Technical Report

LAX Master Plan Supplement to the Draft EIS/EIR

S-5. Supplemental Hydrology and Water Quality Technical Report

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Prepared for:

Los Angeles World Airports

U.S. Department of Transportation
Federal Aviation Administration

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1. INTRODUCTION

This Technical Report presents information related to the effects on hydrology and water quality as a result of implementation of the Los Angeles International Airport (LAX) Master Plan. This report supports the Supplement to the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the LAX Master Plan prepared pursuant to the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

This Technical Report provides supporting information pertaining to updated model inputs that resulted in changes in stormwater pollutant loads associated with baseline conditions, the No Action/No Project Alternative, and Alternatives A, B, and C. It also presents the hydrology and water quality results related to the new alternative, Alternative D, and summarizes recent regulations pertinent to the LAX Master Plan. All other hydrology and water quality information documented in the Draft EIS/EIR and Technical Report 6, *Hydrology and Water Quality Technical Report*, of the Draft EIS/EIR remains unchanged.

2. ENVIRONMENTAL SETTING

This section describes changes in the environmental setting related to hydrology (drainage) and surface water quality that was presented previously in the Technical Report 6, *Hydrology and Water Quality Technical Report,* of the Draft EIS/EIR.

2.1 Drainage Infrastructure Studies

Since the Draft EIS/EIR was prepared, two hydrology and drainage studies have been conducted for parts of the drainage system at LAX. In December 2001, the North Perimeter Storm Drain report was prepared by Parsons Brinckerhoff Quade and Douglas, Inc. for LAWA.[1] The purpose of the report was to document the existing drainage infrastructure in the Argo sub-basin, develop flows for the proposed North Perimeter Storm Drain, and size improvements for the existing trapezoidal open channel. Flows were calculated using the 50-year capital flood event estimates and the Los Angeles County Department of Public Works (LACDPW) Modified Rational Method. Scenarios evaluated included existing land use determinations and land use as specified in Alternative C. Based on this study, design criteria for a reinforced concrete box (RCB) conveyance structure have been developed.

In October 2002, Parsons Brinckerhoff Quade and Douglas, Inc. prepared the On-Site Hydrology Report for LAX for LAWA that examined drainage capabilities in the Imperial and Dominguez Channel sub-basins.[2] The four objectives of the report were to: identify known storm drain facilities within the LAX boundaries; evaluate the existing hydrology and drainage systems to determine their adequacy for conveying the 50-year capital flood event (using the LACDPW Modified Rational Method) under both existing land use and land use associated with Alternative D; develop recommendations for potential improvements; and evaluate hydrology and drainage system adequacy under Alternative D future conditions.

2.2 Regulatory Provisions Regarding Water Quality

Since the Draft EIS/EIR was produced, changes have occurred in several regulatory programs pertaining to water quality that were previously described Section 4.7, *Hydrology and Water Quality*, and Technical Report 6, *Hydrology and Water Quality Technical Report,* of the Draft EIS/EIR. The changes, which are summarized in Section 4.7.3, *Affected Environment/Environmental Baseline*, of the Supplement to the Draft EIS/EIR, relate to the Los Angeles Region Water Quality Control Plan, the National Pollutant Discharge Elimination System (NPDES) Program for stormwater construction permits, the revised 303(d) list and associated Total Maximum Daily Load (TMDL) Program, the dedesignation of the municipal

1 City of Los Angeles, Los Angeles World Airports, Revised Hydrology Report for Los Angeles International Airport North Perimeter Storm Drain, Prepared by Parsons, Brinckerhoff, Quade & Douglas, Inc., December 2001.

2 City of Los Angeles, Los Angeles World Airports, Final On-Site Hydrology Report for Los Angeles International Airport, Prepared by Parsons, Brinkerhoff, Quade and Douglas, December 2002.

beneficial use for groundwater from the West Coast Basin, and amendments to the California Ocean Plan.

3. GENERAL APPROACH AND METHODOLOGY

The methodologies used to analyze drainage and water quality impacts associated with baseline conditions, the No Action/No Project Alternative and the build alternatives are unchanged from those presented in the Technical Report 6, *Hydrology and Water Quality Technical Report,* of the Draft EIS/EIR. These same methods were applied to analysis of Alternative D. This section provides documentation regarding the updated average annual precipitation value, updated event mean concentrations (EMCs) and additional parameters used in estimating annual pollutant loading. It also addresses the applicability of the method used to estimate annual pollutant loads where intensification of land use activity would occur under the various alternatives being considered. For a complete discussion of methodology, please refer to Technical Report 6, *Hydrology and Water Quality Technical Report* (subsection 3.0), of the Draft EIS/EIR.

3.1 Storm Water Event Mean Concentrations

While the method for estimation of annual pollutant loading used in the Supplement to the Draft EIS/EIR remains the same as that in the Draft EIS/EIR, storm water pollutant loads are different from those found in the Draft EIS/EIR due to the use of updated EMC data that is currently available from the LACDPW. The LACDPW EMCs were generated from storm water data collected over the period from 1994-2000, versus the EMCs used in the Draft EIS/EIR that were based on data collected between 1994-1999. Updated EMCs are presented in **Table S1,** Revised Event Mean Concentrations for Storm Water Runoff by Land Use.

Source information is also included in **Table S1**. The source of EMCs used in the Supplement to the Draft EIS/EIR for all land uses except airport operations and airport open space is the LACDPW storm water EMC data collected from 1994 to 2000. Two sources were used for EMCs for the airport land uses. They include the following:

- EMCs calculated from storm water samples collected by the American Association of Airport Executives (AAAE) at over 605 airports nationwide in preparation of its storm water group permit application in 1992. AAAE EMCs were used for total suspended solids (TSS), total phosphorus, total Kjeldahl nitrogen (TKN), oil and grease (O&G), 5-day biochemical oxygen demand (BOD_5), and chemical oxygen demand (COD), as reported in the study entitled *Predicting Pollutant Loads in Airport Storm Water Runoff - Advanced Spatial Statistics*.[3] These data are deemed appropriate for these land uses in the absence of LAX-specific data, which are either not available for the constituents of concern or for which there have been insufficient samples collected to date.
- LACDPW 1994-2000 data for transportation land uses was used for total copper, total lead, and total zinc in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. Storm water samples collected as part of the AAAE permit application did not include analysis for these three metals. LACDPW 1994-2000 data for transportation land uses were also used for the newly added constituents (ammonia, total coliform bacteria, fecal coliform bacteria, and fecal enterococcus bacteria) described in Section 3.3, *Pollutants of Concern*.

For the Supplement to the Draft EIS/EIR, inquiries were made to AAAE and other sources to obtain the original AAAE raw data used in preparation for the U.S. Environmental Protection Agency (USEPA) NPDES storm water permit application for airports. The goal of these inquiries was to isolate the EMCs collected from the four airports located in what is referred to in the Ostrom report as Rainfall Region 5, which includes portions of southwestern Colorado, southern Utah, southern Nevada, western New Mexico, Arizona, and southern California. However, the raw data could not be obtained from AAAE or from other sources to which inquiries were made. Therefore, no new airport EMCs or EMCs specific to LAX are used in this Supplement to the Draft EIS/EIR.

Pollutant loadings for baseline conditions, the No Action/No Project Alternative, and Alternatives A, B, and C were recalculated using these updated EMCs.

[3] Ostrom, Brenda, Predicting Pollutant Loads In Airport Storm water Runoff - Advanced Spatial Statistics, May 12, 1994.

Table S1

Revised Event Mean Concentrations for Storm Water Runoff By Land Use

Pollutant	Pollutant Concentrations by Land Use (mg/L, unless specified) [5]						
	Airport Operations [4] 100% Impervious	Airport Open Space[4] 45% Impervious	Industrial 100% Impervious	Commercial 100% Impervious	High Density Residential[4] 100% Impervious	Open Space[4] 35% Impervious	Transportation 80% Impervious
Total Suspended Solids	19.01 [2]	19.01 [2]	240	66	95	186	78
Total Phosphorus	0.24 [2]	0.24 [2]	0.41	0.39	0.39	0.16	0.44
Total Kjeldahl Nitrogen	1.07 [2]	1.07 [2]	3	3.4	2.9	0.79	1.9
Total Copper	0.06	0.06	0.03	0.04	0.02	0.02	0.06
Total Lead	0.01	0.01	0.02	0.02	0.01	0 [1]	0.01
Total Zinc	0.29	0.29	0.64	0.24	0.08	0.05	0.29
Oil and Grease	2.29 [2]	2.29 [2]	1.7	3.3	1.3	0 [1]	3.1
5-Day Biochemical Oxygen Demand	6.58 [2]	6.58 [2]	20	27	16	12	21
Chemical Oxygen Demand	45.7 [2]	45.7 [2]	80	98	89	17	50
Ammonia	0.29	0.29	0.59	1.26	0.41	0.13	0.29
Total Coliform Bacteria [3]	6.9E+05	6.9E+05	4.5E+05	1.1E+06	1.4E+06	9.2E+03	6.9E+05
Fecal Coliform Bacteria [3]	3.3E+05	3.3E+05	3.4E+05	5.3E+05	9.3E+05	1.4E+03	3.3E+05
Fecal Enterococcus Bacteria [3]	3.2E+04	3.2E+04	9.8E+04	8.6E+04	6.1E+05	6.8E+02	3.2E+04

[1] As noted by LACDPW, values not meaningful, therefore 0 was adopted.

[2] Ostrom, Brenda, Predicting Pollutant Loads In Airport Storm Water Runoff - Advanced Spatial Statistics, May 12, 1994.

[3] Event Mean Concentration in units of organisms/year

[4] The LACPDW EMC for transportation was used for airport operations and airport open space land uses (except where otherwise noted); LACDPW vacant EMC was used for the open space land use; and the LACPDW high density/single family residential EMC was used for the residential land use category.

[5] Unless noted otherwise, data are from Los Angeles County Department of Public Works, Summary Water Quality Data - Storm Water Quality Data Tables (1994 - 2000), http://ladpw.org/wmd/npdes/9400_wq_tbl/Table_4-12.pdf.

Source: Camp Dresser & McKee Inc., 2003.

3.2 Average Annual Precipitation

As described in Technical Report 6, *Hydrology and Water Quality Technical Report* to the Draft EIS/EIR (subsection 3.2.2.3.1), average annual precipitation is one of the factors used in calculating average annual stormwater pollutant loading. The average annual precipitation value used in calculating average annual pollutant loading in the Supplement to the Draft EIS/EIR is 12.23 inches per year. This is a decrease of 0.24 inches when compared to the value of 12.47 inches per year used in the Draft EIS/EIR. The new value is calculated as an average of annual precipitation depths from the period 1948 through 2000 as compared to the period 1949 through 1996 used in the Draft EIS/EIR.

3.3 Pollutants of Concern

Nine pollutants of concern were evaluated in the Draft EIS/EIR. As described in Technical Report 6, *Hydrology and Water Quality Technical Report* (subsection 3.2.2.2), of the Draft EIS/EIR, these pollutants of concern were based on studies and other information pertaining to the Santa Monica Bay and the Dominguez Channel, and included those pollutants that are associated with storm water runoff from LAX. In addition to these nine constituents, four additional pollutants -- fecal coliform, fecal enteroccocus, total coliform bacteria, and ammonia -- have been added to the analysis in the Supplement to the Draft EIS/EIR. These four constituents were added to the analysis based on meeting the following criteria: 1) the constituent appears on the State of California's 303(d) list for non-attainment of water quality standards in the receiving water bodies to which the project discharges[4]; 2) a statistically valid EMC for

[4] State of California, State Water Resources Control Board, Resolution No. 2003-0009, February 4, 2003.

the constituent is available; and 3) there is a reasonable basis upon which to expect that the constituent is present in stormwater at the airport.

Pollutant loadings associated with these pollutants of concern were calculated for baseline conditions, the No Action/No Project Alternative, and all four build alternatives.

3.4 Estimation of Storm Water Annual Pollutant Loads

Estimation of storm water pollutant loading to a receiving water body requires knowledge of land use type, land use area, associated percent imperviousness, runoff coefficients, average annual precipitation, and EMC data for pollutants of concern. The methodology used in both the Draft EIS/EIR and Supplement to the Draft EIS/EIR relates land use patterns and percent imperviousness in a watershed to "per-acre" pollutant loadings. A detailed discussion of this methodology is found in Technical Report 6, *Hydrology and Water Quality Technical Report*, of the Draft EIS/EIR (subsection 3.2.2.3)

The source of EMCs used in the Draft EIS/EIR for all land uses except airport operations and airport open space is the LACDPW storm water EMC data. For the Draft EIS/EIR, the EMCs used were based on data collected between 1994 and 1999. For this Supplement to the Draft EIS/EIR, updated LACDPW EMCs were generated from storm water data collected over the period from 1994 to 2000.[5] The updated EMCs are shown in **Table S1**. Some of the EMC values for the various land uses being considered have increased over those used in the Draft EIS/EIR analysis. Increases range from 1.4 percent for total zinc (airport operations land use) to 300 percent for total copper (open space land use). Decreases in EMCs were also seen for some constituents. Decreases range from 2 percent for chemical oxygen demand (industrial land use) to 62 percent for total zinc (residential land use). As a result of the updated EMCs, new estimated storm water pollutant loads for baseline conditions, the No Action/No Project Alternative and Alternatives A, B, and C are presented in the Supplement to the Draft EIS/EIR.

In addition to the use of LACDPW EMC data, the Draft EIS/EIR also relied upon data from the American Association of Airport Executives (AAAE) for airport operations and airport open space EMCs. For preparation of the Supplement to the Draft EIS/EIR, efforts were made to isolate EMC data from airports located in the southwestern United States rather than relying on the national averages reported to the U.S. Environmental Protection Agency (USEPA) for the National Pollutant Discharge Elimination System (NPDES) storm water permit application for airports. Inquiries were made to AAAE and other sources to obtain the EMCs collected from the four airports located in southwestern Colorado, southern Utah, southern Nevada, western New Mexico, Arizona, and southern California. These data, however, could not be obtained from AAAE or other sources. Therefore, the EMCs used for airport operations and airport open space in the Draft EIS/EIR are also used in the Supplement to the Draft EIS/EIR.

Implementation of the No Action/No Project and build alternatives would involve both changes in land use as well as an increase in frequency of activities currently performed on existing land uses. The methodology described here in determining estimated annual stormwater pollutant loads is especially suited to identifying differences in loading due to differences in land use types and corresponding areas among different Master Plan alternatives. This methodology, however, is not able to quantify differences in annual stormwater pollutant loading due to changes in the level of intensity/intensification of the same land use. Depending upon site history and upon the length of time over which sampling occurred at a particular monitoring station, it is possible that changes in pollutant loading due to increased land use activity might already be incorporated in EMC data collected by LACDPW and AAAE, so that the effects of land use intensification may have already been indirectly addressed. This particular aspect of stormwater samples, however, is typically never quantified. If it is assumed that the EMC data do not account for intensification of land use activities, one might assume that, where there is an intensification of an existing land use, an associated pollutant loading increase may also occur; although it is unknown if the resultant pollutant loading is directly proportional, indirectly proportional, proportional by some fractional relationship, or not significantly different from the "average" loading measured by the EMC.

[5] Los Angeles County, Department of Public Works, Stormwater Quality Summary Data 1994 – 2000, July 2002, http://www.dpw.co.la.ca.us/wmd/NPDES/wq_data.cfm.

For this Supplement to the Draft EIS/EIR, inquiries were made to the Los Angeles Regional Water Quality Control Board (LARWQCB)[6], the LACDPW[7], the AAAE[8], and to several water quality experts in the country[9] for methods to address this issue. No such methods were identified. Therefore, the method used in the Draft EIS/EIR for quantification of estimated annual stormwater pollutant loading related to alternatives with changes in land use, but not from changes in land use intensity, is also used in this Supplement to the Draft EIS/EIR.

4. BASELINE CONDITIONS

Hydrology (drainage and surface recharge) results for baseline conditions, which are presented in Table S4.7-5, Total Impervious Area Within the Hydrology and Water Quality Study Area (HWQSA), and Table S4.7-6, Annual Surface Water Recharge Volumes within the HWQSA, of Section 4.7, *Hydrology and Water Quality,* of the Supplement to the Draft EIS/EIR, have not changed over those presented in the Draft EIS/EIR and accompanying Technical Report 6, *Hydrology and Water Quality Technical Report* (subsection 5.1), of the Draft EIS/EIR. Annual average pollutant loads for baseline conditions based on updated EMC data, including baseline pollutant loads for the additional constituents identified above, are presented in **Table S2**, Revised Annual Average Pollutant Loads (lb/yr), 1996 Baseline Conditions.

Table S2

Revised Annual Average Pollutant Loads (lb/yr), 1996 Baseline Conditions

	Estimated Average Annual Pollutant Loads (lb/yr)			
Pollutant	**Santa Monica Bay**	**Dominguez Channel**	**Total Pollutant Load**	**Difference Between Supplement to the Draftl EIS/EIR and Draft EIS/EIR Total Pollutant Load**
Total Suspended Solids	222,617	247,271	469,887	127,422
Total Phosphorus	1,148	1,001	2,149	14
Total Kjeldahl Nitrogen	5,249	5,825	11,074	154
Total Copper	241	153	394	60
Total Lead	42	39	81	-33
Total Zinc	1,253	1,108	2,361	-120
Oil and Grease	9,649	7,098	16,747	-185
5-Day Biochemical Oxygen Demand	38,830	38,553	77,384	-10,389
Chemical Oxygen Demand	204,416	194,855	399,271	12,085
Ammonia[2]	1,325	1,326	2,651	NA
Total Coliform Bacteria[1,2]	1.63E+11	1.36E+11	2.99E+11	NA
Fecal Coliform Bacteria[1,2]	7.76E+10	7.43E+10	1.52E+11	NA-
Fecal Enterococcus Bacteria[1,2]	7.78E+09	1.94E+10	2.72E+10	NA-

NA = Not Applicable
Totals may not add due to rounding.

1 Expressed in organisms/yr.
2 This pollutant was not included in the Draft EIS/EIR analysis.

Source: Camp Dresser & McKee Inc., 2003.

6 Urrunaga, Carlos, LARWQCB, Personal Communication, September 26, 2002; Amah, Ginachi, Personal Communication, November 4, 2002.

7 Jordan, Stacy , LADPW (Watershed Management Group), Personal Communication, April 24, 2003.

8 Morris, Carter, AAAE, Personal Communication, July 19, 2002.

9 Doerfer, John, Denver Urban Drainage and Flood Control District, Personal Communication, July 3, 2002; Roesner, Larry, Colorado State University, Personal Communication, July 9, 2002.

5. ENVIRONMENTAL CONSEQUENCES

The sections below present supplemental information regarding hydrology and water quality associated with the LAX Master Plan alternatives. A discussion of the environmental consequences of changes in hydrology and water quality for each alternative is included in Section 4.7, *Hydrology and Water Quality,* of the Draft EIS/EIR.

5.1 Hydrology

The drainage section quantifies the amount of impervious area within the Hydrology and Water Quality Study Area (HWQSA) and the recharge section estimates the annual volume of surface water recharge through the pervious surfaces within the HWQSA.

5.1.1 Drainage

The total impervious area, upon which this analysis is based, was calculated as described in Technical Report 6, *Hydrology and Water Quality Technical Report* (subsection 3.0), of the Draft EIS/EIR. The resulting impervious areas within the Santa Monica Bay and Dominguez Channel Watersheds for each alternative and planning horizon, including Alternative D, are presented in **Table S3**, Total Impervious Area within the Hydrology and Water Quality Study Area. The total and impervious areas by watershed for each land use within Alternative D are presented in Attachment A, Total and Impervious Area by Land Use for Alternative D within Hydrology and Water Quality Study Area. Land use designations for Alternative D are shown in the figure contained in Attachment B, Land Use for Alternative D within Hydrology and Water Quality Study Area.

Table S3

Total Impervious Area within the Hydrology and Water Quality Study Area

	Impervious Area (acres)									
		Alternative								
	Baseline	NA/NP		A		B		C		D
Area	Conditions	2005	2015	2005	2015	2005	2015	2005	2015	2015
Santa Monica Bay	2,050	2,184	2,184	2,136	2,259	2,152	2,194	2,148	2,224	2,174
Dominguez Channel	1,460	1,398	1,398	1,291	1,371	1,370	1,387	1,366	1,363	1,499
Total HWQSA	3,510	3,582	3,582	3,427	3,630	3,522	3,581	3,514	3,587	3,673

Source: Camp Dresser & McKee Inc., 2000, 2003.

5.1.2 Recharge

The total recharge volume was calculated as described in Technical Report 6, Hydrology and Water Quality Technical Report (subsection 3.0), of the Draft EIS/EIR. The resulting volumes for each alternative and planning horizon, including Alternative D, are presented in **Table S4**, Annual Surface Water Recharge Volumes within the Hydrology and Water Quality Study Area.

Table S4

Annual Surface Water Recharge Volumes within the Hydrology and Water Quality Study Area

	Baseline Conditions	Alternative								
		NA/NP		A		B		C		D
		2005	2015	2005	2015	2005	2015	2005	2015	2015
Pervious Area (acres)	714	643	643	795	593	699	641	707	635	553
Recharge Volume (acre-feet/year)	171	154	154	191	142	168	154	170	152	131

Source: Camp Dresser & McKee Inc., 2000, 2003.

5.2 Water Quality

Revised average annual pollutant loads for baseline conditions, the No Action/No Project Alternative, and Alternatives A, B, and C for the 2005 and 2015 planning horizons are presented in **Tables S5** through **S11**. These tables also provide average annual pollutant loads for the additional constituents identified above. Pollutant loads for Alternative D are presented in **Table S12,** Estimated Average Annual Pollutant Load Alternative D – Enhanced Safety and Security Plan (2015), for the 2015 planning horizon. Detailed pollutant load results are presented in Attachment C, *Average Annual Storm Water Runoff and Pollutant Loads Generated within Hydrology and Water Quality Study Area*. Also included in Attachment C are average annual runoff volumes.

Table S5

Revised Estimated Average Annual Pollutant Load No Action/No Project Alternative (2005 and 2015)

	Average Annual Pollutant Loads					
	Santa Monica Bay		Dominguez Channel		Total Pollutant Load	
Pollutant	Load (lb/yr)	Percent Difference from Baseline (Table S2)	Load (lb/yr)	Percent Difference from Baseline (Table S2)	Load (lb/yr)	Percent Difference from Baseline (Table S2)
Total Suspended Solids	254,298	14	245,175	-0.8	499,473	6
Total Phosphorus	1,297	13	925	-8	2,222	3
Total Kjeldahl Nitrogen	6,512	24	5,226	-10	11,739	6
Total Copper	255	6	153	-0.3	407	3
Total Lead	69	64	37	-5	106	31
Total Zinc	1,441	15	1,104	-0.3	2,545	8
Oil and Grease	10,780	12	6,880	-3	17,661	6
5-Day Biochemical Oxygen Demand	46,930	21	36,536	-5	83,466	8
Chemical Oxygen Demand	240,778	18	175,411	-10	416,189	4
Ammonia	1,709	29	1,279	-4	2,987	13
Total Coliform Bacteria[1]	1.8E+11	12	1.2E+11	-14	3.0E+11	0.2
Fecal Coliform Bacteria[1]	8.9E+10	14	6.0E+10	-19	1.5E+11	-2
Fecal Enterococcus Bacteria[1]	1.0E+10	30	9.5E+09	-51	2.0E+10	-28

Totals may not add due to rounding.

[1] Expressed in organisms/yr.

Source: Camp Dresser & McKee Inc., 2003.

Table S6

Revised Estimated Average Annual Pollutant Load Alternative A - Added Runway North (2005)

	Santa Monica Bay			Dominguez Channel			Total Pollutant Load		
Pollutant	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)
Total Suspended Solids	210,673	-5	-17	144,466	-42	-41	355,139	-24	-29
Total Phosphorus	1,227	7	-5	782	-22	-15	2,010	-6	-10
Total Kjeldahl Nitrogen	5,707	9	-12	3,787	-35	-28	9,494	-14	-19
Total Copper	255	6	0.3	155	1	1	410	4	1
Total Lead	46	9	-33	30	-22	-18	76	-6	-28
Total Zinc	1,345	7	-7	915	-17	-17	2,260	-4	-11
Oil and Grease	10,502	9	-3	6,506	-8	-5	17,008	2	-4
5-Day Biochemical Oxygen Demand	41,545	7	-11	26,468	-31	-28	68,013	-12	-19
Chemical Oxygen Demand	220,747	8	-8	141,370	-27	-19	362,116	-9	-13
Ammonia	1,462	10	-14	921	-31	-28	2,383	-10	-20
Total Coliform Bacteria[1]	1.8E+11	9	-3	1.1E+11	-21	-7	2.8E+11	-5	-5
Fecal Coliform Bacteria[1]	8.4E+10	9	-5	5.3E+10	-29	-12	1.4E+11	-10	-8
Fecal Enterococcus Bacteria[1]	8.6E+09	11	-14	6.1E+09	-69	-36	1.5E+10	-46	-25

Totals may not add due to rounding.

[1] Expressed in organisms/yr.

Source: Camp Dresser & McKee Inc., 2003.

Table S7

Revised Estimated Average Annual Pollutant Load Alternative A - Added Runway North (2015)

	Santa Monica Bay			Dominguez Channel			Total Pollutant Load		
Pollutant	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)
Total Suspended Solids	226,349	2	-11	127,294	-49	-48	353,644	-25	-29
Total Phosphorus	1,330	16	3	818	-18	-12	2,148	-0.1	-3
Total Kjeldahl Nitrogen	6,473	23	-1	3,884	-33	-26	10,358	-6	-12
Total Copper	269	12	6	167	9	9	436	11	7
Total Lead	51	21	-26	32	-17	-13	83	3	-21
Total Zinc	1,469	17	2	959	-13	-13	2,428	3	-5
Oil and Grease	11,356	18	5	7,036	-1	2	18,392	10	4
5-Day Biochemical Oxygen Demand	46,484	20	-1	26,597	-31	-27	73,081	-6	-12
Chemical Oxygen Demand	244,483	20	2	148,721	-24	-15	393,204	-2	-6
Ammonia	1,696	28	-1	962	-27	-25	2,658	0.3	-11
Total Coliform Bacteria[1]	1.9E+11	18	5	1.2E+11	-14	0	3.1E+11	3	3
Fecal Coliform Bacteria[1]	9.2E+10	19	4	5.7E+10	-23	-5	1.5E+11	-2	0.2
Fecal Enterococcus Bacteria[1]	1.0E+10	28	-1	6.3E+09	-68	-34	1.6E+10	-40	-17

Totals may not add due to rounding.

[1] Expressed in organisms/yr.

Source: Camp Dresser & McKee Inc., 2003.

Table S8

Revised Estimated Average Annual Pollutant Load Alternative B - Added Runway South (2005)

	Santa Monica Bay			Dominguez Channel			Total Pollutant Load		
Pollutant	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)	Load lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)
Total Suspended Solids	218,177	-2	-14	104,252	-58	-57	322,429	-31	-35
Total Phosphorus	1,241	8	-4	785	-22	-15	2,026	-6	-9
Total Kjeldahl Nitrogen	5,735	9	-12	3,589	-38	-31	9,324	-16	-21
Total Copper	257	7	1	168	10	10	426	8	4
Total Lead	46	10	-33	31	-21	-16	77	-5	-27
Total Zinc	1,372	9	-5	904	-18	-18	2,276	-4	-11
Oil and Grease	10,544	9	-2	6,978	-2	1	17,522	5	-1
5-Day Biochemical Oxygen Demand	41,723	7	-11	24,563	-36	-33	66,285	-14	-21
Chemical Oxygen Demand	221,448	8	-8	142,683	-27	-19	364,131	-9	-13
Ammonia	1,440	9	-16	912	-31	-29	2,352	-11	-21
Total Coliform Bacteria[1]	1.8E+11	8	-4	1.2E+11	-14	0.3	2.9E+11	-2	-2
Fecal Coliform Bacteria[1]	8.5E+10	9	-5	5.6E+10	-25	-7	1.4E+11	-7	-6
Fecal Enterococcus Bacteria[1]	8.7E+09	12	-14	5.7E+09	-71	-40	1.4E+10	-47	-26

Totals may not add due to rounding.

[1] Expressed in organisms/yr.

Source: Camp Dresser & McKee Inc., 2003.

Table S9

Revised Estimated Average Annual Pollutant Load Alternative B - Added Runway South (2015)

	Santa Monica Bay			Dominguez Channel			Total Pollutant Load		
Pollutant	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)
Total Suspended Solids	253,666	14	-0.2	87,570	-65	-64	341,236	-27	-32
Total Phosphorus	1,305	14	1	787	-21	-15	2,092	-3	-6
Total Kjeldahl Nitrogen	6,291	20	-3	3,535	-39	-32	9,827	-11	-16
Total Copper	259	7	2	173	13	13	431	9	6
Total Lead	49	16	-29	31	-20	-15	80	-1	-24
Total Zinc	1,455	16	1	906	-18	-18	2,361	0	-7
Oil and Grease	10,796	12	0.1	7,164	1	4	17,960	7	2
5-Day Biochemical Oxygen Demand	45,817	18	-2	23,838	-38	-35	69,655	-10	-17
Chemical Oxygen Demand	234,559	15	-3	143,578	-26	-18	378,138	-5	-9
Ammonia	1,571	19	-8	913	-31	-29	2,484	-6	-17
Total Coliform Bacteria[1]	1.8E+11	11	-1	1.2E+11	-12	3	3.0E+11	1	0.4
Fecal Coliform Bacteria[1]	8.7E+10	13	-1	5.7E+10	-23	-5	1.4E+11	-5	-3
Fecal Enterococcus Bacteria[1]	9.7E+09	24	-4	5.7E+09	-71	-40	1.5E+10	-44	-22

Totals may not add due to rounding.

[1] Expressed in organisms/yr.

Source: Camp Dresser & McKee Inc., 2003.

Table S10

Revised Estimated Average Annual Pollutant Load Alternative C - No Additional Runway (2005)

	Santa Monica Bay			Dominguez Channel			Total Pollutant Load		
Pollutant	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)
Total Suspended Solids	208,276	-6	-18	142,348	-42	-42	350,624	-25	-30
Total Phosphorus	1,223	6	-6	827	-17	-11	2,050	-5	-8
Total Kjeldahl Nitrogen	5,617	7	-14	4,111	-29	-21	9,728	-12	-17
Total Copper	257	7	1	163	7	7	421	7	3
Total Lead	46	9	-34	33	-15	-11	78	-3	-26
Total Zinc	1,353	8	-6	967	-13	-12	2,320	-2	-9
Oil and Grease	10,493	9	-3	6,998	-1	2	17,491	4	-1
5-Day Biochemical Oxygen Demand	40,597	5	-13	28,315	-27	-22	68,913	-11	-17
Chemical Oxygen Demand	219,450	7	-9	153,272	-21	-13	372,722	-7	-10
Ammonia	1,429	8	-16	1,042	-21	-18	2,471	-7	-17
Total Coliform Bacteria[1]	1.8E+11	8	-4	1.2E+11	-14	1	2.9E+11	-2	-2
Fecal Coliform Bacteria[1]	8.4E+10	9	-5	5.7E+10	-23	-5	1.4E+11	-7	-5
Fecal Enterococcus Bacteria[1]	8.5E+09	10	-15	6.7E+09	-66	-30	1.5E+10	-44	-22

Totals may not add due to rounding.

[1] Expressed in organisms/yr.

Source: Camp Dresser & McKee Inc., 2003.

Table S11

Revised Estimated Average Annual Pollutant Load Alternative C - No Additional Runway (2015)

	Santa Monica Bay			Dominguez Channel			Total Pollutant Load		
Pollutant	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compare to NA/NP (Table S5)	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)
Total Suspended Solids	221,375	-1	-13	143,457	-42	-41	364,832	-22	-27
Total Phosphorus	1,295	13	-0.1	828	-17	-10	2,123	-1	-4
Total Kjeldahl Nitrogen	6,143	17	-6	4,077	-30	-22	10,220	-8	-13
Total Copper	266	10	4	164	7	7	430	9	5
Total Lead	49	17	-29	32	-16	-11	82	1	-23
Total Zinc	1,448	16	0.5	970	-12	-12	2,418	2	-5
Oil and Grease	11,059	15	3	6,981	-2	1	18,040	8	2
5-Day Biochemical Oxygen Demand	43,919	13	-6	28,163	-27	-23	72,081	-7	-14
Chemical Oxygen Demand	235,314	15	-2	152,021	-22	-13	387,335	-3	-7
Ammonia	1,573	19	-8	1,017	-23	-20	2,590	-2	-13
Total Coliform Bacteria[1]	1.9E+11	14	2	1.2E+11	-15	-0.1	3.0E+11	1	1
Fecal Coliform Bacteria[1]	8.9E+10	15	1	5.7E+10	-23	-5	1.5E+11	-4	-2
Fecal Enterococcus Bacteria[1]	9.5E+09	22	-6	6.6E+09	-66	-30	1.6E+10	-41	-18

Totals may not add due to rounding.

[1] Expressed in organisms/yr.

Source: Camp Dresser & McKee Inc., 2003.

Table S12

Estimated Average Annual Pollutant Load Alternative D - Enhanced Safety and Security Plan (2015)

	Santa Monica Bay			Dominguez Channel			Total Pollutant Load		
Pollutant	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)	Load (lb/yr)	Percent Difference Compared to Baseline (Table S2)	Percent Difference Compared to NA/NP (Table S5)
Total Suspended Solids	243,505	9	-4	190,536	-23	-22	434,041	-8	-13
Total Phosphorus	1,283	12	-1	940	-6	2	2,223	3	0.1
Total Kjeldahl Nitrogen	6,399	22	-2	4,864	-17	-7	11,263	2	-4
Total Copper	254	6	-0.1	175	14	15	430	9	5
Total Lead	49	17	-29	38	-3	3	87	8	-18
Total Zinc	1,418	13	-2	1,150	4	4	2,568	9	1
Oil and Grease	10,752	11	-0.3	7,578	7	10	18,331	9	4
5-Day Biochemical Oxygen Demand	46,156	19	-2	32,485	-16	-11	78,641	2	-6
Chemical Oxygen Demand	238,122	16	-1	175,486	-10	0.0	413,608	4	-1
Ammonia	1,689	27	-1	1,168	-12	-9	2,857	8	-4
Total Coliform Bacteria[1]	1.8E+11	12	-0.2	1.3E+11	-6	9	3.1E+11	4	4
Fecal Coliform Bacteria[1]	8.8E+10	14	-1	6.4E+10	-13	7	1.5E+11	0.5	3
Fecal Enterococcus Bacteria[1]	9.9E+09	27	-2	9.1E+09	-53	-4	1.9E+10	-30	-3

Totals may not add due to rounding.

[1] Expressed in organisms/yr.

Source: Camp Dresser & McKee Inc., 2003.

5.3 Storm Water Best Management Practices (BMPs)

To address potential impacts as a result of implementation of any of the Master Plan alternatives, LAWA included in the Draft EIS/EIR and in the Supplement to the Draft EIS/EIR a Master Plan Commitment, HWQ-1, related to hydrology and water quality. The overall objective of HWQ-1 is to identify and commit to construct a drainage infrastructure for the selected Master Plan alternative that provides adequate drainage capacity to prevent flooding, controls peak flow discharges, and incorporates Best Management Practices (BMPs) to minimize the effect of airport operations on surface water quality. As part of this commitment, LAWA would design the storm water system to meet the requirements in the Standard Urban Storm Water Mitigation Plan (SUSMP) through incorporation of source control, structural, and treatment control BMPs. Lists of potential methods to reduce peak flow rates and BMPs to infiltrate or treat stormwater runoff are included in the Master Plan Commitment HWQ-1, Develop Detailed Drainage Plan. HWQ-1 is found in Section 4.7, *Hydrology and Water Quality* (subsection 4.7.5), of the Supplement to the Draft EIS/EIR. These BMPs would be designed with the goal of reducing impacts to water quality to the maximum extent practicable and achieving no net gain in pollutant loads discharged to receiving water bodies.

To illustrate the potential to achieve no net gain in pollutant loads, consider the following example. In the case of total copper, the estimated total annual pollutant loading in 2015 under Alternative A would increase by 11 percent when compared to baseline conditions (**Table S7**, Revised Estimated Average Annual Pollutant Load, Alternative A - Added Runway North (2015)). This is equivalent to an additional 42 lbs/year estimated annual total copper load above the 394 lbs/year under baseline conditions. If it is assumed that: 1) a structural BMP, such as a detention basin designed with a water quality outlet structure, is selected that receives runoff from approximately one-third of the HWQSA; 2) the basin is designed to treat 85% of the capture volume; and 3) the basin is capable of removing from 30% to 70% of the incoming total copper load, then the following calculation can be made:

- At 30% removal efficiency:
  - Average estimated annual total copper removed = (33% of runoff diverted to BMP) x (394 lb/year total copper under baseline conditions) x (85% capture) x (30% removal rate for total copper) = 33 lb/year of total copper removed
- At 70% removal efficiency:
  - Average estimated annual total copper removed = (33% of runoff diverted to BMP) x (394 lb/year total copper under baseline conditions) x (85% capture) x (70% removal rate for total copper) = 77 lb/year of total copper removed

From these calculations, it can be seen that the additional estimated average annual copper loading of 42 lbs/year resulting from construction of Alternative A could be treated so that estimated annual average baseline total copper loads would not be exceeded. This could also be shown for other potential pollutants that may result from implementation of any of the other build alternatives.

Attachment A

Total and Impervious Area by Land Use for Alternative D within Hydrology and Water Quality Study Area

Table A1

Total and Impervious Area by Land Use
Alternative D 2015

Region within Hydrology and Water Quality Study Area	Land Use Classifications							Area Subtotals
	Airport Operations (acres)	Airport Open Space (acres)	Industrial (acres)	Commercial (acres)	Residential (acres)	Open Space (acres)	Transportation (acres)	(acres)
Santa Monica Bay Watershed								
Total Area	1,564	360	96	107	0	480	96	2,703
Impervious Area	1,564	162	96	107	0	168	77	2,174
Dominguez Channel Watershed								
Total Area	1,172	0	223	16	13	9	91	1,523
Impervious Area	1,172	0	223	16	13	3	73	1,499
Study Area								
Total Area	2,735	360	319	123	13	489	187	4,226
Impervious Area	2,735	162	319	123	13	171	150	3,673

Source: Camp Dresser & McKee Inc., 2003.

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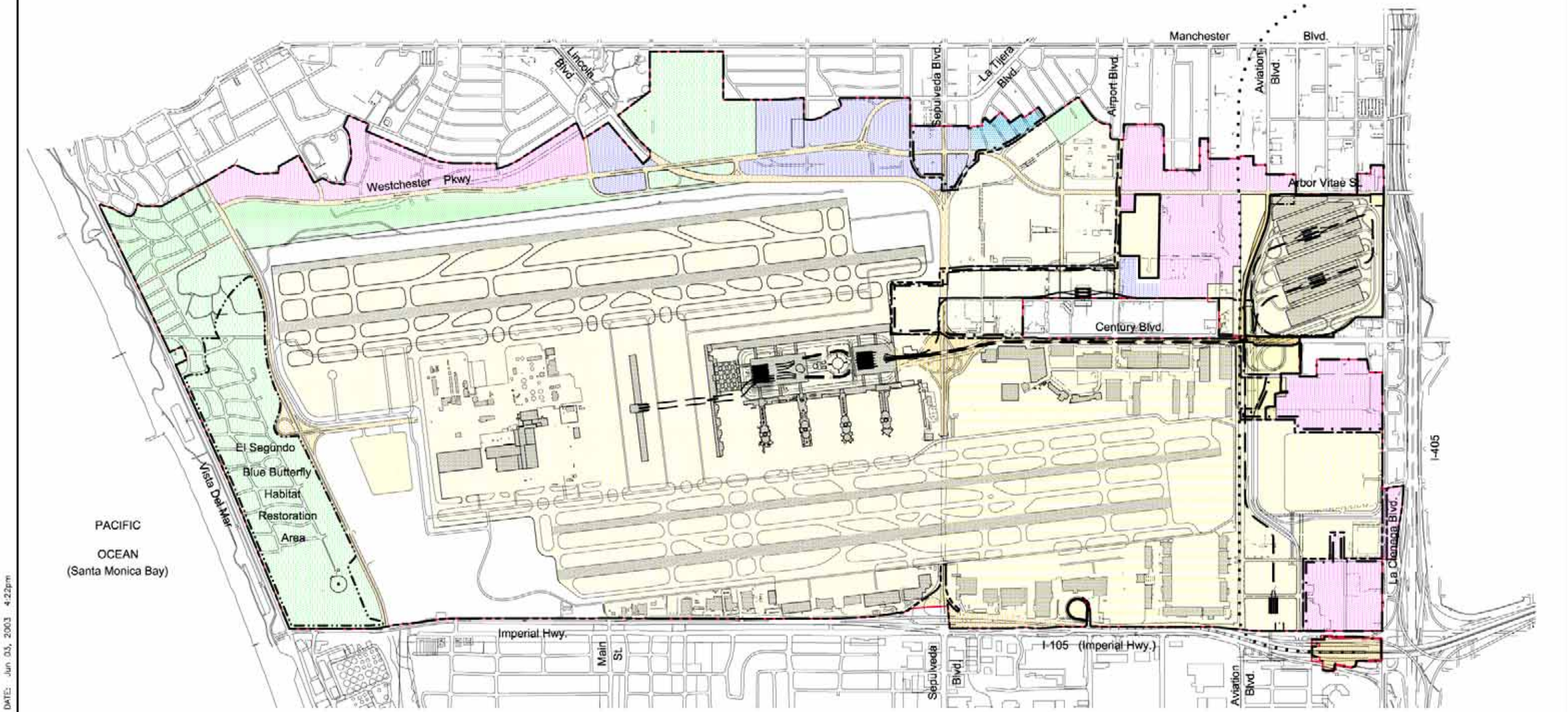
Attachment B

Land Use for Alternative D within Hydrology and Water Quality Study Area



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LAX Master Plan - Supplement to the Draft EIS/EIR	**Land-Use Within Master Plan Boundaries Alternative D (2015)**	Figure **B1**

Attachment C

Average Annual Storm Water Runoff and Pollutant Loads Generated within Hydrology and Water Quality Study Area

Table C1

Average Annual Storm Water Runoff
Baseline Conditions

Region within Hydrology and Water Quality Study Area	Land Use Classifications							Runoff Subtotal
	Airport Operations (ft^3)	Airport Open Space (ft^3)	Industrial (ft^3)	Commercial (ft^3)	Residential (ft^3)	Open Space (ft^3)	Transportation (ft^3)	(ft^3)
Santa Monica Bay Watershed	55,227,982	7,358,993	721,934	360,967	0	10,523,096	2,843,970	77,036,943
Dominguez Channel Watershed	31,909,500	580,480	10,359,759	2,274,093	5,197,928	140,100	2,397,273	52,859,134
Runoff Totals	**87,137,482**	**7,939,474**	**11,081,693**	**2,635,061**	**5,197,928**	**10,663,197**	**5,241,244**	**129,896,077**

Source: Camp Dresser & McKee Inc., 2003.

Table C2

Revised Estimated Pollutant Loads
Baseline Conditions

Region within Hydrology and Water Quality Study Area	Parameter	Land Use Classifications							Pollutant Load Subtotals
		Airport Operations (lbs/yr)	Airport Open Space (lbs/yr)	Industrial (lbs/yr)	Commercial (lbs/yr)	Residential (lbs/yr)	Open Space (lbs/yr)	Transportation (lbs/yr)	(lbs/yr)
Santa Monica Bay Watershed									
	TSS	65,542	8,733	10,816	1,487	0	122,189	13,848	222,617
	Total P	827	110	18	9	0	105	78	1,148
	TKN	3,689	492	135	77	0	519	337	5,249
	Total Cu	193	26	1	1	0	10	10	241
	Total Pb	34	5	1	0	0	0	2	42
	Total Zn	1,003	134	29	5	0	30	52	1,253
	O&G	7,895	1,052	77	74	0	0	550	9,649
	BOD_5	22,686	3,023	901	608	0	7,883	3,728	38,830
	COD	157,562	20,995	3,605	2,208	0	11,168	8,877	204,416
	Ammonia	1,000	133	27	28	0	85	51	1,325
	Total Coliform[1]	1.35E+11	1.80E+10	1.16E+09	1.45E+09	0	3.41E+08	6.96E+09	1.63E+11
	Fecal Coliform[1]	6.41E+10	8.54E+09	8.62E+08	6.74E+08	0	5.19E+07	3.30E+09	7.76E+10
	Fecal Enterococcus[1]	6.24E+09	8.32E+08	2.50E+08	1.10E+08	0	2.52E+07	3.21E+08	7.78E+09
Dominguez Channel Watershed									
	TSS	37,869	689	155,217	9,370	30,827	1,627	11,673	247,271
	Total P	478	9	265	55	127	1	66	1,001
	TKN	2,131	39	1,940	483	941	7	284	5,825
	Total Cu	112	2	21	6	5	0	8	153
	Total Pb	20	0	11	3	3	0	1	39
	Total Zn	580	11	414	34	26	0	44	1,108
	O&G	4,562	83	1,099	468	422	0	464	7,098
	BOD_5	13,108	238	12,935	3,833	5,192	105	3,143	38,553
	COD	91,036	1,656	51,739	13,913	28,880	149	7,483	194,855
	Ammonia	578	11	382	179	133	1	43	1,326
	Total Coliform[1]	7.80E+10	1.42E+09	1.66E+10	9.16E+09	2.51E+10	4.55E+06	5.86E+09	1.36E+11
	Fecal Coliform[1]	3.70E+10	6.74E+08	1.24E+10	4.25E+09	1.71E+10	6.91E+05	2.78E+09	7.43E+10
	Fecal Enterococcus[1]	3.61E+09	6.56E+07	3.59E+09	6.93E+08	1.12E+10	3.36E+05	2.71E+08	1.94E+10
Total Pollutant Loading									
	TSS	103,410	9,422	166,033	10,857	30,827	123,816	25,521	469,887
	Total P	1,306	119	284	64	127	107	144	2,149
	TKN	5,821	530	2,075	559	941	526	622	11,074
	Total Cu	305	28	22	6	5	10	18	394
	Total Pb	54	5	12	3	3	0	3	81
	Total Zn	1,583	144	443	40	26	31	95	2,361
	O&G	12,457	1,135	1,176	543	422	0	1,014	16,747
	BOD_5	35,794	3,261	13,836	4,442	5,192	7,988	6,871	77,384
	COD	248,598	22,651	55,344	16,121	28,880	11,317	16,360	399,271
	Ammonia	1,578	144	408	207	133	87	95	2,651
	Total Coliform[1]	2.13E+11	1.94E+10	1.78E+10	1.06E+10	2.51E+10	3.46E+08	1.28E+10	2.99E+11
	Fecal Coliform[1]	1.01E+11	9.22E+09	1.32E+10	4.92E+09	1.71E+10	5.26E+07	6.08E+09	1.52E+11
	Fecal Enterococcus[1]	9.85E+09	8.97E+08	3.84E+09	8.03E+08	1.12E+10	2.56E+07	5.92E+08	2.72E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003

Table C3

Revised Average Annual Wet Weather Pollutant Loads
Baseline Conditions

Pollutant	Total Pollutant Load				
	Santa Monica Bay Watershed		Dominguez Channel Watershed		Total
	(lbs/year)	% of Total	(lbs/year)	% of Total	(lbs/year)
TSS	222,617	47	247,271	53	469,887
Total P	1,148	53	1,001	47	2,149
TKN	5,249	47	5,825	53	11,074
Total Cu	241	61	153	39	394
Total Pb	42	52	39	48	81
Total Zn	1,253	53	1,108	47	2,361
O&G	9,649	58	7,098	42	16,747
BOD_5	38,830	50	38,553	50	77,384
COD	204,416	51	194,855	49	399,271
Ammonia	1,325	50	1,326	50	2,651
Total Coliform[1]	1.63E+11	54	1.36E+11	46	2.99E+11
Fecal Coliform[1]	7.76E+10	51	7.43E+10	49	1.52E+11
Fecal Enterococcus[1]	7.78E+09	29	1.94E+10	71	2.72E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003

Table C4

Revised Average Annual Storm Water Runoff
No Action/No Project Alternative (2005/2015)

Region within Hydrology and Water Quality Study Area	Land Use Classifications							Runoff Subtotals
	Airport Operations (ft3)	Airport Open Space (ft3)	Industrial (ft3)	Commercial (ft3)	Residential (ft3)	Open Space (ft3)	Transportation (ft3)	(ft3)
Santa Monica Bay Watershed								
	55,805,529	7,059,390	4,187,220	3,862,349	0	7,503,154	2,843,970	81,261,613
Dominguez Channel Watershed								
	32,631,435	0	10,395,855	2,959,931	469,257	2,070,372	2,397,273	50,924,125
Runoff Totals								
	88,436,964	**7,059,390**	**14,583,075**	**6,822,280**	**469,257**	**9,573,527**	**5,256,134**	**132,200,627**

Source: Camp Dresser & McKee Inc., 2003.

Table C5

Revised Estimated Pollutant Loads
No Action/No Project Alternative (2005/2015)

Region within Hydrology and Water Quality Study Area	Parameter	Land Use Calculations							Pollutant Load Subtotals
		Airport Operations (lbs/yr)	Airport Open Space (lbs/yr)	Industrial (lbs/yr)	Commercial (lbs/yr)	Residential (lbs/yr)	Open Space (lbs/yr)	Transportation (lbs/yr)	(lbs/yr)
Santa Monica Bay Watershed									
	TSS	66,227	8,378	62,736	15,914	0	87,123	13,921	254,298
	Total P	836	106	107	94	0	75	79	1,297
	TKN	3,728	472	784	820	0	370	339	6,512
	Total Cu	195	25	8	9	0	7	10	255
	Total Pb	35	4	4	4	0	0	2	69
	Total Zn	1,014	128	167	58	0	22	52	1,441
	O&G	7,978	1,009	444	796	0	0	553	10,780
	BOD_5	22,923	2,900	5,228	6,510	0	5,621	3,748	46,930
	COD	159,210	20,140	20,912	23,630	0	7,963	8,924	240,778
	Ammonia	1,010	128	154	304	0	61	52	1,709
	Total Coliform[1]	1.36E+11	1.73E+10	6.71E+09	1.55E+10	0	2.43E+08	6.99E+09	1.83E+11
	Fecal Coliform[1]	6.48E+10	8.20E+09	5.00E+09	7.21E+09	0	3.70E+07	3.32E+09	8.86E+10
	Fecal Enterococcus[1]	6.31E+09	7.98E+08	1.45E+09	1.18E+09	0	1.80E+07	3.23E+08	1.01E+10
Dominguez Channel Watershed									
	TSS	38,725	0	155,757	12,196	2,783	24,040	11,673	245,175
	Total P	489	0	266	72	11	21	66	925
	TKN	2,180	0	1,947	628	85	102	284	5,226
	Total Cu	114	0	21	7	0	2	8	153
	Total Pb	20	0	11	3	0	0	1	37
	Total Zn	593	0	415	45	2	6	44	1,104
	O&G	4,665	0	1,103	610	38	0	464	6,880
	BOD_5	13,404	0	12,980	4,989	469	1,551	3,143	36,536
	COD	93,096	0	51,919	18,109	2,607	2,197	7,483	175,411
	Ammonia	591	0	383	233	12	17	43	1,279
	Total Coliform[1]	7.98E+10	0.00E+00	1.67E+10	1.19E+10	2.26E+09	6.72E+07	5.86E+09	1.17E+11
	Fecal Coliform[1]	3.79E+10	0.00E+00	1.24E+10	5.53E+09	1.55E+09	1.02E+07	2.78E+09	6.02E+10
	Fecal Enterococcus[1]	3.69E+09	0.00E+00	3.61E+09	9.02E+08	1.01E+09	4.96E+06	2.71E+08	9.48E+09
Total Pollutant Loading									
	TSS	104,953	8,378	218,493	28,109	2,783	111,163	25,594	499,473
	Total P	1,325	106	373	166	11	96	144	2,222
	TKN	5,907	472	2,731	1,448	85	472	623	11,739
	Total Cu	309	25	29	17	0	9	18	407
	Total Pb	55	4	15	8	0	0	3	86
	Total Zn	1,607	128	583	103	2	27	95	2,545
	O&G	12,643	1,009	1,548	1,405	38	0	1,017	17,661
	BOD_5	36,328	2,900	18,208	11,499	469	7,172	6,891	83,466
	COD	252,306	20,140	72,831	41,738	2,607	10,160	16,406	416,189
	Ammonia	1,601	128	537	537	12	78	95	2,987
	Total Coliform[1]	2.16E+11	1.73E+10	2.34E+10	2.75E+10	2.26E+09	3.11E+08	1.29E+10	3.00E+11
	Fecal Coliform[1]	1.03E+11	8.20E+09	1.74E+10	1.27E+10	1.55E+09	4.72E+07	6.10E+09	1.49E+11
	Fecal Enterococcus[1]	9.99E+09	7.98E+08	5.06E+09	2.08E+09	1.01E+09	2.30E+07	5.94E+08	1.96E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

Table C6

Revised Average Annual Wet Weather Pollutant Loads
No Action/No Project Alternative (2005-2015)

Pollutant	Total Pollutant Load				
	Santa Monica Bay Watershed		Dominguez Channel Watershed		Total
	(lbs/year)	% of Total	(lbs/year)	% of Total	(lbs/year)
TSS	254,298	51	245,175	49	499,473
Total P	1,297	58	925	42	2,222
TKN	6,512	55	5,226	45	11,739
Total Cu	255	62	153	38	407
Total Pb	69	80	37	42	106
Total Zn	1,441	57	1,104	43	2,545
O&G	10,780	61	6,880	39	17,661
BOD_5	46,930	56	36,536	44	83,466
COD	240,778	58	175,411	42	416,189
Ammonia	1,709	57	1,279	43	2,987
Total Coliform[1]	1.83E+11	61	1.17E+11	39	3.00E+11
Fecal Coliform[1]	8.86E+10	60	6.02E+10	40	1.49E+11
Fecal Enterococcus[1]	1.01E+10	52	9.48E+09	48	1.96E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

Table C7

Revised Average Annual Storm Water Runoff
Alternative A (2005)

Region within Hydrology and Water Quality Study Area	Land Use Classifications							Runoff Subtotals
	Airport Operations (ft^3)	Airport Open Space (ft^3)	Industrial (ft^3)	Commercial (ft^3)	Residential (ft^3)	Open Space (ft^3)	Transportation (ft^3)	(ft^3)
Santa Monica Bay Watershed								
	57,790,849	7,677,321	1,046,805	1,299,482	0	7,985,722	3,945,823	79,746,002
Dominguez Channel Watershed								
	34,905,528	3,351,806	3,898,446	144,387	0	2,163,773	3,067,319	47,531,258
Runoff Totals								
	92,696,377	**11,029,127**	**4,945,251**	**1,443,869**	**0**	**10,149,495**	**7,013,141**	**127,277,260**

Source: Camp Dresser & McKee Inc., 2003.

Table C8

Revised Estimated Pollutant Loads
Alternative A (2005)

Region within Hydrology and Water Quality Study Area	Parameter	Land Use Classifications							Pollutant Load Subtotals
		Airport Operations (lbs/yr)	Airport Open Space (lbs/yr)	Industrial (lbs/yr)	Commercial (lbs/yr)	Residential (lbs/yr)	Open Space (lbs/yr)	Transportation (lbs/yr)	(lbs/yr)
Santa Monica Bay Watershed									
	TSS	68,583	9,111	15,684	5,354	0	92,727	19,214	210,673
	Total P	866	115	27	32	0	80	108	1,227
	TKN	3,860	513	196	276	0	394	468	5,707
	Total Cu	202	27	2	3	0	7	14	255
	Total Pb	36	5	1	1	0	0	2	46
	Total Zn	1,050	139	42	20	0	23	72	1,345
	O&G	8,262	1,098	111	268	0	0	764	10,502
	BOD_5	23,739	3,154	1,307	2,190	0	5,982	5,173	41,545
	COD	164,874	21,903	5,228	7,950	0	8,475	12,316	220,747
	Ammonia	1,046	139	39	102	0	65	71	1,462
	Total Coliform[1]	1.41E+11	1.88E+10	1.68E+09	5.23E+09	0	2.59E+08	9.65E+09	1.77E+11
	Fecal Coliform[1]	6.71E+10	8.91E+09	1.25E+09	2.43E+09	0	3.94E+07	4.58E+09	8.43E+10
	Fecal Enterococcus[1]	6.53E+09	8.68E+08	3.63E+08	3.96E+08	0	1.91E+07	4.46E+08	8.62E+09
Dominguez Channel Watershed									
	TSS	41,424	3,978	58,409	595	0	25,125	14,936	144,466
	Total P	523	50	100	4	0	22	84	782
	TKN	2,332	224	730	31	0	107	364	3,787
	Total Cu	122	12	8	0	0	2	11	155
	Total Pb	22	2	4	0	0	0	2	30
	Total Zn	634	61	156	2	0	6	56	915
	O&G	4,990	479	414	30	0	0	594	6,506
	BOD_5	14,338	1,377	4,867	243	0	1,621	4,021	26,468
	COD	99,584	9,563	19,470	883	0	2,296	9,574	141,370
	Ammonia	632	61	144	11	0	18	56	921
	Total Coliform[1]	8.54E+10	8.20E+09	6.25E+09	5.81E+08	0	7.02E+07	7.50E+09	1.08E+11
	Fecal Coliform[1]	4.05E+10	3.89E+09	4.66E+09	2.70E+08	0	1.07E+07	3.56E+09	5.29E+10
	Fecal Enterococcus[1]	3.94E+09	3.79E+08	1.35E+09	4.40E+07	0	5.19E+06	3.47E+08	6.07E+09
Total Pollutant Loading									
	TSS	110,007	13,089	74,093	5,949	0	117,851	34,149	355,139
	Total P	1,389	165	127	35	0	101	193	2,010
	TKN	6,192	737	926	306	0	501	832	9,494
	Total Cu	324	39	10	4	0	10	25	410
	Total Pb	58	7	5	2	0	0	4	76
	Total Zn	1,684	200	198	22	0	29	127	2,260
	O&G	13,252	1,577	525	297	0	0	1,357	17,008
	BOD_5	38,077	4,530	6,174	2,434	0	7,603	9,194	68,013
	COD	264,458	31,465	24,698	8,833	0	10,771	21,891	362,116
	Ammonia	1,678	200	182	114	0	82	127	2,383
	Total Coliform[1]	2.27E+11	2.70E+10	7.93E+09	5.81E+09	0	3.29E+08	1.72E+10	2.85E+11
	Fecal Coliform[1]	1.08E+11	1.28E+10	5.91E+09	2.70E+09	0	5.01E+07	8.14E+09	1.37E+11
	Fecal Enterococcus[1]	1.05E+10	1.25E+09	1.71E+09	4.40E+08	0	2.43E+07	7.93E+08	1.47E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

Table C9

Revised Average Annual Wet Weather Pollutant Loads
Alternative A (2005)

Pollutant	Total Pollutant Load				
	Santa Monica Bay Watershed		Dominguez Channel Watershed		Total
	(lbs/year)	% of Total	(lbs/year)	% of Total	(lbs/year)
TSS	210,673	59	144,466	41	355,139
Total P	1,227	61	782	39	2,010
TKN	5,707	60	3,787	40	9,494
Total Cu	255	62	155	38	410
Total Pb	46	60	30	40	76
Total Zn	1,345	60	915	40	2,260
O&G	10,502	62	6,506	38	17,008
BOD_5	41,545	61	26,468	39	68,013
COD	220,747	61	141,370	39	362,116
Ammonia	1,462	61	921	39	2,383
Total Coliform[1]	1.77E+11	62	1.08E+11	38	2.85E+11
Fecal Coliform[1]	8.43E+10	61	5.29E+10	39	1.37E+11
Fecal Enterococcus[1]	8.62E+09	59	6.07E+09	41	1.47E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

Table C10

Revised Average Annual Storm Water Runoff
Alternative A (2015)

Region within Hydrology and Water Quality Study Area	Land Use Classifications							Runoff Subtotals
	Airport Operations (ft3)	Airport Open Space (ft3)	Industrial (ft3)	Commercial (ft3)	Residential (ft3)	Open Space (ft3)	Transportation (ft3)	(ft3)
Santa Monica Bay Watershed								
	61,508,811	5,823,529	2,635,061	3,248,705	0	6,366,785	4,035,162	83,618,052
Dominguez Channel Watershed								
	40,536,617	1,928,693	3,140,415	144,387	0	1,214,203	3,111,988	50,076,303
Runoff Totals								
	102,045,427	**7,752,222**	**5,775,475**	**3,393,092**	**0**	**7,580,988**	**7,147,151**	**133,694,355**

Source: Camp Dresser & McKee Inc., 2003.

Table C11

Revised Estimated Pollutant Loads
Alternative A (2015)

Region within Hydrology and Water Quality Study Area	Parameter	Land Use Classifications							Pollutant Load Subtotals
		Airport Operations	Airport Open Space	Industrial	Commercial	Residential	Open Space	Transportation	
		(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Santa Monica Bay Watershed									
	TSS	72,996	6,911	39,480	13,385	0	73,928	19,649	226,349
	Total P	922	87	67	79	0	64	111	1,330
	TKN	4,109	389	494	690	0	314	479	6,473
	Total Cu	215	20	5	8	0	6	14	269
	Total Pb	38	4	3	4	0	0	3	51
	Total Zn	1,117	106	105	49	0	18	73	1,469
	O&G	8,793	833	280	669	0	0	781	11,356
	BOD_5	25,266	2,392	3,290	5,476	0	4,770	5,290	46,484
	COD	175,481	16,614	13,160	19,875	0	6,757	12,595	244,483
	Ammonia	1,114	105	97	256	0	52	73	1,696
	Total Coliform[1]	1.50E+11	1.42E+10	4.22E+09	1.31E+10	0	2.07E+08	9.87E+09	1.92E+11
	Fecal Coliform[1]	7.14E+10	6.76E+09	3.15E+09	6.07E+09	0	3.14E+07	4.68E+09	9.21E+10
	Fecal Enterococcus[1]	6.95E+09	6.58E+08	9.14E+08	9.90E+08	0	1.53E+07	4.56E+08	9.98E+09
Dominguez Channel Watershed									
	TSS	48,107	2,289	47,052	595	0	14,099	15,153	127,294
	Total P	607	29	80	4	0	12	85	818
	TKN	2,708	129	588	31	0	60	369	3,884
	Total Cu	142	7	6	0	0	1	11	167
	Total Pb	25	1	3	0	0	0	2	32
	Total Zn	736	35	125	2	0	3	57	959
	O&G	5,795	276	333	30	0	0	602	7,036
	BOD_5	16,651	792	3,921	243	0	910	4,080	26,597
	COD	115,649	5,502	15,684	883	0	1,289	9,714	148,721
	Ammonia	734	35	116	11	0	10	56	962
	Total Coliform[1]	9.91E+10	4.72E+09	5.03E+09	5.81E+08	0	3.94E+07	7.61E+09	1.17E+11
	Fecal Coliform[1]	4.71E+10	2.24E+09	3.75E+09	2.70E+08	0	5.99E+06	3.61E+09	5.69E+10
	Fecal Enterococcus[1]	4.58E+09	2.18E+08	1.09E+09	4.40E+07	0	2.91E+06	3.52E+08	6.29E+09
Total Pollutant Loading									
	TSS	121,102	9,200	86,532	13,980	0	88,027	34,802	353,644
	Total P	1,529	116	148	83	0	76	196	2,148
	TKN	6,816	518	1,082	720	0	374	848	10,358
	Total Cu	357	27	12	8	0	7	25	436
	Total Pb	64	5	6	4	0	0	4	83
	Total Zn	1,854	141	231	51	0	22	130	2,428
	O&G	14,588	1,108	613	699	0	0	1,383	18,392
	BOD_5	41,918	3,184	7,211	5,719	0	5,679	9,370	73,081
	COD	291,130	22,117	28,844	20,759	0	8,045	22,309	393,204
	Ammonia	1,847	140	213	267	0	62	129	2,658
	Total Coliform[1]	2.50E+11	1.90E+10	9.26E+09	1.37E+10	0	2.46E+08	1.75E+10	3.09E+11
	Fecal Coliform[1]	1.18E+11	9.00E+09	6.90E+09	6.34E+09	0	3.74E+07	8.30E+09	1.49E+11
	Fecal Enterococcus[1]	1.15E+10	8.76E+08	2.00E+09	1.03E+09	0	1.82E+07	8.08E+08	1.63E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

Table C12

Revised Average Annual Wet Weather Pollutant Loads
Alternative A (2015)

Pollutant	Total Pollutant Load				
	Santa Monica Bay Watershed		Dominguez Channel Watershed		Total
	(lbs/year)	% of Total	(lbs/year)	% of Total	(lbs/year)
TSS	226,349	64	127,294	36	353,644
Total P	1,330	62	818	38	2,148
TKN	6,473	62	3,884	38	10,358
Total Cu	269	62	167	38	436
Total Pb	51	61	32	39	83
Total Zn	1,469	60	959	40	2,428
O&G	11,356	62	7,036	38	18,392
BOD5	46,484	64	26,597	36	73,081
COD	244,483	62	148,721	38	393,204
Ammonia	1,696	64	962	36	2,658
Total Coliform[1]	1.92E+11	62	1.17E+11	38	3.09E+11
Fecal Coliform[1]	9.21E+10	62	5.69E+10	38	1.49E+11
Fecal Enterococcus[1]	9.98E+09	61	6.29E+09	39	1.63E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

Table C13

Revised Average Annual Storm Water Runoff
Alternative B - 2005

Region within Hydrology and Water Quality Study Area	Land Use Classifications							Runoff Subtotals (ft^3)
	Airport Operations (ft^3)	Airport Open Space (ft^3)	Industrial (ft^3)	Commercial (ft^3)	Residential (ft^3)	Open Space (ft^3)	Transportation (ft^3)	
Santa Monica Bay Watershed								
	58,476,686	7,246,642	1,660,449	577,548	0	7,876,756	4,407,410	80,245,490
Dominguez Channel Watershed								
	43,279,967	1,067,335	1,118,998	72,193	0	1,883,572	2,605,732	50,027,798
Runoff Totals								
	101,756,654	**8,313,977**	**2,779,447**	**649,741**	**0**	**9,760,327**	**7,013,141**	**130,273,288**

Source: Camp Dresser & McKee Inc., 2003.

Table C14

Revised Estimated Pollutant Loads
Alternative B (2005)

Region within Hydrology and Water Quality Study Area	Parameter	Land Use Classifications							Pollutant Load Subtotals
		Airport Operations (lbs/yr)	Airport Open Space (lbs/yr)	Industrial (lbs/yr)	Commercial (lbs/yr)	Residential (lbs/yr)	Open Space (lbs/yr)	Transportation (lbs/yr)	(lbs/yr)
Santa Monica Bay Watershed									
	TSS	69,397	8,600	24,878	2,380	0	91,461	21,461	218,177
	Total P	876	109	42	14	0	79	121	1,241
	TKN	3,906	484	311	123	0	388	523	5,735
	Total Cu	204	25	3	1	0	7	15	257
	Total Pb	37	5	2	1	0	0	3	46
	Total Zn	1,062	132	66	9	0	23	80	1,372
	O&G	8,360	1,036	176	119	0	0	853	10,544
	BOD_5	24,021	2,977	2,073	973	0	5,901	5,778	41,723
	COD	166,831	20,674	8,293	3,533	0	8,359	13,757	221,448
	Ammonia	1,059	131	61	45	0	64	80	1,440
	Total Coliform[1]	1.43E+11	1.77E+10	2.66E+09	2.33E+09	0	2.56E+08	1.08E+10	1.77E+11
	Fecal Coliform[1]	6.79E+10	8.41E+09	1.98E+09	1.08E+09	0	3.89E+07	5.12E+09	8.45E+10
	Fecal Enterococcus[1]	6.61E+09	8.19E+08	5.76E+08	1.76E+08	0	1.89E+07	4.98E+08	8.70E+09
Dominguez Channel Watershed									
	TSS	51,362	1,267	16,766	297	0	21,871	12,688	104,252
	Total P	648	16	29	2	0	19	72	785
	TKN	2,891	71	210	15	0	93	309	3,589
	Total Cu	151	4	2	0	0	2	9	168
	Total Pb	27	1	1	0	0	0	2	31
	Total Zn	786	19	45	1	0	5	47	904
	O&G	6,187	153	119	15	0	0	504	6,978
	BOD_5	17,778	438	1,397	122	0	1,411	3,416	24,563
	COD	123,475	3,045	5,589	442	0	1,999	8,133	142,683
	Ammonia	784	19	41	6	0	15	47	912
	Total Coliform[1]	1.06E+11	2.61E+09	1.79E+09	2.91E+08	0	6.11E+07	6.37E+09	1.17E+11
	Fecal Coliform[1]	5.02E+10	1.24E+09	1.34E+09	1.35E+08	0	9.29E+06	3.03E+09	5.60E+10
	Fecal Enterococcus[1]	4.89E+09	1.21E+08	3.88E+08	2.20E+07	0	4.52E+06	2.94E+08	5.72E+09
Total Pollutant Loading									
	TSS	120,760	9,867	41,643	2,677	0	113,332	34,149	322,429
	Total P	1,525	125	71	16	0	97	193	2,026
	TKN	6,797	555	521	138	0	481	832	9,324
	Total Cu	356	29	6	2	0	9	25	426
	Total Pb	64	5	3	1	0	0	4	77
	Total Zn	1,849	151	111	10	0	28	127	2,276
	O&G	14,547	1,189	295	134	0	0	1,357	17,522
	BOD_5	41,799	3,415	3,470	1,095	0	7,312	9,194	66,285
	COD	290,306	23,719	13,881	3,975	0	10,358	21,891	364,131
	Ammonia	1,842	151	102	51	0	79	127	2,352
	Total Coliform[1]	2.49E+11	2.03E+10	4.46E+09	2.62E+09	0	3.17E+08	1.72E+10	2.94E+11
	Fecal Coliform[1]	1.18E+11	9.65E+09	3.32E+09	1.21E+09	0	4.82E+07	8.14E+09	1.41E+11
	Fecal Enterococcus[1]	1.15E+10	9.40E+08	9.64E+08	1.98E+08	0	2.34E+07	7.93E+08	1.44E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

Table C15

Revised Average Annual Wet Weather Pollutant Loads
Alternative B (2005)

Pollutant	Total Pollutant Load				
	Santa Monica Bay Watershed		Dominguez Channel Watershed		Total
	(lbs/year)	% of Total	(lbs/year)	% of Total	(lbs/year)
TSS	218,177	68	104,252	32	322,429
Total P	1,241	61	785	39	2,026
TKN	5,735	62	3,589	38	9,324
Total Cu	257	60	168	40	426
Total Pb	46	60	31	40	77
Total Zn	1,372	60	904	40	2,276
O&G	10,544	60	6,978	40	17,522
BOD5	41,723	63	24,563	37	66,285
COD	221,448	61	142,683	39	364,131
Ammonia	1,440	61	912	39	2,352
Total Coliform[1]	1.77E+11	60	1.17E+11	40	2.94E+11
Fecal Coliform[1]	8.45E+10	60	5.60E+10	40	1.41E+11
Fecal Enterococcus[1]	8.70E+09	60	5.72E+09	40	1.44E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

Table C16

Revised Average Annual Storm Water Runoff
Alternative B (2015)

Region within Hydrology and Water Quality Study Area	Land Use Classifications							Runoff Subtotals (ft^3)
	Airport Operations (ft^3)	Airport Open Space (ft^3)	Industrial (ft^3)	Commercial (ft^3)	Residential (ft^3)	Open Space (ft^3)	Transportation (ft^3)	
Santa Monica Bay Watershed								
	57,285,495	6,347,834	4,151,123	1,479,966	0	7,394,187	4,928,556	81,587,160
Dominguez Channel Watershed								
	45,012,610	1,366,938	324,870	72,193	0	1,307,604	2,501,503	50,585,718
Runoff Totals								
	102,298,104	**7,714,771**	**4,475,993**	**1,552,159**	**0**	**8,701,791**	**7,430,059**	**132,172,878**

Source: Camp Dresser & McKee Inc., 2003.

Table C17

Revised Estimated Pollutant Loads
Alternative B (2015)

Region within Hydrology and Water Quality Study Area	Parameter	Land Use Classifications							Pollutant Load Subtotals
		Airport Operations (lbs/yr)	Airport Open Space (lbs/yr)	Industrial (lbs/yr)	Commercial (lbs/yr)	Residential (lbs/yr)	Open Space (lbs/yr)	Transportation (lbs/yr)	(lbs/yr)
Santa Monica Bay Watershed									
	TSS	67,984	7,533	62,195	6,098	0	85,858	23,999	253,666
	Total P	858	95	106	36	0	74	135	1,305
	TKN	3,827	424	777	314	0	365	585	6,291
	Total Cu	200	22	8	4	0	7	17	259
	Total Pb	36	4	4	2	0	0	3	49
	Total Zn	1,041	115	166	22	0	21	90	1,455
	O&G	8,189	907	441	305	0	0	954	10,796
	BOD_5	23,531	2,608	5,183	2,495	0	5,539	6,461	45,817
	COD	163,432	18,110	20,732	9,054	0	7,847	15,384	234,559
	Ammonia	1,037	115	153	116	0	60	89	1,571
	Total Coliform[1]	1.40E+11	1.55E+10	6.66E+09	5.96E+09	0	2.40E+08	1.21E+10	1.81E+11
	Fecal Coliform[1]	6.65E+10	7.37E+09	4.96E+09	2.76E+09	0	3.65E+07	5.72E+09	8.74E+10
	Fecal Enterococcus[1]	6.47E+09	7.17E+08	1.44E+09	4.51E+08	0	1.77E+07	5.57E+08	9.66E+09
Dominguez Channel Watershed									
	TSS	53,419	1,622	4,867	297	0	15,183	12,181	87,570
	Total P	674	20	8	2	0	13	69	787
	TKN	3,007	91	61	15	0	64	297	3,535
	Total Cu	157	5	1	0	0	1	9	173
	Total Pb	28	1	0	0	0	0	2	31
	Total Zn	818	25	13	1	0	4	45	906
	O&G	6,435	195	34	15	0	0	484	7,164
	BOD_5	18,490	562	406	122	0	980	3,279	23,838
	COD	128,418	3,900	1,622	442	0	1,388	7,808	143,578
	Ammonia	815	25	12	6	0	11	45	913
	Total Coliform[1]	1.10E+11	3.34E+09	5.21E+08	2.91E+08	0	4.24E+07	6.12E+09	1.20E+11
	Fecal Coliform[1]	5.23E+10	1.59E+09	3.88E+08	1.35E+08	0	6.45E+06	2.90E+09	5.73E+10
	Fecal Enterococcus[1]	5.09E+09	1.54E+08	1.13E+08	2.20E+07	0	3.14E+06	2.83E+08	5.66E+09
Total Pollutant Loading									
	TSS	121,402	9,156	67,062	6,395	0	101,041	36,180	341,236
	Total P	1,533	116	115	38	0	87	204	2,092
	TKN	6,833	515	838	329	0	429	881	9,827
	Total Cu	358	27	9	4	0	8	26	431
	Total Pb	64	5	5	2	0	0	5	80
	Total Zn	1,858	140	179	23	0	25	135	2,361
	O&G	14,624	1,103	475	320	0	0	1,438	17,960
	BOD_5	42,021	3,169	5,589	2,616	0	6,519	9,741	69,655
	COD	291,851	22,010	22,354	9,496	0	9,235	23,192	378,138
	Ammonia	1,852	140	165	122	0	71	135	2,484
	Total Coliform[1]	2.50E+11	1.89E+10	7.18E+09	6.25E+09	0	2.82E+08	1.82E+10	3.01E+11
	Fecal Coliform[1]	1.19E+11	8.96E+09	5.35E+09	2.90E+09	0	4.29E+07	8.63E+09	1.45E+11
	Fecal Enterococcus[1]	1.16E+10	8.72E+08	1.55E+09	4.73E+08	0	2.09E+07	8.40E+08	1.53E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2000

Table C18

Revised Average Annual Wet Weather Pollutant Loads
Alternative B (2015)

Pollutant	Total Pollutant Load				
	Santa Monica Bay Watershed		Dominguez Channel Watershed		Total
	(lbs/year)	% of Total	(lbs/year)	% of Total	(lbs/year)
TSS	253,666	74	87,570	26	341,236
Total P	1,305	62	787	38	2,092
TKN	6,291	64	3,535	36	9,827
Total Cu	259	60	173	40	431
Total Pb	49	61	31	39	80
Total Zn	1,455	62	906	38	2,361
O&G	10,796	60	7,164	40	17,960
BOD5	45,817	66	23,838	34	69,655
COD	234,559	62	143,578	38	378,138
Ammonia	1,571	63	913	37	2,484
Total Coliform[1]	1.81E+11	60	1.20E+11	40	3.01E+11
Fecal Coliform[1]	8.74E+10	60	5.73E+10	40	1.45E+11
Fecal Enterococcus[1]	9.66E+09	63	5.66E+09	37	1.53E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

Table C19

Revised Average Annual Storm Water Runoff
Alternative C - 2005

Region within Hydrology and Water Quality Study Area	Land Use Classifications							Runoff Subtotals (ft^3)
	Airport Operations (ft^3)	Airport Open Space (ft^3)	Industrial (ft^3)	Commercial (ft^3)	Residential (ft^3)	Open Space (ft^3)	Transportation (ft^3)	
Santa Monica Bay Watershed								
	59,451,298	7,321,543	1,010,708	649,741	0	8,047,989	3,648,025	80,129,304
Dominguez Channel Watershed								
	38,767,877	1,835,067	3,970,639	1,299,482	0	1,432,137	2,605,732	49,910,935
Runoff Totals								
	98,219,175	**9,156,610**	**4,981,347**	**1,949,223**	**0**	**9,480,127**	**6,253,757**	**130,040,239**

Source: Camp Dresser & McKee Inc., 2003.

Table C20

Revised Estimated Pollutant Loads
Alternative C (2005)

Region within Hydrology and Water Quality Study Area	Parameter	Land Use Classifications							Pollutant Load Subtotals
		Airport Operations (lbs/yr)	Airport Open Space (lbs/yr)	Industrial (lbs/yr)	Commercial (lbs/yr)	Residential (lbs/yr)	Open Space (lbs/yr)	Transportation (lbs/yr)	(lbs/yr)
Santa Monica Bay Watershed									
	TSS	70,554	8,689	15,143	2,677	0	93,450	17,764	208,276
	Total P	891	110	26	16	0	80	100	1,223
	TKN	3,971	489	189	138	0	397	433	5,617
	Total Cu	208	26	2	2	0	8	13	257
	Total Pb	37	5	1	1	0	0	2	46
	Total Zn	1,080	133	40	10	0	23	66	1,353
	O&G	8,499	1,047	107	134	0	0	706	10,493
	BOD_5	24,421	3,007	1,262	1,095	0	6,029	4,782	40,597
	COD	169,611	20,888	5,048	3,975	0	8,541	11,387	219,450
	Ammonia	1,076	133	37	51	0	65	66	1,429
	Total Coliform[1]	1.45E+11	1.79E+10	1.62E+09	2.62E+09	0	2.61E+08	8.92E+09	1.77E+11
	Fecal Coliform[1]	6.90E+10	8.50E+09	1.21E+09	1.21E+09	0	3.97E+07	4.24E+09	8.42E+10
	Fecal Enterococcus[1]	6.72E+09	8.27E+08	3.51E+08	1.98E+08	0	1.93E+07	4.12E+08	8.53E+09
Dominguez Channel Watershed									
	TSS	46,008	2,178	59,491	5,354	0	16,629	12,688	142,348
	Total P	581	27	102	32	0	14	72	827
	TKN	2,590	123	744	276	0	71	309	4,111
	Total Cu	136	6	8	3	0	1	9	163
	Total Pb	24	1	4	1	0	0	2	33
	Total Zn	704	33	159	20	0	4	47	967
	O&G	5,542	262	421	268	0	0	504	6,998
	BOD_5	15,925	754	4,958	2,190	0	1,073	3,416	28,315
	COD	110,603	5,235	19,830	7,950	0	1,520	8,133	153,272
	Ammonia	702	33	146	102	0	12	47	1,042
	Total Coliform[1]	9.5E+10	4.5E+09	6.4E+09	5.2E+09	0	4.6E+07	6.4E+09	1.2E+11
	Fecal Coliform[1]	4.5E+10	2.1E+09	4.7E+09	2.4E+09	0	7.1E+06	3.0E+09	5.7E+10
	Fecal Enterococcus[1]	4.4E+09	2.1E+08	1.4E+09	4.0E+08	0	3.4E+06	2.9E+08	6.7E+09
Total Pollutant Loading									
	TSS	116,562	10,867	74,634	8,031	0	110,079	30,452	350,624
	Total P	1,472	137	127	47	0	95	172	2,050
	TKN	6,561	612	933	414	0	468	742	9,728
	Total Cu	343	32	10	5	0	9	22	421
	Total Pb	61	6	5	2	0	0	4	78
	Total Zn	1,784	166	199	29	0	27	114	2,320
	O&G	14,041	1,309	529	402	0	0	1,210	17,491
	BOD_5	40,346	3,761	6,219	3,286	0	7,102	8,199	68,913
	COD	280,214	26,123	24,878	11,925	0	10,061	19,520	372,722
	Ammonia	1,778	166	183	153	0	77	113	2,471
	Total Coliform[1]	2.4E+11	2.2E+10	8.0E+09	7.8E+09	0	3.1E+08	1.5E+10	2.9E+11
	Fecal Coliform[1]	1.1E+11	1.1E+10	5.9E+09	3.6E+09	0	4.7E+07	7.3E+09	1.4E+11
	Fecal Enterococcus[1]	1.1E+10	1.0E+09	1.7E+09	5.9E+08	0	2.3E+07	7.1E+08	1.5E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

Table C21

Revised Average Annual Wet Weather Pollutant Loads
Alternative C (2005)

Pollutant	Total Pollutant Load				
	Santa Monica Bay Watershed		Dominguez Channel Watershed		Total
	(lbs/year)	% of Total	(lbs/year)	% of Total	(lbs/year)
TSS	208,276	59	142,348	41	350,624
Total P	1,223	60	827	40	2,050
TKN	5,617	58	4,111	42	9,728
Total Cu	257	61	163	39	421
Total Pb	46	58	33	42	78
Total Zn	1,353	58	967	42	2,320
O&G	10,493	60	6,998	40	17,491
BOD5	40,597	59	28,315	41	68,913
COD	219,450	59	153,272	41	372,722
Ammonia	1,429	58	1,042	42	2,471
Total Coliform[1]	1.8E+11	60	1.2E+11	40	2.9E+11
Fecal Coliform[1]	8.4E+10	59	5.7E+10	41	1.4E+11
Fecal Enterococcus[1]	8.5E+09	56	6.7E+09	44	1.5E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

Table C22

Revised Average Annual Storm Water Runoff
Alternative C (2015)

Region within Hydrology and Water Quality Study Area	Land Use Classifications							Runoff Subtotals (ft^3)
	Airport Operations (ft^3)	Airport Open Space (ft^3)	Industrial (ft^3)	Commercial (ft^3)	Residential (ft^3)	Open Space (ft^3)	Transportation (ft^3)	
Santa Monica Bay Watershed								
	61,075,650	6,666,162	2,526,770	1,624,352	0	6,631,419	3,990,492	82,514,846
Dominguez Channel Watershed								
	38,515,200	1,966,143	4,078,929	866,321	0	1,385,437	3,007,759	49,819,791
Runoff Totals								
	99,590,850	**8,632,305**	**6,605,700**	**2,490,674**	**0**	**8,016,856**	**6,998,252**	**132,334,636**

Source: Camp Dresser & McKee Inc., 2003.

Table C23

Revised Estimated Pollutant Loads
Alternative C (2015)

Region within Hydrology and Water Quality Study Area	Parameter	Land Use Classifications						Transportation (lbs/yr)	Pollutant Load Subtotals (lbs/yr)
		Airport Operations (lbs/yr)	Airport Open Space (lbs/yr)	Industrial (lbs/yr)	Commercial (lbs/yr)	Residential (lbs/yr)	Open Space (lbs/yr)		
Santa Monica Bay Watershed									
	TSS	72,482	7,911	37,858	6,693	0	77,001	19,431	221,375
	Total P	915	100	65	40	0	66	110	1,295
	TKN	4,080	445	473	345	0	327	473	6,143
	Total Cu	214	23	5	4	0	6	14	266
	Total Pb	38	4	3	2	0	0	2	49
	Total Zn	1,110	121	101	24	0	19	72	1,448
	O&G	8,731	953	268	335	0	0	772	11,059
	BOD_5	25,088	2,738	3,155	2,738	0	4,968	5,231	43,919
	COD	174,245	19,018	12,619	9,938	0	7,038	12,456	235,314
	Ammonia	1,106	121	93	128	0	54	72	1,573
	Total Coliform[1]	1.49E+11	1.63E+10	4.05E+09	6.54E+09	0	2.15E+08	9.76E+09	1.86E+11
	Fecal Coliform[1]	7.09E+10	7.74E+09	3.02E+09	3.03E+09	0	3.27E+07	4.63E+09	8.94E+10
	Fecal Enterococcus[1]	6.90E+09	7.53E+08	8.76E+08	4.95E+08	0	1.59E+07	4.51E+08	9.49E+09
Dominguez Channel Watershed									
	TSS	45,708	2,333	61,113	3,569	0	16,087	14,646	143,457
	Total P	577	29	104	21	0	14	83	828
	TKN	2,573	131	764	184	0	68	357	4,077
	Total Cu	135	7	8	2	0	1	11	164
	Total Pb	24	1	4	1	0	0	2	32
	Total Zn	700	36	163	13	0	4	55	970
	O&G	5,506	281	433	178	0	0	582	6,981
	BOD_5	15,821	808	5,093	1,460	0	1,038	3,943	28,163
	COD	109,882	5,609	20,371	5,300	0	1,470	9,388	152,021
	Ammonia	697	36	150	68	0	11	54	1,017
	Total Coliform[1]	9.42E+10	4.81E+09	6.54E+09	3.49E+09	0	4.49E+07	7.36E+09	1.16E+11
	Fecal Coliform[1]	4.47E+10	2.28E+09	4.87E+09	1.62E+09	0	6.83E+06	3.49E+09	5.70E+10
	Fecal Enterococcus[1]	4.35E+09	2.22E+08	1.41E+09	2.64E+08	0	3.32E+06	3.40E+08	6.60E+09
Total Pollutant Loading									
	TSS	118,189	10,244	98,971	10,262	0	93,088	34,077	364,832
	Total P	1,492	129	169	61	0	80	192	2,123
	TKN	6,652	577	1,237	529	0	395	830	10,220
	Total Cu	348	30	13	6	0	8	24	430
	Total Pb	62	5	7	3	0	0	4	82
	Total Zn	1,809	157	264	37	0	23	127	2,418
	O&G	14,237	1,234	701	513	0	0	1,354	18,040
	BOD_5	40,909	3,546	8,248	4,198	0	6,006	9,175	72,081
	COD	284,127	24,627	32,990	15,238	0	8,508	21,844	387,335
	Ammonia	1,803	156	243	196	0	65	127	2,590
	Total Coliform[1]	2.44E+11	2.11E+10	1.06E+10	1.00E+10	0	2.60E+08	1.71E+10	3.03E+11
	Fecal Coliform[1]	1.16E+11	1.00E+10	7.89E+09	4.65E+09	0	3.96E+07	8.12E+09	1.46E+11
	Fecal Enterococcus[1]	1.13E+10	9.76E+08	2.29E+09	7.59E+08	0	1.92E+07	7.91E+08	1.61E+10

* Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

Table C24

Revised Average Annual Wet Weather Pollutant Loads
Alternative C (2015)

Pollutant	Total Pollutant Load				
	Santa Monica Bay Watershed		Dominguez Channel Watershed		Total
	(lbs/year)	% of Total	(lbs/year)	% of Total	(lbs/year)
TSS	221,375	61	143,457	39	364,832
Total P	1,295	61	828	39	2,123
TKN	6,143	60	4,077	40	10,220
Total Cu	266	62	164	38	430
Total Pb	49	60	32	40	82
Total Zn	1,448	60	970	40	2,418
O&G	11,059	61	6,981	39	18,040
BOD5	43,919	61	28,163	39	72,081
COD	235,314	61	152,021	39	387,335
Ammonia	1,573	61	1,017	39	2,590
Total Coliform[1]	1.9E+11	62	1.2E+11	38	3.0E+11
Fecal Coliform[1]	8.9E+10	61	5.7E+10	39	1.5E+11
Fecal Enterococcus[1]	9.5E+09	59	6.6E+09	41	1.6E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

Table C25

Average Annual Storm Water Runoff
Alternative D (2015)

Region within Hydrology and Water Quality Study Area	Land Use Classification							Runoff Subtotals
	Airport Operations	Airport Open Space	Industrial	Commercial	Residential	Open Space	Transportation	
	(ft^3)	(ft^3)	(ft^3)	(ft^3)	(ft^3)	(ft^3)	(ft^3)	(ft^3)
Santa Monica Bay Watershed								
	56,441,770	6,745,952	3,461,185	3,875,625	0	7,472,715	2,858,860	80,856,107
Dominguez Channel Watershed								
	42,297,017	0	8,038,126	561,553	473,531	136,939	2,709,961	54,217,128
Runoff Totals								
	98,738,787	**6,745,952**	**11,499,310**	**4,437,178**	**473,531**	**7,609,654**	**5,568,821**	**135,073,235**

Source: Camp Dresser & McKee Inc., 2003.

Table C26

Estimated Pollutant Loads
Alternative D (2015)

Region within Hydrology and Water Quality Study Area	Parameter	Land Use Classifications							Pollutant Load Subtotals
		Airport Operations (lbs/yr)	Airport Open Space (lbs/yr)	Industrial (lbs/yr)	Commercial (lbs/yr)	Residential (lbs/yr)	Open Space (lbs/yr)	Transportation (lbs/yr)	(lbs/yr)
Santa Monica Bay Watershed									
	TSS	66,982	8,006	51,858	15,968	0	86,770	13,921	243,505
	Total P	846	101	89	94	0	75	79	1,283
	TKN	3,770	451	648	823	0	369	339	6,399
	Total Cu	197	24	7	9	0	7	10	254
	Total Pb	35	4	4	4	0	0	2	49
	Total Zn	1,025	123	138	58	0	21	52	1,418
	O&G	8,069	964	367	798	0	0	553	10,752
	BOD_5	23,185	2,771	4,321	6,533	0	5,598	3,748	46,156
	COD	161,025	19,246	17,286	23,711	0	7,931	8,924	238,122
	Ammonia	1,022	122	127	305	0	61	52	1,689
	Total Coliform[1]	1.38E+11	1.65E+10	5.55E+09	1.56E+10	0	2.42E+08	6.99E+09	1.83E+11
	Fecal Coliform[1]	6.55E+10	7.83E+09	4.13E+09	7.24E+09	0	3.69E+07	3.32E+09	8.81E+10
	Fecal Enterococcus[1]	6.38E+09	7.62E+08	1.20E+09	1.18E+09	0	1.79E+07	3.23E+08	9.86E+09
Dominguez Channel Watershed									
	TSS	50,196	0	120,432	2,314	2,808	1,590	13,196	190,536
	Total P	634	0	206	14	12	1	74	940
	TKN	2,825	0	1,505	119	86	7	321	4,864
	Total Cu	148	0	16	1	0	0	9	175
	Total Pb	26	0	9	1	0	0	2	38
	Total Zn	768	0	321	8	2	0	49	1,150
	O&G	6,047	0	853	116	38	0	524	7,578
	BOD_5	17,375	0	10,036	947	473	103	3,553	32,485
	COD	120,671	0	40,144	3,436	2,631	145	8,459	175,486
	Ammonia	766	0	296	44	12	1	49	1,168
	Total Coliform[1]	1.03E+11	0	1.29E+10	2.26E+09	2.29E+09	4.44E+06	6.63E+09	1.28E+11
	Fecal Coliform[1]	4.91E+10	0	9.60E+09	1.05E+09	1.56E+09	6.76E+05	3.15E+09	6.45E+10
	Fecal Enterococcus[1]	4.78E+09	0	2.79E+09	1.71E+08	1.02E+09	3.28E+05	3.06E+08	9.07E+09
Total Pollutant Loading									
	TSS	117,178	8,006	172,290	18,282	2,808	88,360	27,117	434,041
	Total P	1,479	101	294	108	12	76	153	2,223
	TKN	6,596	451	2,154	942	86	375	661	11,263
	Total Cu	345	24	23	11	0	7	19	430
	Total Pb	62	4	12	5	0	0	3	87
	Total Zn	1,794	123	459	67	2	22	101	2,568
	O&G	14,116	964	1,220	914	38	0	1,078	18,331
	BOD_5	40,559	2,771	14,358	7,479	473	5,701	7,301	78,641
	COD	281,696	19,246	57,430	27,146	2,631	8,076	17,382	413,608
	Ammonia	1,788	122	424	349	12	62	101	2,857
	Total Coliform[1]	2.41E+11	1.65E+10	1.84E+10	1.79E+10	2.29E+09	2.47E+08	1.36E+10	3.10E+11
	Fecal Coliform[1]	1.15E+11	7.83E+09	1.37E+10	8.29E+09	1.56E+09	3.75E+07	6.47E+09	1.53E+11
	Fecal Enterococcus[1]	1.12E+10	7.62E+08	3.99E+09	1.35E+09	1.02E+09	1.82E+07	6.29E+08	1.89E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

Table C27

Average Annual Wet Weather Pollutant Loads
Alternative D (2015)

Pollutant	Total Pollutant Load				
	Santa Monica Bay Watershed		Dominguez Channel Watershed		Total
	(lbs/year)	% of Total	(lbs/year)	% of Total	(lbs/year)
TSS	243,505	56	190,536	44	434,041
Total P	1,283	58	940	42	2,223
TKN	6,399	57	4,864	43	11,263
Total Cu	254	59	175	41	430
Total Pb	49	57	38	43	87
Total Zn	1,418	55	1,150	45	2,568
O&G	10,752	59	7,578	41	18,331
BOD_5	46,156	59	32,485	41	78,641
COD	238,122	58	175,486	42	413,608
Ammonia	1,689	59	1,168	41	2,857
Total Coliform[1]	1.83E+11	59	1.28E+11	41	3.10E+11
Fecal Coliform[1]	8.81E+10	58	6.45E+10	42	1.53E+11
Fecal Enterococcus[1]	9.86E+09	52	9.07E+09	48	1.89E+10

[1] Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003.

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