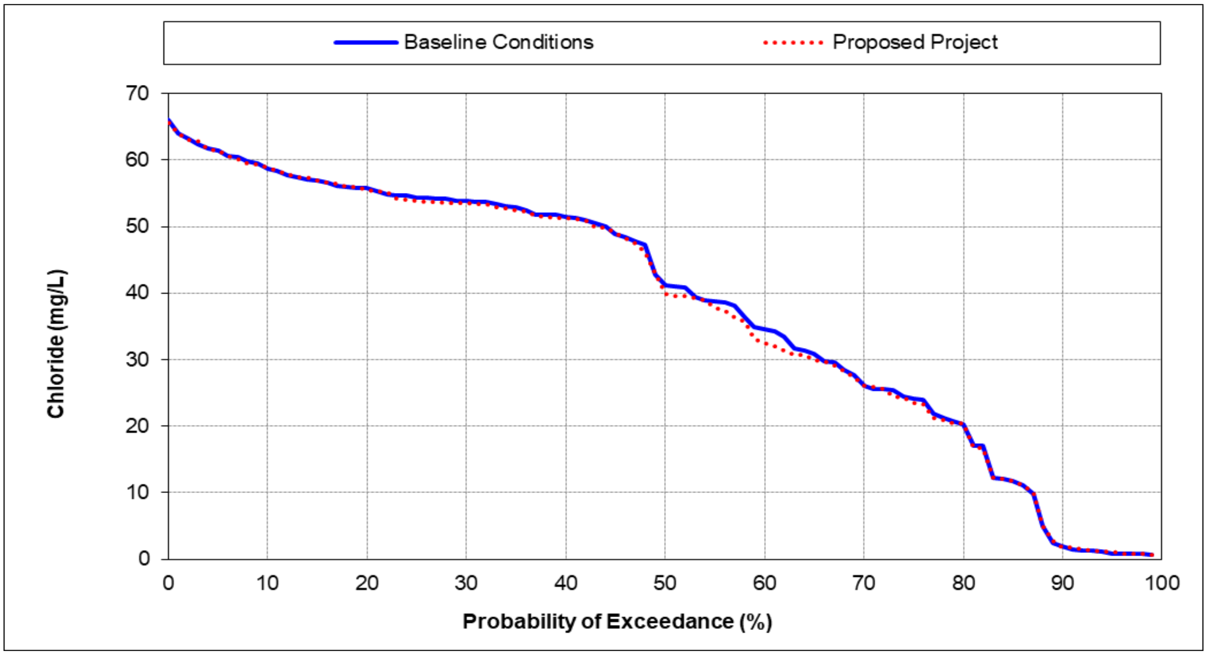

Figure 5A-4k. Jones Pumping Plant, Monthly Average Chloride (in milligrams per liter), May

Figure 5A-4k shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in May. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a slight decrease from about 52% to 65% exceedance.

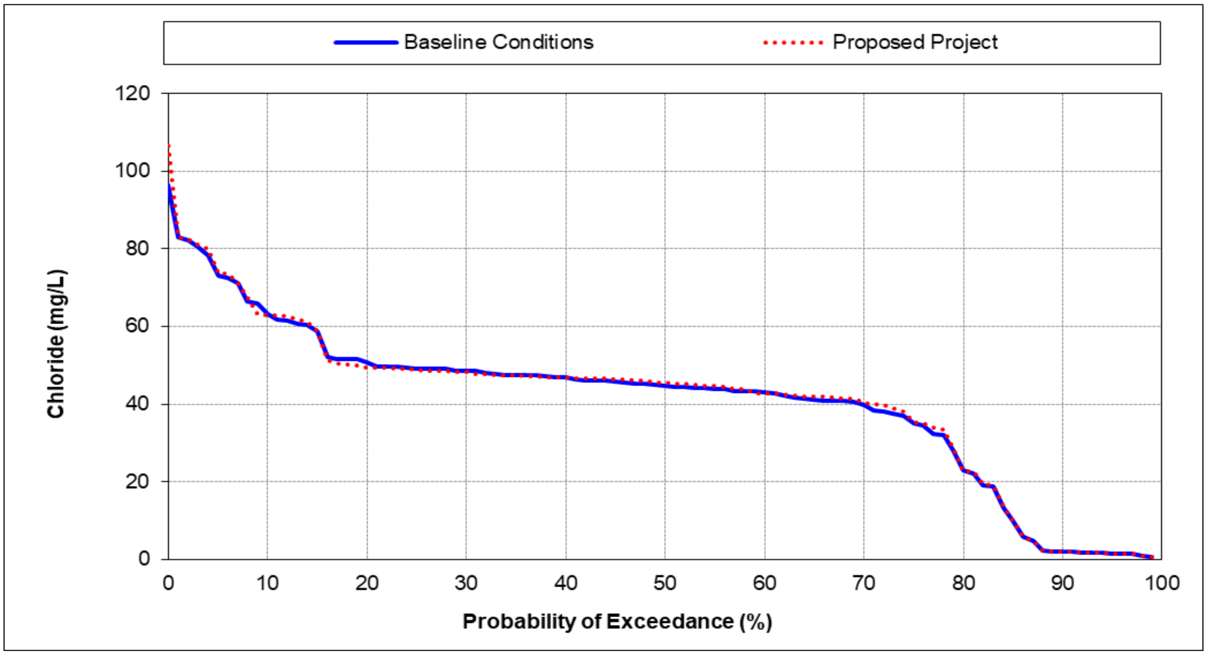

Figure 5A-4l. Jones Pumping Plant, Monthly Average Chloride (in milligrams per liter), June

Figure 5A-4l shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in June. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

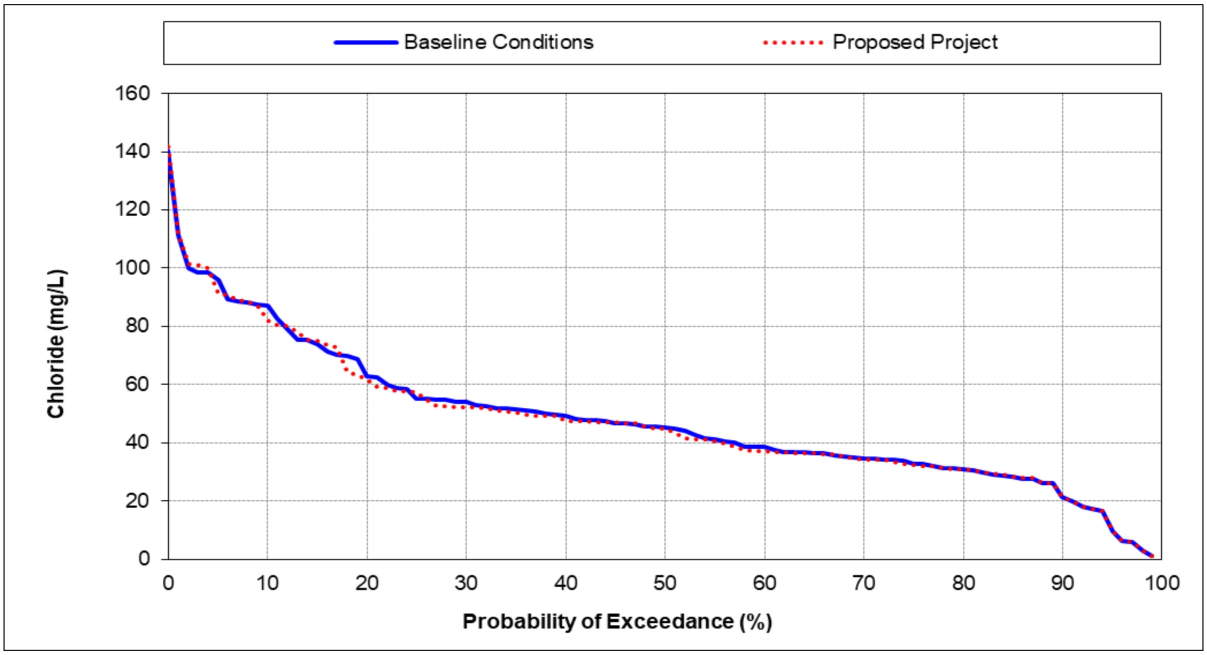

Figure 5A-4m. Jones Pumping Plant, Monthly Average Chloride (in milligrams per liter), July

Figure 5A-4m shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in July. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a slight increase from about 5% to 9% exceedance.

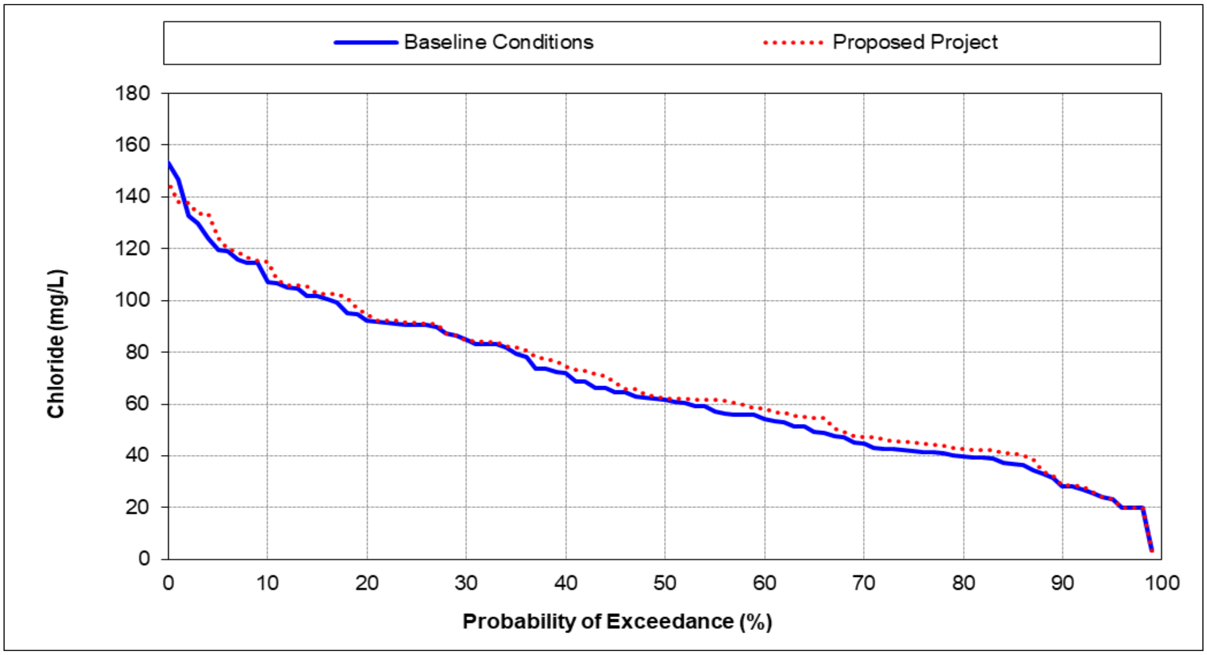

Figure 5A-4n. Jones Pumping Plant, Monthly Average Chloride (in milligrams per liter), August

Figure 5A-4n shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in August. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

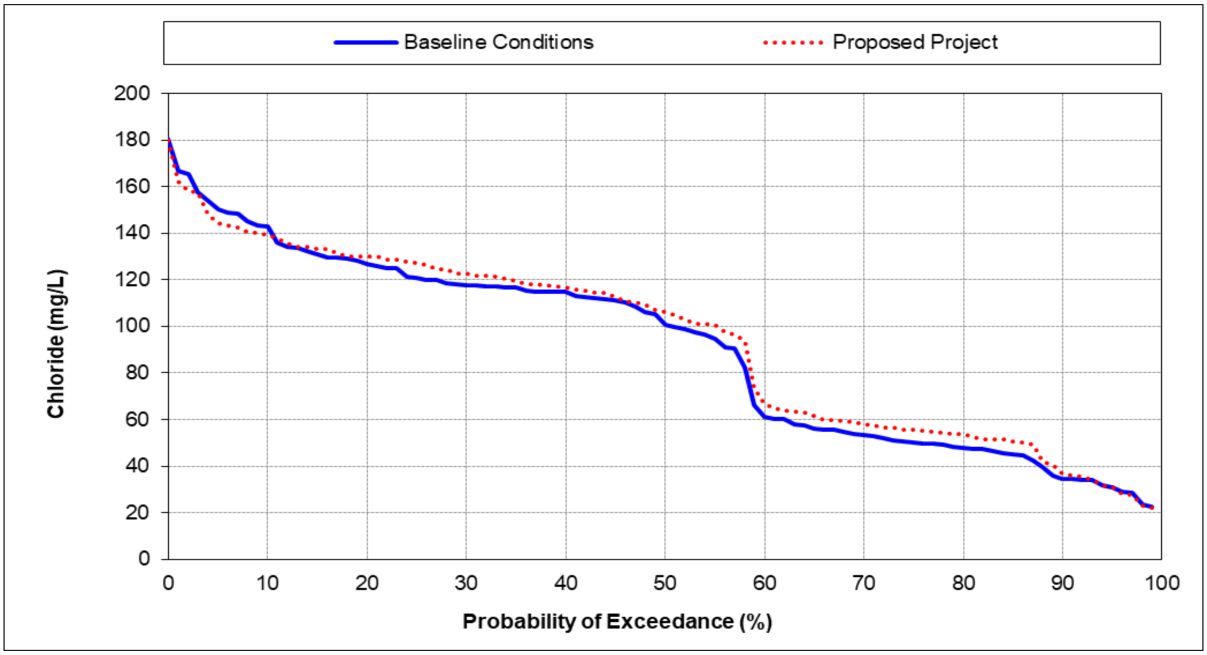

Figure 5A-4o. Jones Pumping Plant, Monthly Average Chloride (in milligrams per liter), September

Figure 5A-4o shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in September. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions with a slight increase from about 45% to 55% exceedance.

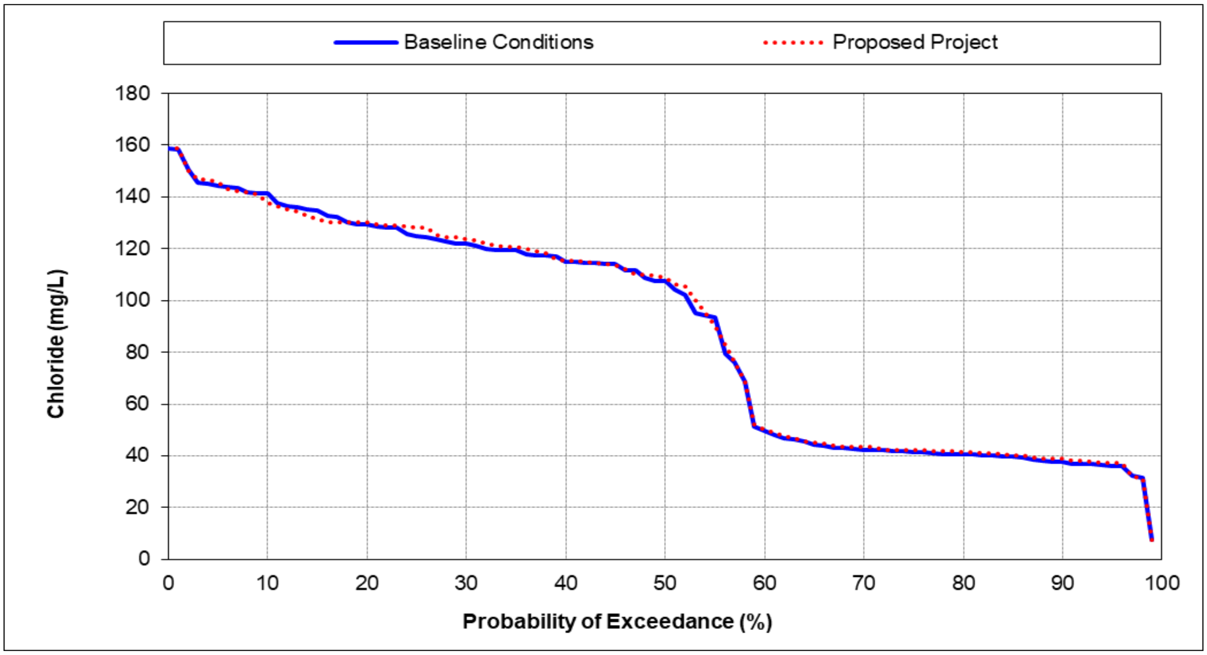

Figure 5A-4p. Jones Pumping Plant, Monthly Average Chloride (in milligrams per liter), October

Figure 5A-4p shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in October. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

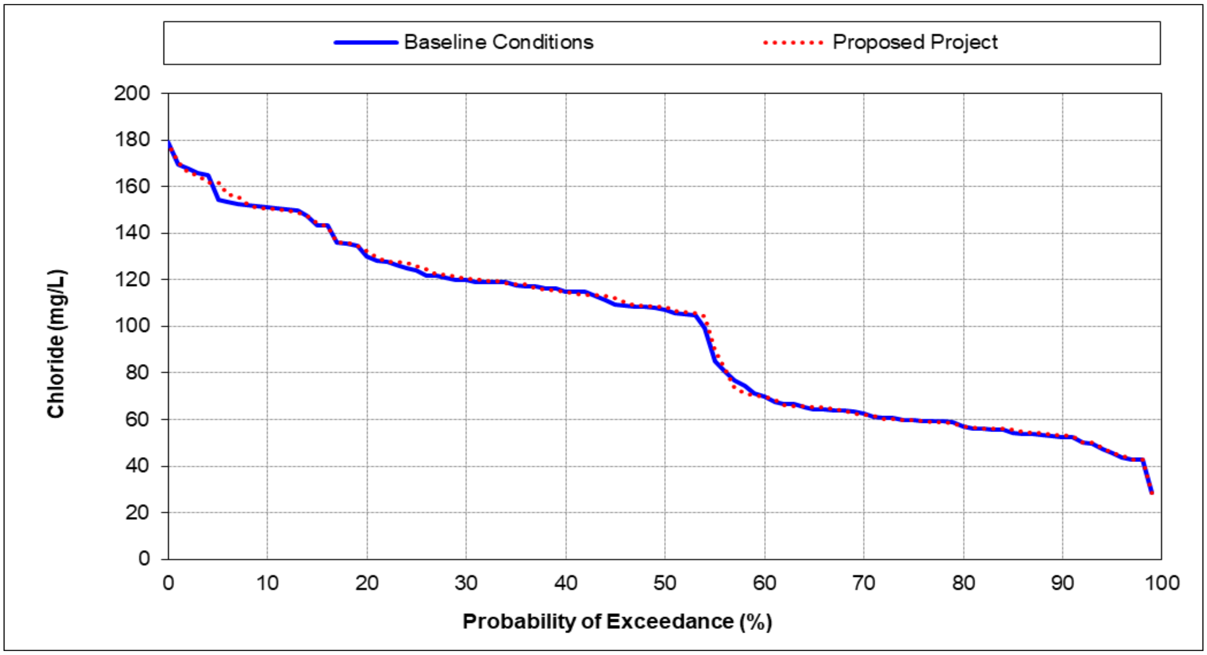

Figure 5A-4q. Jones Pumping Plant, Monthly Average Chloride (in milligrams per liter), November

Figure 5A-4q shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in November. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

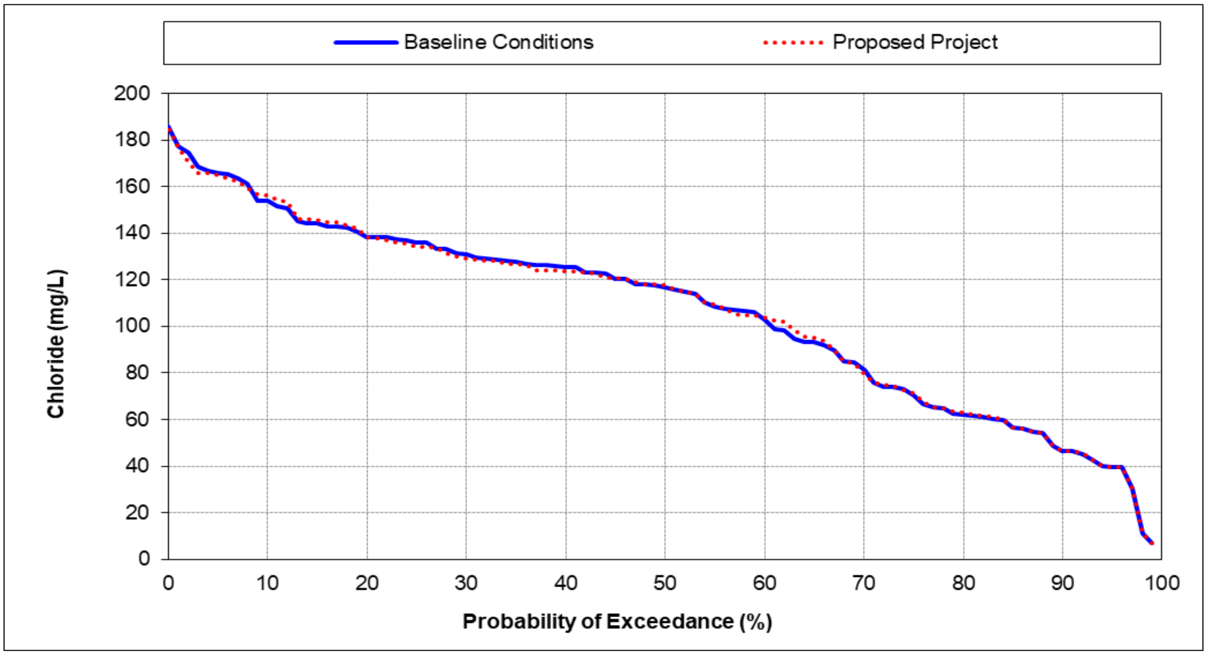

Figure 5A-4r. Jones Pumping Plant, Monthly Average Chloride (in milligrams per liter), December

Figure 5A-4r shows the average chloride concentrations, from 0 mg/L to 35 mg/L, from Jones Pumping Plant under the Proposed Project compared to the CalSim 3 100-year model in December. The probability of exceedance ranges from 0% (left) to 100% (right). The line graph shows that the Proposed Project would generally follow the same curvature of the chloride concentrations under the Baseline Conditions.

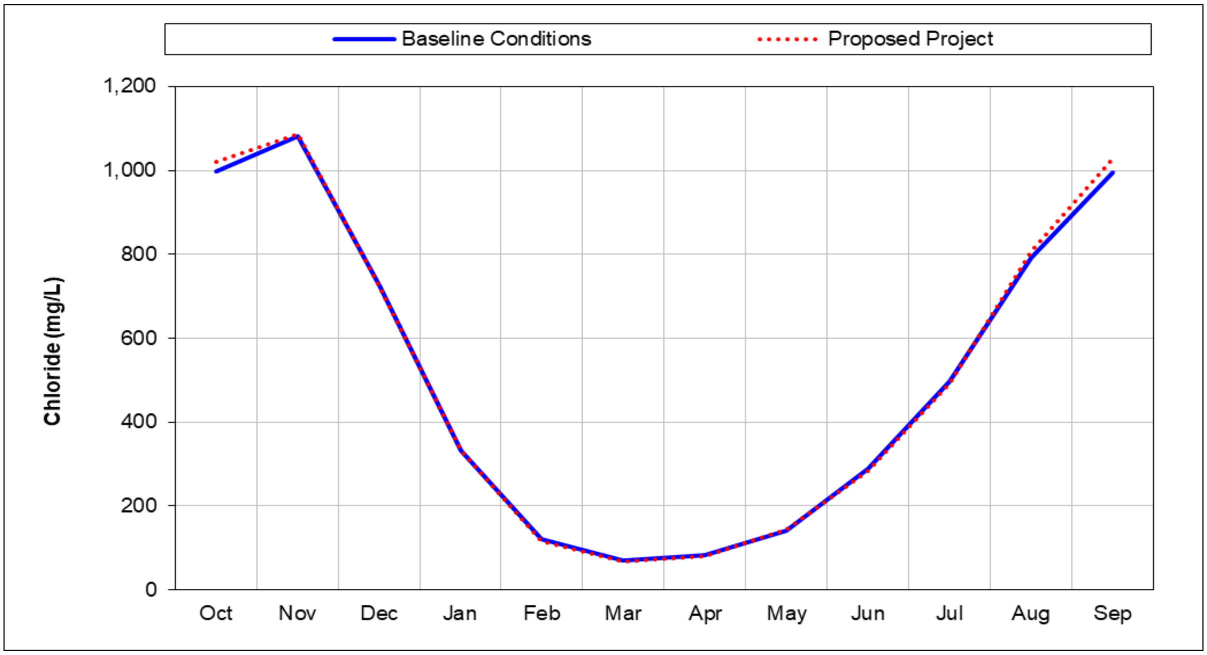

Figure 5A-5a. San Joaquin River at Antioch, Long term Monthly Average Chloride (in milligrams per liter)

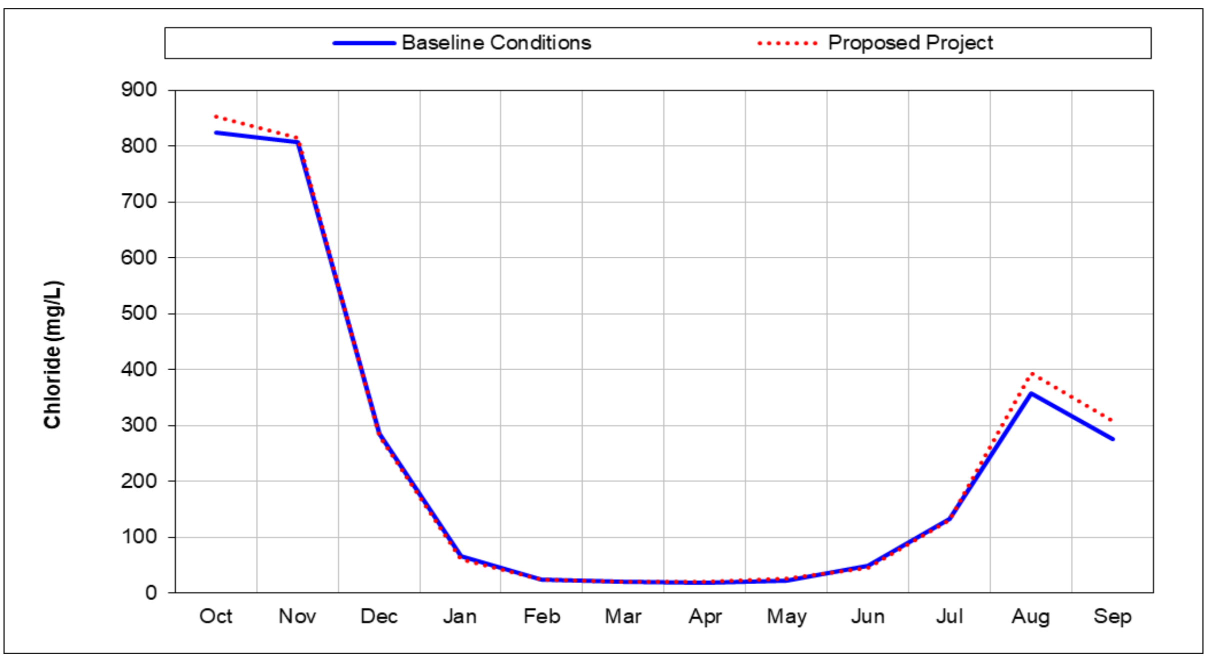

Figure 5A-5b. San Joaquin River at Antioch, Wet Year Monthly Average Chloride (in milligrams per liter)

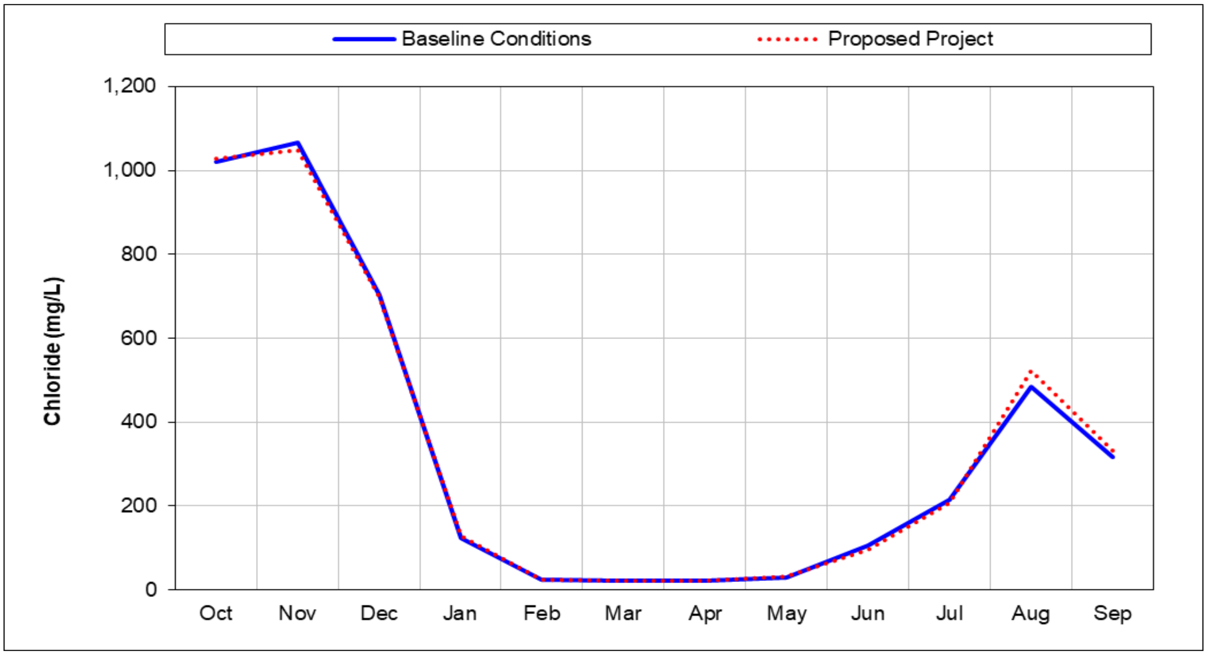

Figure 5A-5c. San Joaquin River at Antioch, Above Normal Year Monthly Average Chloride (in milligrams per liter)

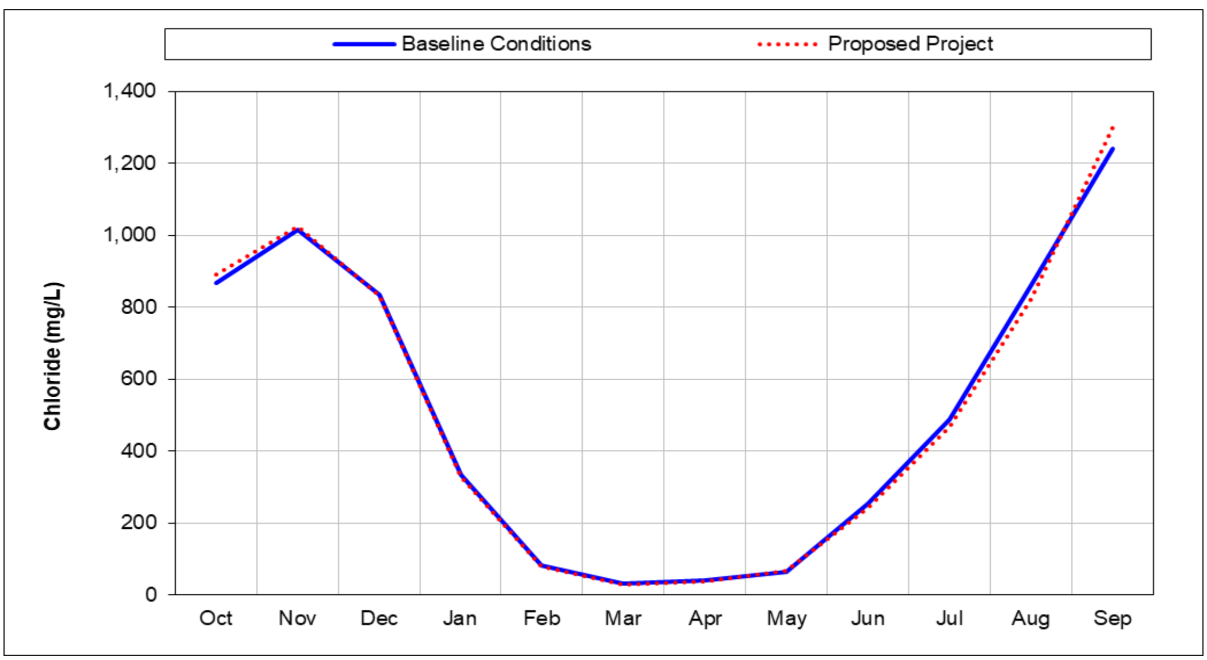

Figure 5A-5d. San Joaquin River at Antioch, Below Normal Year Monthly Average Chloride (in milligrams per liter)

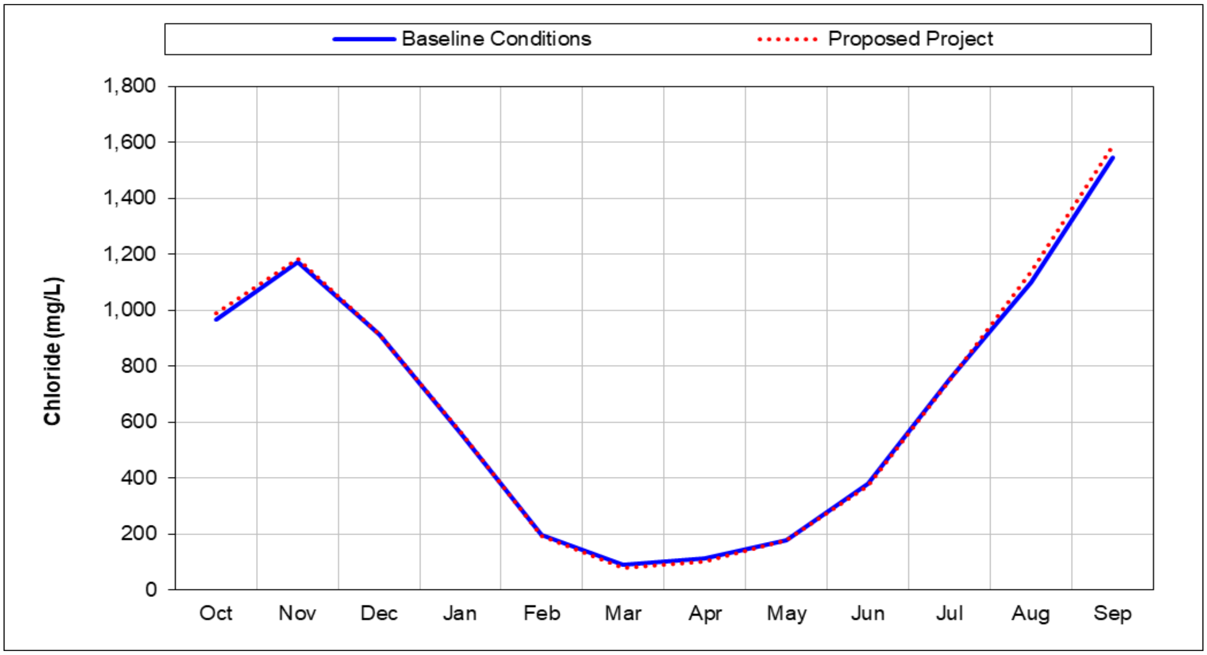

Figure 5A-5e. San Joaquin River at Antioch, Dry Year Monthly Average Chloride (in milligrams per liter)

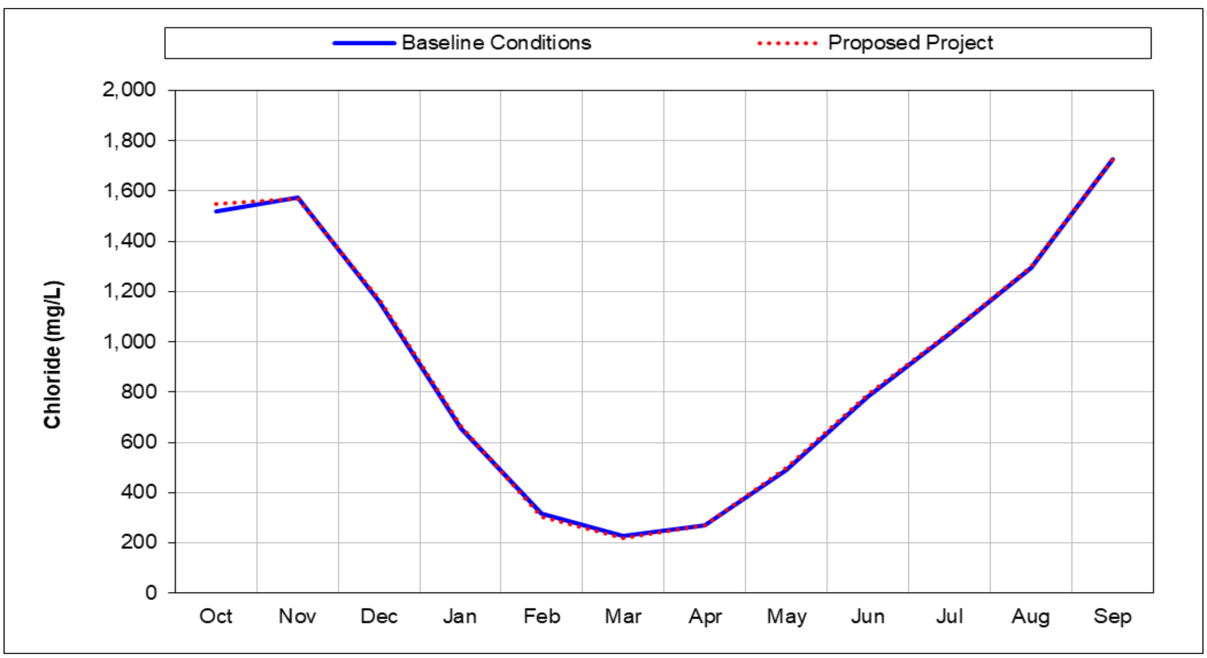

Figure 5A-5f. San Joaquin River at Antioch, Critical Year Monthly Average Chloride (in milligrams per liter)

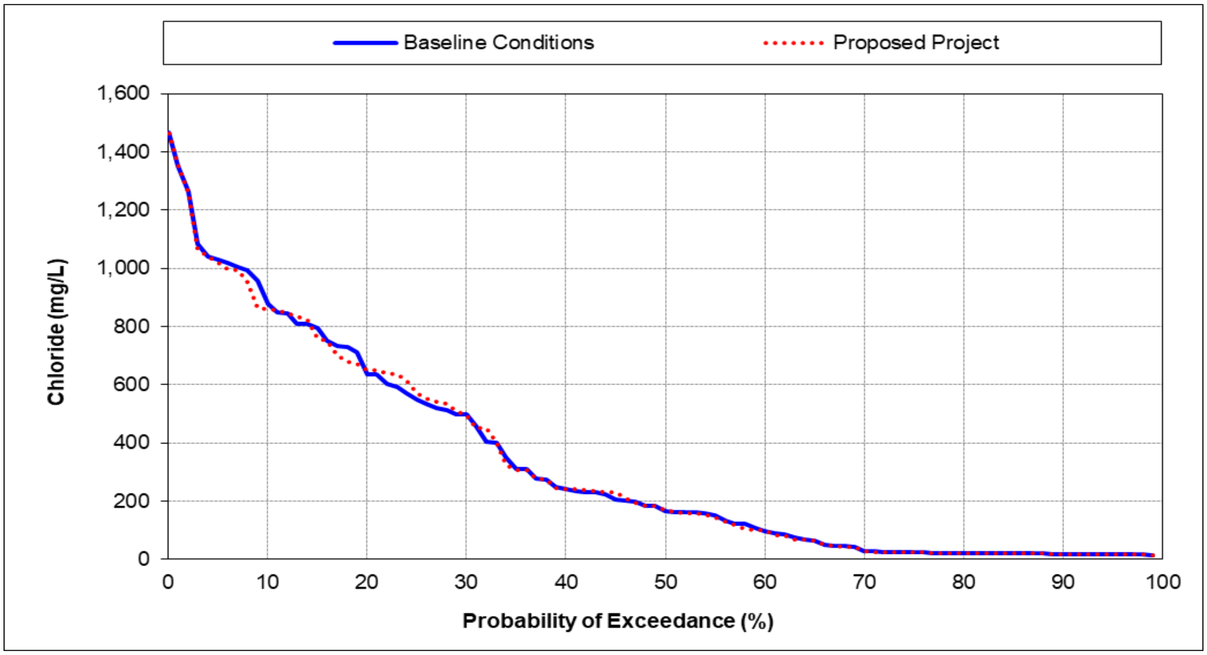

Figure 5A-5g. San Joaquin River at Antioch, Monthly Average Chloride (in milligrams per liter), January

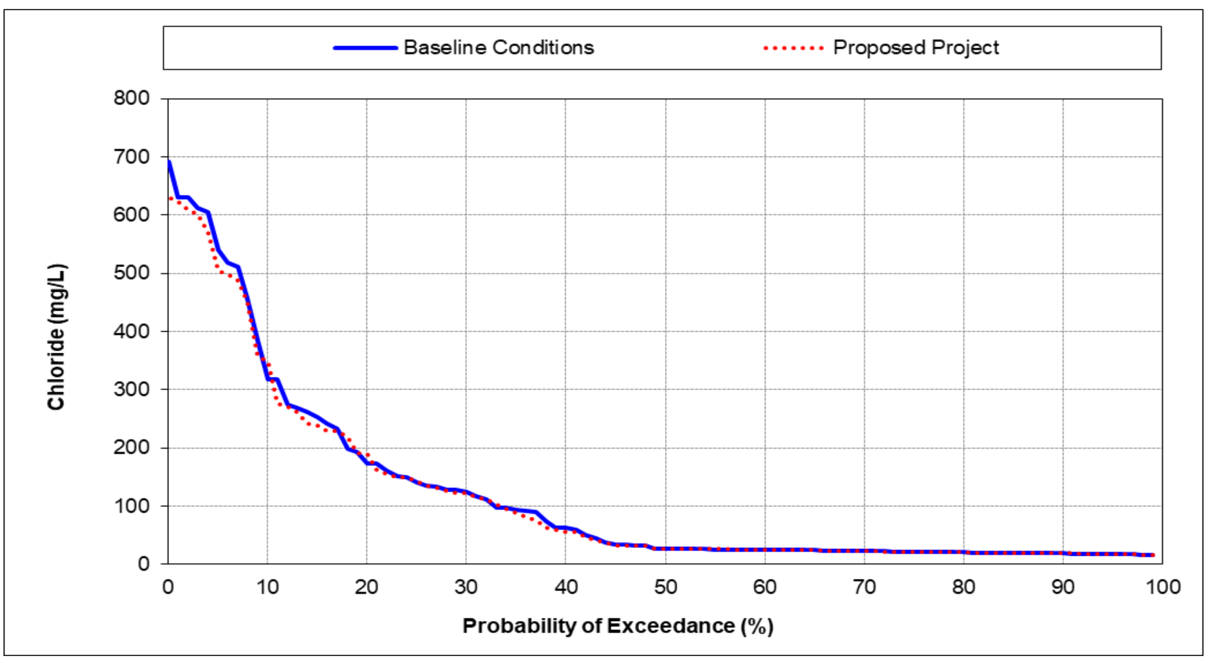

Figure 5A-5h. San Joaquin River at Antioch, Monthly Average Chloride (in milligrams per liter), February

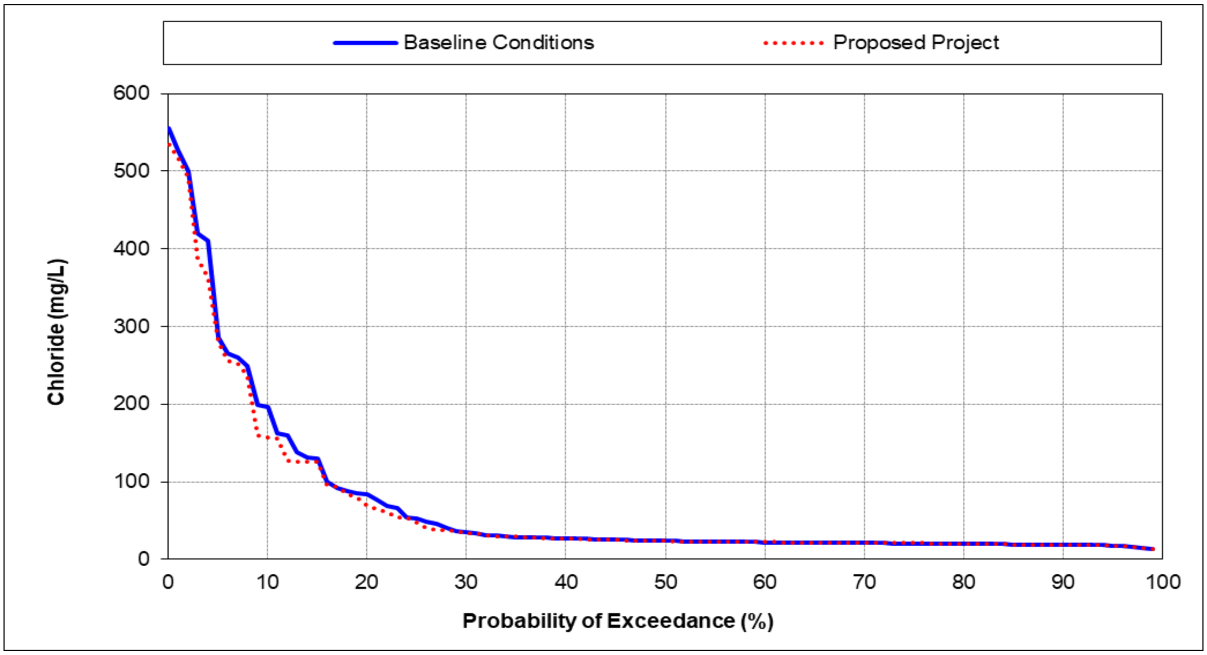

Figure 5A-5i. San Joaquin River at Antioch, Monthly Average Chloride (in milligrams per liter), March

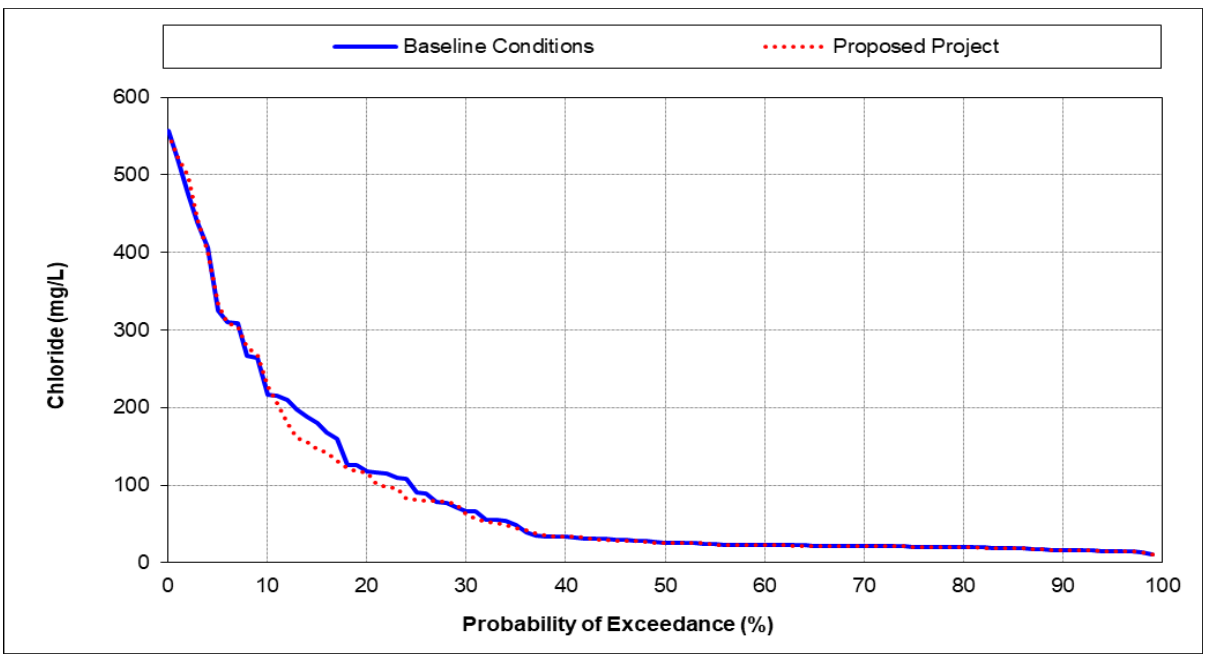

Figure 5A-5j. San Joaquin River at Antioch, Monthly Average Chloride (in milligrams per liter), April

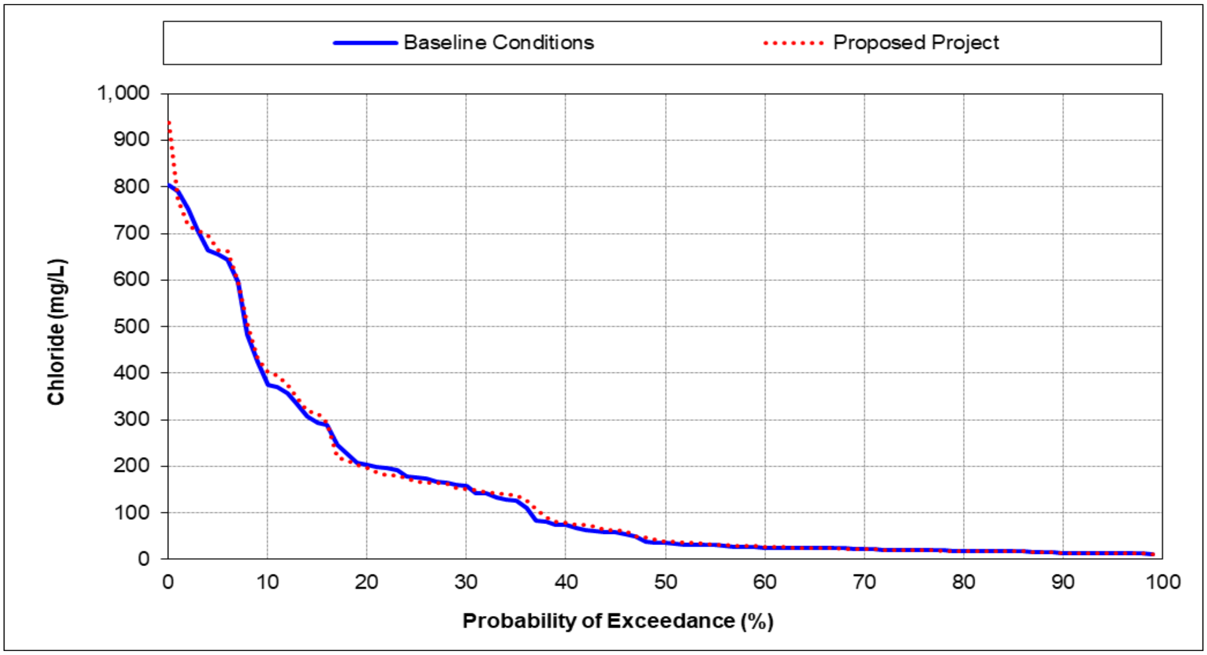

Figure 5A-5k. San Joaquin River at Antioch, Monthly Average Chloride (in milligrams per liter), May

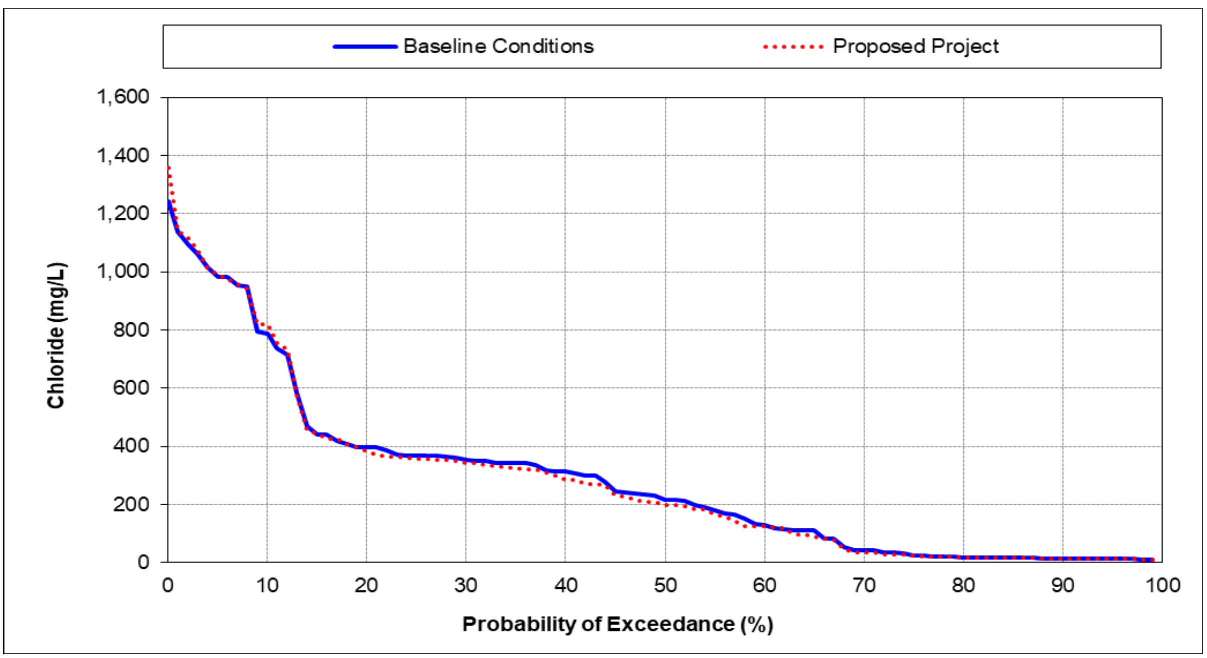

Figure 5A-5l. San Joaquin River at Antioch, Monthly Average Chloride (in milligrams per liter), June

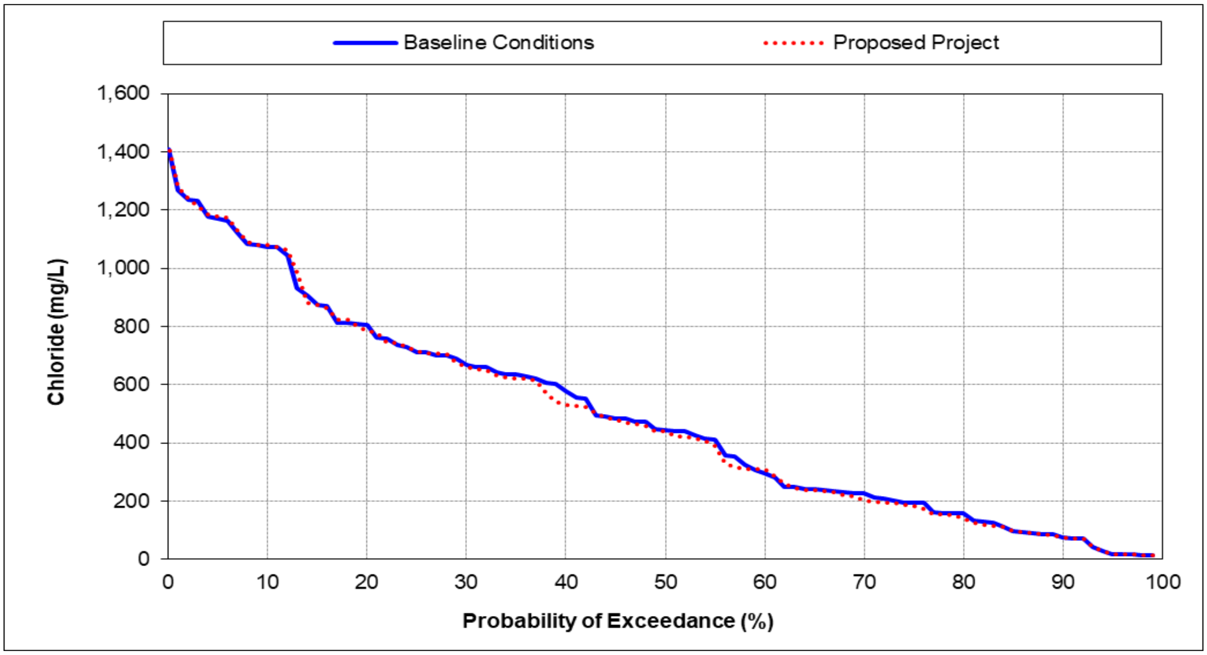

Figure 5A-5m. San Joaquin River at Antioch, Monthly Average Chloride (in milligrams per liter), July

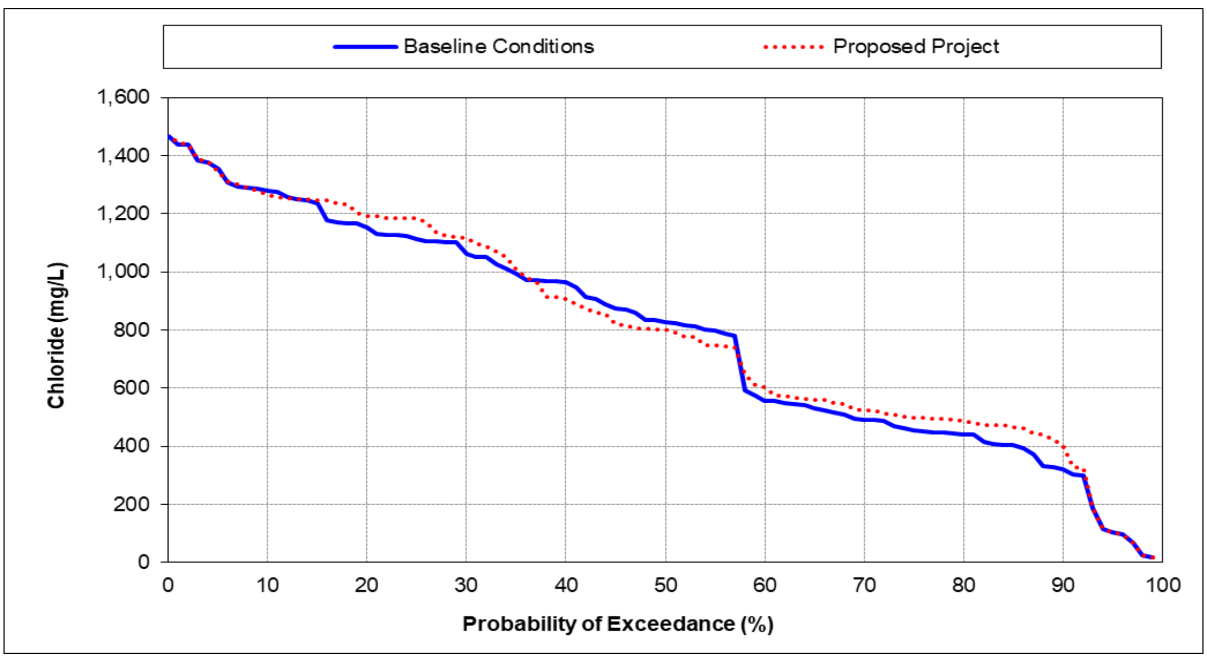

Figure 5A-5n. San Joaquin River at Antioch, Monthly Average Chloride (in milligrams per liter), August

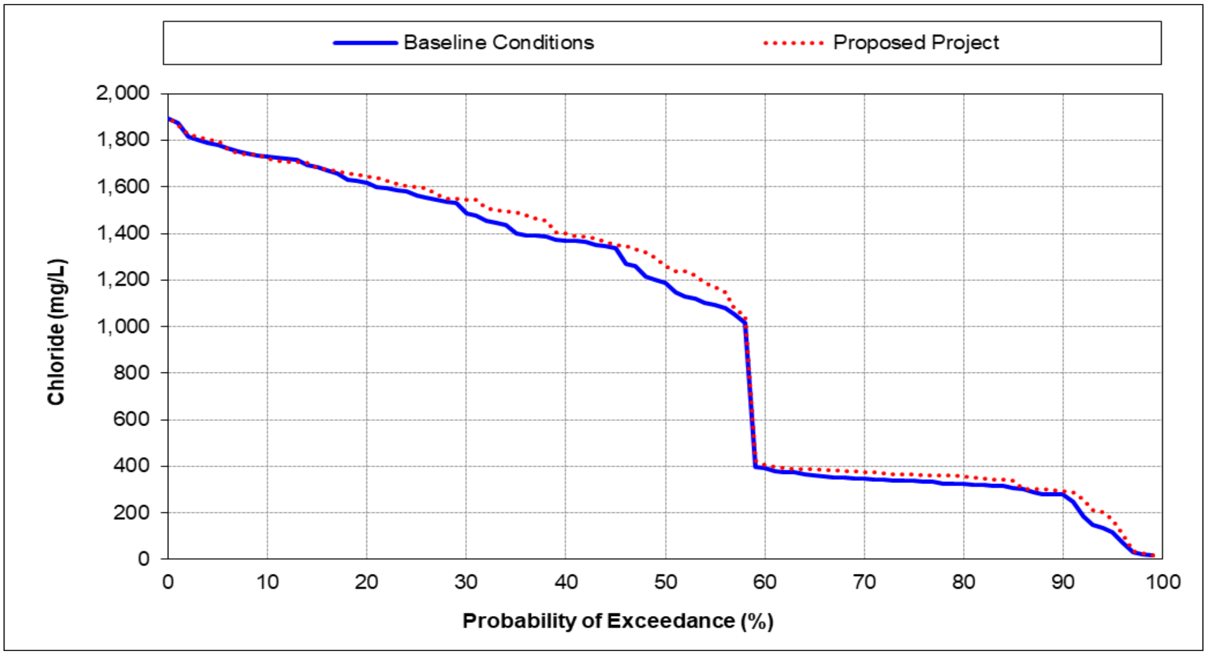

Figure 5A-5o. San Joaquin River at Antioch, Monthly Average Chloride (in milligrams per liter), September

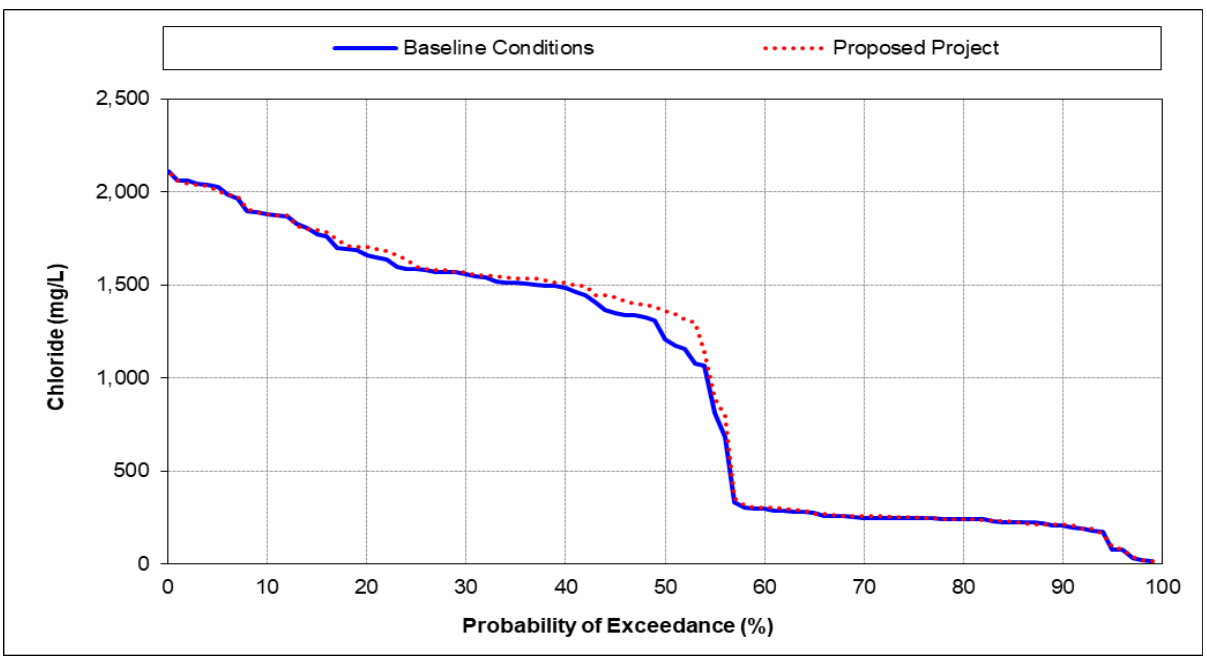

Figure 5A-5p. San Joaquin River at Antioch, Monthly Average Chloride (in milligrams per liter), October

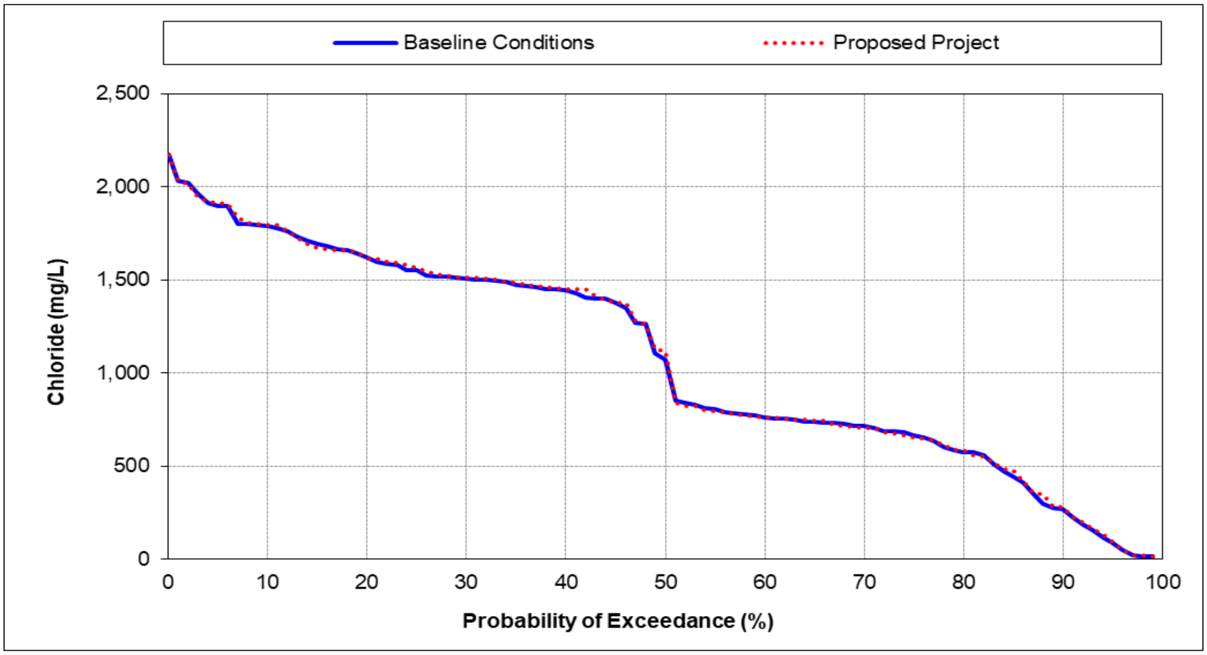

Figure 5A-5q. San Joaquin River at Antioch, Monthly Average Chloride (in milligrams per liter), November

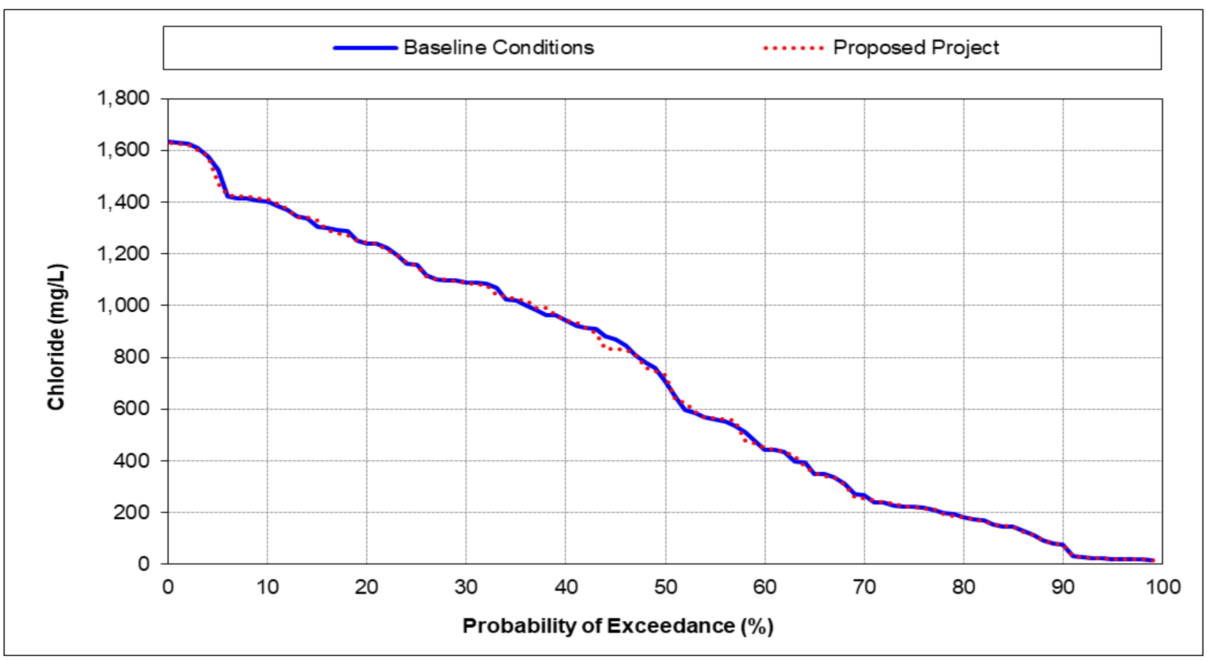

Figure 5A-5r. San Joaquin River at Antioch, Monthly Average Chloride (in milligrams per liter), December

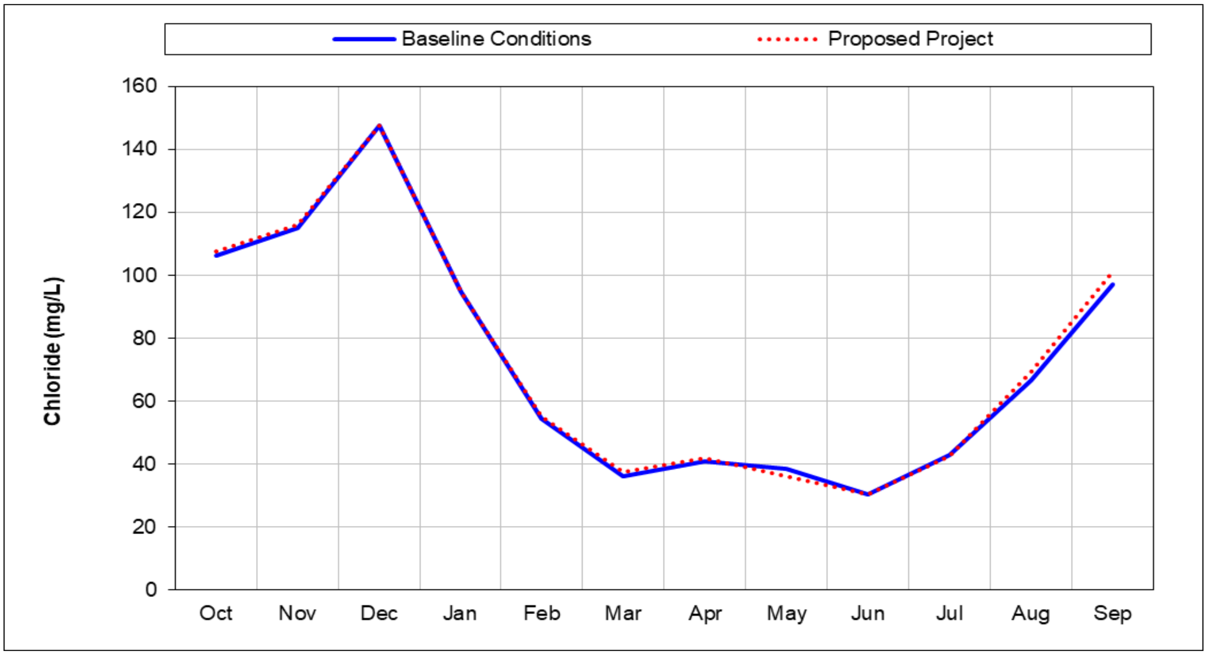

Figure 5A-6a. Contra Costa Water District Pumping Plant #1, Long term Monthly Average Chloride (in milligrams per liter)

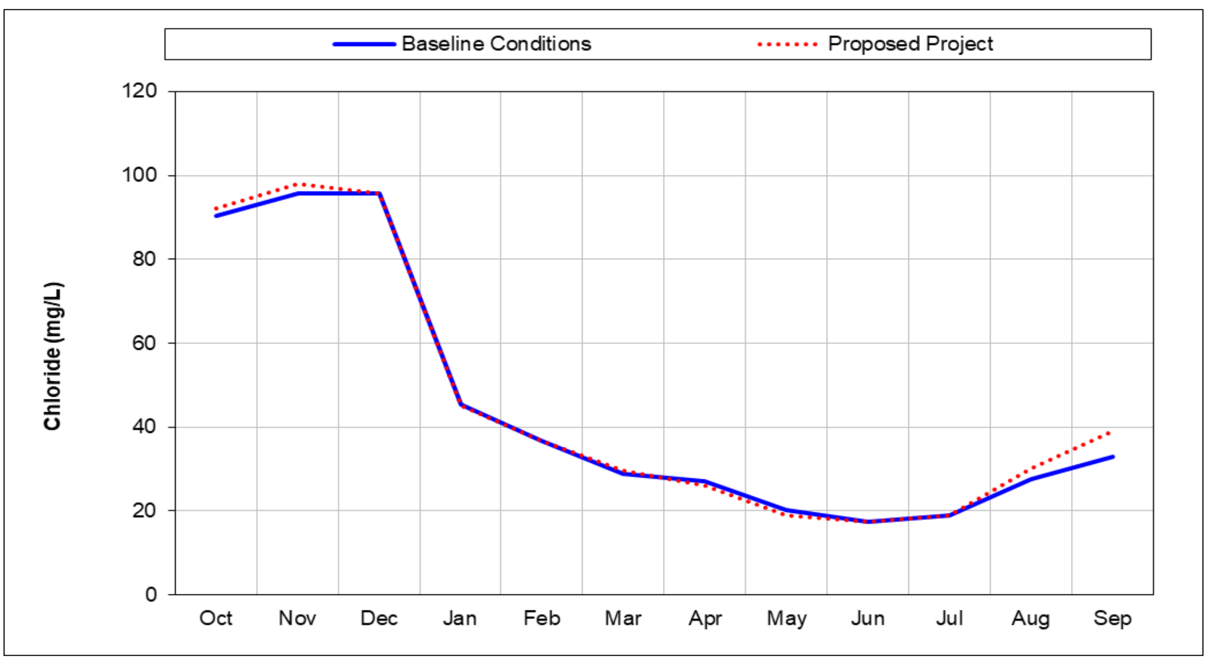

Figure 5A-6b. Contra Costa Water District Pumping Plant #1, Wet Year Monthly Average Chloride (in milligrams per liter)

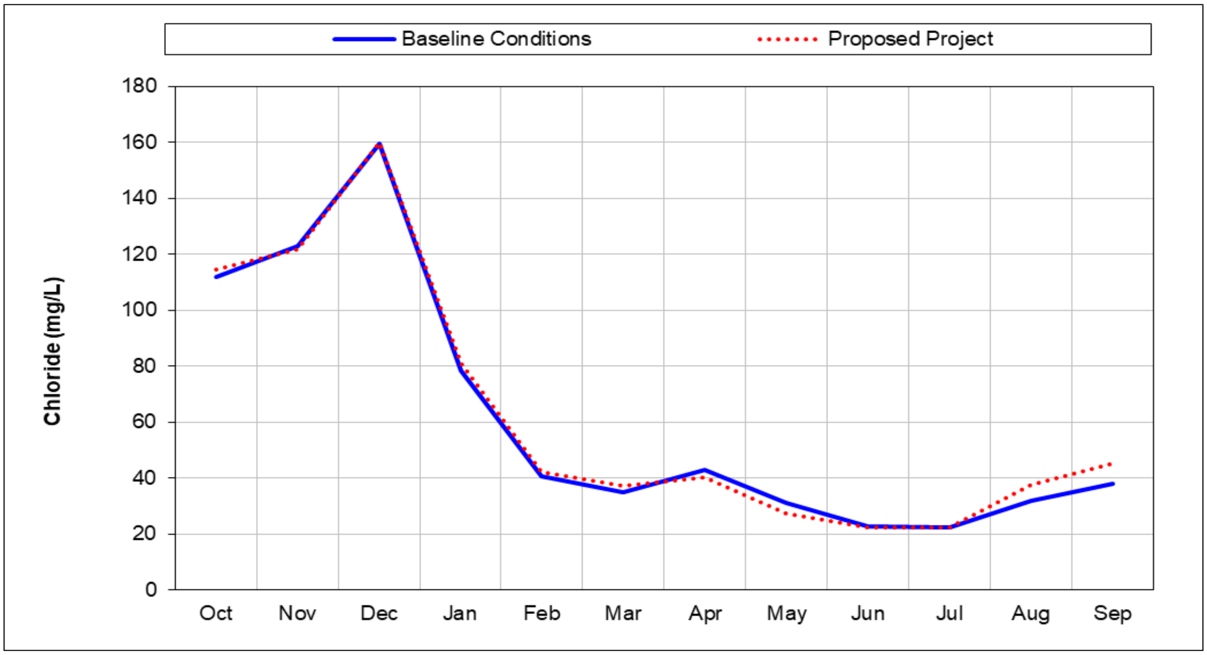

Figure 5A-6c. Contra Costa Water District Pumping Plant #1, Above Normal Year Monthly Average Chloride (in milligrams per liter)

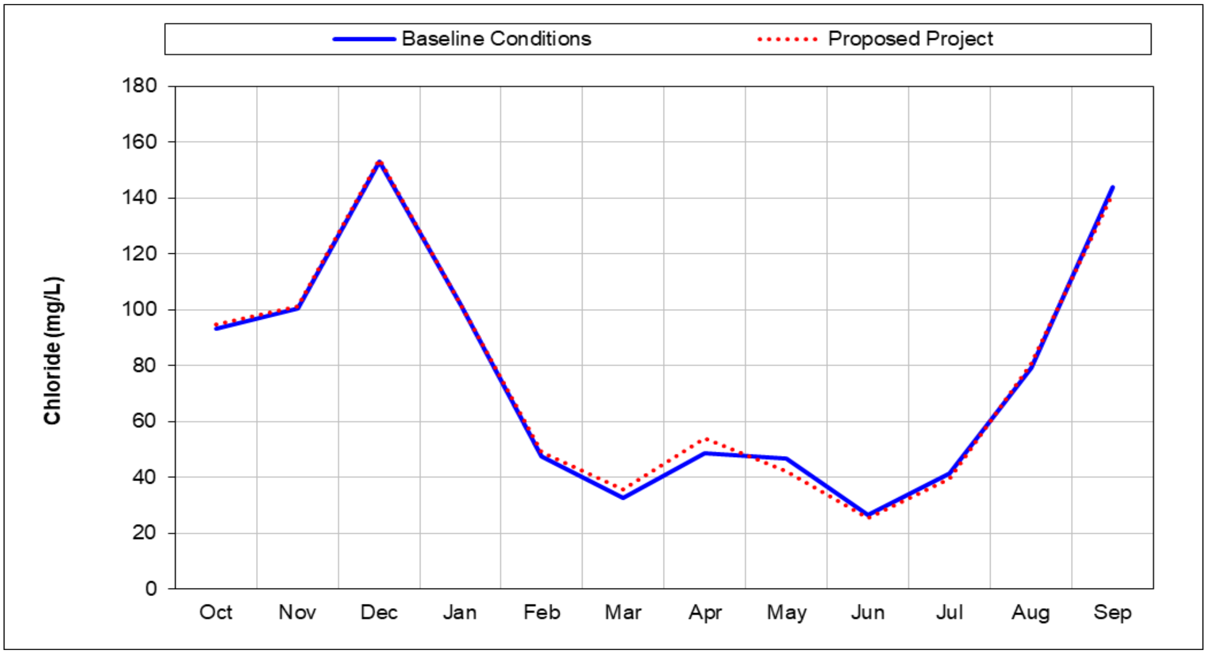

Figure 5A-6d. Contra Costa Water District Pumping Plant #1, Below Normal Year Monthly Average Chloride (in milligrams per liter)

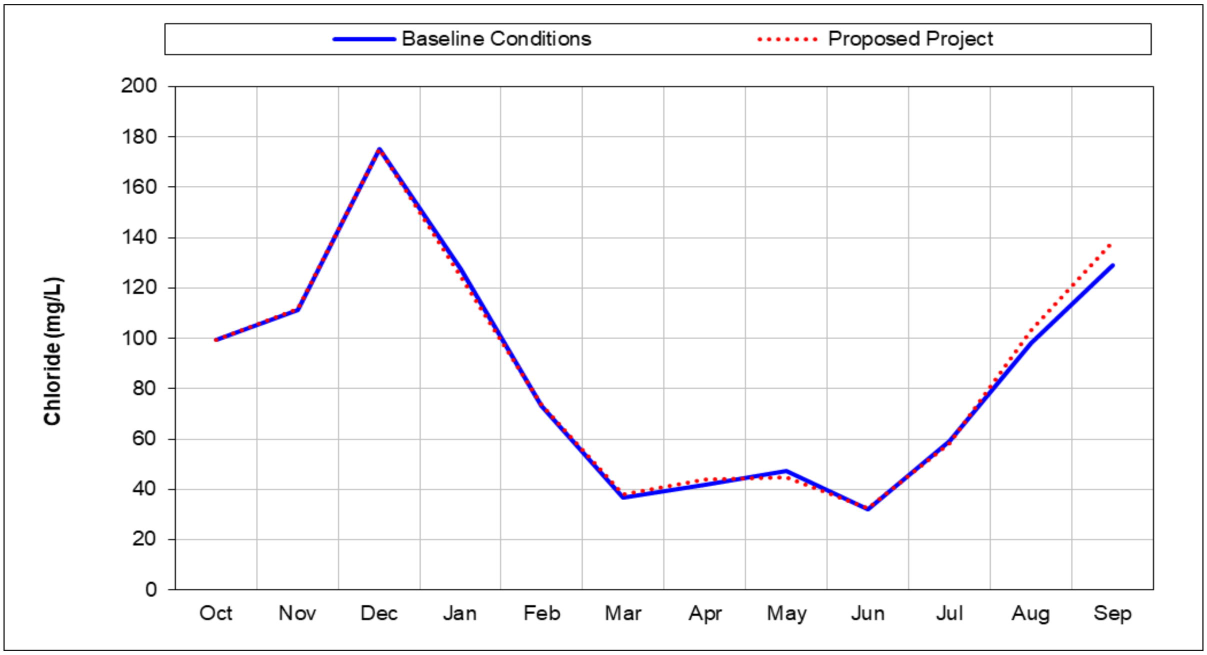

Figure 5A-6e. Contra Costa Water District Pumping Plant #1, Dry Year Monthly Average Chloride (in milligrams per liter)

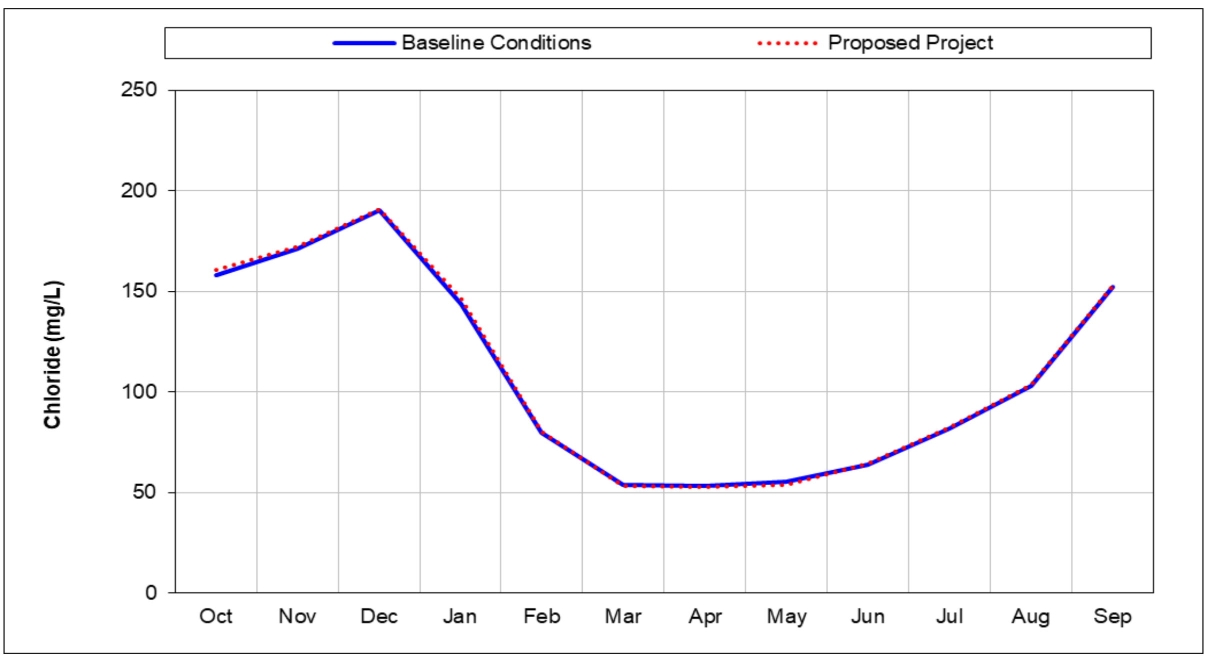

Figure 5A-6f. Contra Costa Water District Pumping Plant #1, Critical Year Monthly Average Chloride (in milligrams per liter)

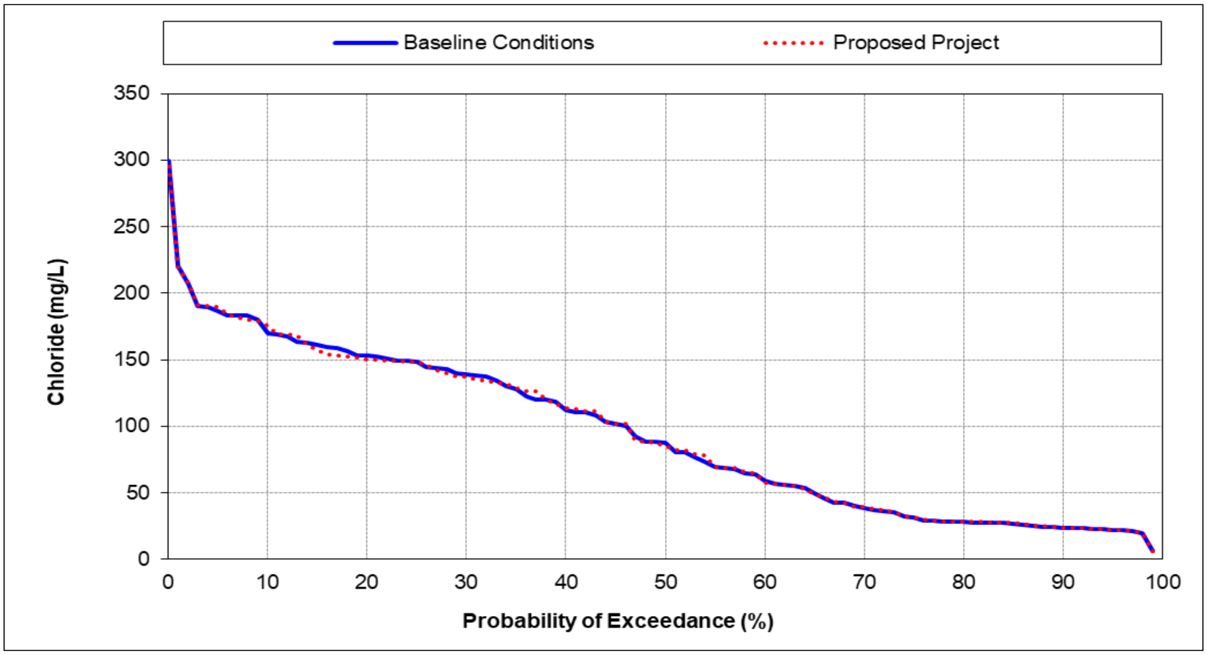

Figure 5A-6g. Contra Costa Water District Pumping Plant #1, Monthly Average Chloride (in milligrams per liter), January

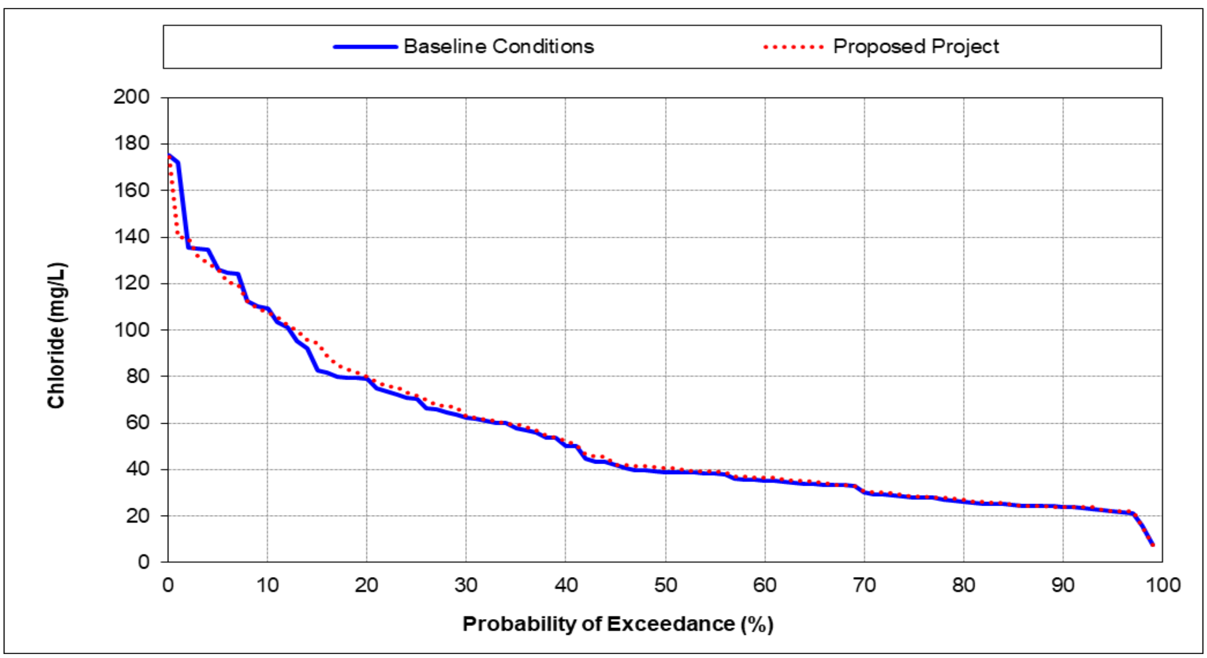

Figure 5A-6h. Contra Costa Water District Pumping Plant #1, Monthly Average Chloride (in milligrams per liter), February

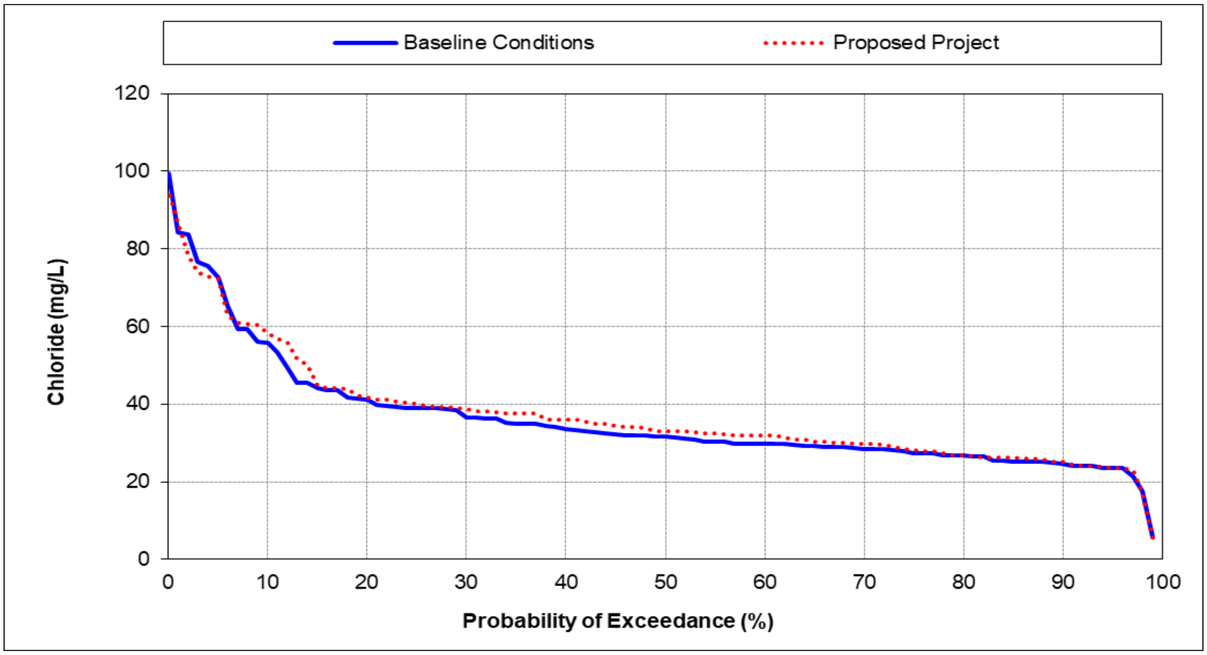

Figure 5A-6i. Contra Costa Water District Pumping Plant #1, Monthly Average Chloride (in milligrams per liter), March

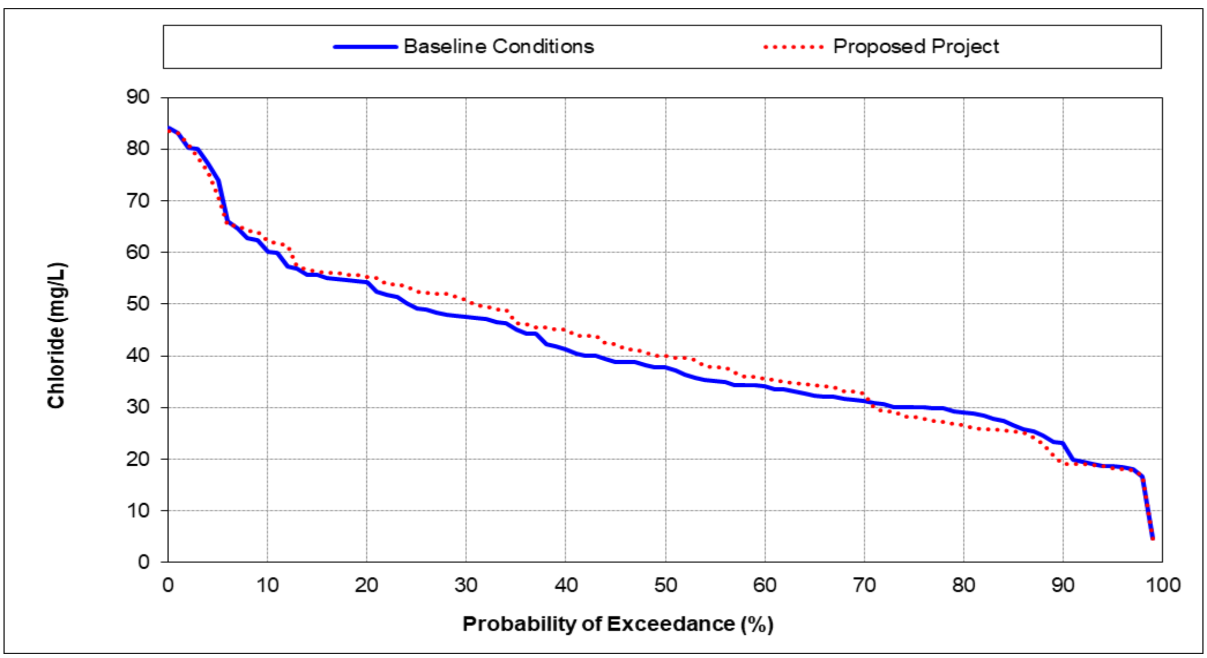

Figure 5A-6j. Contra Costa Water District Pumping Plant #1, Monthly Average Chloride (in milligrams per liter), April

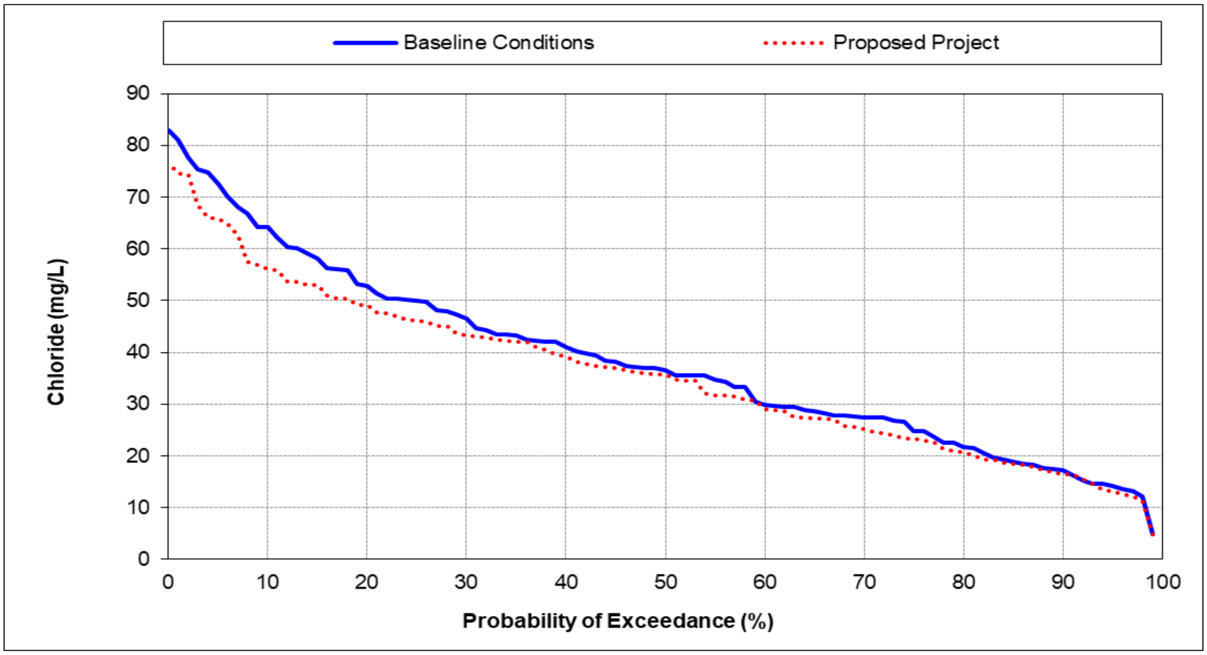

Figure 5A-6k. Contra Costa Water District Pumping Plant #1, Monthly Average Chloride (in milligrams per liter), May

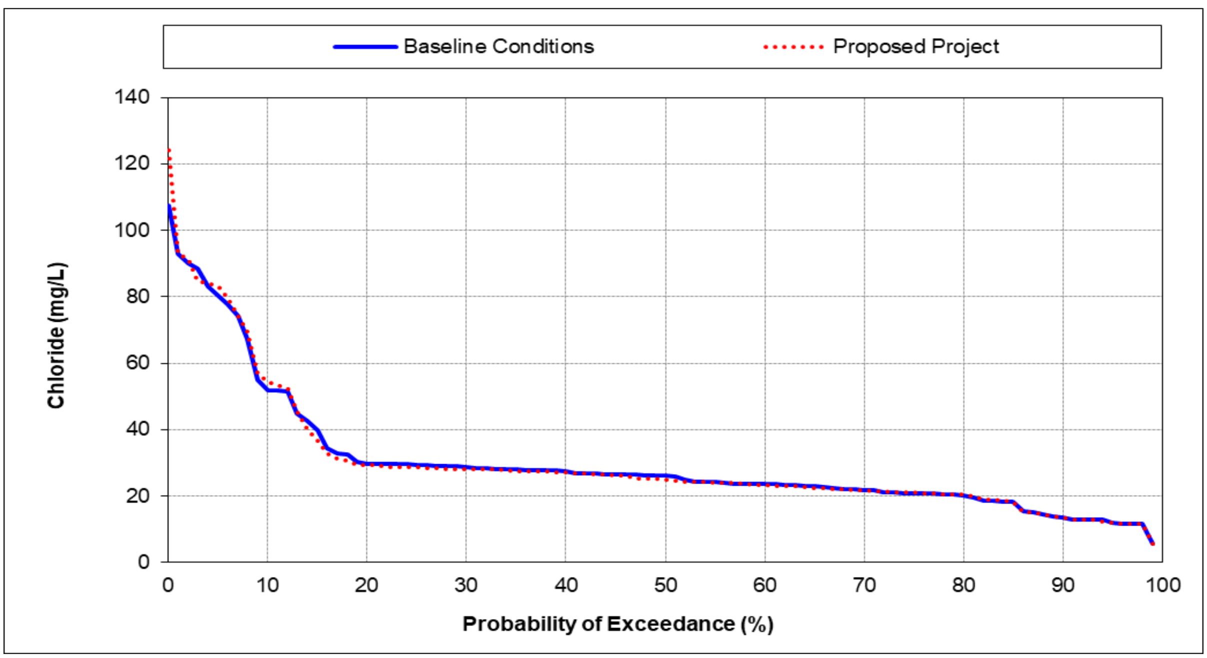

Figure 5A-6l. Contra Costa Water District Pumping Plant #1, Monthly Average Chloride (in milligrams per liter), June

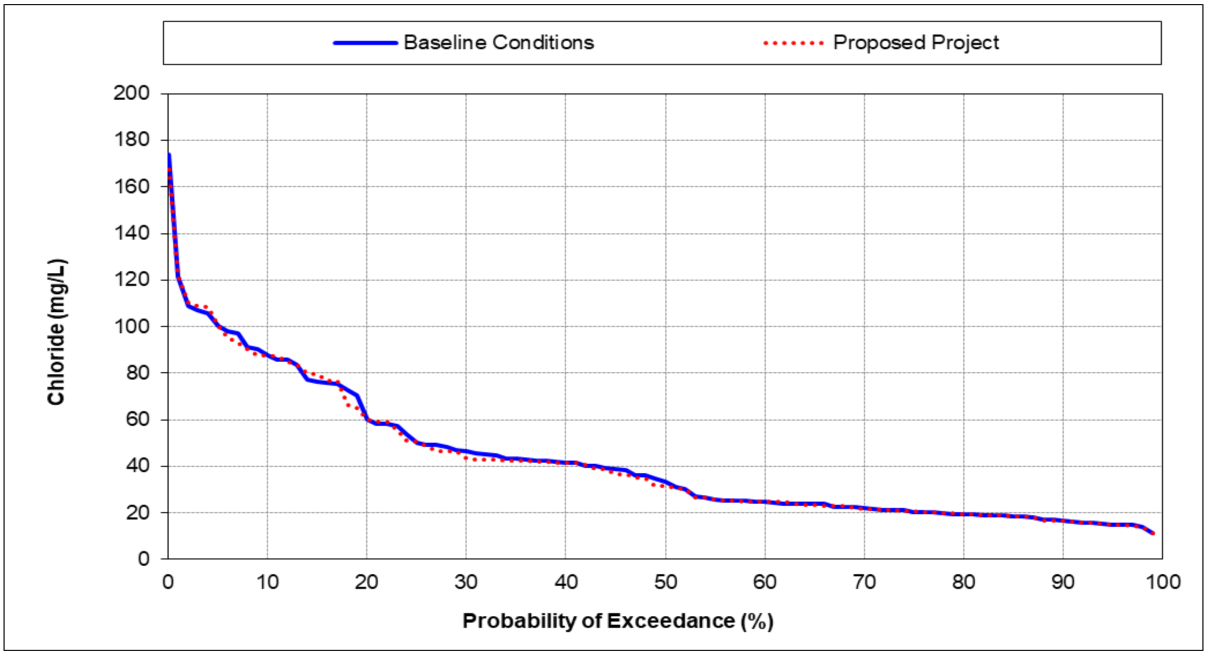

Figure 5A-6m. Contra Costa Water District Pumping Plant #1, Monthly Average Chloride (in milligrams per liter), July

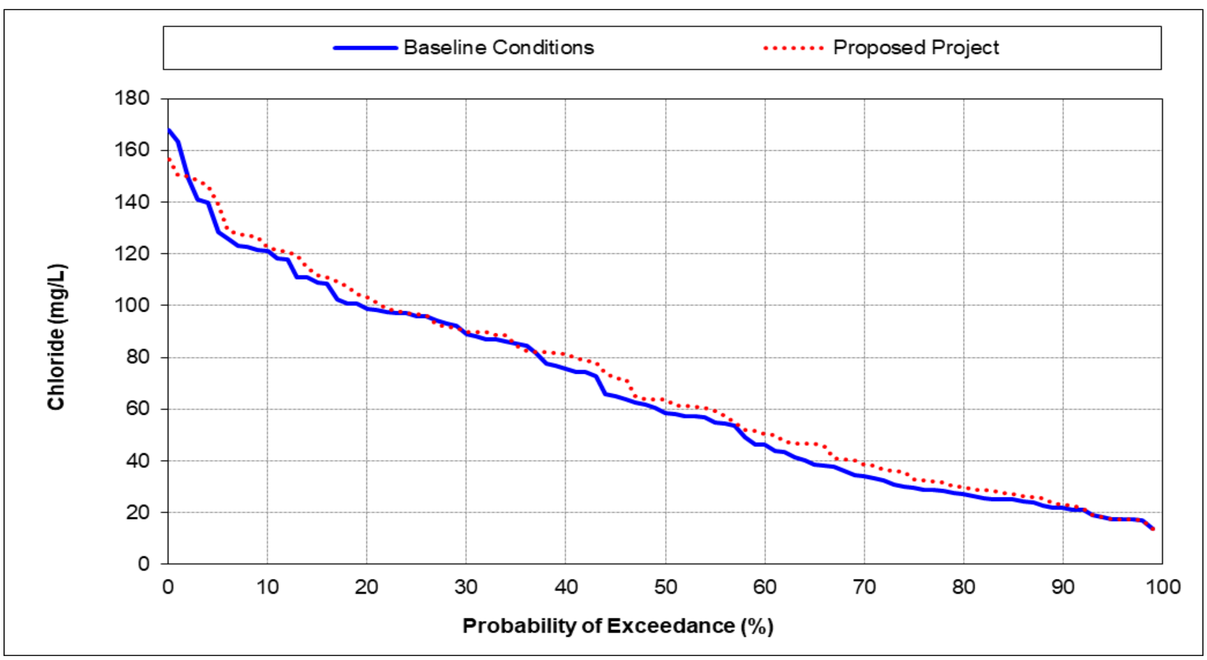

Figure 5A-6n. Contra Costa Water District Pumping Plant #1, Monthly Average Chloride (in milligrams per liter), August

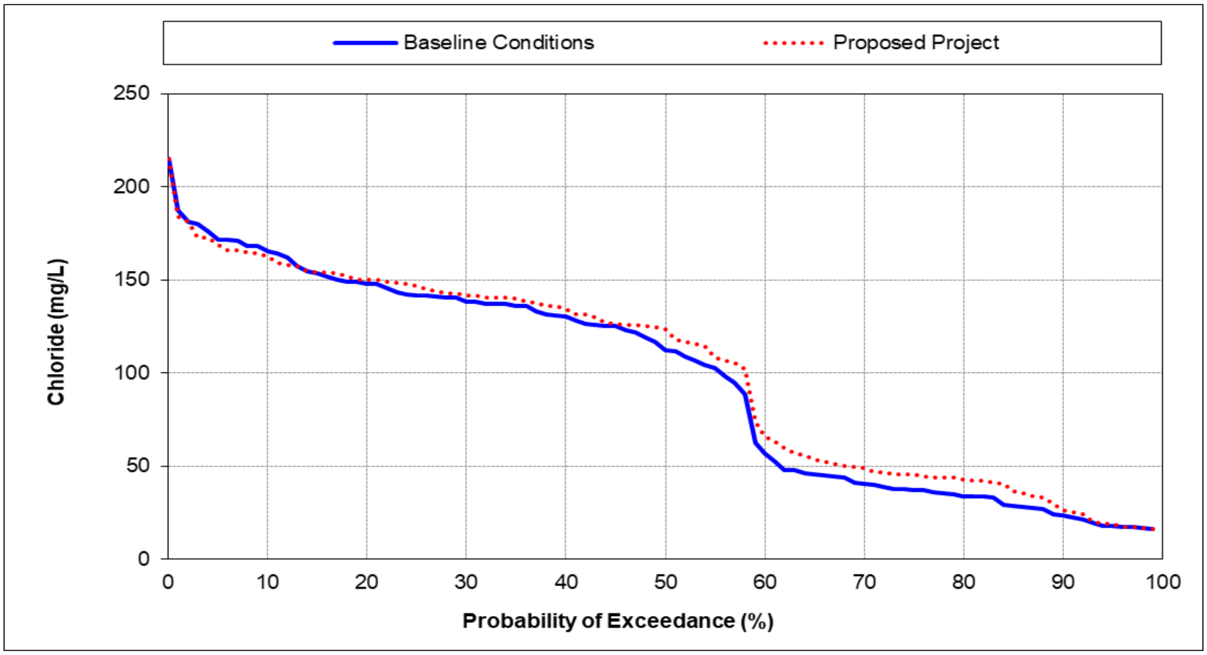

Figure 5A-6o. Contra Costa Water District Pumping Plant #1, Monthly Average Chloride (in milligrams per liter), September

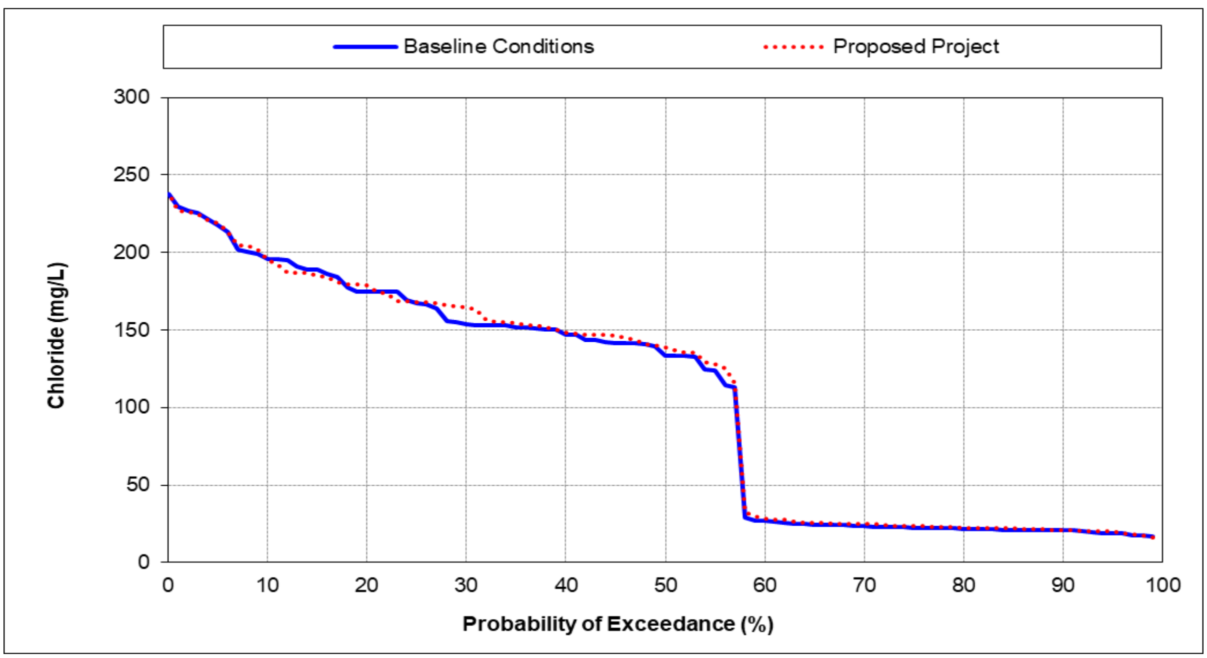

Figure 5A-6p. Contra Costa Water District Pumping Plant #1, Monthly Average Chloride (in milligrams per liter), October

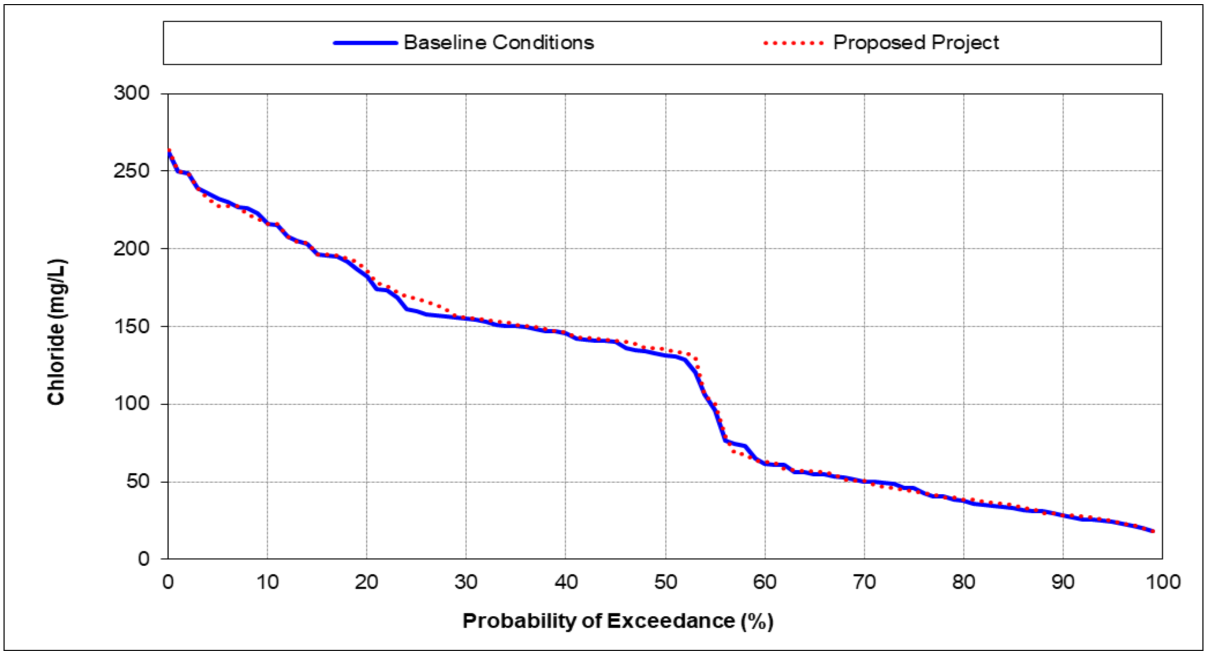

Figure 5A-6q. Contra Costa Water District Pumping Plant #1, Monthly Average Chloride (in milligrams per liter), November

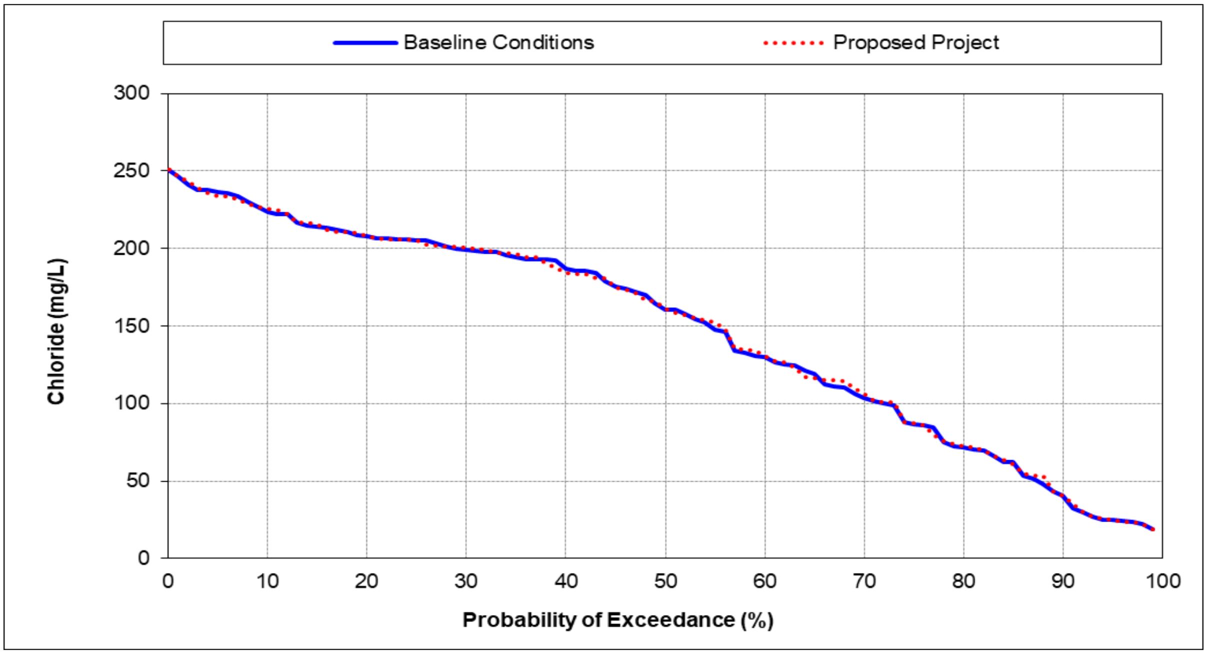

Figure 5A-6r. Contra Costa Water District Pumping Plant #1, Monthly Average Chloride (in milligrams per liter), December

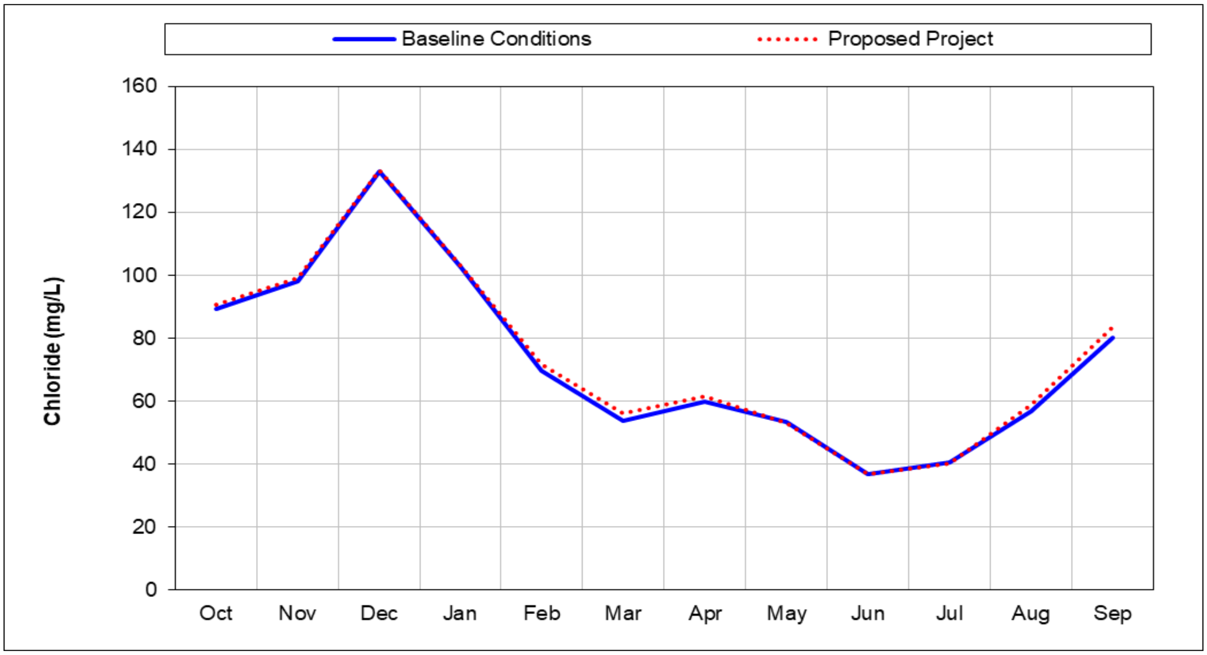

Figure 5A-7a. Old River at State Route 4, Long term Monthly Average Chloride (in milligrams per liter)

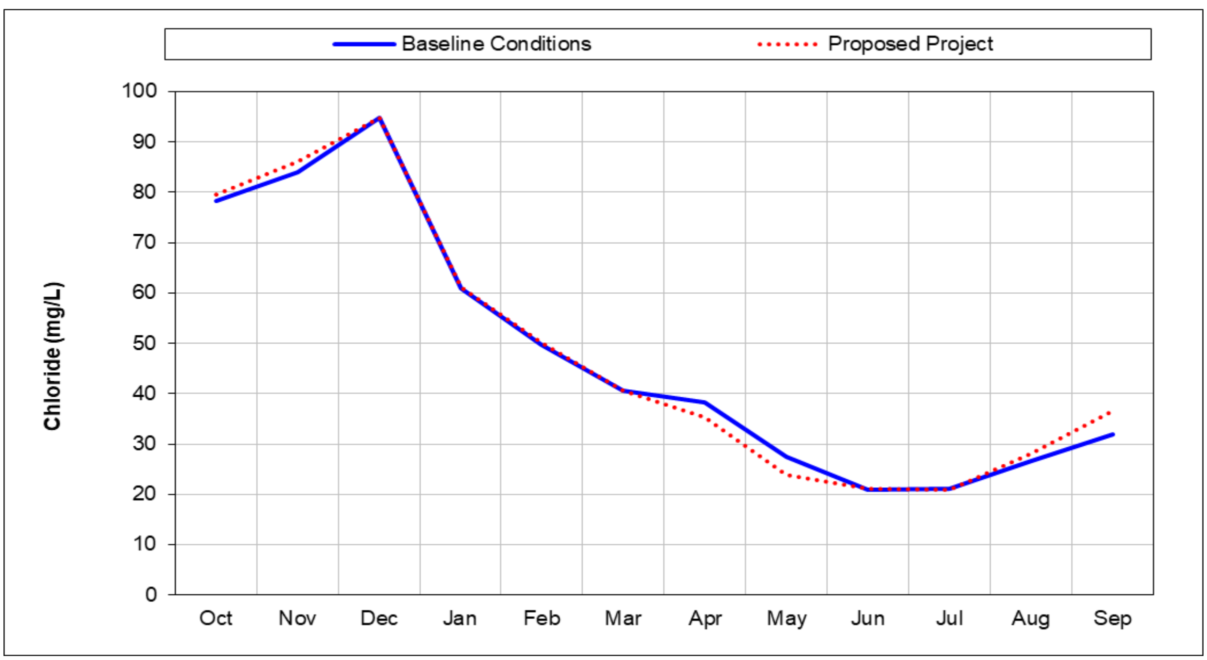

Figure 5A-7b. Old River at State Route 4, Wet Year Monthly Average Chloride (in milligrams per liter)

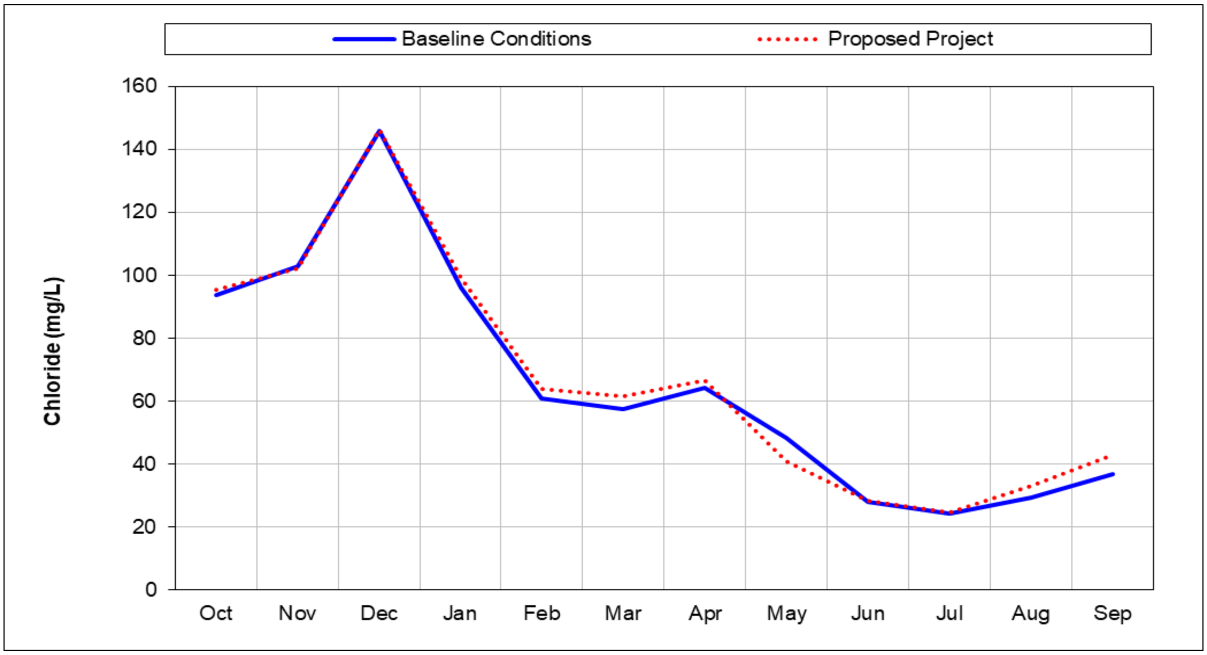

Figure 5A-7c. Old River at State Route 4, Above Normal Year Monthly Average Chloride (in milligrams per liter)

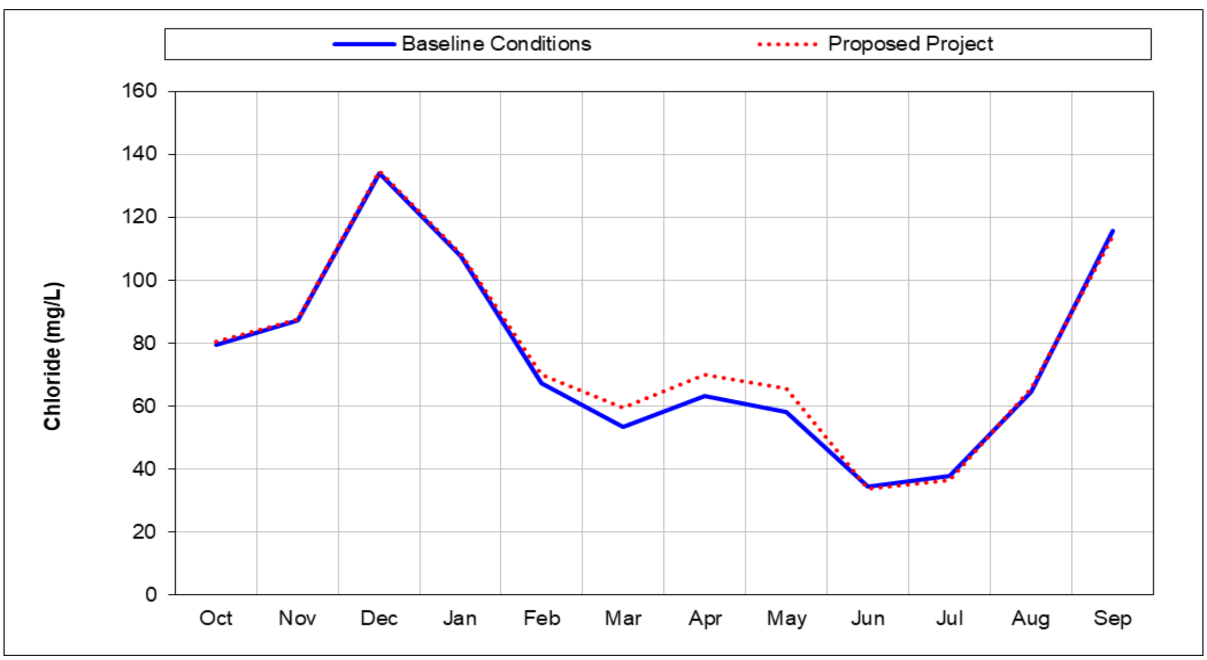

Figure 5A-7d. Old River at State Route 4, Below Normal Year Monthly Average Chloride (in milligrams per liter)

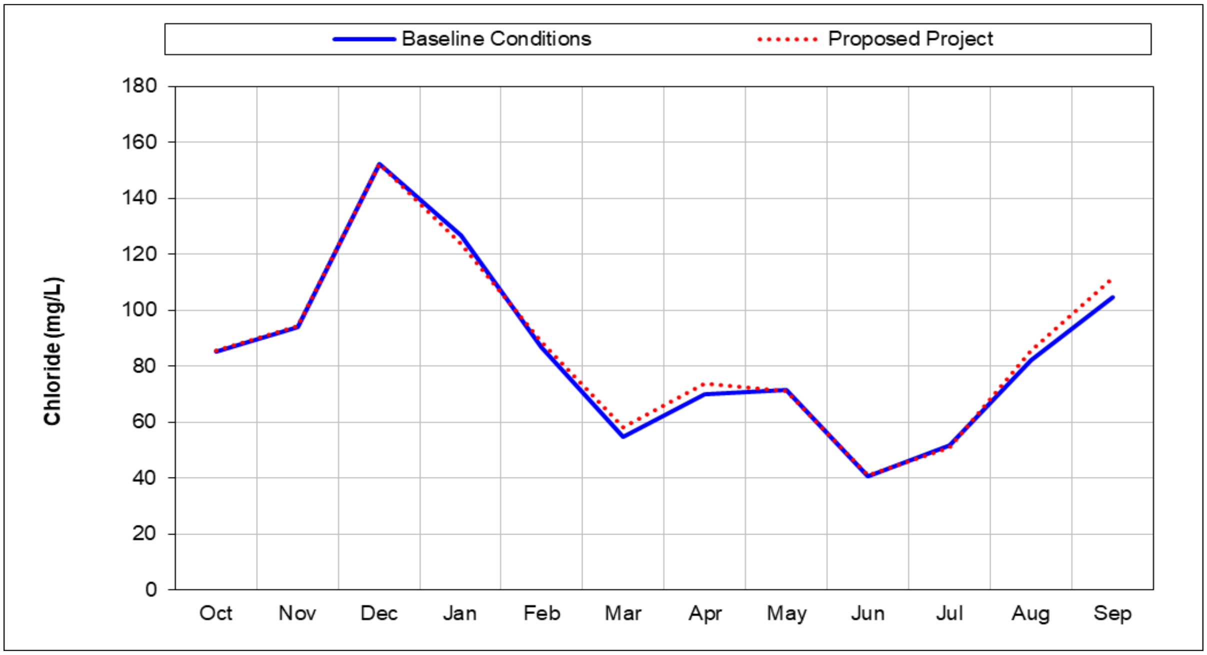

Figure 5A-7e. Old River at State Route 4, Dry Year Monthly Average Chloride (in milligrams per liter)

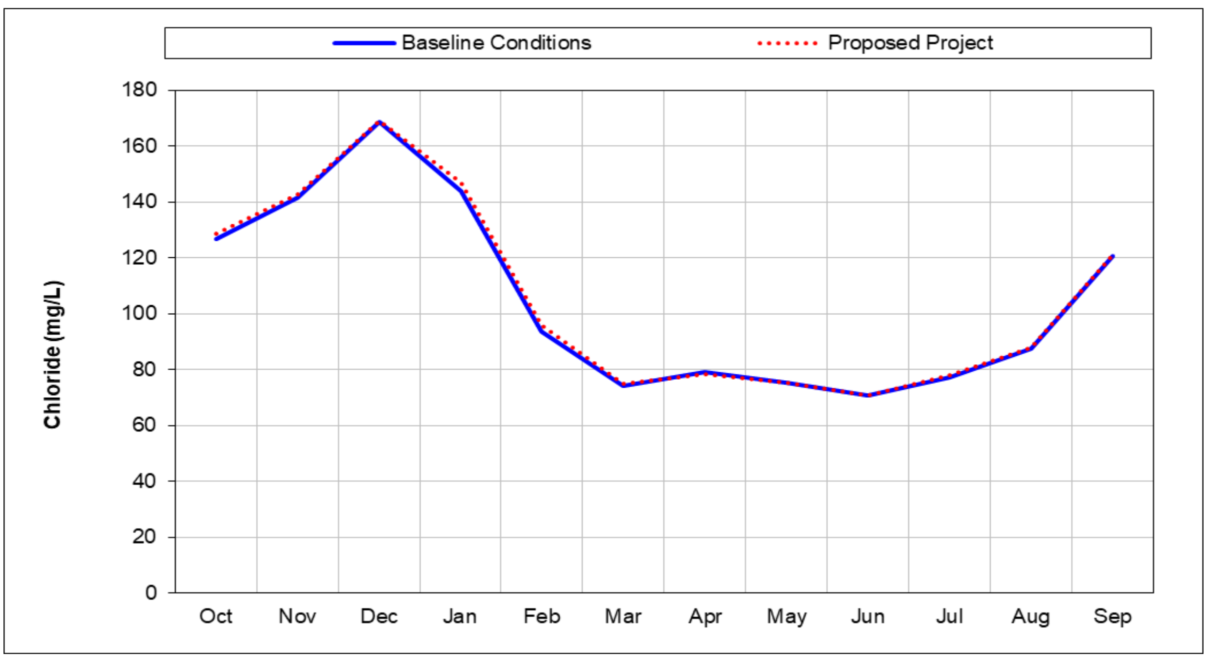

Figure 5A-7f. Old River at State Route 4, Critical Year Monthly Average Chloride (in milligrams per liter)

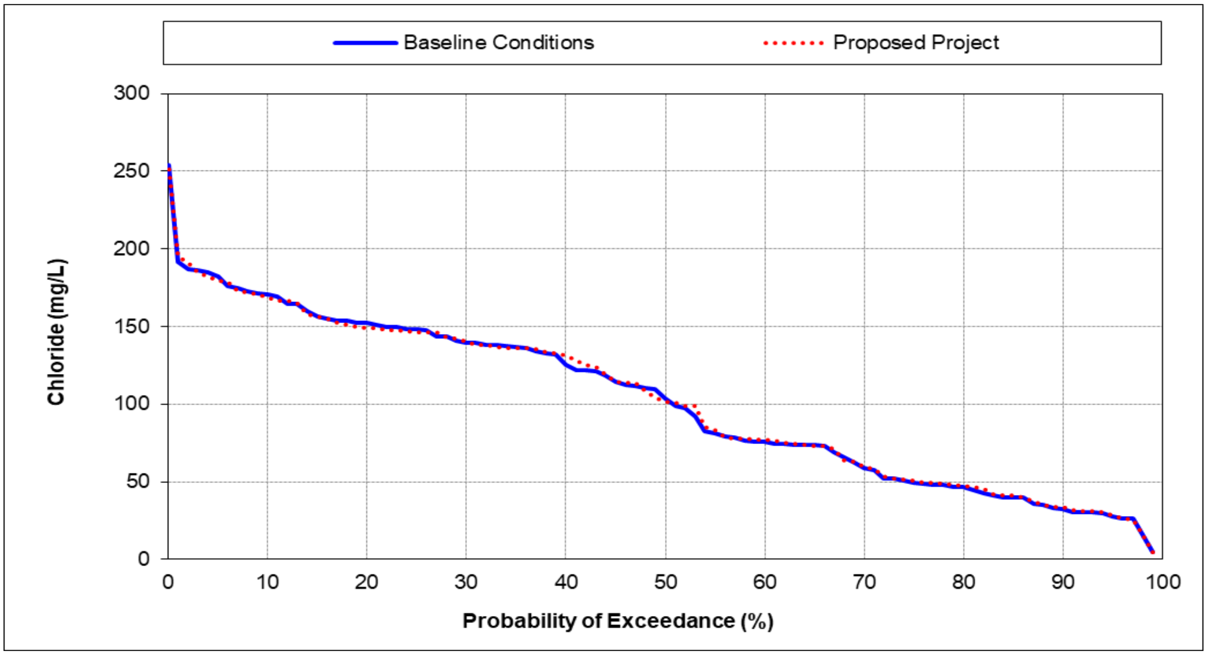

Figure 5A-7g. Old River at State Route 4, Monthly Average Chloride (in milligrams per liter), January

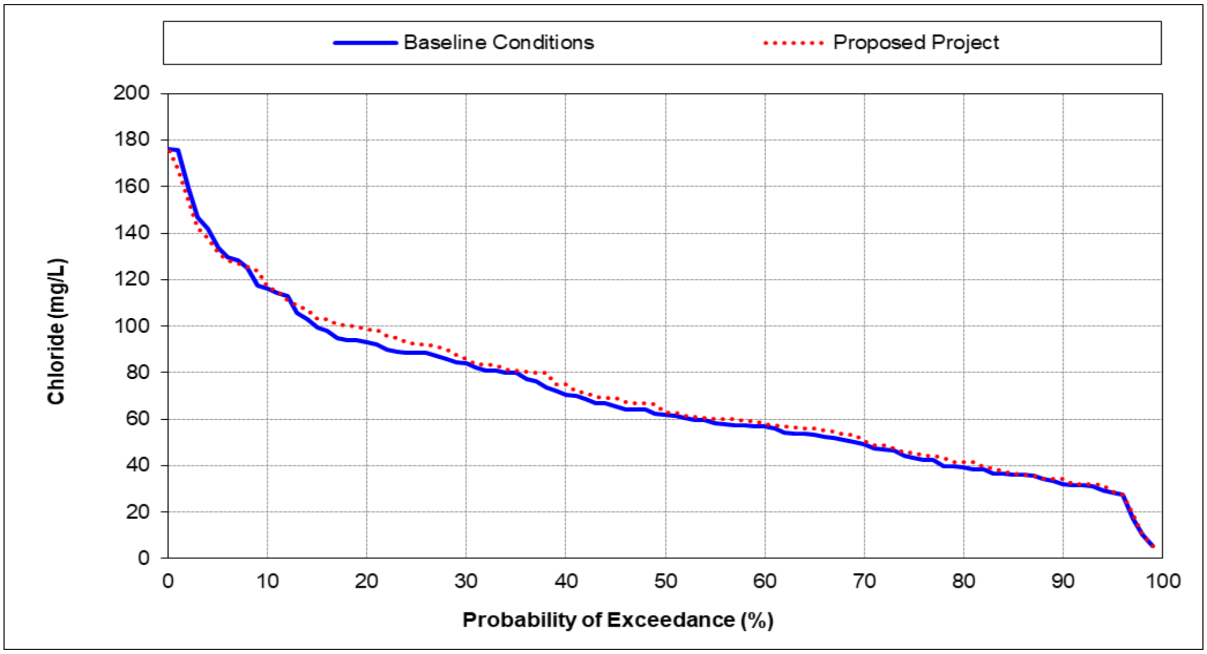

Figure 5A-7h. Old River at State Route 4, Monthly Average Chloride (in milligrams per liter), February

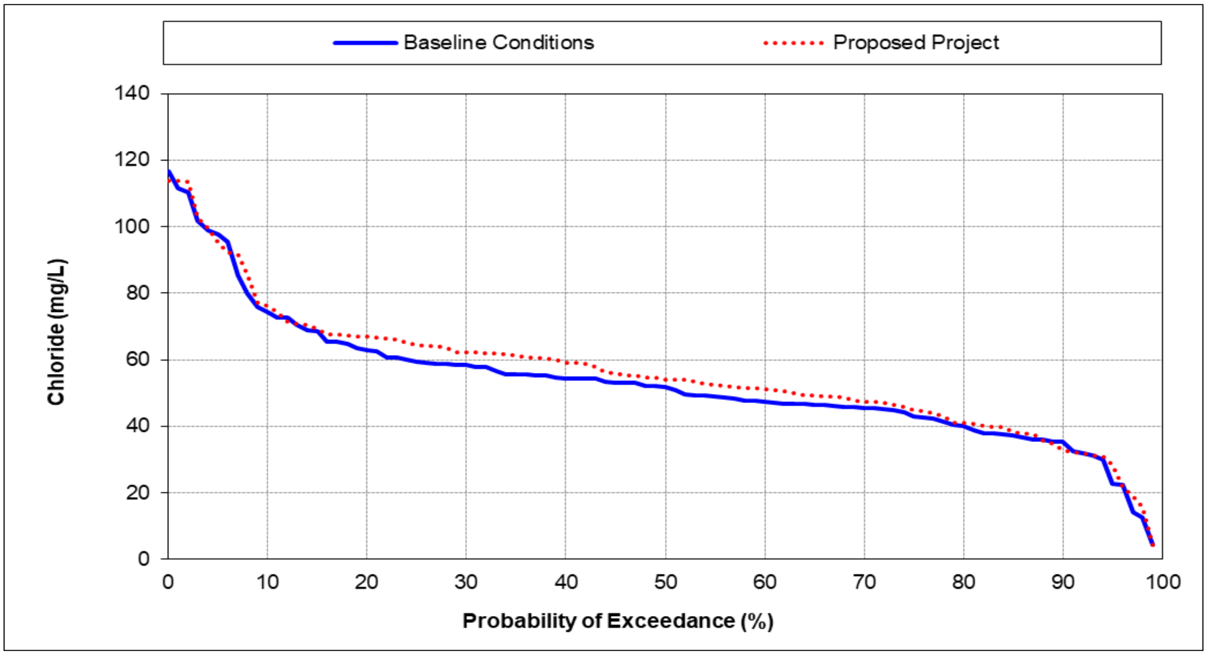

Figure 5A-7i. Old River at State Route 4, Monthly Average Chloride (in milligrams per liter), March

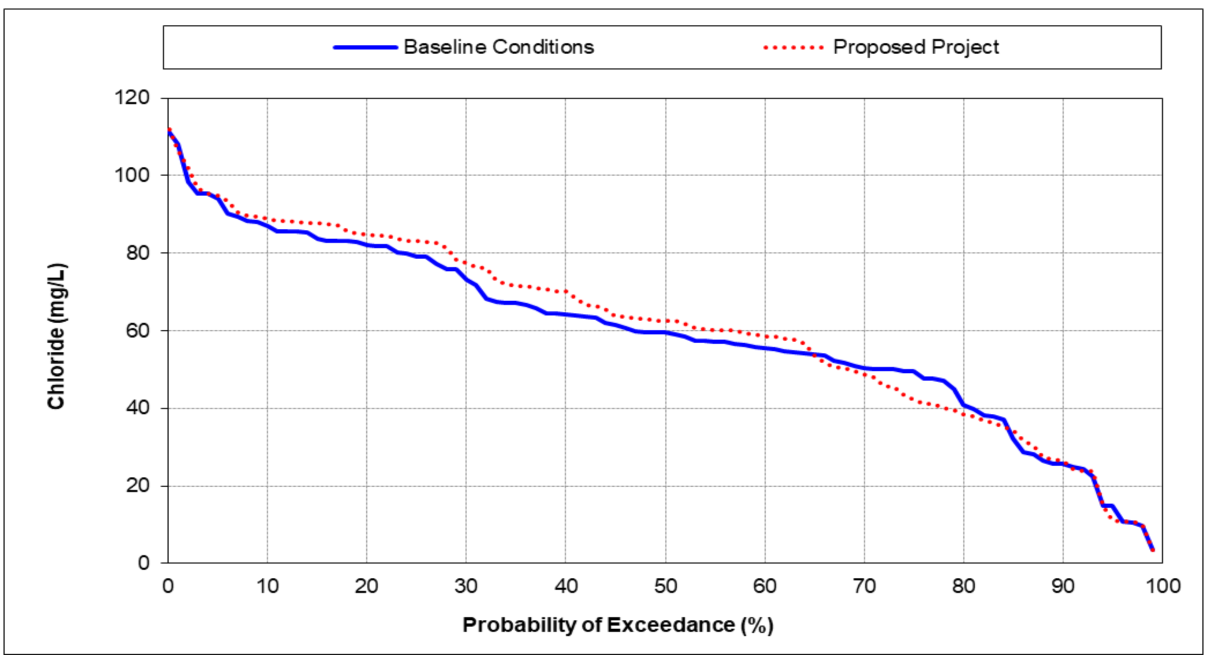

Figure 5A-7j. Old River at State Route 4, Monthly Average Chloride (in milligrams per liter), April

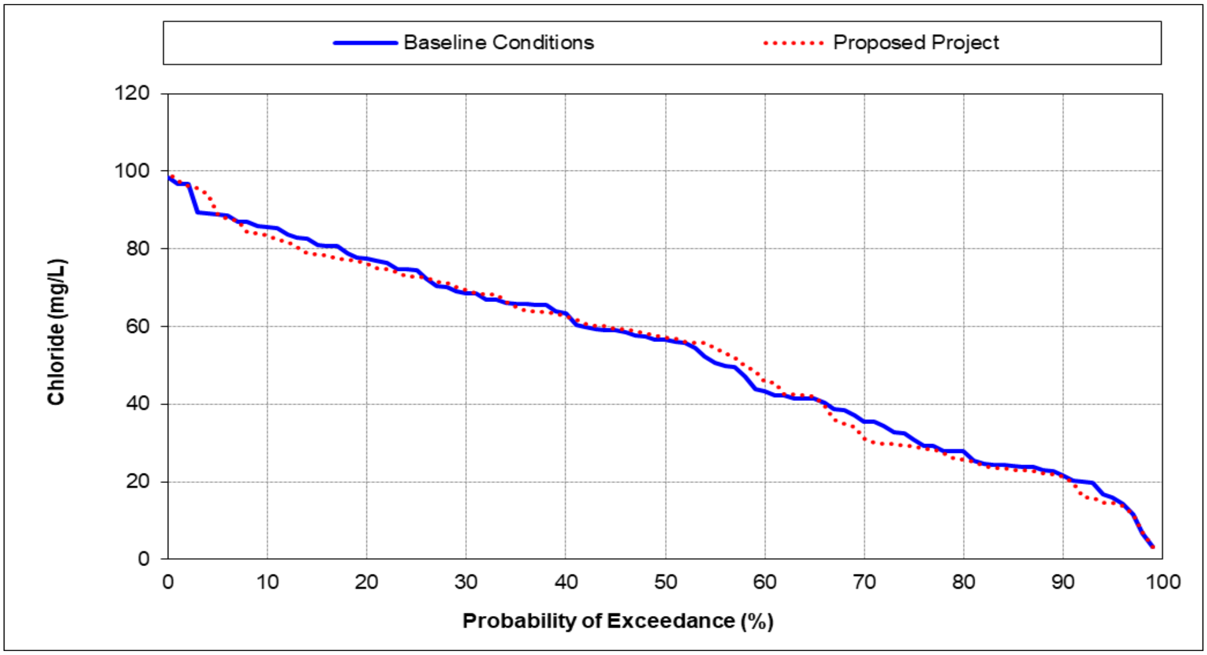

Figure 5A-7k. Old River at State Route 4, Monthly Average Chloride (in milligrams per liter), May

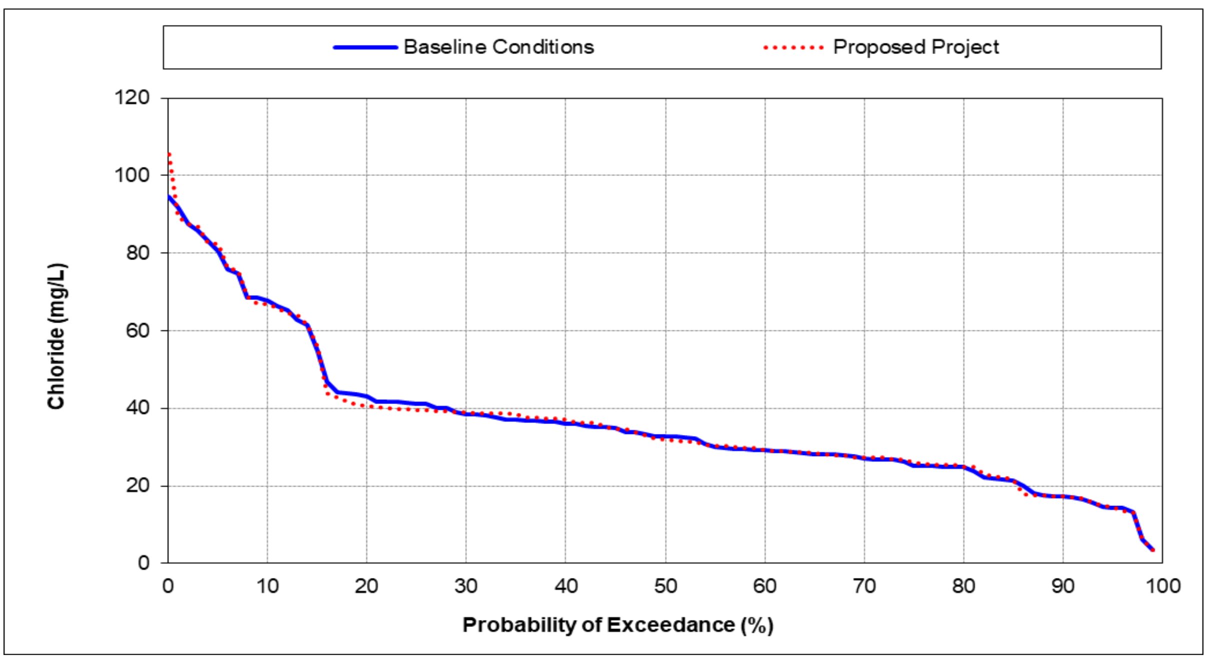

Figure 5A-7l. Old River at State Route 4, Monthly Average Chloride (in milligrams per liter), June

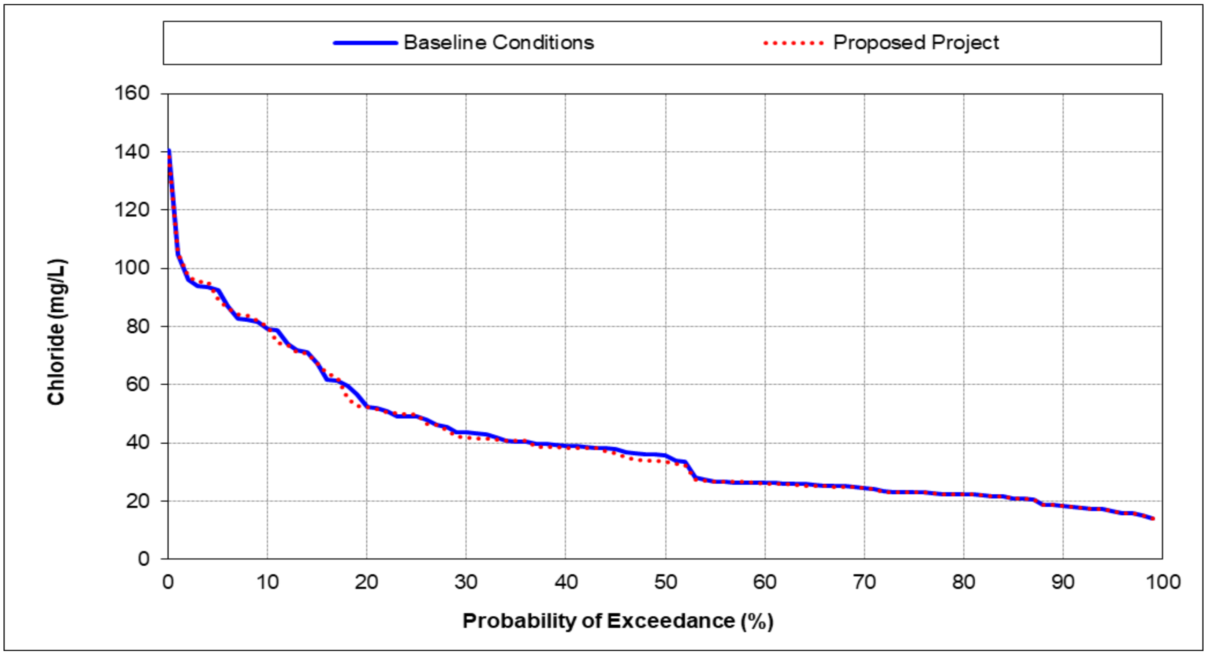

Figure 5A-7m. Old River at State Route 4, Monthly Average Chloride (in milligrams per liter), July

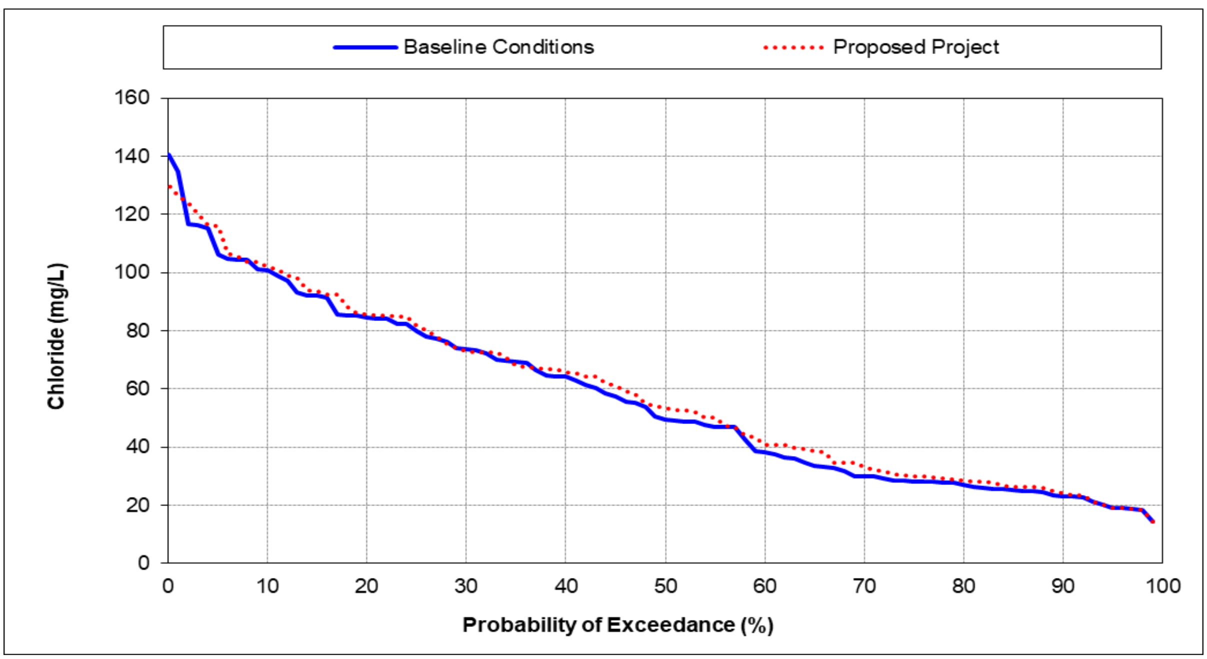

Figure 5A-7n. Old River at State Route 4, Monthly Average Chloride (in milligrams per liter), August

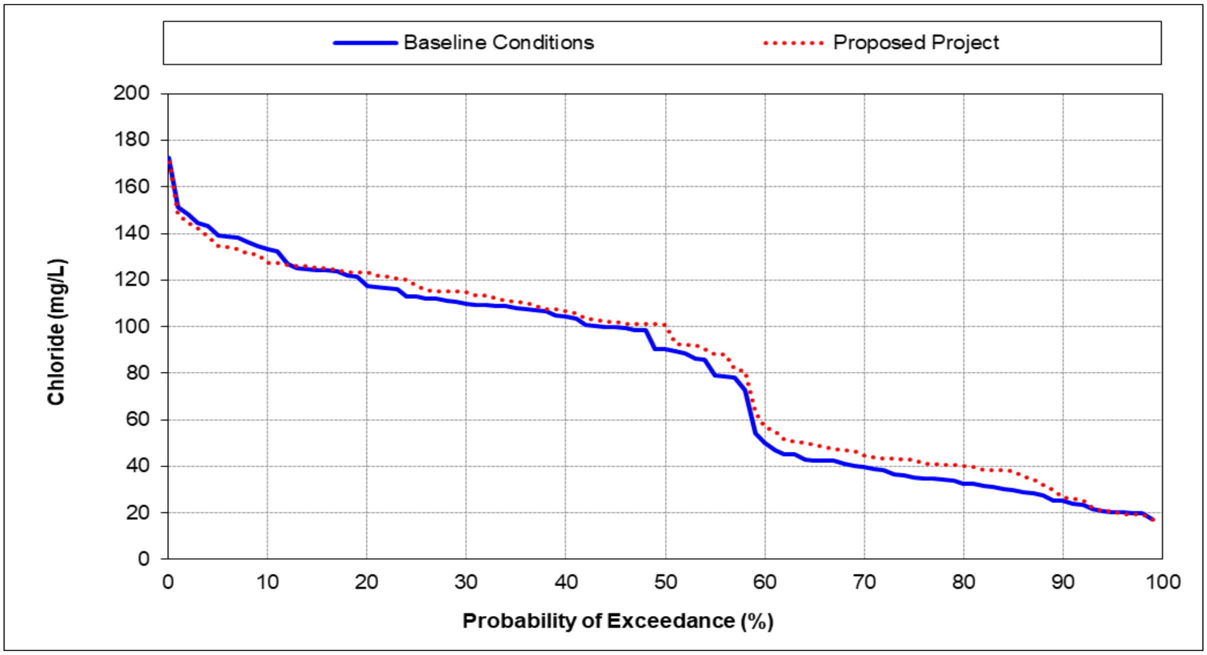

Figure 5A-7o. Old River at State Route 4, Monthly Average Chloride (in milligrams per liter), September

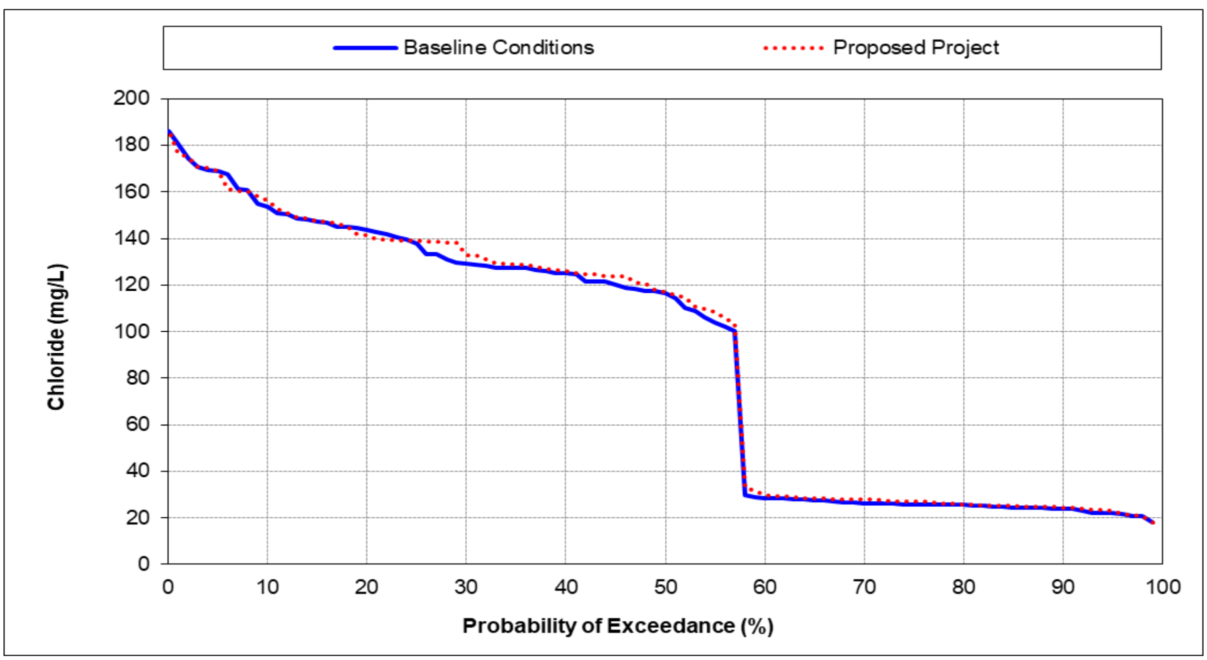

Figure 5A-7p. Old River at State Route 4, Monthly Average Chloride (in milligrams per liter), October

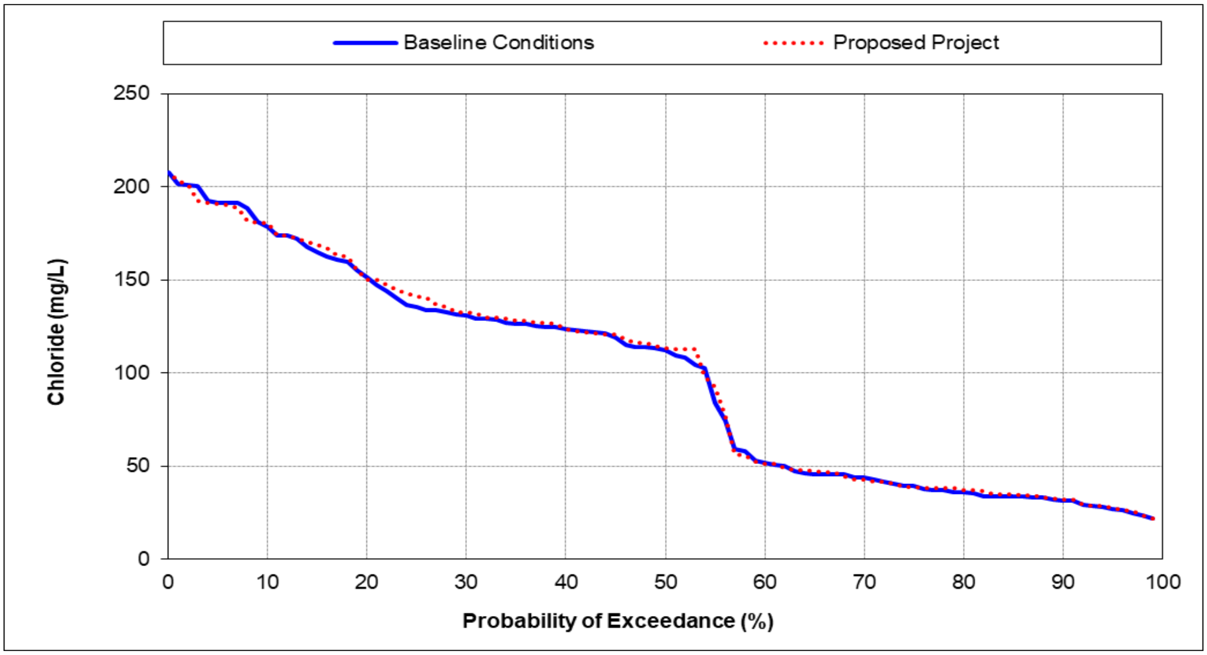

Figure 5A-7q. Old River at State Route 4, Monthly Average Chloride (in milligrams per liter), November

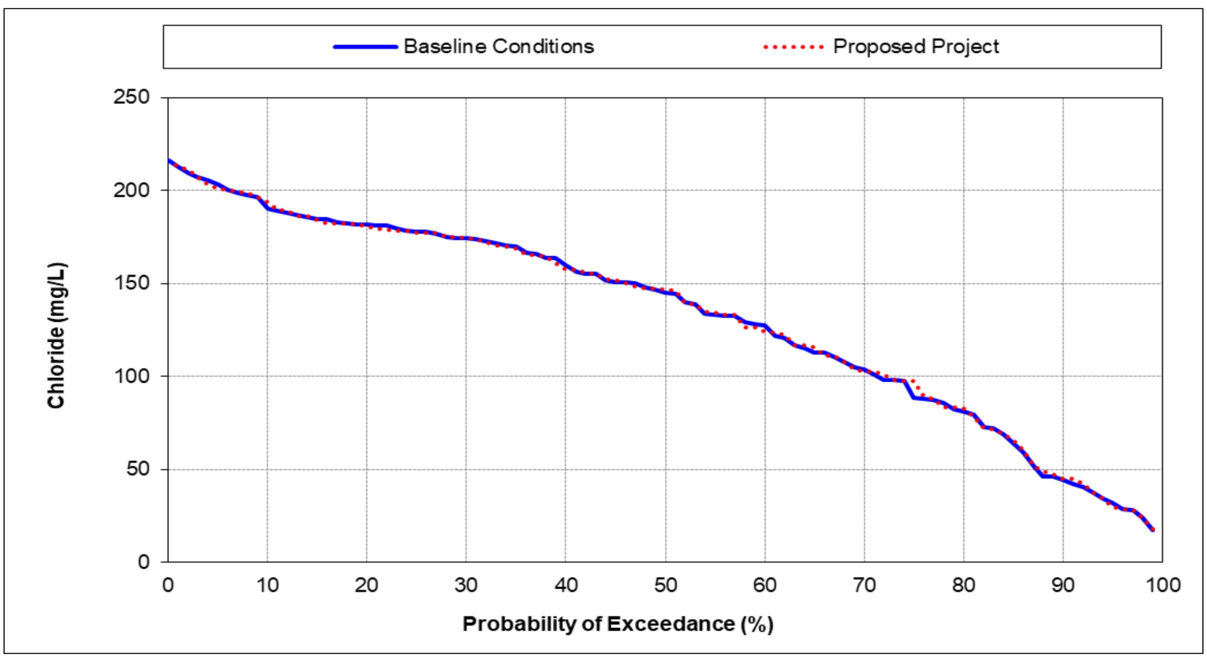

Figure 5A-7r. Old River at State Route 4, Monthly Average Chloride (in milligrams per liter), December

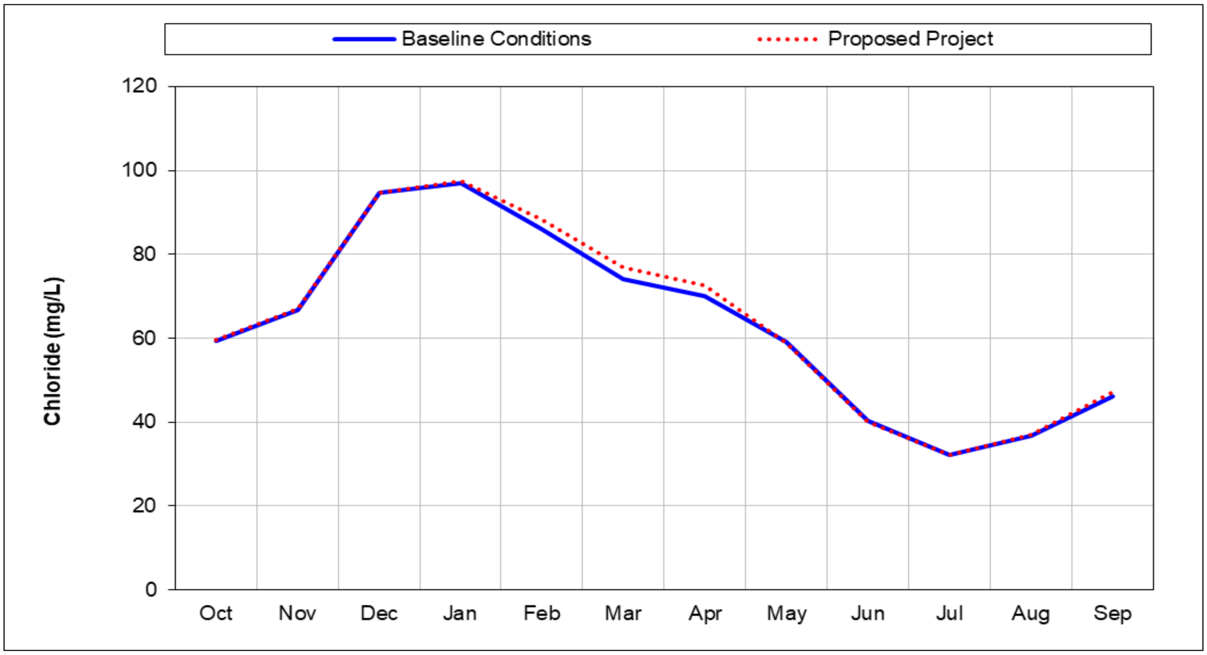

Figure 5A-8a. Victoria Canal, Long term Monthly Average Chloride (in milligrams per liter)

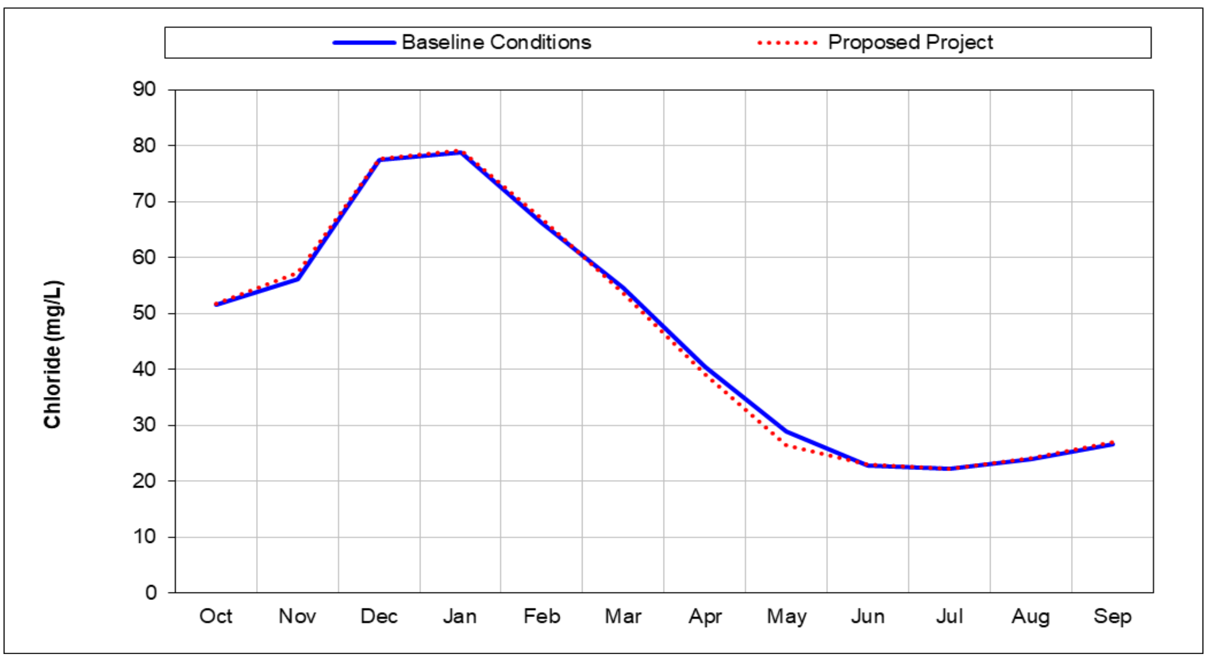

Figure 5A-8b. Victoria Canal, Wet Year Monthly Average Chloride (in milligrams per liter)

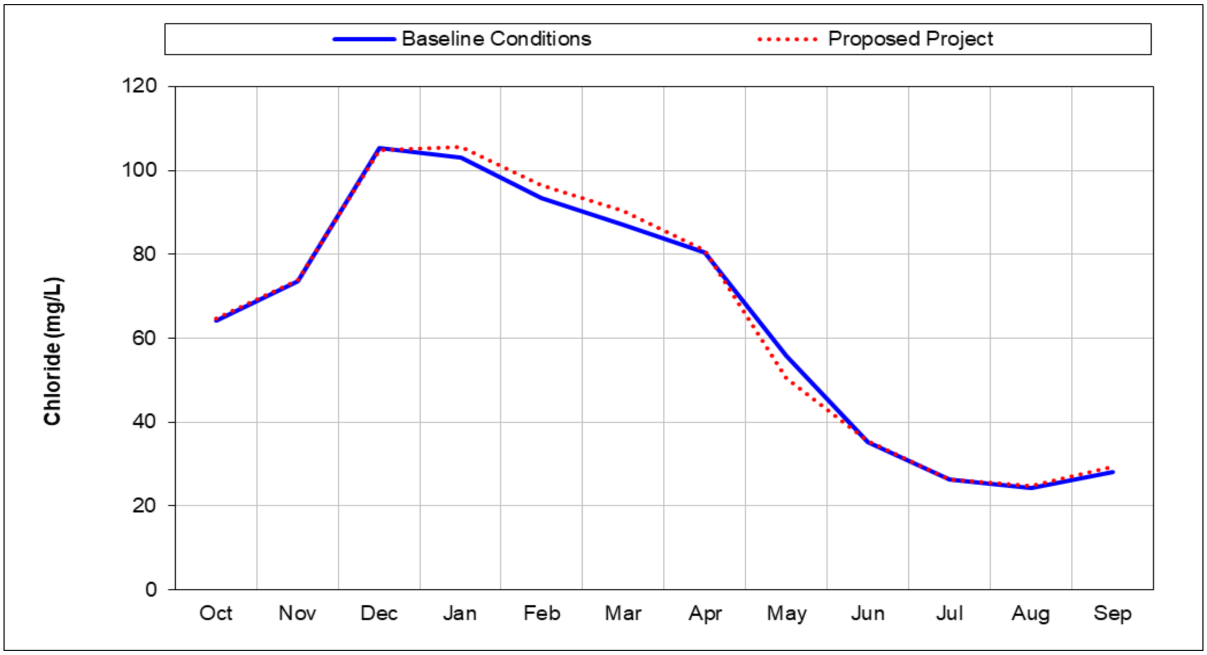

Figure 5A-8c. Victoria Canal, Above Normal Year Monthly Average Chloride (in milligrams per liter)

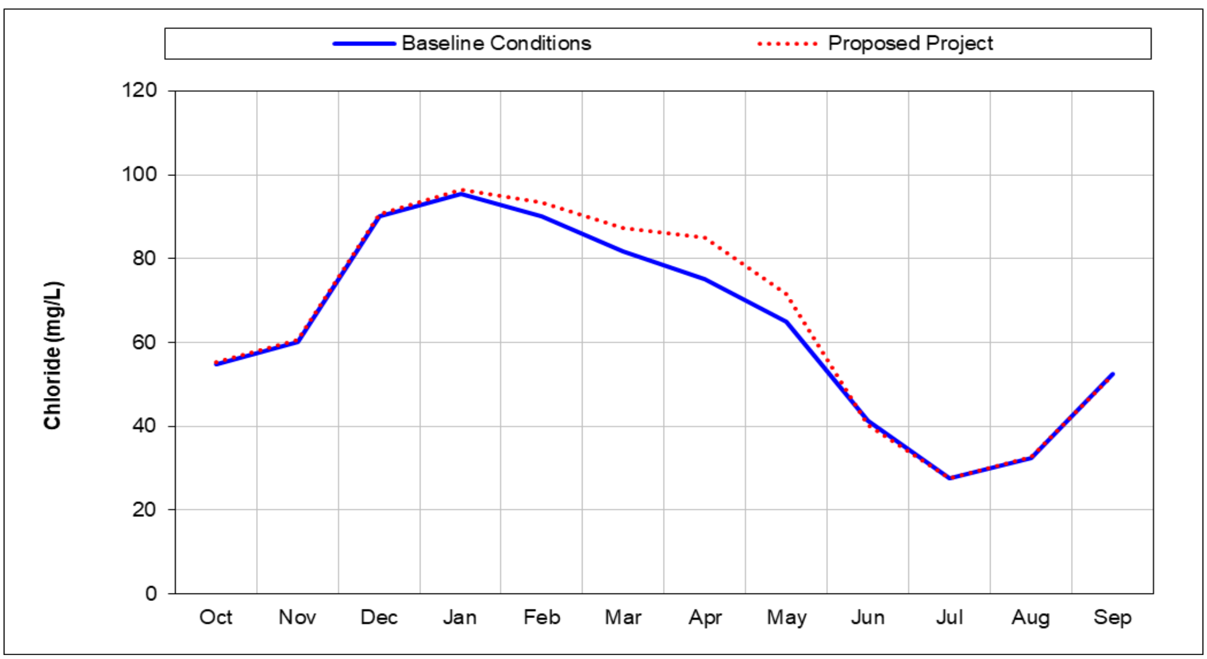

Figure 5A-8d. Victoria Canal, Below Normal Year Monthly Average Chloride (in milligrams per liter)

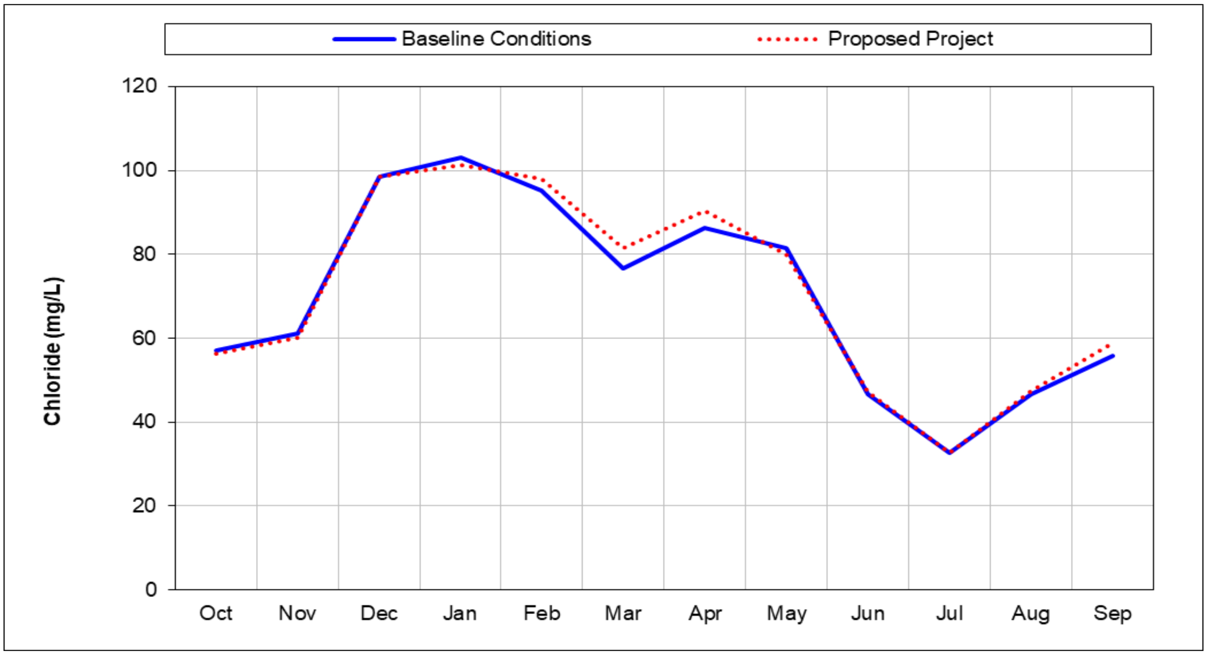

Figure 5A-8e. Victoria Canal, Dry Year Monthly Average Chloride (in milligrams per liter)

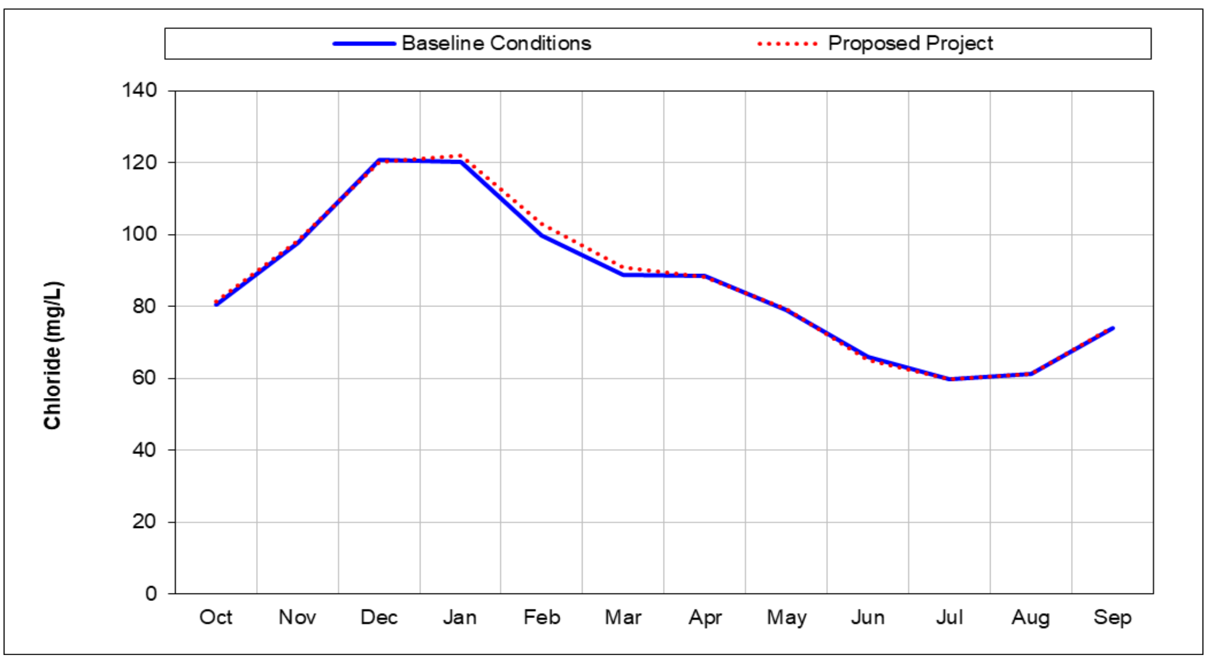

Figure 5A-8f. Victoria Canal, Critical Year Monthly Average Chloride (in milligrams per liter)

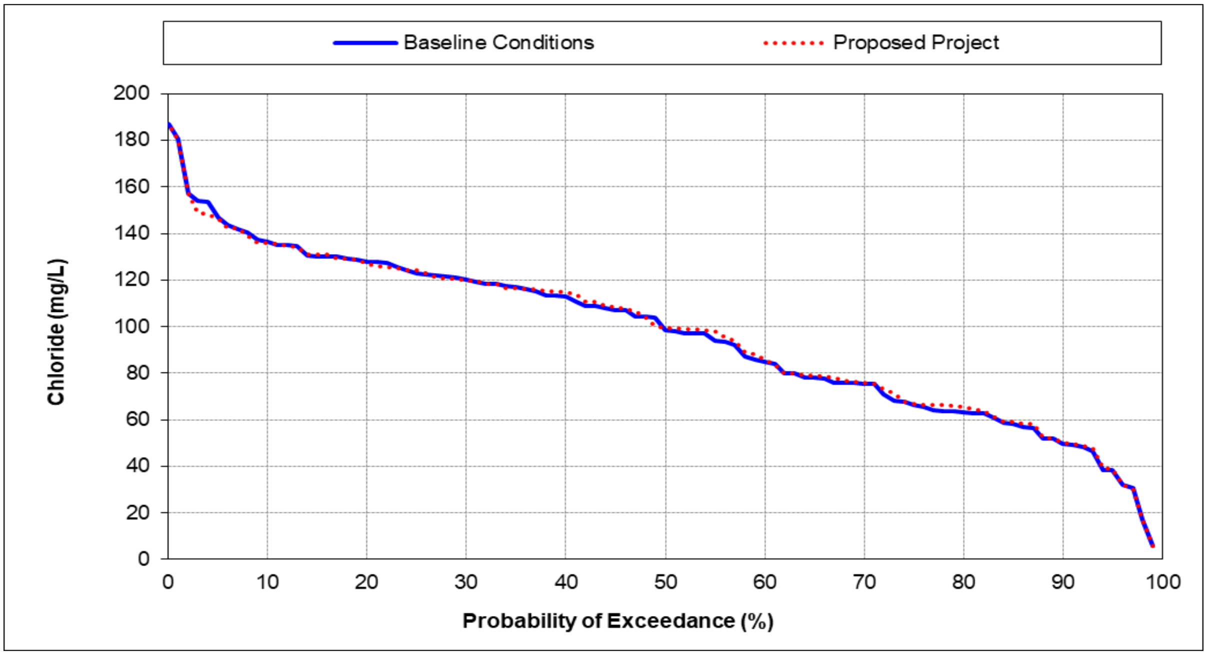

Figure 5A-8g. Victoria Canal, Monthly Average Chloride (in milligrams per liter), January

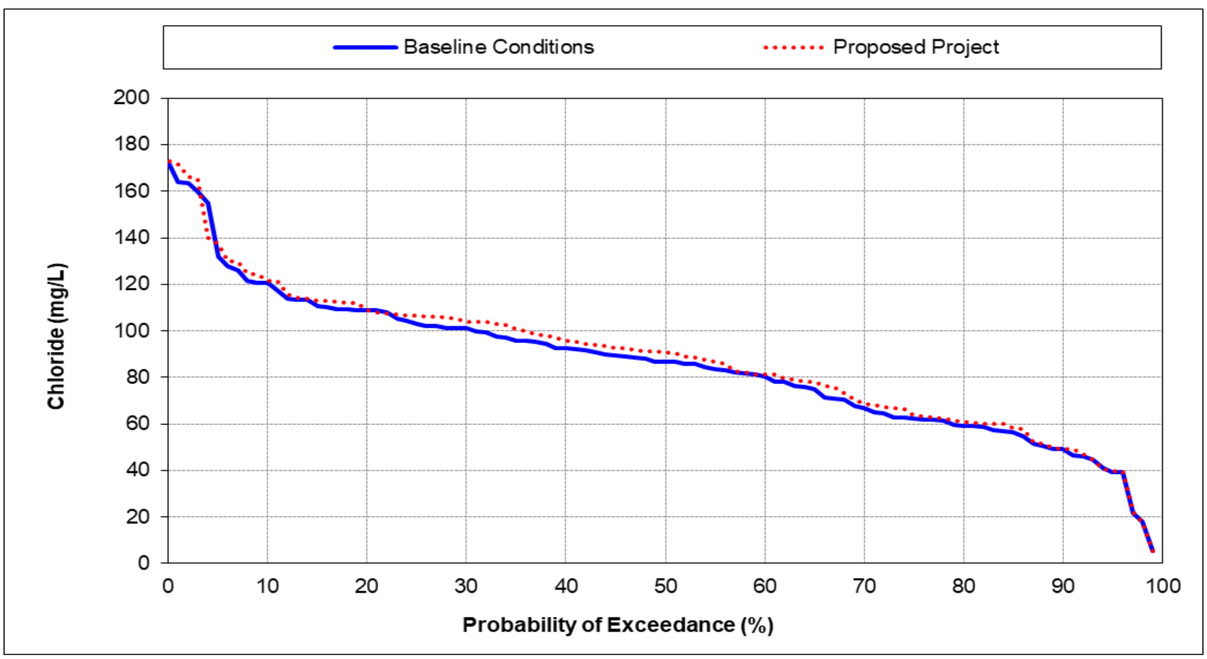

Figure 5A-8h. Victoria Canal, Monthly Average Chloride (in milligrams per liter), February

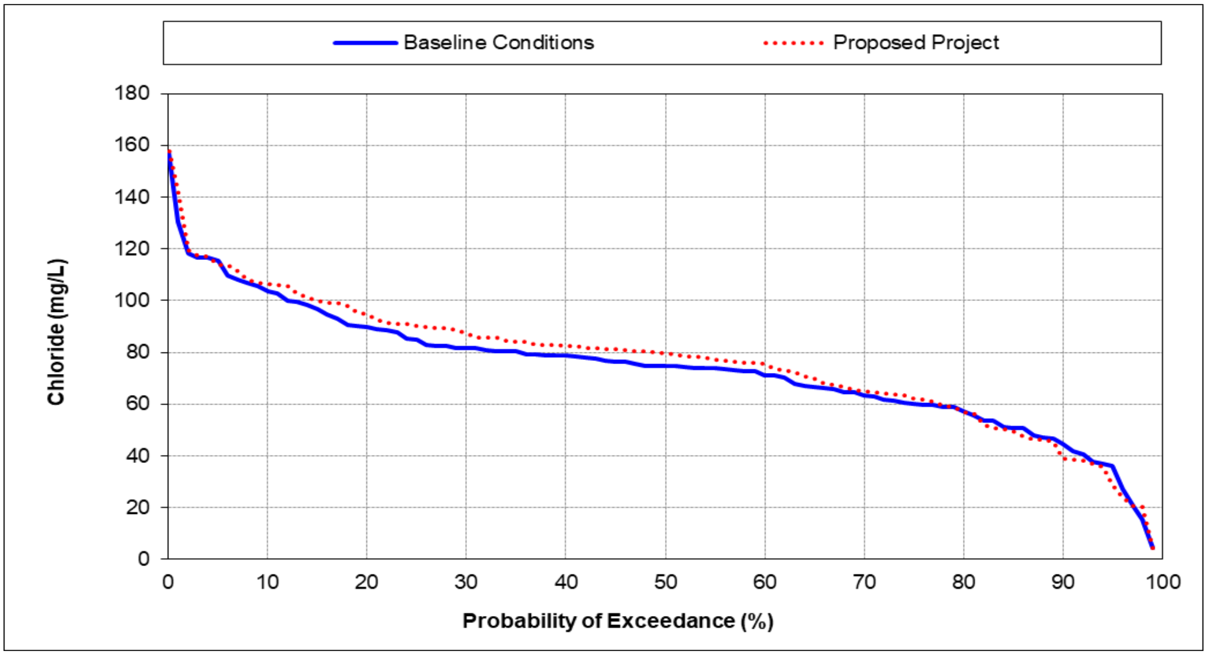

Figure 5A-8i. Victoria Canal, Monthly Average Chloride (in milligrams per liter), March

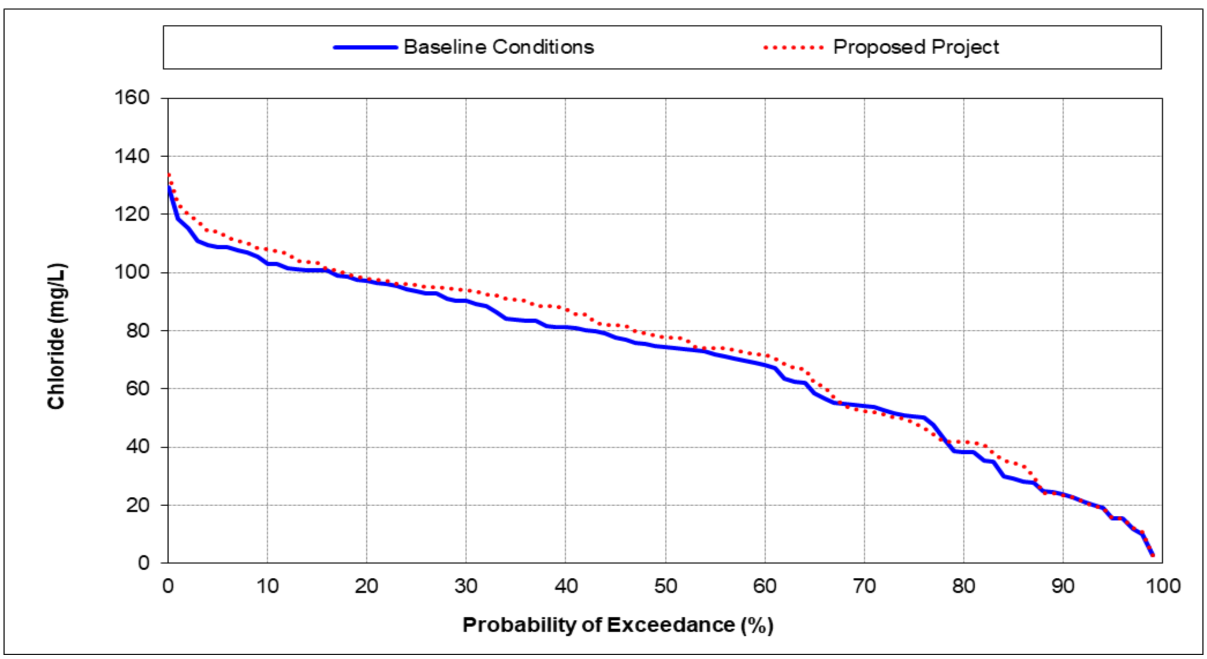

Figure 5A-8j. Victoria Canal, Monthly Average Chloride (in milligrams per liter), April

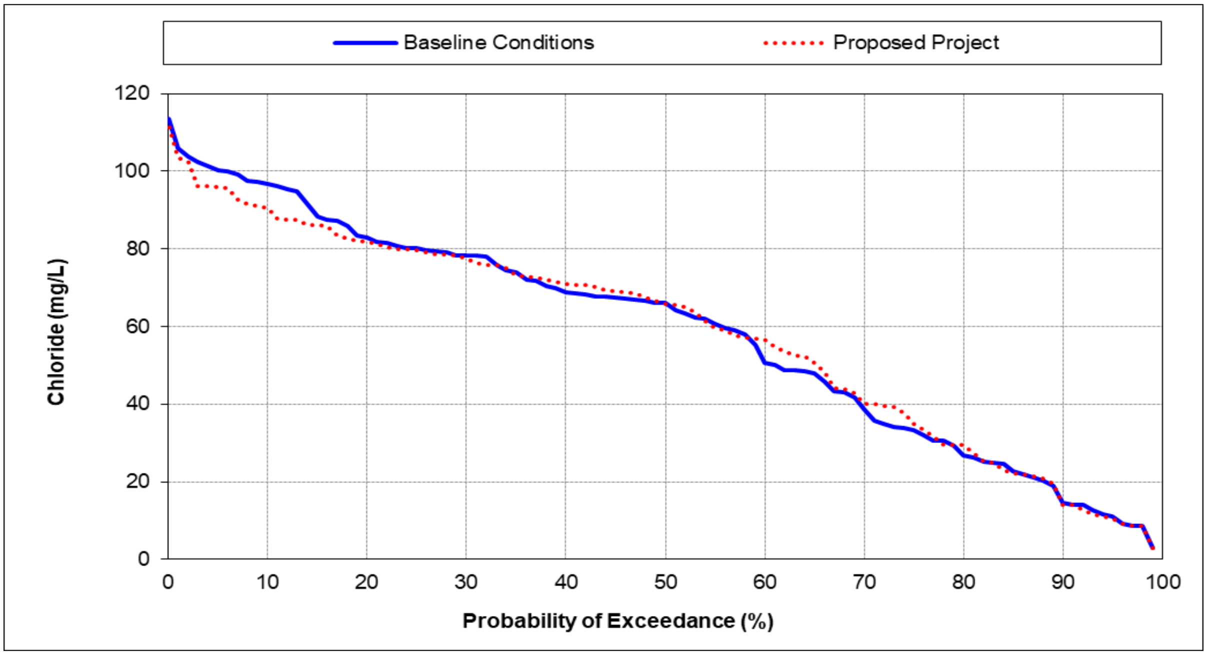

Figure 5A-8k. Victoria Canal, Monthly Average Chloride (in milligrams per liter), May

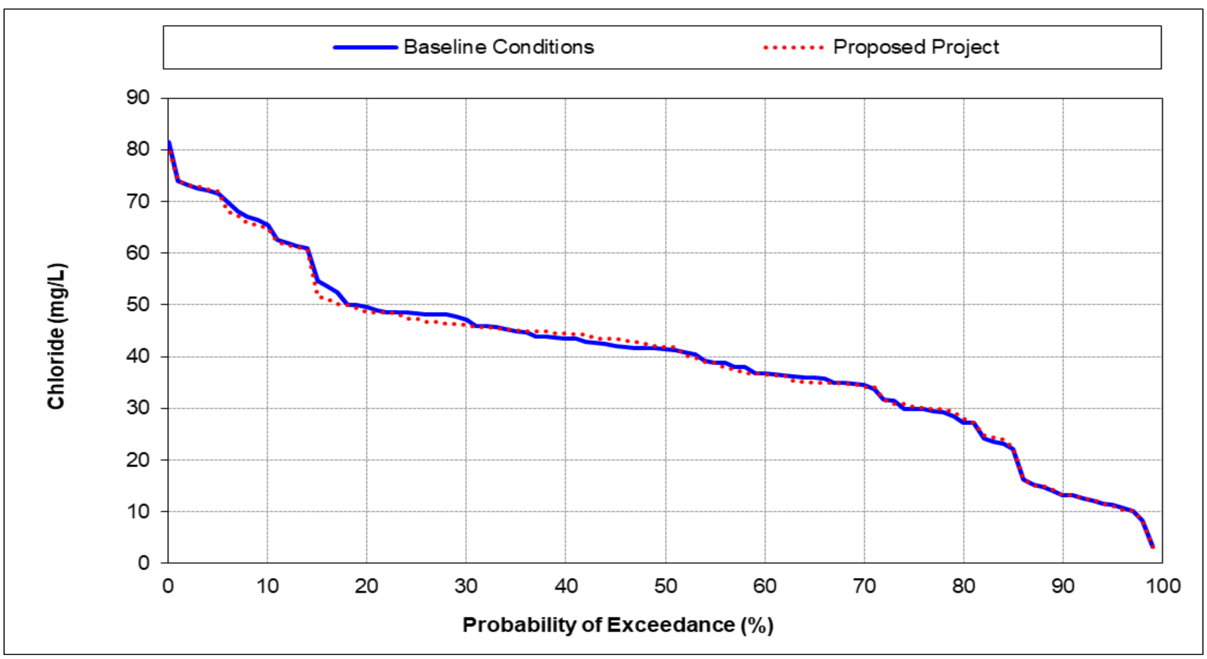

Figure 5A-8l. Victoria Canal, Monthly Average Chloride (in milligrams per liter), June

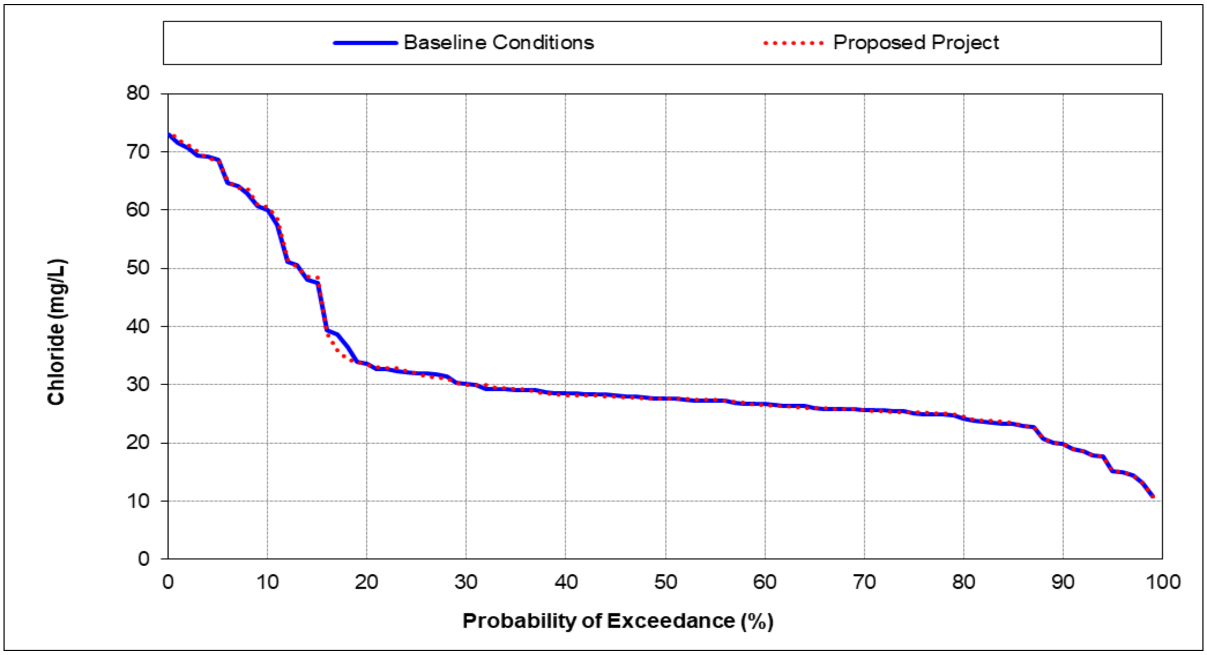

Figure 5A-8m. Victoria Canal, Monthly Average Chloride (in milligrams per liter), July

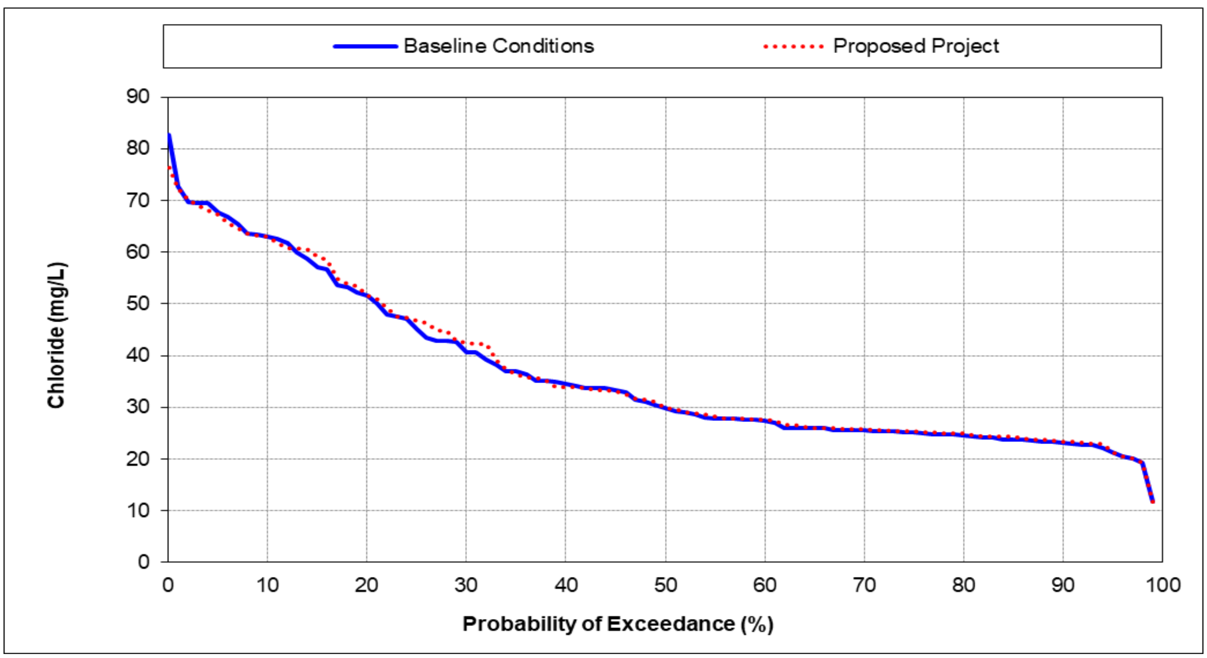

Figure 5A-8n. Victoria Canal, Monthly Average Chloride (in milligrams per liter), August

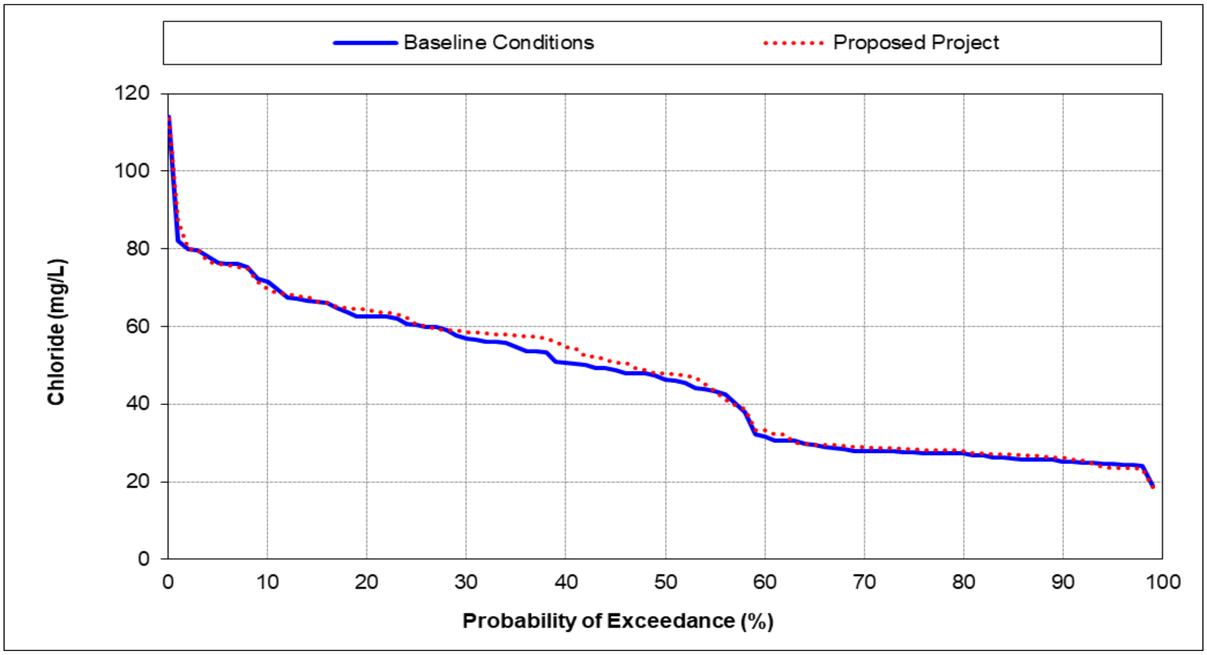

Figure 5A-8o. Victoria Canal, Monthly Average Chloride (in milligrams per liter), September

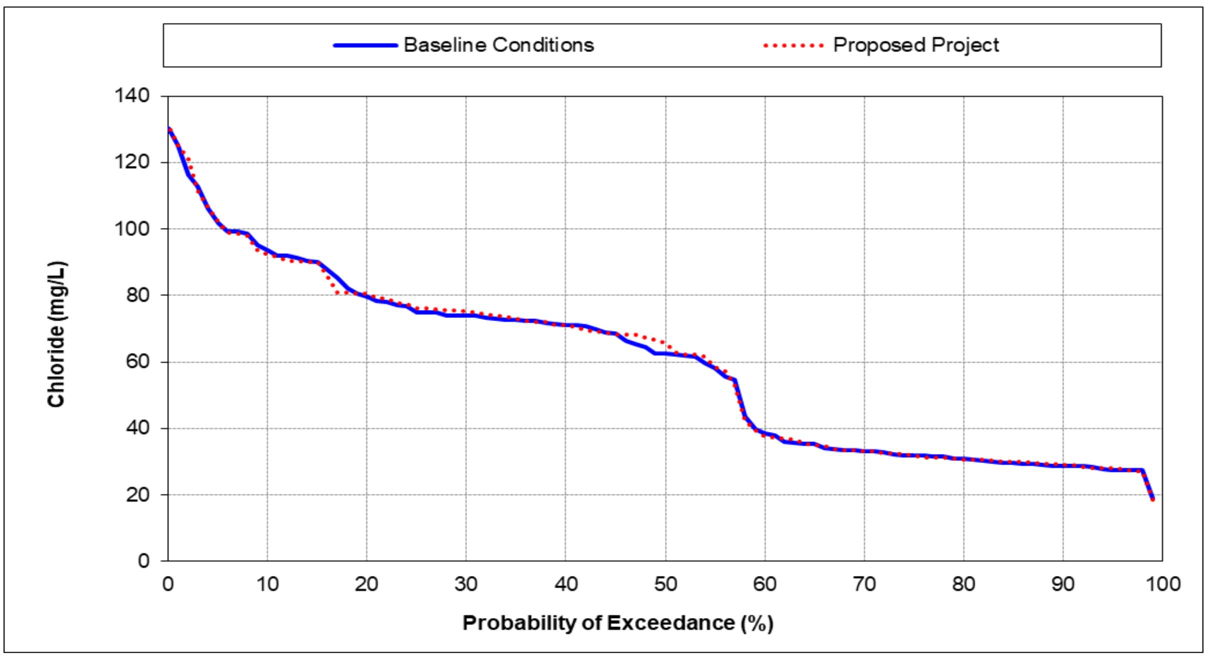

Figure 5A-8p. Victoria Canal, Monthly Average Chloride (in milligrams per liter), October

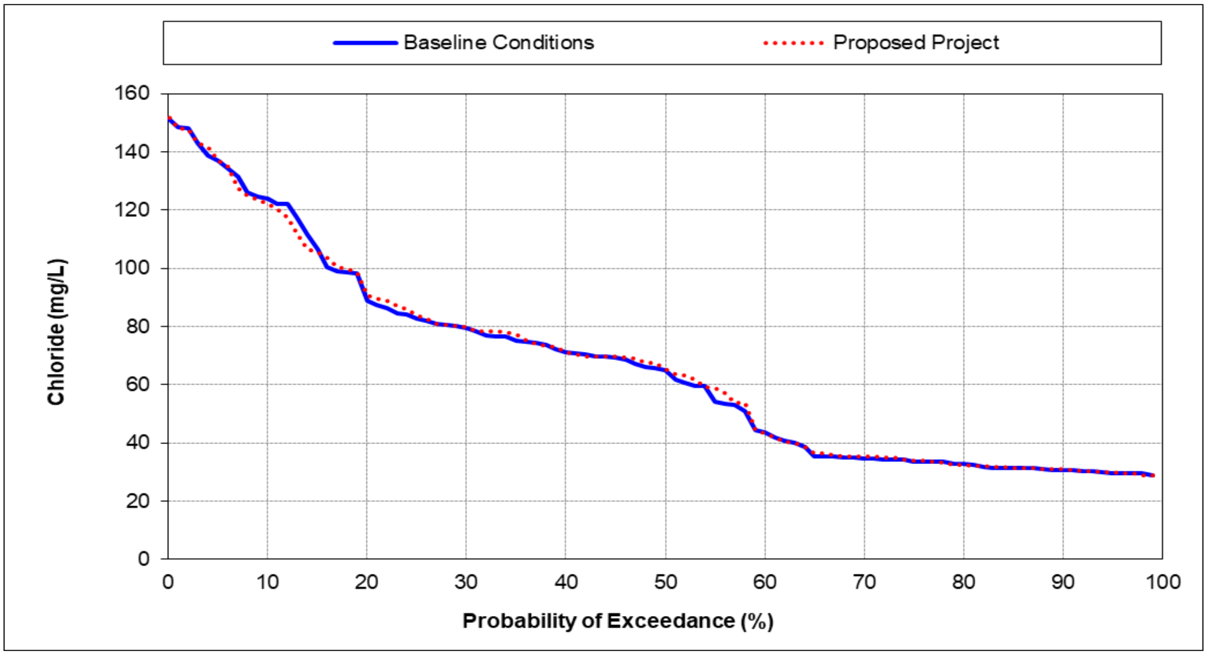

Figure 5A-8q. Victoria Canal, Monthly Average Chloride (in milligrams per liter), November

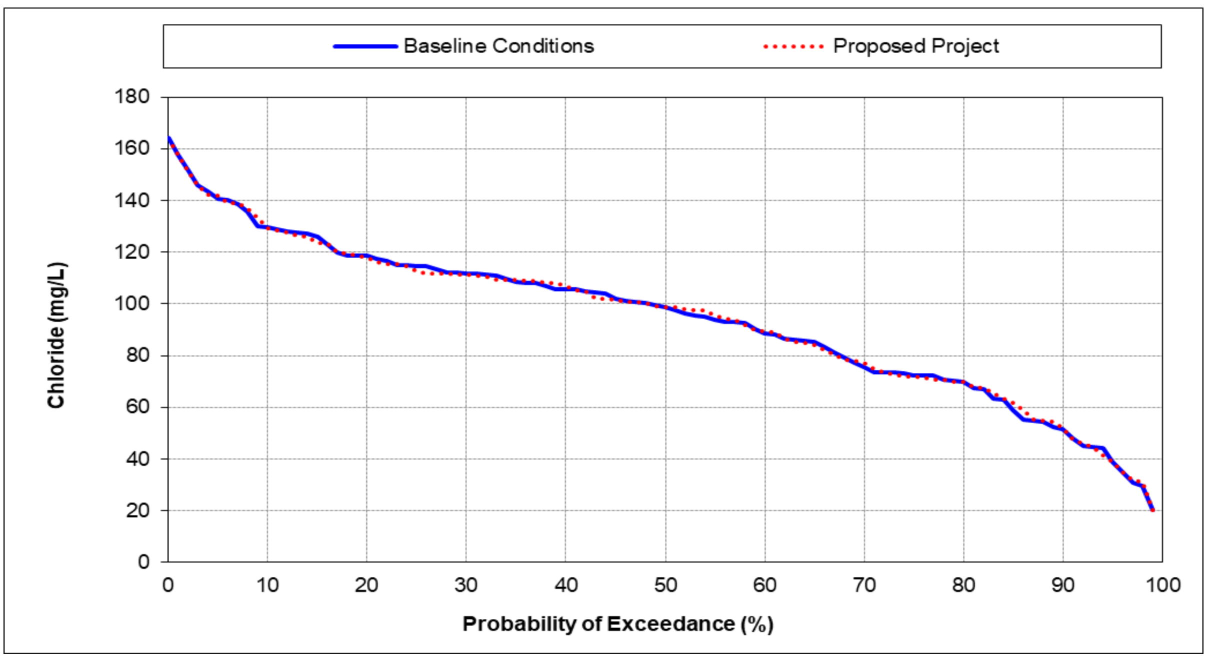

Figure 5A-8r. Victoria Canal, Monthly Average Chloride (in milligrams per liter), December