
4.19 Solid Waste

4.19.1 Introduction

The solid waste analysis addresses impacts related to municipal and construction solid waste generation and disposal. Technical Report 10, *Solid Waste Technical Report*, and Technical Report S-7, *Supplemental Solid Waste Technical Report*, provide additional information on the affected environment relative to solid waste, and the methodology used to assess both baseline conditions and project impacts, including detailed information regarding the solid waste generation factors used in this analysis. Impacts associated with hazardous waste generation and disposal are addressed in Section 4.23, *Hazardous Materials*. Potential birdstrike hazards due to solid waste disposal facilities are addressed in Section 4.24.3, *Safety*. Potential effects of regional growth induced by the LAX Master Plan are addressed in Section 4.5, *Induced Socio-Economic Impacts (Growth Inducement)*.

4.19.2 General Approach and Methodology

This analysis compares the municipal solid waste generation projected for the No Action/No Project Alternative and four build alternatives to baseline solid waste generation and conditions, characterized by existing solid waste sources, diversion mechanisms, and methods of collection and disposal. Construction wastes and their disposal mechanisms are also evaluated as described below. The analysis estimates on-airport solid waste generation under baseline conditions, as well as solid waste generation in areas proposed to be acquired as part of the LAX Master Plan or other airport programs - collectively referred to as the Master Plan boundaries as defined in the introduction to Chapter 4 of this Final EIS/EIR.

Direct and indirect growth associated with the Master Plan outside of the Master Plan boundaries and elsewhere in the region would also result in increased generation of solid waste. Potential impacts are addressed in Section 4.5, *Induced Socio-Economic Impacts (Growth Inducement)*, and in subsection 4.19.7, *Cumulative Impacts*, below.

The acreage and location of land required for the proposed Master Plan improvements are unique to each of the four build alternatives. Consequently, each alternative would result in a different footprint for LAX. In order for the environmental baseline, the No Action/No Project Alternative, and the four build alternatives to be compared side by side, a single solid waste study area was used. This composite study area is referred to as the "Master Plan boundaries."

Total solid waste generation within the Master Plan boundaries was then calculated (as described below) for the environmental baseline and for all alternatives. Under the environmental baseline, land within the Aircraft Noise Mitigation Program (ANMP) acquisition areas is evaluated based on its existing use. Under the No Action/No Project Alternative, it is assumed to be vacant. For each of the build alternatives, it is assumed that all proposed acquisition has been completed and existing land uses demolished. Each alternative proposes a different configuration of land acquisition; thus, not all land within the Master Plan boundaries would be acquired by any one alternative. Land uses within areas not acquired would be unaffected by the Master Plan. The Alternative B off-site fuel farm sites are discussed separately from the Master Plan boundaries.

Several different sources, means, and factors were used for calculating solid waste generation. Solid waste generation factors are typically provided in terms of solid waste generation (in tons or pounds per day or year) per unit (e.g., square foot of building space, ton of cargo, employee). Solid waste generation is projected by multiplying the factor by the appropriate number of units. All solid waste generation values presented in the impact analysis represent estimates and were projected based on the factors and methods described below. Details on the derivation and use of these factors are presented in Technical Report 10, *Solid Waste Technical Report*, and Technical Report S-7, *Supplemental Solid Waste Technical Report*.

Baseline on-airport solid waste generation was estimated during a solid waste audit performed in 1991 and updated in 1994 and documented in *LAX Waste Audit and Recovery Program Update*.⁷¹⁸ Data contained in the *LAX Waste Audit and Recovery Program Update* was used to derive solid waste

⁷¹⁸ Recycling By Nature, *LAX Waste Audit and Recovery Program Update*, June 1995.

4.19 Solid Waste

generation factors for passenger- and cargo-related activities at LAX, which were used to estimate solid waste generation for the environmental baseline (1996) and future conditions.

For non-airport land uses, including planned and proposed uses within LAX Northside/Westchester Southside, solid waste generation was estimated using factors derived from the *1995 Annual Report on Disposal and Diversion in the City of Los Angeles*.⁷¹⁹ In order to account for anticipated future solid waste diversion achieved through source reduction and recycling, as mandated by AB 939 (discussed in subsection 4.19.3, *Affected Environment/Environmental Baseline* below), it was assumed that the required 50 percent diversion would be maintained. Both on-airport and off-airport generation factors were adjusted to reflect 50 percent diversion requirements.

Based on this methodology, in the Draft EIS/EIR, cargo-handling activities were forecasted to generate 2.8 pounds of waste per cargo ton per year by 2000. As described in Technical Report S-7, *Supplemental Solid Waste Technical Report* (Section 3), LAWA calculated actual cargo-related waste disposal as part of its AB 939 reporting obligations as described in the LAX Waste Characterization and Quantification Study Final Report. Actual cargo-related solid waste disposal at LAX in 2000 achieved the disposal rate of 2.8 pounds of waste per cargo ton per year forecasted in the Draft EIS/EIR.

Similarly, in the Draft EIS/EIR, passenger-related activities were forecasted to generate 387 tons per million annual passengers (MAP), or 0.774 pounds per passenger, of solid waste by 2000. Actual passenger-related solid waste disposal at LAX in 2000 was 431 tons per MAP, or 0.862 pounds per passenger.⁷²⁰ As detailed later in this section, LAX achieved a 67 percent solid waste diversion rate by 2000, continuing a positive trend since 1996, so the forecasted factor of 387 tons per MAP is still used as a reasonable estimate to project future solid waste generation under each of the alternatives. A complete discussion of the solid waste generation factors used in this analysis is provided in Technical Report S-7, *Supplemental Solid Waste Technical Report* (Section 3).

Information regarding off-airport solid waste generation, collection, disposal, and diversion within the region was obtained from agencies responsible for solid waste in the area, and contacts with disposal facilities. Data regarding off-airport solid waste generation is based on off-airport land uses as of 1996. Data regarding the capacities of regional landfills is current to 2003.

To determine whether the projected increase in solid waste generation associated with the Master Plan alternatives would be significant, the total quantity of solid waste that would be generated by each of the four build alternatives and the No Action/No Project Alternative was estimated using the factors described above. Projected solid waste generation was then compared to the anticipated capacity at the appropriate regional disposal facilities. The implementation of various solid waste-related city and county plans and policies was also taken into account.

For the generation of waste by construction and demolition activities, quantitative factors were taken from studies performed by the Metro Regional Environmental Management (Metro), a regional government that serves the Portland, Oregon, metropolitan area.⁷²¹ Metro has performed studies to develop a quantitative factor for waste generated by the construction and demolition of residences and commercial buildings. Factors used for demolition of commercial buildings were for light, wood frame buildings. Although some of the structures that would be demolished as a result of Master Plan implementation would be of similar construction, others would be concrete structures. As a result, the actual quantity of solid waste generated as a result of demolition could differ from that presented in this analysis. For example, at LAX, asphalt and concrete are recycled at an on-site batch plant. In addition, no diversion was assumed in the calculation of construction and demolition waste, although such waste is often recycled or otherwise diverted from landfill disposal. More detailed information on these factors is presented in Technical Report 10, *Solid Waste Technical Report*.

⁷¹⁹ City of Los Angeles, Integrated Solid Waste Management Office, *1995 Annual Report on Disposal and Diversion in the City of Los Angeles*, 1995.

⁷²⁰ Los Angeles World Airport, *LAX Waste Characterization & Quantification Study Final Report*, January 2002.

⁷²¹ Metro Regional Environmental Management Department Solid Waste Department of Portland, OR (Metro), *Characterization of Construction Site Waste*, July 30, 1993.

4.19.3 Affected Environment/Environmental Baseline

Regional Solid Waste Collection, Disposal, and Diversion

Solid waste in the City of Los Angeles is collected by municipal agencies and private refuse haulers. Waste collected by these entities is disposed of at regional landfills. There are eight major landfills currently accepting municipal solid waste in Los Angeles County. **Figure F4.19-1**, Locations of Active Regional Solid Waste Disposal Facilities, illustrates the locations of these landfills. **Table F4.19-1**, Regional Municipal Solid Waste Landfills, provides pertinent information including owner/operator, permitted daily capacity, average daily tonnage in tons per day (tpd), approximate closure date for each of the landfills, and approximate distance from LAX.

Table F4.19-1

Regional Municipal Solid Waste Landfills

Landfill	Owner/Operator	Permitted Daily Capacity (tpd)	Average Daily Tonnage (tpd)	Approx. Closure Date	Approx. Distance From LAX (miles)
Antelope Valley ¹	Arklin Brothers Enterprises, USA Waste	1,400	600	2011	67
Bradley West	Waste Management Inc.	10,000	2,200	2006	30
Calabasas ²	LACSD	3,500	1,100	2018	33
Chiquita Canyon ³	Republic Services of California	6,000	5,300	2011	40
Lancaster	Waste Management Inc.	1,700	1,200	2032	82
Puente Hills ⁴	LACSD	12,000	13,200	2013	31
Scholl Canyon ⁵	LACSD	3,400	1,200	2024	32
Sunshine Canyon ⁶	Browning-Ferris Industries	11,500	6,500	2006	82
Total		49,500	31,300		

Note: Table S2, Regional Municipal Solid Waste Landfills, located in Technical Report S-7, *Supplemental Solid Waste Technical Report*, provides additional information regarding the regional municipal solid waste landfills within the City of Los Angeles.

- ¹ Antelope Valley Landfill has capacity and is permitted to operate until 2011; however, an expansion anticipated to be permitted by 2004 will extend that service life to 2037.
- ² Calabasas does not accept waste from portions of the City of Los Angeles, including the LAX area.
- ³ Approximately 82 percent of inert waste accepted by Chiquita Canyon originates from the City of Los Angeles.
- ⁴ The County of Los Angeles received a 10-year permit extension for the Puente Hills landfill, extending its service life to 2013. This facility does not accept waste from LAX, as LAX is located outside of its watershed.
- ⁵ Scholl Canyon does not accept waste from the City of Los Angeles.
- ⁶ In 2002, Sunshine Canyon received planning approval to operate an extension within the City of Los Angeles. Though currently not operational, the expansion into the City jurisdiction would extend the service life of the entire facility to 2028. Browning-Ferris Industries has applied for a permit to expand operations in the City of Los Angeles. This application has not received approval from the City of Los Angeles. If approved, the permit would extend the closure date of Sunshine Canyon to 2028.

Sources: Connie Christian, Project Engineer, Sanitation Districts of Los Angeles County, Personal Communication, March 3, 2003; Bruce Matlock, Health & Safety Compliance Supervisor, Waste Management, Inc., Personal Communication, October 16, 2002; Larry Mendoza, Solid Waste Systems Administrator, Sanitation Districts of Los Angeles County, Personal Communication, January and October, 2002, and March 3, 2003; Matt Terrell, Landfill Manager, Chiquita Canyon Sanitary Landfill, Personal Communication, February 4, 2002; Dave Thompson, Environmental Specialist, City of Los Angeles, Environmental Affairs Department, Personal Communication, February, 2002, January, 2003, and February 27, 2003; Mike Williams, District Landfill Manager, Waste Management of California, Inc., Personal Communication, October, 2002, and March 11, 2003.

There are also several other small landfills in Los Angeles County that are currently accepting waste. Most of these facilities are restricted from receiving waste from outside of a specified watershed. In addition, several landfills in Riverside, San Bernardino, and Orange counties receive waste from the City of Los Angeles. Only a small portion of the City of Los Angeles-generated waste is disposed of in landfills outside of Los Angeles County.⁷²² Currently, the cost of hauling material to facilities outside the county limits the volume of waste disposed of at these facilities.

⁷²² Los Angeles County Department of Public Works, Environmental Programs Division, Countywide Siting Element, June 1997.

4.19 Solid Waste

A portion of city-generated waste is also disposed of through transformation. Transformation involves the incineration of municipal solid waste in order to generate energy. In the fourth quarter of 1995, approximately 17,000 tons of municipal solid waste were transformed at two facilities.⁷²³

The mid- to long-term municipal solid waste disposal capacity availability in Los Angeles County is uncertain and is based on a variety of dynamic parameters, including new regulations, the ability to permit expanded or new sites, the economic viability of recycling, flow control legislation, and waste generation rates. Other factors governing municipal solid waste disposal include increasing solid waste management costs and more restrictive regulations governing landfill operations. Even with maximum levels of source reduction, recycling, composting, and other diversion, and assuming that potential expansions at existing landfills are permitted, new landfill sites will be a necessary part of the solid waste management system in the Los Angeles region. With many of Los Angeles County's currently permitted landfills facing closure or expiration of their permits, additional landfill sites must be located and approved, or operating permits at existing landfills must be extended, or there will be a severe shortfall in solid waste disposal capacity within the Los Angeles region.

As indicated in **Table F4.19-1**, the Puente Hills Landfill received a 10-year extension of its operating permit from the County Sanitation Districts of Los Angeles (LACSD). In addition, LACSD recently purchased Mesquite Regional Landfill in Imperial County to accept municipal solid waste from Southern California communities via rail haul. A Master Plan will be developed for the Mesquite Regional Landfill and LACSD estimates landfill operations would start by 2010. LACSD recently signed agreements to purchase Eagle Mountain Landfill in Riverside County; however, the purchase agreements have not been finalized and are currently subject to legal challenges.

The total remaining landfill capacity (assuming the implementation of potential capacity expansions) available to the City of Los Angeles in 1992, the last date for which data is available, was 63.1 million tons.⁷²⁴ As of December 31, 2000, the remaining permitted Class III (municipal solid waste) landfill capacity in Los Angeles County was estimated at 96.5 million tons.⁷²⁵ According to the County, the 96.5 million ton capacity will be exhausted by 2009. Los Angeles County could experience a shortfall in permitted daily capacity as early as 2004 (upon exhaustion of the currently permitted disposal capacity at the Bradley Landfill), even with the development of all in-County landfill expansions, including the proposed Puente Hills and Sunshine Canyon landfill expansions.⁷²⁶

In light of landfill capacity problems throughout the state, in 1989, the state legislature enacted AB 939.⁷²⁷ AB 939 required each city and county to divert 25 percent of its solid waste from landfill disposal, through source reduction, recycling, and composting, by the end of 1995. AB 939 also required cities and counties to divert 50 percent of their waste streams by the Year 2000. These percentages are based on the amount of waste generated in the 1990 baseline year.

Subdivision (C) of Section 41781 of the California Public Resources Code provides for exceptions or adjustments to the diversion goals due to changing conditions. Subdivision (C) states: "[t]he amount of solid waste from which the required reductions are measured shall be the amount of solid waste existing on January 1, 1990, with future adjustments for increases or decreases in the quantity of waste caused only by changes in population or changes in the number or size of governmental, industrial, or commercial operations in the jurisdiction."

AB 939 encourages source reduction activities as the preferred management approach. Recycling is the second best alternative, including composting of green and food wastes. Waste that is disposed of through transformation, the combustion or incineration of waste, is not considered diverted under AB 939. Landfilling is the least preferred solid waste disposal alternative.

⁷²³ City of Los Angeles, Integrated Solid Waste Management Office, 1995 Annual Report on Disposal and Diversion in the City of Los Angeles, 1995.

⁷²⁴ Envicom Corporation, et al., Draft City of Los Angeles, General Plan Framework EIR, prepared for the City of Los Angeles, Department of City Planning, January 1995.

⁷²⁵ County of Los Angeles Department of Public Works, 2000 Annual Report on the Countywide Summary Plan and Countywide Siting Element, September 2001.

⁷²⁶ County of Los Angeles Department of Public Works, 2000 Annual Report on the Countywide Summary Plan and Countywide Siting Element, September 2001.

⁷²⁷ Assembly Bill 939 or the California Integrated Waste Management Act of 1989. Codified in Public Resources Code Section 42920-42928, the law is commonly referred to as AB 939.

In 1997, the city disposed of 3.5 millions tons of waste. This is an 11 percent decrease from the 3.7 million tons of solid waste generated in 1990.⁷²⁸ Both the county and city are striving to continue to decrease solid waste generation through source reduction and recycling, as well as attempting to site new landfills and extend the permits of existing landfills in order to ensure adequate landfill disposal capacity for the region. These efforts are documented in a number of plans, which are briefly described below.

- ◆ In response to AB 939, which requires that adequate long-term municipal solid waste disposal capacity be secured, the City of Los Angeles, Integrated Solid Waste Management Office (now the Solid Resources Citywide Recycling Division or SRCRD), established the City Solid Waste Management Policy Plan (CiSWMPP). It is a long-term overall city policy and planning document that contains goals, objectives, and policies covering all aspects of solid waste management within the city. It provides direction for the solid waste management decision-making process, projects citywide diversion goals and disposal capacity needs over the 30-year planning period (1990 to 2020), and ensures that disposal practices would not conflict with diversion goals. CiSWMPP establishes citywide diversion objectives of 25 percent by 1995, 50 percent by 2000, and 70 percent by 2020 based on the Solid Waste Generation Study (SWGS).⁷²⁹ The SWGS quantifies and characterizes existing solid waste generation, diversion, and disposal, and identifies proposed measures to increase source reduction, recycling, and composting activities.
- ◆ *The Annual Report on Disposal and Diversion*, prepared by the City of Los Angeles, Bureau of Sanitation, Integrated Solid Waste Management Office, documents the city's comprehensive disposal studies that serve to examine public and private solid waste generators and pinpoint waste streams that can be most easily diverted or recycled. It contains data on solid waste generation, diversion, and disposal practices for each city department, as well as a number of targeted generator types, and identifies additional measures each generator can take to increase diversion. *The Annual Report* also documents the city's methodology for determining its 1995 diversion rate.⁷³⁰
- ◆ AB 939 mandated that each city and county in California prepare a *Source Reduction and Recycling Element* (SRRE) to document the plan the city or county would use to achieve AB 939 diversion requirements. The county's SRRE includes a solid waste generation study to quantify and characterize existing solid waste generation, diversion, and disposal, and identifies proposed measures to increase source reduction, recycling, and composting activities in the county. Additionally, the SRRE proposes education and public information programs and means to fund the recommended activities.⁷³¹ The city's SRRE includes a strategic action plan for diverting solid waste from landfills. It establishes diversion objectives for specific programs and targeted generators that would demonstrate exceedance of the diversion objectives of the CiSWMPP. It also includes public education goals defined by specific programmatic elements.
- ◆ The *Countywide Siting Element* (CSE) was prepared by the Los Angeles County Department of Public Works pursuant to state law. The purpose of the CSE is to address the management of that portion of solid waste that remains after cities and communities have completed their recycling, composting, and other waste diversion activities. The CSE provides a means for proper planning and siting of solid waste transformation and land disposal facilities on a countywide basis. It also offers strategies and establishes siting criteria to be used as an aid to evaluate sites proposed for development of needed solid waste facilities.⁷³²

In response to AB 939 and as a result of the previously-described plans, the city has implemented source reduction, recycling, composting, and market development programs for about one-half of the city's waste stream disposed of by the Bureau of Sanitation.⁷³³ The city's programs concentrate on removing barriers

⁷²⁸ City of Los Angeles, Integrated Solid Waste Management Office, 1995 Annual Report on Disposal and Diversion in the City of Los Angeles, 1995.

⁷²⁹ City of Los Angeles, Board of Public Works, City of Los Angeles Solid Waste Management Policy Plan, 1993.

⁷³⁰ City of Los Angeles, Integrated Solid Waste Management Office, 1995 Annual Report on Disposal and Diversion in the City of Los Angeles, 1995.

⁷³¹ Los Angeles County Department of Public Works, Waste Management Division, Los Angeles County Source Reduction and Recycling Element, August 1993.

⁷³² Los Angeles County Department of Public Works, Environmental Programs Division, Countywide Siting Element, June 1997.

⁷³³ The Bureau of Sanitation is responsible for transportation and disposal of waste generated by single-family residences, certain multi-family residences, and city department facilities (e.g., parks). Industrial, commercial, and most multi-family

4.19 Solid Waste

to stimulate voluntary programs and creating markets for recyclable materials. The programs rely heavily on commercial and industrial waste generators for the major portion of their materials diversion, as they have greater amounts of homogeneously separated materials ready for transport. Curbside recycling and yard waste collection have been extended to all households, and the SRCRD is working with city government, the Bureau of Sanitation, and private collection companies to develop programs and policies that target specific private generators for cost-effective diversion and recycling programs. As a result of these efforts, the City of Los Angeles exceeded the mandated 50 percent diversion rate with a 58.8 percent diversion rate in 2000.⁷³⁴ LAX reached a 67 percent diversion rate by 2000.⁷³⁵ Increased source reduction efforts by airport operations and tenants were an important factor in reaching the 50 percent diversion rate goal.⁷³⁶

Construction and Demolition Waste

Construction and demolition waste comprises 28 percent of the solid waste stream statewide, with wood waste as the largest component. Other major components include concrete, asphalt, and ferrous materials. Waste generated by construction and demolition activities is considered to be inert material and can be disposed of at unclassified landfills, which include a greater number of facilities than those that accept municipal solid waste. These facilities are often abandoned gravel pits. Facilities in the Los Angeles region that accept inert waste include Azusa Land Reclamation, CalMat Landfill, Nu-Way Live Oak Landfill, Peck Road Gravel Pit, Reliance Pit #2, and Strathern Landfill.

As of December 31, 2000, the total remaining permitted inert (or unclassified landfill) waste capacity in Los Angeles County was estimated to be approximately 57.7 million tons. Based on the average 2000 disposal rate, this capacity would be exhausted in approximately 44 years.⁷³⁷ Therefore, there is anticipated to be no shortfall in disposal capacity for inert waste within the county.

Construction and demolition waste continues to make a substantial contribution to the waste stream but is more cost-effectively diverted than sent to a landfill. Many opportunities for recycling within city departments remain for construction and demolition waste. Diversion of this material will continue to play an important role in reducing the city's disposed waste stream and a large portion of construction and demolition waste can be diverted from landfills through reuse and recycling. In Los Angeles County, there are a number of operations that recycle most kinds of construction and demolition materials. Generally, construction waste (e.g., lumber scraps) is more desirable for recycling than demolition waste, which is generally less uniform and may be commingled with other materials. However, asphalt from demolition is commonly crushed and reused as filler below new pavement. This practice is discussed in Section 4.17.2, *Natural Resources*. The California Integrated Waste Management Board (CIWMB) does not track the generation, disposal, and diversion of construction and demolition waste specifically.

Autoclaved Waste

The U.S. Department of Agriculture requires all trash that would come into contact with putrescible⁷³⁸ waste generated on international flights be either incinerated or autoclaved⁷³⁹ prior to disposal at a landfill. International waste is any waste removed from any means of conveyance originating from a foreign country. This type of waste includes leftover food and anything that could have come into contact with food that is to be disposed, including disposable utensils, napkins, plastic plates, and cups.

At LAX, food caterers that provision aircraft are charged with the responsibility for proper handling and disposal of international waste. Food waste is autoclaved or incinerated and then transported to regular landfills for disposal per federal quarantine regulations which address foreign and international waste. Food waste to be incinerated is transported to the Southeast Resource Recovery Facility (SERRF) for

residences must contract with private companies for their solid waste transportation and disposal needs.

⁷³⁴ Los Angeles World Airports (LAWA), Los Angeles International Airport, Waste Disposal, Recycling and Generation, 2002.

⁷³⁵ Los Angeles World Airports (LAWA), Los Angeles International Airport, Waste Disposal, Recycling and Generation, 2002.

⁷³⁶ County of Los Angeles Department of Public Works, 2000 Annual Report on the Countywide Summary Plan and Countywide Siting Element, September 2001.

⁷³⁷ County of Los Angeles Department of Public Works, 2000 Annual Report on the Countywide Summary Plan and Countywide Siting Element, September 2001.

⁷³⁸ Putrescible waste is waste that is likely to become putrid.

⁷³⁹ An autoclave is an apparatus that uses superheated steam under high pressure to achieve sterilization. Autoclaved waste is waste that is treated in an autoclave.

incineration per federal quarantine regulations. The U.S. Department of Agriculture has approved the use of the SERRF for this purpose.

The SERRF is a waste-to-energy plant, located in Long Beach, with total permitted capacity to receive 2,240 tpd of solid waste and with average daily processed tonnage of 1,610 tpd.⁷⁴⁰ The standard procedure for the ash remains resulting from the incineration process is to transport the ashes to the Puente Hills Landfill for use as a roadbase for the landfill.⁷⁴¹ The SERRF has sufficient capacity to meet present demands. However, if the facility does not have capacity in the future, it would deny waste from other cities and waste coming from Long Beach would have priority over nearby cities. Although it would be more costly, autoclaved waste could also be disposed of in municipal landfills.⁷⁴²

Baseline LAX Solid Waste Generation and Diversion

Solid waste is generated at LAX by numerous on-airport uses, including passengers, visitors, LAWA uses, and tenant activities. The greatest variety of solid waste is generated by tenant activities, which include airlines, cargo handlers, caterers, flight service operators, concessionaires, and service and aviation-related support businesses. Solid waste management is conducted by both LAWA and private companies. The solid waste management system at LAX is one component of a larger solid waste system described above, encompassing the entire Los Angeles region. Private companies operating in the Los Angeles region provide collection services, and waste is transported to several regional landfills.

Baseline municipal solid waste generation within the Master Plan boundaries is 52,754 tons per year (tpy). Of this, LAX generates approximately 40,228 tpy, based on cargo and passenger volumes for 1996. Changes in conditions between 1996 and 2000 include modifications to cargo, terminal, and ancillary facilities, and acquisition and demolition of 534 dwelling units within Manchester Square and Belford. In addition, passenger and cargo volumes increased by approximately 17 percent and 18 percent, respectively, between 1996 and 2000. These changes resulted in: 1) a decrease in solid waste generation associated with airport facilities by 8,075 tpy, a reduction of 20 percent compared to the 1996 baseline; and 2) a decrease in municipal solid waste generation within the Master Plan boundaries to 32,442 tpy in 2000, a 20 percent reduction compared to the 1996 baseline (refer to **Table F4.19-2**, Summary of Municipal Solid Waste Generation in Tons Per Year, in subsection 4.19.6 below).

As mentioned in subsection 4.19.2, *General Approach and Methodology*, in 1991 a waste audit and recovery program was undertaken at LAX, which was updated in 1994. This program was the first comprehensive audit of solid waste activities at the airport. The purpose of the program was to provide reliable solid waste information for LAX, develop a system-wide database, and recommend a comprehensive integrated materials recovery and source reduction plan for LAX. Based on the audit, a program was developed for achieving the waste diversion mandated by AB 939. The program consists of a combination of source reduction, recycling, composting of food wastes, and the collection and separation of recyclable material. The proposed plan was designed to reduce wastes disposed of by LAX by a minimum of 58 percent.

LAWA has implemented several waste recovery efforts at LAX in accordance with this program. Some of these efforts pre-date the audit. Cardboard, metals, and wood pallets are the largest constituents of the recycled waste stream. Aluminum used beverage container (UBC) recovery is a small portion of the waste recovery effort, with most of the recycled UBC coming from the airlines. There is also an extensive concrete and asphalt recycling program at LAX. In 2000, approximately 23 percent of all materials recycled by LAWA was asphalt and concrete from demolition and repaving operations.⁷⁴³ LAWA recovers, grinds, and recycles concrete and asphalt generated at LAX at an on-site batch plant. As a result of these efforts, LAX achieved a diversion rate of 67 percent in 2000.⁷⁴⁴ Technical Report 10, *Solid Waste Technical Report*, provides more detailed information on recycling and diversion efforts at LAX.

⁷⁴⁰ California Integrated Waste Management Board, California Waste Facilities, Sites & Operations Database, *Solid Waste Information System (SWIS) Database*, Available: <http://www.ciwmb.ca.gov/SWISsrch.htm> [September 19, 2000].

⁷⁴¹ Yueehara, Stan, County of Los Angeles, Department of Health Services, *Personal Communication*, September 19, 2000.

⁷⁴² Foley, Allen, Southeast Resource Recovery Facility (SERRF), *Personal Communication*, September 27, 2000.

⁷⁴³ LAWA, Recycling Coordinator.

⁷⁴⁴ Los Angeles World Airports (LAWA), *Los Angeles International Airport, Waste Disposal, Recycling and Generation*, 2002.

4.19 Solid Waste

4.19.4 Thresholds of Significance

4.19.4.1 CEQA Thresholds of Significance

A significant solid waste impact would occur if the direct and indirect changes in the environment that may be caused by the particular build alternative would potentially result in one or more of the following future conditions:

- ◆ A net increase in project-related solid waste generation that could not be accommodated by existing or permitted regional landfills or other disposal facilities.
- ◆ Conflicts with solid waste policies and objectives intended to help achieve the requirements of AB 939.

These thresholds are utilized because they address the two potential impacts to solid waste associated with the Master Plan alternatives: the potential for project-generated solid waste to exceed the capacity of permitted regional landfills or other disposal facilities, and the potential for the project to hinder compliance with AB 939 diversion requirements. The first threshold was developed based upon guidance provided in the *Draft L.A. CEQA Thresholds Guide*.⁷⁴⁵ The second threshold was developed specifically to address potential conflicts associated with the requirements of AB 939, which was not addressed in the *Draft L.A. CEQA Thresholds Guide*.

As indicated in these thresholds, only existing or permitted landfill capacity was considered in this analysis; planned new landfills, landfill expansions, or permit extensions are excluded from the determination of significance. Although there are plans to extend the closure dates for two landfills in the region, discretionary approval for these facilities is extremely difficult to obtain and may take many years. Other landfills may have reached capacity and, therefore, would not be able to extend their permits.

4.19.4.2 Federal Standards

There are no federal standards that define significance thresholds for solid waste impacts. However, the FAA *Airport Environmental Handbook*, requires an evaluation to determine if solid waste disposal facilities (i.e., landfills) are located within 3,000 meters (approximately 9,843 feet) of all runways planned to be used by turbojet aircraft. This is addressed in Section 4.24.3, *Safety*. Additionally, it is the policy of the FAA to encourage the development of facilities that exemplify the principles of environmental design including waste minimization and resource conservation. These FAA policies and responsibilities are addressed through the impacts analyses relating to the CEQA Thresholds of Significance presented above, as well as in Section 4.17.1, *Energy*, and Section 4.17.2, *Natural Resources*.

4.19.5 Master Plan Commitments

As addressed in subsection 4.19.6, *Environmental Consequences*, implementation of any of the Master Plan build alternatives would have potential impacts related to solid waste. In recognition of these potential impacts, LAWA has included the commitments listed below in the Master Plan, coded "SW" for "solid waste."

- ◆ **SW-1. Implement an Enhanced Recycling Program (Alternatives A, B, C, and D).**

LAWA will enhance their existing recycling program, based on successful programs at other airports and similar facilities. Features of the enhanced recycling program will include: expansion of the existing terminal recycling program to all terminals, including new terminals; development of a recycling program at LAX Northside/Westchester Southside; lease provisions requiring that tenants meet specified diversion goals; and preference for recycled materials during procurement, where practical and appropriate.

- ◆ **SW-2. Requirements for the Use of Recycled Materials During Construction (Alternatives A, B, C, and D).**

LAWA will require, where feasible, that contractors use a specified minimum percentage of recycled materials during construction of LAX Master Plan improvements. The percentage of recycled

⁷⁴⁵ City of Los Angeles, *Draft L.A. CEQA Thresholds Guide*, May 14, 1998.

materials required will be specified in the construction bid documents. Recycled materials may include, but are not limited to, asphalt, drywall, steel, aluminum, ceramic tile, cellulose insulation, and composite engineered wood products. The use of recycled materials in LAX Master Plan construction will help to reduce the project's reliance upon virgin materials and support the recycled materials market, decreasing the quantity of solid waste requiring disposal.

◆ **SW-3. Requirements for the Recycling of Construction and Demolition Waste (Alternatives A, B, C, and D).**

LAWA will require that contractors recycle a specified minimum percentage of waste materials generated during construction and demolition. The percentage of waste materials required to be recycled will be specified in the construction bid documents. Waste materials to be recycled may include, but are not limited to, asphalt, concrete, drywall, steel, aluminum, ceramic tile, and architectural details.

4.19.6 Environmental Consequences

This section describes the potential environmental impacts of the No Action/No Project Alternative and the four build alternatives. For each alternative, the effects are discussed as they relate to overall solid waste generation, compliance with AB 939 diversion requirements, and construction and demolition solid waste generation. **Table F4.19-2**, Summary of Municipal Solid Waste Generation in Tons Per Year, identifies projected municipal solid waste generation under each of the alternatives as well as under 1996 baseline and Year 2000 conditions.

As described in the Analytical Framework discussion in the introduction to Chapter 4, the basis for determining impacts under CEQA is different from that of NEPA. Under CEQA, the impacts of a proposed project and alternatives are measured against the "environmental baseline," which is normally the physical conditions that existed at the time the Notice of Preparation was published (i.e., June 1997, or 1996 when a full year of data is appropriate, for the LAX Master Plan Draft EIS/EIR). As such, the CEQA analysis in this Final EIS/EIR uses the environmental baseline, or in some cases an "adjusted environmental baseline," as the basis by which to measure and evaluate the impacts of each alternative. Under NEPA, the impacts of each action alternative (i.e., build alternative) are measured against the conditions that would otherwise occur in the future if no action were to occur (i.e., the "No Action" alternative). As such, the NEPA analysis in this Final EIS/EIR uses the No Action/No Project Alternative as the basis by which to measure and evaluate the impacts of each build alternative (i.e., Alternatives A, B, C, and D) in the future (i.e., at buildout in 2015 or, for construction-related impacts, selected future interim year). Based on this fundamental difference in the approach to evaluating impacts, the nature and significance of impacts determined under CEQA are not necessarily representative of, or applicable to, impacts determined under NEPA. The following presentation of environmental consequences should, therefore, be reviewed and considered accordingly.

4.19 Solid Waste

Table F4.19-2

Summary of Municipal Solid Waste Generation in Tons Per Year

	1996	Year	Alternatives 2015				
	Baseline	2000	NA/NP	A	B	C	D
LAX							
Airport Facilities	40,228	32,153	34,825	43,728	43,728	40,516	34,902
Belford	535	281	NA ¹	NA ²	NA ²	NA ²	NA ¹
Continental City	NA	NA	2,964	NA	NA	NA	NA
LAX Northside ³	NA	8	5,389	NA	NA	NA	5,389
Westchester Southside	NA	NA	NA	3,633	3,633	3,633	NA
Subtotal LAX⁴	40,763	32,442	43,178	47,361	47,361	44,149	40,291
Non-Project Uses Within the Master Plan Boundaries⁵							
Manchester Square	1,947	1,468	NA ¹	3,162 ⁶	NA ⁷	NA ⁷	NA ⁷
Land Within Acquisition Areas ⁸	10,044	9,053	9,053	2,006	371	4,853	8,221
Subtotal Non-Project Uses⁴	11,991	10,521	9,053	5,168	371	4,853	8,221
TOTAL MASTER PLAN BOUNDARIES⁴	52,754	42,963	52,231	52,529	47,732	49,002	48,512

NA = Not Applicable

NA/NP = No Action/No Project

- ¹ Under the No Action/No Project Alternative and Alternative D, existing uses within Belford and Manchester Square would be demolished. No redevelopment of Belford is assumed for either alternative for purposes of this analysis. Under the No Action/No Project Alternative, no redevelopment of Manchester Square is assumed.
- ² Under Alternatives A, B, and C, existing uses within Belford would be demolished, and the area would be incorporated into the overall Master Plan development. Solid waste generation associated with proposed land uses in this area is incorporated within "Airport Facilities" above.
- ³ LAX Northside is currently subject to a trip cap (refer to Chapter 4, Affected Environment, Consequences and Mitigation Measures (Analytical Framework Section)). Under Alternative D, this trip cap would be reduced, which would effectively reduce the total amount of development allowed in LAX Northside. Therefore, solid waste generation in this area may be overstated.
- ⁴ Information in table may not total due to rounding.
- ⁵ For 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.
- ⁶ Under Alternative A, Manchester Square is assumed to be redeveloped with commercial/light industrial uses independent of the Master Plan.
- ⁷ Under Alternatives B, C, and D, existing uses within Manchester Square would be demolished, and the area would be incorporated into the overall Master Plan development. Solid waste generation associated with proposed land uses in this area is incorporated within "Airport Facilities" above.
- ⁸ No land within the acquisition areas would be acquired under the No Action/No Project Alternative. Only a portion of the land within the acquisition areas would be acquired for each build alternative. The land within the areas that would not be acquired would not be affected by the Master Plan and would remain in its current use.

Source: Camp Dresser & McKee Inc., 2003.

4.19.6.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, there would be limited improvements to the airfield and related uses (e.g., cargo) at LAX. These improvements would increase cargo activity at LAX over baseline conditions. In addition, under the No Action/No Project Alternative, passenger activity at LAX would increase as a result of projected growth. The demolition of existing land uses in Belford and Manchester Square included in the No Action/No Project Alternative would eliminate existing municipal solid waste generation in those areas; however, the development of LAX Northside and Continental City would increase municipal solid waste generation in currently undeveloped areas within the Master Plan boundaries.

Although cargo and passenger activity would increase under the No Action/No Project Alternative, due to compliance with AB 939, total solid waste generation for airport facilities would decrease 5,403 tpy below

the environmental baseline by 2015 (a 13 percent decrease). LAX Northside municipal solid waste generation would be 5,389 tpy by 2015.

Table F4.19-2 includes municipal solid waste generation projections for the No Action/No Project Alternative. Total municipal solid waste generation within the Master Plan boundaries, including LAX Northside, Continental City, and land that would not be acquired under this alternative, would decrease 523 tpy below the environmental baseline by 2015 (a 1 percent decrease). This decrease is partly due to the ongoing acquisition and demolition of existing land uses within Belford and Manchester Square and partly due to compliance with AB 939 diversion requirements, the LAX on-site recycling program, and participation in the city's diversion program. The development of LAX Northside and Continental City and the increase in passengers and cargo tonnage would partially offset this decrease. Overall municipal solid waste generation would decrease as compared to baseline conditions.

Although total municipal solid waste generation would decrease as compared to 1996 baseline conditions under the No Action/No Project Alternative, it would increase by 22 percent compared to Year 2000 conditions.

LAWA would continue to implement existing programs aimed at reducing waste generation and disposal, which are designed to maintain a 58 percent diversion rate. With the continuation of those programs, the No Action/No Project Alternative would not conflict with solid waste policies and objectives intended to help achieve the requirements of AB 939.

Construction and demolition activities associated with the previously-approved projects under the No Action/No Project Alternative would generate limited quantities of inert solid waste requiring disposal.

Table F4.19-3, Summary of Construction and Demolition Solid Waste Generation, shows construction and demolition solid waste generation projections for this alternative. Overall solid waste due to demolition would total 15,624 tons by 2015. Total solid waste due to new construction would be 33,861 tons by 2015. In the case of cargo buildings, the construction waste would consist primarily of masonry, concrete, and metal. These materials are fairly easily recycled and a sizable market for their recycling exists. These materials also tend to create fewer scraps during construction than do materials like wood or drywall. Construction and demolition activities would also require the removal of pavement. LAX uses recycled pavement as filler below new paving. To the extent possible, suitable materials would be reused at LAX.

Table F4.19-3
Summary of Construction and Demolition Solid Waste Generation

	Alternative				
	NA/NP	A	B	C	D
Total Construction Solid Waste (Tons)	33,861	77,540	69,482	51,338	34,165
Total Demolition Solid Waste (Tons)	15,624	386,352	493,718	218,756	100,178

Notes: Information in the table depicts total waste generation from start through 2015.

Source: Camp Dresser & McKee Inc., 2003.

As indicated in subsection 4.19.3, *Affected Environment/Environmental Baseline*, inert disposal capacity is anticipated to be available well beyond the 2015 planning horizon.

4.19.6.2 Alternative A - Added Runway North

Under Alternative A, both passenger and cargo activity would increase at LAX. Alternative A would also include development of Westchester Southside. Existing uses in the acquisition areas would be demolished. Uses within the ANMP properties -- Belford and Manchester Square -- will be demolished as part of a separate action being undertaken by LAWA. The land within the acquisition areas and Belford would be incorporated into the Master Plan. Manchester Square would be redeveloped independent of the Master Plan with commercial and industrial uses.

4.19 Solid Waste

Table F4.19-2 shows that, under Alternative A, municipal solid waste generation for airport facilities would increase 3,500 tpy above the environmental baseline by 2015 (a 9 percent increase). Westchester Southside municipal solid waste generation would be 3,633 tpy by 2015.

Total municipal solid waste generation within the Master Plan boundaries under Alternative A would decrease by 225 tpy below the environmental baseline by 2015 (a less than 1 percent decrease). Although total municipal solid waste would decrease as compared to 1996 baseline conditions under Alternative A, it would increase by 22 percent compared to Year 2000.

Under Alternative A, municipal solid waste generation for airport facilities would increase approximately 8,903 tpy above the No Action/No Project Alternative by 2015 (a 26 percent increase). Total municipal solid waste generation under Alternative A would increase by 298 tpy (a less than 1 percent increase) above the No Action/No Project Alternative.

The decrease, as compared to the environmental baseline, is partly due to the ongoing acquisition and demolition of existing land uses within Belford and Manchester Square and the planned acquisition of additional land for Master Plan development, and partly due to compliance with AB 939 diversion requirements, including the LAX on-site recycling program and participation in the city's diversion program. The development of Westchester Southside and the increase in passengers and cargo tonnage would partially offset this decrease. Nevertheless, overall municipal solid waste generation would decrease as compared to the environmental baseline. Because municipal solid waste generation within the Master Plan boundaries is projected to decrease under Alternative A, the impact would be less than significant.

In addition to existing programs aimed at reducing waste generation, LAWA would implement Master Plan Commitment SW-1, Implement an Enhanced Recycling Program (Alternatives A, B, C, and D), to enhance the current on-site recycling program, extend recycling requirements to tenants, and address the procurement of recycled materials. With the continuation of existing recycling programs and implementation of Master Plan Commitment SW-1, Alternative A would not conflict with solid waste policies and objectives intended to help achieve the requirements of AB 939.

Construction and demolition activities for Alternative A would generate a substantial amount of solid waste requiring disposal. **Table F4.19-3** shows construction and demolition solid waste generation projections for this alternative. As indicated in the table, under Alternative A, overall solid waste due to demolition would total approximately 386,352 tons by 2015. Total solid waste due to new construction would be approximately 77,540 tons by 2015.

As with the No Action/No Project Alternative, in the case of cargo and terminal buildings, the construction waste would consist primarily of masonry, concrete, and metal. As indicated previously, these materials are fairly easily recycled and a sizable market for their recycling exists. These materials also tend to create fewer scraps during construction than do materials like wood or drywall. Construction and demolition activities would also require the removal of pavement. LAX uses recycled pavement as filler below new paving. To the extent possible, suitable materials would be reused at LAX. Additionally, Master Plan Commitments SW-2, Requirements for the Use of Recycled Materials During Construction (Alternatives A, B, C, and D), and SW-3, Requirements for the Recycling of Construction and Demolition Waste (Alternatives A, B, C, and D), would reduce the amount of demolition and construction waste requiring disposal by requiring contractors to use recycled construction materials and to recycle demolition and construction-related waste. Recycling of construction materials would be consistent with FAA policies that encourage the development of facilities that exemplify the highest standards of design, including sustainability through waste minimization and resource conservation.

As indicated previously, inert disposal capacity is anticipated to be available well beyond the 2015 planning horizon. Therefore, impacts with respect to construction and demolition solid waste would be less than significant.

4.19.6.3 Alternative B - Added Runway South

As with Alternative A, both passenger and cargo activity would increase at LAX under Alternative B. Alternative B would also include development of Westchester Southside. Existing uses in the acquisition areas would be demolished. Uses within the ANMP properties -- Belford and Manchester Square -- will be demolished as part of a separate action being undertaken by LAWA. The land within these areas would be incorporated into the Master Plan. **Table F4.19-2** shows that, under Alternative B, municipal

solid waste generation for airport facilities would increase 3,500 tpy over the environmental baseline by 2015 (a 9 percent increase). Westchester Southside municipal solid waste generation would be 3,633 tpy by 2015. Solid waste generation at the off-site fuel farm would be negligible.

Total municipal solid waste generation within the Master Plan boundaries under Alternative B would decrease by 5,022 tpy below the environmental baseline by 2015 (a 10 percent decrease). Although total municipal solid waste would decrease as compared to 1996 baseline conditions under Alternative B, it would increase by 11 percent compared to Year 2000.

Under Alternative B, solid waste generation for airport facilities would increase approximately 8,903 tpy above the No Action/No Project Alternative (a 26 percent increase). Total municipal solid waste generation within the Master Plan boundaries would be less than that under the No Action/No Project Alternative.

Similar to Alternative A, the decrease in municipal solid waste, as compared to the environmental baseline, is partly due to the ongoing acquisition and demolition of existing land uses within Belford and Manchester Square and the planned acquisition of additional land for Master Plan development. It is also partly due to compliance with AB 939 diversion requirements, including the LAX on-site recycling program and participation in the city's diversion program. The development of Westchester Southside and the increase in passengers and cargo tonnage would partially offset this decrease. Overall municipal solid waste generation would decrease as compared to baseline conditions. Because municipal solid waste generation within the Master Plan boundaries is projected to decrease under Alternative B, the impact would be less than significant.

In addition to existing programs aimed at reducing waste generation, LAWA would implement Master Plan Commitment SW-1, Implement an Enhanced Recycling Program (Alternatives A, B, C, and D), to enhance the current on-site recycling program, extend recycling requirements to tenants, and address the procurement of recycled materials. With the continuation of existing recycling programs and implementation of Master Plan Commitment SW-1, Alternative B would not conflict with solid waste policies and objectives intended to help achieve the requirements of AB 939.

Construction and demolition activities for Alternative B would generate a substantial amount of solid waste requiring disposal. **Table F4.19-3** shows construction and demolition solid waste generation projections for this alternative. As indicated in the table, under Alternative B, overall solid waste generation due to demolition would total 493,718 tons by 2015. Total solid waste generation due to new construction would be 69,482 tons by 2015. Under Alternative B, the impacts of construction and demolition wastes would be the same as under Alternative A. As with Alternative A, Master Plan Commitments SW-2, Requirements for the Use of Recycled Materials During Construction (Alternatives A, B, C, and D), and SW-3, Requirements for the Recycling of Construction and Demolition Waste (Alternatives A, B, C, and D), would reduce the amount of demolition and construction waste requiring disposal by requiring contractors to use recycled construction materials and to recycle demolition and construction-related waste. Recycling of construction materials would be consistent with FAA policies pertaining to waste minimization and resource conservation.

As inert disposal capacity is anticipated to be available well beyond the 2015 planning horizon, impacts with respect to construction and demolition solid waste would be less than significant.

4.19.6.4 Alternative C - No Additional Runway

As with Alternatives A and B, both passenger and cargo activity would increase at LAX under Alternative C. Alternative C would include development of Westchester Southside. Existing uses in the acquisition areas would be demolished. Uses within the ANMP properties -- Belford and Manchester Square -- will be demolished as part of a separate action being undertaken by LAWA. The land within these areas would be incorporated into the Master Plan.

Table F4.19-2 shows that, under Alternative C, municipal solid waste generation for airport facilities would increase 288 tpy over the environmental baseline (a less than 1 percent increase). Westchester Southside municipal solid waste generation would be 3,633 tpy by 2015. Total municipal solid waste generation within the Master Plan boundaries under Alternative C would decrease by 3,752 tpy below the environmental baseline by 2015 (a 7 percent decrease). Although total municipal solid waste would decrease as compared to 1996 baseline conditions under Alternative C, it would increase by 14 percent compared to Year 2000 conditions. Under Alternative C, solid waste generation for airport facilities would

4.19 Solid Waste

increase approximately 5,691 tpy above the No Action/No Project Alternative by 2015 (a 16 percent increase). Total municipal solid waste generation within the Master Plan boundaries would be less than that under the No Action/No Project Alternative.

Similar to Alternatives A and B, the decrease in municipal solid waste generation as compared to the environmental baseline is partly due to the ongoing acquisition and demolition of existing land uses within Belford and Manchester Square and the planned acquisition of additional land for Master Plan development, and partly due to compliance with AB 939 diversion requirements, including the LAX on-site recycling program and participation in the city's diversion program. The development of Westchester Southside and the increase in passengers and cargo tonnage would partially offset this decrease. Overall municipal solid waste generation would decrease as compared to baseline conditions. Because municipal solid waste generation within the Master Plan boundaries is projected to decrease under Alternative C, the impact would be less than significant.

In addition to existing programs aimed at reducing waste generation, LAWA would implement Master Plan Commitment SW-1, Implement an Enhanced Recycling Program (Alternatives A, B, C, and D), to enhance the current on-site recycling program, extend recycling requirements to tenants, and address the procurement of recycled materials. With the continuation of existing recycling programs and implementation of Master Plan Commitment SW-1, Alternative C would not conflict with solid waste policies and objectives intended to help achieve the requirements of AB 939.

Construction and demolition activities for Alternative C would generate a substantial amount of solid waste requiring disposal. **Table F4.19-3** shows construction and demolition solid waste generation projections for this alternative. As indicated in the table, under Alternative C, overall solid waste generation due to demolition would total approximately 218,756 tons by 2015. Total solid waste due to new construction would be approximately 51,338 tons by 2015. Under Alternative C, the impacts of construction and demolition wastes would be similar to those associated with Alternatives A and B. As with Alternatives A and B, Master Plan Commitments SW-2, Requirements for the Use of Recycled Materials During Construction (Alternatives A, B, C, and D), and SW-3, Requirements for the Recycling of Construction and Demolition Waste (Alternatives A, B, C, and D), would reduce the amount of demolition and construction waste requiring disposal by requiring contractors to use recycled construction materials and to recycle demolition and construction-related waste. Recycling of construction materials would be consistent with FAA policies pertaining to waste minimization and resource conservation.

As inert disposal capacity is anticipated to be available well beyond the 2015 planning horizon, impacts with respect to construction and demolition solid waste would be less than significant.

4.19.6.5 Alternative D - Enhanced Safety and Security Plan

As with the other build alternatives, under Alternative D, passenger and cargo activity would increase at LAX compared to baseline conditions. Alternative D would include the development of LAX Northside. Existing uses in the acquisition areas would be demolished. As with Alternatives A, B, and C, uses within the ANMP properties -- Belford and Manchester Square -- will be demolished as part of a separate action being undertaken by LAWA. For purposes of this analysis, no redevelopment of the Belford property is assumed. The land within the acquisition areas and Manchester Square would be incorporated into the Master Plan.

Table F4.19-2 shows that, under Alternative D, municipal solid waste generation for airport facilities would decrease 5,326 tpy below baseline conditions by 2015 (a 13 percent decrease). LAX Northside municipal solid waste generation would be 5,389 tpy by 2015. Total municipal solid waste generation within the Master Plan boundaries under Alternative D would decrease by 4,242 tpy below baseline conditions by 2015 (an 8 percent decrease).

Although total municipal solid waste generation would decrease as compared to 1996 baseline conditions under Alternative D, it would increase by 13 percent compared to Year 2000 conditions.

Under Alternative D, solid waste generation for airport facilities would be slightly higher than the No Action/No Project Alternative. However, overall municipal solid waste generation within the Master Plan boundaries would be lower than the No Action/No Project Alternative.

The decrease in municipal solid waste generation, as compared to the environmental baseline, is partly due to the ongoing acquisition and demolition of existing land uses within Belford and Manchester Square

and the planned acquisition of additional land for Master Plan development, and partly due to compliance with AB 939 diversion requirements, including the LAX on-site recycling program and participation in the city's diversion program. The development of LAX Northside and the increase in passengers and cargo tonnage would partially offset this decrease. Overall municipal solid waste generation would decrease as compared to baseline conditions. Because municipal solid waste generation within the Master Plan boundaries is projected to decrease under Alternative D, the impact would be less than significant.

In addition to existing programs aimed at reducing solid waste generation, LAWA would implement Master Plan Commitment SW-1, Implement an Enhanced Recycling Program (Alternatives A, B, C, and D), to enhance the current on-site recycling program, extend recycling requirements to tenants, and address the procurement of recycled materials. With the continuation of existing recycling programs and implementation of Master Plan Commitment SW-1, Alternative D would not conflict with solid waste policies and objectives intended to help achieve the requirements of AB 939.

Construction and demolition activities for Alternative D would generate a substantial amount of solid waste requiring disposal. **Table F4.19-3** shows construction and demolition solid waste generation projections for this alternative. As indicated in the table, under Alternative D, overall solid waste due to demolition would total 100,178 tons by 2015. Total solid waste due to new construction would total 34,165 tons by 2015.

For cargo and terminal buildings, construction waste would consist primarily of masonry, concrete, and metal. These materials are fairly easily recycled and a sizable market for their recycling exists. These materials also tend to create fewer scraps during construction than do materials like wood or drywall. Construction and demolition activities would also require the removal of pavement. LAX uses recycled pavement as filler below new paving. To the extent possible, suitable materials would be reused at LAX. Additionally, Master Plan Commitments SW-2, Requirements for the Use of Recycled Materials During Construction (Alternatives A, B, C, and D), and SW-3, Requirements for the Recycling of Construction and Demolition Waste (Alternatives A, B, C, and D), would reduce the amount of demolition and construction waste requiring disposal by requiring contractors to use recycled construction materials and to recycle demolition and construction-related waste. Recycling of construction materials would be consistent with FAA policies pertaining to waste minimization and resource conservation.

As indicated previously, inert disposal capacity is anticipated to be available well beyond the 2015 planning horizon. Therefore, impacts with respect to construction and demolition solid waste associated with Alternative D would be less than significant.

4.19.7 Cumulative Impacts

As discussed under subsection 4.19.3, *Affected Environment/Environmental Baseline*, solid waste generation at LAX results from a number of activities, including on-airport uses, passenger activities, LAWA uses, and tenant activities. Solid waste in the City of Los Angeles is disposed of at regional landfills. Many of these landfills are nearing capacity or the end of their permits. Extensions are being sought at several landfills, and the County of Los Angeles is pursuing development of rail-haul facilities outside the county. However, future capacity at these landfills is not assured and future permitted landfill capacity is severely constrained.

4.19.7.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, aircraft operations, passenger activity, and cargo handling would increase and LAX Northside and Continental City would be developed. However, due to compliance with AB 939, total solid waste generation for airport related land uses would decrease as compared to the environmental baseline. Additionally, on-going acquisition of properties by LAWA within the Manchester Square and Belford areas would further reduce solid waste generation in the immediate area with the displacement of 148 acres of residential uses.

The most sizable related project in the immediate vicinity of LAX is the Playa Vista project, which, combined with development of LAX Northside, could result in cumulative impacts to regional landfills through increased solid waste generation. Other projects in the vicinity, relocated residents from Manchester Square, and overall forecast growth throughout the region would place an additional demand on regional landfills. As addressed in subsection 4.19.3, *Affected Environment/Environmental Baseline*, plans are underway by several public entities and private companies for the development of landfills and

4.19 Solid Waste

rail haul facilities in remote areas outside Los Angeles County. Although the city and county are seeking other landfill options, future capacity at these landfills is not assured, and future permitted capacity is severely constrained.

4.19.7.2 Alternatives A, B, and C

Although airport activities would increase under the Alternatives A, B, and C with the acquisition and demolition of land uses within the Master Plan boundaries and compliance with AB 939, total solid waste generated within the Master Plan boundaries would decrease as compared to the environmental baseline. As a result, impacts relative to solid waste generation would be less than significant.

Alternatives A, B, and C would have indirect effects on solid waste due to project-related increases in population associated with direct employment. This population increase could range from 38,017 to 86,806 within the five county region, which would represent less than 1 to approximately 2 percent of forecast growth from 1996 to 2015. Within a ten mile radius of LAX, population growth associated with new employment at LAX would represent approximately 3 to 5 percent of forecast growth. A component of this growth would consist of residents and businesses that would be relocated within the region due to acquisition associated with the Alternatives A, B, and C. This increase in population, in combination with relocation of residents from Manchester Square and Belford and overall forecast growth, would increase regional solid waste generation. Because it is uncertain whether there would be enough landfill capacity to support this growth, the impact of increased population and resulting increases in solid waste generation would result in a potentially significant impact.

Impacts from other projects could also occur as a result of future development in the vicinity of LAX. As indicated above, the most notable major project in proximity to LAX is Playa Vista. Development of Playa Vista would exacerbate demands on constrained regional landfills. Other projects within the region, including the development of Manchester Square with light industrial uses under Alternative A, would have similar increases.

Projected direct and indirect population growth, in conjunction with other regional projects, would result in cumulative increases to solid waste generation within the Los Angeles region. As indicated in subsection 4.19.7.1, above, it is uncertain whether there will be enough landfill capacity to support this growth through the Year 2015. Therefore, impacts associated with cumulative increases in solid waste generation would be potentially significant.

4.19.7.3 Alternative D - Enhanced Safety and Security Plan

Although airport activities would increase under Alternative D, with the acquisition and demolition of land uses within the Master Plan boundaries and compliance with AB 939, total solid waste generated within the Master Plan boundaries would decrease as compared to the 1996 environmental baseline. As a result, impacts relative to solid waste generation would be less than significant. Alternative D would not have indirect effects on solid waste, as both on-airport and off-airport direct employment is projected to decrease, resulting in less population and associated solid waste generation. As with the other build alternatives, under Alternative D, some businesses would be relocated within the region due to acquisition associated with this alternative.

Because Alternative D would not have any direct or indirect adverse impacts relative to solid waste generation compared to 1996 baseline conditions, cumulative solid waste impacts under this alternative would be less than significant.

4.19.8 Mitigation Measures

Although total solid waste generation within the Master Plan boundaries associated with Alternatives A, B, C, and D would be less than that under the environmental baseline, LAWA would implement Master Plan Commitments SW-1, Implement an Enhanced Recycling Program (Alternatives A, B, C, and D), SW-2, Requirements for the Use of Recycled Materials During Construction (Alternatives A, B, C, and D), and SW-3, Requirements for the Recycling of Construction and Demolition Waste (Alternatives A, B, C, and D) to reduce airport-related solid waste generation from these alternatives. As a result, Alternatives A, B, C, and D would not have any significant impacts relative to project-related solid waste generation, and no mitigation would be required.

The following mitigation measure is recommended to reduce cumulative solid waste impacts.

◆ **MM-SW-1. Provide Landfill Capacity to Accommodate Cumulative Solid Waste (Alternatives A, B, and C).**

Additional landfill capacity in the Los Angeles region should be provided through the siting of new landfills, the expansion of existing landfills, or the extension of permits for existing facilities to address the projected landfill capacity shortfall resulting from cumulative development. As an alternative, or to augment regional landfill capacity, landfill capacity outside the region could be accessed by developing the necessary rail haul infrastructure. The responsibility for implementing this mitigation measure lies with state, county, and local solid waste planning authorities. The costs for implementing this mitigation measure will be passed on to LAX and other solid waste generators through increased solid waste disposal costs.

4.19.9 Level of Significance After Mitigation

4.19.9.1 Alternatives A, B, and C

Cumulative impacts from development of Alternatives A, B, or C could be mitigated through implementation of MM-SW-1, Provide Landfill Capacity to Accommodate Cumulative Solid Waste (Alternatives A, B, and C). Implementation of this mitigation measure is the responsibility of another agency (or agencies). If this mitigation measure is not fully implemented, cumulative impacts associated with solid waste generation and disposal under Alternatives A, B, and C would remain significant.

4.19.9.2 Alternative D - Enhanced Safety and Security Plan

No significant solid waste impacts would occur under Alternative D; therefore, no mitigation is required.

4.19 Solid Waste

This page intentionally left blank.