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3 **8J.1 Nitrate Methodology**

4 Nitrate does not behave conservatively in the environment. However, because nitrate
5 concentrations vary considerably between the source waters to the Delta, conservative modeling the
6 mass-balance approach (DSM2 fingerprinting data combined with historical source water quality
7 data) was employed to provide a characterization of changes in nitrate concentration anticipated as
8 a result of changes in source water fractions throughout the Delta. Addition and loss mechanisms
9 are considered qualitatively in the context of the quantitative mixing results to characterize changes
10 in nitrate concentrations under the alternatives assessed.

11 Section 8.3.1.3 and the nitrate discussion under section 8.3.1.7 provide more detailed information
12 regarding the assessment methodology for nitrate and the details of the approach. Figures and
13 tables to support the assessment are provided below.

1 **Table 1. Monthly Sacramento River Nitrate-N Concentrations (mg/L-N) Used in Assessment**

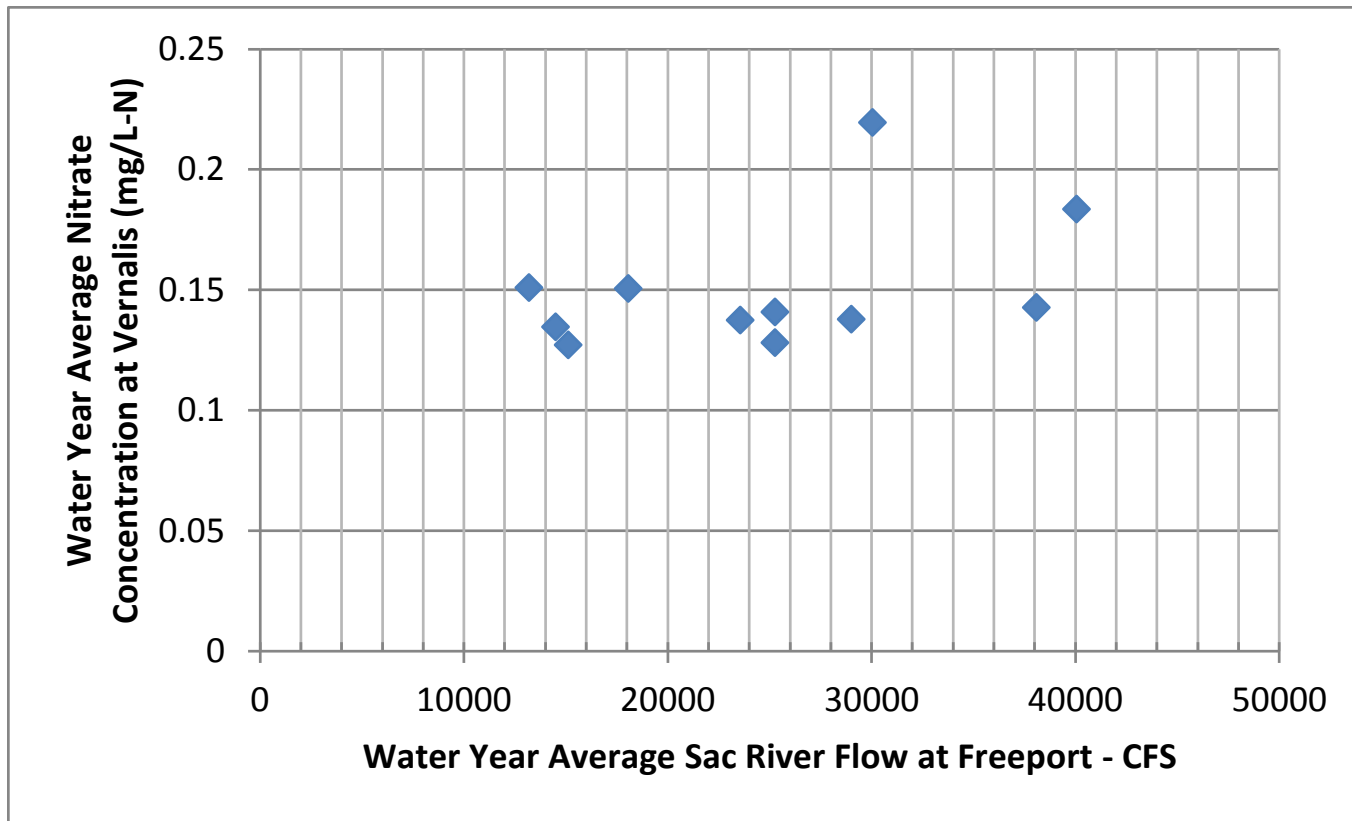
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean (mg/L as N)	0.204	0.209	0.167	0.140	0.104	0.093	0.069	0.068	0.092	0.140	0.165	0.184
Minimum (mg/L as N)	0.090	0.113	0.068	0.068	0.045	0.045	0.045	0.023	0.045	0.068	0.090	0.023
Maximum (mg/L as N)	0.361	0.384	0.361	0.226	0.181	0.203	0.136	0.136	0.136	0.540	0.553	0.474
75th Percentile (mg/L as N)	0.248	0.248	0.203	0.164	0.113	0.113	0.090	0.090	0.113	0.158	0.158	0.226
99th Percentile (mg/L as N)	0.350	0.371	0.336	0.220	0.174	0.185	0.125	0.122	0.136	0.442	0.545	0.453
Data Source	DWR											
Station(s)	Sac River at Greene's Landing, Sac River at Hood											
Date Range	1997 - 2008											
ND Replaced with RL	No											
Data Omitted	Data prior to 1992 (EPA Method 353.2; poor detection limit)											
No. of Data Points	27	29	29	28	29	28	25	31	33	30	26	25

2 **Table 2. Monthly San Joaquin River Nitrate-N Concentrations (mg/L-N) Used in Assessment**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean (mg/L as N)	1.639	1.585	1.373	1.069	0.791	1.193	1.457	1.656	1.681	1.672	1.839	1.689
Minimum (mg/L as N)	0.429	0.497	0.407	0.136	0.068	0.113	0.203	0.745	0.610	0.723	1.175	0.361
Maximum (mg/L as N)	2.711	3.614	3.027	2.485	2.123	2.259	2.282	2.485	2.485	2.733	2.349	2.485
75th Percentile (mg/L as N)	1.886	2.169	1.965	1.525	1.017	1.638	2.010	1.999	2.101	2.090	2.016	1.960
99th Percentile (mg/L as N)	2.711	3.479	2.929	2.354	1.992	2.198	2.275	2.485	2.485	2.642	2.328	2.471
Data Source	DWR											
Station(s)	SJR at Vernalis											
Date Range	1990 - 2009											
ND Replaced with RL	No											
Data Omitted	Two values > 9 mg/L as N											
No. of Data Points	35	31	32	30	30	31	31	31	29	30	32	32

1 **Table 3. Monthly In-Delta Agriculture Nitrate-N Concentrations (mg/L-N) Used in Assessment**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean (mg/L as N)	2.683	3.833	3.006	2.778	1.739	1.595	1.424	2.001	0.059	1.750	0.111	0.930
Minimum (mg/L as N)	0.090	0.339	0.181	0.023	0.023	0.068	0.023	0.023	0.023	0.023	0.002	0.045
Maximum (mg/L as N)	19.193	18.516	6.774	54.644	10.613	9.032	30.483	23.709	0.135	16.032	0.429	1.626
75th Percentile (mg/L as N)	3.387	4.516	4.290	1.953	0.553	1.784	1.310	1.773	0.068	1.908	0.158	1.423
99th Percentile (mg/L as N)	11.967	16.653	6.756	34.182	10.025	8.057	14.632	18.222	0.133	11.042	0.418	1.619
Data Source	DWR											
Station(s)	All Delta Ag Drains from DWR Water Data Library											
Date Range	1990 - 2001											
ND Replaced with RL	Yes											
Data Omitted	None											
No. of Data Points	81	26	9	47	7	28	61	55	5	66	11	6



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2 **Figure 1. Linear regression between water year average nitrate-N concentration at Sacramento River at Greene’s Landing or Sacramento River**
3 **at Hood and water year average flow in the Sacramento River at Freeport (1997-2008).**

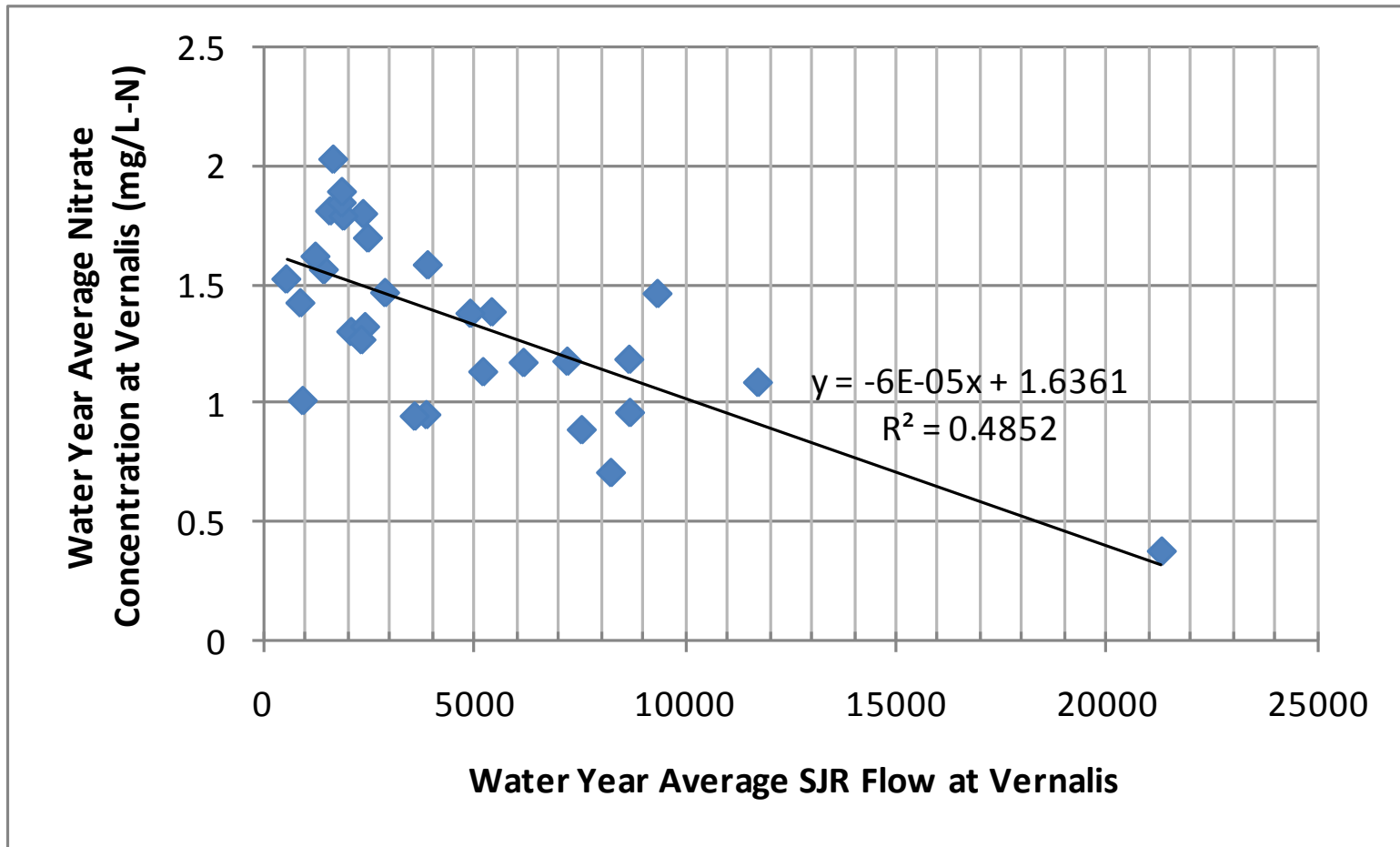


Figure 2. Linear regression between water year average nitrate-N concentration and water year average flow in the San Joaquin River at Vernalis (1975-2005).

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1 **Table 4. Period Average Nitrate-N concentrations and Frequency of Exceedance of objectives/Criteria for existing Conditions and No Action**
 2 **LLT.**

Nitrate	Location	Period ^a	Period Average Concentration mg/L-N		Lowest Applicable Human Health Criterion/Objective (10 mg/L-N) ^b		Lowest Applicable Aquatic Life Criterion/Objective (N/A)		Other Relevant Threshold (5 mg/L-N) ^c	
			No Act. LLT		Frequency of Criterion/Objective Exceedance (%)		Frequency of Criterion/Objective Exceedance (%)		Frequency of Criterion/Objective Exceedance (%)	
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.29	0.28	0	0	-	-	0	0
		DROUGHT	0.30	0.29	0	0	-	-	0	0
	SJR at Buckley Cove	ALL	1.44	1.32	0	0	-	-	0	0
		DROUGHT	1.45	1.25	0	0	-	-	0	0
	Franks Tract	ALL	0.36	0.36	0	0	-	-	0	0
		DROUGHT	0.24	0.26	0	0	-	-	0	0
Old R. at Rock Slough	ALL	0.46	0.47	0	0	-	-	0	0	
	DROUGHT	0.31	0.34	0	0	-	-	0	0	
Western Delta	Sac. R. at Emmaton	ALL	0.20	0.20	0	0	-	-	0	0
		DROUGHT	0.19	0.20	0	0	-	-	0	0
	SJR at Antioch	ALL	0.27	0.26	0	0	-	-	0	0
		DROUGHT	0.19	0.20	0	0	-	-	0	0
Sac. R. at Mallard Island	ALL	0.19	0.19	0	0	-	-	0	0	
	DROUGHT	0.15	0.15	0	0	-	-	0	0	
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.27	0.27	0	0	-	-	0	0
		DROUGHT	0.27	0.27	0	0	-	-	0	0
	Contra Costa PP #1	ALL	0.51	0.52	0	0	-	-	0	0
		DROUGHT	0.38	0.41	0	0	-	-	0	0
	Banks PP	ALL	0.70	0.71	0	0	-	-	0	0
		DROUGHT	0.56	0.58	0	0	-	-	0	0
	Jones PP	ALL	0.92	0.96	0	0	-	-	0	0
		DROUGHT	0.79	0.86	0	0	-	-	0	0

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).
^b Drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.
^c Ayers and Westcot (1985). Recommended goals for sensitive crops.

1 **Table 5. Period average Change in Nitrate-N Concentrations (mg/L-N) for No Action LLT Relative to**
 2 **existing Conditions.**

Nitrate	Location	Period ^a	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Annual Avg. Change	
			Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.00	0.00	0.00	-0.02	-0.02	-0.01	-0.01	-0.01	-0.02	-0.01	-0.01	0.00	-0.01	
			(-1%)	(-0%)	(-0%)	(-4%)	(-4%)	(-2%)	(-2%)	(-2%)	(-6%)	(-7%)	(-3%)	(-3%)	(-3%)	
	DROUGHT	0.00	0.00	0.00	-0.02	-0.03	-0.02	-0.02	-0.01	-0.01	-0.01	0.00	0.01	0.00	-0.01	
			(0%)	(-0%)	(-1%)	(-3%)	(-4%)	(-5%)	(-6%)	(-5%)	(-4%)	(-1%)	(4%)	(0%)	(-3%)	
	SJR at Buckley Cove	ALL	-0.05	-0.02	-0.12	-0.09	-0.06	-0.05	-0.05	-0.04	-0.04	-0.13	-0.25	-0.35	-0.20	-0.12
			(-3%)	(-1%)	(-8%)	(-5%)	(-4%)	(-4%)	(-4%)	(-4%)	(-4%)	(-10%)	(-19%)	(-22%)	(-13%)	(-8%)
	DROUGHT	-0.07	-0.08	-0.16	-0.17	-0.07	-0.09	-0.11	-0.07	-0.24	-0.37	-0.65	-0.37	-0.20	-0.20	
			(-4%)	(-4%)	(-10%)	(-10%)	(-4%)	(-6%)	(-9%)	(-8%)	(-19%)	(-33%)	(-45%)	(-25%)	(-14%)	
	Franks Tract	ALL	0.03	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.00	-0.03	-0.05	-0.01	-0.01	0.00
			(13%)	(16%)	(3%)	(2%)	(-0%)	(-0%)	(0%)	(-1%)	(-7%)	(-17%)	(-7%)	(-12%)	(-1%)	
	DROUGHT	0.05	0.06	0.03	0.02	0.00	-0.01	-0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.02	
			(25%)	(38%)	(14%)	(8%)	(0%)	(-2%)	(-1%)	(0%)	(3%)	(5%)	(9%)	(-0%)	(6%)	
Old R. at Rock Slough	ALL	0.06	0.06	0.03	0.03	0.00	0.02	0.02	0.00	-0.02	-0.04	-0.02	-0.02	0.01		
		(28%)	(22%)	(7%)	(5%)	(0%)	(3%)	(2%)	(1%)	(-4%)	(-15%)	(-7%)	(-19%)	(2%)		
DROUGHT	0.10	0.10	0.10	0.03	0.00	0.01	0.01	0.02	0.02	0.01	0.02	0.00	0.04			
		(44%)	(52%)	(42%)	(8%)	(1%)	(2%)	(2%)	(5%)	(7%)	(8%)	(14%)	(-1%)	(12%)		
Western Delta	Sac. R. at Emmaton	ALL	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.01	
			(5%)	(7%)	(2%)	(0%)	(1%)	(2%)	(4%)	(11%)	(4%)	(-0%)	(3%)	(-1%)	(3%)	
	DROUGHT	0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	
			(8%)	(12%)	(4%)	(3%)	(2%)	(-0%)	(1%)	(-0%)	(2%)	(5%)	(9%)	(-1%)	(3%)	
	SJR at Antioch	ALL	0.01	0.02	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.03	-0.01	0.00	0.00
			(9%)	(10%)	(1%)	(0%)	(-1%)	(-1%)	(-1%)	(1%)	(-4%)	(-14%)	(-7%)	(-5%)	(-1%)	
	DROUGHT	0.02	0.03	0.01	0.01	0.00	-0.01	-0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.01	
			(14%)	(24%)	(8%)	(2%)	(-1%)	(-2%)	(-3%)	(-2%)	(-0%)	(5%)	(8%)	(-0%)	(3%)	
	Sac. R. at Mallard Island	ALL	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	-0.02	-0.01	0.00	0.00	
			(10%)	(11%)	(2%)	(0%)	(-2%)	(-0%)	(0%)	(3%)	(1%)	(-9%)	(-7%)	(-1%)	(0%)	
	DROUGHT	0.02	0.02	0.01	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	
			(15%)	(22%)	(7%)	(1%)	(-3%)	(-1%)	(-2%)	(-1%)	(-0%)	(5%)	(6%)	(-0%)	(3%)	
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	-0.02	0.00	0.00	0.00	0.05	0.02	-0.02	0.00	-0.02	-0.02	-0.02	0.00	0.00	
			(-7%)	(0%)	(-0%)	(-0%)	(11%)	(4%)	(-6%)	(-1%)	(-6%)	(-10%)	(-7%)	(0%)	(-1%)	
	DROUGHT	-0.03	0.00	0.00	0.00	0.01	0.02	0.02	0.04	-0.01	-0.02	0.00	0.00	0.00		
			(-8%)	(0%)	(1%)	(1%)	(3%)	(5%)	(5%)	(16%)	(-5%)	(-8%)	(-1%)	(0%)	(1%)	
	Contra Costa PP #1	ALL	0.01	0.09	0.04	-0.01	0.10	0.03	-0.01	0.00	-0.02	-0.05	-0.06	-0.02	0.01	
			(2%)	(50%)	(11%)	(-1%)	(11%)	(3%)	(-1%)	(0%)	(-3%)	(-13%)	(-16%)	(-18%)	(2%)	
	DROUGHT	0.05	0.12	0.03	0.04	-0.01	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00		
			(15%)	(67%)	(11%)	(9%)	(-2%)	(3%)	(3%)	(4%)	(1%)	(1%)	(-2%)	(1%)	(6%)	
	Banks PP	ALL	0.03	0.06	0.04	0.04	0.00	0.00	0.00	0.00	0.01	-0.01	-0.03	-0.06	0.01	
			(5%)	(11%)	(8%)	(5%)	(0%)	(-0%)	(-0%)	(0%)	(1%)	(-1%)	(-7%)	(-19%)	(1%)	
	DROUGHT	0.04	0.10	0.07	0.08	0.00	-0.03	-0.02	-0.01	0.04	0.04	0.04	-0.04	0.03		
			(8%)	(22%)	(14%)	(13%)	(-0%)	(-3%)	(-3%)	(-1%)	(6%)	(15%)	(16%)	(-24%)	(5%)	
Jones PP	ALL	0.14	0.13	0.04	0.06	0.01	0.02	0.01	0.01	0.02	0.05	0.05	0.06	0.05		
		(18%)	(15%)	(4%)	(5%)	(1%)	(1%)	(1%)	(1%)	(2%)	(9%)	(8%)	(10%)	(5%)		
DROUGHT	0.23	0.20	0.04	0.05	0.03	0.01	0.00	0.01	0.05	0.12	0.08	0.01	0.07			
		(34%)	(30%)	(4%)	(5%)	(2%)	(1%)	(0%)	(1%)	(9%)	(45%)	(21%)	(3%)	(9%)		

^a ALL: Water years 1976-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

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1 Table 6. No Action LLT use of assimilative Capacity Available under existing Conditions.

Nitrate No Action LLT	Location	Period ^a	OC T	NO V	DE C	JAN	FEB	MA R	AP R	MA Y	JU N	JUL	AU G	SE P	Annual Avg. Change
			Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.	Ex. Cond.
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.0	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.1
		DROUGHT	0.0	0.0	0.0	0.2	0.3	0.3	0.2	0.1	0.1	0.0	-0.1	0.0	0.1
	SJR at Buckley Cove	ALL	0.6	0.2	1.4	1.0	0.7	0.6	0.6	0.4	1.4	2.8	4.2	2.3	1.3
		DROUGHT	0.8	0.9	2.0	2.1	0.9	1.0	1.2	0.8	2.7	4.1	7.6	4.4	2.4
	Franks Tract	ALL	-0.3	-0.4	-0.1	-0.1	0.0	0.0	0.0	0.0	0.3	0.5	0.1	0.1	0.0
		DROUGHT	-0.5	-0.6	-0.3	-0.2	0.0	0.1	0.1	0.0	-0.1	-0.1	-0.1	0.0	-0.2
Old R. at Rock Slough	ALL	-0.7	-0.6	-0.3	-0.3	0.0	-0.3	-0.2	0.0	0.2	0.5	0.2	0.2	-0.1	
	DROUGHT	-1.0	-1.0	-1.0	-0.3	0.0	-0.1	-0.1	-0.2	-0.2	-0.1	-0.2	0.0	-0.4	
Western Delta	Sac. R. at Emmaton	ALL	-0.1	-0.1	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.1	0.0	0.0	0.0	-0.1
		DROUGHT	-0.1	-0.2	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	-0.1
	SJR at Antioch	ALL	-0.1	-0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.3	0.1	0.0	0.0
		DROUGHT	-0.2	-0.3	-0.1	-0.1	0.0	0.1	0.1	0.0	0.0	-0.1	-0.1	0.0	-0.1
Sac. R. at Mallard Island	ALL	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.2	0.1	0.0	0.0	
	DROUGHT	-0.2	-0.2	-0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.2	0.0	0.0	0.0	-0.5	-0.2	0.2	0.0	0.2	0.2	0.2	0.0	0.0
		DROUGHT	0.3	0.0	0.0	0.0	-0.2	-0.2	-0.2	-0.4	0.1	0.2	0.0	0.0	0.0
	Contra Costa PP #1	ALL	-0.1	-1.0	-0.4	0.1	-1.1	-0.3	0.1	0.0	0.2	0.5	0.6	0.2	-0.1
		DROUGHT	-0.5	-1.2	-0.3	-0.4	0.1	-0.2	-0.2	-0.2	0.0	0.0	0.0	0.0	-0.2
	Banks PP	ALL	-0.3	-0.7	-0.5	-0.4	0.0	0.0	0.0	0.0	-0.1	0.1	0.3	0.6	-0.1
		DROUGHT	-0.4	-1.1	-0.7	-0.8	0.0	0.3	0.3	0.1	-0.4	-0.4	-0.4	0.4	-0.3
	Jones PP	ALL	-1.5	-1.4	-0.4	-0.7	-0.2	-0.2	-0.1	-0.1	-0.2	-0.6	-0.5	-0.6	-0.5
		DROUGHT	-2.5	-2.2	-0.4	-0.5	-0.3	-0.1	0.0	-0.1	-0.5	-1.3	-0.8	-0.1	-0.8

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

NOTES:

-- Positive values indicate that implementation of the Alternative increases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality improves under the Alternative, relative to Existing Conditions or the No Action Alternative). Negative values indicate that implementation of the Alternative decreases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality degradation occurs under the Alternative, relative to Existing Conditions or the No Action Alternative). Values of -100% represent instances where all available assimilative capacity is used under the Alternative, and therefore concentrations are at or above the criteria.

-- Regulatory objective is the drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

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1 **Table 7. Period Average Nitrate-N Concentrations and Frequency of Exceedance of objectives/Criteria**
 2 **for existing Conditions, No Action LLT, and Alternative 1 LLT.**

Nitrate Alt 1 LLT	Location	Period ^a	Period Average Concentration mg/L-N			Lowest Applicable Human Health Criterion/Objective (10 mg/L-N) ^b			Lowest Applicable Aquatic Life Criterion/Objective (N/A)			Other Relevant Threshold (5 mg/L-N) ^c		
			Ex. Cond.	No Act. LLT	Alt 1 LLT	Ex. Cond.	No Act. LLT	Alt 1 LLT	Ex. Cond.	No Act. LLT	Alt 1 LLT	Ex. Cond.	No Act. LLT	Alt 1 LLT
			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)					
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.29	0.28	0.33	0	0	0	-	-	-	0	0	0
		DROUGHT	0.30	0.29	0.33	0	0	0	-	-	-	0	0	0
	SJR at Buckley Cove	ALL	1.44	1.32	1.32	0	0	0	-	-	-	0	0	0
		DROUGHT	1.45	1.25	1.28	0	0	0	-	-	-	0	0	0
	Franks Tract	ALL	0.36	0.36	0.46	0	0	0	-	-	-	0	0	0
DROUGHT		0.24	0.26	0.27	0	0	0	-	-	-	0	0	0	
Old R. at Rock Slough	ALL	0.46	0.47	0.55	0	0	0	-	-	-	0	0	0	
	DROUGHT	0.31	0.34	0.35	0	0	0	-	-	-	0	0	0	
Western Delta	Sac. R. at Emmaton	ALL	0.20	0.20	0.21	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.19	0	0	0	-	-	-	0	0	0
	SJR at Antioch	ALL	0.27	0.26	0.32	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.20	0	0	0	-	-	-	0	0	0
	Sac. R. at Mallard Island	ALL	0.19	0.19	0.21	0	0	0	-	-	-	0	0	0
DROUGHT		0.15	0.15	0.15	0	0	0	-	-	-	0	0	0	
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.27	0.27	0.19	0	0	0	-	-	-	0	0	0
		DROUGHT	0.27	0.27	0.19	0	0	0	-	-	-	0	0	0
	Contra Costa PP #1	ALL	0.51	0.52	0.60	0	0	0	-	-	-	0	0	0
		DROUGHT	0.38	0.41	0.41	0	0	0	-	-	-	0	0	0
	Banks PP	ALL	0.70	0.71	0.46	0	0	0	-	-	-	0	0	0
		DROUGHT	0.56	0.58	0.53	0	0	0	-	-	-	0	0	0
	Jones PP	ALL	0.92	0.96	0.71	0	0	0	-	-	-	0	0	0
DROUGHT		0.79	0.86	0.82	0	0	0	-	-	-	0	0	0	

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

^b Drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

^c Ayers and Westcot (1985). Recommended goals for sensitive crops.

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1 **Table 8. Period average Change in Nitrate-N Concentrations (mg/L-N) for Alternative 1A LLT Relative to existing Conditions and the No Action Alternative LLT.**

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change			
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT		
Delta Interior	Moke R. (SF) at Staten Island	ALL	0.03	0.03	0.00	0.00	0.01	0.01	0.03	0.04	0.04	0.07	0.06	0.07	0.05	0.05	0.02	0.03	0.07	0.09	0.06	0.08	0.09	0.10	0.00	0.00	0.04	0.05		
			(15%)	(16%)	(-1%)	(-0%)	(3%)	(4%)	(5%)	(10%)	(7%)	(11%)	(15%)	(17%)	(12%)	(15%)	(8%)	(11%)	(28%)	(36%)	(32%)	(41%)	(50%)	(54%)	(-1%)	(2%)	(13%)	(17%)		
	SJR at Buckley Cove	ALL	-0.10	-0.06	-0.13	-0.12	-0.09	0.03	-0.06	0.03	-0.05	0.01	-0.04	0.01	-0.04	0.01	-0.03	0.00	-0.10	0.02	-0.21	0.04	-0.28	0.07	-0.25	-0.05	-0.12	0.00		
			(-6%)	(-4%)	(-8%)	(-7%)	(-6%)	(2%)	(-4%)	(2%)	(-3%)	(1%)	(-3%)	(1%)	(-4%)	(1%)	(-4%)	(0%)	(-8%)	(2%)	(-16%)	(4%)	(-18%)	(5%)	(-16%)	(-4%)	(-8%)	(-0%)		
	Franks Tract	ALL	0.12	0.10	0.11	0.08	0.07	0.06	0.12	0.11	0.23	0.23	0.19	0.20	0.07	0.07	-0.01	-0.01	0.03	0.05	0.05	0.10	0.09	0.10	0.04	0.05	0.09	0.09		
			(60%)	(41%)	(52%)	(31%)	(23%)	(20%)	(26%)	(24%)	(36%)	(37%)	(33%)	(33%)	(14%)	(14%)	(-3%)	(-3%)	(7%)	(14%)	(20%)	(46%)	(45%)	(57%)	(32%)	(51%)	(26%)	(26%)		
	Old R. at Rock Slough	ALL	0.17	0.11	0.12	0.06	0.06	0.03	0.19	0.16	0.23	0.23	0.16	0.13	-0.02	-0.03	-0.08	-0.08	0.04	0.06	0.08	0.12	0.10	0.11	0.06	0.09	0.09	0.08		
			(73%)	(36%)	(46%)	(20%)	(15%)	(8%)	(33%)	(26%)	(29%)	(29%)	(21%)	(17%)	(-2%)	(-4%)	(-13%)	(-14%)	(7%)	(12%)	(26%)	(48%)	(47%)	(58%)	(49%)	(84%)	(20%)	(18%)		
	Western Delta	Sac. R. at Emmaton	ALL	0.03	0.02	0.03	0.02	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	-0.01	0.00	-0.02	-0.01	-0.02	0.02	0.02	0.03	0.02	0.01	0.01	0.01	0.01	
				(19%)	(13%)	(18%)	(10%)	(1%)	(-1%)	(2%)	(1%)	(4%)	(2%)	(6%)	(4%)	(2%)	(-2%)	(-1%)	(-10%)	(-6%)	(-9%)	(10%)	(11%)	(20%)	(17%)	(13%)	(15%)	(6%)	(3%)	
		SJR at Antioch	ALL	0.07	0.05	0.08	0.07	0.04	0.04	0.07	0.07	0.12	0.13	0.13	0.14	0.07	0.07	0.00	0.00	-0.01	0.01	0.01	0.04	0.03	0.04	0.02	0.02	0.05	0.06	
				(40%)	(29%)	(51%)	(37%)	(17%)	(16%)	(21%)	(21%)	(28%)	(29%)	(32%)	(33%)	(18%)	(19%)	(-0%)	(-1%)	(-2%)	(2%)	(5%)	(22%)	(16%)	(25%)	(18%)	(24%)	(20%)	(21%)	
		Sac. R. at Mallard Island	ALL	0.04	0.03	0.05	0.03	0.02	0.02	0.03	0.03	0.05	0.06	0.06	0.06	0.03	0.03	-0.01	-0.01	-0.01	-0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	
				(31%)	(19%)	(39%)	(25%)	(11%)	(9%)	(12%)	(12%)	(16%)	(18%)	(21%)	(22%)	(11%)	(11%)	(-3%)	(-6%)	(-4%)	(-5%)	(-2%)	(8%)	(4%)	(12%)	(9%)	(11%)	(12%)	(11%)	
		Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	-0.08	-0.06	0.00	0.00	-0.02	-0.02	-0.09	-0.09	-0.17	-0.23	-0.13	-0.14	-0.13	-0.11	-0.09	-0.09	-0.11	-0.10	-0.12	-0.09	-0.15	-0.13	0.00	0.00	-0.09	-0.09
					(-29%)	(-24%)	(3%)	(3%)	(-8%)	(-7%)	(-26%)	(-26%)	(-36%)	(-42%)	(-34%)	(-37%)	(-39%)	(-35%)	(-38%)	(-37%)	(-45%)	(-41%)	(-51%)	(-45%)	(-52%)	(-48%)	(6%)	(5%)	(-33%)	(-32%)
			Contra Costa PP #1	ALL	0.14	0.13	0.14	0.05	0.13	0.10	0.11	0.12	0.26	0.16	0.15	0.12	0.07	0.07	-0.08	-0.08	0.01	0.03	0.09	0.14	0.06	0.12	0.04	0.06	0.09	0.08
					(42%)	(40%)	(76%)	(17%)	(41%)	(27%)	(16%)	(18%)	(30%)	(17%)	(18%)	(14%)	(8%)	(9%)	(-13%)	(-13%)	(1%)	(5%)	(23%)	(42%)	(18%)	(42%)	(32%)	(61%)	(18%)	(16%)
Banks PP			ALL	0.05	0.03	-0.16	-0.22	-0.19	-0.23	-0.36	-0.40	-0.52	-0.52	-0.72	-0.72	-0.47	-0.47	-0.21	-0.21	-0.38	-0.40	0.06	0.07	-0.03	0.00	0.01	0.06	-0.24	-0.25	
				(10%)	(5%)	(-27%)	(-34%)	(-31%)	(-36%)	(-46%)	(-48%)	(-46%)	(-46%)	(-68%)	(-68%)	(-49%)	(-49%)	(-29%)	(-30%)	(-45%)	(-46%)	(12%)	(14%)	(-7%)	(-1%)	(2%)	(27%)	(-35%)	(-35%)	
Jones PP			ALL	0.11	-0.03	-0.09	-0.21	-0.19	-0.23	-0.30	-0.36	-0.62	-0.63	-0.58	-0.59	-0.40	-0.41	-0.25	-0.26	-0.33	-0.35	0.06	0.00	0.20	0.15	-0.05	-0.11	-0.20	-0.25	
				(15%)	(-3%)	(-11%)	(-22%)	(-20%)	(-23%)	(-25%)	(-29%)	(-43%)	(-44%)	(-45%)	(-46%)	(-36%)	(-36%)	(-31%)	(-31%)	(-39%)	(-40%)	(10%)	(0%)	(34%)	(24%)	(-9%)	(-17%)	(-22%)	(-26%)	

^a ALL: Water years 1976-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

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1 Table 9. Alternative 1A use of assimilative Capacity Available under existing Conditions and No Action LLT Relative to the 10 mg/L-N MCL.

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change	
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT
			Alt 1 LLT																									
Delta Interior	Moke. R. (SF) at Staten Island	ALL	-0.3	-0.3	0.0	0.0	-0.1	-0.1	-0.3	-0.5	-0.5	-0.7	-0.7	-0.7	-0.5	-0.6	-0.2	-0.3	-0.7	-0.9	-0.7	-0.8	-1.0	-1.0	0.0	0.0	-0.4	-0.5
		DROUGHT	-0.3	-0.3	0.0	0.0	-0.1	-0.1	0.0	-0.1	0.3	0.0	-0.3	-0.6	-0.1	-0.3	-0.2	-0.3	-1.0	-1.1	-1.0	-1.1	-1.0	-0.9	0.0	0.0	-0.3	-0.4
	SJR at Buckley Cove	ALL	1.3	0.7	1.6	1.4	1.1	-0.3	0.7	-0.3	0.6	-0.1	0.5	-0.1	0.5	-0.1	0.4	0.0	1.2	-0.3	2.4	-0.4	3.4	-0.8	2.9	0.6	1.4	0.0
		DROUGHT	1.9	1.1	2.9	1.9	2.0	0.1	1.6	-0.5	0.8	-0.1	0.8	-0.3	0.9	-0.3	0.7	-0.1	2.1	-0.6	2.1	-1.9	3.7	-3.6	4.6	0.2	2.0	-0.4
	Franks Tract	ALL	-1.3	-1.0	-1.1	-0.8	-0.7	-0.7	-1.3	-1.2	-2.4	-2.4	-2.1	-2.1	-0.8	-0.8	0.1	0.1	-0.3	-0.6	-0.5	-1.0	-0.9	-1.0	-0.4	-0.5	-1.0	-1.0
		DROUGHT	-0.4	0.2	0.0	0.7	-0.1	0.2	-0.4	-0.2	-0.5	-0.5	-0.3	-0.4	-0.3	-0.3	-0.1	-0.1	-0.3	-0.3	-0.5	-0.4	-0.8	-0.7	0.0	0.0	-0.3	-0.2
Old R. at Rock Slough	ALL	-1.7	-1.1	-1.2	-0.7	-0.6	-0.3	-2.0	-1.7	-2.5	-2.5	-1.7	-1.4	0.2	0.3	0.8	0.9	-0.4	-0.6	-0.8	-1.2	-1.0	-1.2	-0.6	-0.9	-1.0	-0.9	
	DROUGHT	-0.4	0.7	0.1	1.1	-0.3	0.8	-0.8	-0.5	-0.5	-0.5	-0.3	-0.2	-0.2	-0.1	-0.1	0.0	-0.5	-0.4	-0.9	-0.7	-1.0	-0.8	0.0	0.0	-0.4	0.0	
Western Delta	Sac. R. at Emmaton	ALL	-0.3	-0.2	-0.3	-0.2	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.1	0.0	0.1	0.0	0.2	0.1	0.2	-0.2	-0.2	-0.3	-0.2	-0.1	-0.1	-0.1	-0.1
		DROUGHT	0.0	0.1	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	-0.1	-0.1	-0.2	-0.1	0.0	0.0	0.0	0.1
	SJR at Antioch	ALL	-0.7	-0.5	-0.8	-0.7	-0.4	-0.4	-0.8	-0.8	-1.3	-1.4	-1.4	-1.4	-0.7	-0.7	0.0	0.0	0.1	-0.1	-0.1	-0.4	-0.3	-0.4	-0.2	-0.2	-0.5	-0.6
		DROUGHT	-0.2	0.0	-0.1	0.3	-0.1	0.1	-0.2	-0.1	-0.1	-0.2	-0.1	-0.1	0.0	-0.1	0.1	0.0	0.1	0.1	-0.1	-0.1	-0.3	-0.2	0.0	0.0	-0.1	0.0
	Sac. R. at Mallard Island	ALL	-0.4	-0.3	-0.5	-0.3	-0.2	-0.2	-0.3	-0.3	-0.5	-0.6	-0.6	-0.6	-0.3	-0.3	0.1	0.1	0.1	0.1	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2
		DROUGHT	-0.2	0.0	-0.1	0.1	-0.1	0.0	-0.1	-0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.8	0.6	0.0	0.0	0.2	0.2	1.0	1.0	1.8	2.4	1.3	1.5	1.4	1.1	0.9	0.9	1.1	1.0	1.2	0.9	1.5	1.3	-0.1	0.0	0.9	0.9
		DROUGHT	1.3	1.0	0.0	0.0	0.1	0.2	0.5	0.5	1.1	1.3	1.0	1.2	1.1	1.3	0.9	1.3	1.2	1.1	1.3	1.1	1.8	1.8	0.0	0.0	0.9	0.9
	Contra Costa PP #1	ALL	-1.4	-1.4	-1.5	-0.5	-1.4	-1.0	-1.2	-1.2	-2.8	-1.8	-1.6	-1.4	-0.7	-0.8	0.9	0.9	-0.1	-0.3	-0.9	-1.4	-0.7	-1.2	-0.4	-0.6	-1.0	-0.9
		DROUGHT	-0.2	0.3	0.0	1.2	0.0	0.4	-0.2	0.3	-0.5	-0.7	-0.1	0.2	-0.1	0.1	0.2	0.4	-0.5	-0.5	-0.9	-0.8	-0.9	-0.9	0.0	0.0	-0.3	0.0
	Banks PP	ALL	-0.6	-0.3	1.7	2.3	2.0	2.5	3.9	4.3	5.9	5.9	8.0	8.0	5.2	5.1	2.3	2.3	4.2	4.3	-0.6	-0.7	0.3	0.0	-0.1	-0.6	2.6	2.7
		DROUGHT	-0.8	-0.4	-0.5	0.5	-0.2	0.6	-0.1	0.7	-1.1	-1.1	5.6	5.3	4.3	4.0	1.7	1.6	0.1	0.5	-2.0	-1.6	-2.6	-2.2	0.0	-0.4	0.3	0.6
	Jones PP	ALL	-1.2	0.3	1.0	2.4	2.1	2.5	3.4	4.1	7.2	7.4	6.6	6.8	4.4	4.6	2.7	2.8	3.7	3.8	-0.6	0.0	-2.1	-1.6	0.6	1.2	2.2	2.8
		DROUGHT	-2.6	-0.2	-3.4	-1.2	-1.5	-1.1	-1.7	-1.1	4.3	4.6	2.2	2.3	4.2	4.3	3.2	3.3	1.0	1.5	-2.1	-0.8	-3.8	-3.0	-2.2	-2.0	-0.3	0.5

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

NOTES:

-- Positive values indicate that implementation of the Alternative increases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality improves under the Alternative, relative to Existing Conditions or the No Action Alternative). Negative values indicate that implementation of the Alternative decreases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality degradation occurs under the Alternative, relative to Existing Conditions or the No Action Alternative). Values of -100% represent instances where all available assimilative capacity is used under the Alternative, and therefore concentrations are at or above the criteria.

-- Regulatory objective is the drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

1 **Table 10. Period Average Nitrate-N Concentrations and Frequency of Exceedance of objectives/Criteria for existing Conditions, No Action LLT, and Alternative 2 LLT.**

Nitrate Alt 2 LLT	Location	Period ^a	Period Average Concentration mg/L-N			Lowest Applicable Human Health Criterion/Objective (10 mg/L-N) ^b			Lowest Applicable Aquatic Life Criterion/Objective (N/A)			Other Relevant Threshold (5 mg/L-N) ^c		
			Ex. Cond.	No Act. LLT	Alt 2 LLT	Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)		
						Ex. Cond.	No Act. LLT	Alt 2 LLT	Ex. Cond.	No Act. LLT	Alt 2 LLT	Ex. Cond.	No Act. LLT	Alt 2 LLT
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.29	0.28	0.34	0	0	0	-	-	-	0	0	0
		DROUGHT	0.30	0.29	0.34	0	0	0	-	-	-	0	0	0
	SJR at Buckley Cove	ALL	1.44	1.32	1.38	0	0	0	-	-	-	0	0	0
		DROUGHT	1.45	1.25	1.37	0	0	0	-	-	-	0	0	0
	Franks Tract	ALL	0.36	0.36	0.52	0	0	0	-	-	-	0	0	0
		DROUGHT	0.24	0.26	0.33	0	0	0	-	-	-	0	0	0
Old R. at Rock Slough	ALL	0.46	0.47	0.64	0	0	0	-	-	-	0	0	0	
	DROUGHT	0.31	0.34	0.42	0	0	0	-	-	-	0	0	0	
Western Delta	Sac. R. at Emmaton	ALL	0.20	0.20	0.22	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.20	0	0	0	-	-	-	0	0	0
	SJR at Antioch	ALL	0.27	0.26	0.35	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.22	0	0	0	-	-	-	0	0	0
	Sac. R. at Mallard Island	ALL	0.19	0.19	0.23	0	0	0	-	-	-	0	0	0
		DROUGHT	0.15	0.15	0.16	0	0	0	-	-	-	0	0	0
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.27	0.27	0.19	0	0	0	-	-	-	0	0	0
		DROUGHT	0.27	0.27	0.19	0	0	0	-	-	-	0	0	0
	Contra Costa PP #1	ALL	0.51	0.52	0.69	0	0	0	-	-	-	0	0	0
		DROUGHT	0.38	0.41	0.47	0	0	0	-	-	-	0	0	0
	Banks PP	ALL	0.70	0.71	0.46	0	0	0	-	-	-	0	0	0
		DROUGHT	0.56	0.58	0.52	0	0	0	-	-	-	0	0	0
	Jones PP	ALL	0.92	0.96	0.62	0	0	0	-	-	-	0	0	0
		DROUGHT	0.79	0.86	0.71	0	0	0	-	-	-	0	0	0

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

^b Drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

^c Ayers and Westcot (1985). Recommended goals for sensitive crops.

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1 Table 11. Period average Change in nitrate-N Concentrations (mg/L-N) for Alternative 2A LLT Relative to existing Conditions and the No Action Alternative LLT.

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change			
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT		
Alt 2 LLT	Delta Interior	Moke R. (SF) at Staten Island	ALL	0.04	0.05	0.00	0.00	0.01	0.01	0.03	0.05	0.06	0.09	0.08	0.08	0.07	0.08	0.04	0.04	0.08	0.09	0.06	0.07	0.09	0.10	0.00	0.00	0.05	0.05	
				(21%)	(22%)	(-1%)	(-0%)	(4%)	(4%)	(7%)	(11%)	(10%)	(14%)	(18%)	(20%)	(19%)	(21%)	(14%)	(17%)	(31%)	(39%)	(29%)	(38%)	(48%)	(52%)	(-2%)	(1%)	(16%)	(19%)	
		DROUGHT	0.04	0.04	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.03	0.05	0.07	0.02	0.04	0.02	0.04	0.09	0.10	0.10	0.11	0.10	0.09	0.10	0.09	0.00	0.00	0.04	0.05
				(20%)	(20%)	(-1%)	(-1%)	(2%)	(3%)	(1%)	(4%)	(-0%)	(4%)	(10%)	(15%)	(6%)	(12%)	(9%)	(15%)	(39%)	(44%)	(58%)	(59%)	(54%)	(48%)	(-0%)	(-0%)	(12%)	(16%)	
		SJR at Buckley Cove	ALL	-0.05	0.00	-0.03	-0.01	-0.05	0.07	-0.03	0.05	-0.05	0.01	-0.04	0.01	-0.05	0.00	-0.03	0.00	-0.07	0.05	-0.09	0.15	-0.10	0.25	-0.11	0.09	-0.06	0.06	
				(-3%)	(0%)	(-2%)	(-1%)	(-3%)	(5%)	(-2%)	(3%)	(-3%)	(0%)	(-3%)	(1%)	(-4%)	(0%)	(-4%)	(0%)	(-6%)	(5%)	(-7%)	(14%)	(-6%)	(20%)	(-7%)	(7%)	(-4%)	(4%)	
	DROUGHT	-0.06	0.00	-0.10	-0.03	-0.13	0.03	-0.10	0.07	-0.09	-0.01	-0.07	0.02	-0.09	0.01	-0.06	0.01	-0.12	0.11	0.00	0.37	-0.06	0.59	-0.16	0.22	-0.09	0.12			
			(-4%)	(0%)	(-6%)	(-2%)	(-8%)	(2%)	(-6%)	(5%)	(-5%)	(-1%)	(-5%)	(1%)	(-8%)	(1%)	(-7%)	(1%)	(-10%)	(11%)	(-0%)	(50%)	(-4%)	(73%)	(-10%)	(19%)	(-6%)	(9%)		
	Franks Tract	ALL	0.27	0.24	0.29	0.25	0.16	0.15	0.15	0.14	0.27	0.27	0.22	0.22	0.14	0.14	0.06	0.07	0.12	0.14	0.08	0.12	0.08	0.09	0.07	0.08	0.16	0.16		
			(130%)	(103%)	(133%)	(101%)	(51%)	(47%)	(33%)	(30%)	(43%)	(43%)	(37%)	(38%)	(25%)	(25%)	(15%)	(16%)	(28%)	(38%)	(30%)	(57%)	(42%)	(53%)	(65%)	(88%)	(44%)	(45%)		
	DROUGHT	0.14	0.09	0.16	0.10	0.09	0.06	0.07	0.05	0.10	0.10	0.10	0.10	0.08	0.09	0.05	0.05	0.07	0.06	0.06	0.06	0.08	0.07	0.01	0.01	0.08	0.07			
			(69%)	(35%)	(96%)	(42%)	(45%)	(27%)	(23%)	(15%)	(23%)	(23%)	(25%)	(27%)	(23%)	(25%)	(19%)	(19%)	(31%)	(27%)	(43%)	(36%)	(54%)	(42%)	(6%)	(6%)	(35%)	(27%)		
Old R. at Rock Slough	ALL	0.41	0.34	0.40	0.34	0.18	0.15	0.22	0.19	0.29	0.29	0.20	0.17	0.06	0.04	0.01	0.00	0.12	0.14	0.09	0.13	0.09	0.10	0.22	0.24	0.19	0.18			
		(176%)	(116%)	(153%)	(108%)	(46%)	(37%)	(39%)	(32%)	(37%)	(37%)	(27%)	(23%)	(8%)	(6%)	(2%)	(1%)	(23%)	(28%)	(30%)	(53%)	(40%)	(51%)	(172%)	(235%)	(42%)	(39%)			
DROUGHT	0.23	0.13	0.25	0.15	0.12	0.02	0.13	0.10	0.12	0.11	0.10	0.09	0.07	0.06	0.04	0.02	0.09	0.07	0.10	0.09	0.10	0.08	0.01	0.01	0.11	0.08				
		(101%)	(39%)	(131%)	(51%)	(51%)	(6%)	(36%)	(26%)	(21%)	(20%)	(18%)	(16%)	(12%)	(10%)	(12%)	(7%)	(32%)	(24%)	(62%)	(49%)	(62%)	(42%)	(7%)	(7%)	(36%)	(22%)			
Western Delta	Sac. R. at Emmaton	ALL	0.06	0.05	0.06	0.05	0.02	0.02	0.01	0.01	0.02	0.01	0.02	0.01	0.02	0.01	0.03	0.00	0.02	0.01	0.02	0.02	0.03	0.02	0.01	0.01	0.03	0.02		
			(36%)	(29%)	(39%)	(30%)	(11%)	(9%)	(4%)	(3%)	(5%)	(4%)	(8%)	(5%)	(10%)	(5%)	(13%)	(2%)	(10%)	(6%)	(15%)	(15%)	(19%)	(16%)	(14%)	(16%)	(14%)	(10%)		
		DROUGHT	0.02	0.01	0.04	0.02	0.02	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	0.02	0.01	0.02	0.01	0.00	0.00	0.01	0.00		
			(14%)	(5%)	(24%)	(11%)	(9%)	(5%)	(2%)	(-0%)	(2%)	(-0%)	(1%)	(1%)	(-2%)	(-2%)	(-5%)	(-4%)	(-3%)	(-5%)	(14%)	(8%)	(19%)	(9%)	(3%)	(3%)	(5%)	(2%)		
	SJR at Antioch	ALL	0.13	0.12	0.16	0.14	0.08	0.08	0.10	0.09	0.14	0.14	0.14	0.15	0.10	0.10	0.05	0.05	0.05	0.07	0.03	0.06	0.02	0.03	0.03	0.03	0.09	0.09		
			(79%)	(65%)	(96%)	(78%)	(35%)	(34%)	(27%)	(27%)	(30%)	(32%)	(34%)	(35%)	(27%)	(27%)	(17%)	(16%)	(18%)	(23%)	(14%)	(32%)	(15%)	(23%)	(32%)	(38%)	(32%)	(33%)		
	DROUGHT	0.06	0.04	0.08	0.05	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.02	0.03	0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.03	0.02	0.00	0.00	0.03	0.02		
			(38%)	(21%)	(60%)	(29%)	(25%)	(15%)	(13%)	(11%)	(9%)	(10%)	(11%)	(13%)	(9%)	(12%)	(2%)	(4%)	(3%)	(4%)	(16%)	(10%)	(25%)	(16%)	(4%)	(4%)	(16%)	(13%)		
	Sac. R. at Mallard Island	ALL	0.07	0.06	0.09	0.07	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.04	0.04	0.02	0.02	0.03	0.03	0.01	0.03	0.01	0.01	0.01	0.02	0.04	0.04		
			(58%)	(44%)	(70%)	(52%)	(27%)	(25%)	(18%)	(18%)	(19%)	(20%)	(22%)	(23%)	(18%)	(17%)	(12%)	(8%)	(13%)	(13%)	(6%)	(18%)	(4%)	(12%)	(17%)	(19%)	(22%)	(21%)		
	DROUGHT	0.04	0.02	0.05	0.02	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01		
			(33%)	(15%)	(45%)	(19%)	(21%)	(13%)	(11%)	(10%)	(2%)	(5%)	(2%)	(3%)	(-0%)	(2%)	(-3%)	(-2%)	(-3%)	(-3%)	(4%)	(-0%)	(13%)	(7%)	(3%)	(3%)	(9%)	(6%)		
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	-0.08	-0.06	0.01	0.01	-0.02	-0.01	-0.09	-0.09	-0.17	-0.22	-0.13	-0.14	-0.13	-0.11	-0.09	-0.08	-0.11	-0.09	-0.11	-0.09	-0.15	-0.13	0.01	0.01	-0.09	-0.09		
			(-30%)	(-25%)	(4%)	(3%)	(-7%)	(-7%)	(-25%)	(-25%)	(-35%)	(-42%)	(-34%)	(-36%)	(-38%)	(-35%)	(-37%)	(-37%)	(-44%)	(-40%)	(-49%)	(-43%)	(-52%)	(-48%)	(7%)	(7%)	(-32%)	(-31%)		
	DROUGHT	-0.13	-0.10	0.00	0.00	-0.01	-0.01	-0.05	-0.05	-0.11	-0.12	-0.10	-0.12	-0.11	-0.13	-0.09	-0.13	-0.12	-0.11	-0.12	-0.10	-0.18	-0.18	0.00	0.00	-0.08	-0.09			
			(-40%)	(-35%)	(3%)	(2%)	(-5%)	(-6%)	(-15%)	(-15%)	(-26%)	(-28%)	(-28%)	(-31%)	(-34%)	(-37%)	(-37%)	(-46%)	(-46%)	(-43%)	(-52%)	(-48%)	(-56%)	(-56%)	(5%)	(5%)	(-31%)	(-31%)		
	Contra Costa PP #1	ALL	0.35	0.34	0.40	0.30	0.28	0.24	0.14	0.14	0.40	0.31	0.21	0.18	0.08	0.09	-0.02	-0.02	0.09	0.11	0.11	0.16	0.05	0.10	0.08	0.10	0.18	0.17		
			(107%)	(104%)	(214%)	(109%)	(87%)	(68%)	(20%)	(22%)	(47%)	(32%)	(25%)	(21%)	(10%)	(11%)	(-3%)	(-4%)	(14%)	(18%)	(30%)	(50%)	(14%)	(36%)	(66%)	(103%)	(35%)	(33%)		
	DROUGHT	0.20	0.15	0.21	0.09	0.13	0.09	0.04	0.04	0.12	0.13	0.06	0.04	0.04	0.02	0.00	-0.02	0.08	0.08	0.10	0.10	0.09	0.09	0.01	0.01	0.09	0.07			
			(61%)	(41%)	(119%)	(31%)	(44%)	(30%)	(8%)	(-1%)	(19%)	(21%)	(10%)	(7%)	(6%)	(3%)	(-0%)	(-4%)	(21%)	(21%)	(43%)	(41%)	(29%)	(31%)	(9%)	(9%)	(23%)	(16%)		
	Banks PP	ALL	-0.04	-0.07	-0.18	-0.24	-0.05	-0.10	-0.33	-0.36	-0.53	-0.53	-0.58	-0.58	-0.53	-0.53	-0.19	-0.19	-0.34	-0.36	0.05	0.05	-0.02	0.00	-0.12	-0.07	-0.24	-0.25		
			(-7%)	(-11%)	(-31%)	(-37%)	(-9%)	(-15%)	(-41%)	(-44%)	(-47%)	(-47%)	(-56%)	(-56%)	(-55%)	(-55%)	(-26%)	(-26%)	(-40%)	(-41%)	(9%)	(11%)	(-6%)	(1%)	(-43%)	(-29%)	(-34%)	(-35%)		
	DROUGHT	0.12	0.08	-0.03	-0.13	0.09	0.02	-0.17	-0.24	-0.17	-0.17	-0.42	-0.39	-0.38	-0.36	-0.12	-0.11	-0.08	-0.12	0.24	0.20	0.25	0.21	0.03	0.07	-0.03	-0.06			
			(24%)	(15%)	(-6%)	(-23%)	(19%)	(5%)	(-28%)	(-36%)	(-19%)	(-19%)	(-45%)	(-43%)	(-41%)	(-40%)	(-18%)	(-18%)	(-14%)	(-19%)	(95%)	(69%)	(99%)	(72%)	(23%)	(62%)	(-6%)	(-10%)		
Jones PP	ALL	-0.07	-0.22	-0.13	-0.26	-0.14	-0.18	-0.49	-0.56	-0.69	-0.70	-0.72	-0.74	-0.49	-0.50	-0.35	-0.36	-0.40	-0.42	0.03	-0.02	0.13	0.08	-0.22	-0.27	-0.30	-0.34			
		(-9%)	(-23%)	(-16%)	(-27%)	(-15%)	(-18%)	(-42%)	(-45%)	(-48%)	(-49%)	(-56%)	(-57%)	(-44%)	(-45%)	(-43%)	(-44%)	(-47%)	(-48%)	(6%)	(-3%)	(22%)	(13%)	(-37%)	(-43%)	(-32%)	(-36%)			
DROUGHT	-0.02	-0.25	0.09	-0.11	0.10	0.06	-0.44	-0.49	-0.19	-0.22	-0.50	-0.51	-0.34	-0.35	-0.37	-0.38	-0.05	-0.10	0.14	0.02	0.29	0.21	0.17	0.16	-0.08	-0.15				
		(-4%)	(-28%)	(14%)	(-12%)	(11%)	(7%)	(-41%)	(-43%)	(-14%)	(-15%)	(-38%)	(-39%)	(-31%)	(-31%)	(-46%)	(-47%)	(-9%)	(-16%)	(52%)	(5%)	(78%)	(46%)	(43%)	(39%)	(-10%)	(-17%)			

^a ALL: Water years 1976-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

1 Table 12. Alternative 2A use of assimilative Capacity Available under existing Conditions and No Action LLT Relative to the 10 mg/L-N MCL.

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change	
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT
			Alt 2 LLT																									
Delta Interior	Moke. R. (SF) at Staten Island	ALL	-0.5	-0.5	0.0	0.0	-0.1	-0.1	-0.3	-0.5	-0.7	-0.9	-0.8	-0.9	-0.7	-0.8	-0.4	-0.4	-0.8	-1.0	-0.6	-0.7	-0.9	-1.0	0.0	0.0	-0.5	-0.6
		DROUGHT	-0.5	-0.4	0.0	0.0	-0.1	-0.1	0.0	-0.2	0.0	-0.3	-0.5	-0.8	-0.2	-0.5	-0.2	-0.4	-1.0	-1.0	-1.1	-1.1	-1.0	-0.9	0.0	0.0	-0.4	-0.5
	SJR at Buckley Cove	ALL	0.6	0.0	0.4	0.2	0.6	-0.8	0.4	-0.6	0.6	-0.1	0.4	-0.2	0.5	0.0	0.4	0.0	0.8	-0.6	1.1	-1.7	1.2	-2.8	1.3	-1.0	0.7	-0.6
		DROUGHT	0.7	0.0	1.3	0.3	1.5	-0.4	1.3	-0.8	1.0	0.1	0.8	-0.2	1.1	-0.1	0.7	-0.1	1.4	-1.3	0.0	-3.9	0.7	-6.4	1.8	-2.4	1.0	-1.3
	Franks Tract	ALL	-2.7	-2.4	-3.0	-2.6	-1.7	-1.6	-1.6	-1.5	-2.8	-2.8	-2.4	-2.4	-1.4	-1.4	-0.7	-0.7	-1.2	-1.5	-0.8	-1.3	-0.8	-0.9	-0.7	-0.8	-1.6	-1.7
		DROUGHT	-1.4	-0.9	-1.6	-1.0	-1.0	-0.7	-0.7	-0.5	-1.0	-1.0	-1.0	-1.1	-0.9	-0.9	-0.5	-0.5	-0.7	-0.6	-0.7	-0.6	-0.8	-0.7	-0.1	-0.1	-0.9	-0.7
Old R. at Rock Slough	ALL	-4.2	-3.5	-4.1	-3.5	-1.8	-1.6	-2.3	-2.0	-3.2	-3.2	-2.1	-1.9	-0.6	-0.5	-0.1	0.0	-1.2	-1.5	-0.9	-1.3	-0.9	-1.0	-2.2	-2.4	-2.0	-1.9	
	DROUGHT	-2.3	-1.3	-2.6	-1.5	-1.2	-0.2	-1.3	-1.1	-1.2	-1.2	-1.1	-0.9	-0.7	-0.6	-0.4	-0.2	-0.9	-0.7	-1.0	-0.9	-1.0	-0.8	-0.1	-0.1	-1.2	-0.8	
Western Delta	Sac. R. at Emmaton	ALL	-0.6	-0.6	-0.6	-0.5	-0.2	-0.2	-0.1	-0.1	-0.2	-0.1	-0.2	-0.1	-0.2	-0.1	-0.3	0.0	-0.2	-0.1	-0.2	-0.2	-0.3	-0.2	-0.1	-0.1	-0.3	-0.2
		DROUGHT	-0.3	-0.1	-0.4	-0.2	-0.2	-0.1	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	-0.2	-0.1	-0.2	-0.1	0.0	0.0	-0.1	0.0
	SJR at Antioch	ALL	-1.3	-1.2	-1.6	-1.4	-0.8	-0.8	-1.0	-1.0	-1.4	-1.5	-1.5	-1.5	-1.0	-1.0	-0.5	-0.5	-0.6	-0.7	-0.3	-0.6	-0.2	-0.4	-0.3	-0.3	-0.9	-0.9
		DROUGHT	-0.6	-0.4	-0.8	-0.5	-0.4	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.2	-0.3	0.0	-0.1	-0.1	-0.1	-0.2	-0.1	-0.3	-0.2	0.0	0.0	-0.3	-0.3
	Sac. R. at Mallard Island	ALL	-0.7	-0.6	-0.9	-0.7	-0.5	-0.4	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.3	-0.2	-0.3	-0.3	-0.1	-0.3	-0.1	-0.1	-0.1	-0.2	-0.4	-0.4
		DROUGHT	-0.4	-0.2	-0.5	-0.2	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	-0.1	-0.1
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.8	0.6	-0.1	-0.1	0.2	0.1	0.9	0.9	1.8	2.4	1.3	1.5	1.3	1.1	0.9	0.9	1.1	1.0	1.2	0.9	1.5	1.3	-0.1	-0.1	0.9	0.9
		DROUGHT	1.3	1.1	0.0	0.0	0.1	0.1	0.5	0.5	1.1	1.3	1.0	1.2	1.1	1.3	0.9	1.3	1.2	1.1	1.3	1.1	1.8	1.8	0.0	0.0	0.9	0.9
	Contra Costa PP #1	ALL	-3.6	-3.5	-4.1	-3.1	-2.9	-2.5	-1.5	-1.5	-4.4	-3.4	-2.3	-2.0	-0.9	-1.0	0.2	0.3	-0.9	-1.2	-1.2	-1.7	-0.5	-1.1	-0.8	-1.0	-1.9	-1.8
		DROUGHT	-2.0	-1.5	-2.1	-0.9	-1.3	-1.0	-0.4	0.1	-1.3	-1.4	-0.7	-0.5	-0.4	-0.2	0.0	0.2	-0.8	-0.8	-1.0	-1.0	-0.9	-0.9	-0.1	-0.1	-0.9	-0.7
	Banks PP	ALL	0.4	0.7	1.9	2.6	0.6	1.1	3.5	4.0	6.0	6.0	6.5	6.5	5.9	5.8	2.1	2.1	3.8	3.9	-0.5	-0.5	0.2	0.0	1.3	0.7	2.6	2.7
		DROUGHT	-1.2	-0.9	0.3	1.4	-1.0	-0.3	1.8	2.6	1.9	1.9	4.7	4.3	4.2	3.9	1.2	1.2	0.9	1.3	-2.5	-2.1	-2.6	-2.2	-0.3	-0.7	0.4	0.6
	Jones PP	ALL	0.8	2.4	1.4	2.8	1.5	2.0	5.6	6.4	8.1	8.2	8.3	8.5	5.6	5.7	3.9	3.9	4.4	4.6	-0.4	0.2	-1.4	-0.9	2.3	2.9	3.2	3.8
		DROUGHT	0.3	2.8	-1.0	1.2	-1.1	-0.7	4.9	5.5	2.2	2.5	5.7	5.8	3.9	3.9	4.0	4.1	0.5	1.1	-1.4	-0.2	-3.0	-2.2	-1.8	-1.7	0.9	1.6

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

NOTES:

-- Positive values indicate that implementation of the Alternative increases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality improves under the Alternative, relative to Existing Conditions or the No Action Alternative). Negative values indicate that implementation of the Alternative decreases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality degradation occurs under the Alternative, relative to Existing Conditions or the No Action Alternative). Values of -100% represent instances where all available assimilative capacity is used under the Alternative, and therefore concentrations are at or above the criteria.

-- Regulatory objective is the drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

2

3

1 **Table 13. Period Average nitrate-N Concentrations and Frequency of Exceedance of objectives/Criteria for existing Conditions, No Action LLT, and Alternative 3 LLT.**

Nitrate Alt 3 LLT	Location	Period ^a	Period Average Concentration mg/L-N			Lowest Applicable Human Health Criterion/Objective (10 mg/L-N) ^b			Lowest Applicable Aquatic Life Criterion/Objective (N/A)			Other Relevant Threshold (5 mg/L-N) ^c		
			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)					
			Ex. Cond.	No Act. LLT	Alt 3 LLT	Ex. Cond.	No Act. LLT	Alt 3 LLT	Ex. Cond.	No Act. LLT	Alt 3 LLT	Ex. Cond.	No Act. LLT	Alt 3 LLT
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.29	0.28	0.33	0	0	0	-	-	-	0	0	0
		DROUGHT	0.30	0.29	0.33	0	0	0	-	-	-	0	0	0
	SJR at Buckley Cove	ALL	1.44	1.32	1.32	0	0	0	-	-	-	0	0	0
		DROUGHT	1.45	1.25	1.27	0	0	0	-	-	-	0	0	0
	Franks Tract	ALL	0.36	0.36	0.42	0	0	0	-	-	-	0	0	0
		DROUGHT	0.24	0.26	0.27	0	0	0	-	-	-	0	0	0
Old R. at Rock Slough	ALL	0.46	0.47	0.51	0	0	0	-	-	-	0	0	0	
	DROUGHT	0.31	0.34	0.35	0	0	0	-	-	-	0	0	0	
Western Delta	Sac. R. at Emmaton	ALL	0.20	0.20	0.20	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.19	0	0	0	-	-	-	0	0	0
	SJR at Antioch	ALL	0.27	0.26	0.30	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.20	0	0	0	-	-	-	0	0	0
	Sac. R. at Mallard Island	ALL	0.19	0.19	0.20	0	0	0	-	-	-	0	0	0
		DROUGHT	0.15	0.15	0.15	0	0	0	-	-	-	0	0	0
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.27	0.27	0.18	0	0	0	-	-	-	0	0	0
		DROUGHT	0.27	0.27	0.19	0	0	0	-	-	-	0	0	0
	Contra Costa PP #1	ALL	0.51	0.52	0.56	0	0	0	-	-	-	0	0	0
		DROUGHT	0.38	0.41	0.41	0	0	0	-	-	-	0	0	0
	Banks PP	ALL	0.70	0.71	0.54	0	0	0	-	-	-	0	0	0
		DROUGHT	0.56	0.58	0.52	0	0	0	-	-	-	0	0	0
	Jones PP	ALL	0.92	0.96	0.80	0	0	0	-	-	-	0	0	0
		DROUGHT	0.79	0.86	0.78	0	0	0	-	-	-	0	0	0

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

^b Drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

^c Ayers and Westcot (1985). Recommended goals for sensitive crops.

1 Table 14. Period average Change in Nitrate-N Concentrations (mg/L-N) for Alternative 3 LLT Relative to existing Conditions and the No Action Alternative LLT.

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change		
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	
Alt 3 LLT	Delta Interior	Moke R. (SF) at Staten Island	ALL	0.03	0.03	0.00	0.00	0.01	0.01	0.01	0.03	0.02	0.05	0.05	0.06	0.03	0.04	0.02	0.03	0.07	0.09	0.06	0.08	0.09	0.10	0.00	0.00	0.03	0.04
				(14%)	(15%)	(-1%)	(-1%)	(2%)	(3%)	(3%)	(7%)	(4%)	(8%)	(12%)	(14%)	(9%)	(12%)	(7%)	(10%)	(27%)	(35%)	(31%)	(40%)	(50%)	(55%)	(-1%)	(1%)	(11%)	(15%)
		DROUGHT	0.02	0.02	0.00	0.00	0.01	0.01	-0.01	0.00	-0.02	0.00	0.03	0.06	0.01	0.03	0.02	0.03	0.09	0.10	0.10	0.10	0.10	0.10	0.09	0.00	0.00	0.03	0.04
				(11%)	(11%)	(-1%)	(-1%)	(2%)	(3%)	(-2%)	(1%)	(-3%)	(1%)	(6%)	(12%)	(3%)	(9%)	(6%)	(12%)	(38%)	(44%)	(56%)	(57%)	(52%)	(46%)	(-0%)	(-0%)	(9%)	(13%)
		SJR at Buckley Cove	ALL	-0.11	-0.06	-0.14	-0.12	-0.10	0.02	-0.07	0.02	-0.05	0.01	-0.04	0.01	-0.04	0.01	-0.03	0.00	-0.11	0.02	-0.22	0.03	-0.28	0.08	-0.25	-0.05	-0.12	0.00
				(-6%)	(-4%)	(-8%)	(-7%)	(-6%)	(1%)	(-4%)	(1%)	(-3%)	(0%)	(-3%)	(1%)	(-4%)	(1%)	(-4%)	(0%)	(-9%)	(1%)	(-16%)	(3%)	(-17%)	(6%)	(-16%)	(-4%)	(-8%)	(-0%)
	DROUGHT	-0.16	-0.10	-0.23	-0.16	-0.18	-0.02	-0.13	0.04	-0.06	0.01	-0.07	0.02	-0.08	0.03	-0.06	0.01	-0.21	0.02	-0.22	0.15	-0.33	0.31	-0.42	-0.05	-0.18	0.02		
			(-10%)	(-6%)	(-13%)	(-9%)	(-11%)	(-1%)	(-8%)	(3%)	(-4%)	(1%)	(-5%)	(2%)	(-7%)	(1%)	(-17%)	(2%)	(-20%)	(21%)	(-23%)	(39%)	(-28%)	(-4%)	(-12%)	(2%)			
	Franks Tract	ALL	0.08	0.06	0.07	0.03	0.05	0.04	0.06	0.05	0.12	0.12	0.14	0.14	0.05	0.05	-0.02	-0.02	0.00	0.03	0.04	0.09	0.08	0.10	0.02	0.03	0.06	0.06	
			(41%)	(25%)	(31%)	(13%)	(15%)	(13%)	(13%)	(10%)	(19%)	(20%)	(24%)	(24%)	(10%)	(9%)	(-5%)	(-5%)	(1%)	(8%)	(16%)	(40%)	(44%)	(55%)	(15%)	(31%)	(16%)	(17%)	
	DROUGHT	0.03	-0.02	0.00	-0.06	0.01	-0.02	0.03	0.01	0.06	0.06	0.04	0.05	0.02	0.02	0.00	0.00	0.02	0.02	0.05	0.04	0.07	0.06	0.00	0.00	0.03	0.01		
			(15%)	(-8%)	(0%)	(-27%)	(6%)	(-8%)	(10%)	(2%)	(14%)	(14%)	(10%)	(12%)	(5%)	(7%)	(-0%)	(-0%)	(11%)	(8%)	(32%)	(25%)	(49%)	(37%)	(2%)	(2%)	(12%)	(5%)	
	Old R. at Rock Slough	ALL	0.11	0.05	0.09	0.03	0.03	0.00	0.07	0.04	0.15	0.15	0.17	0.14	-0.03	-0.04	-0.09	-0.09	0.00	0.02	0.07	0.11	0.10	0.11	0.01	0.03	0.06	0.05	
			(49%)	(17%)	(35%)	(10%)	(7%)	(0%)	(13%)	(7%)	(19%)	(19%)	(22%)	(19%)	(-4%)	(-5%)	(-15%)	(-16%)	(1%)	(5%)	(23%)	(45%)	(45%)	(57%)	(8%)	(33%)	(13%)	(10%)	
	DROUGHT	0.03	-0.07	0.00	-0.10	0.01	-0.09	0.11	0.08	0.14	0.14	0.05	0.04	-0.03	-0.04	-0.02	-0.04	0.04	0.02	0.08	0.06	0.10	0.07	0.00	0.00	0.04	0.01		
			(14%)	(-21%)	(0%)	(-34%)	(4%)	(-27%)	(29%)	(20%)	(24%)	(24%)	(10%)	(7%)	(-5%)	(-7%)	(-7%)	(-11%)	(14%)	(7%)	(49%)	(37%)	(58%)	(38%)	(2%)	(2%)	(14%)	(2%)	
	Western Delta	Sac. R. at Emmaton	ALL	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	-0.01	-0.01	-0.03	-0.03	-0.03	0.01	0.01	0.03	0.02	0.01	0.01	0.00	0.00	
				(10%)	(5%)	(8%)	(1%)	(-0%)	(-2%)	(-0%)	(-0%)	(1%)	(0%)	(4%)	(1%)	(-1%)	(-5%)	(-4%)	(-13%)	(-12%)	(-15%)	(8%)	(8%)	(18%)	(16%)	(8%)	(9%)	(2%)	(-1%)
			DROUGHT	0.00	-0.01	0.00	-0.02	0.00	-0.01	0.00	-0.01	0.00	-0.01	0.00	0.00	-0.01	-0.01	-0.02	-0.02	-0.02	-0.02	0.01	0.00	0.02	0.01	0.00	0.00	0.00	-0.01
				(-0%)	(-7%)	(2%)	(-9%)	(-1%)	(-5%)	(-1%)	(-3%)	(0%)	(-2%)	(-1%)	(-1%)	(-5%)	(-6%)	(-9%)	(-9%)	(-10%)	(-11%)	(9%)	(3%)	(15%)	(5%)	(1%)	(2%)	(-1%)	(-4%)
		SJR at Antioch	ALL	0.05	0.03	0.05	0.03	0.02	0.02	0.04	0.04	0.06	0.07	0.08	0.09	0.04	0.04	-0.01	-0.01	-0.03	-0.01	0.00	0.03	0.02	0.03	0.01	0.01	0.03	0.03
				(27%)	(17%)	(31%)	(19%)	(10%)	(9%)	(13%)	(13%)	(14%)	(15%)	(20%)	(21%)	(10%)	(11%)	(-4%)	(-5%)	(-8%)	(-5%)	(-0%)	(15%)	(14%)	(23%)	(10%)	(16%)	(11%)	(12%)
		DROUGHT	0.02	-0.01	0.01	-0.02	0.00	-0.01	0.02	0.01	0.02	0.02	0.01	0.02	0.01	0.02	0.00	0.00	-0.01	-0.01	-0.01	-0.01	0.01	0.00	0.03	0.02	0.00	0.01	0.00
				(10%)	(-3%)	(7%)	(-14%)	(2%)	(-5%)	(6%)	(4%)	(4%)	(6%)	(5%)	(7%)	(-1%)	(2%)	(-7%)	(-5%)	(-7%)	(-6%)	(8%)	(2%)	(21%)	(12%)	(2%)	(2%)	(4%)	(1%)
Sac. R. at Mallard Island		ALL	0.03	0.02	0.03	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.01	0.01	-0.02	-0.02	-0.03	-0.03	-0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.01	
			(22%)	(11%)	(24%)	(11%)	(6%)	(4%)	(8%)	(8%)	(7%)	(9%)	(12%)	(13%)	(3%)	(3%)	(-8%)	(-11%)	(-12%)	(-12%)	(-8%)	(2%)	(2%)	(10%)	(6%)	(7%)	(5%)	(4%)	
DROUGHT		0.02	0.00	0.01	-0.01	0.00	-0.01	0.01	0.01	0.00	0.01	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	
			(15%)	(-1%)	(10%)	(-10%)	(3%)	(-4%)	(6%)	(5%)	(-1%)	(2%)	(-1%)	(-0%)	(-6%)	(-4%)	(-9%)	(-8%)	(-9%)	(-9%)	(-1%)	(-5%)	(10%)	(4%)	(1%)	(2%)	(1%)	(-2%)	
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	-0.08	-0.06	0.00	0.00	-0.02	-0.02	-0.09	-0.09	-0.18	-0.23	-0.13	-0.14	-0.13	-0.11	-0.09	-0.09	-0.11	-0.10	-0.12	-0.09	-0.15	-0.13	0.00	0.00	-0.09	-0.09	
			(-29%)	(-24%)	(2%)	(2%)	(-8%)	(-8%)	(-26%)	(-26%)	(-36%)	(-42%)	(-34%)	(-37%)	(-39%)	(-35%)	(-38%)	(-37%)	(-45%)	(-41%)	(-51%)	(-45%)	(-52%)	(-49%)	(5%)	(5%)	(-33%)	(-32%)	
		DROUGHT	-0.13	-0.10	0.00	0.00	-0.01	-0.02	-0.05	-0.05	-0.11	-0.13	-0.10	-0.12	-0.11	-0.13	-0.09	-0.13	-0.12	-0.11	-0.13	-0.11	-0.18	-0.18	0.00	0.00	-0.09	-0.09	
			(-40%)	(-34%)	(2%)	(2%)	(-6%)	(-7%)	(-15%)	(-16%)	(-27%)	(-29%)	(-29%)	(-32%)	(-34%)	(-37%)	(-37%)	(-46%)	(-47%)	(-44%)	(-53%)	(-48%)	(-57%)	(-57%)	(4%)	(4%)	(-31%)	(-32%)	
	Contra Costa PP #1	ALL	0.05	0.05	0.08	-0.01	0.06	0.02	0.00	0.01	0.17	0.07	0.15	0.13	0.06	0.07	-0.09	-0.09	-0.03	-0.01	0.07	0.12	0.05	0.11	0.02	0.04	0.05	0.04	
			(16%)	(14%)	(44%)	(-4%)	(17%)	(5%)	(-0%)	(1%)	(19%)	(7%)	(19%)	(15%)	(7%)	(8%)	(-13%)	(-14%)	(-5%)	(-1%)	(20%)	(38%)	(16%)	(38%)	(14%)	(40%)	(10%)	(8%)	
	DROUGHT	0.01	-0.04	0.00	-0.12	0.01	-0.02	-0.01	-0.06	0.14	0.16	0.05	0.02	-0.03	-0.05	-0.05	-0.06	0.02	0.02	0.08	0.08	0.08	0.08	0.00	0.00	0.03	0.00		
			(4%)	(-10%)	(-1%)	(-41%)	(3%)	(-7%)	(-3%)	(-11%)	(22%)	(25%)	(7%)	(4%)	(-5%)	(-8%)	(-11%)	(-14%)	(6%)	(6%)	(35%)	(33%)	(26%)	(28%)	(4%)	(4%)	(7%)	(0%)	
	Banks PP	ALL	0.03	0.00	-0.12	-0.19	-0.07	-0.12	-0.19	-0.22	-0.27	-0.27	-0.46	-0.46	-0.37	-0.36	-0.17	-0.17	-0.25	-0.26	0.04	0.04	-0.03	-0.01	-0.06	-0.01	-0.16	-0.17	
			(5%)	(-0%)	(-21%)	(-29%)	(-12%)	(-19%)	(-24%)	(-27%)	(-24%)	(-24%)	(-44%)	(-44%)	(-38%)	(-38%)	(-23%)	(-23%)	(-29%)	(-30%)	(8%)	(9%)	(-8%)	(-2%)	(-22%)	(-3%)	(-23%)	(-24%)	
	DROUGHT	0.06	0.02	-0.01	-0.11	0.00	-0.07	-0.14	-0.22	0.09	0.09	-0.29	-0.26	-0.34	-0.31	-0.13	-0.12	-0.03	-0.07	0.05	0.01	0.23	0.19	0.02	0.06	-0.03	-0.06		
			(13%)	(5%)	(-2%)	(-20%)	(0%)	(-12%)	(-24%)	(-33%)	(9%)	(10%)	(-31%)	(-29%)	(-36%)	(-35%)	(-20%)	(-20%)	(-5%)	(-11%)	(21%)	(5%)	(92%)	(65%)	(15%)	(52%)	(-6%)	(-10%)	
Jones PP	ALL	0.15	0.01	0.16	0.04	-0.05	-0.09	-0.27	-0.33	-0.54	-0.56	-0.50	-0.51	-0.19	-0.20	-0.20	-0.20	-0.35	-0.36	0.06	0.00	0.20	0.15	0.11	0.05	-0.12	-0.17		
		(19%)	(1%)	(20%)	(4%)	(-5%)	(-9%)	(-23%)	(-27%)	(-38%)	(-39%)	(-39%)	(-40%)	(-17%)	(-18%)	(-24%)	(-25%)	(-40%)	(-41%)	(10%)	(1%)	(33%)	(24%)	(19%)	(8%)	(-13%)	(-17%)		
DROUGHT	0.19	-0.04	0.61	0.40	-0.02	-0.06	-0.36	-0.41	-0.49	-0.52	-0.43	-0.44	-0.19	-0.19	-0.24	-0.26	-0.15	-0.20	0.23	0.11	0.35	0.27	0.17	0.16	-0.01	-0.08			
		(27%)	(-5%)	(89%)	(46%)	(-2%)	(-6%)	(-33%)	(-36%)	(-35%)	(-36%)	(-33%)	(-33%)	(-17%)	(-17%)	(-31%)	(-32%)	(-27%)	(-33%)	(85%)	(27%)	(94%)	(60%)	(43%)	(39%)	(-2%)	(-10%)		

^a ALL: Water years 1976-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

1 Table 15. Alternative 3 use of assimilative Capacity Available under existing Conditions and No Action LLT Relative to the 10 mg/L-N MCL.

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change			
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT		
Alt 3 LLT	Delta Interior	Moke. R. (SF) at Staten Island	ALL	-0.3	-0.3	0.0	0.0	-0.1	-0.1	-0.1	-0.3	-0.2	-0.5	-	-	-0.3	-0.4	-0.2	-0.3	-0.7	-0.9	-0.6	-0.8	-1.0	-1.0	0.0	0.0	-	-	
			DROUGHT	-0.3	-0.2	0.0	0.0	-0.1	-0.1	0.1	0.0	0.3	0.0	0.3	-	-	-0.1	-0.3	-0.2	-0.3	-0.9	-1.0	-1.0	-1.0	-1.0	-0.9	0.0	0.0	-	-
		SJR at Buckley Cove	ALL	1.3	0.7	1.7	1.5	1.2	-0.2	0.8	-0.2	0.7	-0.1	0.5	-	-	0.5	-0.1	0.4	0.0	1.3	-0.2	2.5	-0.3	3.3	-0.9	3.0	0.6	1.4	0.1
			DROUGHT	2.0	1.2	2.9	1.9	2.1	0.2	1.6	-0.5	0.8	-0.1	0.8	-	-	0.9	-0.3	0.7	-0.1	2.4	-0.3	2.4	-1.6	3.9	-3.4	4.9	0.5	2.1	-
		Franks Tract	ALL	-0.9	-0.6	-0.7	-0.3	-0.5	-0.4	-0.6	-0.5	-1.3	-1.3	-	-	-0.5	-0.5	0.2	0.2	0.0	-0.3	-0.4	-0.9	-0.8	-1.0	-0.2	-0.3	-	-	
			DROUGHT	-0.3	0.2	0.0	0.6	-0.1	0.2	-0.3	-0.1	-0.6	-0.6	-	-	-0.2	-0.3	0.0	0.0	-0.2	-0.2	-0.5	-0.4	-0.8	-0.6	0.0	0.0	-	-	
	Old R. at Rock Slough	ALL	-1.2	-0.5	-0.9	-0.3	-0.3	0.0	-0.8	-0.5	-1.6	-1.6	-	-	0.3	0.5	0.9	1.0	0.0	-0.3	-0.7	-1.1	-1.0	-1.1	-0.1	-0.3	-	-		
		DROUGHT	-0.3	0.7	0.0	1.0	-0.1	0.9	-1.1	-0.8	-1.5	-1.4	-	-	0.3	0.4	0.2	0.4	-0.4	-0.2	-0.8	-0.7	-1.0	-0.7	0.0	0.0	-	-		
	Western Delta	Sac. R. at Emmaton	ALL	-0.2	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	0.0	0.1	0.1	0.3	0.3	0.4	-0.1	-0.1	-0.3	-0.2	-0.1	-0.1	0.0	0.0	
			DROUGHT	0.0	0.1	0.0	0.2	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	-0.1	0.0	-0.2	-0.1	0.0	0.0	0.0	0.1
		SJR at Antioch	ALL	-0.5	-0.3	-0.5	-0.3	-0.2	-0.2	-0.5	-0.5	-0.6	-0.7	-	-	-0.4	-0.4	0.1	0.1	0.3	0.1	0.0	-0.3	-0.2	-0.3	-0.1	-0.1	-	-	
			DROUGHT	-0.2	0.1	-0.1	0.2	0.0	0.1	-0.2	-0.1	-0.2	-0.2	-	-	0.0	0.0	0.1	0.1	0.1	0.1	-0.1	0.0	-0.3	-0.2	0.0	0.0	-	-	
Sac. R. at Mallard Island		ALL	-0.3	-0.2	-0.3	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	-	-	-0.1	-0.1	0.2	0.2	0.3	0.3	0.1	0.0	0.0	-0.1	0.0	-0.1	0.0	-	-	
		DROUGHT	-0.2	0.0	-0.1	0.1	0.0	0.1	-0.1	-0.1	0.0	-0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.8	0.6	0.0	0.0	0.2	0.2	1.0	1.0	1.8	2.4	1.3	1.5	1.4	1.2	0.9	0.9	1.2	1.0	1.2	0.9	1.5	1.3	0.0	0.0	0.9	0.9		
		DROUGHT	1.3	1.0	0.0	0.0	0.1	0.2	0.5	0.5	1.2	1.3	1.0	1.2	1.2	1.3	0.9	1.3	1.2	1.1	1.3	1.1	1.8	1.8	0.0	0.0	0.9	0.9		
	Contra Costa PP #1	ALL	-0.5	-0.5	-0.8	0.1	-0.6	-0.2	0.0	-0.1	-1.8	-0.8	-	-	-0.6	-0.7	0.9	1.0	0.3	0.1	-0.8	-1.3	-0.6	-1.1	-0.2	-0.4	-	-		
		DROUGHT	-0.1	0.4	0.0	1.2	-0.1	0.2	0.2	0.6	-1.5	-1.7	-	-	0.3	0.6	0.5	0.6	-0.2	-0.2	-0.8	-0.8	-0.8	-0.9	0.0	0.0	-	-		
	Banks PP	ALL	-0.3	0.0	1.3	2.0	0.8	1.3	2.0	2.5	3.0	3.0	5.2	5.2	4.1	4.0	1.8	1.8	2.7	2.8	-0.4	-0.5	0.3	0.1	0.7	0.1	1.7	1.8		
		DROUGHT	-0.6	-0.3	0.1	1.2	0.0	0.7	1.5	2.3	-0.9	-1.0	3.2	2.9	3.7	3.4	1.4	1.3	0.3	0.7	-0.5	-0.1	-2.4	-2.0	-0.2	-0.6	0.3	0.6		
	Jones PP	ALL	-1.7	-0.1	-1.8	-0.4	0.6	1.0	3.1	3.8	6.3	6.5	5.7	5.9	2.2	2.3	2.1	2.2	3.8	4.0	-0.6	0.0	-2.1	-1.6	-1.1	-0.5	1.3	1.9		
		DROUGHT	-2.0	0.5	-6.5	-4.4	0.2	0.6	4.0	4.6	5.7	6.0	5.0	5.0	2.1	2.2	2.7	2.8	1.6	2.2	-2.4	-1.1	-3.7	-2.9	-1.8	-1.7	0.2	0.9		

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

NOTES:
 -- Positive values indicate that implementation of the Alternative increases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality improves under the Alternative, relative to Existing Conditions or the No Action Alternative). Negative values indicate that implementation of the Alternative decreases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality degradation occurs under the Alternative, relative to Existing Conditions or the No Action Alternative). Values of -100% represent instances where all available assimilative capacity is used under the Alternative, and therefore concentrations are at or above the criteria.
 -- Regulatory objective is the drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

1 **Table 16. Period Average nitrate-N Concentrations and Frequency of Exceedance of objectives/Criteria for existing Conditions, No Action LLT, and Alternative 4 LLT Scenario H1-H4.**

Nitrate Alt 4 LLT Scenario H1-H4	Location	Period ^a	Period Average Concentration mg/L-N								Lowest Applicable Human Health Criterion/Objective (10 mg/L-N) ^b				Lowest Applicable Aquatic Life Criterion/Objective (N/A)				Other Relevant Threshold (5 mg/L-N) ^c							
			Ex. Cond.	No Act. LLT	H1	H2	H3	H4	Frequency of Criterion/Objective Exceedance (%)				Frequency of Criterion/Objective Exceedance (%)				Frequency of Criterion/Objective Exceedance (%)									
									Ex. Cond.	No Act. LLT	H1	H2	H3	H4	Ex. Cond.	No Act. LLT	H1	H2	H3	H4	Ex. Cond.	No Act. LLT	H1	H2	H3	H4
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.29	0.28	0.33	0.34	0.33	0.34	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
		DROUGHT	0.30	0.29	0.34	0.34	0.34	0.34	0	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0
	SJR at Buckley Cove	ALL	1.44	1.32	1.38	1.38	1.38	1.38	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
		DROUGHT	1.45	1.25	1.37	1.37	1.37	1.37	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
	Franks Tract	ALL	0.36	0.36	0.47	0.49	0.50	0.52	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
		DROUGHT	0.24	0.26	0.30	0.31	0.33	0.34	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
Old R. at Rock Slough	ALL	0.46	0.47	0.57	0.59	0.62	0.65	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0	
	DROUGHT	0.31	0.34	0.38	0.40	0.42	0.44	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0	
Western Delta	Sac. R. at Emmaton	ALL	0.20	0.20	0.22	0.22	0.22	0.23	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
		DROUGHT	0.19	0.20	0.19	0.20	0.20	0.20	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
	SJR at Antioch	ALL	0.27	0.26	0.33	0.34	0.34	0.35	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
		DROUGHT	0.19	0.20	0.21	0.22	0.22	0.23	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
	Sac. R. at Mallard Island	ALL	0.19	0.19	0.22	0.22	0.23	0.23	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
		DROUGHT	0.15	0.15	0.15	0.16	0.16	0.16	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.27	0.27	0.19	0.19	0.19	0.19	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
		DROUGHT	0.27	0.27	0.19	0.19	0.19	0.19	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
	Contra Costa PP #1	ALL	0.51	0.52	0.62	0.64	0.67	0.70	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
		DROUGHT	0.38	0.41	0.43	0.45	0.47	0.49	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
	Banks PP	ALL	0.70	0.71	0.49	0.51	0.50	0.51	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
		DROUGHT	0.56	0.58	0.52	0.50	0.52	0.50	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
	Jones PP	ALL	0.92	0.96	0.71	0.67	0.68	0.65	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0
		DROUGHT	0.79	0.86	0.77	0.71	0.74	0.68	0	0	0	0	0	0	-	-	-	-	-	-	0	0	0	0	0	0

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

^b Drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

^c Ayers and Westcot (1985). Recommended goals for sensitive crops.

1 Table 17C. Period average Change in nitrate-N Concentrations (mg/L-N) for Alternative 4 Scenario H3 LLT Relative to existing Conditions and the No Action Alternative LLT.

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change		
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	
Alt 4 LLT Scenario H3	Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.05	0.05	0.00	0.00	0.01	0.01	0.02	0.04	0.04	0.06	0.07	0.08	0.06	0.07	0.04	0.04	0.08	0.09	0.06	0.07	0.09	0.09	0.00	0.00	0.04	0.05
				(22%)	(23%)	(-1%)	(-1%)	(4%)	(4%)	(5%)	(9%)	(6%)	(11%)	(16%)	(18%)	(18%)	(20%)	(14%)	(16%)	(30%)	(38%)	(30%)	(39%)	(47%)	(52%)	(-2%)	(1%)	(15%)	(18%)
		DROUGHT	0.04	0.04	0.00	0.00	0.00	0.01	0.00	0.01	-0.01	0.02	0.04	0.07	0.02	0.05	0.02	0.04	0.09	0.10	0.11	0.11	0.10	0.09	0.00	0.00	0.04	0.04	
			(19%)	(19%)	(-1%)	(-1%)	(2%)	(3%)	(-0%)	(3%)	(-1%)	(3%)	(8%)	(14%)	(6%)	(13%)	(9%)	(15%)	(39%)	(45%)	(59%)	(60%)	(55%)	(49%)	(-0%)	(-0%)	(12%)	(15%)	
		SJR at Buckley Cove	ALL	-0.05	0.00	-0.03	-0.01	-0.05	0.07	-0.04	0.05	-0.05	0.01	-0.04	0.01	-0.05	0.00	-0.03	0.00	-0.07	0.05	-0.08	0.16	-0.10	0.25	-0.11	0.09	-0.06	0.06
				(-3%)	(0%)	(-2%)	(-1%)	(-3%)	(5%)	(-2%)	(3%)	(-3%)	(0%)	(-3%)	(1%)	(-4%)	(0%)	(-4%)	(0%)	(-6%)	(5%)	(-6%)	(15%)	(-6%)	(20%)	(-7%)	(6%)	(-4%)	(4%)
	DROUGHT	-0.06	0.00	-0.10	-0.03	-0.13	0.04	-0.11	0.07	-0.08	-0.01	-0.07	0.02	-0.09	0.01	-0.06	0.01	-0.13	0.11	0.00	0.37	-0.06	0.59	-0.16	0.21	-0.09	0.12		
		(-4%)	(0%)	(-6%)	(-2%)	(-8%)	(2%)	(-6%)	(4%)	(-5%)	(-1%)	(-5%)	(1%)	(-8%)	(1%)	(-7%)	(1%)	(-10%)	(11%)	(0%)	(51%)	(-4%)	(74%)	(-11%)	(19%)	(-6%)	(9%)		
	Franks Tract	ALL	0.26	0.23	0.27	0.24	0.15	0.14	0.12	0.11	0.19	0.19	0.19	0.20	0.13	0.13	0.06	0.07	0.11	0.14	0.07	0.12	0.08	0.09	0.06	0.07	0.14	0.14	
			(127%)	#####	(126%)	(94%)	(47%)	(43%)	(26%)	(23%)	(31%)	(31%)	(33%)	(33%)	(24%)	(24%)	(15%)	(16%)	(27%)	(37%)	(28%)	(55%)	(41%)	(52%)	(56%)	(78%)	(39%)	(40%)	
	DROUGHT	0.14	0.09	0.16	0.10	0.09	0.06	0.08	0.05	0.09	0.09	0.09	0.10	0.08	0.08	0.05	0.05	0.07	0.06	0.07	0.06	0.08	0.07	0.01	0.01	0.08	0.07		
		(70%)	(36%)	(95%)	(41%)	(42%)	(24%)	(26%)	(17%)	(22%)	(22%)	(24%)	(26%)	(21%)	(23%)	(20%)	(19%)	(31%)	(27%)	(44%)	(37%)	(56%)	(43%)	(6%)	(6%)	(34%)	(26%)		
Old R. at Rock Slough	ALL	0.41	0.34	0.38	0.33	0.15	0.12	0.13	0.10	0.19	0.19	0.18	0.16	0.06	0.04	0.01	0.00	0.11	0.14	0.08	0.13	0.08	0.10	0.21	0.24	0.17	0.16		
		(176%)	#####	(147%)	(103%)	(38%)	(29%)	(23%)	(16%)	(24%)	(24%)	(24%)	(20%)	(8%)	(6%)	(1%)	(1%)	(22%)	(27%)	(29%)	(51%)	(40%)	(50%)	(169%)	(231%)	(37%)	(34%)		
DROUGHT	0.24	0.14	0.24	0.14	0.12	0.02	0.13	0.11	0.10	0.10	0.09	0.08	0.06	0.05	0.04	0.02	0.09	0.07	0.10	0.09	0.11	0.08	0.01	0.01	0.11	0.08			
	(106%)	(43%)	(127%)	(49%)	(51%)	(6%)	(37%)	(27%)	(18%)	(17%)	(16%)	(14%)	(11%)	(9%)	(12%)	(6%)	(32%)	(24%)	(63%)	(50%)	(64%)	(44%)	(6%)	(7%)	(36%)	(22%)			
Western Delta	Sac. R. at Emmaton	ALL	0.06	0.05	0.05	0.04	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.00	0.02	0.01	0.02	0.02	0.03	0.02	0.01	0.01	0.02	0.02	
			(34%)	(27%)	(35%)	(26%)	(11%)	(9%)	(4%)	(3%)	(4%)	(3%)	(6%)	(3%)	(9%)	(5%)	(12%)	(1%)	(9%)	(5%)	(14%)	(14%)	(18%)	(15%)	(13%)	(14%)	(12%)	(9%)	
	DROUGHT	0.03	0.01	0.04	0.02	0.02	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01	-0.01	0.02	0.01	0.03	0.01	0.00	0.00	0.01	0.00		
		(15%)	(6%)	(24%)	(11%)	(9%)	(5%)	(3%)	(1%)	(2%)	(-0%)	(0%)	(0%)	(-1%)	(-2%)	(-4%)	(-4%)	(-3%)	(-5%)	(15%)	(9%)	(20%)	(10%)	(3%)	(3%)	(6%)	(2%)		
	SJR at Antioch	ALL	0.12	0.11	0.14	0.13	0.08	0.07	0.08	0.08	0.10	0.10	0.12	0.12	0.09	0.09	0.05	0.04	0.05	0.06	0.02	0.05	0.02	0.03	0.03	0.03	0.08	0.08	
			(75%)	(61%)	(88%)	(70%)	(32%)	(31%)	(22%)	(22%)	(22%)	(23%)	(29%)	(30%)	(25%)	(25%)	(16%)	(15%)	(17%)	(22%)	(12%)	(29%)	(14%)	(22%)	(28%)	(34%)	(28%)	(29%)	
DROUGHT	0.07	0.04	0.08	0.05	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.02	0.03	0.00	0.01	0.01	0.01	0.02	0.01	0.03	0.02	0.00	0.00	0.03	0.03			
	(41%)	(23%)	(60%)	(29%)	(25%)	(16%)	(14%)	(11%)	(8%)	(10%)	(11%)	(13%)	(7%)	(10%)	(2%)	(4%)	(3%)	(4%)	(16%)	(10%)	(26%)	(17%)	(4%)	(5%)	(16%)	(13%)			
Sac. R. at Mallard Island	ALL	0.07	0.06	0.08	0.06	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.04	0.04	0.02	0.02	0.03	0.03	0.01	0.02	0.00	0.01	0.01	0.01	0.04	0.04		
		(54%)	(41%)	(62%)	(46%)	(25%)	(23%)	(16%)	(16%)	(13%)	(15%)	(18%)	(19%)	(16%)	(15%)	(11%)	(8%)	(12%)	(12%)	(5%)	(16%)	(3%)	(11%)	(15%)	(17%)	(19%)	(18%)		
DROUGHT	0.04	0.02	0.05	0.02	0.03	0.02	0.02	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01			
	(35%)	(17%)	(46%)	(19%)	(23%)	(14%)	(10%)	(9%)	(2%)	(5%)	(2%)	(3%)	(-1%)	(1%)	(-4%)	(-2%)	(-3%)	(-3%)	(4%)	(-0%)	(13%)	(7%)	(3%)	(3%)	(9%)	(6%)			
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	-0.08	-0.06	0.01	0.00	-0.02	-0.02	-0.09	-0.09	-0.17	-0.22	-0.13	-0.14	-0.13	-0.11	-0.09	-0.08	-0.11	-0.09	-0.15	-0.13	0.01	0.01	-0.09	-0.09			
			(-30%)	(-25%)	(3%)	(3%)	(-7%)	(-7%)	(-25%)	(-25%)	(-35%)	(-42%)	(-34%)	(-36%)	(-38%)	(-35%)	(-37%)	(-37%)	(-44%)	(-40%)	(-49%)	(-43%)	(-52%)	(-48%)	(7%)	(7%)	(-32%)	(-31%)	
	DROUGHT	-0.13	-0.10	0.00	0.00	-0.01	-0.01	-0.05	-0.05	-0.11	-0.12	-0.10	-0.12	-0.11	-0.13	-0.09	-0.13	-0.12	-0.11	-0.12	-0.10	-0.18	-0.17	0.00	0.00	-0.08	-0.09		
		(-40%)	(-34%)	(3%)	(2%)	(-5%)	(-6%)	(-15%)	(-15%)	(-26%)	(-28%)	(-28%)	(-31%)	(-34%)	(-37%)	(-37%)	(-46%)	(-46%)	(-43%)	(-52%)	(-48%)	(-56%)	(-56%)	(5%)	(5%)	(-31%)	(-31%)		
	Contra Costa PP #1	ALL	0.35	0.35	0.38	0.28	0.25	0.21	0.08	0.09	0.27	0.18	0.19	0.17	0.08	0.09	-0.02	-0.02	0.08	0.10	0.11	0.15	0.05	0.10	0.07	0.09	0.16	0.15	
			(108%)	#####	(202%)	(101%)	(78%)	(60%)	(12%)	(13%)	(32%)	(18%)	(23%)	(20%)	(9%)	(10%)	(-3%)	(-3%)	(14%)	(17%)	(28%)	(48%)	(13%)	(36%)	(56%)	(91%)	(31%)	(29%)	
	DROUGHT	0.20	0.16	0.21	0.09	0.11	0.08	0.05	0.00	0.10	0.12	0.06	0.04	0.04	0.02	0.00	-0.01	0.07	0.07	0.10	0.10	0.09	0.10	0.01	0.01	0.09	0.06		
		(64%)	(43%)	(118%)	(30%)	(40%)	(26%)	(10%)	(1%)	(16%)	(18%)	(9%)	(6%)	(6%)	(3%)	(1%)	(-3%)	(20%)	(20%)	(44%)	(42%)	(30%)	(32%)	(10%)	(9%)	(23%)	(16%)		
	Banks PP	ALL	-0.06	-0.09	-0.11	-0.17	0.00	-0.04	-0.27	-0.31	-0.41	-0.41	-0.54	-0.54	-0.53	-0.52	-0.20	-0.20	-0.32	-0.33	0.08	0.08	0.02	0.05	-0.10	-0.04	-0.20	-0.21	
			(-12%)	(-16%)	(-19%)	(-27%)	(0%)	(-7%)	(-35%)	(-38%)	(-36%)	(-36%)	(-51%)	(-51%)	(-55%)	(-55%)	(-28%)	(-28%)	(-37%)	(-38%)	(16%)	(17%)	(5%)	(12%)	(-34%)	(-18%)	(-29%)	(-30%)	
	DROUGHT	-0.05	-0.08	-0.02	-0.13	0.08	0.01	-0.15	-0.23	-0.10	-0.09	-0.44	-0.41	-0.46	-0.43	-0.12	-0.11	0.05	0.01	0.28	0.24	0.27	0.23	0.04	0.08	-0.04	-0.07		
		(-9%)	(-16%)	(-5%)	(-23%)	(17%)	(2%)	(-25%)	(-34%)	(-11%)	(-10%)	(-47%)	(-45%)	(-49%)	(-48%)	(-18%)	(-18%)	(8%)	(2%)	(110%)	(82%)	(107%)	(78%)	(29%)	(70%)	(-7%)	(-11%)		
Jones PP	ALL	-0.02	-0.17	-0.17	-0.29	0.10	0.06	-0.32	-0.38	-0.53	-0.55	-0.67	-0.69	-0.44	-0.46	-0.32	-0.33	-0.42	-0.44	0.04	-0.01	0.12	0.07	-0.20	-0.25	-0.24	-0.29		
		(-3%)	(-18%)	(-20%)	(-31%)	(10%)	(6%)	(-27%)	(-31%)	(-37%)	(-38%)	(-52%)	(-53%)	(-40%)	(-41%)	(-39%)	(-40%)	(-49%)	(-50%)	(7%)	(-2%)	(20%)	(11%)	(-34%)	(-40%)	(-26%)	(-30%)		
DROUGHT	0.20	-0.03	0.03	-0.17	0.34	0.30	-0.39	-0.44	-0.37	-0.40	-0.35	-0.35	-0.34	-0.35	-0.31	-0.33	-0.13	-0.18	0.15	0.03	0.29	0.21	0.11	0.10	-0.05	-0.12			
	(29%)	(-4%)	(5%)	(-20%)	(39%)	(33%)	(-36%)	(-39%)	(-27%)	(-28%)	(-27%)	(-27%)	(-31%)	(-31%)	(-40%)	(-41%)	(-23%)	(-29%)	(56%)	(7%)	(78%)	(47%)	(28%)	(24%)	(-7%)	(-14%)			

^a ALL: Water years 1976-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

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1 Table 17D. Period average Change in nitrate-N Concentrations (mg/L-N) for Alternative 4 Scenario H4 LLT relative to Existing Conditions and the No Action Alternative LLT.

Alt 4 LLT Scenario H4	Location	Period ^a	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.04	0.04	0.00	0.00	0.01	0.01	0.03	0.05	0.05	0.07	0.07	0.08	0.06	0.07	0.03	0.04	0.09	0.10	0.08	0.10	0.08	0.09	0.00	0.00	0.04	0.05	
		DROUGHT	(20%)	(21%)	(-1%)	(-1%)	(4%)	(4%)	(6%)	(10%)	(7%)	(12%)	(16%)	(18%)	(16%)	(19%)	(13%)	(15%)	(34%)	(43%)	(40%)	(50%)	(44%)	(48%)	(-2%)	(1%)	(15%)	(19%)	
	SJR at Buckley Cove	ALL	-0.05	0.00	-0.03	-0.01	-0.05	0.07	-0.03	0.05	-0.05	0.01	-0.04	0.01	-0.05	0.00	-0.03	0.00	-0.07	0.05	-0.06	0.18	-0.10	0.25	-0.11	0.09	-0.06	0.06	
		DROUGHT	(-3%)	(0%)	(-2%)	(-1%)	(-3%)	(5%)	(-2%)	(4%)	(-3%)	(0%)	(-3%)	(1%)	(-4%)	(0%)	(-4%)	(0%)	(-6%)	(5%)	(-5%)	(17%)	(-6%)	(20%)	(-7%)	(6%)	(-4%)	(5%)	
	Franks Tract	ALL	0.26	0.24	0.26	0.23	0.14	0.13	0.13	0.12	0.22	0.23	0.21	0.22	0.15	0.15	0.08	0.08	0.15	0.17	0.14	0.18	0.12	0.13	0.08	0.09	0.16	0.16	
		DROUGHT	(129%)	#####	(121%)	(90%)	(43%)	(39%)	(28%)	(25%)	(36%)	(36%)	(36%)	(37%)	(27%)	(27%)	(18%)	(19%)	(36%)	(45%)	(53%)	(85%)	(64%)	(77%)	(71%)	(95%)	(45%)	(45%)	
	Old R. at Rock Slough	ALL	0.41	0.35	0.37	0.32	0.14	0.11	0.15	0.12	0.24	0.24	0.21	0.18	0.09	0.08	0.03	0.03	0.18	0.20	0.18	0.23	0.13	0.14	0.24	0.27	0.20	0.19	
		DROUGHT	(178%)	#####	(143%)	(99%)	(37%)	(28%)	(26%)	(20%)	(30%)	(30%)	(28%)	(24%)	(12%)	(10%)	(6%)	(5%)	(35%)	(41%)	(62%)	(91%)	(60%)	(72%)	(193%)	(261%)	(44%)	(41%)	
	Western Delta	Sac. R. at Emmaton	ALL	0.06	0.05	0.05	0.04	0.02	0.02	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.00	0.02	0.00	0.03	0.02	0.05	0.05	0.04	0.04	0.02	0.02	0.03	0.02
			DROUGHT	(35%)	(28%)	(34%)	(25%)	(10%)	(8%)	(4%)	(4%)	(5%)	(4%)	(7%)	(5%)	(4%)	(-1%)	(10%)	(-1%)	(14%)	(10%)	(34%)	(34%)	(30%)	(27%)	(17%)	(19%)	(15%)	(11%)
		SJR at Antioch	ALL	0.13	0.12	0.14	0.12	0.06	0.06	0.08	0.08	0.12	0.12	0.13	0.13	0.09	0.10	0.05	0.05	0.07	0.08	0.06	0.09	0.05	0.06	0.04	0.04	0.08	0.09
			DROUGHT	(79%)	(64%)	(84%)	(67%)	(27%)	(26%)	(23%)	(23%)	(26%)	(27%)	(31%)	(33%)	(25%)	(26%)	(18%)	(16%)	(22%)	(26%)	(31%)	(52%)	(32%)	(41%)	(38%)	(44%)	(32%)	(33%)
Sac. R. at Mallard Island		ALL	0.07	0.06	0.07	0.06	0.03	0.03	0.04	0.04	0.05	0.05	0.05	0.06	0.04	0.03	0.02	0.02	0.03	0.03	0.03	0.04	0.02	0.03	0.02	0.02	0.04	0.04	
		DROUGHT	(59%)	(45%)	(61%)	(44%)	(21%)	(19%)	(15%)	(14%)	(16%)	(18%)	(20%)	(21%)	(14%)	(14%)	(11%)	(8%)	(15%)	(14%)	(17%)	(29%)	(16%)	(25%)	(22%)	(24%)	(21%)	(21%)	
Major Diversions (Pumping Stations)		NBA at Barker Slough PP	ALL	-0.08	-0.06	0.01	0.01	-0.02	-0.01	-0.09	-0.09	-0.17	-0.22	-0.12	-0.14	-0.13	-0.11	-0.09	-0.09	-0.11	-0.09	-0.11	-0.09	-0.14	-0.12	0.01	0.01	-0.09	-0.08
			DROUGHT	(-29%)	(-24%)	(4%)	(3%)	(-7%)	(-7%)	(-25%)	(-25%)	(-35%)	(-41%)	(-33%)	(-36%)	(-38%)	(-34%)	(-37%)	(-37%)	(-44%)	(-41%)	(-49%)	(-43%)	(-50%)	(-46%)	(8%)	(8%)	(-32%)	(-31%)
		Contra Costa PP #1	ALL	0.36	0.36	0.38	0.29	0.24	0.21	0.08	0.09	0.33	0.23	0.20	0.17	0.11	0.12	0.01	0.01	0.16	0.18	0.22	0.26	0.10	0.15	0.10	0.12	0.19	0.18
			DROUGHT	(112%)	#####	(207%)	(104%)	(76%)	(58%)	(12%)	(14%)	(38%)	(24%)	(24%)	(20%)	(13%)	(14%)	(2%)	(2%)	(26%)	(30%)	(58%)	(82%)	(28%)	(53%)	(83%)	(124%)	(37%)	(35%)
		Banks PP	ALL	0.03	0.00	-0.16	-0.22	0.03	-0.01	-0.23	-0.27	-0.43	-0.44	-0.52	-0.52	-0.47	-0.47	-0.20	-0.21	-0.44	-0.45	0.09	0.10	0.14	0.17	-0.14	-0.09	-0.19	-0.20
			DROUGHT	(5%)	(-0%)	(-27%)	(-34%)	(6%)	(-2%)	(-29%)	(-32%)	(-38%)	(-38%)	(-50%)	(-50%)	(-50%)	(-49%)	(-28%)	(-28%)	(-51%)	(-52%)	(19%)	(20%)	(36%)	(46%)	(-49%)	(-37%)	(-27%)	(-28%)
	Jones PP	ALL	-0.14	-0.28	-0.03	-0.16	0.05	0.01	-0.47	-0.54	-0.61	-0.62	-0.70	-0.71	-0.53	-0.54	-0.32	-0.33	-0.35	-0.37	0.04	-0.01	0.09	0.04	-0.22	-0.27	-0.27	-0.31	
		DROUGHT	(-18%)	(-31%)	(-4%)	(-16%)	(5%)	(1%)	(-40%)	(-43%)	(-43%)	(-43%)	(-54%)	(-55%)	(-48%)	(-48%)	(-39%)	(-39%)	(-41%)	(-42%)	(7%)	(-2%)	(15%)	(6%)	(-37%)	(-43%)	(-29%)	(-33%)	

^a ALL: Water years 1976-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

1 **Table 19. Period Average nitrate-N concentrations and frequency of exceedance of objectives/criteria for existing conditions, No Action LLT, and Alternative 5 LLT.**

Nitrate Alt 5 LLT	Location	Period ^a	Period Average Concentration mg/L-N			Lowest Applicable Human Health Criterion/Objective (10 mg/L-N) ^b			Lowest Applicable Aquatic Life Criterion/Objective (N/A)			Other Relevant Threshold (5 mg/L-N) ^c		
			Period Average Concentration mg/L-N			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)		
			Ex. Cond.	No Act. LLT	Alt 5 LLT	Ex. Cond.	No Act. LLT	Alt 5 LLT	Ex. Cond.	No Act. LLT	Alt 5 LLT	Ex. Cond.	No Act. LLT	Alt 5 LLT
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.29	0.28	0.32	0	0	0	-	-	-	0	0	0
		DROUGHT	0.30	0.29	0.33	0	0	0	-	-	-	0	0	0
	SJR at Buckley Cove	ALL	1.44	1.32	1.37	0	0	0	-	-	-	0	0	0
		DROUGHT	1.45	1.25	1.35	0	0	0	-	-	-	0	0	0
	Franks Tract	ALL	0.36	0.36	0.43	0	0	0	-	-	-	0	0	0
		DROUGHT	0.24	0.26	0.29	0	0	0	-	-	-	0	0	0
Old R. at Rock Slough	ALL	0.46	0.47	0.53	0	0	0	-	-	-	0	0	0	
	DROUGHT	0.31	0.34	0.37	0	0	0	-	-	-	0	0	0	
Western Delta	Sac. R. at Emmaton	ALL	0.20	0.20	0.20	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.19	0	0	0	-	-	-	0	0	0
	SJR at Antioch	ALL	0.27	0.26	0.29	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.21	0	0	0	-	-	-	0	0	0
	Sac. R. at Mallard Island	ALL	0.19	0.19	0.20	0	0	0	-	-	-	0	0	0
		DROUGHT	0.15	0.15	0.15	0	0	0	-	-	-	0	0	0
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.27	0.27	0.18	0	0	0	-	-	-	0	0	0
		DROUGHT	0.27	0.27	0.19	0	0	0	-	-	-	0	0	0
	Contra Costa PP #1	ALL	0.51	0.52	0.57	0	0	0	-	-	-	0	0	0
		DROUGHT	0.38	0.41	0.42	0	0	0	-	-	-	0	0	0
	Banks PP	ALL	0.70	0.71	0.59	0	0	0	-	-	-	0	0	0
		DROUGHT	0.56	0.58	0.54	0	0	0	-	-	-	0	0	0
	Jones PP	ALL	0.92	0.96	0.82	0	0	0	-	-	-	0	0	0
		DROUGHT	0.79	0.86	0.77	0	0	0	-	-	-	0	0	0

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

^b Drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

^c Ayers and Westcot (1985). Recommended goals for sensitive crops.

1 Table 20. Period average change in nitrate-N concentrations (mg/L-N) for Alternative 5 LLT relative to existing conditions and the No Action Alternative LLT.

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change			
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT		
Alt 5 LLT	Delta Interior	Moke R. (SF) at Staten Island	ALL	0.03	0.04	0.00	0.00	0.00	0.01	0.00	0.02	0.01	0.03	0.04	0.05	0.04	0.05	0.03	0.04	0.06	0.08	0.04	0.06	0.08	0.08	0.00	0.00	0.03	0.04	
				(16%)	(17%)	(-1%)	(-1%)	(2%)	(3%)	(-0%)	(4%)	(1%)	(5%)	(9%)	(11%)	(10%)	(13%)	(11%)	(14%)	(24%)	(32%)	(22%)	(31%)	(40%)	(45%)	(-2%)	(0%)	(9%)	(13%)	
		DROUGHT	0.04	0.03	0.00	0.00	0.01	0.01	-0.01	0.00	-0.03	-0.01	0.02	0.04	0.01	0.03	0.02	0.03	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.03	0.04	
			(16%)	(16%)	(-1%)	(-1%)	(2%)	(3%)	(-3%)	(1%)	(-5%)	(-1%)	(4%)	(9%)	(3%)	(10%)	(7%)	(13%)	(37%)	(43%)	(53%)	(54%)	(56%)	(50%)	(-0%)	(-0%)	(9%)	(12%)		
		SJR at Buckley Cove	ALL	-0.05	0.00	-0.03	-0.01	-0.06	0.05	-0.06	0.02	-0.06	0.00	-0.04	0.01	-0.05	0.01	-0.03	0.00	-0.09	0.04	-0.14	0.11	-0.13	0.22	-0.11	0.09	-0.07	0.04	
			(-3%)	(-0%)	(-2%)	(-1%)	(-4%)	(4%)	(-4%)	(1%)	(-4%)	(0%)	(-3%)	(0%)	(-4%)	(1%)	(-4%)	(0%)	(-7%)	(3%)	(-10%)	(10%)	(-8%)	(17%)	(-7%)	(7%)	(-5%)	(3%)		
	DROUGHT	-0.07	0.00	-0.11	-0.03	-0.13	0.03	-0.13	0.05	-0.07	0.00	-0.07	0.02	-0.08	0.02	-0.06	0.01	-0.16	0.08	-0.09	0.28	-0.13	0.52	-0.17	0.21	-0.11	0.10			
		(-4%)	(-0%)	(-6%)	(-2%)	(-8%)	(2%)	(-7%)	(3%)	(-4%)	(0%)	(-5%)	(1%)	(-7%)	(2%)	(-7%)	(1%)	(-12%)	(8%)	(-8%)	(38%)	(-9%)	(65%)	(-11%)	(18%)	(-7%)	(8%)			
	Franks Tract	ALL	0.14	0.12	0.16	0.12	0.10	0.09	0.05	0.04	0.05	0.05	0.06	0.06	0.05	0.05	0.03	0.04	0.03	0.06	0.01	0.06	0.05	0.06	0.02	0.03	0.06	0.07		
		(71%)	(50%)	(72%)	(49%)	(31%)	(28%)	(11%)	(9%)	(8%)	(9%)	(11%)	(11%)	(9%)	(9%)	(8%)	(9%)	(8%)	(15%)	(5%)	(27%)	(26%)	(36%)	(18%)	(34%)	(18%)	(18%)			
	DROUGHT	0.10	0.05	0.14	0.08	0.08	0.05	0.04	0.02	0.04	0.04	0.02	0.02	0.01	0.02	0.01	0.01	0.03	0.02	0.05	0.04	0.07	0.06	0.00	0.00	0.05	0.03			
		(50%)	(20%)	(83%)	(33%)	(38%)	(21%)	(15%)	(6%)	(10%)	(10%)	(4%)	(6%)	(3%)	(5%)	(3%)	(3%)	(13%)	(10%)	(30%)	(24%)	(49%)	(37%)	(3%)	(3%)	(21%)	(13%)			
	Old R. at Rock Slough	ALL	0.20	0.14	0.26	0.20	0.09	0.07	0.06	0.03	0.04	0.04	0.05	0.03	0.01	-0.01	0.00	0.00	0.00	0.03	0.01	0.06	0.05	0.07	0.05	0.08	0.07	0.06		
		(87%)	(46%)	(99%)	(63%)	(24%)	(16%)	(11%)	(5%)	(6%)	(6%)	(7%)	(4%)	(1%)	(-1%)	(0%)	(-1%)	(1%)	(5%)	(5%)	(24%)	(25%)	(34%)	(43%)	(76%)	(15%)	(13%)			
	DROUGHT	0.15	0.05	0.21	0.11	0.09	-0.01	0.11	0.08	0.05	0.04	-0.01	-0.02	-0.04	-0.05	0.00	-0.02	0.04	0.02	0.07	0.06	0.10	0.08	0.00	0.00	0.06	0.03			
		(65%)	(14%)	(110%)	(38%)	(37%)	(-3%)	(30%)	(21%)	(8%)	(7%)	(-1%)	(-3%)	(-7%)	(-8%)	(-1%)	(-6%)	(13%)	(6%)	(46%)	(34%)	(59%)	(40%)	(5%)	(5%)	(21%)	(8%)			
	Western Delta	Sac. R. at Emmaton	ALL	0.03	0.02	0.03	0.02	0.01	0.01	0.00	0.00	0.00	-0.01	0.00	-0.01	0.00	-0.01	0.01	-0.01	-0.02	-0.03	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	
				(16%)	(10%)	(17%)	(9%)	(5%)	(3%)	(-1%)	(-1%)	(-1%)	(-3%)	(-1%)	(-3%)	(-1%)	(-5%)	(4%)	(-6%)	(-8%)	(-12%)	(-1%)	(-1%)	(8%)	(6%)	(4%)	(5%)	(2%)	(-1%)	
			DROUGHT	0.01	0.00	0.03	0.01	0.01	0.00	0.00	-0.01	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.01	-0.01	-0.02	-0.02	0.01	0.00	0.02	0.01	0.00	0.00	0.00	0.00
				(7%)	(-0%)	(21%)	(8%)	(6%)	(2%)	(1%)	(-2%)	(-1%)	(-3%)	(-4%)	(-4%)	(-6%)	(-7%)	(-8%)	(-8%)	(-9%)	(-10%)	(8%)	(2%)	(16%)	(6%)	(1%)	(2%)	(1%)	(-2%)	
		SJR at Antioch	ALL	0.06	0.05	0.07	0.06	0.04	0.04	0.03	0.03	0.02	0.02	0.03	0.04	0.03	0.03	0.02	0.02	0.00	0.01	-0.02	0.01	0.00	0.01	0.01	0.01	0.03	0.03	
				(38%)	(27%)	(45%)	(31%)	(16%)	(15%)	(9%)	(9%)	(4%)	(6%)	(8%)	(9%)	(8%)	(8%)	(7%)	(-0%)	(4%)	(-7%)	(7%)	(3%)	(10%)	(9%)	(14%)	(10%)	(10%)	(11%)	
		DROUGHT	0.04	0.02	0.07	0.04	0.03	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.00	0.01	0.00	-0.01	0.00	-0.01	-0.01	0.01	0.00	0.03	0.02	0.00	0.00	0.02	0.01	
			(24%)	(9%)	(53%)	(23%)	(18%)	(9%)	(8%)	(6%)	(3%)	(5%)	(2%)	(3%)	(-3%)	(-0%)	(-5%)	(-3%)	(-6%)	(-5%)	(7%)	(2%)	(20%)	(12%)	(2%)	(3%)	(8%)	(5%)		
Sac. R. at Mallard Island		ALL	0.04	0.02	0.04	0.02	0.02	0.02	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.02	0.00	-0.01	0.00	0.01	0.01	0.01		
			(29%)	(17%)	(31%)	(18%)	(13%)	(11%)	(5%)	(5%)	(1%)	(2%)	(2%)	(3%)	(1%)	(1%)	(1%)	(-2%)	(-5%)	(-5%)	(-12%)	(-3%)	(-5%)	(2%)	(5%)	(7%)	(4%)	(4%)		
DROUGHT		0.03	0.01	0.04	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.00	-0.01	-0.01	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	0.01	0.00	0.00	0.01	0.00	0.00		
		(23%)	(7%)	(40%)	(14%)	(15%)	(7%)	(6%)	(5%)	(-1%)	(2%)	(-3%)	(-2%)	(-8%)	(-6%)	(-8%)	(-7%)	(-9%)	(-8%)	(-1%)	(-5%)	(9%)	(3%)	(1%)	(2%)	(3%)	(1%)	(1%)		
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	-0.08	-0.06	0.00	0.00	-0.02	-0.02	-0.09	-0.09	-0.18	-0.23	-0.13	-0.14	-0.13	-0.11	-0.09	-0.09	-0.11	-0.10	-0.12	-0.09	-0.15	-0.13	0.00	0.00	-0.09	-0.09		
			(-31%)	(-26%)	(2%)	(2%)	(-8%)	(-8%)	(-26%)	(-26%)	(-36%)	(-42%)	(-34%)	(-37%)	(-39%)	(-35%)	(-38%)	(-37%)	(-45%)	(-41%)	(-51%)	(-45%)	(-53%)	(-50%)	(5%)	(5%)	(-33%)	(-32%)		
	DROUGHT	-0.13	-0.10	0.00	0.00	-0.01	-0.01	-0.05	-0.05	-0.11	-0.13	-0.10	-0.12	-0.11	-0.13	-0.09	-0.13	-0.12	-0.11	-0.13	-0.11	-0.18	-0.18	0.00	0.00	-0.08	-0.09			
		(-40%)	(-35%)	(2%)	(2%)	(-5%)	(-6%)	(-15%)	(-15%)	(-26%)	(-29%)	(-28%)	(-32%)	(-34%)	(-37%)	(-37%)	(-46%)	(-47%)	(-44%)	(-53%)	(-48%)	(-57%)	(-57%)	(4%)	(4%)	(-31%)	(-32%)			
	Contra Costa PP #1	ALL	0.15	0.15	0.25	0.15	0.14	0.10	-0.01	0.00	0.09	-0.01	0.05	0.03	-0.03	-0.02	-0.02	-0.02	-0.02	0.00	0.01	0.06	0.02	0.07	0.02	0.04	0.05	0.05		
			(48%)	(45%)	(133%)	(55%)	(43%)	(29%)	(-1%)	(-0%)	(10%)	(-1%)	(6%)	(3%)	(-3%)	(-3%)	(-3%)	(-3%)	(-4%)	(-1%)	(2%)	(17%)	(5%)	(26%)	(18%)	(45%)	(10%)	(9%)		
	DROUGHT	0.10	0.06	0.13	0.01	0.10	0.06	0.00	-0.04	0.07	0.08	-0.03	-0.05	-0.06	-0.08	-0.04	-0.05	0.00	0.00	0.06	0.06	0.08	0.08	0.01	0.01	0.04	0.01			
		(32%)	(16%)	(74%)	(4%)	(34%)	(21%)	(1%)	(-8%)	(11%)	(13%)	(-4%)	(-8%)	(-9%)	(-12%)	(-9%)	(-12%)	(1%)	(1%)	(25%)	(23%)	(25%)	(27%)	(6%)	(6%)	(9%)	(3%)			
	Banks PP	ALL	-0.04	-0.07	-0.06	-0.12	0.09	0.05	-0.09	-0.12	-0.17	-0.18	-0.24	-0.24	-0.32	-0.31	-0.11	-0.12	-0.18	-0.19	-0.12	-0.11	-0.03	-0.01	-0.02	0.03	-0.11	-0.12		
			(-7%)	(-11%)	(-10%)	(-19%)	(15%)	(7%)	(-11%)	(-15%)	(-15%)	(-23%)	(-23%)	(-33%)	(-33%)	(-16%)	(-16%)	(-21%)	(-22%)	(-24%)	(-24%)	(-9%)	(-2%)	(-7%)	(15%)	(-15%)	(-16%)			
	DROUGHT	-0.01	-0.05	-0.08	-0.18	0.10	0.03	-0.05	-0.13	0.10	0.10	-0.19	-0.16	-0.26	-0.24	-0.09	-0.09	0.00	-0.04	0.00	-0.04	0.16	0.12	0.02	0.06	-0.02	-0.04			
		(-2%)	(-9%)	(-18%)	(-33%)	(21%)	(6%)	(-8%)	(-19%)	(11%)	(11%)	(-20%)	(-17%)	(-28%)	(-26%)	(-15%)	(-14%)	(-0%)	(-6%)	(1%)	(-12%)	(63%)	(40%)	(14%)	(50%)	(-3%)	(-7%)			
Jones PP	ALL	0.29	0.15	-0.16	-0.28	-0.04	-0.08	-0.18	-0.24	-0.19	-0.21	-0.27	-0.28	-0.17	-0.18	-0.18	-0.19	-0.20	-0.21	0.04	-0.01	0.07	0.02	-0.10	-0.16	-0.09	-0.14			
		(37%)	(16%)	(-19%)	(-30%)	(-4%)	(-8%)	(-15%)	(-19%)	(-14%)	(-14%)	(-21%)	(-22%)	(-15%)	(-16%)	(-22%)	(-22%)	(-23%)	(-24%)	(7%)	(-2%)	(12%)	(3%)	(-18%)	(-25%)	(-10%)	(-15%)			
DROUGHT	0.31	0.08	0.05	-0.15	0.07	0.03	-0.46	-0.51	-0.14	-0.17	-0.27	-0.27	-0.14	-0.14	-0.20	-0.22	-0.06	-0.11	0.19	0.07	0.24	0.16	0.03	0.01	-0.02	-0.09				
	(46%)	(9%)	(8%)	(-17%)	(8%)	(4%)	(-43%)	(-45%)	(-10%)	(-12%)	(-21%)	(-21%)	(-12%)	(-12%)	(-26%)	(-27%)	(-10%)	(-17%)	(71%)	(17%)	(64%)	(35%)	(7%)	(3%)	(-2%)	(-10%)				

^a ALL: Water years 1976-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

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1 **Table 21. Alternative 5 use of assimilative capacity available under existing conditions and No Action LLT relative to the 10 mg/L-N MCL.**

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change	
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT
			Alt 5 LLT																									
Delta Interior	Moke. R. (SF) at Staten Island	ALL	-0.3	-0.4	0.0	0.0	-0.1	-0.1	0.0	-0.2	-0.1	-0.3	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.6	-0.8	-0.5	-0.6	-0.8	-0.8	0.0	0.0	-0.3	-0.4
		DROUGHT	-0.4	-0.4	0.0	0.0	-0.1	-0.1	0.1	0.0	0.4	0.1	-0.2	-0.5	-0.1	-0.4	-0.2	-0.3	-0.9	-1.0	-1.0	-1.0	-1.1	-1.0	0.0	0.0	-0.3	-0.4
	SJR at Buckley Cove	ALL	0.6	0.0	0.4	0.2	0.8	-0.6	0.8	-0.3	0.7	0.0	0.5	-0.1	0.5	-0.1	0.4	0.0	1.0	-0.4	1.6	-1.2	1.6	-2.5	1.3	-1.0	0.8	-0.5
		DROUGHT	0.8	0.0	1.3	0.4	1.6	-0.4	1.6	-0.5	0.9	0.0	0.8	-0.2	1.0	-0.2	0.7	-0.1	1.8	-0.9	1.0	-3.0	1.5	-5.6	1.9	-2.3	1.2	-1.1
	Franks Tract	ALL	-1.5	-1.2	-1.6	-1.3	-1.0	-0.9	-0.5	-0.4	-0.6	-0.6	-0.7	-0.7	-0.5	-0.5	-0.4	-0.4	-0.3	-0.6	-0.1	-0.6	-0.5	-0.6	-0.2	-0.3	-0.7	-0.7
		DROUGHT	-1.0	-0.5	-1.4	-0.8	-0.8	-0.5	-0.5	-0.2	-0.5	-0.5	-0.2	-0.2	-0.1	-0.2	-0.1	-0.1	-0.3	-0.2	-0.5	-0.4	-0.8	-0.6	0.0	0.0	-0.5	-0.4
Old R. at Rock Slough	ALL	-2.1	-1.4	-2.7	-2.1	-1.0	-0.7	-0.6	-0.3	-0.5	-0.5	-0.6	-0.3	-0.1	0.1	0.0	0.0	0.0	-0.3	-0.2	-0.6	-0.5	-0.7	-0.6	-0.8	-0.7	-0.6	
	DROUGHT	-1.5	-0.5	-2.2	-1.1	-0.9	0.1	-1.1	-0.8	-0.5	-0.4	0.1	0.2	0.4	0.5	0.0	0.2	-0.4	-0.2	-0.7	-0.6	-1.0	-0.8	0.0	0.0	-0.7	-0.3	
Western Delta	Sac. R. at Emmaton	ALL	-0.3	-0.2	-0.3	-0.2	-0.1	-0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	-0.1	0.1	0.2	0.3	0.0	0.0	-0.1	-0.1	0.0	0.0	-0.1	0.0
		DROUGHT	-0.1	0.0	-0.3	-0.1	-0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	-0.1	0.0	-0.2	-0.1	0.0	0.0	0.0
	SJR at Antioch	ALL	-0.6	-0.5	-0.7	-0.6	-0.4	-0.4	-0.3	-0.3	-0.2	-0.3	-0.3	-0.4	-0.3	-0.3	-0.2	-0.2	0.0	-0.1	0.2	-0.1	0.0	-0.2	-0.1	-0.1	-0.3	-0.3
		DROUGHT	-0.4	-0.2	-0.7	-0.4	-0.3	-0.2	-0.2	-0.2	-0.1	-0.2	0.0	-0.1	0.1	0.0	0.1	0.1	0.1	0.1	-0.1	0.0	-0.3	-0.2	0.0	0.0	-0.2	-0.1
	Sac. R. at Mallard Island	ALL	-0.4	-0.2	-0.4	-0.2	-0.2	-0.2	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.0	0.1	0.0	0.0	-0.1	-0.1	-0.1
		DROUGHT	-0.3	-0.1	-0.4	-0.2	-0.2	-0.1	-0.1	-0.1	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.1	0.0	0.0	0.0	-0.1	0.0
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.9	0.7	0.0	0.0	0.2	0.2	1.0	1.0	1.9	2.4	1.3	1.5	1.4	1.2	0.9	0.9	1.1	1.0	1.2	1.0	1.5	1.3	0.0	0.0	0.9	0.9
		DROUGHT	1.3	1.1	0.0	0.0	0.1	0.1	0.5	0.5	1.2	1.3	1.0	1.2	1.2	1.3	0.9	1.3	1.2	1.1	1.3	1.1	1.9	1.8	0.0	0.0	0.9	0.9
	Contra Costa PP #1	ALL	-1.6	-1.5	-2.5	-1.6	-1.4	-1.1	0.1	0.0	-1.0	0.1	-0.6	-0.3	0.3	0.2	0.2	0.2	0.3	0.0	-0.1	-0.6	-0.2	-0.8	-0.2	-0.4	-0.6	-0.5
		DROUGHT	-1.1	-0.6	-1.3	-0.1	-1.0	-0.7	0.0	0.4	-0.7	-0.9	0.3	0.5	0.6	0.9	0.4	0.6	0.0	0.0	-0.6	-0.6	-0.8	-0.8	-0.1	-0.1	-0.4	-0.1
	Banks PP	ALL	0.4	0.7	0.6	1.3	-1.0	-0.5	0.9	1.4	1.9	2.0	2.7	2.7	3.5	3.5	1.2	1.3	1.9	2.1	1.3	1.2	0.4	0.1	0.2	-0.3	1.2	1.3
		DROUGHT	0.1	0.5	0.9	2.0	-1.0	-0.3	0.5	1.3	-1.1	-1.1	2.0	1.7	2.9	2.6	1.0	0.9	0.0	0.4	0.0	0.4	-1.6	-1.2	-0.2	-0.6	0.2	0.4
	Jones PP	ALL	-3.2	-1.6	1.7	3.1	0.4	0.9	2.0	2.8	2.3	2.4	3.0	3.2	1.9	2.1	1.9	2.0	2.1	2.3	-0.4	0.2	-0.7	-0.2	1.1	1.7	1.0	1.6
		DROUGHT	-3.4	-0.9	-0.6	1.7	-0.8	-0.4	5.2	5.7	1.7	2.0	3.1	3.2	1.5	1.6	2.2	2.3	0.6	1.1	-2.0	-0.7	-2.5	-1.7	-0.3	-0.1	0.2	1.0

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

NOTES:

-- Positive values indicate that implementation of the Alternative increases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality improves under the Alternative, relative to Existing Conditions or the No Action Alternative). Negative values indicate that implementation of the Alternative decreases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality degradation occurs under the Alternative, relative to Existing Conditions or the No Action Alternative). Values of -100% represent instances where all available assimilative capacity is used under the Alternative, and therefore concentrations are at or above the criteria.

-- Regulatory objective is the drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

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1 **Table 22. Period Average nitrate-N concentrations and frequency of exceedance of objectives/criteria for existing conditions, No Action LLT, and Alternative 6A LLT.**

Nitrate Alt 6 LLT	Location	Period ^a	Period Average Concentration mg/L-N			Lowest Applicable Human Health Criterion/Objective (10 mg/L-N) ^b			Lowest Applicable Aquatic Life Criterion/Objective (N/A)			Other Relevant Threshold (5 mg/L-N) ^c		
			Period Average Concentration mg/L-N			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)		
			Ex. Cond.	No Act. LLT	Alt 6 LLT	Ex. Cond.	No Act. LLT	Alt 6 LLT	Ex. Cond.	No Act. LLT	Alt 6 LLT	Ex. Cond.	No Act. LLT	Alt 6 LLT
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.29	0.28	0.36	0	0	0	-	-	-	0	0	0
		DROUGHT	0.30	0.29	0.36	0	0	0	-	-	-	0	0	0
	SJR at Buckley Cove	ALL	1.44	1.32	1.38	0	0	0	-	-	-	0	0	0
		DROUGHT	1.45	1.25	1.38	0	0	0	-	-	-	0	0	0
	Franks Tract	ALL	0.36	0.36	0.78	0	0	0	-	-	-	0	0	0
		DROUGHT	0.24	0.26	0.58	0	0	0	-	-	-	0	0	0
Old R. at Rock Slough	ALL	0.46	0.47	1.23	0	0	0	-	-	-	0	0	0	
	DROUGHT	0.31	0.34	1.07	0	0	0	-	-	-	0	0	0	
Western Delta	Sac. R. at Emmaton	ALL	0.20	0.20	0.29	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.26	0	0	0	-	-	-	0	0	0
	SJR at Antioch	ALL	0.27	0.26	0.49	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.34	0	0	0	-	-	-	0	0	0
	Sac. R. at Mallard Island	ALL	0.19	0.19	0.31	0	0	0	-	-	-	0	0	0
		DROUGHT	0.15	0.15	0.22	0	0	0	-	-	-	0	0	0
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.27	0.27	0.20	0	0	0	-	-	-	0	0	0
		DROUGHT	0.27	0.27	0.20	0	0	0	-	-	-	0	0	0
	Contra Costa PP #1	ALL	0.51	0.52	1.33	0	0	0	-	-	-	0	0	0
		DROUGHT	0.38	0.41	1.17	0	0	0	-	-	-	0	0	0
	Banks PP	ALL	0.70	0.71	0.14	0	0	0	-	-	-	0	0	0
		DROUGHT	0.56	0.58	0.14	0	0	0	-	-	-	0	0	0
	Jones PP	ALL	0.92	0.96	0.14	0	0	0	-	-	-	0	0	0
		DROUGHT	0.79	0.86	0.14	0	0	0	-	-	-	0	0	0

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

^b Drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

^c Ayers and Westcot (1985). Recommended goals for sensitive crops.

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1 Table 23. Period average change in nitrate-N concentrations (mg/L-N) for Alternative 6A LLT relative to existing conditions and the No Action Alternative LLT.

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change		
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	
Alt 6 LLT	Delta Interior	Moke R. (SF) at Staten Island	ALL	0.07	0.07	0.00	0.00	0.02	0.02	0.06	0.07	0.08	0.10	0.09	0.10	0.08	0.09	0.05	0.05	0.10	0.12	0.14	0.16	0.16	0.17	0.00	0.00	0.07	0.08
				(32%)	(33%)	(-1%)	(-1%)	(8%)	(9%)	(12%)	(16%)	(13%)	(18%)	(21%)	(23%)	(21%)	(24%)	(17%)	(20%)	(40%)	(49%)	(71%)	(84%)	(87%)	(93%)	(-1%)	(1%)	(24%)	(28%)
		DROUGHT	0.06	0.06	0.00	0.00	0.02	0.02	0.04	0.05	0.02	0.05	0.07	0.09	0.04	0.06	0.04	0.05	0.12	0.13	0.16	0.16	0.16	0.16	0.16	0.00	0.00	0.06	0.07
				(29%)	(29%)	(-1%)	(-1%)	(9%)	(10%)	(8%)	(12%)	(3%)	(7%)	(13%)	(19%)	(10%)	(16%)	(14%)	(21%)	(50%)	(56%)	(88%)	(90%)	(88%)	(81%)	(-1%)	(-1%)	(20%)	(24%)
		SJR at Buckley Cove	ALL	-0.06	-0.01	-0.06	-0.05	-0.01	0.11	-0.05	0.04	-0.06	0.01	-0.04	0.01	-0.05	0.01	-0.03	0.00	-0.08	0.04	-0.03	0.22	-0.06	0.29	-0.11	0.08	-0.05	0.06
				(-4%)	(-1%)	(-4%)	(-3%)	(-1%)	(8%)	(-3%)	(3%)	(-3%)	(0%)	(-3%)	(1%)	(-4%)	(0%)	(-4%)	(0%)	(-7%)	(4%)	(-2%)	(20%)	(-4%)	(23%)	(-7%)	(6%)	(-4%)	(5%)
	DROUGHT	-0.08	-0.01	-0.14	-0.06	-0.08	0.08	-0.11	0.07	-0.07	0.00	-0.07	0.02	-0.09	0.02	-0.06	0.01	-0.13	0.10	0.08	0.45	0.03	0.67	-0.17	0.20	-0.07	0.13		
			(-5%)	(-1%)	(-8%)	(-4%)	(-5%)	(6%)	(-6%)	(4%)	(-4%)	(0%)	(-5%)	(1%)	(-7%)	(2%)	(-7%)	(1%)	(-11%)	(10%)	(7%)	(60%)	(2%)	(84%)	(-11%)	(18%)	(-5%)	(10%)	
	Franks Tract	ALL	0.58	0.55	0.58	0.54	0.50	0.50	0.58	0.57	0.64	0.65	0.49	0.49	0.32	0.31	0.17	0.18	0.26	0.29	0.30	0.35	0.39	0.41	0.25	0.27	0.42	0.42	
			(281%)	(236%)	(266%)	(215%)	(160%)	(153%)	(126%)	(120%)	(103%)	(104%)	(82%)	(83%)	(58%)	(58%)	(41%)	(42%)	(64%)	(76%)	(114%)	(160%)	(207%)	(232%)	(234%)	(281%)	(117%)	(118%)	
	DROUGHT	0.39	0.34	0.39	0.32	0.44	0.41	0.56	0.53	0.59	0.59	0.47	0.47	0.32	0.33	0.19	0.19	0.21	0.21	0.18	0.17	0.22	0.21	0.05	0.05	0.34	0.32		
			(193%)	(135%)	(229%)	(139%)	(210%)	(171%)	(184%)	(164%)	(140%)	(140%)	(120%)	(124%)	(91%)	(94%)	(79%)	(79%)	(99%)	(93%)	(120%)	(109%)	(145%)	(125%)	(59%)	(60%)	(138%)	(124%)	
Old R. at Rock Slough	ALL	1.19	1.13	1.20	1.14	1.07	1.04	1.10	1.07	0.98	0.98	0.72	0.70	0.40	0.38	0.24	0.24	0.40	0.42	0.52	0.56	0.76	0.77	0.71	0.73	0.77	0.76		
		(514%)	(381%)	(458%)	(357%)	(281%)	(256%)	(194%)	(179%)	(124%)	(124%)	(97%)	(90%)	(53%)	(50%)	(42%)	(41%)	(77%)	(85%)	(176%)	(225%)	(355%)	(390%)	(559%)	(712%)	(170%)	(164%)		
DROUGHT	1.04	0.94	1.10	1.00	1.11	1.01	1.23	1.20	1.23	1.23	0.95	0.94	0.63	0.62	0.43	0.41	0.39	0.37	0.31	0.30	0.43	0.41	0.30	0.30	0.76	0.73			
		(456%)	(285%)	(575%)	(342%)	(479%)	(307%)	(336%)	(304%)	(217%)	(215%)	(174%)	(168%)	(116%)	(112%)	(130%)	(119%)	(142%)	(126%)	(197%)	(174%)	(260%)	(216%)	(326%)	(328%)	(248%)	(212%)		
Western Delta	Sac. R. at Emmaton	ALL	0.15	0.14	0.13	0.12	0.08	0.08	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.06	0.04	0.08	0.07	0.12	0.12	0.15	0.14	0.07	0.07	0.09	0.09	
			(87%)	(78%)	(83%)	(71%)	(42%)	(40%)	(27%)	(26%)	(24%)	(23%)	(26%)	(23%)	(28%)	(22%)	(31%)	(18%)	(36%)	(30%)	(82%)	(82%)	(103%)	(98%)	(71%)	(74%)	(47%)	(42%)	
	DROUGHT	0.09	0.08	0.08	0.07	0.10	0.09	0.09	0.08	0.09	0.08	0.06	0.06	0.04	0.04	0.03	0.03	0.04	0.04	0.06	0.06	0.08	0.07	0.02	0.02	0.07	0.06		
			(51%)	(40%)	(55%)	(38%)	(50%)	(44%)	(35%)	(31%)	(26%)	(24%)	(22%)	(22%)	(19%)	(19%)	(19%)	(19%)	(25%)	(23%)	(52%)	(44%)	(63%)	(49%)	(19%)	(20%)	(34%)	(30%)	
	SJR at Antioch	ALL	0.29	0.28	0.30	0.28	0.25	0.25	0.30	0.30	0.33	0.34	0.28	0.28	0.20	0.20	0.11	0.11	0.14	0.15	0.16	0.18	0.21	0.22	0.13	0.13	0.22	0.23	
			(177%)	(155%)	(186%)	(159%)	(105%)	(103%)	(84%)	(84%)	(74%)	(76%)	(67%)	(69%)	(54%)	(55%)	(38%)	(37%)	(46%)	(51%)	(76%)	(104%)	(133%)	(150%)	(137%)	(148%)	(84%)	(86%)	
DROUGHT	0.18	0.15	0.17	0.14	0.20	0.19	0.26	0.25	0.27	0.28	0.22	0.22	0.14	0.15	0.07	0.08	0.08	0.08	0.08	0.07	0.11	0.10	0.03	0.03	0.15	0.14			
		(106%)	(80%)	(126%)	(82%)	(118%)	(101%)	(102%)	(98%)	(81%)	(83%)	(73%)	(76%)	(54%)	(58%)	(40%)	(43%)	(46%)	(47%)	(61%)	(53%)	(84%)	(71%)	(30%)	(31%)	(78%)	(72%)		
Sac. R. at Mallard Island	ALL	0.17	0.16	0.17	0.16	0.13	0.13	0.15	0.15	0.16	0.17	0.14	0.14	0.10	0.10	0.06	0.05	0.08	0.07	0.08	0.09	0.11	0.12	0.07	0.07	0.12	0.12		
		(133%)	(113%)	(137%)	(113%)	(80%)	(77%)	(59%)	(59%)	(54%)	(56%)	(50%)	(51%)	(40%)	(40%)	(29%)	(25%)	(35%)	(34%)	(49%)	(64%)	(86%)	(101%)	(86%)	(89%)	(62%)	(61%)		
DROUGHT	0.10	0.08	0.09	0.07	0.11	0.10	0.14	0.13	0.14	0.15	0.10	0.10	0.06	0.07	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.01	0.01	0.07	0.07			
		(83%)	(59%)	(90%)	(55%)	(85%)	(73%)	(70%)	(69%)	(56%)	(60%)	(41%)	(43%)	(31%)	(34%)	(22%)	(23%)	(26%)	(26%)	(31%)	(25%)	(49%)	(41%)	(19%)	(19%)	(50%)	(47%)		
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	-0.06	-0.04	0.01	0.01	0.00	0.00	-0.07	-0.07	-0.16	-0.21	-0.11	-0.13	-0.12	-0.10	-0.08	-0.08	-0.10	-0.09	-0.10	-0.08	-0.12	-0.10	0.02	0.02	-0.08	-0.07	
			(-22%)	(-16%)	(9%)	(8%)	(-2%)	(-1%)	(-21%)	(-20%)	(-32%)	(-39%)	(-31%)	(-34%)	(-36%)	(-32%)	(-35%)	(-35%)	(-42%)	(-38%)	(-44%)	(-38%)	(-43%)	(-39%)	(17%)	(17%)	(-28%)	(-27%)	
	DROUGHT	-0.11	-0.08	0.01	0.01	0.00	0.00	-0.02	-0.02	-0.08	-0.10	-0.08	-0.10	-0.10	-0.10	-0.12	-0.08	-0.12	-0.11	-0.10	-0.11	-0.09	-0.16	-0.16	0.01	0.01	-0.07	-0.07	
			(-34%)	(-28%)	(6%)	(6%)	(1%)	(-0%)	(-7%)	(-8%)	(-20%)	(-22%)	(-24%)	(-27%)	(-30%)	(-34%)	(-34%)	(-43%)	(-43%)	(-40%)	(-48%)	(-43%)	(-50%)	(-50%)	(11%)	(11%)	(-26%)	(-26%)	
	Contra Costa PP #1	ALL	1.16	1.16	1.24	1.15	1.17	1.14	1.13	1.13	1.21	1.11	0.82	0.80	0.50	0.51	0.25	0.25	0.39	0.41	0.52	0.57	0.74	0.79	0.69	0.71	0.82	0.81	
			(358%)	(351%)	(665%)	(409%)	(367%)	(320%)	(169%)	(172%)	(141%)	(116%)	(99%)	(93%)	(59%)	(61%)	(38%)	(38%)	(63%)	(68%)	(140%)	(176%)	(216%)	(278%)	(580%)	(734%)	(160%)	(156%)	
	DROUGHT	1.05	1.00	1.15	1.03	1.15	1.12	1.24	1.20	1.32	1.00	0.98	0.68	0.66	0.46	0.45	0.46	0.45	0.42	0.41	0.32	0.32	0.40	0.40	0.31	0.31	0.79	0.77	
			(330%)	(275%)	(647%)	(348%)	(410%)	(358%)	(268%)	(237%)	(203%)	(209%)	(159%)	(151%)	(101%)	(96%)	(109%)	(101%)	(116%)	(115%)	(136%)	(132%)	(132%)	(136%)	(357%)	(354%)	(207%)	(189%)	
	Banks PP	ALL	-0.41	-0.44	-0.42	-0.48	-0.41	-0.45	-0.57	-0.61	-0.91	-0.91	-0.88	-0.87	-0.81	-0.81	-0.62	-0.62	-0.76	-0.77	-0.42	-0.41	-0.32	-0.30	-0.20	-0.14	-0.56	-0.57	
			(-74%)	(-75%)	(-72%)	(-74%)	(-69%)	(-71%)	(-73%)	(-74%)	(-81%)	(-81%)	(-83%)	(-83%)	(-85%)	(-85%)	(-85%)	(-85%)	(-88%)	(-89%)	(-85%)	(-85%)	(-81%)	(-80%)	(-68%)	(-60%)	(-80%)	(-80%)	
	DROUGHT	-0.34	-0.38	-0.29	-0.40	-0.29	-0.36	-0.38	-0.45	-0.69	-0.69	-0.76	-0.73	-0.78	-0.76	-0.53	-0.52	-0.49	-0.53	-0.18	-0.22	-0.18	-0.22	-0.06	-0.02	-0.41	-0.44		
			(-71%)	(-73%)	(-64%)	(-71%)	(-61%)	(-66%)	(-64%)	(-68%)	(-76%)	(-76%)	(-81%)	(-81%)	(-84%)	(-84%)	(-83%)	(-83%)	(-83%)	(-84%)	(-71%)	(-75%)	(-71%)	(-75%)	(-37%)	(-17%)	(-75%)	(-76%)	
Jones PP	ALL	-0.64	-0.79	-0.67	-0.79	-0.75	-0.79	-0.96	-1.03	-1.21	-1.23	-1.11	-1.12	-0.97	-0.98	-0.71	-0.72	-0.76	-0.78	-0.51	-0.56	-0.52	-0.56	-0.49	-0.54	-0.77	-0.82		
		(-82%)	(-85%)	(-80%)	(-83%)	(-80%)	(-81%)	(-82%)	(-83%)	(-85%)	(-85%)	(-86%)	(-87%)	(-87%)	(-87%)	(-87%)	(-87%)	(-87%)	(-89%)	(-89%)	(-87%)	(-89%)	(-87%)	(-88%)	(-84%)	(-85%)	(-85%)	(-85%)	
DROUGHT	-0.53	-0.76	-0.51	-0.72	-0.69	-0.72	-0.86	-0.91	-1.17	-1.19	-1.13	-1.14	-0.97	-0.97	-0.68	-0.70	-0.47	-0.51	-0.20	-0.32	-0.30	-0.38	-0.31	-0.32	-0.65	-0.72			
		(-79%)	(-84%)	(-76%)	(-81%)	(-79%)	(-80%)	(-80%)	(-81%)	(-84%)	(-84%)	(-87%)	(-87%)	(-87%)	(-87%)	(-86%)	(-86%)	(-83%)	(-84%)	(-73%)	(-81%)	(-80%)	(-84%)	(-77%)	(-78%)	(-82%)	(-84%)		

^a ALL: Water years 1976-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

1 **Table 24. Alternative 6 use of assimilative capacity available under existing conditions and No Action LLT relative to the 10 mg/L-N MCL.**

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change	
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT
			Alt 6 LLT																									
Delta Interior	Moke. R. (SF) at Staten Island	ALL	-0.7	-0.7	0.0	0.0	-0.2	-0.2	-0.6	-0.8	-0.9	-1.1	-0.9	-1.0	-0.8	-0.9	-0.5	-0.5	-1.1	-1.2	-1.5	-1.6	-1.7	-1.7	0.0	0.0	-0.7	-0.8
		DROUGHT	-0.7	-0.7	0.0	0.0	-0.2	-0.2	-0.4	-0.6	-0.2	-0.5	-0.7	-0.9	-0.4	-0.6	-0.4	-0.5	-1.2	-1.3	-1.6	-1.6	-1.7	-1.6	0.0	0.0	-0.6	-0.7
	SJR at Buckley Cove	ALL	0.7	0.2	0.7	0.5	0.1	-1.3	0.6	-0.5	0.7	-0.1	0.5	-0.1	0.5	-0.1	0.4	0.0	0.9	-0.5	0.4	-2.4	0.7	-3.3	1.4	-1.0	0.6	-0.7
		DROUGHT	0.9	0.1	1.7	0.8	1.0	-1.0	1.3	-0.8	0.9	0.0	0.8	-0.2	1.0	-0.2	0.7	-0.1	1.5	-1.1	-0.9	-4.8	-0.3	-7.3	2.0	-2.3	0.9	-1.5
	Franks Tract	ALL	-5.9	-5.6	-5.9	-5.6	-5.2	-5.1	-6.1	-6.0	-6.9	-6.9	-5.2	-5.2	-3.3	-3.3	-1.8	-1.8	-2.7	-3.0	-3.1	-3.5	-4.0	-4.1	-2.6	-2.7	-4.4	-4.4
		DROUGHT	-4.0	-3.5	-3.9	-3.3	-4.5	-4.2	-5.7	-5.5	-6.2	-6.2	-4.9	-4.9	-3.3	-3.4	-1.9	-1.9	-2.2	-2.1	-1.8	-1.8	-2.2	-2.1	-0.5	-0.5	-3.4	-3.3
Old R. at Rock Slough	ALL	-12.2	-11.6	-12.3	-11.8	-11.1	-10.8	-11.7	-11.4	-10.7	-10.7	-7.8	-7.5	-4.3	-4.2	-2.6	-2.5	-4.2	-4.4	-5.3	-5.7	-7.7	-7.9	-7.2	-7.4	-8.1	-8.0	
	DROUGHT	-10.6	-9.7	-11.2	-10.3	-11.4	-10.5	-12.7	-12.5	-13.0	-13.0	-10.1	-10.0	-6.7	-6.6	-4.5	-4.3	-4.0	-3.8	-3.2	-3.1	-4.4	-4.2	-3.0	-3.0	-7.9	-7.5	
Western Delta	Sac. R. at Emmaton	ALL	-1.6	-1.5	-1.3	-1.2	-0.8	-0.8	-0.7	-0.7	-0.8	-0.7	-0.6	-0.6	-0.7	-0.6	-0.6	-0.4	-0.8	-0.7	-1.2	-1.2	-1.5	-1.4	-0.7	-0.7	-0.9	-0.9
		DROUGHT	-1.0	-0.8	-0.9	-0.7	-1.0	-0.9	-0.9	-0.9	-0.9	-0.9	-0.8	-0.6	-0.6	-0.4	-0.4	-0.3	-0.3	-0.4	-0.4	-0.6	-0.6	-0.8	-0.7	-0.2	-0.2	-0.7
	SJR at Antioch	ALL	-3.0	-2.8	-3.1	-2.9	-2.5	-2.5	-3.1	-3.1	-3.5	-3.6	-2.9	-3.0	-2.0	-2.1	-1.1	-1.1	-1.4	-1.5	-1.6	-1.9	-2.2	-2.3	-1.3	-1.3	-2.3	-2.3
		DROUGHT	-1.8	-1.6	-1.7	-1.4	-2.1	-1.9	-2.7	-2.6	-2.8	-2.9	-2.2	-2.3	-1.4	-1.5	-0.7	-0.8	-0.8	-0.8	-0.8	-0.7	-1.1	-1.0	-0.3	-0.3	-1.5	-1.5
	Sac. R. at Mallard Island	ALL	-1.7	-1.6	-1.7	-1.6	-1.3	-1.3	-1.5	-1.5	-1.7	-1.7	-1.4	-1.4	-1.1	-1.0	-0.6	-0.6	-0.8	-0.8	-0.8	-0.9	-1.1	-1.2	-0.7	-0.8	-1.2	-1.2
		DROUGHT	-1.0	-0.8	-0.9	-0.7	-1.1	-1.0	-1.4	-1.4	-1.4	-1.5	-1.0	-1.0	-0.6	-0.7	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.5	-0.5	-0.1	-0.1	-0.8
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.6	0.4	-0.1	-0.1	0.0	0.0	0.8	0.8	1.6	2.2	1.2	1.4	1.3	1.1	0.8	0.8	1.1	0.9	1.0	0.8	1.3	1.0	-0.2	-0.2	0.8	0.8
		DROUGHT	1.1	0.8	-0.1	-0.1	0.0	0.0	0.2	0.3	0.9	1.0	0.9	1.0	1.0	1.2	0.8	1.2	1.1	1.0	1.2	1.0	1.6	1.6	-0.1	-0.1	0.7	0.7
	Contra Costa PP #1	ALL	-12.0	-12.0	-12.6	-11.8	-12.1	-11.8	-12.1	-12.1	-13.3	-12.3	-9.0	-8.7	-5.5	-5.5	-2.7	-2.7	-4.2	-4.4	-5.4	-5.9	-7.6	-8.2	-7.0	-7.2	-8.6	-8.5
		DROUGHT	-10.8	-10.4	-11.7	-10.6	-11.9	-11.6	-13.0	-12.7	-13.9	-14.1	-10.7	-10.5	-7.3	-7.1	-4.8	-4.7	-4.3	-4.3	-3.3	-3.2	-4.1	-4.1	-3.2	-3.2	-8.2	-8.0
	Banks PP	ALL	4.3	4.6	4.4	5.1	4.3	4.8	6.2	6.7	10.3	10.3	9.8	9.8	9.0	8.9	6.6	6.7	8.3	8.4	4.4	4.3	3.4	3.1	2.0	1.4	6.0	6.1
		DROUGHT	3.6	4.0	3.1	4.2	3.0	3.8	4.0	4.9	7.6	7.6	8.4	8.1	8.6	8.4	5.6	5.5	5.2	5.6	1.9	2.3	1.9	2.3	0.6	0.2	4.4	4.7
	Jones PP	ALL	7.0	8.7	7.3	8.8	8.3	8.7	10.9	11.7	14.2	14.3	12.7	12.9	10.9	11.0	7.7	7.8	8.3	8.5	5.4	6.0	5.5	6.0	5.2	5.8	8.5	9.1
		DROUGHT	5.7	8.4	5.5	7.9	7.5	8.0	9.7	10.3	13.5	13.9	13.0	13.1	10.9	11.0	7.4	7.6	4.9	5.5	2.0	3.3	3.1	4.0	3.2	3.3	7.1	7.9

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

NOTES:

-- Positive values indicate that implementation of the Alternative increases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality improves under the Alternative, relative to Existing Conditions or the No Action Alternative). Negative values indicate that implementation of the Alternative decreases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality degradation occurs under the Alternative, relative to Existing Conditions or the No Action Alternative). Values of -100% represent instances where all available assimilative capacity is used under the Alternative, and therefore concentrations are at or above the criteria.

-- Regulatory objective is the drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

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3

1 **Table 25. Period Average nitrate-N concentrations and frequency of exceedance of objectives/criteria for existing conditions, No Action LLT, and Alternative 7 LLT.**

Nitrate Alt 7 LLT	Location	Period ^a	Period Average Concentration mg/L-N			Lowest Applicable Human Health Criterion/Objective (10 mg/L-N) ^b			Lowest Applicable Aquatic Life Criterion/Objective (N/A)			Other Relevant Threshold (5 mg/L-N) ^c		
			Period Average Concentration mg/L-N			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)		
			Ex. Cond.	No Act. LLT	Alt 7 LLT	Ex. Cond.	No Act. LLT	Alt 7 LLT	Ex. Cond.	No Act. LLT	Alt 7 LLT	Ex. Cond.	No Act. LLT	Alt 7 LLT
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.29	0.28	0.34	0	0	0	-	-	-	0	0	0
		DROUGHT	0.30	0.29	0.34	0	0	0	-	-	-	0	0	0
	SJR at Buckley Cove	ALL	1.44	1.32	1.33	0	0	0	-	-	-	0	0	0
		DROUGHT	1.45	1.25	1.27	0	0	0	-	-	-	0	0	0
	Franks Tract	ALL	0.36	0.36	0.67	0	0	0	-	-	-	0	0	0
		DROUGHT	0.24	0.26	0.51	0	0	0	-	-	-	0	0	0
Old R. at Rock Slough	ALL	0.46	0.47	1.04	0	0	0	-	-	-	0	0	0	
	DROUGHT	0.31	0.34	0.92	0	0	0	-	-	-	0	0	0	
Western Delta	Sac. R. at Emmaton	ALL	0.20	0.20	0.25	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.23	0	0	0	-	-	-	0	0	0
	SJR at Antioch	ALL	0.27	0.26	0.42	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.31	0	0	0	-	-	-	0	0	0
	Sac. R. at Mallard Island	ALL	0.19	0.19	0.27	0	0	0	-	-	-	0	0	0
		DROUGHT	0.15	0.15	0.21	0	0	0	-	-	-	0	0	0
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.27	0.27	0.19	0	0	0	-	-	-	0	0	0
		DROUGHT	0.27	0.27	0.19	0	0	0	-	-	-	0	0	0
	Contra Costa PP #1	ALL	0.51	0.52	1.10	0	0	0	-	-	-	0	0	0
		DROUGHT	0.38	0.41	0.98	0	0	0	-	-	-	0	0	0
	Banks PP	ALL	0.70	0.71	0.29	0	0	0	-	-	-	0	0	0
		DROUGHT	0.56	0.58	0.23	0	0	0	-	-	-	0	0	0
	Jones PP	ALL	0.92	0.96	0.36	0	0	0	-	-	-	0	0	0
		DROUGHT	0.79	0.86	0.28	0	0	0	-	-	-	0	0	0

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

^b Drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

^c Ayers and Westcot (1985). Recommended goals for sensitive crops.

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1 Table 26. Period average change in nitrate-N concentrations (mg/L-N) for Alternative 7 LLT relative to existing conditions and the No Action Alternative LLT.

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change																												
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT																									
Alt 7 LLT	Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.06	0.06	0.00	0.00	0.02	0.02	0.05	0.07	0.06	0.09	0.08	0.09	0.07	0.08	0.04	0.05	0.09	0.10	0.04	0.06	0.06	0.07	0.00	0.00	0.05	0.06	(29%)	(30%)	(-1%)	(-1%)	(8%)	(8%)	(10%)	(14%)	(10%)	(14%)	(18%)	(20%)	(19%)	(22%)	(16%)	(19%)	(34%)	(43%)	(21%)	(30%)	(31%)	(36%)	(-2%)	(1%)	(16%)	(20%)
			DROUGHT	0.06	0.06	0.00	0.00	0.02	0.02	0.03	0.05	0.01	0.04	0.06	0.09	0.03	0.06	0.03	0.05	0.10	0.11	0.08	0.08	0.07	0.06	0.00	0.00	0.04	0.05	(28%)	(28%)	(-1%)	(-1%)	(8%)	(9%)	(7%)	(11%)	(2%)	(6%)	(12%)	(18%)	(9%)	(16%)	(12%)	(18%)	(40%)	(46%)	(44%)	(44%)	(38%)	(33%)	(-0%)	(-0%)	(14%)	(17%)
		SJR at Buckley Cove	ALL	-0.09	-0.04	-0.08	-0.06	-0.02	0.10	-0.05	0.03	-0.06	0.00	-0.04	0.01	-0.05	0.00	-0.03	0.00	-0.09	0.04	-0.21	0.03	-0.34	0.01	-0.29	-0.09	-0.11	0.00	(-5%)	(-2%)	(-5%)	(-4%)	(-1%)	(7%)	(-3%)	(2%)	(-4%)	(0%)	(-3%)	(1%)	(-4%)	(0%)	(-4%)	(0%)	(-7%)	(4%)	(-16%)	(3%)	(-21%)	(1%)	(-18%)	(-7%)	(-8%)	(0%)
			DROUGHT	-0.13	-0.06	-0.18	-0.10	-0.10	0.06	-0.12	0.05	-0.08	-0.01	-0.07	0.01	-0.09	0.02	-0.07	0.01	-0.14	0.10	-0.20	0.17	-0.52	0.13	-0.52	-0.14	-0.18	0.02	(-8%)	(-4%)	(-10%)	(-6%)	(-6%)	(4%)	(-7%)	(3%)	(-5%)	(-0%)	(-5%)	(1%)	(-7%)	(1%)	(-8%)	(1%)	(-11%)	(9%)	(-18%)	(23%)	(-36%)	(16%)	(-35%)	(-13%)	(-13%)	(2%)
		Franks Tract	ALL	0.35	0.32	0.47	0.44	0.43	0.42	0.49	0.48	0.54	0.54	0.44	0.44	0.30	0.30	0.17	0.17	0.25	0.28	0.13	0.17	0.07	0.08	0.06	0.08	0.31	0.31	(169%)	(137%)	(219%)	(175%)	(137%)	(131%)	(107%)	(102%)	(87%)	(87%)	(74%)	(74%)	(55%)	(55%)	(40%)	(41%)	(61%)	(73%)	(48%)	(80%)	(35%)	(46%)	(58%)	(80%)	(85%)	(86%)
			DROUGHT	0.18	0.13	0.27	0.21	0.37	0.34	0.50	0.47	0.55	0.55	0.44	0.44	0.30	0.31	0.18	0.18	0.20	0.20	0.12	0.11	0.07	0.06	0.01	0.01	0.27	0.25	(90%)	(52%)	(162%)	(90%)	(174%)	(140%)	(164%)	(146%)	(129%)	(129%)	(113%)	(116%)	(85%)	(88%)	(76%)	(75%)	(94%)	(87%)	(76%)	(68%)	(49%)	(37%)	(11%)	(11%)	(110%)	(98%)
	Old R. at Rock Slough	ALL	0.83	0.77	1.09	1.03	1.00	0.98	1.00	0.97	1.00	0.93	0.93	0.70	0.68	0.38	0.36	0.23	0.23	0.40	0.42	0.12	0.17	0.06	0.08	0.27	0.29	0.59	0.58	(358%)	(259%)	(417%)	(324%)	(264%)	(240%)	(177%)	(163%)	(117%)	(117%)	(94%)	(88%)	(50%)	(47%)	(40%)	(39%)	(77%)	(85%)	(43%)	(68%)	(28%)	(38%)	(212%)	(285%)	(129%)	(124%)
		DROUGHT	0.54	0.43	0.94	0.84	1.03	0.93	1.15	1.12	1.16	1.16	0.90	0.89	0.59	0.58	0.41	0.40	0.39	0.37	0.14	0.12	0.08	0.06	0.01	0.01	0.61	0.57	(235%)	(132%)	(491%)	(288%)	(442%)	(281%)	(314%)	(284%)	(205%)	(203%)	(164%)	(159%)	(108%)	(105%)	(124%)	(113%)	(141%)	(126%)	(86%)	(72%)	(51%)	(32%)	(9%)	(10%)	(198%)	(167%)	
	Western Delta	Sac. R. at Emmaton	ALL	0.08	0.07	0.09	0.08	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.04	0.06	0.05	0.06	0.04	0.06	0.05	0.03	0.03	0.01	0.01	0.01	0.01	0.05	0.05	(45%)	(38%)	(59%)	(48%)	(34%)	(31%)	(22%)	(21%)	(20%)	(18%)	(21%)	(18%)	(25%)	(20%)	(29%)	(16%)	(28%)	(23%)	(20%)	(21%)	(10%)	(7%)	(12%)	(14%)	(27%)	(23%)
			DROUGHT	0.03	0.02	0.06	0.04	0.07	0.06	0.08	0.07	0.07	0.07	0.05	0.05	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.00	0.00	0.04	0.04	(18%)	(10%)	(36%)	(22%)	(37%)	(32%)	(29%)	(25%)	(22%)	(20%)	(19%)	(19%)	(17%)	(16%)	(17%)	(20%)	(18%)	(25%)	(18%)	(12%)	(3%)	(5%)	(6%)	(22%)	(18%)	
		SJR at Antioch	ALL	0.16	0.14	0.24	0.22	0.20	0.20	0.25	0.25	0.27	0.27	0.24	0.24	0.18	0.18	0.11	0.11	0.14	0.15	0.05	0.08	0.02	0.03	0.02	0.03	0.16	0.16	(95%)	(80%)	(146%)	(123%)	(84%)	(83%)	(70%)	(70%)	(60%)	(62%)	(57%)	(58%)	(50%)	(50%)	(37%)	(36%)	(45%)	(50%)	(26%)	(46%)	(11%)	(19%)	(26%)	(32%)	(58%)	(60%)
			DROUGHT	0.08	0.05	0.12	0.09	0.16	0.15	0.23	0.22	0.25	0.25	0.20	0.20	0.13	0.14	0.07	0.07	0.08	0.08	0.05	0.04	0.03	0.02	0.01	0.01	0.12	0.11	(46%)	(28%)	(88%)	(52%)	(93%)	(78%)	(89%)	(85%)	(73%)	(75%)	(68%)	(70%)	(50%)	(55%)	(39%)	(42%)	(48%)	(49%)	(37%)	(29%)	(23%)	(14%)	(8%)	(8%)	(60%)	(55%)
Sac. R. at Mallard Island		ALL	0.08	0.07	0.13	0.12	0.11	0.10	0.12	0.12	0.13	0.14	0.11	0.11	0.09	0.09	0.06	0.05	0.07	0.07	0.03	0.04	0.00	0.01	0.01	0.01	0.08	0.08	(66%)	(52%)	(106%)	(85%)	(63%)	(61%)	(49%)	(48%)	(43%)	(45%)	(41%)	(42%)	(36%)	(36%)	(29%)	(25%)	(35%)	(34%)	(17%)	(29%)	(4%)	(11%)	(14%)	(16%)	(42%)	(41%)	
		DROUGHT	0.04	0.02	0.07	0.04	0.09	0.08	0.12	0.12	0.13	0.13	0.09	0.09	0.06	0.06	0.03	0.03	0.04	0.04	0.02	0.02	0.01	0.01	0.00	0.00	0.06	0.05	(36%)	(18%)	(66%)	(36%)	(68%)	(56%)	(61%)	(59%)	(50%)	(54%)	(38%)	(39%)	(29%)	(32%)	(22%)	(24%)	(30%)	(30%)	(21%)	(15%)	(14%)	(8%)	(5%)	(6%)	(39%)	(35%)	
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	-0.08	-0.06	0.01	0.01	-0.01	-0.01	-0.09	-0.09	-0.17	-0.22	-0.12	-0.14	-0.13	-0.11	-0.08	-0.08	-0.11	-0.09	-0.11	-0.09	-0.15	-0.13	0.01	0.01	-0.09	-0.08	(-30%)	(-25%)	(4%)	(4%)	(-6%)	(-6%)	(-24%)	(-24%)	(-34%)	(-41%)	(-33%)	(-36%)	(-38%)	(-34%)	(-36%)	(-36%)	(-43%)	(-39%)	(-48%)	(-42%)	(-52%)	(-48%)	(8%)	(8%)	(-31%)	(-31%)	
		DROUGHT	-0.13	-0.10	0.01	0.01	-0.01	-0.01	-0.04	-0.04	-0.10	-0.11	-0.09	-0.11	-0.10	-0.12	-0.12	-0.09	-0.12	-0.10	-0.12	-0.10	-0.12	-0.18	-0.18	0.01	0.01	-0.08	-0.08	(-40%)	(-34%)	(4%)	(3%)	(-3%)	(-4%)	(-12%)	(-12%)	(-23%)	(-26%)	(-26%)	(-29%)	(-32%)	(-35%)	(-36%)	(-44%)	(-45%)	(-42%)	(-52%)	(-47%)	(-56%)	(-56%)	(8%)	(8%)	(-29%)	(-30%)
	Contra Costa PP #1	ALL	0.52	0.51	1.07	0.98	1.09	1.05	1.04	1.04	1.13	1.03	0.81	0.79	0.48	0.49	0.24	0.24	0.39	0.41	0.18	0.22	0.02	0.08	0.09	0.12	0.59	0.58	(159%)	(155%)	(576%)	(350%)	(341%)	(296%)	(156%)	(159%)	(132%)	(108%)	(98%)	(92%)	(58%)	(59%)	(37%)	(37%)	(63%)	(68%)	(47%)	(70%)	(6%)	(27%)	(80%)	(120%)	(115%)	(112%)	
		DROUGHT	0.22	0.18	0.92	0.80	1.04	1.01	1.15	1.10	1.22	1.24	0.97	0.95	0.62	0.60	0.44	0.42	0.42	0.42	0.14	0.13	0.06	0.07	0.01	0.01	0.60	0.58	(70%)	(49%)	(520%)	(272%)	(371%)	(324%)	(247%)	(218%)	(190%)	(196%)	(154%)	(145%)	(93%)	(87%)	(103%)	(96%)	(116%)	(115%)	(58%)	(56%)	(22%)	(24%)	(15%)	(14%)	(157%)	(142%)	
	Banks PP	ALL	-0.41	-0.44	-0.42	-0.48	-0.38	-0.42	-0.35	-0.39	-0.73	-0.74	-0.65	-0.65	-0.81	-0.81	-0.62	-0.62	-0.71	-0.72	0.07	0.07	0.08	0.11	-0.14	-0.09	-0.41	-0.41	(-74%)	(-75%)	(-72%)	(-74%)	(-64%)	(-67%)	(-45%)	(-47%)	(-65%)	(-65%)	(-62%)	(-62%)	(-85%)	(-85%)	(-85%)	(-85%)	(-83%)	(-83%)	(14%)	(15%)	(20%)	(28%)	(-49%)	(-37%)	(-58%)	(-58%)	
		DROUGHT	-0.37	-0.41	-0.33	-0.43	-0.29	-0.36	-0.38	-0.45	-0.74	-0.74	-0.78	-0.75	-0.87	-0.85	-0.61	-0.61	-0.57	-0.61	0.04	0.00	0.23	0.18	0.03	0.06	-0.33	-0.36	(-77%)	(-78%)	(-71%)	(-76%)	(-61%)	(-66%)	(-64%)	(-68%)	(-81%)	(-81%)	(-83%)	(-83%)	(-94%)	(-94%)	(-97%)	(-97%)	(-97%)	(-97%)	(15%)	(-0%)	(89%)	(62%)	(18%)	(56%)	(-59%)	(-61%)	
	Jones PP	ALL	-0.64	-0.79	-0.67	-0.79	-0.57	-0.61	-0.67	-0.73	-0.94	-0.96	-1.00	-1.02	-0.97	-0.98	-0.71	-0.72	-0.75	-0.77	0.21	0.16	0.15	0.10	-0.14	-0.20	-0.56	-0.61	(-82%)	(-85%)	(-80%)	(-83%)	(-61%)	(-63%)	(-57%)	(-59%)	(-66%)	(-66%)	(-78%)	(-79%)	(-87%)	(-87%)	(-87%)	(-87%)	(-87%)	(-88%)	(36%)	(25%)	(25%)	(15%)	(-25%)	(-32%)	(-61%)	(-63%)	
		DROUGHT	-0.53	-0.76	-0.51	-0.72	-0.69	-0.72	-0.86	-0.91	-1.17	-1.19	-1.12	-1.13	-0.97	-0.97	-0.68	-0.70	-0.47	-0.52	0.28	0.16	0.28	0.20	0.25	0.24	-0.52	-0.59	(-79%)	(-84%)	(-76%)	(-81%)	(-79%)	(-80%)	(-80%)	(-81%)	(-84%)	(-84%)	(-86%)	(-86%)	(-87%)	(-87%)	(-86%)	(-87%)	(-83%)	(-84%)	(104%)	(40%)	(76%)	(45%)	(63%)	(58%)	(-65%)	(-68%)	

^a ALL: Water years 1976-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

1 Table 27. Alternative 7 use of assimilative capacity available under existing conditions and No Action LLT relative to the 10 mg/L-N MCL.

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change	
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT
			Alt 7 LLT																									
Delta Interior	Moke. R. (SF) at Staten Island	ALL	-0.6	-0.7	0.0	0.0	-0.2	-0.2	-0.5	-0.7	-0.7	-0.9	-0.8	-0.9	-0.7	-0.8	-0.4	-0.5	-0.9	-1.1	-0.4	-0.6	-0.6	-0.7	0.0	0.0	-0.5	-0.6
		DROUGHT	-0.6	-0.6	0.0	0.0	-0.2	-0.2	-0.4	-0.5	-0.2	-0.5	-0.6	-0.9	-0.4	-0.6	-0.3	-0.5	-1.0	-1.1	-0.8	-0.8	-0.7	-0.6	0.0	0.0	-0.4	-0.5
	SJR at Buckley Cove	ALL	1.0	0.5	1.0	0.8	0.2	-1.1	0.6	-0.4	0.7	0.0	0.5	-0.1	0.5	0.0	0.4	0.0	1.0	-0.5	2.5	-0.4	4.1	-0.1	3.4	1.1	1.3	0.0
		DROUGHT	1.5	0.8	2.2	1.2	1.2	-0.7	1.5	-0.6	1.0	0.1	0.9	-0.2	1.0	-0.2	0.7	-0.1	1.6	-1.1	2.2	-1.8	6.1	-1.4	6.1	1.6	2.2	-0.2
	Franks Tract	ALL	-3.5	-3.3	-4.9	-4.5	-4.5	-4.4	-5.2	-5.1	-5.8	-5.8	-4.6	-4.7	-3.2	-3.1	-1.8	-1.8	-2.6	-2.9	-1.3	-1.8	-0.7	-0.8	-0.6	-0.8	-3.2	-3.2
		DROUGHT	-1.9	-1.4	-2.8	-2.1	-3.8	-3.5	-5.1	-4.9	-5.7	-5.7	-4.6	-4.6	-3.1	-3.2	-1.9	-1.9	-2.1	-2.0	-1.2	-1.1	-0.8	-0.6	-0.1	-0.1	-2.7	-2.6
Old R. at Rock Slough	ALL	-8.5	-7.9	-11.2	-10.7	-10.4	-10.2	-10.6	-10.3	-10.1	-10.1	-7.6	-7.3	-4.1	-3.9	-2.4	-2.4	-4.2	-4.5	-1.3	-1.7	-0.6	-0.8	-2.7	-2.9	-6.1	-6.0	
	DROUGHT	-5.5	-4.5	-9.6	-8.6	-10.5	-9.6	-11.9	-11.6	-12.3	-12.3	-9.5	-9.4	-6.2	-6.1	-4.3	-4.1	-4.0	-3.8	-1.4	-1.3	-0.9	-0.6	-0.1	-0.1	-6.3	-6.0	
Western Delta	Sac. R. at Emmaton	ALL	-0.8	-0.7	-0.9	-0.8	-0.7	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.6	-0.5	-0.6	-0.4	-0.6	-0.5	-0.3	-0.3	-0.1	-0.1	-0.1	-0.1	-0.5	-0.5
		DROUGHT	-0.3	-0.2	-0.6	-0.4	-0.7	-0.7	-0.8	-0.7	-0.8	-0.7	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	0.0	0.0	-0.1	-0.4	-0.4
	SJR at Antioch	ALL	-1.6	-1.5	-2.4	-2.3	-2.0	-2.0	-2.6	-2.6	-2.8	-2.9	-2.5	-2.5	-1.9	-1.9	-1.1	-1.1	-1.4	-1.5	-0.5	-0.8	-0.2	-0.3	-0.2	-0.3	-1.6	-1.6
		DROUGHT	-0.8	-0.5	-1.2	-0.9	-1.6	-1.5	-2.3	-2.3	-2.6	-2.6	-2.1	-2.1	-1.3	-1.4	-0.7	-0.8	-0.9	-0.9	-0.5	-0.4	-0.3	-0.2	-0.1	-0.1	-1.2	-1.1
	Sac. R. at Mallard Island	ALL	-0.8	-0.7	-1.3	-1.2	-1.1	-1.0	-1.3	-1.2	-1.4	-1.4	-1.1	-1.2	-0.9	-0.9	-0.6	-0.5	-0.8	-0.8	-0.3	-0.4	0.0	-0.1	-0.1	-0.1	-0.8	-0.8
		DROUGHT	-0.4	-0.3	-0.7	-0.5	-0.9	-0.8	-1.2	-1.2	-1.3	-1.4	-0.9	-0.9	-0.6	-0.6	-0.3	-0.3	-0.4	-0.4	-0.2	-0.2	-0.1	-0.1	0.0	0.0	-0.6	-0.5
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.8	0.6	-0.1	-0.1	0.1	0.1	0.9	0.9	1.8	2.3	1.3	1.4	1.3	1.1	0.9	0.8	1.1	0.9	1.1	0.9	1.5	1.3	-0.1	-0.1	0.9	0.9
		DROUGHT	1.3	1.0	-0.1	-0.1	0.1	0.1	0.4	0.4	1.0	1.2	1.0	1.1	1.1	1.3	0.9	1.3	1.2	1.1	1.3	1.1	1.8	1.8	-0.1	-0.1	0.8	0.8
	Contra Costa PP #1	ALL	-5.3	-5.3	-10.9	-10.1	-11.2	-10.9	-11.1	-11.2	-12.4	-11.4	-8.9	-8.6	-5.3	-5.4	-2.6	-2.6	-4.2	-4.4	-1.8	-2.3	-0.2	-0.8	-1.0	-1.2	-6.2	-6.1
		DROUGHT	-2.3	-1.8	-9.4	-8.3	-10.8	-10.5	-12.0	-11.6	-13.1	-13.2	-10.3	-10.1	-6.7	-6.5	-4.6	-4.4	-4.3	-4.3	-1.4	-1.4	-0.7	-0.7	-0.1	-0.1	-6.3	-6.0
	Banks PP	ALL	4.3	4.6	4.4	5.1	4.0	4.5	3.9	4.3	8.3	8.3	7.3	7.3	9.0	8.9	6.7	6.7	7.8	7.9	-0.7	-0.8	-0.8	-1.1	1.5	0.9	4.4	4.5
		DROUGHT	3.9	4.3	3.4	4.5	3.0	3.8	4.0	4.9	8.1	8.1	8.6	8.3	9.6	9.3	6.5	6.5	6.0	6.5	-0.4	0.0	-2.3	-1.9	-0.3	-0.6	3.5	3.8
	Jones PP	ALL	7.0	8.7	7.3	8.8	6.3	6.8	7.6	8.3	11.0	11.2	11.5	11.7	10.9	11.0	7.7	7.8	8.2	8.4	-2.2	-1.7	-1.5	-1.1	1.5	2.1	6.2	6.7
		DROUGHT	5.7	8.4	5.5	7.9	7.5	8.0	9.7	10.3	13.5	13.9	12.9	13.0	10.9	11.0	7.4	7.6	5.0	5.5	-2.9	-1.6	-2.9	-2.1	-2.6	-2.5	5.6	6.4

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

NOTES:

-- Positive values indicate that implementation of the Alternative increases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality improves under the Alternative, relative to Existing Conditions or the No Action Alternative). Negative values indicate that implementation of the Alternative decreases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality degradation occurs under the Alternative, relative to Existing Conditions or the No Action Alternative). Values of -100% represent instances where all available assimilative capacity is used under the Alternative, and therefore concentrations are at or above the criteria.

-- Regulatory objective is the drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

1 **Table 28. Period Average nitrate-N concentrations and frequency of exceedance of objectives/criteria for existing conditions, No Action LLT, and Alternative 8 LLT.**

Nitrate Alt 8 LLT	Location	Period ^a	Period Average Concentration mg/L-N			Lowest Applicable Human Health Criterion/Objective (10 mg/L-N) ^b			Lowest Applicable Aquatic Life Criterion/Objective (N/A)			Other Relevant Threshold (5 mg/L-N) ^c		
			Period Average Concentration mg/L-N			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)		
			Ex. Cond.	No Act. LLT	Alt 8 LLT	Ex. Cond.	No Act. LLT	Alt 8 LLT	Ex. Cond.	No Act. LLT	Alt 8 LLT	Ex. Cond.	No Act. LLT	Alt 8 LLT
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.29	0.28	0.34	0	0	0	-	-	-	0	0	0
		DROUGHT	0.30	0.29	0.34	0	0	0	-	-	-	0	0	0
	SJR at Buckley Cove	ALL	1.44	1.32	1.35	0	0	0	-	-	-	0	0	0
		DROUGHT	1.45	1.25	1.32	0	0	0	-	-	-	0	0	0
	Franks Tract	ALL	0.36	0.36	0.68	0	0	0	-	-	-	0	0	0
		DROUGHT	0.24	0.26	0.51	0	0	0	-	-	-	0	0	0
Old R. at Rock Slough	ALL	0.46	0.47	1.06	0	0	0	-	-	-	0	0	0	
	DROUGHT	0.31	0.34	0.93	0	0	0	-	-	-	0	0	0	
Western Delta	Sac. R. at Emmaton	ALL	0.20	0.20	0.25	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.23	0	0	0	-	-	-	0	0	0
	SJR at Antioch	ALL	0.27	0.26	0.43	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.31	0	0	0	-	-	-	0	0	0
	Sac. R. at Mallard Island	ALL	0.19	0.19	0.27	0	0	0	-	-	-	0	0	0
		DROUGHT	0.15	0.15	0.21	0	0	0	-	-	-	0	0	0
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.27	0.27	0.19	0	0	0	-	-	-	0	0	0
		DROUGHT	0.27	0.27	0.19	0	0	0	-	-	-	0	0	0
	Contra Costa PP #1	ALL	0.51	0.52	1.13	0	0	0	-	-	-	0	0	0
		DROUGHT	0.38	0.41	1.00	0	0	0	-	-	-	0	0	0
	Banks PP	ALL	0.70	0.71	0.35	0	0	0	-	-	-	0	0	0
		DROUGHT	0.56	0.58	0.30	0	0	0	-	-	-	0	0	0
	Jones PP	ALL	0.92	0.96	0.37	0	0	0	-	-	-	0	0	0
		DROUGHT	0.79	0.86	0.27	0	0	0	-	-	-	0	0	0

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

^b Drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

^c Ayers and Westcot (1985). Recommended goals for sensitive crops.

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1 Table 29. Period average change in nitrate-N concentrations (mg/L-N) for Alternative 8 LLT relative to existing conditions and the No Action Alternative LLT.

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change			
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT		
Alt 8 LLT	Delta Interior	Moke R. (SF) at Staten Island	ALL	0.07 (31%)	0.07 (32%)	0.00 (-1%)	0.00 (-1%)	0.02 (7%)	0.02 (8%)	0.04 (8%)	0.06 (12%)	0.05 (8%)	0.07 (13%)	0.06 (15%)	0.07 (17%)	0.05 (15%)	0.06 (18%)	0.03 (12%)	0.04 (15%)	0.09 (35%)	0.11 (44%)	0.09 (43%)	0.10 (53%)	0.08 (43%)	0.09 (48%)	0.00 (-2%)	0.00 (1%)	0.05 (16%)	0.06 (20%)	
			DROUGHT	0.07 (31%)	0.07 (31%)	0.00 (-1%)	0.00 (-1%)	0.02 (8%)	0.02 (9%)	0.03 (6%)	0.04 (9%)	-0.01 (-1%)	0.02 (3%)	0.03 (5%)	0.05 (11%)	0.03 (4%)	0.04 (10%)	0.02 (7%)	0.03 (13%)	0.10 (42%)	0.11 (48%)	0.10 (58%)	0.11 (59%)	0.10 (50%)	0.08 (44%)	0.00 (-0%)	0.00 (-1%)	0.04 (13%)	0.05 (16%)	
		SJR at Buckley Cove	ALL	-0.07 (-4%)	-0.03 (-2%)	-0.07 (-4%)	-0.06 (-3%)	-0.02 (-1%)	0.10 (7%)	-0.05 (-3%)	0.04 (3%)	-0.06 (-4%)	0.00 (0%)	-0.04 (-3%)	0.01 (1%)	-0.05 (-4%)	0.01 (1%)	-0.03 (-4%)	0.00 (0%)	-0.08 (-7%)	0.04 (4%)	-0.11 (-8%)	0.14 (13%)	0.14 (-13%)	0.21 (11%)	0.14 (-14%)	-0.22 (-1%)	-0.02 (-1%)	-0.08 (-6%)	0.03 (2%)
			DROUGHT	-0.10 (-6%)	-0.03 (-2%)	-0.16 (-9%)	-0.08 (-5%)	-0.09 (-5%)	0.07 (5%)	-0.11 (-6%)	0.07 (4%)	-0.07 (-4%)	0.00 (0%)	-0.07 (-5%)	0.02 (1%)	-0.09 (-7%)	0.02 (2%)	-0.06 (-7%)	0.01 (1%)	-0.14 (-11%)	0.10 (10%)	-0.09 (-8%)	0.28 (39%)	0.28 (-20%)	0.28 (44%)	0.28 (-24%)	0.36 (1%)	0.01 (1%)	-0.13 (-9%)	0.07 (6%)
		Franks Tract	ALL	0.37 (181%)	0.34 (148%)	0.48 (223%)	0.45 (178%)	0.43 (136%)	0.42 (130%)	0.49 (107%)	0.48 (102%)	0.53 (85%)	0.53 (86%)	0.43 (72%)	0.43 (73%)	0.29 (53%)	0.28 (53%)	0.16 (37%)	0.16 (38%)	0.24 (59%)	0.27 (70%)	0.18 (69%)	0.23 (104%)	0.13 (68%)	0.14 (82%)	0.08 (70%)	0.09 (94%)	0.09 (87%)	0.32 (87%)	0.32 (88%)
			DROUGHT	0.20 (100%)	0.15 (60%)	0.29 (171%)	0.23 (97%)	0.38 (179%)	0.35 (145%)	0.50 (167%)	0.48 (147%)	0.54 (128%)	0.54 (128%)	0.42 (108%)	0.43 (112%)	0.28 (78%)	0.28 (80%)	0.16 (68%)	0.16 (68%)	0.19 (87%)	0.18 (81%)	0.12 (81%)	0.11 (72%)	0.10 (65%)	0.09 (51%)	0.01 (13%)	0.01 (13%)	0.27 (110%)	0.25 (98%)	
	Old R. at Rock Slough	ALL	0.86 (369%)	0.79 (267%)	1.11 (423%)	1.05 (328%)	1.01 (266%)	0.99 (242%)	1.01 (178%)	0.98 (164%)	0.93 (117%)	0.93 (117%)	0.70 (94%)	0.68 (88%)	0.38 (50%)	0.36 (47%)	0.23 (40%)	0.23 (39%)	0.40 (76%)	0.42 (84%)	0.24 (82%)	0.28 (114%)	0.28 (63%)	0.15 (75%)	0.15 (239%)	0.30 (318%)	0.33 (134%)	0.61 (129%)	0.60 (129%)	
		DROUGHT	0.57 (248%)	0.46 (141%)	0.95 (498%)	0.85 (292%)	1.04 (447%)	0.94 (284%)	1.16 (317%)	1.13 (286%)	1.17 (206%)	1.16 (204%)	0.90 (165%)	0.89 (160%)	0.59 (108%)	0.58 (104%)	0.41 (123%)	0.39 (112%)	0.38 (138%)	0.36 (122%)	0.15 (96%)	0.14 (81%)	0.12 (70%)	0.09 (49%)	0.01 (12%)	0.01 (13%)	0.62 (201%)	0.58 (170%)		
	Western Delta	Sac. R. at Emmaton	ALL	0.09 (51%)	0.08 (44%)	0.10 (61%)	0.09 (50%)	0.07 (35%)	0.06 (32%)	0.05 (20%)	0.05 (19%)	0.05 (16%)	0.05 (15%)	0.03 (15%)	0.03 (12%)	0.03 (14%)	0.02 (9%)	0.03 (17%)	0.01 (6%)	0.05 (23%)	0.04 (19%)	0.06 (42%)	0.06 (42%)	0.04 (30%)	0.04 (27%)	0.01 (16%)	0.02 (17%)	0.05 (26%)	0.05 (22%)	
			DROUGHT	0.04 (23%)	0.03 (14%)	0.06 (38%)	0.04 (24%)	0.08 (40%)	0.07 (35%)	0.07 (28%)	0.07 (24%)	0.06 (18%)	0.05 (15%)	0.02 (8%)	0.02 (8%)	0.01 (6%)	0.01 (6%)	0.01 (8%)	0.02 (9%)	0.03 (15%)	0.02 (13%)	0.03 (29%)	0.03 (22%)	0.03 (22%)	0.02 (12%)	0.01 (6%)	0.01 (7%)	0.04 (20%)	0.03 (16%)	
		SJR at Antioch	ALL	0.17 (104%)	0.16 (88%)	0.24 (149%)	0.23 (126%)	0.20 (83%)	0.19 (82%)	0.24 (69%)	0.24 (69%)	0.26 (58%)	0.27 (60%)	0.23 (55%)	0.23 (56%)	0.17 (46%)	0.17 (47%)	0.10 (33%)	0.09 (32%)	0.12 (40%)	0.13 (45%)	0.09 (43%)	0.12 (65%)	0.12 (36%)	0.07 (45%)	0.03 (35%)	0.04 (41%)	0.16 (59%)	0.16 (61%)	
			DROUGHT	0.08 (50%)	0.06 (32%)	0.12 (93%)	0.09 (55%)	0.17 (97%)	0.15 (82%)	0.23 (90%)	0.22 (86%)	0.25 (72%)	0.25 (75%)	0.19 (64%)	0.19 (67%)	0.11 (43%)	0.12 (47%)	0.06 (34%)	0.07 (37%)	0.07 (41%)	0.07 (42%)	0.05 (38%)	0.04 (31%)	0.04 (33%)	0.03 (23%)	0.03 (9%)	0.01 (9%)	0.12 (60%)	0.11 (55%)	
Sac. R. at Mallard Island		ALL	0.09 (73%)	0.08 (58%)	0.13 (108%)	0.12 (87%)	0.10 (63%)	0.10 (61%)	0.12 (48%)	0.12 (47%)	0.13 (41%)	0.13 (44%)	0.11 (39%)	0.11 (39%)	0.08 (32%)	0.08 (32%)	0.05 (24%)	0.04 (20%)	0.06 (29%)	0.06 (28%)	0.04 (25%)	0.06 (38%)	0.03 (20%)	0.04 (30%)	0.02 (20%)	0.02 (21%)	0.08 (42%)	0.08 (41%)		
		DROUGHT	0.05 (38%)	0.03 (20%)	0.07 (68%)	0.05 (37%)	0.09 (70%)	0.08 (59%)	0.12 (62%)	0.12 (61%)	0.13 (50%)	0.14 (55%)	0.08 (37%)	0.09 (38%)	0.05 (24%)	0.05 (27%)	0.03 (21%)	0.03 (22%)	0.03 (25%)	0.03 (25%)	0.02 (20%)	0.02 (15%)	0.02 (19%)	0.01 (13%)	0.00 (6%)	0.00 (6%)	0.06 (39%)	0.05 (35%)		
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	-0.08 (-29%)	-0.06 (-24%)	0.01 (5%)	0.01 (4%)	-0.01 (-5%)	-0.01 (-5%)	-0.08 (-23%)	-0.08 (-23%)	-0.17 (-34%)	-0.22 (-41%)	-0.12 (-33%)	-0.14 (-36%)	-0.13 (-39%)	-0.11 (-35%)	-0.09 (-38%)	-0.09 (-37%)	-0.11 (-46%)	-0.10 (-42%)	-0.12 (-51%)	-0.09 (-45%)	-0.15 (-53%)	-0.13 (-49%)	0.01 (9%)	0.01 (9%)	-0.09 (-32%)	-0.08 (-31%)		
		DROUGHT	-0.12 (-38%)	-0.10 (-33%)	0.01 (4%)	0.01 (4%)	0.00 (-2%)	-0.01 (-3%)	-0.03 (-11%)	-0.04 (-11%)	-0.10 (-23%)	-0.11 (-26%)	-0.09 (-27%)	-0.11 (-30%)	-0.11 (-33%)	-0.13 (-37%)	-0.09 (-37%)	-0.13 (-46%)	-0.13 (-47%)	-0.12 (-44%)	-0.11 (-53%)	-0.11 (-49%)	-0.18 (-57%)	-0.18 (-57%)	0.01 (7%)	0.01 (7%)	-0.08 (-30%)	-0.08 (-30%)		
	Contra Costa PP #1	ALL	0.54 (167%)	0.54 (163%)	1.05 (562%)	0.95 (340%)	1.10 (344%)	1.06 (299%)	1.04 (156%)	1.04 (159%)	1.15 (133%)	1.05 (110%)	0.81 (98%)	0.79 (92%)	0.49 (58%)	0.50 (60%)	0.24 (37%)	0.24 (37%)	0.39 (63%)	0.41 (68%)	0.27 (72%)	0.32 (98%)	0.10 (28%)	0.15 (54%)	0.22 (184%)	0.24 (248%)	0.62 (120%)	0.61 (117%)		
		DROUGHT	0.30 (93%)	0.25 (69%)	0.94 (529%)	0.82 (277%)	1.05 (375%)	1.02 (327%)	1.16 (249%)	1.11 (220%)	1.23 (191%)	1.24 (197%)	0.97 (155%)	0.95 (146%)	0.62 (93%)	0.60 (88%)	0.43 (101%)	0.41 (94%)	0.41 (114%)	0.41 (113%)	0.15 (63%)	0.15 (61%)	0.10 (33%)	0.10 (35%)	0.02 (18%)	0.02 (17%)	0.62 (161%)	0.59 (146%)		
	Banks PP	ALL	-0.41 (-74%)	-0.44 (-75%)	-0.42 (-72%)	-0.48 (-74%)	-0.32 (-53%)	-0.36 (-57%)	-0.36 (-46%)	-0.40 (-49%)	-0.68 (-61%)	-0.69 (-61%)	-0.69 (-66%)	-0.69 (-66%)	-0.81 (-85%)	-0.81 (-85%)	-0.62 (-85%)	-0.62 (-85%)	-0.71 (-83%)	-0.72 (-83%)	0.36 (74%)	0.37 (76%)	0.41 (103%)	0.44 (118%)	-0.13 (-45%)	-0.08 (-32%)	-0.35 (-50%)	-0.36 (-50%)		
		DROUGHT	-0.40 (-82%)	-0.44 (-84%)	-0.29 (-64%)	-0.40 (-71%)	-0.33 (-69%)	-0.39 (-73%)	-0.38 (-64%)	-0.45 (-68%)	-0.69 (-76%)	-0.69 (-76%)	-0.76 (-82%)	-0.74 (-81%)	-0.87 (-94%)	-0.85 (-94%)	-0.61 (-97%)	-0.61 (-97%)	-0.55 (-93%)	-0.59 (-94%)	0.49 (192%)	0.45 (153%)	0.47 (185%)	0.43 (145%)	0.05 (35%)	0.09 (78%)	-0.26 (-46%)	-0.28 (-49%)		
	Jones PP	ALL	-0.64 (-82%)	-0.79 (-85%)	-0.67 (-80%)	-0.79 (-83%)	-0.63 (-67%)	-0.67 (-68%)	-0.61 (-52%)	-0.67 (-54%)	-0.99 (-69%)	-1.00 (-69%)	-0.99 (-78%)	-1.01 (-78%)	-0.97 (-87%)	-0.98 (-87%)	-0.71 (-87%)	-0.72 (-87%)	-0.76 (-89%)	-0.78 (-89%)	0.29 (51%)	0.24 (38%)	0.26 (45%)	0.22 (34%)	-0.18 (-31%)	-0.24 (-37%)	-0.55 (-60%)	-0.60 (-62%)		
		DROUGHT	-0.53 (-79%)	-0.76 (-84%)	-0.51 (-76%)	-0.72 (-81%)	-0.69 (-79%)	-0.72 (-80%)	-0.86 (-80%)	-0.91 (-81%)	-1.17 (-84%)	-1.20 (-85%)	-1.11 (-85%)	-1.11 (-85%)	-0.97 (-87%)	-0.98 (-87%)	-0.69 (-86%)	-0.70 (-87%)	-0.47 (-83%)	-0.52 (-84%)	0.34 (127%)	0.22 (56%)	0.25 (66%)	0.17 (36%)	0.10 (24%)	0.08 (20%)	-0.53 (-66%)	-0.60 (-69%)		

^a ALL: Water years 1976-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

1 Table 30. Alternative 8 use of assimilative capacity available under existing conditions and No Action LLT relative to the 10 mg/L-N MCL.

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change	
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT
			Alt 8 LLT																									
Delta Interior	Moke. R. (SF) at Staten Island	ALL	-0.7	-0.7	0.0	0.0	-0.2	-0.2	-0.4	-0.6	-0.5	-0.8	-0.7	-0.7	-0.6	-0.6	-0.3	-0.4	-0.9	-1.1	-0.9	-1.0	-0.8	-0.9	0.0	0.0	-0.5	-0.6
		DROUGHT	-0.7	-0.7	0.0	0.0	-0.2	-0.2	-0.3	-0.5	0.1	-0.2	-0.3	-0.5	-0.2	-0.4	-0.2	-0.3	-1.0	-1.1	-1.1	-1.1	-0.9	-0.9	0.0	0.0	-0.4	-0.5
	SJR at Buckley Cove	ALL	0.9	0.3	0.9	0.7	0.2	-1.2	0.6	-0.5	0.7	-0.1	0.5	-0.1	0.5	-0.1	0.4	0.0	1.0	-0.5	1.3	-1.6	2.5	-1.6	2.6	0.2	1.0	-0.4
		DROUGHT	1.2	0.4	1.9	1.0	1.1	-0.9	1.3	-0.8	0.9	0.0	0.8	-0.2	1.0	-0.2	0.7	-0.1	1.5	-1.1	1.0	-3.1	3.4	-3.9	4.2	-0.2	1.6	-0.8
	Franks Tract	ALL	-3.8	-3.5	-4.9	-4.6	-4.4	-4.4	-5.2	-5.0	-5.7	-5.7	-4.5	-4.6	-3.0	-3.0	-1.6	-1.7	-2.5	-2.8	-1.9	-2.3	-1.3	-1.5	-0.8	-0.9	-3.3	-3.3
		DROUGHT	-2.1	-1.6	-2.9	-2.3	-3.9	-3.6	-5.2	-4.9	-5.7	-5.7	-4.4	-4.4	-2.9	-2.9	-1.7	-1.7	-1.9	-1.8	-1.2	-1.2	-1.0	-0.9	-0.1	-0.1	-2.7	-2.6
Old R. at Rock Slough	ALL	-8.8	-8.2	-11.3	-10.8	-10.5	-10.3	-10.7	-10.4	-10.1	-10.1	-7.6	-7.4	-4.1	-4.0	-2.4	-2.4	-4.2	-4.4	-2.5	-2.9	-1.4	-1.5	-3.1	-3.3	-6.4	-6.3	
	DROUGHT	-5.8	-4.8	-9.7	-8.8	-10.6	-9.7	-12.0	-11.7	-12.4	-12.3	-9.6	-9.4	-6.2	-6.1	-4.2	-4.1	-3.9	-3.7	-1.6	-1.4	-1.2	-0.9	-0.1	-0.1	-6.4	-6.0	
Western Delta	Sac. R. at Emmaton	ALL	-0.9	-0.8	-1.0	-0.9	-0.7	-0.7	-0.5	-0.5	-0.5	-0.5	-0.4	-0.3	-0.3	-0.2	-0.3	-0.1	-0.5	-0.4	-0.6	-0.6	-0.4	-0.4	-0.1	-0.2	-0.5	-0.5
		DROUGHT	-0.4	-0.3	-0.6	-0.4	-0.8	-0.7	-0.8	-0.7	-0.6	-0.5	-0.2	-0.2	-0.1	-0.1	-0.1	-0.2	-0.3	-0.2	-0.4	-0.3	-0.3	-0.2	-0.1	-0.1	-0.4	-0.3
	SJR at Antioch	ALL	-1.8	-1.6	-2.5	-2.3	-2.0	-2.0	-2.5	-2.5	-2.7	-2.8	-2.4	-2.4	-1.8	-1.8	-1.0	-1.0	-1.2	-1.4	-0.9	-1.2	-0.6	-0.7	-0.3	-0.4	-1.6	-1.7
		DROUGHT	-0.9	-0.6	-1.3	-0.9	-1.7	-1.6	-2.4	-2.3	-2.6	-2.6	-1.9	-2.0	-1.2	-1.2	-0.6	-0.7	-0.7	-0.7	-0.5	-0.4	-0.4	-0.3	-0.1	-0.1	-1.2	-1.1
	Sac. R. at Mallard Island	ALL	-0.9	-0.8	-1.4	-1.2	-1.1	-1.0	-1.2	-1.2	-1.3	-1.4	-1.1	-1.1	-0.8	-0.8	-0.5	-0.4	-0.6	-0.6	-0.4	-0.6	-0.3	-0.4	-0.2	-0.2	-0.8	-0.8
		DROUGHT	-0.5	-0.3	-0.7	-0.5	-0.9	-0.8	-1.2	-1.2	-1.3	-1.4	-0.9	-0.9	-0.5	-0.5	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.1	0.0	0.0	-0.6	-0.5
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.8	0.6	-0.1	-0.1	0.1	0.1	0.9	0.9	1.8	2.3	1.3	1.5	1.4	1.2	0.9	0.9	1.2	1.0	1.2	1.0	1.5	1.3	-0.1	-0.1	0.9	0.9
		DROUGHT	1.3	1.0	-0.1	-0.1	0.1	0.1	0.4	0.4	1.0	1.2	1.0	1.2	1.1	1.3	0.9	1.3	1.2	1.1	1.3	1.1	1.9	1.8	-0.1	-0.1	0.8	0.9
	Contra Costa PP #1	ALL	-5.6	-5.6	-10.7	-9.8	-11.4	-11.0	-11.1	-11.2	-12.6	-11.6	-8.9	-8.6	-5.3	-5.4	-2.6	-2.6	-4.1	-4.3	-2.8	-3.3	-1.0	-1.6	-2.2	-2.4	-6.5	-6.4
		DROUGHT	-3.1	-2.6	-9.6	-8.5	-10.9	-10.6	-12.1	-11.7	-13.2	-13.3	-10.4	-10.2	-6.7	-6.5	-4.5	-4.3	-4.3	-4.2	-1.5	-1.5	-1.0	-1.1	-0.2	-0.2	-6.4	-6.2
	Banks PP	ALL	4.3	4.6	4.4	5.1	3.3	3.8	4.0	4.4	7.7	7.7	7.7	7.7	9.0	9.0	6.7	6.7	7.8	7.9	-3.8	-3.8	-4.3	-4.5	1.3	0.8	3.7	3.8
		DROUGHT	4.2	4.6	3.1	4.2	3.4	4.2	4.0	4.9	7.6	7.6	8.4	8.1	9.6	9.3	6.5	6.5	5.8	6.2	-5.0	-4.6	-4.8	-4.4	-0.5	-0.9	2.7	3.0
	Jones PP	ALL	7.0	8.7	7.3	8.8	6.9	7.4	6.9	7.7	11.6	11.7	11.4	11.6	10.9	11.0	7.7	7.8	8.3	8.5	-3.1	-2.6	-2.8	-2.3	1.9	2.5	6.0	6.6
		DROUGHT	5.7	8.4	5.5	7.9	7.5	8.0	9.7	10.3	13.6	13.9	12.7	12.8	10.9	11.0	7.4	7.6	4.9	5.5	-3.5	-2.3	-2.5	-1.7	-1.0	-0.9	5.7	6.5

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

NOTES:

-- Positive values indicate that implementation of the Alternative increases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality improves under the Alternative, relative to Existing Conditions or the No Action Alternative). Negative values indicate that implementation of the Alternative decreases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality degradation occurs under the Alternative, relative to Existing Conditions or the No Action Alternative). Values of -100% represent instances where all available assimilative capacity is used under the Alternative, and therefore concentrations are at or above the criteria.

-- Regulatory objective is the drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

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3

1 **Table 31. Period Average nitrate-N concentrations and frequency of exceedance of objectives/criteria for existing conditions, No Action LLT, and Alternative 9 LLT.**

Nitrate Alt 9 LLT	Location	Period ^a	Period Average Concentration mg/L-N			Lowest Applicable Human Health Criterion/Objective (10 mg/L-N) ^b			Lowest Applicable Aquatic Life Criterion/Objective (N/A)			Other Relevant Threshold (5 mg/L-N) ^c		
			Period Average Concentration mg/L-N			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)			Frequency of Criterion/Objective Exceedance (%)		
			Ex. Cond.	No Act. LLT	Alt 9 LLT	Ex. Cond.	No Act. LLT	Alt 9 LLT	Ex. Cond.	No Act. LLT	Alt 9 LLT	Ex. Cond.	No Act. LLT	Alt 9 LLT
Delta Interior	Moke. R. (SF) at Staten Island	ALL	0.29	0.28	0.27	0	0	0	-	-	-	0	0	0
		DROUGHT	0.30	0.29	0.27	0	0	0	-	-	-	0	0	0
	SJR at Buckley Cove	ALL	1.44	1.32	0.59	0	0	0	-	-	-	0	0	0
		DROUGHT	1.45	1.25	0.48	0	0	0	-	-	-	0	0	0
	Franks Tract	ALL	0.36	0.36	0.96	0	0	0	-	-	-	0	0	0
		DROUGHT	0.24	0.26	0.78	0	0	0	-	-	-	0	0	0
Old R. at Rock Slough	ALL	0.46	0.47	1.32	0	0	0	-	-	-	0	0	0	
	DROUGHT	0.31	0.34	1.22	0	0	0	-	-	-	0	0	0	
Western Delta	Sac. R. at Emmaton	ALL	0.20	0.20	0.23	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.22	0	0	0	-	-	-	0	0	0
	SJR at Antioch	ALL	0.27	0.26	0.42	0	0	0	-	-	-	0	0	0
		DROUGHT	0.19	0.20	0.33	0	0	0	-	-	-	0	0	0
	Sac. R. at Mallard Island	ALL	0.19	0.19	0.26	0	0	0	-	-	-	0	0	0
		DROUGHT	0.15	0.15	0.21	0	0	0	-	-	-	0	0	0
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.27	0.27	0.18	0	0	0	-	-	-	0	0	0
		DROUGHT	0.27	0.27	0.19	0	0	0	-	-	-	0	0	0
	Contra Costa PP #1	ALL	0.51	0.52	1.38	0	0	0	-	-	-	0	0	0
		DROUGHT	0.38	0.41	1.28	0	0	0	-	-	-	0	0	0
	Banks PP	ALL	0.70	0.71	0.53	0	0	0	-	-	-	0	0	0
		DROUGHT	0.56	0.58	0.39	0	0	0	-	-	-	0	0	0
	Jones PP	ALL	0.92	0.96	0.54	0	0	0	-	-	-	0	0	0
		DROUGHT	0.79	0.86	0.39	0	0	0	-	-	-	0	0	0

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

^b Drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

^c Ayers and Westcot (1985). Recommended goals for sensitive crops.

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1 Table 32. Period average change in nitrate-N concentrations (mg/L-N) for Alternative 9 LLT relative to existing conditions and the No Action Alternative LLT.

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change		
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	
Alt 9 LLT	Delta Interior	Moke R. (SF) at Staten Island	ALL	0.01	0.01	0.00	0.00	0.00	0.00	-0.05	-0.03	-0.08	-0.06	-0.03	-0.02	-0.05	-0.04	-0.04	-0.04	-0.01	0.00	-0.01	0.01	0.01	0.02	0.00	0.00	-0.02	-0.01
				(5%)	(6%)	(-0%)	(0%)	(-1%)	(-1%)	(-11%)	(-7%)	(-14%)	(-10%)	(-7%)	(-5%)	(-14%)	(-12%)	(-16%)	(-14%)	(-5%)	(1%)	(-3%)	(4%)	(7%)	(10%)	(-4%)	(-1%)	(-7%)	(-5%)
		DROUGHT	0.02	0.02	0.00	0.00	0.00	0.00	-0.08	-0.07	-0.19	-0.16	-0.10	-0.08	-0.08	-0.06	-0.04	-0.03	0.00	0.01	0.02	0.02	0.04	0.03	0.00	0.00	-0.03	-0.03	
				(8%)	(8%)	(0%)	(0%)	(-1%)	(-1%)	(-17%)	(-15%)	(-27%)	(-24%)	(-20%)	(-16%)	(-20%)	(-16%)	(-15%)	(-10%)	(0%)	(4%)	(11%)	(11%)	(22%)	(18%)	(-0%)	(-0%)	(-11%)	(-9%)
		SJR at Buckley Cove	ALL	-1.16	-1.12	-1.28	-1.27	-1.01	-0.89	-0.82	-0.74	-0.59	-0.53	-0.48	-0.43	-0.39	-0.34	-0.36	-0.32	-0.70	-0.57	-0.82	-0.58	-1.10	-0.74	-1.42	-1.22	-0.84	-0.73
				(-70%)	(-69%)	(-75%)	(-75%)	(-65%)	(-62%)	(-51%)	(-48%)	(-37%)	(-34%)	(-35%)	(-32%)	(-34%)	(-31%)	(-43%)	(-40%)	(-57%)	(-52%)	(-62%)	(-53%)	(-68%)	(-59%)	(-90%)	(-89%)	(-59%)	(-55%)
	DROUGHT	-1.24	-1.17	-1.53	-1.45	-1.24	-1.08	-1.06	-0.89	-0.83	-0.75	-0.71	-0.62	-0.56	-0.46	-0.52	-0.45	-0.87	-0.63	-0.71	-0.34	-1.00	-0.36	-1.39	-1.02	-0.97	-0.77		
			(-74%)	(-73%)	(-85%)	(-84%)	(-76%)	(-73%)	(-61%)	(-57%)	(-48%)	(-46%)	(-48%)	(-45%)	(-46%)	(-41%)	(-59%)	(-55%)	(-69%)	(-62%)	(-64%)	(-46%)	(-69%)	(-44%)	(-93%)	(-90%)	(-67%)	(-61%)	
	Franks Tract	ALL	0.93	0.91	0.92	0.88	0.76	0.75	0.77	0.76	0.72	0.72	0.52	0.53	0.38	0.38	0.25	0.25	0.39	0.42	0.40	0.45	0.54	0.55	0.64	0.66	0.60	0.60	
			(457%)	(391%)	(424%)	(351%)	(239%)	(230%)	(166%)	(160%)	(115%)	(115%)	(88%)	(89%)	(70%)	(70%)	(58%)	(59%)	(96%)	(110%)	(153%)	(206%)	(285%)	(316%)	(593%)	(691%)	(166%)	(167%)	
	DROUGHT	0.79	0.74	0.87	0.80	0.78	0.75	0.77	0.75	0.78	0.78	0.62	0.63	0.45	0.45	0.31	0.31	0.33	0.33	0.20	0.19	0.23	0.21	0.32	0.32	0.54	0.52		
			(388%)	(291%)	(514%)	(346%)	(367%)	(309%)	(257%)	(231%)	(183%)	(183%)	(159%)	(164%)	(126%)	(129%)	(130%)	(130%)	(155%)	(147%)	(130%)	(119%)	(148%)	(128%)	(354%)	(354%)	(222%)	(203%)	
	Old R. at Rock Slough	ALL	1.27	1.20	1.28	1.22	1.09	1.06	1.00	0.97	0.82	0.82	0.63	0.61	0.35	0.34	0.24	0.24	0.55	0.58	0.76	0.80	1.17	1.19	1.18	1.20	0.86	0.85	
			(547%)	(407%)	(488%)	(382%)	(286%)	(261%)	(177%)	(163%)	(103%)	(103%)	(85%)	(79%)	(47%)	(44%)	(42%)	(41%)	(107%)	(116%)	(259%)	(323%)	(551%)	(601%)	(932%)	(1171%)	(190%)	(183%)	
	DROUGHT	1.23	1.13	1.30	1.20	1.19	1.09	1.14	1.11	1.02	1.02	0.81	0.80	0.59	0.58	0.48	0.47	0.68	0.66	0.54	0.52	0.95	0.93	1.02	1.02	0.91	0.88		
			(539%)	(343%)	(680%)	(412%)	(512%)	(330%)	(312%)	(282%)	(180%)	(179%)	(148%)	(143%)	(108%)	(104%)	(146%)	(133%)	(249%)	(227%)	(335%)	(302%)	(573%)	(490%)	(1119%)	(1126%)	(296%)	(255%)	
Western Delta	Sac. R. at Emmaton	ALL	0.06	0.05	0.07	0.06	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.02	0.00	0.00	-0.01	0.02	0.02	0.03	0.02	0.02	0.02	0.03	0.02	
			(35%)	(28%)	(44%)	(34%)	(22%)	(20%)	(11%)	(10%)	(11%)	(10%)	(9%)	(7%)	(9%)	(4%)	(9%)	(-1%)	(-2%)	(-5%)	(13%)	(13%)	(19%)	(16%)	(25%)	(27%)	(15%)	(12%)	
	DROUGHT	0.05	0.03	0.08	0.06	0.05	0.05	0.04	0.04	0.06	0.05	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.00	0.01	0.01	0.03	0.03		
			(26%)	(17%)	(53%)	(37%)	(27%)	(23%)	(16%)	(13%)	(17%)	(14%)	(10%)	(10%)	(10%)	(9%)	(7%)	(8%)	(7%)	(5%)	(15%)	(9%)	(12%)	(3%)	(14%)	(15%)	(17%)	(14%)	
	SJR at Antioch	ALL	0.23	0.21	0.26	0.24	0.17	0.16	0.23	0.23	0.24	0.25	0.18	0.18	0.13	0.13	0.08	0.08	0.08	0.09	0.08	0.11	0.09	0.11	0.13	0.13	0.16	0.16	
			(138%)	(118%)	(159%)	(135%)	(70%)	(69%)	(65%)	(65%)	(53%)	(55%)	(43%)	(44%)	(36%)	(37%)	(29%)	(27%)	(27%)	(32%)	(39%)	(61%)	(59%)	(71%)	(135%)	(146%)	(59%)	(61%)	
	DROUGHT	0.17	0.14	0.23	0.20	0.17	0.16	0.21	0.20	0.22	0.23	0.18	0.18	0.11	0.12	0.07	0.08	0.08	0.08	0.05	0.05	0.06	0.05	0.03	0.03	0.03	0.13	0.13	
			(101%)	(76%)	(172%)	(119%)	(98%)	(83%)	(82%)	(77%)	(66%)	(68%)	(60%)	(63%)	(44%)	(48%)	(41%)	(44%)	(45%)	(46%)	(44%)	(36%)	(43%)	(33%)	(38%)	(39%)	(68%)	(63%)	
Sac. R. at Mallard Island	ALL	0.09	0.07	0.11	0.10	0.07	0.06	0.08	0.08	0.10	0.11	0.08	0.09	0.07	0.07	0.04	0.04	0.03	0.03	0.02	0.04	0.04	0.04	0.05	0.05	0.07	0.06		
		(69%)	(54%)	(90%)	(70%)	(40%)	(37%)	(34%)	(33%)	(33%)	(35%)	(31%)	(31%)	(27%)	(26%)	(21%)	(17%)	(12%)	(12%)	(16%)	(28%)	(28%)	(37%)	(61%)	(63%)	(34%)	(34%)		
DROUGHT	0.06	0.04	0.10	0.08	0.07	0.07	0.08	0.08	0.10	0.11	0.09	0.09	0.06	0.06	0.04	0.04	0.03	0.03	0.02	0.02	0.03	0.02	0.01	0.01	0.06	0.05			
		(49%)	(29%)	(97%)	(61%)	(57%)	(47%)	(44%)	(42%)	(39%)	(43%)	(37%)	(39%)	(29%)	(32%)	(26%)	(27%)	(27%)	(27%)	(22%)	(16%)	(24%)	(17%)	(15%)	(15%)	(39%)	(35%)		
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	-0.09	-0.07	0.00	0.00	-0.02	-0.02	-0.09	-0.09	-0.18	-0.23	-0.13	-0.14	-0.13	-0.11	-0.09	-0.08	-0.11	-0.10	-0.12	-0.09	-0.15	-0.13	0.00	0.00	-0.09	-0.09	
			(-32%)	(-27%)	(3%)	(2%)	(-8%)	(-8%)	(-26%)	(-26%)	(-36%)	(-42%)	(-34%)	(-37%)	(-39%)	(-35%)	(-37%)	(-37%)	(-45%)	(-41%)	(-51%)	(-45%)	(-54%)	(-50%)	(5%)	(5%)	(-33%)	(-32%)	
	DROUGHT	-0.13	-0.11	0.01	0.00	-0.01	-0.01	-0.05	-0.05	-0.11	-0.12	-0.10	-0.11	-0.11	-0.12	-0.09	-0.13	-0.12	-0.10	-0.12	-0.11	-0.18	-0.18	0.01	0.01	-0.08	-0.09		
			(-41%)	(-36%)	(3%)	(3%)	(-5%)	(-6%)	(-15%)	(-15%)	(-25%)	(-28%)	(-27%)	(-30%)	(-33%)	(-36%)	(-36%)	(-45%)	(-46%)	(-43%)	(-52%)	(-48%)	(-58%)	(-58%)	(6%)	(6%)	(-31%)	(-31%)	
	Contra Costa PP #1	ALL	1.20	1.19	1.28	1.19	1.13	1.09	0.98	0.99	1.00	0.90	0.72	0.69	0.43	0.44	0.23	0.23	0.53	0.55	0.79	0.84	1.09	1.15	1.02	1.05	0.87	0.86	
			(369%)	(362%)	(689%)	(425%)	(354%)	(308%)	(147%)	(150%)	(116%)	(94%)	(86%)	(80%)	(51%)	(53%)	(35%)	(35%)	(86%)	(92%)	(213%)	(261%)	(319%)	(401%)	(865%)	(1083%)	(170%)	(165%)	
	DROUGHT	1.15	1.11	1.23	1.11	1.13	1.10	1.09	1.05	1.09	1.10	0.85	0.83	0.60	0.58	0.48	0.46	0.72	0.72	0.68	0.68	0.85	0.85	0.85	0.85	0.89	0.87		
			(363%)	(304%)	(692%)	(375%)	(401%)	(351%)	(235%)	(207%)	(169%)	(174%)	(135%)	(127%)	(90%)	(85%)	(112%)	(105%)	(201%)	(199%)	(290%)	(285%)	(283%)	(289%)	(968%)	(962%)	(234%)	(214%)	
	Banks PP	ALL	-0.12	-0.15	-0.08	-0.14	-0.03	-0.08	-0.08	-0.12	-0.23	-0.24	-0.23	-0.23	-0.33	-0.33	-0.31	-0.31	-0.40	-0.42	-0.08	-0.08	-0.06	-0.03	-0.11	-0.05	-0.17	-0.18	
			(-22%)	(-26%)	(-13%)	(-21%)	(-6%)	(-13%)	(-11%)	(-15%)	(-21%)	(-21%)	(-22%)	(-22%)	(-35%)	(-34%)	(-43%)	(-43%)	(-47%)	(-48%)	(-17%)	(-16%)	(-14%)	(-8%)	(-38%)	(-23%)	(-25%)	(-26%)	
	DROUGHT	-0.11	-0.15	-0.12	-0.23	-0.05	-0.12	-0.06	-0.13	-0.26	-0.26	-0.37	-0.34	-0.42	-0.40	-0.35	-0.34	-0.28	-0.31	0.04	0.00	0.04	0.00	-0.03	0.00	-0.16	-0.19		
			(-23%)	(-28%)	(-27%)	(-40%)	(-11%)	(-22%)	(-9%)	(-20%)	(-28%)	(-28%)	(-40%)	(-38%)	(-45%)	(-44%)	(-55%)	(-54%)	(-47%)	(-50%)	(14%)	(-1%)	(17%)	(1%)	(-21%)	(4%)	(-29%)	(-33%)	
Jones PP	ALL	-0.33	-0.47	-0.28	-0.40	-0.36	-0.40	-0.45	-0.51	-0.48	-0.49	-0.43	-0.44	-0.48	-0.49	-0.40	-0.41	-0.41	-0.42	-0.20	-0.25	-0.25	-0.30	-0.40	-0.46	-0.37	-0.42		
		(-42%)	(-51%)	(-33%)	(-42%)	(-38%)	(-41%)	(-38%)	(-41%)	(-33%)	(-34%)	(-33%)	(-34%)	(-43%)	(-43%)	(-49%)	(-49%)	(-47%)	(-48%)	(-34%)	(-40%)	(-42%)	(-46%)	(-69%)	(-72%)	(-40%)	(-44%)		
DROUGHT	-0.30	-0.53	-0.34	-0.55	-0.45	-0.48	-0.54	-0.59	-0.73	-0.76	-0.74	-0.74	-0.61	-0.61	-0.51	-0.52	-0.25	-0.30	0.02	-0.10	-0.07	-0.15	-0.28	-0.29	-0.40	-0.47			
		(-44%)	(-59%)	(-51%)	(-62%)	(-51%)	(-53%)	(-50%)	(-52%)	(-53%)	(-54%)	(-57%)	(-57%)	(-54%)	(-55%)	(-64%)	(-64%)	(-45%)	(-49%)	(8%)	(-26%)	(-20%)	(-34%)	(-71%)	(-72%)	(-51%)	(-55%)		

^a ALL: Water years 1976-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

1 Table 33. Alternative 9 use of assimilative capacity available under existing conditions, and No Action LLT relative to the 10 mg/L-N MCL.

Nitrate	Location	Period ^a	OCT		NOV		DEC		JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		Annual Avg. Change	
			Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT	Ex. Cond.	No Act. LLT
			Alt 9 LLT																									
Delta Interior	Moke. R. (SF) at Staten Island	ALL	-0.1	-0.1	0.0	0.0	0.0	0.0	0.5	0.3	0.9	0.6	0.3	0.2	0.5	0.4	0.4	0.4	0.1	0.0	0.1	-0.1	-0.1	-0.2	0.0	0.0	0.2	0.1
		DROUGHT	-0.2	-0.2	0.0	0.0	0.0	0.0	0.9	0.7	2.0	1.7	1.1	0.8	0.8	0.6	0.4	0.3	0.0	-0.1	-0.2	-0.2	-0.4	-0.3	0.0	0.0	0.4	0.3
	SJR at Buckley Cove	ALL	14.0	13.3	15.5	15.3	11.9	10.4	9.8	8.7	7.0	6.2	5.6	5.0	4.4	3.8	3.9	3.5	8.0	6.4	9.5	6.5	13.1	8.5	16.8	14.2	9.9	8.4
		DROUGHT	14.9	14.0	18.6	17.5	14.8	12.6	12.8	10.5	10.0	9.0	8.3	7.2	6.4	5.2	5.7	4.9	9.9	7.0	7.9	3.7	11.7	3.9	16.3	11.4	11.4	8.8
	Franks Tract	ALL	-9.5	-9.3	-9.4	-9.1	-7.8	-7.7	-8.0	-7.9	-7.6	-7.6	-5.6	-5.6	-4.0	-4.0	-2.6	-2.6	-4.1	-4.4	-4.1	-4.6	-5.5	-5.6	-6.5	-6.6	-6.2	-6.3
		DROUGHT	-8.1	-7.6	-8.8	-8.2	-8.0	-7.7	-8.0	-7.8	-8.1	-8.1	-6.4	-6.5	-4.6	-4.7	-3.2	-3.2	-3.4	-3.3	-2.0	-1.9	-2.3	-2.2	-3.2	-3.2	-5.5	-5.4
Old R. at Rock Slough	ALL	-13.0	-12.4	-13.1	-12.6	-11.3	-11.1	-10.6	-10.4	-8.9	-8.9	-6.9	-6.6	-3.8	-3.7	-2.6	-2.5	-5.8	-6.1	-7.8	-8.2	-12.0	-12.1	-11.9	-12.1	-9.0	-8.9	
	DROUGHT	-12.6	-11.7	-13.3	-12.4	-12.2	-11.3	-11.8	-11.6	-10.8	-10.8	-8.6	-8.5	-6.2	-6.1	-5.0	-4.8	-7.0	-6.8	-5.4	-5.3	-9.7	-9.5	-10.3	-10.3	-9.4	-9.1	
Western Delta	Sac. R. at Emmaton	ALL	-0.6	-0.5	-0.7	-0.6	-0.4	-0.4	-0.3	-0.3	-0.4	-0.3	-0.2	-0.2	-0.2	-0.1	-0.2	0.0	0.0	0.1	-0.2	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	
		DROUGHT	-0.5	-0.3	-0.8	-0.6	-0.5	-0.5	-0.4	-0.4	-0.6	-0.5	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.2	0.0	-0.1	-0.1	-0.3	-0.3
	SJR at Antioch	ALL	-2.3	-2.2	-2.6	-2.5	-1.7	-1.7	-2.4	-2.4	-2.5	-2.6	-1.9	-1.9	-1.4	-1.4	-0.9	-0.8	-0.8	-1.0	-0.8	-1.1	-1.0	-1.1	-1.3	-1.3	-1.6	-1.6
		DROUGHT	-1.7	-1.5	-2.3	-2.0	-1.7	-1.6	-2.1	-2.1	-2.3	-2.4	-1.8	-1.9	-1.2	-1.2	-0.8	-0.8	-0.8	-0.8	-0.6	-0.5	-0.6	-0.5	-0.3	-0.3	-1.3	-1.3
	Sac. R. at Mallard Island	ALL	-0.9	-0.8	-1.1	-1.0	-0.7	-0.6	-0.9	-0.9	-1.0	-1.1	-0.9	-0.9	-0.7	-0.7	-0.4	-0.4	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.5	-0.5	-0.7	-0.7
		DROUGHT	-0.6	-0.4	-1.0	-0.8	-0.8	-0.7	-0.9	-0.8	-1.0	-1.1	-0.9	-0.9	-0.6	-0.6	-0.4	-0.4	-0.3	-0.4	-0.2	-0.2	-0.3	-0.2	-0.1	-0.1	-0.6	-0.5
Major Diversions (Pumping Stations)	NBA at Barker Slough PP	ALL	0.9	0.7	0.0	0.0	0.2	0.2	1.0	1.0	1.8	2.4	1.3	1.5	1.4	1.2	0.9	0.9	1.1	1.0	1.2	1.0	1.6	1.4	0.0	0.0	0.9	0.9
		DROUGHT	1.4	1.1	-0.1	0.0	0.1	0.1	0.5	0.5	1.1	1.3	1.0	1.2	1.1	1.3	0.9	1.3	1.2	1.1	1.3	1.1	1.9	1.9	-0.1	-0.1	0.9	0.9
	Contra Costa PP #1	ALL	-12.4	-12.3	-13.1	-12.3	-11.7	-11.3	-10.5	-10.6	-11.0	-10.0	-7.8	-7.5	-4.7	-4.8	-2.5	-2.5	-5.7	-5.9	-8.2	-8.7	-11.3	-11.8	-10.4	-10.6	-9.1	-9.1
		DROUGHT	-11.9	-11.5	-12.5	-11.4	-11.6	-11.3	-11.4	-11.1	-11.6	-11.7	-9.1	-8.9	-6.5	-6.3	-5.0	-4.8	-7.5	-7.5	-7.0	-7.0	-8.7	-8.8	-8.6	-8.6	-9.3	-9.1
	Banks PP	ALL	1.3	1.6	0.8	1.5	0.4	0.9	0.9	1.3	2.6	2.7	2.5	2.5	3.7	3.6	3.4	3.4	4.4	4.5	0.9	0.8	0.6	0.3	1.1	0.5	1.9	1.9
		DROUGHT	1.2	1.6	1.3	2.4	0.5	1.2	0.6	1.4	2.9	2.8	4.1	3.8	4.6	4.4	3.7	3.6	2.9	3.4	-0.4	0.0	-0.5	0.0	0.3	0.0	1.7	2.0
	Jones PP	ALL	3.6	5.2	3.0	4.4	4.0	4.4	5.1	5.9	5.6	5.8	4.9	5.1	5.4	5.5	4.4	4.4	4.5	4.6	2.1	2.7	2.6	3.2	4.2	4.9	4.1	4.6
		DROUGHT	3.2	5.8	3.7	6.0	4.9	5.3	6.1	6.6	8.5	8.8	8.5	8.6	6.8	6.9	5.5	5.6	2.7	3.2	-0.2	1.1	0.8	1.6	2.9	3.1	4.4	5.1

^a ALL: Water years 1975-1991 represent the 16-year period modeled using DSM2. DROUGHT: Represents a 5 consecutive year (water years 1987-1991) drought period consisting of dry and critical water year types (as defined by the Sacramento Valley 40-30-30 water year hydrologic classification index).

NOTES:

-- Positive values indicate that implementation of the Alternative increases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality improves under the Alternative, relative to Existing Conditions or the No Action Alternative). Negative values indicate that implementation of the Alternative decreases assimilative capacity available under Existing Conditions or the No Action Alternative (i.e., water quality degradation occurs under the Alternative, relative to Existing Conditions or the No Action Alternative). Values of -100% represent instances where all available assimilative capacity is used under the Alternative, and therefore concentrations are at or above the criteria.

-- Regulatory objective is the drinking water maximum contaminant level (MCL) incorporated by reference in the Region 2 and 5 Basin Plans.

1 **8J.2 References**

- 2 Ayers, R. S., and D. W. Westcot. 1985. *Water Quality for Agriculture*. FAO Irrigation and Drainage
3 Paper No. 29. Rome, Italy.