

Technical Report
LAX Master Plan Supplement to the Draft EIS/EIR

**S-6. Supplemental Energy Supply
Technical Report**

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1. INTRODUCTION

This Technical Report presents detailed information related to energy consumption associated with implementation of Alternative D - Enhanced Safety and Security Plan, 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 Year 2000 conditions and analysis results for Alternative D that are supplemental to the material presented in Section 4.17.1 *Energy Supply*, of the Supplement to the Draft EIS/EIR, and to Technical Report 8, *Energy Supply Technical Report*, of the Draft EIS/EIR. Impacts associated with the information contained in this Technical Report are addressed in Section 4.17.1, *Energy Supply*, of the Supplement to the Draft EIS/EIR.

Technical Report 8, *Energy Supply Technical Report*, of the Draft EIS/EIR provides detailed information pertaining to the general approach and methodology used in the analysis, factors and equations used to develop projected electricity, natural gas, and transportation-related fuel consumption, and analysis results for the No Action/No Project Alternative and Alternatives A, B, and C.

2. YEAR 2000 ENERGY CONSUMPTION

The Draft EIS/EIR provided information pertaining to baseline energy consumption, including calculations of energy use for the 1996 baseline year. Changes at LAX have occurred since 1996 that affect these calculated energy consumption values, including the construction of an additional 466,000 square feet of cargo uses, an additional 15,000 square feet of terminal facilities, and a 9,000-square-foot child care facility within LAX Northside. In addition, since 1996, LAWA has initiated the purchase of residential uses within the Belford and Manchester Square areas as part of a voluntary acquisition associated with the Aircraft Noise Mitigation Program (ANMP). As of 2000, 147 single-family dwelling units and 142 multi-family dwelling units in Manchester Square, and 245 multi-family dwelling units in Belford had been purchased. The on-airport vehicle fleet mix assumptions, presented in **Table S1**, On-Airport Vehicle Fleet Mix Assumptions, and the annual vehicle miles traveled by on-airport vehicles, presented in **Table S2**, Annual Vehicle Miles Traveled by On-Airport Vehicles, were assumed to remain unchanged since baseline conditions.

In order to calculate Year 2000 electricity and natural gas consumption, including airport operations, the methods and factors described in Section 2, General Approach and Methodology, of Technical Report 8, *Energy Supply Technical Report*, of the Draft EIS/EIR were used. For purposes of comparison, electricity and natural gas consumption in the 1996 baseline year are provide in **Table S3**, 1996 Baseline Electricity Consumption Based on Facility Areas, and **Table S4**, 1996 Baseline Natural Gas Consumption Based on Facility Areas, respectively. **Table S5**, Electricity Consumption Based on Facility Areas Under Year 2000 Conditions, **Table S6** Natural Gas Consumption Based on Facility Areas Under Year 2000 Conditions, and **Table S7**, Year 2000 Conditions Energy Consumption Estimate for GSE, provide the electricity, natural gas, and fuel consumption factors, facility areas, and other information used to estimate energy consumption for Year 2000 conditions. Year 2000 electricity and natural gas consumption for facility areas and operations within the Master Plan boundaries is estimated to be 313,689 MWH/Yr and 1,766 MMCF/Yr, respectively. For comparison, electricity and natural gas consumption associated with the 1996 baseline conditions was estimated to be 287,898 MWH/Yr and 1,787 MMCF/Yr (see Table S4.17.1-3, Energy Consumption within Master Plan Boundaries, in Section 4.17.1, *Energy Supply*, of the Supplement to the Draft EIS/EIR for consolidated energy information).

Energy consumption in the Year 2000 associated with specific uses at LAX is provided in tables presented in Section 3, *Environmental Consequences*, below. Results pertaining to Year 2000 conditions are summarized herein. Using the methods described in Section 2, *General Approach and Methodology*, of Technical Report 8, *Energy Supply Technical Report*, of the Draft EIS/EIR, estimates of Liquefied Natural Gas (LNG), Compressed Natural Gas (CNG), and propane consumption were calculated. LNG and CNG consumption by GSE increased under Year 2000 conditions as compared to 1996 baseline (see **Table S14**, GSE Energy Consumption, below). Estimates of diesel and gasoline were also calculated. Year 2000 diesel and gasoline consumption is estimated to be 24.8 million gallons/year and 113.8 million gallons/year, respectively (see **Table S16**, Daily Vehicle Miles Traveled and Gasoline and Diesel Consumption for Off-Airport Vehicles, below). For comparison, diesel and gasoline consumption

associated with the 1996 baseline conditions was estimated to be 27.7 million gallons/year and 142.5 million gallons/year.

3. ENVIRONMENTAL CONSEQUENCES

To determine the projected electricity and natural gas consumption under each of the alternatives, usage factors for each land use were multiplied by the square footage or units of that land use. **Table S8**, Land Uses Included in the Alternatives, presents a comparison of the land use types included in the alternatives. Projected electricity and natural gas usage for the No Action/No Project Alternative and Alternatives A, B, and C are presented in Tables 13 through 16 and Tables 20 through 23 of Technical Report 8, *Energy Supply Technical Report*, of the Draft EIS/EIR. **Table S9**, Electricity Consumption Based on Facility Areas Under Alternative D, and **Table S10**, Natural Gas Consumption Based on Facility Areas Under Alternative D, present estimated electricity and natural gas consumption under Alternative D.

Electricity consumption for airport operations includes the Central Utility Plant (CUP) (presented in **Table S11**, Estimated Electricity Consumption at the Central Utility Plant and **Table S12**, Estimated Natural Gas Consumption at the Central Utility Plant), gate electrification (presented in **Table S13**, Estimated Annual Power Consumption for Gate Electrification), Automated People Mover (APM), and electric Ground Support Equipment (GSE) (presented in **Table S14**, GSE Energy Consumption) and on-airport vehicles. A consolidated summary of electricity consumption for airport operations is provided in **Table S15**, Electricity Consumption by Airport Operations. Off-airport energy consumption associated with vehicles is identified in **Table S16**, Daily Vehicle Miles Traveled and Gas and Diesel Consumption for Off-Airport Vehicles. Construction-related fuel consumption is provided in **Table S17**, Construction-Related Consumption of Gasoline and Diesel.

A discussion of the environmental consequences of energy consumption projected for Alternative D is included in Section 4.17.1, *Energy Supply*, of the Supplement to the Draft EIS/EIR. Table S4.17.1-3, Energy Consumption within Master Plan Boundaries, in Section 4.17.1, *Energy Supply*, of the Supplement to the Draft EIS/EIR provides a presentation of energy use information associated with Alternative D in a consolidated format.

Table S1
On-Airport Vehicle Fleet Mix Assumptions

Vehicle Type	Percentage of Fleet																							
	Baseline Conditions							No Action/No Project Alternative 2015							Alternatives A, B, C, D - 2015									
	Diesel	Gasoline	CNG	LNG	Propane	Battery	Fuel Cell	Hybrid	Diesel	Gasoline	CNG	LNG	Propane	Battery	Fuel Cell	Hybrid	Diesel	Gasoline	CNG	LNG	Propane	Battery	Fuel Cell	Hybrid
Cargo																								
Light Duty Auto		100.0							95.0	5.0							49.0	29.0					8.0	14.0
Pickup	18.0	81.0			1.0			9.0	81.0	1.0				2.0	2.5	4.5	9.0	41.0	29.0				8.0	13.0
Van	6.0	94.0						18.5	65.5	1.0				3.0	4.0	8.0	3.0	47.0	30.5				8.0	11.5
Step Van	22.0	78.0						14.0	70.0	1.0	1.0				5.0	9.0	11.0	39.0	35.5				5.5	9.0
Cube Van	84.0	16.0						70.5	16.0	1.0	1.0				4.0	7.5	42.0	8.0	34.0				6.0	10.0
3-Axle	95.0	5.0						89.0	1.0		1.0				3.0	6.0	47.0	2.0		38.0			5.0	8.0
4/5-Axle	100.0							95.0							2.0	3.0	50.0			38.0			5.0	7.0
LAWA																								
Van			33.0			67.0				33.0				67.0								33.3	33.3	33.3
Pickup	11.0	61.0	26.0			2.0		11.0	62.0	26.0				1.0				51.0				10.0	15.0	24.0
Sedan		80.0	19.0			1.0			80.0	19.0				1.0				46.0				10.0	17.5	26.5
Parking Lot Bus	55.0		5.0	40.0							100.0									60.0			17.0	23.0
Airfield Bus	100.0							100.0												59.0			18.0	23.0
Flyaway Bus	100.0							100.0												62.0			15.0	23.0
Construction	100.0							100.0											100.0					
Sweeper	75.0		25.0					80.0		20.0									100.0					
Forklift						100.0								100.0								100.0		
Truck	89.0					11.0		90.0						10.0						80.0		20.0		
Rideshare Van		100.0							100.0										37.5				25.0	37.5
On-Road GSE																								
Van	1.0	98.0			1.0			1.0	95.0				3.0	1.0				45.0	35.0			10.0		10.0
Pickup	81.0	18.0			1.0			81.0	15.0				3.0	1.0			15.0	50.0	15.0			10.0		10.0
Car		99.0				1.0			96.0					4.0				65.0	15.0			10.0		10.0
Truck	53.0	32.0			15.0			53.0	29.0				17.0	1.0				45.0	35.0			10.0		10.0
Bus	90.0	6.0	4.0					90.0	3.0	6.0				1.0					80.0			10.0		10.0
SUV		100.0							97.0	2.0				1.0				65.0	15.0			10.0		10.0
Step Van		78.0			22.0				75.0				24.0	1.0				30.0	35.0			25.0		10.0

Source: JKH Mobility Services and Barton-Aschman, 2000.

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Table S2

Annual Vehicle Miles Traveled by On-Airport Vehicles

Class	Vehicle Type	Miles Traveled Per Year		
		1996	Alternatives 2015	
		Baseline ¹	NA/NP	A, B, C, and D
Cargo	Light Duty Auto	1,954,656	3,990,359	2,666,761
	Pickup	291,304	594,687	397,430
	Van	673,404	1,374,730	918,733
	Step Van	246,536	503,295	336,353
	Cube Van	1,967,248	4,016,065	2,683,940
	3-Axle	250,319	511,019	341,514
LAWA	4/5-Axle	539,732	1,101,843	736,363
	Van	21,840	31,522	36,656
	Pickup	1,303,120	1,880,796	2,187,122
	Sedan	1,645,280	2,374,637	2,761,394
	Parking Lot Bus	1,055,765	1,523,788	1,771,968
	Airfield Bus	174,720	252,174	293,245
	Flyaway Bus	54,990	79,367	92,294
	Construction	40,040	57,790	67,202
	Sweeper	7,280	10,507	12,219
	Forklift	1,820	2,627	3,055
On-Road GSE	Truck	203,840	294,203	342,120
	Van	8,594,550	8,792,637	10,906,039
	Pickup	4,337,150	4,478,034	5,554,377
	Car	4,366,500	4,467,139	5,540,862
	Truck	4,057,650	4,151,170	5,148,948
	Bus	511,200	522,982	648,686
	SUV	276,900	283,282	351,372
	Step Van	244,950	250,596	310,829

¹ Cargo VMT under baseline conditions was estimated using the anticipated ratio of cargo tonnage and VMT presented for the 2005 No Action/No Project Alternative.

Source: Calstart, 1999.

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Table S3

1996 Baseline Electricity Consumption Based on Facility Areas

Land Use	Usage Factor	Unit Type	Building S.F. or Units	Total Consumption (MWH/Yr)
LAX¹				
Airport Land Uses				
Terminal (S.F.)	19.05	KWH/S.F./Yr	3,997,119	76,145
Cargo (S.F.)	13.40	KWH/S.F./Yr	1,900,000 ²	25,460 ²
Maintenance (S.F.)	24.22	KWH/S.F./Yr	1,440,000	34,877
Ancillary (S.F.)	14.17	KWH/S.F./Yr	1,294,000	18,336
Subtotal Airport Uses				154,818
Non-Airport Land Uses				
Belford				
Residential (Multi Family DUs)	5,626.50	KWH/Unit/Yr	583	3,280
Subtotal Non-Airport Uses				3,280
SUBTOTAL AIRPORT AND NON-AIRPORT USES				158,098²
Non-Project Uses Within Master Plan Boundaries³				
Manchester Square				
Residential (Single Family DUs)	5,626.50	KWH/Unit/Yr	280	1,575
Residential (Multi Family DUs)	5,626.50	KWH/Unit/Yr	1,706	9,599
Subtotal Manchester Square				11,174
Land Within Acquisition Areas				
Residential (Single Family DUs)	5,626.50	KWH/Unit/Yr	57	321
Residential (Multi Family DUs)	5,626.50	KWH/Unit/Yr	69	388
Hotel (S.F.)	9.95	KWH/S.F./Yr	1,404,993	13,980
Office (S.F.)	12.95	KWH/S.F./Yr	1,108,312	14,353
Retail (S.F.)	13.55	KWH/S.F./Yr	148,219	2,008
Light Industrial (S.F.)	10.50	KWH/S.F./Yr	3,789,292	39,788
Institutional (S.F.) ⁴	9.31	KWH/S.F./Yr	156,178	1,454
Subtotal Acquisition				72,292
SUBTOTAL NON-PROJECT USES				83,466
TOTAL MASTER PLAN BOUNDARIES				241,564²

S.F. = Square Feet
MWH = megawatt-hour
KWH = kilowatt-hour

Notes: Information in table may not always total, due to rounding.
There is no baseline electricity consumption associated with Continental City or LAX Northside.

- Electricity consumption for airport facilities based on square footage only. Electricity consumed by airport operations including CUP, gate electrification, and electric GSE and on-airport vehicles are not included.
- Modified since publication of the Draft EIS/EIR to correct an error. This modification does not alter the conclusions of the Draft EIS/EIR.
- For the purposes of this analysis, a single composite study area was established, referred to as the "Master Plan boundaries." However, for each alternative, a portion of the study area would not be incorporated into the Master Plan development.
- Based on office land use type from SCAQMD, CEQA Air Quality Handbook, 1993, Table A9-12-A.

Source: Camp Dresser & McKee Inc., 2003.

Table S4

1996 Baseline Natural Gas Consumption Based on Facility Areas

Land Use	Usage Factor	Unit Type	Building S.F. or Units	Total Consumption (MCF/Yr)
LAX¹				
Airport Land Uses				
Terminal (S.F.)	15.18	CF/S.F./Yr	3,997,119	60,676
Cargo (S.F.)	9.84	CF/S.F./Yr	1,900,000 ²	18,696 ²
Maintenance (S.F.)	24.59	CF/S.F./Yr	1,440,000	35,410
Ancillary (S.F.)	142.60	CF/S.F./Yr	1,294,000	184,524
Subtotal Airport Uses				299,306²
Non-Airport Land Uses				
Belford				
Residential (Multi Family DUs)	48,144	CF/Unit/Yr	583	28,068
Subtotal Non-Airport Use				28,068
SUBTOTAL AIRPORT AND NON-AIRPORT USES				327,374²
Non-Project Uses Within Master Plan Boundaries³				
Manchester Square				
Residential (Single Family DUs)	79,980	CF/Unit/Yr	280	22,394
Residential (Multi Family DUs)	48,144	CF/Unit/Yr	1,706	82,134
Subtotal Non-Project Uses				104,528
Land Within Acquisition Areas				
Residential (Single Family DUs)	79,980	CF/Unit/Yr	57	4,559
Residential (Multi Family DUs)	48,144	CF/Unit/Yr	69	3,322
Hotel (S.F.)	57.60	CF/S.F./Yr	1,404,993	80,927
Office (S.F.)	24.00	CF/S.F./Yr	1,108,312	26,599
Retail (S.F.)	34.80	CF/S.F./Yr	148,219	5,158
Light Industrial (meters)	2,939,600	CF/Meter/Yr	140	411,544 ⁴
Institutional (S.F.) ⁵	24.00	CF/S.F./Yr	156,178	3,748
Subtotal Acquisition Areas				535,858⁴
SUBTOTAL NON-PROJECT USES				640,386
TOTAL MASTER PLAN BOUNDARIES				967,760²

S.F. = Square Feet

MCF = thousand cubic feet of natural gas

Notes: Information in the table may not always total due to rounding.

- ¹ Electricity consumption for airport facilities based on square footage only. Electricity consumed by airport operations including CUP, gate electrification, APM, and electric GSE and on-airport vehicles are not included.
- ² Modified since publication of the Draft EIS/EIR to correct an error in the Draft EIS/EIR. This modification does not alter the conclusions of the Draft EIS/EIR.
- ³ For the purposes of this analysis, a single composite study area was established, referred to as the "Master Plan boundaries." However, for each alternative, a portion of the study area would not be incorporated into the Master Plan development.
- ⁴ Modified since publication of the Draft EIS/EIR to correct a mathematical error.
- ⁵ Based on office land use type from SCAQMD, CEQA Air Quality Handbook, 2000, Table A9-12-A.

Source: Camp Dresser & McKee Inc., 2003

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Table S5

Electricity Consumption Based on Facility Areas Under Year 2000 Conditions

Land Use	Usage Factor	Unit Type	Building S.F. or Units	Total Consumption (MWH/Yr)
LAX¹				
Airport Land Uses				
Terminal (S.F.)	19.05	KWH/S.F./Yr	4,012,119	76,431
Cargo (S.F.)	13.40	KWH/S.F./Yr	2,366,000	31,704
Maintenance (S.F.)	24.22	KWH/S.F./Yr	1,440,000	34,877
Ancillary (S.F.)	14.17	KWH/S.F./Yr	1,294,000	18,336
Subtotal Airport Uses				161,348
Non-Airport Land Uses				
Belford²				
Residential (Multi Family DUs)	5,626.50	KWH/Unit/Yr	340	1,913
LAX Northside				
Airport Related (S.F.)	24	KWH/S.F./Yr	9,000	216
Subtotal Non-Airport Uses				2,129
SUBTOTAL AIRPORT AND NON-AIRPORT USES				163,477
Non-Project Uses Within Master Plan Boundaries³				
Manchester Square⁴				
Residential (Single Family DUs)	5,626.50	KWH/Unit/Yr	132	743
Residential (Multi Family DUs)	5,626.50	KWH/Unit/Yr	1,579	8,884
Subtotal Manchester Square				9,627
Land Within Acquisition Areas				
Residential (Single Family DUs)	5,626.50	KWH/Unit/Yr	57	321
Residential (Multi Family DUs)	5,626.50	KWH/Unit/Yr	69	388
Hotel (S.F.)	9.95	KWH/S.F./Yr	1,404,993	13,980
Office (S.F.)	12.95	KWH/S.F./Yr	1,108,312	14,353
Retail (S.F.)	13.55	KWH/S.F./Yr	148,219	2,008
Light Industrial (S.F.)	10.50	KWH/S.F./Yr	3,789,292	39,788
Institutional (S.F.) ⁵	9.31	KWH/S.F./Yr	156,178	1,454
Subtotal Acquisition				72,292
SUBTOTAL NON-PROJECT USES				81,919
TOTAL MASTER PLAN BOUNDARIES				245,396

S.F. = Square Feet
MWH = megawatt-hour
KWH = kilowatt-hour

- Electricity consumption for airport facilities based on square footage only. Electricity consumed by airport operations including CUP, gate electrification, and electric GSE and on-airport vehicles are not included.
- Subsequent to publication of the Draft EIS/EIR the number of multi-family dwelling units within Belford was determined to be 585. As of December 2000, 245 units had been acquired.
- For the purposes of this analysis, a single composite study area was established, referred to as the "Master Plan boundaries." However, for each alternative, a portion of the study area would not be incorporated into the Master Plan development.
- Subsequent to publication of the Draft EIS/EIR, the number of dwelling units within Manchester Square was determined to be 279 single-family units and 1,721 multi-family units. As of December 2000, 147 single-family units and 142 multi-family units had been acquired.
- Based on office land use type from SCAQMD, CEQA Air Quality Handbook, 1993, Table A9-12-A.

Notes: Information in table may not always total, due to rounding.
There is no baseline electricity consumption associated with Continental City or LAX Northside.

Source: Camp Dresser & McKee Inc., 2003.

Table S6

**Natural Gas Consumption Based on Facility Areas Under
Year 2000 Conditions**

Land Use	Usage Factor	Unit Type	Building S.F. or Units	Total Consumption (MCF/Yr)
LAX¹				
Airport Land Uses				
Terminal (S.F.)	15.18	CF/S.F./Yr	4,012,119	60,904
Cargo (S.F.)	9.84	CF/S.F./Yr	2,366,000	23,281
Maintenance (S.F.)	24.59	CF/S.F./Yr	1,440,000	35,410
Ancillary (S.F.)	142.60	CF/S.F./Yr	1,294,000	184,524
Subtotal Airport Uses				304,119
Non-Airport Land Uses				
Belford²				
Residential (Multi Family DUs)	48,144	CF/Unit/Yr	340	16,369
LAX Northside				
Airport Related (S.F.)	23.63	CF/S.F./Yr	9,000	213
Subtotal Non-Airport Use				16,583
SUBTOTAL AIRPORT AND NON-AIRPORT USES				320,702
Non-Project Uses Within Master Plan Boundaries³				
Manchester Square⁴				
Residential (Single Family DUs)	79,980	CF/Unit/Yr	132	10,557
Residential (Multi Family DUs)	48,144	CF/Unit/Yr	1,579	76,019
Subtotal Non-Project Uses				86,576
Land Within Acquisition Areas				
Residential (Single Family DUs)	79,980	CF/Unit/Yr	57	4,559
Residential (Multi Family DUs)	48,144	CF/Unit/Yr	69	3,322
Hotel (S.F.)	57.60	CF/S.F./Yr	1,404,993	80,927
Office (S.F.)	24.00	CF/S.F./Yr	1,108,312	26,599
Retail (S.F.)	34.80	CF/S.F./Yr	148,219	5,158
Light Industrial (meters)	2,939,600	CF/Meter/Yr	140	411,544
Institutional ⁵ (S.F.)	24.00	CF/S.F./Yr	156,178	3,748
Subtotal Acquisition Areas				535,858
SUBTOTAL NON-PROJECT USES				622,434
TOTAL MASTER PLAN BOUNDARIES				943,136

S.F. = Square Feet

MCF = thousand cubic feet of natural gas

¹ Electricity consumption for airport facilities based on square footage only. Electricity consumed by airport operations including CUP, gate electrification, APM, and electric GSE and on-airport vehicles are not included.

² Subsequent to publication of the Draft EIS/EIR the number of multi-family dwelling units within Belford was determined to be 585. As of December 2000, 245 units had been acquired.

³ For the purposes of this analysis, a single composite study area was established, referred to as the "Master Plan boundaries." However, for each alternative, a portion of the study area would not be incorporated into the Master Plan development.

⁴ Subsequent to publication of the Draft EIS/EIR, the number of dwelling units within Manchester Square was determined to be 279 single-family units and 1,721 multi-family units. As of December 2000, 147 single-family units and 142 multi-family units had been acquired.

⁵ Based on office land use type from SCAQMD, CEQA Air Quality Handbook, 2000, Table A9-12-A.

Source: Camp Dresser & McKee Inc., 2003

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Table S7

Year 2000 Conditions Energy Consumption Estimate for GSE

	Equipment List ¹	Less Forklift & Cart	Net	Percent	Million BTUs
Electric	223	155	68	4%	26,239
Diesel	543	5	538	28%	206,441
Gasoline	1139	36	1103	57%	423,686
LNG, CNG, and Propane	293	81	212	11%	81,419
Total					737,785

¹ Source: 1995 list from Aviation Systems, Inc.

² The total million BTUs under baseline conditions was estimated using GSE energy consumption for 2005 under the No Action/No Project Alternative. Year 2000 GSE energy consumption was obtained by multiplying the original baseline GSE energy consumption by a ratio of aircraft operations.

Source: Camp Dresser & McKee Inc., 2003.

Table S8

Land Uses Included in the Alternatives

Land Use	1996 Baseline	Year 2000	Alternatives 2015				
			NA/NP	A	B	C	D
LAX							
Airport Land Uses							
Terminal (S.F.) ¹	3,997,119 ²	4,012,119	3,997,000	10,419,000	9,712,000	7,319,000	6,800,000
Cargo (S.F.)	1,900,000 ²	2,366,000 ²	2,342,000 ²	4,518,000	4,871,000	4,903,000 ²	2,342,000
Maintenance (S.F.)	1,440,000	1,440,000	1,440,000	841,000	859,000	834,000	1,368,000
Ancillary (S.F.)	1,294,000	1,294,000	1,294,000	2,260,000	1,720,000	3,198,000	1,764,000
Belford							
Residential (Multi Family DUs)	583	340					
Manchester Square³							
Residential (Single Family DUs)	280	132					
Residential (Multi Family DUs)	1,706	1,579					
Office (S.F.)				50,000			
Hotel (S.F.)				500,000			
Industrial (S.F.)				1,720,000			
LAX Northside⁴							
Office (S.F.)			1,580,000				1,580,000
Hotel (S.F.)			870,000				870,000
Retail (S.F.)			60,000				60,000
Airport Related (S.F.)		9,000	750,000				750,000
R/D Business Park (S.F.)			1,170,000				1,170,000
Restaurant (S.F.)			70,000				70,000
Continental City							
Office (S.F.)			3,000,000				
Retail (S.F.)			100,000				
Westchester Southside							
Hotel (S.F.)				850,000	850,000	850,000	
Office (S.F.)				650,000	650,000	650,000	
Retail (S.F.)				110,000	110,000	110,000	
R/D Business Park (S.F.)				970,000	970,000	970,000	
Restaurant (S.F.)				40,000	40,000	40,000	

Table S8

Land Uses Included in the Alternatives

Land Use	1996	Year	Alternatives 2015				
	Baseline	2000	NA/NP	A	B	C	D
Land Within Acquisition Areas⁵							
Residential (Single Family DUs)	57	57	57				57
Residential (Multi Family DUs)	69	69	69	42	42	42 ²	69
Hotel (S.F.)	1,404,993	1,404,993	1,404,993	63,595 ²		1,030,340	1,341,398
Office (S.F.)	1,108,312	1,108,312	1,108,312	142,064		137,010 ²	901,001
Retail (S.F.)	148,219	148,219	148,219	45,737	60,231 ²	73,002	113,564
Light Industrial (S.F.)	3,789,292	3,789,292	3,789,292	1,196,544	83,329	2,207,937 ²	3,542,231
Light Industrial (S.F.) (Gas Meters) ⁶	140	140	140	44	3	73	131
Institutional (S.F.) ⁷	156,178	156,178	156,178	85,902	85,902		102,912

¹ The minor differences in terminal and cargo square footage between 2000 and the No Action/No Project Alternative are attributable to improvements at LAX that were not foreseen at the time the No Action /No Project Alternative assumptions were developed. Actual terminal and cargo facilities under the No Action/No Project would normally be the same as the facilities in 2000. However, the increased square footage does not materially alter the energy consumption totals, nor affect the conclusions of this analysis.

² Modified since publication of the Draft EIS/EIR to correct an error. This modification does not alter the conclusions of the Draft EIS/EIR.

³ Under the No Action/No Project Alternative, existing uses would be demolished. For purposes of this Supplement to the Draft EIS/EIR, no development is assumed. Under Alternative A, Manchester Square would be redeveloped with commercial/light industrial uses independent of the Master Plan. Under Alternatives B, C, and D, existing uses would be demolished, and the area would be incorporated into the overall Master Plan development.

⁴ Development in LAX Northside may be subject to a trip cap (refer to Chapter 4, *Affected Environmental Consequences and Mitigation Measures* (Analytical Framework section)). As a result, energy consumption associated with LAX Northside is overstated.

⁵ Only a portion of the land within the acquisition areas would be acquired for each individual build alternative. No land within the acquisition areas would be acquired under the No Action/No Project Alternative. The land within the Master Plan boundaries that would not be acquired under a particular alternative would be unaffected by the Master Plan.

⁶ Conversion of Light Industrial areas from square feet to numbers of gas meters was based on approximately 27,000 square feet per gas meter derived from the baseline data collected by Psomas and Associates.

⁷ Includes college, high school, elementary school and library land use.

Source: Landrum & Brown, 2003.

Table S9

Electricity Consumption Based on Facility Areas Under Alternative D

Land Use	Usage Factor	Unit Type	2015	
			Building S.F. or Units	Total Consumption (MWH/Yr)
LAX¹				
Airport Land Uses				
Terminal (S.F.)	19.05	KWH/S.F./Yr	6,800,000	129,540
Cargo (S.F.)	13.40	KWH/S.F./Yr	2,342,000	31,383
Maintenance (S.F.)	24.22	KWH/S.F./Yr	1,368,000	33,133
Ancillary (S.F.)	14.17	KWH/S.F./Yr	1,764,000	24,996
Subtotal Airport Uses				219,052
Non-Airport Land Uses				
LAX Northside				
Hotel (S.F.)	9.95	KWH/S.F./Yr	870,000	8,657
Office (S.F.)	12.95	KWH/S.F./Yr	1,580,000	20,461
Retail (S.F.)	13.55	KWH/S.F./Yr	60,000	813
Airport Related (S.F.)	24.00	KWH/S.F./Yr	750,000	18,000
R/D Business Park, Educational Facilities (S.F.)	12.95	KWH/S.F./Yr	1,170,000	15,152
Restaurant (S.F.)	47.45	KWH/S.F./Yr	70,000	3,322
Subtotal LAX Northside				66,405
SUBTOTAL AIRPORT AND NON-AIRPORT USES				285,456
Non-Project Uses Within Master Plan Boundaries²				
Land Within Acquisition Areas				
Residential (Single Family DUs)	5,626.50	KWH/Unit/Yr	57	321
Residential (Multi Family DUs)	5,626.50	KWH/Unit/Yr	69	388
Hotel (S.F.)	9.95	KWH/S.F./Yr	1,341,398	13,346
Office (S.F.)	12.95	KWH/S.F./Yr	901,001	11,668
Retail (S.F.)	13.55	KWH/S.F./Yr	113,564	1,539
Light Industrial (S.F.)	10.50	KWH/S.F./Yr	3,542,231	37,193
Institutional (S.F.)	9.31	KWH/S.F./Yr	102,912	958
Subtotal Acquisition Areas				65,415
TOTAL MASTER PLAN BOUNDARIES				350,870

S.F. = Square Feet
MWH = Megawatt-hour

¹ Electricity consumption for airport facilities based on square footage only. Electricity consumed by airport operations including CUP, gate electrification, and electric GSE and on-airport vehicles are not included.

² For the purposes of this analysis, a single composite study area was established, referred to as the "Master Plan boundaries." However, for each alternative, a portion of the study area would not be incorporated into the Master Plan development.

Source: Camp Dresser & McKee Inc., 2003.

Table S10

**Natural Gas Consumption Based on Facility Areas
Under Alternative D**

Land Use	Usage Factor	Unit Type	2015	
			Building S.F. or Units	Total Consumption (MCF/Yr)
LAX				
Airport Land Uses				
Terminal (S.F.)	15.18	CF/S.F./Yr	6,800,000	103,224
Cargo (S.F.)	9.84	CF/S.F./Yr	2,342,000	23,045
Maintenance (S.F.)	24.59	CF/S.F./Yr	1,368,000	33,639
Ancillary (S.F.)	142.60	CF/S.F./Yr	1,764,000	251,546
Subtotal Airport Uses				411,455
Non-Airport Land Uses				
LAX Northside				
Hotel (S.F.)	57.60	CF/S.F./Yr	870,000	50,112
Office (S.F.)	24.00	CF/S.F./Yr	1,580,000	37,920
Retail (S.F.)	34.80	CF/S.F./Yr	60,000	2,088
Airport Related (S.F.)	23.63	CF/S.F./Yr	750,000	17,723
R/D Business Park (S.F.)	24.00	CF/S.F./Yr	1,170,000	28,080
Restaurant (S.F.)	38.40	CF/S.F./Yr	70,000	2,688
Subtotal LAX Northside				138,611
SUBTOTAL AIRPORT AND NON-AIRPORT USES				550,066
Non-Project Uses Within Master Plan Boundaries¹				
Land Within Acquisition Areas				
Residential (Single Family DUs)	79,980	CF/Unit/Yr	57	4,559
Residential (Multi Family DUs)	48,144	CF/Unit/Yr	69	3,321
Hotel (S.F.)	57.60	CF/S.F./Yr	1,341,398	77,265
Office (S.F.)	24.00	CF/S.F./Yr	901,001	21,624
Retail (S.F.)	34.80	CF/S.F./Yr	113,564	3,952
Light Industrial (number of meters) ²	2,939,600	CF/Meter/Yr	131	385,088
Institutional (S.F.)	24.00	CF/S.F./Yr	102,912	2,469
Subtotal Acquisition Areas				498,279
SUBTOTAL NON-PROJECT USES				498,279
TOTAL MASTER PLAN BOUNDARIES				1,048,345

S.F. = Square Feet
MCF = thousand cubic feet of natural gas

¹ For the purposes of this analysis, a single composite study area was established, referred to as the "Master Plan boundaries." However, for each alternative, a portion of the study area would not be incorporated into the Master Plan development.

² Data collected during the baseline survey (Psomas and Associates) indicated that each gas meter serviced approximately 27,000 square feet of light industrial areas on average.

Source: Camp Dresser & McKee Inc., 2000.

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Table S11

Estimated Electricity Consumption at the Central Utility Plant

	1996	Year	Alternative (2015)				
	Baseline	2000	NA/NP ²	A	B	C	D
Terminal Area (S.F.)	3,997,119	4,012,119	3,997,000	10,419,000	9,712,000	7,319,000	6,800,000
Electrical Power Consumption ¹ (MWH)	26,780	26,881	26,780	69,807	65,070	49,037	26,780 ³

¹ Psomas and Associates, Utilities Consumption and Generation at LAX, October, 1996

² No Action/No Project Alternative

³ Even though electrical power consumption at the CUP is based on terminal area, Alternative D assumes that there will not be additional power provided by CUP for increased terminal area, therefore electrical power consumption for Alternative D is equal to the No Action/No Plan alternative.

Source: Camp Dresser & McKee Inc., 2003.

Table S12

Estimated Natural Gas Consumption at the Central Utility Plant

	1996	Year	Alternatives 2015				
	Baseline	2000	NA/NP ²	A	B	C	D
Terminal Area (S.F.)	3,997,119 ⁴	4,012,119	3,997,000	10,419,000	9,712,000	7,319,000	6,800,000
Electrical Power Consumption ¹ (MWH)	820	822	820	1,506	1,430	1,175	820 ³

¹ Natural gas consumption includes natural gas consumed to produce electrical power (derived from Psomas and Associates, Utilities Consumption and Generation at LAX, October, 1996):

106.81 CF/S.F./Yr - factor applied to terminal area

393 MMCF/Yr – used for electrical power generation

² No Action/No Project Alternative

³ Even though natural gas consumption at the CUP is based on terminal area, Alternative D assumes that there will not be additional power provided by CUP for increased terminal area, therefore natural gas consumption for Alternative D is equal to the No Action/No Plan alternative.

⁴ Modified since publication of the Draft EIS/EIR to correct an error. This modification does not alter the conclusions of the Draft EIS/EIR.

Assumptions:

A. Credit from DWP to LAWA = \$3,581,000 (1998 per Green Power Agreement)

B. Unit cost of Electricity = \$0.0898 per kWh

C. Power generated = 39,862,864 kWh

D. Efficiency of Generation = 34% per GE description of single cycle gas turbine.

E. Natural Gas used per year to generate electricity = 393 MMCF

Source: Camp Dresser & McKee Inc., 2003. Psomas and Associates, Utilities Consumption and Generation at LAX, October, 1996

Table S13

Estimated Annual Power Consumption for Gate Electrification

Aircraft and APU Information					Annual Landings and Takeoffs							Annual Electrical Power Consumption (MWH)						
Aircraft	APU	APU HP	Aircraft Size	Time at Gate (minutes)	Baseline 1996	Year 2000	2015				Baseline 1996	Year 2000	2015					
							NA/NP	Alt A	Alt B	Alt C			Alt D	NA/NP	Alt A	Alt B	Alt C	Alt D
EMB110KQ1	APU GTCP 36 (80HP)	80	Light	30	0	0	3,431	4,803	4,803	2,402	4,803	-	-	82	115	115	57	114
Jetstream 31	-NONE-	0	Light	30	29,396	0	7,548	7,548	7,548	4,460	7,205	-	-	-	-	-	-	-
Swearingen Metro 2	APU GTCP 36 (80HP)	80	Light	30	8,674	1,013	11,665	9,950	9,950	7,205	12,009	83	24	278	237	237	172	286
BH-1900	-NONE-	0	Light	30	21,685	0	6,519	7,548	7,548	4,803	6,862	-	-	-	-	-	-	-
BH-1900 Cargo	-NONE-	0	Light	30	963	0	1,029	1,029	1,029	1,029	1,029	-	-	-	-	-	-	-
GenAvProp	-NONE-	0	Light	30	14,457	9,116	14,753	14,067	14,067	14,753	14,753	-	-	-	-	-	-	-
GenAvProp Cargo	-NONE-	0	Light	30	2,409	1,013	2,745	3,088	3,088	3,088	2,745	-	-	-	-	-	-	-
SHORT 360	APU GTCP 36 (80HP)	80	Light	30	0	0	1,029	2,059	2,059	686	1,029	-	-	25	49	49	16	24
SF-340A	APU GTCP 36 (80HP)	80	Light	30	16,866	25,322	5,490	6,862	6,862	3,774	5,833	161	603	131	164	164	90	139
EMB-120	APU GTCP 36 (80HP)	80	Light	30	4,819	54,696	3,431	5,490	5,490	3,088	3,431	46	1,302	82	131	131	74	82
ATR42	APU GTCP 36 (80HP)	80	Light	30	0	0	7,548	9,950	9,950	5,833	8,921	-	-	180	237	237	139	212
GenAvJet	-NONE-	0	Light	30	2,891	8,778	3,088	4,803	4,803	3,088	3,088	-	-	-	-	-	-	-
DASH-7	APU GTCP 36 (80HP)	80	Light	30	0	0	8,921	11,322	11,322	5,490	10,980	-	-	213	270	270	131	261
ATR72-200	APU GTCP 36 (80HP)	80	Light	30	0	0	3,774	4,803	4,803	2,059	4,461	-	-	90	115	115	49	106
FOKKER 50	APU GTCP 36 (80HP)	80	Light	30	0	0	2,745	4,460	4,460	1,716	3,341	-	-	65	106	106	41	82
Saab 2000	APU GTCP 36 (80HP)	80	Light	30	0	0	8,921	12,352	12,352	6,176	10,636	-	-	213	295	295	147	253
BAE146-300	APU GTCP 36 (80HP)	80	Light	30	2,891	0	0	0	0	0	0	28	-	-	-	-	-	-
Canadair RJ50	APU GTCP 85 (200 HP)	200	Light	30	0	0	61,76	10,636	10,636	5,147	8,234	-	-	368	635	635	307	490
Canadair RJ70	APU GTCP 85 (200 HP)	200	Light	30	0	0	686	686	686	686	686	-	-	41	41	41	41	41
MD-90-95	APU GTCP 85 (200 HP)	200	Medium	45	0	0	4,803	6,519	6,519	5,833	5,833	-	-	430	583	583	522	521
F-28-4000	APU GTCP 85 (200 HP)	200	Medium	45	963	1,013	0	0	0	0	0	34	90	-	-	-	-	-
FOKKER 70	APU GTCP 85 (200 HP)	200	Medium	45	0	0	1,029	1,716	1,716	686	1,372	-	-	92	154	154	61	122
B737-300	APU GTCP 85 (200 HP)	200	Medium	45	60,238	47,268	34,310	28,477	28,477	27,448	30,879	2,156	4,220	3,070	2,548	2,548	2,456	2,757
B737-400	APU GTCP 85 (200 HP)	200	Medium	45	1,927	17,895	13,381	8,578	8,578	8,578	8,920	69	1,598	1,197	768	768	768	796
B737-500	APU GTCP 85 (200 HP)	200	Medium	45	27,468	22,283	22,645	9,950	9,950	11,665	11,666	983	1,989	2,026	890	890	1,044	1,042
FOKKER 100-100	APU GTCP 85 (200 HP)	200	Medium	45	0	1,351	1,029	1,029	1,029	1,029	1,029	-	121	92	92	92	92	92
B737-200	APU GTCP 85 (200 HP)	200	Medium	45	1,445	675	0	0	0	0	0	52	60	-	-	-	-	-
A319	APU GTCP 85 (200 HP)	200	Medium	45	0	7,091	686	1,372	1,372	686	686	-	633	61	123	123	61	61
MD-90-10	APU GTCP 85 (200 HP)	200	Medium	45	0	1,688	5,490	7,891	7,891	7,205	5,490	-	151	491	706	706	645	490
A320	APU GTCP 85 (200 HP)	200	Medium	45	0	20,933	7,205	9,950	9,950	9,264	8,235	-	1,869	645	890	890	829	735
B737-200C Cargo	APU GTCP 85 (200 HP)	200	Medium	45	0	0	2,745	3,431	3,431	3,431	2,745	-	-	246	307	307	307	245
B727 Cargo	APU GTCP 85 (200 HP)	200	Medium	45	1,927	5,064	0	0	0	0	0	69	452	-	-	-	-	-
B727-200	APU GTCP 85 (200 HP)	200	Medium	45	13,975	5,065	0	0	0	0	0	500	452	-	-	-	-	-
DC9 Cargo	APU GTCP 85 (200 HP)	200	Medium	45	481	5,064	0	0	0	0	0	17	452	-	-	-	-	-
DC9-50	APU GTCP 85 (200 HP)	200	Medium	45	31,806	1,351	0	0	0	0	0	1,138	121	-	-	-	-	-
MD-80-87	APU GTCP 85 (200 HP)	200	Medium	45	2,891	0	343	1,029	1,029	1,029	343	103	-	31	92	92	92	31
MD-80	APU GTCP 85 (200 HP)	200	Medium	45	29,396	34,438	16,469	16,469	16,469	17,155	13,381	1,052	3,075	1,474	1,474	1,474	1,535	1,195
B757-200	APU GTCP 85 (200 HP)	200	Medium	45	29,878	42,542	52,151	88,520	88,520	78,227	65,532	1,069	13,798	4,667	7,921	7,921	7,000	5,851
B757-200 Cargo	APU GTCP 85 (200 HP)	200	Medium	45	963	1,013	1,372	2,059	2,059	2,059	1,372	34	90	123	184	184	184	122
DC8 Cargo	APU GTCP 660 (300 HP)	300	Heavy	60	3,373	1,013	0	0	0	0	0	241	181	-	-	-	-	-
DC8-70	APU GTCP 660 (300 HP)	300	Heavy	60	0	0	0	0	0	0	0	-	-	-	-	-	-	-
A340-200	APU GTCP 660 (300 HP)	300	Heavy	60	0	676	2,402	6,862	6,862	5,490	3,088	-	121	430	1,228	1,228	982	551
IL-96	APU GTCP 660 (300 HP)	300	Heavy	60	0	0	0	0	0	0	0	-	-	-	-	-	-	-
B767-200	APU GTCP 660 (300 HP)	300	Heavy	60	10,602	11,142	12,352	13,381	13,381	12,352	12,009	759	1,990	2,211	2,395	2,395	2,211	2,144
B767-200 Cargo	APU GTCP 660 (300 HP)	300	Heavy	60	0	675	2,059	2,402	2,402	2,402	2,059	-	121	368	430	430	430	368
B767-300	APU GTCP 660 (300 HP)	300	Heavy	60	4,819	10,467	22,302	17,498	17,498	13,724	13,381	345	1,869	3,991	3,132	3,132	2,456	2,289
A310-200	APU GTCP 85 (200 HP)	200	Heavy	60	0	0	2,745	2,745	2,745	3,088	2,402	-	-	327	327	327	368	286
A310-200 Cargo	APU GTCP 85 (200 HP)	200	Heavy	60	0	0	1,029	1,716	1,716	1,716	1,029	-	-	123	205	205	205	122
L1011-500	APU GTCP 660 (300 HP)	300	Heavy	60	7,228	3,376	0	0	0	0	0	517	603	-	-	-	-	-

Table S13

Estimated Annual Power Consumption for Gate Electrification

Aircraft and APU Information					Annual Landings and Takeoffs								Annual Electrical Power Consumption (MWH)							
Aircraft	APU	APU HP	Aircraft Size	Time at Gate (minutes)	Baseline	Year	2015					Baseline	Year	2015						
					1996	2000	NA/NP	Alt A	Alt B	Alt C	Alt D	1996	2000	NA/NP	Alt A	Alt B	Alt C	Alt D		
B747 Combination	APU GTCP 660 (300 HP)	300	Heavy	60	0	338	2,402	3,431	3,431	3,088	2,745	-	60	430	614	614	553	490		
B747-400	APU GTCP 660 (300 HP)	300	Heavy	60	9,156	14,180	17,841	22,302	22,302	21,615	20,930	655	2,532	3,193	3,991	3,991	3,868	3,737		
B747-400 Cargo	APU GTCP 660 (300 HP)	300	Heavy	60	0	675	2,059	3,088	3,088	3,088	2,059	-	121	368	553	553	553	368		
A300B	APU GTCP 660 (300 HP)	300	Heavy	60	963	338	22,645	23,331	23,331	22,988	21,616	69	60	4,053	4,175	4,175	4,114	3,860		
B747-200	APU GTCP 660 (300 HP)	300	Heavy	60	4,819	4,390	1,372	1,372	1,372	1,372	1,372	345	784	246	246	246	246	245		
B747-200 Cargo	APU GTCP 660 (300 HP)	300	Heavy	60	2,409	675	2,402	3,088	3,088	3,088	2,401	172	121	430	553	553	553	429		
A300-C4-200 Cargo	APU GTCP 660 (300 HP)	300	Heavy	60	0	675	1029	1716	1,716	1,716	1,029	-	121	184	307	307	307	184		
DC10-30	APU GTCP 660 (300 HP)	300	Heavy	60	11,083	5,402	0	0	0	0	0	793	965	-	-	-	-	-		
DC10-30 Cargo	APU GTCP 660 (300 HP)	300	Heavy	60	1,927	4,389	2,059	2,745	2,745	2,745	2,059	138	784	368	491	491	491	368		
MD-11	APU GTCP 660 (300 HP)	300	Heavy	60	2,891	3,040	19,557	23,331	23,331	21,615	16,126	207	543	3,500	4,175	4,175	3,868	2,879		
MD-11 Cargo	APU GTCP 660 (300 HP)	300	Heavy	60	0	1,013	1,716	2,745	2,745	2,745	1,715	-	181	307	491	491	491	306		
A330	APU GTCP 85 (200 HP)	200	Heavy	60	0	338	2,402	5,833	5,833	5,833	3,431	-	40	287	696	696	696	408		
B747-X	APU GTCP 660 (300 HP)	300	Heavy	60	0		4,803	5,147	5,147	5,147	4,803	-	-	860	921	921	921	858		
B777-200	APU GTCP 660 (300 HP)	300	Heavy	60	963	3,039	5,147	15,783	15,783	14,410	9,950	69	543	921	2,825	2,825	2,579	1,777		
A300-600C		300	Heavy	60	0	338	0	0	0	0	0	-	60	-	-	-	-	-		
B737-800		200	Medium	45	0	3,376	0	0	0	0	0	-	301	-	-	-	-	-		
Total Annual Electrical Power (MWH)												11,908	33,199	39,010	46,882	46,882	42,754	37,921		

Source: Camp Dresser & McKee Inc., 2000.

Table S14
GSE Energy Consumption

Energy Form/ GSE Vehicle Type	BHP	Load Factor	Annual Hours of Operation					Annual Energy Consumed (Million BTUs)				
			2015					2015				
			No Action/ No Project	Alternative A	Alternative B	Alternative C	Alternative D	No Action/ No Project	Alternative A	Alternative B	Alternative C	Alternative D
Electric Powered GSE												
Electric Aircraft Tug Wide	500	0.8	1,190	19,763	19,763	18,345	15,417	4,844	80,474	80,474	74,699	62,777
Electric Airstart Unit Tra	180	0.5	51					47				
Electric Cabin Service	180	0.2	858	35,596	35,854	30,021	33,196	314	13,045	13,140	11,002	12,165
Electric Water Truck	150	0.2	274	5,352	5,009	5,215	5,078	84	1,635	1,530	1,593	1,551
Electric Aircraft Tug Narrow	130	0.8	2,550	30,159	29,781	24,257	27,105	2,700	31,930	31,530	25,682	28,696
Electric Airstart Unit	130	0.9	51					61				
Electric Food Truck	130	0.25	2,802	83,058	82,858	70,050	79,458	927	27,480	27,414	23,176	26,288
Electric Fuel Truck	130	0.25		2,802		600	600		927		199	199
Electric Hydrant Truck	130	0.25	5,605	24,819	25,018	21,416	30,223	1,854	8,211	8,277	7,085	9,999
Electric Lavatory Truck	130	0.25	1,144	28,477	28,592	24,474	30,194	378	9,422	9,460	8,097	9,989
Electric Baggage Tug	100	0.55	114,224	287,260	292,607	243,514	235,255	63,954	160,837	163,831	136,343	131,717
Electric Cargo Loader	70	0.5		35,248	35,247	35,248	22,095		12,559	12,558	12,559	7,872
Electric Container Loader	70	0.5	1,578	227,272	225,167	210,962	177,295	562	80,977	80,227	75,166	63,169
Electric Belt Loader	60	0.5	51,328	162,218	162,218	137,514	132,850	15,676	49,541	49,541	41,997	40,572
Subtotal								91,402	477,038	477,981	417,598	394,994
Diesel Powered GSE												
Diesel Airstart Unit	600	0.9	686					3,772				
Diesel Aircraft Tug Wide	500	0.8	13,450					54,768				
Diesel Air Conditioning Unit	300	0.75	17,327					39,687				
Diesel Bus	180	0.25	55,805					25,564				
Diesel Fuel Truck	180	0.25	10,007					4,584				
Diesel Aircraft Tug Narrow	175	0.8	20,827					29,682				
Diesel Airstart Transporter	170	0.5	686					594				
Diesel Cabin Service	170	0.2										
Diesel Transporter	170	0.5	858					742				
Diesel Water Truck	150	0.2	17,292	4,666	4,666	4,323	4,186	5,281	1,425	1,425	1,320	1,278
Diesel Hydrant Truck	130	0.25	120,888					39,996				
Diesel Shuttle	130	0.25	74,340					24,595				
Diesel GPU Transporter	130	0.5	5,776					3,822				
Diesel Lavatory Truck	130	0.25	94,354	21,501	21,501	18,298	18,756	31,217	7,114	7,114	6,054	6,205
Diesel Baggage Tug	78	0.55	94,299					41,182				
Diesel Cargo Loader	76	0.5	21,045					8,141				
Diesel Container Loader	76	0.5	160,460					62,072				
Diesel Belt Loader	45	0.5	86,738					19,867				
Subtotal								395,569	8,539	8,539	7,374	7,483
Gasoline Powered GSE												
Gasoline Aircraft Tug Wide	500	0.8	869					3,539				
Gasoline Airstart Transporter	180	0.5	86					79				
Gasoline Water Truck	150	0.2	3,568	11,665	12,626	11,803	9,538	1,090	3,563	3,856	3,605	2,913
Gasoline Hydrant Truck	130	0.25	81,059	37,826	37,627	32,022	33,024	26,818	12,515	12,449	10,595	10,926
Gasoline Aircraft Tug Narrow	130	0.8	1,235					1,308				
Gasoline Airstart Unit	130	0.9	86					102				
Gasoline Cabin Service	130	0.2	63,475	30,364	30,450	25,904	21,787	16,801	8,037	8,060	6,856	5,766
Gasoline Food Truck	130	0.25	148,108	68,248	71,050	60,243	71,252	49,002	22,580	23,507	19,931	23,573
Gasoline Fuel Truck	130	0.25		4,403	2,802	1,801	1,801		1,457	927	596	596
Gasoline Lavatory Truck	130	0.25	17,842	73,538	71,479	61,186	57,756	5,903	24,330	23,649	20,243	19,108
Gasoline Baggage Tug	100	0.55	91,381	28,678	28,678	24,790	21,873	51,164	16,057	16,057	13,880	12,247
Gasoline Cargo Loader	70	0.5	2,631					937				
Gasoline Container Loader	70	0.5	18,414					6,561				
Gasoline Belt Loader	60	0.5	84,541	16,194	16,194	13,999	12,352	25,819	4,964	4,946	4,275	3,772
Subtotal								189,122	93,483	93,450	79,981	78,901
Propane and CNG Powered GSE												
Propane Wide Tug	500	0.8	778					3,166				
Propane Cabin Service	180	0.2	20,501					7,513				
Propane Water Truck	150	0.2	1,029					314				
Propane Food Truck	130	0.25	47,034					15,561				

Table S14
GSE Energy Consumption

Energy Form/ GSE Vehicle Type	BHP	Load Factor	Annual Hours of Operation					Annual Energy Consumed (Million BTUs)							
			2015					2015							
			No Action/ No Project	Alternative A	Alternative B	Alternative C	Alternative D	No Action/ No Project	Alternative A	Alternative B	Alternative C	Alternative D			
Propane Fuel Truck	130	0.25	600								199				
Propane Lavatory Truck	130	0.25	3,546								1,173				
Propane Narrow Tug	130	0.8	858								908				
Propane Transporter	130	0.5													
Propane Baggage Tug	100	0.55	180,818								101,240				
Propane Cargo Loader	70	0.5	1,578								562				
Propane Container Loader	70	0.5	6,840								2,437				
Propane Belt Loader	60	0.5	48,859								14,922				
CNG Aircraft Tug Wide	500	0.8													
CNG Bus	180	0.25													
CNG Water Truck	150	0.2		3,843	4,186	3,019	2,402		1,174	1,278	922	733			
CNG Aircraft Tug Narrow	130	0.8													
CNG Food Truck	130	0.25		82,861	82,860	70,249	58,441		27,414	27,414	23,242	19,335			
CNG Fuel Truck	130	0.25		5,004	9,407	5,405	8,206		1,656	3,112	1,788	2,715			
CNG Hydrant Truck	130	0.25		187,534	187,532	160,514	150,309		62,045	62,045	53,106	49,729			
CNG Lavatory Truck	130	0.25		11,265	10,693	9,150	8,806		3,727	3,538	3,027	2,914			
CNG Shuttle	130	0.25													
CNG Baggage Tug	100	0.55		259,072	259,072	218,726	250,812		145,054	145,054	122,465	140,427			
CNG Cargo Loader	70	0.5													
CNG Belt Loader	60	0.5		146,299	146,299	123,516	141,635		44,680	44,680	37,722	43,255			
CNG Cabin Service	50	0.2		35,512	35,512	30,021	34,654		3,615	3,615	3,056	3,528			
CNG Container Loader	50	0.5													
Subtotal									147,996	289,365	290,737	245,328	262,636		
Total									824,089	868,425	870,706	750,281	744,014		

Source: Camp Dresser & McKee Inc., 2000.

Table S15

Electricity Consumption by Airport Operations

Airport Operations (MWH/Yr)	1996	Year	NA/NP	Alternatives Total 2105			
	Baseline	2000		A	B	C	D
CUP	26,780	26,881	26,780	69,807	65,070	49,037	26,780
Gate Electrification	11,908	33,199	39,010	46,882	46,882	42,754	37,921
APM	0	0	0	93,200	174,500	62,000	208,240
GSE ¹	7,647	8,213	9,621	50,215	50,314	43,958	41,578
On Airport Vehicles	0	0	858	6,808	6,808	6,808	6,808
Total Airport Operations	46,335	68,293	76,269	266,912	343,574	204,557	321,327

¹ As discussed in Section 2.1.24, *Electricity Consumption for GSE*, of the Draft EIS/EIR the estimates for electricity consumption were obtained by estimating energy consumed by gasoline, then converting to electricity assuming an equivalent electricity consumption of 12 kilowatt-hour (KWH) of electricity per gallon of gasoline. The estimated amount of energy consumed as gasoline by GSE is presented in Table 20, GSE Energy Consumption. A gallon of gasoline is equivalent to 114,000 BTUs.

Source: Camp Dresser & McKee Inc., 2003.

Table S16

Daily Vehicle Miles Traveled and Gasoline and Diesel Consumption For Off-Airport Vehicles

	1996	Year	Alternatives 2015				
	Baseline	2000	NA/NP	A	B	C	D
VMT Data¹ (miles per day)	8,522,324	6,741,676	10,610,424 ²	13,518,742 ²	13,387,050 ²	13,302,383 ²	10,932,998
Fuel Factor (Gallons per Total VMT by Fuel)³							
Gasoline	0.0432	0.0432	0.0389	0.0389	0.0389	0.0389	0.0389
Diesel	0.0074	0.0074	0.0070	0.0070	0.0070	0.0070	0.0070
Estimated Gasoline Consumption (millions of gallons per year)		106.3	150.7 ²	191.9 ²	190.1 ²	188.9 ²	155.2
Estimated Diesel Consumption (millions of gallons per year)		18.2	27.1 ²	34.5 ²	34.2 ²	34.0 ²	27.9

¹ Total Daily VMT data provided by PCR Services Corp., miles/day

² Modified since publication of the Draft EIS/EIR to correct an error. This modification does not alter the conclusions of the Draft EIS/EIR.

³ CARB, *Predicted California Vehicle Emissions Ozone Planning Inventory*, 1998 (July 28)

⁴ Baseline estimated using No Action/No Project Alternative, 2005 ratioed by MAP (58/68.5)

Source: Camp Dresser & McKee Inc., 2003.

Table S17

Construction-Related Consumption of Gasoline and Diesel

Fuel Consumption (million gallons)	Total Through 2015			
	A	B	C	D
Diesel ¹	31.6	34.1	32.0	29.9
Gasoline ²	3.1	3.1	3.1	3.1

¹ Derived from data provided by Bechtel Corporation presented in Table 4.20-3, Projected Brake Horsepower and Fuel Consumption, in Section 4.20, *Construction Impacts*, of the Draft EIS/EIR.

² Derived from data provided by PCR Services Corp. for Alternative C. Gasoline consumption associated with construction-related activities for Alternatives A and B assumed to be similar to Alternative C. Diesel for Alternative D provided by ECS.

Source: Camp Dresser McKee Inc., 2003.
