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Appendix 80 San Francisco Bay Analysis

Effects of the No Action Alternative and Alternatives 1A–9 on the San Francisco Bay were assessed mostly qualitatively. Tables and figures below support the assessment of nutrients, mercury, and selenium.

Table 80-1. Change in total nitrogen and phosphorus loads in Delta outflows under the project alternatives relative to Existing Conditions and the No Action Alternative.

Project Alternative	Total Nitrogen Load (lb/day)	Increase in Total Nitrogen Load (%)		Annual Average Net Delta Outflow (cfs)	Increase in Phosphorus Load ^a (%)	
		Relative to Existing Conditions	Relative to No Action Alternative		Relative to Existing Conditions	Relative to No Action Alternative
Existing Conditions	60,530	–	–	21,598	–	–
No Action Alternative	41,253	-32	–	22,651	5	–
Alternative 1	41,711	-31	1	21,159	-2	-7
Alternative 2	44,836	-26	9	21,759	1	-4
Alternative 3	40,761	-33	-1	21,291	-1	-6
Alternative 4-H1	43,294	-28	5	21,445	-1	-5
Alternative 4-H2	44,284	-27	7	22,162	3	-2
Alternative 4-H3	45,242	-25	10	21,939	2	-3
Alternative 4-H4	46,247	-24	12	22,643	5	0
Alternative 5	41,911	-31	2	22,173	3	-2
Alternative 6	57,782	-5	40	23,516	9	4
Alternative 7	52,854	-13	28	23,595	9	4
Alternative 8	55,033	-9	33	24,651	14	9
Alternative 9	50,081	-17	21	22,741	5	0

^a The increase in phosphorus load is estimated as the change in Delta outflow. See Chapter 8, *Water Quality*, Section 8.3.1.8 for more information regarding the loading estimate methodology.

1 **Table 8O-2. Estimated long-term average mercury and methylmercury loads exported from the Delta**
 2 **to San Francisco Bay and percent change relative to Existing Conditions and the No Action**
 3 **Alternative.^a**

Alternative	kg/yr	Total Mercury		kg/yr	Total Methylmercury	
		% Change Relative to Existing Conditions	% Change Relative to No Action Alternative		% Change Relative to Existing Conditions	% Change Relative to No Action Alternative
Existing Conditions	260	-	-	3.58	-	-
No Action Alternative	263	1	-	3.67	3	-
Alternative 1	260	0	-1	3.54	-1	-4
Alternative 2	261	0	-1	3.65	2	-1
Alternative 3	258	-1	-2	3.54	-1	-4
Alternative 4-H1	261	0	-1	3.58	0	-2
Alternative 4-H2	265	2	1	3.64	2	-1
Alternative 4-H3	262	1	-1	3.66	2	0
Alternative 4-H4	265	2	1	3.71	4	1
Alternative 5	263	1	0	3.64	2	-1
Alternative 6	272	5	3	3.95	10	7
Alternative 7	270	4	3	3.87	8	5
Alternative 8	276	6	5	3.98	11	8
Alternative 9	268	3	2	3.72	4	1

^a Loads estimates accounted for changes in source water fraction and net delta outflows under each alternative. Changes in other sources of mercury and methylmercury to and within Delta could not be quantitatively estimated, thus the load estimates were calculated based on the assumption that these sources remained unchanged under the alternatives.

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1 **Table O-3. Estimated long-term average total selenium load and total and dissolved selenium**
 2 **concentrations of North San Francisco Bay relative to Existing Conditions and the No Action**
 3 **Alternative.**

Alternative	Total Se Load (kg/yr)	% Change in Load Relative to Existing Conditions	% Change in Load Relative to No Action Alternative	Total Se Concentration (µg/L)	Dissolved Se Concentration (µg/L)
Existing Conditions	5,605	–	–	0.13	0.11
No Action Alternative	5,797	3%	–	0.13	0.11
Alternative 1	5,803	4%	0%	0.13	0.11
Alternative 2	6,063	8%	5%	0.14	0.12
Alternative 3	5,689	1%	-2%	0.13	0.11
Alternative 4-H1	5,930	6%	2%	0.13	0.12
Alternative 4-H2	6,072	8%	5%	0.14	0.12
Alternative 4-H3	6,064	8%	5%	0.14	0.12
Alternative 4-H4	6,242	11%	8%	0.14	0.12
Alternative 5	5,856	4%	1%	0.13	0.11
Alternative 6	6,960	24%	20%	0.16	0.14
Alternative 7	6,706	20%	16%	0.15	0.13
Alternative 8	6,932	24%	20%	0.16	0.14
Alternative 9	6,524	16%	13%	0.15	0.13

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