4.25.2 Wastewater (CEQA)

4.25.2.1 Introduction

The wastewater analysis addresses sanitary and industrial wastewater generation. Conclusions regarding the significance of impacts provided in this section are strictly for the purposes of CEQA. Technical Report 15b, *Wastewater Technical Report,* contains additional information regarding wastewater factors for specific land uses, regional and LAX wastewater collection and treatment, and wastewater generation projections. Additional information is also provided in Technical Report S-10b, *Supplemental Wastewater Technical Report.* Water use is addressed in Section 4.25.1, *Water Use*, and storm water in Section 4.7, *Hydrology and Water Quality.* Potential effects of regional growth induced by the LAX Master Plan are addressed in Section 4.5, *Induced Socio-Economic Impacts (Growth Inducement)*.

4.25.2.2 General Approach and Methodology

This analysis compares the wastewater generation projected for the No Action/No Project Alternative and four build alternatives to baseline wastewater generation, characterized by existing wastewater sources, collection facilities, and methods of conveyance and treatment. The analysis estimates on-airport wastewater generation under baseline conditions, as well as wastewater generation in areas proposed to be acquired as part of the LAX Master Plan and 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 in the vicinity of LAX and elsewhere in the region associated with the Master Plan would also result in increased wastewater generation. Potential impacts are addressed in Section 4.5, *Induced Socio-Economic Impacts (Growth Inducement)*, and in subsection 4.25.2.7, *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 baseline conditions, the No Action/No Project Alternative, and the four build alternatives to be compared side by side, a single wastewater study area was used. This composite study area is referred to as the "Master Plan boundaries." Total wastewater generation within the study area was then calculated (as described below) for baseline conditions and for all alternatives.

Under baseline conditions, 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 wastewater generation. Wastewater generation factors are typically provided in terms of wastewater generation (in gallons per day or acre-feet per year) per unit (e.g., square foot of building space, hotel room, dwelling unit). Wastewater generation was projected by multiplying the factor by the appropriate number of units. The data regarding baseline wastewater generation in the region is generally reported for the 1996/1997 timeframe.

Wastewater generation factors for on-airport cargo, maintenance, and ancillary uses were developed based on water consumption data compiled by Psomas and Associates in 1996 in *Utilities Consumption and Generation at LAX Technical Addendum*.[922] Because terminal visitors engage in the same types of

[922] Psomas and Associates, Utilities Consumption and Generation at LAX Technical Addendum, October 31, 1996.

activities as retail visitors (e.g., food service, sanitary, and cleaning), and consequently, generate similar quantities of wastewater on average, per square foot of building area, factors for wastewater generation in the terminals were based on the *Draft L.A. CEQA Thresholds Guide* factor for retail uses.[923] The *Draft L.A. CEQA Thresholds Guide* was also used to estimate wastewater generation for non-airport land uses, including the acquisition areas, and planned and proposed uses within LAX Northside/Westchester Southside. The wastewater generation factors contained in the *Draft L.A. CEQA Thresholds Guide* are based on facility type and square footage and represent average usage for each facility type. Wastewater generated by the Central Utility Plant (CUP), through boiler blowdown, was calculated based on the generation of the existing CUP, as reported in 1997. A complete discussion of the wastewater generation factors used in this analysis is provided in Technical Report 15b, *Wastewater Technical Report*.

The city's wastewater generation factor for retail use is dependent upon square footage and, therefore, would not account for increased passenger activity in the Central Terminal Area (CTA) under the No Action/No Project Alternative because the square footage of building area would not increase. To account for this intensification of use, a second factor was applied based on the projected increase in passengers that would use the CTA under the No Action/No Project Alternative. This factor was 136 percent for 2015.[924]

The total wastewater generation for each of the four build alternatives and the No Action/No Project Alternative was projected.[925] To determine whether the increase in wastewater generation associated with the Master Plan alternatives would be significant, projected wastewater flows were compared to the anticipated capacity at the appropriate regional wastewater treatment facility.

Information regarding existing wastewater facilities and capacities within the region was obtained through correspondence with the wastewater service providers serving the region. Consultation with the service providers focused on any relevant planning criteria, such as population, employment and/or land use, employed to project future needs.

The wastewater analysis also considers industrial wastewater discharges and the location, alignment, and depths of the existing outfall sewers to identify potential conflicts between the LAX Master Plan subsurface construction activities--such as excavation and tunneling--and the outfall sewers. Impacts from potential conflicts between proposed improvements and existing sewer outfalls were determined based on *LAX Master Plan Phase II Interim Report Sanitary Sewers*, prepared by Bechtel Infrastructure Corporation,[926] and augmented by a preliminary analysis performed by MARRS for Alternative D.[927]

4.25.2.3 Affected Environment/Environmental Baseline

Wastewater Conveyance and Treatment

The City of Los Angeles operates four wastewater treatment facilities that provide sewage treatment for most of the city's incorporated area and for several other cities and unincorporated areas in the Los Angeles region. The primary elements of the city's existing wastewater system are two wastewater treatment plants, two water reclamation plants,[928] approximately 6,500 miles of major interceptor and

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923 City of Los Angeles, Draft L.A. CEQA Thresholds Guide, May 14, 1998. Although not required by CEQA, the Draft L.A. CEQA Thresholds Guide was prepared by the City of Los Angeles to provide standards for the preparation of EIRs within the City. Although not formally adopted at the time of the analysis, the wastewater generation use factors contained in the guide were based on City of Los Angeles, Los Angeles Bureau of Sanitation wastewater generation factors, which were updated in the 1990s to reflect wastewater generation trends, and remain valid.

924 This factor was derived by dividing the total number of passengers by the baseline number of passengers as follows: 78.7 MAP (projected 2015 passengers) /58 MAP = 1.357 or 136 percent.

925 Subsequent to the calculation of wastewater generation for Alternative C, the alternative was modified to eliminate impacts to a historic resource. This modification reduced the amount of cargo square footage that would be constructed under this alternative, and similarly reduced the square footage of commercial and residential uses that would be acquired. The resultant differences in wastewater generation would not be substantial, and would not alter the conclusions of the analysis with regard to level of significance or need for mitigation.

926 Bechtel Infrastructure Corporation, LAX Master Plan Phase II Interim Report Sanitary Sewers, January 22, 1998.

927 MARRS, LAX Master Plan Alternative D Environmental Data Memorandum, August 27, 2002.

928 Water reclamation plants treat wastewater to a higher level so that it can be reused (as reclaimed water) for irrigation and industrial purposes.

mainline sewers, and 55 pumping plants. Sanitary wastewater generated by activities at LAX is treated at the Hyperion Treatment Plant (HTP).

HTP is located adjacent to the southwest boundary of LAX, approximately two miles southwest of the CTA. Presently, HTP has a design capacity of 450 million gallons per day (mgd). Average flows at HTP were 352 mgd in April 2000.[929] Recently, flows have decreased. In April 2002, average flows at HTP were 331 mgd, leaving an excess capacity of almost 120 mgd.[930]

Policy 9.2.3 in the *Los Angeles General Plan Framework* calls for wastewater treatment plant capacity to be developed as necessary.[931] That process is underway as the City of Los Angeles develops an Integrated Resources Plan (IRP). The first phase of that plan, the Integrated Plan for the Wastewater Program (IPWP), has been completed. This program, which featured a dedicated public involvement process, assessed projected wastewater needs for Los Angeles, identified tools available for meeting those needs, and developed a technical framework for development of policies and a preliminary facilities plan for meeting the needs through the 2020 planning horizon. The City of Los Angeles will follow the IPWP with a detailed wastewater facilities plan, environmental documentation and a financial plan. Based on the original IPWP projections, wastewater flows to HTP were anticipated to exceed the facility's capacity in 2020.[932] As part of the second phase of the IRP, the City is refining its wastewater flow projections and wastewater system capacity projections to determine more precisely when the shortfall in capacity will occur. The second phase of the IRP is under development and is scheduled to be completed in 2005.

Projected needs for wastewater facilities are being compared to the existing capabilities of the facilities to determine the projected shortfall. Using a public involvement process, a preferred set of options (or alternatives) will be selected that addresses the shortfall and meets the City's future wastewater treatment needs. Alternatives that the City of Los Angeles has for meeting its projected shortfall include combinations of increasing capacity at HTP, building new reclamation capacity upstream of HTP, conservation of potable water, and infiltration/inflow reduction.

Wastewater is delivered to HTP by gravity flow through five major sewer lines. These five major sewer lines are the Coastal Interceptor Sewer (CIS), North Outfall Sewer (NOS), North Central Outfall Sewer (NCOS), North Outfall Relief Sewer (NORS), and Central Outfall Sewer (COS). As illustrated in **Figure F4.25.2-1**, Location of Existing Sanitary Sewer Facilities, the latter three outfalls pass under LAX. The COS crosses Sepulveda Boulevard at a depth of 10 feet, the CTA at 10 to 25 feet, and Imperial Highway at 5 to 10 feet.[933] Four of the five outfalls presently, or are scheduled to, receive wastewater discharges from LAX. **Table F4.25.2-1**, Capacity and Flow of Outfall Sewers Serving LAX, provides capacities and flow information for these four outfalls. The design capacities in the table identify the volume of flow the outfalls were originally designed to convey. Through use and age, the interiors of the pipelines have deteriorated and debris has accumulated, reducing the effective capacities of the outfalls. As indicated in the table, all four of the outfalls have surplus effective capacity available.

929 Garnas, Gil, Division Manager, City of Los Angeles Department of Public Works, Bureau of Sanitation, Personal Communication, November 9, 2000.

930 City of Los Angeles Department of Public Works, Bureau of Sanitation, April 2002 Monthly Report for Hyperion Treatment Plant.

931 Envicom Corp., City of Los Angeles Citywide General Plan Framework, December 1996.

932 City of Los Angeles, Department of Public Works, Bureau of Sanitation, Integrated Plan for the Wastewater Program, Baseline Needs Technical Memorandum, April 2000.

933 Bechtel Infrastructure Corporation, LAX Master Plan Phase II Interim Report Sanitary Sewers, January 22, 1998.

Table F4.25.2-1

Capacity and Flow of Outfall Sewers Serving LAX

Outfall Sewer	Design Capacity	Effective Capacity	Flow[1]	Percent Effective Capacity Available
Central Outfall Sewer (COS)	91 mgd	65 mgd	2 mgd[2]	N/A
North Outfall Sewer (NOS)[3]	405 mgd	268 mgd	3 mgd[3]	N/A
North Outfall Relief Sewer (NORS)	557 mgd	381 mgd	129 mgd	64 %
North Central Outfall Sewer (NCOS)	353 mgd	259 mgd	220 mgd	15 %

1 Average Daily Dry Weather Flow.
2 COS flows are diverted into the NORS, with the exception of some local flows from LAX and the City of El Segundo in order to rehabilitate the lower portion of the COS beneath LAX.
3 The NOS is "off line" with the exception of some local flows that cannot be bypassed. All flow is diverted into the NORS in order to rehabilitate the lower portion of the NOS.

Sources: City of Los Angeles, Department of Public Works, Bureau of Sanitation, Integrated Plan for the Wastewater Program, Tools Memorandum, June 2000.

Baseline LAX Sanitary Wastewater Flows

Site-specific wastewater generation data are not collected at LAX. To calculate baseline wastewater generation, usage-based factors were used, as described above in subsection 4.25.2.2, *General Approach and Methodology.* Based on these factors, baseline wastewater generation at LAX (that is, for airport-related facilities) is 0.8 mgd. Baseline wastewater generation within the Master Plan boundaries, which includes LAX, the ANMP properties, and all areas proposed to be acquired under the various Master Plan alternatives, is approximately 2.0 mgd.

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. These changes resulted in: 1) an increase in wastewater generation associated with airport-related activities by 10,274 gpd, an increase of 1.3 percent compared to the 1996 baseline; and 2) a decrease in wastewater generation within the Master Plan boundaries to 1.94 mgd in 2000, a 3.7 percent decrease compared to the 1996 baseline (refer to **Table F4.25.2-2,** Wastewater Generation Comparison, in subsection 4.25.2.6 below).

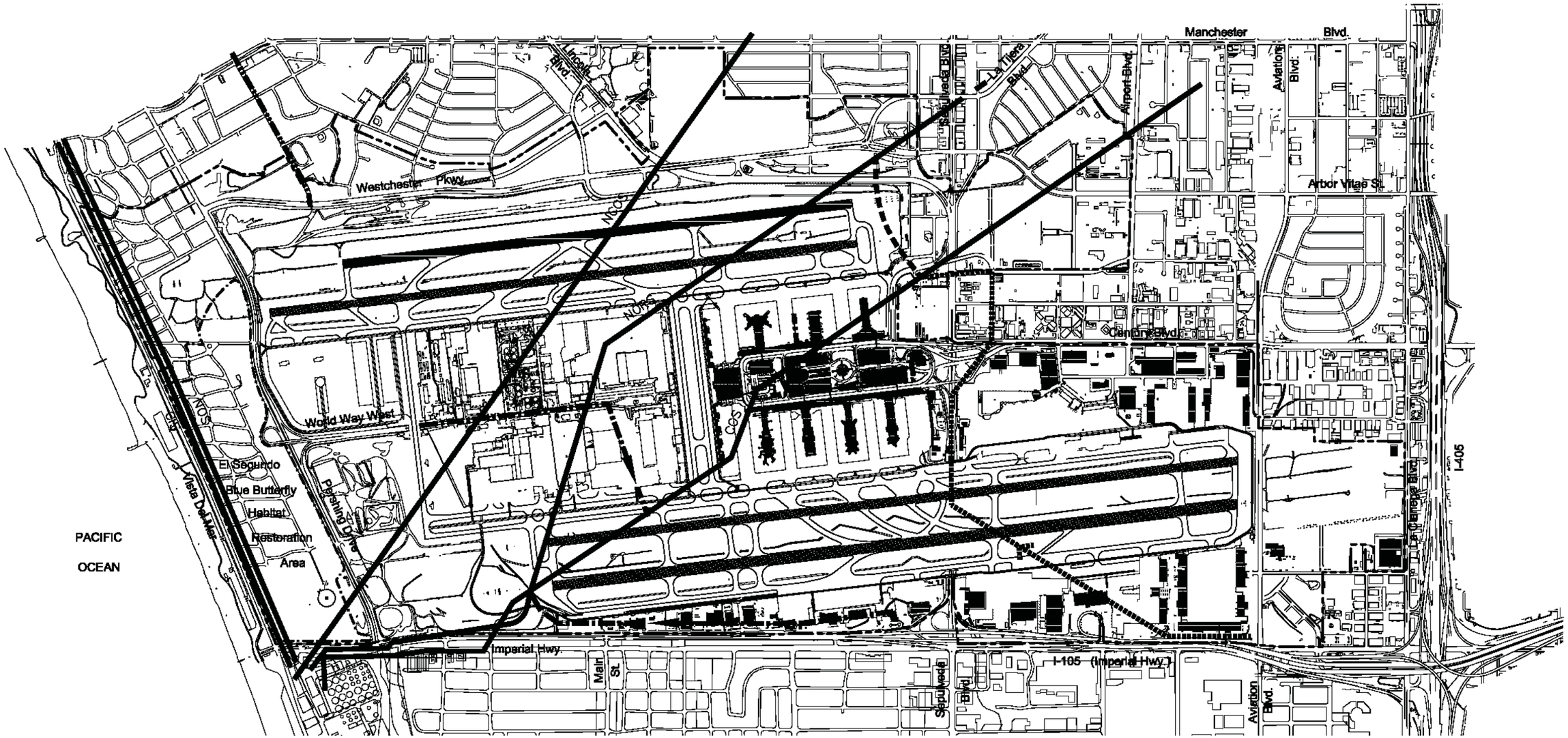
Baseline LAX Industrial Wastewater Flows

Twenty-seven airport tenants, including LAWA, hold permits to discharge industrial wastewater to the sewer system. As industrial dischargers, they are subject to regulation, permitting, and pretreatment requirements as specified by the City of Los Angeles Industrial Waste Control Ordinance. Together, they are permitted to discharge up to 385,000 gallons of industrial waste per day. Discharges are typically attributed to a combination of activities, including washing and steam cleaning equipment, aircraft, ground vehicles, garbage cans, floors; food preparation; refrigeration and air conditioning recirculation; and boiler blowdown. Additional information about industrial wastewater permits and discharges is provided in Technical Report 15b, *Wastewater Technical Report*.

Dry weather flows, and the first flush of wet weather (i.e., storm) flows from the central and southwestern portions of LAX are collected in an on-site water quality retention basin and discharged to HTP. These flows are described in greater detail in Section 4.7, *Hydrology and Water Quality*, and Technical Report 15b, *Wastewater Technical Report.*

Off-Site Fuel Farm Sites

The existing on-site fuel farm generates wastewater from sanitary (restrooms) and cleaning (janitorial) uses. Two sites close to LAX are being considered for the construction of an off-site fuel farm under Alternative B: Scattergood Electric Generating Station and the oil refinery located south of the airport. Scattergood has limited sanitation facilities and generates a negligible amount (i.e., on the order of a few hundred gallons per day) of wastewater that is conveyed one-quarter mile north to HTP. The oil refinery has an on-site wastewater treatment plant that treats stormwater and process water in order to meet permitting standards. Sanitary wastewater generated at the oil refinery is treated at HTP.



Source: Camp Dresser & McKee Inc., 2000.

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LAX Master Plan Final EIS/EIR	**Location of Existing Sanitary Sewer Facilities**	Figure **F4.25.2-1**

4.25.2.4 Thresholds of Significance

4.25.2.4.1 CEQA Thresholds of Significance

A significant wastewater generation 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:

- An exceedance in the capacities of regional wastewater collection and treatment facilities due to project-related wastewater generation.
- Interference with major wastewater collection facilities due to construction of project features.

These thresholds of significance are utilized because they address the two potential impacts to wastewater collection and treatment associated with the LAX Master Plan alternatives: the potential for the project to exceed regional wastewater collection and treatment capabilities; and the potential for the construction of proposed facilities to interfere with existing wastewater collection infrastructure. The first threshold was developed based upon guidance provided in the *Draft L.A. CEQA Thresholds Guide*[934] to address potential impacts to collection and treatment capabilities and infrastructure. The second threshold was developed specifically to address potential impacts associated with the Master Plan Alternatives relative to construction conflicts, which was not addressed in the *Draft L.A. CEQA Thresholds Guide.*

4.25.2.4.2 Federal Standards

The FAA *Airport Environmental Handbook* does not require that this environmental topic be addressed; therefore, no federal standards apply to the following analysis.

4.25.2.5 Master Plan Commitments

As addressed in subsection 4.25.2.6, *Environmental Consequences*, implementation of any of the Master Plan build alternatives would have potential impacts related to the potential for construction to interfere with existing sewer outfalls. In recognition of these potential impacts from construction activities on existing sewer outfalls, LAWA has included the following commitment in the LAX Master Plan coded "PU" for "public utilities."

- **PU-1. Develop a Utility Relocation Program (Alternatives A, B, C, and D).**

  LAWA will develop and implement a utilities relocation program to minimize interference with existing utilities associated with LAX Master Plan facility construction. Prior to initiating construction of a Master Plan component, LAWA will prepare a construction evaluation to determine if the proposed construction will interfere with existing utility location or operation. LAWA will determine utility relocation needs and, for sites on LAX property, LAWA will develop a plan for relocating existing utilities as necessary before, during and after construction of LAX Master Plan features. LAWA will implement the utility relocation program during construction of LAX Master Plan improvements.

4.25.2.6 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 wastewater generation, the adequacy of existing collection and treatment facilities, and the potential for construction to interfere with existing sewer outfalls. **Table F4.25.2-2,** Wastewater Generation Comparison, identifies wastewater generation under each of the alternatives as well as under 1996 baseline and Year 2000 conditions.

4.25.2.6.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, there would be limited improvements to LAX. These projects would increase the amount of cargo space 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.

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

4.25.2 Wastewater (CEQA)

The demolition of existing land uses in Belford and Manchester Square included in the No Action/No Project Alternative would eliminate existing wastewater generation in those areas; however, the development of LAX Northside and Continental City would create new wastewater generation in currently undeveloped areas within the Master Plan boundaries.

The increase in square footage dedicated to cargo uses would proportionately increase wastewater generation at LAX. In addition, intensification of terminal use would increase terminal-related wastewater generation 36 percent by 2015 over baseline conditions. Wastewater generation at the fuel farm and the CUP would not change. Total wastewater generation for airport facilities would increase 123,711 gpd over baseline conditions by 2015 (a 16 percent increase).

Table F4.25.2-2 shows wastewater generation projections under the No Action/No Project Alternative. Total wastewater generation within the Master Plan boundaries, including LAX Northside, Continental City, and land within the Master Plan boundaries that would not be acquired under this alternative, would increase 941,026 gpd over baseline conditions by 2015 (a 47 percent increase). The majority of this increase in wastewater generation is attributable to the development of LAX Northside and Continental City.

Table F4.25.2-2

Wastewater Generation Comparison (gpd)

	1996 Baseline	Year 2000	Alternatives 2015 NA/NP	A	B	C	D
LAX							
Airport Facilities	797,672	807,946	921,383	1,520,612	1,379,111	1,442,284	1,104,188
Belford	93,280	54,400	NA[1]	NA[2]	NA[2]	NA[2]	NA[1]
Continental City	NA	NA	458,000	NA	NA	NA	NA
LAX Northside[3]	NA	1,350	775,955	NA	NA	NA	775,955
Westchester Southside	NA	NA	NA	458,460	458,460	458,460	NA
Subtotal LAX[4]	**890,952**	**863,696**	**2,155,338**	**1,979,072**	**1,837,571**	**1,900,744**	**1,880,143**
Non-Project Uses Within Master Plan Boundaries[5]							
Manchester Square	323,360	276,400	NA[1]	245,200[6]	NA[7]	NA[7]	NA[7]
Land Within Acquisition Areas[8]	796,764	796,765	796,764	160,318	31,089	385,767	715,121
Subtotal Non-Project Uses[4]	**1,120,124**	**1,073,165**	**796,764**	**405,518**	**31,089**	**385,767**	**715,121**
TOTAL MASTER PLAN BOUNDARIES[4]	**2,011,076**	**1,936,861**	**2,952,102**	**2,384,590**	**1,868,660**	**2,286,511**	**2,595,263**

NA = Not Applicable.
NA/NP = No Action/No Project Alternative.

1 Under the No Action/No Project Alternative and Alternative D existing uses within Belford would be demolished, and under the No Action/No Project Alternative existing uses within Manchester Square would be demolished; with no redevelopment assumed for purposes of this analysis.

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. Wastewater 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, this generation value may be over stated.

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. Wastewater 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.

HTP has a design capacity of 450 mgd, and currently has excess wastewater capacity. It is anticipated that the 0.94 mgd increase in wastewater generation associated with the No Action/No Project Alternative in 2015, compared to baseline conditions, could be accommodated by the existing wastewater treatment facilities at HTP. As indicated in **Table F4.25.2-1**, all four of the outfalls have remaining excess capacity sufficient to convey the increase wastewater generated as a result of the No Action/No Project Alternative.

As the maintenance and industrial uses at LAX would be unchanged under the No Action/No Project Alternative, industrial wastewater discharges would remain similar to those under baseline conditions. Discharges would continue to be regulated by the City of Los Angeles Industrial Waste Control Ordinance, requiring that discharges meet water quality standards and mandating pretreatment, where necessary, to achieve these standards.

4.25.2.6.2 Alternative A - Added Runway North

Under Alternative A, the building area dedicated to terminal, cargo, and ancillary airport uses would increase and the building area for maintenance uses would decrease compared to baseline conditions. 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.

Table F4.25.2-2 shows that, under Alternative A, wastewater generation from airport facilities would increase 722,940 gpd over baseline conditions by 2015 (a 91 percent increase). Westchester Southside wastewater generation would be 458,460 gpd by 2015.

Total wastewater generation within the Master Plan boundaries under Alternative A would increase 373,514 gpd over baseline conditions by 2015 (a 19 percent increase). By 2015, the overall intensification of uses on the airport, and the redevelopment of Manchester Square with commercial uses (independent of the LAX Master Plan), would account for the 19 percent increase projected in wastewater generation within the Master Plan boundaries. In 2015, total wastewater generation within the Master Plan boundaries for Alternative A would be less than that under the No Action/No Project Alternative.

As noted above, HTP has a design capacity of 450 mgd, and currently has excess wastewater capacity. It is anticipated that the 0.37 mgd increase in wastewater generation associated with Alternative A in 2015, compared to baseline conditions, could be accommodated by the existing wastewater treatment facilities at HTP. Therefore, the impact associated with increased wastewater generation for this alternative would be less than significant.

As maintenance and industrial uses at LAX would be reduced under Alternative A, industrial wastewater discharges would likely be lower than those under baseline conditions. Discharges would continue to be regulated by the City of Los Angeles Industrial Waste Control Ordinance, requiring that discharges meet water quality standards and mandating pretreatment, where necessary, to achieve these standards.

Alternative A would require new wastewater collection infrastructure, as well as relocating and renovating on-airport facilities. The construction of this new infrastructure would be incorporated into the LAX Master Plan as part of Master Plan Commitment PU-1, Develop a Utility Relocation Program (Alternatives A, B, C, and D). Given the existing surplus capacity of the outfall sewers, it is anticipated that regional wastewater collection pipelines would be adequate to accommodate increases in wastewater generation for this alternative. Because the project would be designed to provide the requisite wastewater infrastructure, the need for new and relocated facilities on the airport would be a less than significant impact.

Construction of subsurface structures as part of Alternative A may interfere with existing wastewater collection infrastructure. As discussed in subsection 4.25.2.3, *Affected Environment/Environmental Baseline*, three major sewer outfalls, the NCOS, NORS, and COS, underlie LAX. Construction of major subsurface structures, such as the proposed close-in parking garage near the West Terminal Area and the People Mover, could potentially interfere with these outfalls. The NCOS and NORS are larger and deeper than the COS and, based on a preliminary analysis performed by Bechtel Infrastructure Corporation, design and construction would be performed so it would not interfere with these sewers. However, the COS crosses Sepulveda Boulevard at a depth of 10 feet, the CTA at 10 to 25 feet, and Imperial Highway at 5 to 10 feet. Based on preliminary engineering analysis, it appears that the COS would be affected by the Alternative A construction and would require relocation or modification. Under Master Plan Commitment PU-1, a utility relocation program would be implemented during construction to minimize potential impacts on existing subsurface utilities and ensure that potential impacts on existing wastewater outfalls would be less than significant.

4.25.2.6.3 Alternative B - Added Runway South

As with Alternative A, Alternative B would increase the building area dedicated to terminal, cargo, and ancillary airport uses, and decrease building area for maintenance uses compared to baseline conditions. Alternative B would also include development of Westchester Southside. Existing uses in the acquisition areas would be demolished. (Also as with Alternative A, uses within the ANMP properties--Belford and

Manchester Square--will be demolished as part of a separate action being undertaken by LAWA.) These areas would be incorporated into the Master Plan.

Table F4.25.2-2 shows that, under Alternative B, wastewater generation from airport facilities would increase 581,439 gpd over baseline conditions by 2015 (a 73 percent increase). Westchester Southside wastewater generation would be 458,460 gpd by 2015. Because of the reduction and elimination of high wastewater generation uses within the acquisition areas, wastewater generation in the other areas within the LAX Master Plan boundaries would decrease substantially from baseline conditions, and would offset increases in airport-related wastewater generation.

Under Alternative B, total wastewater generation within the Master Plan boundaries would decrease 142,416 gpd from baseline conditions by 2015 (a 7 percent decrease). In 2015, total wastewater generation within the Master Plan boundaries under Alternative B would be less than under the No Action/No Project Alternative.

Alternative B would result in less wastewater generation within the Master Plan boundaries than under baseline conditions. Therefore, wastewater generated under Alternative B would not cause an exceedance in the capacity of wastewater treatment facilities and no adverse impacts would occur. Alternative B would require the removal and relocation of the existing fuel farm and related infrastructure. Relocating the fuel farm to an off-site location--Scattergood Electric Generating Station or the oil refinery located south of the airport--would increase wastewater generation at the new site. The wastewater generation at the current fuel farm would be replaced by similar wastewater generation at the new fuel farm. Both of the off-site locations have adequate conveyance piping to accommodate the wastewater generation at the relocated fuel farm. Because the total wastewater generation associated with the relocated fuel farm could be accommodated by the existing wastewater collection facilities at either site, the impact would be less than significant.

The potential impacts associated with wastewater generation, the new/relocated on-airport wastewater infrastructure, and industrial wastewater flows would be the same as those described for Alternative A, above. As with Alternative A, implementation of a utility relocation program under Master Plan Commitment PU-1, Develop a Utility Relocation Program (Alternatives A, B, C, and D), would ensure that potential construction-related impacts would be less than significant.

4.25.2.6.4 Alternative C - No Additional Runway

Under Alternative C, the building area dedicated to terminal, cargo, and ancillary airport uses would increase, and the building area for maintenance uses would decrease compared to baseline conditions. Alternative C would also include development of Westchester Southside. Existing uses in the acquisition areas would be demolished. (As with Alternatives A and B, uses within the ANMP properties--Belford and Manchester Square--will be demolished as part of a separate action being undertaken by LAWA.) These areas would be incorporated into the Master Plan.

Table F4.25.2-2 shows that, under Alternative C, wastewater generation from airport facilities would increase 644,612 gpd over baseline conditions by 2015 (an 81 percent increase). Westchester Southside wastewater generation would be 458,460 gpd by 2015. Because of the reduction and elimination of high wastewater generation uses within the acquisition areas, as described previously, wastewater generation in the other areas within the LAX Master Plan boundaries would decrease substantially from baseline conditions, and would partially offset increases in airport-related wastewater generation. Alternative C would result in higher wastewater generation within the acquisition areas, as compared to Alternatives A and B, due to the lower total land acquisition required. Alternatives A and B would acquire more land and convert it into airport uses; Alternative C would maintain more of the existing land uses, with their higher wastewater generation rates.

Total wastewater generation within the Master Plan boundaries would increase 275,435 gpd over baseline conditions by 2015 (a 14 percent increase). Similar to Alternatives A and B, Alternative C would result in less wastewater generation within the Master Plan boundaries in 2015 than would the No Action/No Project Alternative.

As with Alternative A, by 2015, intensification of uses on the airport would increase wastewater generation within the Master Plan boundaries.

As previously noted, HTP has a design capacity of 450 mgd, and currently has excess wastewater capacity. It is anticipated that the 0.28 mgd increase in wastewater generation associated with Alternative C in 2015, compared to baseline conditions, could be accommodated by the existing wastewater treatment facilities at HTP. Therefore, the impact associated with increased wastewater generation for this alternative would be less than significant.

The potential impacts associated with wastewater generation, the new/relocated on-airport wastewater infrastructure and industrial wastewater flows would be the same as those described for Alternative A, above. As with Alternative A, implementation of a utility relocation program under Master Plan Commitment PU-1, Develop a Utility Relocation Program (Alternatives A, B, C, and D), would ensure that potential construction-related impacts would be less than significant.

4.25.2.6.5 Alternative D - Enhanced Safety and Security Plan

Under Alternative D, the building area dedicated to terminal, cargo, and ancillary airport uses would increase, and the building area for maintenance uses would decrease slightly 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 F4.25.2-2 shows that under Alternative D, wastewater generation from airport facilities would increase 306,516 gpd over baseline conditions by 2015 (a 38 percent increase).

Because of the reduction and elimination of some high wastewater generation uses within the acquisition areas, wastewater generation in the other areas within the LAX Master Plan boundaries would decrease somewhat from baseline conditions, and would partially offset increases in airport-related wastewater generation. Alternative D would result in higher wastewater generation within the acquisition areas, as compared to Alternatives A, B, and C, due to the lower total land acquisition required. The other alternatives, particularly Alternatives A and B, would require more land to be converted into airport uses; Alternative D would maintain substantially more of the existing land uses, with their higher wastewater generation rates. Total wastewater generation within the Master Plan boundaries would increase 584,187 gpd over baseline conditions by 2015 (a 29 percent increase). Similar to Alternatives A, B, and C, Alternative D would result in less wastewater generation within the Master Plan boundaries in 2015 than would the No Action/No Project Alternative, although the difference would be smaller than with the other build alternatives.

As previously noted, HTP has a design capacity of 450 mgd, and currently has excess wastewater capacity. It is anticipated that the 0.58 mgd increase in wastewater generation associated with Alternative D in 2015, compared to baseline conditions, could be accommodated by the existing wastewater treatment facilities at HTP. Therefore, the impact associated with increased wastewater generation for this alternative would be less than significant.

Maintenance and industrial uses at LAX would decrease only slightly (approximately 5 percent) under Alternative D. As a result, it is anticipated that industrial wastewater discharges would be similar to baseline conditions.

Alternative D would require new wastewater collection infrastructure, as well as relocating and renovating on-airport facilities. The construction of this new infrastructure would be incorporated into the LAX Master Plan as part of Master Plan Commitment PU-1, Develop a Utility Relocation Program (Alternatives A, B, C, and D). Given the existing surplus capacity of the outfall sewers, it is anticipated that regional wastewater collection pipelines would be adequate to accommodate increases in wastewater generation for this alternative. Because the project would be designed to provide the requisite wastewater infrastructure, the need for new and relocated facilities on the airport would be a less than significant impact.

Construction of subsurface structures as part of Alternative D may interfere with existing wastewater collection infrastructure. As discussed in subsection 4.25.2.3, three major sewer outfalls, the NCOS, NORS, and COS, underlie LAX. Construction of major subsurface structures, such as the proposed APM, and the consolidated RAC facility, as well as improvement to the CTA and the south airfield, could

potentially interfere with these outfalls. The NCOS and NORS are larger and deeper than the COS and, based on a preliminary analysis performed by MARRS[935] design and construction would be performed so Alternative D would not interfere with these sewers. However, the COS crosses Sepulveda Boulevard at a depth of 10 feet, the CTA at 10 to 25 feet, and Imperial Highway at 5 to 10 feet. Based on preliminary engineering analysis, it appears that the COS would be affected by the Alternative D construction and would require relocation or modification. Under Master Plan Commitment PU-1, a utility relocation program would be implemented during construction to minimize potential impacts on existing subsurface utilities and ensure that potential impacts on existing wastewater outfalls would be less than significant.

4.25.2.7 Cumulative Impacts

As discussed in subsection 4.25.2.3, *Affected Environment/Environmental Baseline*, wastewater generated by LAX, the City of Los Angeles, and other cities and counties in the region is treated at a limited number of facilities, including HTP. Based on current projections, wastewater flows to Hyperion Treatment Plant will exceed the plant's capacity in 2020. The city is undergoing an extensive planning effort to address this projected shortfall. The techniques being considered for using and enhancing treatment capacity are well-recognized and technically feasible. As such, adequate capacity is expected to be available to meet future flows.

4.25.2.7.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, additional passenger activity, cargo handling, and development of LAX Northside and Continental City would increase wastewater generation within the Master Plan boundaries. Ongoing acquisition of properties by LAWA within the Manchester Square and Belford areas would reduce wastewater generation in the immediate area. The majority of the increase in wastewater generation within the Master Plan boundaries would be attributable to the development of LAX Northside and Continental City.

The most sizeable related project in the immediate vicinity of LAX is the Playa Vista project, which, combined with development of LAX Northside, would result in a cumulative increase in wastewater generation in the region. Other projects in the vicinity, relocated residents from Manchester Square and Belford, and overall forecast growth throughout the region would place additional demands on wastewater treatment facilities.

HTP is anticipated to have insufficient capacity to treat projected wastewater flows through 2020 based on projected regional growth currently assumed in the IPWP. The IPWP is based on growth assumptions reflected in local general plans and aggregated into SCAG growth projections. By implementing the IRP, the city is expected to provide adequate treatment capacity to meet the increase in flows associated with the No Action/No Project Alternative as well as providing sufficient wastewater capacity to meet the cumulative needs of the region through 2020. However, at the time of the EIS/EIR analysis, the means for accommodating projected wastewater flows had not yet been selected from the various options being considered. As such, capacity to treat cumulative wastewater flows at HTP is not assured at this time.

4.25.2.7.2 Alternatives A, B, and C

As previously discussed in subsection 4.25.2.6, *Environmental Consequences*, demand for wastewater treatment facilities under Alternatives A and C would increase due to new development within the Master Plan boundaries, increases in passenger activity and employment, and increased aircraft operations. (Wastewater generation under Alternative B would decrease compared to baseline conditions.) To meet these needs, extensive planning efforts currently underway would ensure adequate wastewater treatment capacity to accommodate project-related flows.

Alternatives A, B, and C would also have an indirect effect on wastewater generation due to project-related increases in population associated with direct employment. This population increase could range from 38,000 to approximately 87,000 within the five-county region, which would represent less than 1 to approximately 2 percent of forecasted population 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 forecasted growth. Relocation of residents from Manchester Square and Belford, and overall

935 MARRS, LAX Master Plan Alternative D Environmental Data Memorandum, August 27, 2002.

forecast growth also contribute to increased wastewater treatment demands within the region. Uncertainty exists as to where residents would be relocated; however, relocated residents and businesses may be accommodated by planned or proposed new developments within the HTP service area and the service area of other wastewater treatment plants in Los Angeles. This would cause indirect cumulative increases in wastewater generation within the region.

In considering impacts associated with related project development in the airport vicinity, the proposed Playa Vista development would, in combination with Alternatives A, B, and C, directly increase cumulative wastewater generation in the region. Other developments within the region, including the development of Manchester Square under Alternative A (which would be developed independent of the LAX Master Plan) would also increase cumulative wastewater generation.

As indicated above, HTP is anticipated to have insufficient capacity to treat projected wastewater flows through 2020 based on projected regional growth currently assumed in the IPWP. This projected shortfall in future treatment capacity is anticipated to occur irrespective of which Master Plan alternative is selected. As part of the IRP, the City of Los Angeles is developing a plan for meeting the increased capacity needs through 2020. The techniques for using and enhancing treatment capacity under consideration by the IRP planning process are technically feasible, well-recognized techniques that can be implemented, as part of the IRP, with adequate lead time to address regional wastewater treatment capacity needs in the future. With implementation of the IRP, additional wastewater treatment capacity would be available and the cumulative wastewater generation associated with Alternatives A, B, or C and related cumulative projects would not exceed treatment capacity. Under those conditions, there would be no significant impact. However, at the time of the EIS/EIR analysis, the IRP was still under preparation and the means for accommodating the projected wastewater flows were not yet selected from the various options being considered. As such, capacity to treat cumulative wastewater flows at HTP was not assured at the time of the analysis; hence, the cumulative impact related to wastewater is considered to be potentially significant.

4.25.2.7.3 Alternative D - Enhanced Safety and Security Plan

Demand for wastewater treatment facilities under Alternative D would increase due to new development within the Master Plan boundaries, and increases in passenger activity and aircraft operations compared to baseline conditions. To meet these needs, extensive planning efforts currently underway would ensure adequate wastewater treatment capacity to accommodate project-related flows.

Alternative D would not result in an increase in population associated with direct employment. However, relocation of residents from Manchester Square and Belford, and overall forecast growth would contribute to increased wastewater treatment demands within the region. Uncertainty exists as to where residents would be relocated; however, relocated residents and businesses may be accommodated by planned or proposed new developments within the HTP service area and the service area of other wastewater treatment plants in Los Angeles. This would cause indirect cumulative increases in wastewater generation within the region.

In considering impacts associated with related project development in the airport vicinity, the proposed Playa Vista development, in combination with Alternative D, would directly increase cumulative wastewater generation in the region. Other developments within the region would also increase cumulative wastewater generation.

As indicated above, the HTP is anticipated to have insufficient capacity to treat projected wastewater flows through 2020 based on projected regional growth currently assumed in the IPWP. This projected shortfall in future treatment capacity is anticipated to occur irrespective of which Master Plan alternative is selected. With implementation of the IRP, additional wastewater treatment capacity would be available and the cumulative wastewater generation associated with Alternative D and related cumulative projects would not exceed treatment capacity. Under those conditions, there would be no significant impact. However, at the time of the EIS/EIR analysis, the IRP was still under preparation and the means for accommodating the projected wastewater flows were not yet selected from the various options being considered. As such, capacity to treat cumulative wastewater flows at HTP was not assured at the time of the analysis; hence, the cumulative impact related to wastewater is considered to be potentially significant.

4.25.2.8 Mitigation Measures

Alternatives A, B, C, and D would not have any significant impacts relative to project-related wastewater generation and treatment capacity. Therefore, no mitigation would be required. Master Plan Commitment PU-1 would minimize potential conflicts with subsurface utilities during construction. As a result, none of the build alternatives would have significant impacts to wastewater facilities during construction, and no mitigation would be required.

The following mitigation measure is recommended to reduce cumulative wastewater impacts:

- **MM-WW-1. Provide Additional Wastewater Treatment Capacity to Accommodate Cumulative Flows (Alternatives A, B, C, and D).**

  Additional wastewater capacity within the City of Los Angeles should be provided by the expansion/upgrade of the city's wastewater treatment systems via a combination of improvements to address the projected wastewater shortfall resulting from cumulative development. Such improvements could include increasing capacity at HTP, building new reclamation capacity upstream of HTP, conservation of potable water, and infiltration/inflow reduction. Implementation of this mitigation measure is the responsibility of the City of Los Angeles Department of Public Works, Bureau of Sanitation. Specific improvements will be identified in the City's IPWP and Wastewater Facilities Plan component of the City's Integrated Resources Plan. The cost for implementing this mitigation measure would be passed on to LAX and other wastewater generators through increased wastewater fees.

4.25.2.9 Level of Significance After Mitigation

Cumulative impacts from development of Alternatives A, B, C, or D could be mitigated to a level that is less than significant through implementation of Mitigation Measure MM-WW-1, Provide Additional Wastewater Treatment Capacity to Accommodate Cumulative Flows (Alternatives A, B, C, and D). Implementation of this mitigation measure is the responsibility of another agency. If this mitigation measure is not fully implemented, cumulative impacts associated with wastewater generation and treatment would remain significant.

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