# 4. Environmental Consequences

## 4.1 Introduction

The potential environmental effects resulting from implementation of the feasible alternatives identified in Section 2 are presented in this section. These alternatives are summarized below and discussed in detail in Section 2 of this EA:

- Proposed Action Alternative (Refinement #2 Alternative) – RSA improvements to Runway 6L-24R and Runway 6R-24L would involve:
  - Implementation of declared distances on Runway 6L and Runway 6R
  - Demolition of service road segments on the west end of Runway 6L
  - Service roads in the eastern portion of the Runway 6L-24R RSA would be relocated outside the RSA
  - Service road segments would be constructed between the Runway 6L-24R RSA and the Runway 6R-24L RSA
  - Two segments of service roads would be constructed for access to navigational aids (navaids) east of the runways
  - Cover a segment of the Argo Ditch
  - Pavement rehabilitation of Runway 6L-24R and Taxiway AA
  - Runway centerline and touchdown lighting replacement
  - Runway and taxiway pavement markings
  - Closure of vehicle service roads located within the Runway 6R-24L RSA
  - Relocate security gate(s)
  - Relocated Air Operations Area (AOA) Fence
  - LAWA equipment parking area closures
  - Realignment of taxiway hold bars
  - Construction Staging Areas

- No Action Alternative – No improvements to the RSAs, no pavement reconstruction, and no realignment of taxiway hold bars.

The analysis of potential effects on environmental resources discussed in this section includes an overview of impacts, methodology, thresholds of significance, and potential construction and operational impacts. Potential impacts are discussed in relation to the study areas defined in Section 3. Potential cumulative impacts resulting from the incremental effects of the Proposed Action when added to the effects of past, present, and reasonably foreseeable future actions are also analyzed. Where necessary, mitigation measures are discussed that would reduce or eliminate anticipated environmental impacts for each of the alternatives.

In accordance with guidance provided in FAA Orders 1050.1E, *Environmental Impacts: Policies and Procedures, Change 1*, and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, the following describes environmental resources which are not present within the project area and/or would not be affected by any of the alternatives:

- Farmlands – There are no prime or unique farmlands within the Generalized Study Area (GSA). The nearest prime farmlands are located more than 30 miles north of LAX[1].
- Wild and Scenic Rivers – There are no Wild and Scenic Rivers within the GSA or in the vicinity of Los Angeles. The U.S. Department of the Interior, National Park Service, maintains a national inventory of river segments that qualify for inclusion in the National Wild and Scenic River System. According to the National Rivers Inventory, the nearest listed Wild and Scenic River is Piru Creek, in Angeles National Forest, which is located over 20 miles northeast of the GSA.[2] The next two closest wild and scenic river segments to the proposed project, a 33-mile segment of the Sisquoc River and a 31.5-mile segment of the Sespe Creek, are located more than 50 miles to the northwest in Santa Barbara County in the Los Padres National Forest.[3, 4]
- Coastal Zones and Barriers – There are no coastal barrier islands in the vicinity of Los Angeles. The Detailed Study Area (DSA) is located east of the boundary of the California Coastal Zone, which is at the eastern right-of-way of South Pershing Drive. (Refer to Section 3, Section 3.11).
- Department of Transportation Act, Section 4(f) and Land and Water Conservation Fund Act, Section 6(f) Resources – No designated Section 4(f) or Section 6(f) resources are located within the DSA and none would be indirectly affected by the Proposed Action. (Refer to Section 3.4).
- Fish, Wildlife and Plants – There are no federal or state-listed or candidate species that are known to be present within or immediately adjacent to the DSA. Construction activities are not anticipated to

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1 California Department of Conservation website, *http://www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx*, accessed April 2012.

2 U.S. Fish and Wildlife Service, *National Wild and Scenic Rivers System*, accessed online, September 2013: http://www.rivers.gov/.

3 U.S. Department of the Interior, *National Park Service, National Wild and Scenic Rivers System*, December 1990.

4 U.S. Department of the Interior, National Park Service, *Wild & Scenic Rivers State-By-State List website*, http://www.nps.gov/rivers/wildriverslist.html, accessed April 2012.

impact any federal or state-listed or candidate species within the DSA vicinity. Once construction of the Proposed Action is completed, there would be no effect to listed species or designated critical habitat during the operations and maintenance phases of the Proposed Action. As such, the Proposed Action is anticipated to have no impact on any federal or state-listed or candidate species within the DSA vicinity. (Refer to Section 3.8).

- Historic, Architectural, Archaeological, and Cultural Resources – No historic properties are located within the APE for the proposed project. FAA made a finding that there would be no adverse effect to historic properties. SHPO concurred with FAA's finding in a letter dated April 29, 2014 (see Appendix B). Therefore, the APE does not contain any historic properties listed or eligible for listing on the National Register of Historic Places. Discovery of unanticipated archaeological resources is not expected due to extensive previous soil disturbance and because no previously identified sites are known within the APE (Refer to Section 3.12 and Appendix E).
- Floodplains – The DSA is not located on officially designated floodplains. (Refer to Section 3.10).

# 4.2 Noise

This section addresses the future aircraft noise environment and potential noise impacts related to the No Action Alternative or Proposed Action Alternative in the area surrounding LAX, and the methodology used to determine future aircraft noise exposure. The terms and metrics associated with aircraft noise relative to this analysis are discussed in detail in **Appendix F**.

## 4.2.1 OVERVIEW OF IMPACTS

The Proposed Action Alternative would not change the long-term operational conditions at LAX. All aircraft operational assumptions would be similar to those defined for the No Action Alternative, except for the implementation of declared distances for Runway 6L-24R and Runway 6R-24L. The Proposed Action Alternative would not change the number or type of aircraft operations nor would it change runway use at LAX. The implementation of declared distances would not change the start of take-off or where aircraft land on the northern runways.

When compared to the No Action Alternative, the Proposed Action Alternative would not cause new noise sensitive areas to be located at or above 65 decibels (dB) Community Noise Equivalent Level (CNEL), or existing sensitive and non-sensitive areas to experience a noise increase of at least 1.5 dB CNEL, which is the federal threshold for significant noise impacts. The use of CNEL as the measurement for significance of changes in noise levels is approved by the FAA for this report under the guidelines of FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*. Therefore, no significant noise impacts are anticipated during operations. However, during the construction phase of the Proposed Action Alternative, there would be a short-term (estimated 6 months) increase in aircraft noise exposure over some areas east of Runway 6R-24L due to aircraft operations being shifted to this runway during the 4-month runway closure period and the 2-month period that Runway 6L-24R would operate with a displaced threshold of 1,925 feet.

## 4.2.2 METHODOLOGY

### 4.2.2.1 Construction Impacts

Potential construction noise impacts for the Proposed Action were evaluated based on the potential increase in aircraft noise on neighboring communities due to operations shifted to other runways when Runway 6L-24R is closed for 4 months and when a displaced threshold of 1,925 feet is implemented on the same runway for a subsequent 2 months. As part of the Proposed Action, Runway 6L-24R must be closed for an estimated 4 months for pavement rehabilitation. During this time, the operations from this runway must be accommodated through the use of other runways at LAX. This shift in operations would cause a temporary increase in noise impacts to neighboring communities during the construction period when Runway 6L-24R is closed. In addition, to allow for completion of construction work on the Argo Ditch, Runway 6L-24R must operate at a reduced length of 7,000 feet for a period of 60 days (2 months). Taxi times for this period were calculated using the increased taxiing distance and a taxiway speed of 15 knots.

For determination of aircraft noise effects during the runway closure period, CNEL contours were developed using the latest version of the FAA's Integrated Noise Model (INM) available at the time the EA was prepared (INM, Version 7.0d, released on May 30, 2013). The INM is FAA's standard noise modeling tool for predicting noise levels in the vicinity of airports. As the INM model produces noise contours representing average annual noise exposure, the 4 month runway closure period and 2 month period with a reduced runway length on Runway 6L-24R had to be annualized with 6 months of normal operations.

### 4.2.2.2 Operational Impacts

The Proposed Action would not enhance airport capacity nor permanently alter existing or planned airport operations. The number of aircraft operations, time of day of operations, fleet mix, aircraft operational weights, and aircraft flight tracks at LAX would not change under the No Action Alternative or the Proposed Action. Aircraft noise descriptors and the methods for aircraft noise prediction were presented in Section 3.2.

For determination of aircraft noise effects, CNEL contours were developed using the INM to reflect forecast conditions for the No Action Alternative and the Proposed Action. 2015 and 2020 CNEL contours of equal noise for the 65, 70, and 75 dBA levels were calculated based on the FAA Terminal Area Forecast (TAF). The data and methodologies used to develop the noise contours for existing and future aircraft operational conditions are provided in Appendix F. As operations are the same for the No Action and Proposed Action Alternatives, published data was used for the 2020 CNEL contours. These forecasted operational conditions are summarized in **Table 4-1** and detailed in Appendix F. Fleet mix, runway use, time of day, flight tracks and flight track use, and departure procedures remain the same as under existing (2012) conditions.

**Table 4-1: Existing and Forecast LAX Aircraft Flight Operations**

| AIRCRAFT CATEGORY | ANNUAL FLIGHT OPERATIONS | | |
|---|---|---|---|
| | EXISTING 2012 | TAF 2015 1/ | TAF 2020 2/ |
| Air Carrier (AC) | 481,338 | 502,043 | 575,366 |
| Air Taxi (AT) | 103,159 | 93,447 | 106,727 |
| General Aviation (GA) | 18,334 | 18,318 | 20,867 |
| Military (MIL) | 2,649 | 2,601 | 2,321 |
| **Total Operations** | **605,480** | **616,409** | **705,281** |

NOTES:

1/ 2013 Federal Aviation Administration Terminal Area Forecast for 2015.

2/ 2012 Federal Aviation Administration Terminal Area Forecast for 2020.

SOURCES: Existing (2012) data is based on data provided by Los Angeles World Airports (2014). Terminal Area Forecast (TAF) data is from FAA, http://aspm.faa.gov/main/taf.asp, accessed March 9, 2013.

PREPARED BY: Ricondo & Associates, Inc., June 2014.

In 2015, total aircraft operations are expected to increase by approximately 1.8 percent above existing (2012) levels. Future 2020 total operations are expected to increase by 17 percent above existing (2012) levels. The largest operations increase is anticipated to be operations by air carrier aircraft.

The aircraft noise analysis includes maps depicting generalized flight tracks and sensitive land uses within the noise impact areas. Land use and population noise exposure was evaluated within the noise contours to include the following:

- The number of people living or residences within each noise contour at or above 65, 70, and 75 dB CNEL, including the net increase or decrease in the number of people or residences exposed to that level of noise; and
- The locations and numbers of noise-sensitive land uses (e.g. schools, churches, hospitals, parks, recreation areas) within each contour at or above 65, 70, and 75 dB CNEL.

FAA Orders 1050.1E, *Environmental Impacts: Policies and Procedures*, Change 1, and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, establish the FAA's Threshold of Significance for aviation noise impacts. In accordance with FAA Order 1050.1E, a proposed action would be considered to have a significant impact with regard to aviation noise, when compared to the No Action Alternative for the same timeframe, if it would:

- Cause noise-sensitive areas located at or above CNEL 65 dB to experience a noise increase of at least CNEL 1.5 dB; or
- Cause an increase of CNEL 1.5 dB that introduces new noise-sensitive areas to exposure levels of CNEL 65 dB or more.

For these thresholds, the noise analysis compared the Proposed Action with the No Action Alternative for the same timeframe.

## 4.2.3 CONSTRUCTION IMPACTS

### 4.2.3.1 No Action Alternative

Under the No Action Alternative, there would be no construction activities. Therefore, there would be no change in the noise environment at noise-sensitive areas adjoining LAX. No significant construction noise impacts are anticipated.

### 4.2.3.2 Proposed Action

A shift in runway use during the construction period would cause an increase in noise impacts to neighboring communities. Construction of the Proposed Action would require closure of Runway 6L-24R for approximately 4 months, and implementation of a displaced threshold of 1,925 feet for an additional period of 2 months. An analysis of the effects of the change in runway operation during the runway closure period is included in this EA. Assumptions concerning runway use were developed and are included in Appendix F. **Exhibit 4-1** identifies the areas that would experience a 1.5 dB CNEL or greater increase in noise (at or above 65 dB CNEL) or a 1.5 dB CNEL or greater decrease in noise (at or above 65 dB CNEL) during the 4-month runway closure and 2-month displaced threshold period. **Table 4-2** summarizes the dwelling units and population contained within the 65, 70, and 75 dB CNEL contours.

**Table 4-2: Land Use Noise Exposure by Sensitive Land Use (2015 Construction)**

| LAND USE | | 65+ dB CNEL[1/] | 70+ dB CNEL[2/] | 75 dB CNEL AND ABOVE [3/] |
|---|---|---|---|---|
| **Residential** | **Population** | 44,689 | 11,486 | 384 |
| | **Dwelling Units** | 13,860 | 2,874 | 77 |
| **Increase of 1.5 dB CNEL or Greater within 65 dB CNEL** | | | | |
| **Residential** | **Population** | 364 | | |
| | **Dwelling Units** | 95 | | |

NOTES: This table is not intended to be viewed as cumulative. Each group with a higher starting dB CNEL is a subset of the group with the lower starting dB CNEL. For example the 13,860 single-family units exposed to 65 dB CNEL and above include the 2,874 exposed to 70 dB CNEL and above and the 77 exposed to 75 dB CNEL and above.

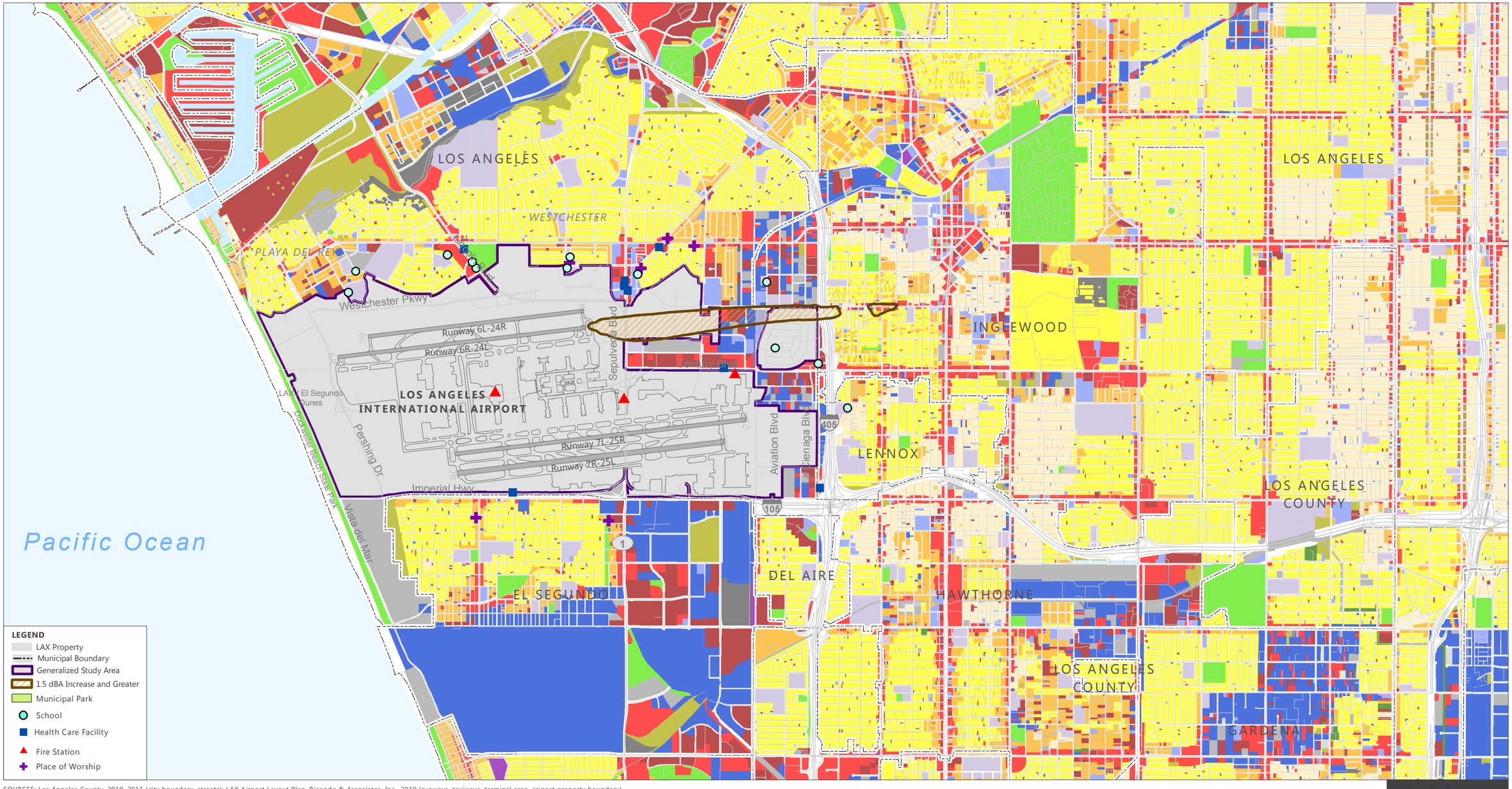
1/ The numbers presented in this group include sensitive uses that are exposed to 65 dB CNEL and above including the numbers on the two other groups in this table.

2/ These numbers are subsets of the 65 dB CNEL and Above group.

3/ These numbers are subsets of the 65 dB CNEL group and of the 70 dB CNEL and Above group.

SOURCE: Ricondo & Associates, Inc., May 2014.
PREPARED BY: Ricondo & Associates, Inc., June 2014.

Due to the redistribution of aircraft during the construction period and temporary closure of Runway 6L-24R, a 1.5 dB CNEL and higher increase is observable when compared to (2015) no project conditions. The primary areas that would experience an increase of 1.5 dB CNEL or higher are located directly east of Runway 6R-24L.




SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary).
South California Association of Governments (land use), 2008.
PREPARED BY: Ricondo & Associates, Inc., June 2014.

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**EXHIBIT 4-1**

CNEL 1.5 dBA or Greater Increase During Construction Period

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Exhibit 4-1 illustrates sensitive land uses in relation to the areas that would experience a 1.5 dB CNEL or greater increase during the construction period. Besides residential land uses, no sensitive land uses are located within the 1.5 dB CNEL or greater noise contour. These dwelling units are located within the City of Inglewood within the existing Sound Insulation Grant Program established by LAWA to mitigate noise impacts through sound insulation for non-City of Los Angeles jurisdictions around LAX. The current LAX Eligibility Contour is the 2015 Alternative D 65 dB CNEL noise contour from the 2005 LAX Master Plan Final EIS/EIR (Alt D Contour).[5]

The City of Inglewood administers the Residential Sound Insulation Program (RSIP) for all areas within the City that are zoned residential and located within the 2015 Alternative D 65 dB CNEL noise contour. The City of Inglewood funds the RSIP through grants from LAWA and the FAA. Applicable criteria for sound insulation eligibility include:

- Property must be zoned residential
- Property must be located within the 2015 Alternative D 65 dB CNEL noise contour
- Property must have been constructed prior to incorporation of allowable interior noise level standards in the California Building Standards (Title 24), which requires that interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. These standards were incorporated in 1974 for multi-family dwellings and in 1989 for single-family homes.

**Exhibit 4-2** depicts the residential areas and their current status within the City of Inglewood's RSIP. Seven residential properties that are zoned residential land uses would experience a 1.5 dB increase or higher in airport noise that have not been already insulated. All properties zoned residential have been invited or are active in the program. Those property owners that have not responded have been sent letters inviting them to participate in the City of Inglewood's RSIP. There are 52 total parcels (containing 95 residential dwellings and a population of 364) that would be impacted by an increase of 1.5 dB CNEL or greater during the 4-month closure of Runway 6L-24R and the 2-month period when Runway 6L-24R would be reduced to 7,000 feet. Of these 52 parcels, 8 have been mitigated under the RSIP, 3 are in process of being mitigated, 6 (7 total dwelling units, 28 people) have been invited to participate but have not responded, 1 has declined to participate in the RSIP, 5 are not eligible for sound insulation because they were constructed after the cutoff for eligibility in the RSIP, and 29 are not eligible because they are zoned C-2 (commercial).

[5] City of Los Angeles, Los Angeles World Airports, *Residential Sound Insulation*, Accessed Online: http://www.lawa.org/welcome_LAWA.aspx?id=1092, March 2014.

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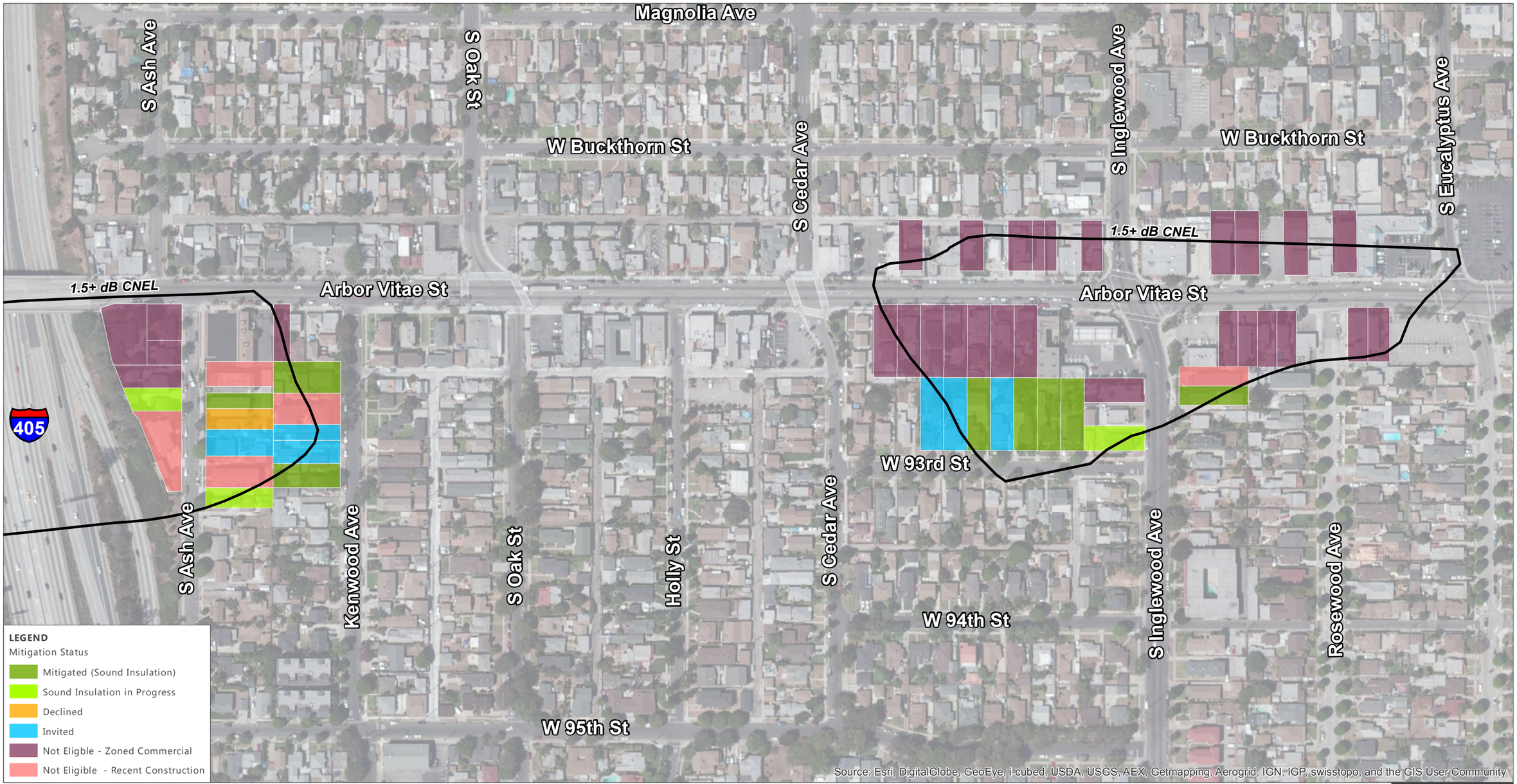


SOURCES: City of Inglewood Residential Sound Insulation Program and Los Angeles World Airports, 2014 (mitigation status of affected parcels); Ricondo & Associates, Inc., 2014 (noise contour).
PREPARED BY: Ricondo & Associates, Inc., June 2014.

**EXHIBIT 4-2**

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Properties with Residential Structures within 1.5 dB CNEL or Greater Increase Noise Contour

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As discussed further in Mitigation Measures, Section 4.2.5 below, the 6 (7 dwelling units, 28 people) RSIP eligible parcels that have not responded and the 1 which declined to participate are being sent letters by LAWA to invite them to participate in the RSIP again. Any property that wishes to participate in the RSIP would be included into the program and sound insulated prior to the runway closure period.[6] Therefore, any temporary noise impacts that would occur as a result of construction of the Proposed Action would be mitigated.

### 4.2.4 OPERATIONAL IMPACTS

#### 4.2.4.1 No Action Alternative

The No Action Alternative would not affect (increase or decrease) the number of aircraft operations at LAX or the routing of aircraft in the air to and from LAX, when compared to the Proposed Action for the same timeframes. Under the No Action Alternative, existing noise levels from aircraft operations would generally continue, with some change due to the natural growth in aviation activity forecast to occur at LAX with or without the Proposed Action.

#### 4.2.4.2 Proposed Action

The Proposed Action would not result in a change to any of the CNEL contours when compared to the No Action Alternative. The Proposed Action would not increase or decrease the number or type of aircraft operations as compared to the No Action Alternative for the same timeframes.

The detailed data and methodologies used to develop the aircraft noise contours for the 2015 Proposed Action Alternative are provided in Appendix F. Future (2015) CNEL contours for the Proposed Action Alternative are presented in **Exhibit 4-3** and the associated estimated noise exposure levels over noise sensitive land uses are presented in **Table 4-3**. As operations are the same for the No Action and Proposed Action Alternatives, published data was used for the 2020 CNEL contours, as shown in **Exhibit 4-4.** The associated estimated noise exposure levels over noise sensitive land uses are shown in **Table 4-4**.

[6] Under California Code of Regulations Title 21, Chapter 6, Section 5014(a)(4), if a residential land owner refuses to participate in a sound insulation program, the residential use is not considered incompatible (as long as the airport proprietor has made a genuine effort to sound insulate or acquire an avigation easement).

**Table 4-3: Land Use Noise Exposure by Sensitive Land Use (2015)**

| LAND USE | | 65+dB CNEL[1/] | 70+ dB CNEL[2/] | 75 dB CNEL AND ABOVE [3/] |
|---|---|---|---|---|
| Residential | Population | 42,768 | 11,052 | 364 |
| | Dwelling Units | 13,383 | 2,812 | 73 |
| School | | 31 | 6 | 0 |
| Church | | 16 | 0 | 0 |
| Hospital | | 31 | 9 | 0 |
| Recreation | | 15 | 4 | 2 |

NOTES: This table is not intended to be viewed as cumulative. Each group with a higher starting dB CNEL is a subset of the group with the lower starting dB CNEL. For example the 13,383 single-family units exposed to 65 dB CNEL and above include the 2,812 exposed to 70 dB CNEL and above and the 73 exposed to 75 dB CNEL and above.

1/ The numbers presented in this group include sensitive uses that are exposed to 65 dB CNEL and above including the numbers on the two other groups in this table.

2/ These numbers are subsets of the 65 dB CNEL and Above group.

3/ These numbers are subsets of the 65 dB CNEL group and of the 70 dB CNEL and Above group.

SOURCE: Ricondo & Associates, Inc., January 2014.
PREPARED BY: Ricondo & Associates, Inc., June 2014.

**Table 4-4: Land Use Noise Exposure by Sensitive Land Use (2020)**

| LAND USE | | 65+ dB CNEL[1/] | 70+ dB CNEL[2/] | 75 dB CNEL AND ABOVE [3/] |
|---|---|---|---|---|
| Residential | Population | 44,871 | 13,135 | 643 |
| | Dwelling Units | 13,889 | 3,335 | 129 |
| School | | 63 | 21 | - |
| Church | | 4 | 3 | - |
| Hospital | | 5 | - | - |
| Recreation | | 16 | 11 | 4 |

NOTES: This table is not intended to be viewed as cumulative. Each group with a higher starting dB CNEL is a subset of the group with the lower starting dB CNEL. For example the 13,889 single-family units exposed to 65 dB CNEL and above include the 3,335 exposed to 70 dB CNEL and above and the 129 exposed to 75 dB CNEL and above.

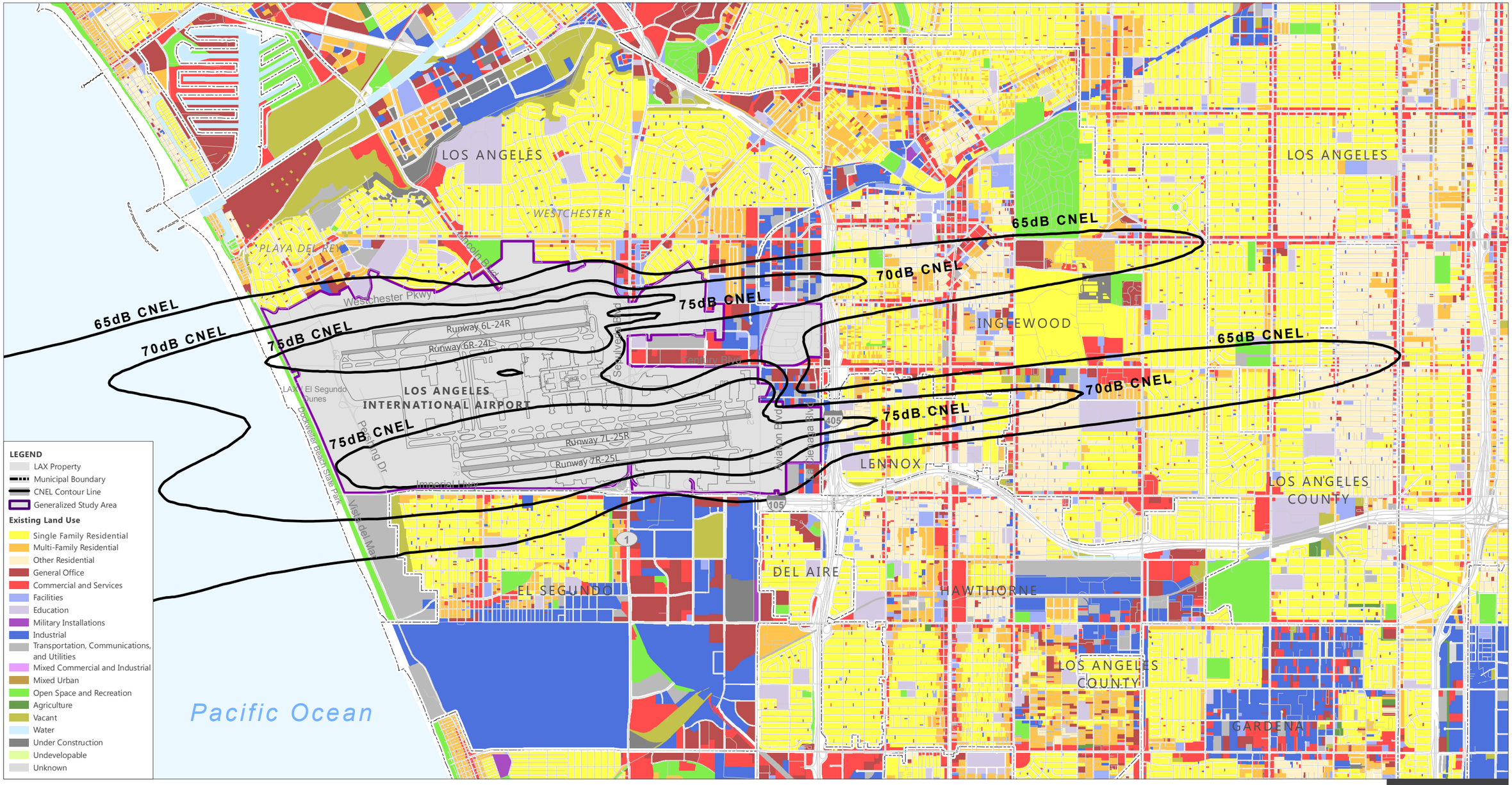
1/ The numbers presented in this group include sensitive uses that are exposed to 65 dB CNEL and above including the numbers on the two other groups in this table.

2/ These numbers are subsets of the 65 dB CNEL and Above group.

3/ These numbers are subsets of the 65 dB CNEL group and of the 70 dB CNEL and Above group.

Population contains 2010 census data.

SOURCE: City of Los Angeles, Los Angeles World Airports, *Final Environmental Assessment for Los Angeles International Airport (LAX) Runway 7L-25R Runway Safety Area (RSA) and Associated Improvements Project*, August 2013.
PREPARED BY: Ricondo & Associates, Inc., June 2014.




SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary).
South California Association of Governments (land use), 2008.
PREPARED BY: Ricondo & Associates, Inc., June 2014.

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**EXHIBIT 4-3**

Future (2015) Proposed Action Alternative
CNEL Contours and Land Use

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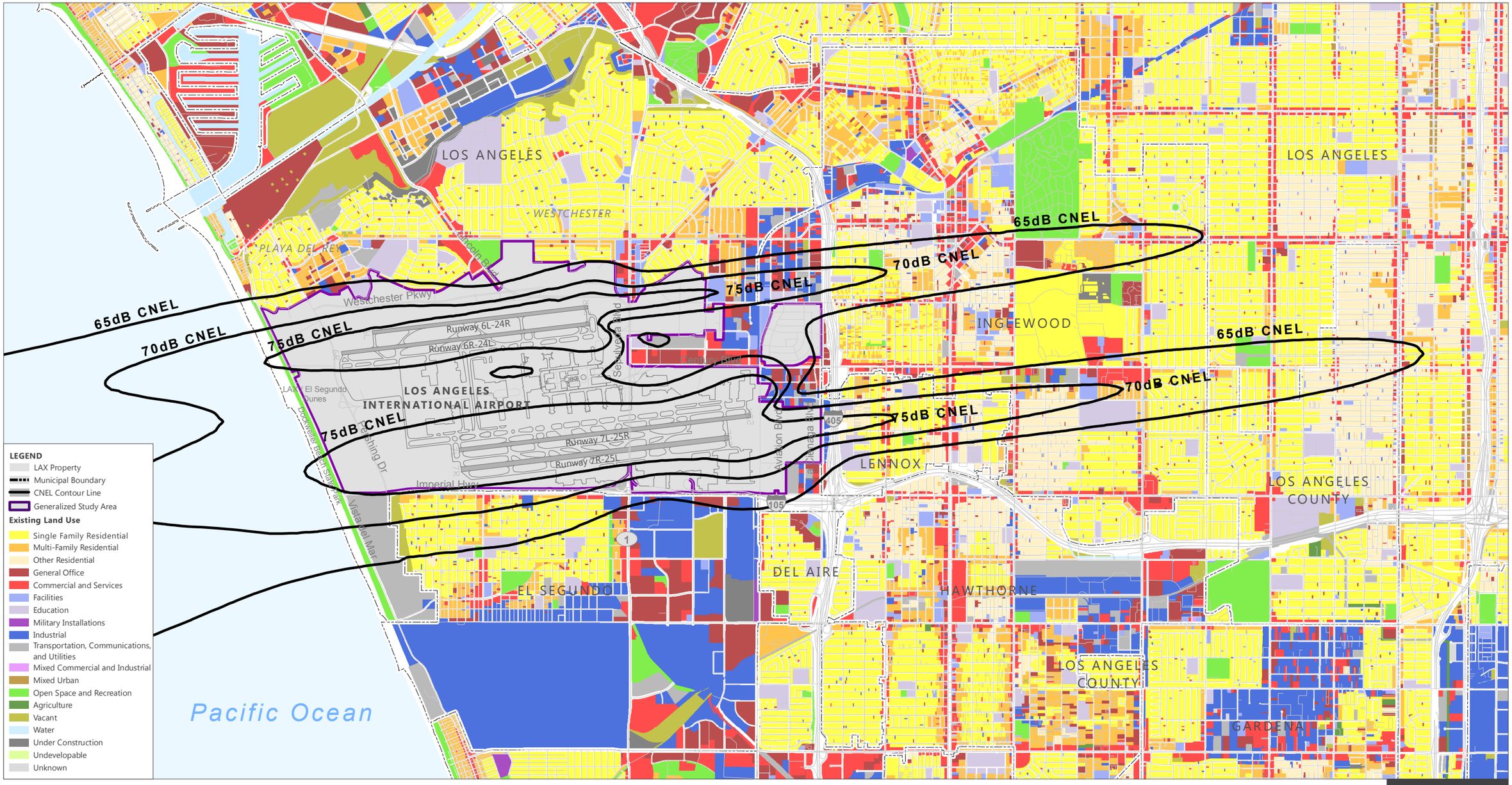


SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary).
South California Association of Governments (land use), 2008.
PREPARED BY: Ricondo & Associates, Inc., June 2014.

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**EXHIBIT 4-4**

Future (2020) Proposed Action Alternative
CNEL Contours and Land Use

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### 4.2.5 MITIGATION MEASURES

The Proposed Action Alternative would not result in significant operational noise impacts, but would result in temporary significant construction-related noise impacts due to the shift in aircraft operations while the runway is closed. All properties zoned residential located within the 1.5 dB CNEL or greater increase noise contour that would result from closure of Runway 6L-24R for 4 months and a reduced runway length of 7,000 feet for 2 months during construction, have either been mitigated, are in the process of being mitigated, or have been invited to participate in the City of Inglewood's RSIP. For those seven properties that are eligible to participate in the RSIP and that have not responded or previously declined to participate in the City of Inglewood's RSIP, LAWA will invite them again to participate in the RSIP; if the affected property owners agree to participate in the RSIP, sound insulation will be completed prior to July 2015 when construction of the Proposed Action and the temporary closure of Runway 6L-24R would begin.[7]

## 4.3 Compatible Land Use

Impacts to existing and planned land uses in the vicinity of an airport are usually associated with the extent of aircraft noise impacts related to that airport. As indicated in Section 4.2, Noise, above, the Proposed Action would result in no change in noise exposure when compared to the No Action Alternative for the same timeframe, but would result in temporary noise impacts during construction. These temporary noise impacts would be or have previously been mitigated through the City of Inglewood's RSIP for those properties eligible for sound insulation.

### 4.3.1 OVERVIEW OF IMPACTS

The Proposed Action would not change operational conditions at LAX. All assumptions remain the same as those identified for the No Action Alternative. When compared to the No Action Alternative during the same timeframe, there would be no difference in noise exposure under the Proposed Action. However, there would be a 1.5 dB CNEL or greater increase in noise over some noise sensitive areas during the 6-month construction period. As discussed in Section 4.2.3, these temporary noise impacts would be or have previously been mitigated through the City of Inglewood's RSIP for those properties that are eligible for sound insulation. Therefore, as stated in Section 4.2, no significant noise impacts would result and there would be no impacts on compatible land use.

### 4.3.2 METHODOLOGY

According to FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures, Change 1*, Appendix A, § 4.1(a), the compatibility of existing and planned land uses in the vicinity of airports is usually associated with the extent of the airport's future noise impacts. If the noise analysis conducted in support of a proposed

[7] Under California Code of Regulations Title 21, Chapter 6, Section 5014(a)(4), if a residential land owner refuses to participate in a sound insulation program, the residential use is not considered incompatible (as long as the airport proprietor has made a genuine effort to sound insulate or acquire an avigation easement).

action concludes that there are no significant impacts, the same conclusion can generally be drawn regarding the compatibility of land use in the areas around the airport. Alternatively, where the noise analysis indicates that significant impacts would occur to noise-sensitive land uses within areas exposed to CNEL 65 dB or higher, then impacts on compatible land use must be addressed.

LAWA has already implemented an Airport Residential Soundproofing Program (RSP) for residences impacted by aircraft noise. The RSP provides noise insulation for residential buildings located within the recorded 65 dB CNEL or above. Currently, there are approximately 9,000 residences eligible for the program located in the City of Los Angeles communities of Playa del Rey, Westchester, and areas of South Los Angeles. As of the end of 2012, LAWA has provided soundproofing to over 6,900 of these eligible residences. Additionally, Los Angeles County, the City of Inglewood, and the City of El Segundo have established residential sound insulation programs to mitigate exposure to aircraft noise.

As discussed in Section 4.2.2, *Methodology*, the same thresholds of significance for noise are applicable to compatible land uses. Therefore, a proposed action would be considered to have a significant impact with regard to aviation noise, when compared to the No Action Alternative for the same timeframe, if it would:

- Cause noise-sensitive areas located at or above CNEL 65 dBA to experience a noise increase of at least CNEL 1.5 dBA; or
- Cause an increase of CNEL 1.5 dBA that introduces new noise-sensitive areas to exposure levels of CNEL 65 dBA or more.

### 4.3.3 CONSTRUCTION IMPACTS

#### 4.3.3.1 No Action Alternative

Under the No Action Alternative, there would be no construction activities associated with improvements to Runway 6L-24R or Runway 6R-24L and, consequently, there would be no change in the noise environment at noise sensitive areas in the vicinity of LAX. Therefore, no significant construction impacts related to compatible land use would occur.

#### 4.3.3.2 Proposed Action

Under the Proposed Action Alternative, construction activities would include demolition, excavation and grading of Runway 6L-24R, Taxiway AA, and several service roads. To allow for the rehabilitation of portions of the Runway 6L-24R pavement, the runway must be temporarily closed for an extended period of time (estimated at 4 months) and operate with a reduced runway length of 7,000 feet (estimated at 2 months). Runway 6L-24R is the primary arrivals runway on the north airfield; the proposed closure would require shifting all arriving aircraft traffic to other runways at LAX during the 4-month runway closure period and shifting larger aircraft (Airplane Design Group [ADG] IV or higher) to other runways during the 2-month temporary displaced threshold. This shift in operations may cause airfield and/or airspace delays resulting in increased arrival and departure taxi times. An increase in taxi travel times can result in increased noise for neighboring communities.

As discussed in Section 4.2 the redistribution of aircraft during the construction period and temporary closure of Runway 6L-24R, would result in a 1.5 dB CNEL or higher increase in noise over some noise sensitive areas when compared to (2015) no project conditions (Exhibit 4-1). The primary areas that would experience an increase of 1.5 dB CNEL or higher are located directly east of Runway 6R-24L. This increase would impact residential dwellings east of the airport during the runway closure and reduced runway length periods. As discussed in Section 4.2.3, 364 residents located within the 65 dB CNEL noise contour would experience an increase in noise exposure of 1.5 dB CNEL or greater during the runway closure period. Eligible properties located within the 1.5 dB CNEL or greater increase noise contour are within the City of Inglewood's RSIP and have either already been mitigated or have previously been invited to participate in the City of Inglewood's RSIP. Those seven parcels which are eligible for participation in the RSIP but have not responded or previously declined to participate in the RSIP, will be invited to participate in the RSIP prior to construction. If any of them elect to participate in the RSIP, sound insulation would be completed prior to construction of the Proposed Action. As such, the temporary noise impacts associated with the 4-month closure and 2-month shortening of Runway 6L-24R during construction of the Proposed Action would not be significant.

### 4.3.4 OPERATIONAL IMPACTS

#### 4.3.4.1 No Action Alternative

Under the No Action Alternative, the improvements associated with the Proposed Action would not be constructed and the noise environment at LAX and at the existing sensitive land uses would remain unchanged. Therefore, no operational impacts would occur.

#### 4.3.4.2 Proposed Action

The Proposed Action would not result in changes to existing land uses in the vicinity of LAX. Tables 4-3 and 4-4 above summarize the incompatible land uses that are exposed to noise levels of 65 dBA CNEL and above for 2015 and 2020, for both the Proposed Action and the No Action Alternative. As shown, single-family residences, multi-family residences, schools, churches, hospitals, and recreational uses would experience the same noise exposure levels as the No Action Alternative for both 2015 and 2020. Therefore, no significant land use compatibility impacts are anticipated in either 2015 or 2020.

### 4.3.5 MITIGATION MEASURES

The Proposed Action Alternative would not result in significant operational noise impacts, but would result in temporary construction-related noise impacts over noise sensitive uses due to the shift in aircraft operations while the runway is closed and the runway is operated at a reduced length. Mitigation measures for noise impacts are discussed in further detail within Section 4.2.5.

# 4.4 Socioeconomic Impacts, Environmental Justice, Children's Environmental Health and Safety Risk, and Surface Transportation

## 4.4.1 OVERVIEW OF IMPACTS

Under the No Action Alternative, none of the improvements proposed under the Proposed Action Alternative would be constructed. Therefore, no disproportionately high and adverse impacts related to socioeconomic impacts, environmental justice, children's environmental health and safety risk and surface transportation are anticipated under the No Action Alternative.

The Proposed Action would not result in the displacement of people, housing or businesses; population growth; division or disruption of established communities; or disruption of orderly planned development. In addition, the Proposed Action would not be located adjacent to schools or substantial numbers of residences. Therefore, no disproportionately high and adverse impacts related to socioeconomic impacts, environmental justice, children's environmental health and safety risk and surface transportation are anticipated under the Proposed Action.

## 4.4.2 METHODOLOGY

### 4.4.2.1 Socioeconomics

Socioeconomic data, including demographics (race and ethnicity), housing characteristics, and employment data, was gathered from the 2010 U.S. Census for the 14 2010 Census tracts located partially or wholly within the GSA (refer to Exhibit 3-6). In addition, sensitive land uses were identified within the GSA and within a quarter-mile of the GSA (refer to Exhibit 3-4) using spatial data. Social impacts were determined through the evaluation of how the implementation of the No Action Alternative or Proposed Action could impact sensitive populations and resources important to surrounding populations. A significant impact would occur if the action would cause:

- Extensive relocation, but sufficient replacement housing is unavailable;
- Extensive relocation of community businesses that would cause severe economic hardship for affected communities; and/or
- A substantial loss in community tax base.

### 4.4.2.2 Environmental Justice

U.S. Department of Transportation (DOT) Order 5610.2, *DOT Order to Address Environmental Justice in Minority Populations and Low-Income Populations* (April 15, 1997), was used to undertake the environmental justice analysis as required under Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994). Environmental justice impacts were evaluated by determining whether the No Action Alternative or Proposed Action would have

disproportionately high and adverse human health or environmental impacts on minority and low-income populations. Also evaluated were impacts to resources important to communities of environmental justice concern. A significant impact would occur if the action would cause disproportionately high and adverse human health or environmental impacts to minorities and low-income populations.

A Census Tract has the potential to contain a community of environmental justice concern when the minority or low-income population of the analysis area is "meaningfully greater" than that of the surrounding areas. Poverty was determined using U.S. Department of Housing and Urban Development, Health and Human Services Poverty Guidelines as used by the U.S. Census. Finally, Executive Order 13166, *Improving Access to Services for Persons with Limited English Proficiency* (August 11, 2000), requires federal agencies to provide the opportunity for Limited English Proficiency (LEP) communities to be involved in the planning process by having access to translated materials and/or translation services during meetings. For this evaluation, the LEP population was calculated for the GSA and the public outreach effort was evaluated.

#### 4.4.2.3 Children's Environmental Health and Safety Risk

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (April 21, 1997), requires federal agencies to prioritize the identification and assessment of environmental health and safety risks resulting from policies, programs, activities, and standards that may disproportionately affect children. Impacts of the alternatives studied in detail were assessed with regard to compliance with Executive Order 13045. The location of schools and daycare centers in the GSA were identified, and any specific health concerns for children are qualitatively described. A significant impact would occur if the action would cause disproportionate health and safety risks to children.

#### 4.4.2.4 Surface Transportation

Surface transportation was assessed with regard to whether the Proposed Action would cause significant impacts in increased traffic within the GSA as opposed to the No Action Alternative. A significant impact would occur if the action would cause disruptions of local traffic patterns that substantially reduce the levels of service (LOS) of the roads serving LAX and its surrounding communities.

### 4.4.3 CONSTRUCTION IMPACTS

#### 4.4.3.1 No Action Alternative

Under the No Action Alternative, no elements proposed under the Proposed Action Alternative would be constructed. Therefore, no construction impacts to socioeconomics, environmental justice, children's environmental health and safety, or surface transportation would occur.

#### 4.4.3.2 Proposed Action

*Socioeconomic and Secondary (Induced) Impacts*

Employment within the GSA would not significantly change as a result of construction of the Proposed Action. Construction activities would occur on LAX property and would not require relocation of housing or businesses. Construction vehicles and construction worker vehicles would use major roads and would not

require construction of new roads that could relocate housing or businesses. Construction activities would be temporary and would not impact the community tax base. Therefore, no significant socioeconomic impacts during construction are anticipated.

### *Environmental Justice*

The combined populations of the Census tracts which intersect the GSA can be characterized as having a slightly smaller percentage of minority population than the City of Los Angeles or Los Angeles County (refer to Table 3-6). Certain Census tracts which intersect the GSA have a greater minority population than the City of Los Angeles and Los Angeles County. The GSA also intersects Census tracts which have a slightly greater percentage of residents below the poverty level than the City of Los Angeles or Los Angeles County (21 percent of the GSA Census tracts versus 19 percent of the City of Los Angeles and 16 percent of Los Angeles County).

An analysis of air quality (see Section 4.5) and traffic (see below) indicates that no significant construction impacts are anticipated under the Proposed Action. The shift in aircraft operations during the runway closure and reduced runway length period would cause a temporary increase of 1.5 dB CNEL or greater in noise exposure for 364 residents located within the 65 dB CNEL noise contour and a temporary decrease of 1.5 dB CNEL or greater for 15 residents located within the 65 dB CNEL noise contour. The demographics of these areas are generally consistent with the demographics of the City of Los Angeles population. Eligible properties within the 1.5 dB CNEL or greater increase noise contour have either been mitigated or are eligible for sound insulation and will be offered the opportunity to be sound insulated prior to construction of the Proposed Action (see Section 4.2.3). No significant construction impacts related to lighting and visual character (see Section 4.10), hazardous materials (see Section 4.12), or water resources (see Section 4.6) are anticipated. Therefore, no disproportionately high and adverse human health or environmental impacts to minority and low-income populations would occur during construction.

### *Children's Environmental Health and Safety Risk*

Air quality construction impacts on the schools and daycare facilities in the vicinity of the GSA or on residential and recreational areas within the GSA would not exceed applicable significant impact thresholds (see Section 4.5). The Proposed Action Alternative would not result in significant operational noise impacts. The shift in aircraft operations during the runway closure and reduced runway length period would cause a temporary increase of 1.5 dB CNEL or greater in noise exposure for 364 residents located within the 65 dB CNEL noise contour and a temporary decrease of 1.5 dB CNEL or greater for 15 residents located within the 65 dB CNEL noise contour. Eligible properties within the 1.5 dB CNEL or greater increase noise contour have either been mitigated or are eligible for sound insulation (see Section 4.2.3).

### *Surface Transportation*

Construction activities would generate increased traffic associated with construction employees and deliveries in the vicinity of the proposed staging areas (Exhibit 1-8). Only a portion of the proposed construction staging areas would be utilized for the Proposed Action, however potential construction haul routes would be located along Westchester Parkway, Pershing Drive, Lincoln Boulevard, Imperial Highway, Aviation Boulevard,

La Cienega Boulevard, and Sepulveda Boulevard. These roads would potentially sustain an increase in traffic due to construction hauling and employee traffic.

However, although there may be short-term localized impacts associated with these construction activities, the Proposed Action would not have long-term impacts on GSA roadways levels of service, disrupt surrounding communities, or result in long-term impacts on local businesses, due to implementation of construction traffic mitigation commitments from the LAX Master Plan EIS/EIR. As these LAX Master Plan mitigation commitments are incorporated into the design of the Proposed Action, no significant construction traffic impacts would occur.

## 4.4.4 OPERATIONAL IMPACTS

### 4.4.4.1 No Action Alternative

Under the No Action Alternative, ongoing operations at LAX would be limited to other already approved and/or funded programs in other areas of the LAX property. No elements proposed under the Proposed Action would be implemented. Therefore, no disproportionately high and adverse socioeconomic impacts, environmental justice, or children's environmental health and safety would occur.

### 4.4.4.2 Proposed Action

*Socioeconomic and Secondary (Induced) Impacts*

The improvements associated with the Proposed Action would be located entirely on existing LAX property. Consequently, no real estate acquisitions would be required, and no displacement of residences, businesses, or community facilities/utilities would occur. Furthermore, no disruption to established communities would occur. The Proposed Action would not change ongoing LAX operations, and would not result in any impact to the tax base. Therefore, no significant socioeconomic impacts are anticipated.

*Environmental Justice*

The combined populations of the Census tracts which intersect the GSA can be characterized as having a slightly smaller percentage of minority population than the City of Los Angeles or Los Angeles County (refer to Table 3-6). Certain Census tracts which intersect the GSA have a greater minority population than the City of Los Angeles and Los Angeles County. However, the Proposed Action would have no greater significant impact on these populations than any other Census tracts which intersect the GSA. The GSA also intersects Census tracts which have a slightly greater percentage of residents below the poverty level than the City of Los Angeles or Los Angeles County (21 percent of the GSA Census tracts versus 19 percent of the City of Los Angeles and 16 percent of Los Angeles County). Because the Proposed Action would not result in any long term or permanent change to aircraft operations at the airport, it would not result in any effect to minority and low-income populations when compared to the No Action Alternative.

*Children's Environmental Health and Safety Risk*

There are 11 schools identified within or immediately adjacent to the GSA (refer to Exhibit 3-4). Because the Proposed Action would not result in any change to aircraft operations at the airport, it would not result in any disproportionate impact on children's environmental health and safety.

*Surface Transportation*

The Proposed Action would not increase or otherwise alter the number of passengers or aircraft operations at LAX compared to the No Action Alternative. Therefore, roadways and intersections within and adjacent to the GSA would not be adversely affected if the Proposed Action is implemented. Therefore, no significant impacts related to surface traffic are anticipated.

### 4.4.5 MITIGATION MEASURES

No significant impacts would occur under the Proposed Action; thus, no mitigation measures are required.

## 4.5 Air Quality

Two sets of federal guidelines or requirements determine the need for, define the type(s) of, and establish the extent of, an air quality assessment required for airport-related actions. These include FAA Orders 1050.1E, *Environmental Impacts: Policies and Procedures*, and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, and the federal *Clean Air Act* (CAA), as amended by the *Clean Air Act Amendments* (CAAA) *of 1990*. Guidelines for preparing an air quality analysis under NEPA are also contained in the FAA's *Air Quality Procedures for Civilian Airports and Air Force Bases,* referred to as the FAA's *Air Quality Handbook and its Addendum*.[8]

The requirements described in all of these documents were followed in preparing the air quality assessment for the action alternatives at LAX. FAA Order 1050.1E states that an air quality assessment prepared under NEPA should include an analysis and conclusions of a Proposed Action's impacts on air quality and further directs that, when a NEPA analysis is needed, the Proposed Action should be assessed by evaluating the effects on the National Ambient Air Quality Standards (NAAQS). FAA Order 5050.4B further provides that, for NEPA purposes, environmental analyses must determine if the air quality impacts of any reasonable alternative would exceed the NAAQS for the time periods analyzed. LAX belongs to the South Coast Air Basin (Basin) and current air quality in the Basin and NAAQS attainment status is discussed in Section 3.6 of this EA.

The CAAA require federal agencies to ensure that their actions conform to the appropriate State Implementation Plan (SIP). Conformity is defined as demonstrating that a project or action conforms to the SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. Federally funded and approved actions at airports are subject to

[8] U.S. Department of Transportation, Federal Aviation Administration, *Air Quality Procedures for Civilian Airports and Air Force Bases*, 1997.

the U.S. Environmental Protection Agency (USEPA) General Conformity regulations. A conformity determination of the proposed action is required if the total direct and indirect pollutant emissions resulting from a project are above *de minimis* (risk too small to be concerned or lacking significance) emissions threshold levels specified in the conformity regulations.

## 4.5.1 OVERVIEW OF IMPACTS

In accordance with FAA Order 5050.4B, construction and operational emissions inventories were prepared to address project-related emissions associated with the No Action Alternative and the Proposed Action. Air emissions associated with construction activities and operations consist of carbon monoxide (CO), oxides of nitrogen (NOx), particulate matter ($PM_{10}$ and $PM_{2.5}$), sulfur dioxide (SOx), volatile organic compounds (VOC), and lead (Pb)[9]. The construction and operational emissions would be below the established General Conformity *de minimis* thresholds for all applicable pollutants, both alternatives, and both future years and, therefore, conform to the CAA. No significant impacts related to air quality are anticipated for the Proposed Action Alternative.

Greenhouse Gas (GHG) emissions associated with the Proposed Action would comprise less than one-hundredth of a percent of the U.S.-based GHG emissions.

## 4.5.2 METHODOLOGY

### 4.5.2.1 Construction Impacts

*Construction Activity*

Air pollutant emissions occurring as the result of construction activity vary based on the project's duration and level of activity. Construction emissions occur mostly as exhaust products from the operation of construction equipment and vehicles, but can also occur as fugitive dust emissions from land disturbance during material staging, demolition, and movement. Evaporative emissions also result from asphalt paving operations, runway/taxiway striping, and architectural coating.

Data used to conduct the construction emissions analysis for the Proposed Action included a project schedule and a preliminary cost estimate detailing quantities of materials to be used. Construction activity estimates, including types, number, and specifications of equipment for various construction activities, was derived from data provided by MARRS Services, Inc., in support of the LAX Runway 7L-25R RSA Final EA.[10] All construction activities related to the Proposed Action were assumed to occur in 2015.

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[9] Lead (Pb) emissions are not typically considered in emission inventories for commercial service airports because they are primarily from piston engine aircraft. However, Pb emissions are quantified for this analysis so that they may be compared to the air monitoring requirement threshold of 1.0 tons per year.

[10] City of Los Angeles, Los Angeles World Airports, *Final Environmental Assessment for Los Angeles International Airport (LAX) Runway 7L-25R Runway Safety Area (RSA) and Associated Improvements Project*, August 2013.

Construction equipment is generally categorized as off-road or on-road equipment. Off-road equipment is typically used for earthwork, paving, demolition, and other on-site activities, while on-road equipment is typically used to transport and deliver supplies, materials, and employees.

On-road on-site construction vehicles include water trucks, pickup trucks, haul trucks, and other on-road vehicles that operate on the construction site. To calculate emissions, total vehicle miles traveled (VMT) for each vehicle type was calculated and applied to region-specific emission factors (in grams per mile) obtained from the California Air Resources Board (CARB) EMFAC2011 emission factor model.

On-road off-site vehicle trips include personal vehicles transporting construction workers to the site, as well as hauling trips for the delivery/removal of various materials. In general, off-site hauling trips were based on estimated quantities of various materials, such as concrete, construction materials, cut/fill material, etc. On-road off-site vehicle emissions were calculated by determining total VMT for each type of vehicle. Emission factors obtained from EMFAC2011 were applied to the VMT estimates to calculate total emissions.

Off-road on-site construction equipment and fuel type, estimated horsepower, and estimated annual hours of operation required for the construction activities were also developed. The annual hours of operation were based on the material use and production rates, assuming a 10-hour-per-day, 6-day-per-week work week. Off-road diesel exhaust emission factors for VOC, $NO_X$, and $PM_{10}$ were based on USEPA tiered emissions standards and the CARB OFFROAD2011 emissions model, as applicable. Off-road exhaust emission factors for CO were derived from the CARB OFFROAD2007 emissions model for 2015. $PM_{2.5}$ emission factors were developed using the $PM_{10}$ emission factors and $PM_{2.5}$ size profiles derived from the CARB-approved California Emission Inventory and Reporting System (CEIDARS). Emissions for off-road equipment were calculated by multiplying an emission factor by the horsepower, load factor, usage factor, and operational hours for each type of equipment.

Fugitive dust is an additional source of $PM_{10}$ and $PM_{2.5}$ emissions associated with construction activities. Fugitive dust includes re-suspended road dust from both off- and on-road vehicles, as well as dust from grading, loading, and unloading activities. Fugitive dust emissions were calculated using methodologies, formulas, and values from the USEPA's Compilation of Air Pollutant Factors (AP-42), the SCAQMD's CEQA Air Quality Handbook, and documentation associated with CARB's California Emissions Estimator Model (CalEEMod) emissions estimator computer program.

Construction materials that can be sources of fugitive VOC emissions include hot-mix asphalt paving, runway/taxiway striping, and architectural coating. VOC emissions from asphalt paving operations result from the evaporation of the petroleum distillate solvent, or diluent, used to liquefy asphalt cement. Asphalt paving and paint striping emissions were calculated using the methodology included in CalEEMod.

### *Temporary Shift in Aircraft Operations*

Runway 6L-24R would be closed for a period of 122 days (approximately 4 months) during the runway rehabilitation construction period; operations from this runway must be accommodated through the use of other runways at LAX during this time. In order to determine air quality impacts during this period, airport simulation models (SIMMOD) were developed for the 2015 No Action Alternative and the 2015 runway

closure period. Information on the number and types of aircraft operations considered at LAX for 2015 were developed specifically for the Project. These data were used to develop SIMMOD of aircraft operations in order to determine Project-specific taxi/idle times. The SIMMOD used information about facilities and operations to predict specific timing, volume, and location (e.g., runway used) for aircraft operations. In addition, to allow for construction work on the Argo Ditch, Runway 6L-24R must operate at a reduced length of 7,000 feet for a period of 60 days (2 months). Taxi times for this period were calculated using the increased taxiing distance and a taxiway speed of 15 knots. Detailed assumptions are provided in **Appendix G**.

The incremental differences in taxi/idle times were used for the analysis of aircraft emissions associated with the shift in aircraft operations during the runway closure period and the shortened runway period; taxi/idle times during both of these periods will be slightly greater than normal operations during 2015. A summary of the taxi times are shown in **Table 4-5**.

**Table 4-5: Comparison of Taxi Times during Construction Year**

| | 2015 NO ACTION TAXI TIME (MINUTES) | 2015 PROPOSED ACTION (RUNWAY CLOSED) TAXI TIME (MINUTES) | 2015 PROPOSED ACTION (SHORTENED RUNWAY) TAXI TIME (MINUTES) |
|---|---|---|---|
| **Arrivals** | 9.21 | 9.26 | 9.39 |
| **Departures** | 12.05 | 12.62 | 12.05 |

SOURCE: Ricondo & Associates, Inc., March 2014.
PREPARED BY: Ricondo & Associates, Inc., June 2014.

Operational aircraft emissions for the No Action Alternative and Proposed Action were calculated using the taxi times in Table 4-5 and FAA's Emissions and Dispersion Modeling System (EDMS), Version 5.1.4.1. EDMS is a USEPA approved air quality model that estimates emissions from airport sources based on information input into the model. Aircraft emissions occur during approach, taxi-in (from runway to apron including landing roll), engine startup at the apron, taxi-out (from apron to runway), takeoff, and climb-out; emissions for each of these operational modes were calculated for the 2015 No Action Alternative and the 2015 Proposed Action Alternative. The taxi/idle times were derived from the SIMMOD results. However, as none of the other operational phases would be affected by the runway closure, the EDMS default times-in-mode were the basis for climbout, approach, and takeoff times; however, climbout and approach times were adjusted according to the average mixing height adjustment parameters contained in EDMS. For LAX, a mixing height of 1,806 feet above mean sea level was used in the emissions modeling.

The aircraft fleet mix and operational levels for the 2015 No Action Alternative and the 2015 Proposed Action Alternative were assigned within the EDMS in a manner consistent with the noise assessment developed for this EA, as outlined in Appendix F. Where possible, aircraft engines representing the actual in-use fleet at LAX were applied in EDMS using LAWA's Aircraft Noise and Operations Monitoring System (ANOMS) data, and cross-referenced with proprietary fleet data for air carrier and business jet operations, on the basis of reported aircraft tail number. In segments of the fleet where such matches were not possible, EDMS default engine selections were retained.

Annual emissions outputs from EDMS for the runway closure period, shortened runway period, and normal operations were annualized based on the number of days for each phase.

#### 4.5.2.2 Operational Impacts

As noted in Section 1, Purpose and Need, neither the fleet composition nor operational levels of aircraft serving LAX would change as a result of the Proposed Action. Additionally, the Proposed Action would not affect emissions of stationary sources, motor vehicles, or aircraft ground support equipment, and therefore, these sources are not relevant to this analysis. Implementation of the Proposed Action would not cause a change in flight paths/routes or taxi/idle times, and therefore, would not have any operational impacts when compared to the No Action Alternative. For disclosure purposes, an aircraft emissions inventory was prepared for the No Action and Proposed Action Alternatives for both 2015 and 2020. In general terms, an emissions inventory is a quantification of the amount of pollutants emitted from a source over a period of time. The amount is calculated by applying emission factors (i.e., grams of pollutant/operation) to source activity levels (i.e., number of aircraft operations). The results are provided in tons by pollutant, emission source, and analysis year.

Operational impacts follow the same methodology as the runway closure period during the construction phase, as outlined in Section 4.5.2.1. SIMMOD of aircraft operations for the 2015 No Action and Proposed Action Alternatives were developed in order to determine Project-specific taxi/idle times. Aircraft emissions were then calculated using EDMS and the taxi/idle times derived from the SIMMOD results. As none of the other operational phases would be affected by the Proposed Action Alternative, the EDMS default times-in-mode were the basis for climbout, approach, and takeoff times.

**Table 4-6** depicts the total aircraft operations utilized in the emissions inventories for the 2015 and 2020 calendar years. As mentioned, these operational levels do not differ between the No Action Alternative and the Proposed Action for a given year, and are based upon total operations reported in the FAA TAF. Also summarized in Table 4-6 are taxi times utilized in the operational emissions analysis by year and alternative. As shown, there would be no difference in taxi times between the No Action Alternative and the Proposed Action for either 2015 or 2020.

**Table 4-6: Total Aircraft Operations and Taxi Times, by Calendar Year**

| YEAR | OPERATIONS | TAXI-IN TIME (MINUTES) | | TAXI-OUT TIME (MINUTES) | |
|---|---|---|---|---|---|
| | | NO ACTION | PROPOSED ACTION | NO ACTION | PROPOSED ACTION |
| **2015** | 616,409 1/ | 9.21 | 9.21 | 12.05 | 12.05 |
| **2020** | 705,281 2/ | 10.90 | 10.90 | 13.82 | 13.82 |

NOTES:

1/ 2013 Federal Aviation Administration Terminal Area Forecast for 2015.

2/ 2012 Federal Aviation Administration Terminal Area Forecast for 2020.

SOURCE: Ricondo & Associates, Inc., January 2014.
PREPARED BY: Ricondo & Associates, Inc., June 2014.

### 4.5.2.3 Thresholds of Significance

The USEPA first promulgated the General Conformity Rule in 1993 to implement the conformity provision of Title I, § 176(c)(1) of the *CAA Amendments of 1990*. Section 176(c)(1) requires that the federal government not engage in, support, or provide financial assistance for licensing, permitting, or approving any activity not conforming to an approved CAA implementation plan. The approved implementation plan could be a Federal, State, or Tribal Implementation Plan. Revisions to the General Conformity Rule are codified in 40 CFR Parts 51 and 93, Subpart W, *Revisions to the General Conformity Regulations, Final Rule* (April 2010). The General Conformity Rule applies to all federal actions except highway and transit programs. The latter must comply with the conformity requirements for Transportation Plans in 40 CFR Part 93, Subpart A.

The General Conformity Rule is designed to ensure that air emissions associated with federal actions do not contribute to air quality degradation or prevent achievement of state and federal air quality goals. In short, General Conformity refers to the process of evaluating federal plans, programs, and projects to determine and demonstrate that they meet the requirements of the CAA and applicable SIP. Compliance with the General Conformity Rule is based on a comparison of the changes in project-related air emissions (Proposed Action minus the No Action Alternative) with the *de minimis* thresholds, in accordance with FAA Order 1050.1E.

The South Coast Air Basin is currently designated non-attainment of NAAQS for the following pollutants: ozone ($O_3$), Pb, $PM_{10}$, and $PM_{2.5}$. Additionally, the Basin is designated as a maintenance area for CO and $NO_2$. Applicable *de minimis* thresholds for criteria pollutants and their precursors are presented in **Table 4-7**.

**Table 4-7: General Conformity *De Minimis* Thresholds**

| NAAQS | ATTAINMENT STATUS (SEVERITY) | POLLUTANT(S) | DE MINIMIS THRESHOLD (TONS PER YEAR) |
|---|---|---|---|
| Carbon Monoxide (CO) | Maintenance | CO | 100 |
| Fine Particulate Matter ($PM_{2.5}$) [1/] | Non-attainment | $NO_X$ | 100 |
| | | $PM_{2.5}$ | 100 |
| | | $SO_X$ | 100 |
| | | VOC | 100 |
| Lead (Pb) [2/] | Non-attainment | Pb | 25 |
| Nitrogen Dioxide ($NO_2$) [3/] | Maintenance | $NO_X$ | 100 |
| Ozone ($O_3$) [4/] | Non-attainment (Extreme) | $NO_X$ | 10 |
| | | VOC | 10 |
| Respirable Particulate Matter ($PM_{10}$) | Non-attainment (Serious) | $PM_{10}$ | 70 |

NOTES:

1/ Refers to both 2006 24-hour and 1997 Annual Standards.

2/ Refers to 2008 Standard.

3/ Refers to Annual Standard. USEPA has yet to designate non-attainment areas for the 1-hour $NO_2$ standard promulgated in 2010.

4/ Refers to 1997 8-hour Standard. USEPA has yet to finalize non-attainment area designations for the 8-hour ozone standard promulgated in 2008. However, based on state recommendations, the area is anticipated to be designated non-attainment of the 2008 standard.

SOURCES: General Conformity Rule (40 CFR Part 93, Subpart B); USEPA, Greenbook Non-Attainment Areas for Criteria Pollutants, As of July 31, 2013.
PREPARED BY: Ricondo & Associates, Inc., June 2014.

### 4.5.3 CONSTRUCTION IMPACTS

Construction of the proposed improvements is expected to occur in 2015. Construction activity emissions inventories for criteria pollutants were developed for the Proposed Action. Emissions sources include off-road on-site equipment, on-road on-site equipment, worker commute trips, fugitive dust and fugitive VOCs. Emissions inventories were also developed for the aircraft operational emissions during construction. To allow for the rehabilitation of portions of the Runway 6L-24R pavement, the runway must be temporarily closed for an extended period of time (estimated at approximately 4 months), and operate at a reduced length of 7,000 feet for approximately 2 months. During the runway closure period, the operations from this runway must be accommodated through the use of other runways at LAX. This shift in operations may cause airfield and/or airspace delays resulting in increased arrival and departure taxi times. Additional taxi distance as a result of the shortened runway would also increase arrival taxi times during the shortened runway period. Any increase in taxi travel times can result in increased emissions.

#### 4.5.3.1 No Action Alternative

Under the No Action Alternative, no construction activities would occur at the project site. Thus, runway rehabilitation would not occur and there would not be a runway closure. Therefore, no emissions inventory is required for the No Action Alternative and no significant construction air quality impacts are anticipated.

#### 4.5.3.2 Proposed Action

The emissions inventory for construction activities associated with the Proposed Action is presented in **Table 4-8**. The construction-related pollutant emissions were compared against the General Conformity *de minimis* thresholds established for the South Coast Air Basin to gauge conformance to the SIP. General Conformity *de minimis* thresholds are evaluated on a project by project basis and would not need to be evaluated cumulatively with other projects at LAX. Compliance with the General Conformity Rule is based on a comparison of the changes in project-related air emissions with the *de minimis* thresholds, in accordance with FAA Order 1050.1E.

As shown in Table 4-8, the construction-related emissions of criteria pollutants would be below the established annual *de minimis* thresholds for the construction period, estimated to be completed entirely in 2015. The increase in emissions will be temporary in nature and only during the construction period. Additionally, there would be no overlap between the Proposed Action and previously approved improvements to the Runway 7L-25R RSA.

**Table 4-8: 2015 Proposed Action Alternative Construction Emissions Inventory**

| | ESTIMATED ANNUAL EMISSIONS OF CRITERIA POLLUTANTS (TONS/YEAR) | | | | |
|---|---|---|---|---|---|
| **CONSTRUCTION SECTOR** | **CO** | **VOC** | **$NO_X$** | **$PM_{10}$** | **$PM_{2.5}$** |
| **Construction Activity** | 10.2 | 0.99 | 3.42 | 2.72 | 0.85 |
| **Incremental Aircraft Operations** | 32.4 | 4.12 | 5.73 | 0.24 | 0.24 |
| **Total** | 42.6 | 5.11 | 9.15 | 2.96 | 1.09 |
| ***De Minimis Threshold*** | *100* | *10* | *10* | *70* | *100* |
| **Significant?** | No | No | No | No | No |

NOTE: Table values may not sum to total values due to rounding.

SOURCE: Ricondo & Associates, Inc., March 2014; General Conformity Rule (40 CFR Part 93, Subpart B), January 31, 1994.
PREPARED BY: Ricondo & Associates, Inc., June 2014.

### 4.5.4 OPERATIONAL IMPACTS

The criteria pollutant emissions inventories are used to disclose and compare the Proposed Action to the future No Action Alternative and determine the air quality impacts for purposes of NEPA. Emissions inventories are also used to compare the action-related emissions to the General Conformity thresholds. The following sections provide the results of the air quality impact assessment for the No Action Alternative and the Proposed Action Alternative for 2015 and 2020.

#### 4.5.4.1 No Action and Proposed Action Alternatives

Criteria pollutant emissions associated with the No Action and Proposed Action Alternatives for 2015 and 2020 are presented in **Table 4-9**. The No Action and Proposed Action Alternative emissions are greater in 2020 than 2015 due to the projected increase in aircraft operations. Emissions for lead (Pb) were estimated to be less than 0.01 tons per year in both 2015 and 2020.

**Table 4-9: No Action and Proposed Action Alternative Operational Emissions Inventories**

| POLLUTANT | 2015 AIRCRAFT EMISSIONS (TONS) | 2020 AIRCRAFT EMISSIONS (TONS) |
|---|---|---|
| **CO** | 3,075 | 3,450 |
| **VOC** | 505 | 517 |
| **$NO_X$** | 3,430 | 3,842 |
| **$SO_X$** | 329 | 384 |
| **$PM_{10}$** | 47.0 | 51.6 |
| **$PM_{2.5}$** | 47.0 | 51.6 |

SOURCE: Ricondo & Associates, Inc., January 2014.
PREPARED BY: Ricondo & Associates, Inc., June 2014.

Implementation of the Proposed Action will not cause a change in aircraft operations or routes, and therefore would cause no net change in criteria pollutant emissions compared to the No Action Alternative. As such, operational emissions are below each of the criteria pollutant General Conformity *de minimis* thresholds, and thus, the Proposed Action conforms to the SIP for future operational years. Therefore, no significant operational air quality impacts are anticipated under the Proposed Action.

### 4.5.5 HAZARDOUS AIR POLLUTANTS

Hazardous air pollutants (HAPs) are pollutants that do not have established NAAQS, but present potential adverse human health risks from short-term (acute) or long-term (chronic) exposures. Because the analysis of HAPs is not an FAA requirement, the approach described herein is designed to address state and local agency concerns as well as those of the general public. HAPs of concern that were included in this analysis were included based on emissions estimates and human toxicity information, as well as results of the LAX Master Plan Final Environmental Impact Statement/Environmental Impact Report Human Health Risk Assessment.[11]

As described above in Section 4.5.2, *Methodology*, emissions sources that are relevant to the Proposed Action only include aircraft and construction equipment.

[11] City of Los Angeles, Los Angeles World Airports, *Los Angeles International Airport Master Plan Final Environmental Impact Statement/Environmental Impact Report*, January 2005.

#### 4.5.5.1 No Action Alternative

Under the No Action Alternative, no construction activities would occur at the project site. Operational HAP emissions for 2015 and 2020 for the No Action Alternative would be the same as those for the Proposed Action, as shown in **Table 4-10**.

#### 4.5.5.2 Proposed Action

Table 4-10 presents the aircraft HAP emissions for the construction of the Proposed Action, as well as operational HAPs emissions for 2015 and 2020. Implementation of the Proposed Action would not increase operational emissions of HAPs; however, HAPs emissions associated with construction of the Proposed Action would be greater than the No Action Alternative, although short-term and temporary in nature.

### 4.5.6 GREENHOUSE GASES EMISSIONS AND CLIMATE CHANGE

Based on FAA aircraft data, operations at LAX account for less than two percent of the total U.S. commercial aviation activity.[12] Therefore, assuming that GHGs occur in proportion to level of activity, GHG emissions associated with existing and future aviation activity at LAX would be expected to represent less than two percent of U.S.-based airport GHG emissions.

Although there are no federal standards for aviation-related GHG emissions, it is well established that GHG emissions can affect climate.[13] The Council on Environmental Quality (CEQ) has indicated that climate change should be considered in NEPA analyses. As noted by CEQ, however, "…it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or project emissions, as such direct linkage is difficult to isolate and to understand."[14]

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12 In 2010, the FAA Air Traffic Activity Data System reported 28,365,430 total towered aircraft operations in the United States. LAX accounted for 540,211 aircraft operations, or 1.9 percent of the total aircraft operations at towered airports in the United States.

13 *Massachusetts v. E.P.A.*, 549 U.S. 497, 508-10, 521-23 (2007).

14 Council on Environmental Quality, *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*, 2010.

**Table 4-10: Proposed Action Emissions of HAPs**

| | | CONSTRUCTION | | OPERATIONS | |
|---|---|---|---|---|---|
| HAP SPECIES | TYPE | EQUIPMENT HAPS (TPY) | INCREMENTAL AIRCRAFT OPERATIONS (TPY) | 2015 AIRCRAFT HAPS (TPY) | 2020 AIRCRAFT HAPS (TPY) |
| Acetaldehyde | VOC | 0.0696 | 0.12 | 16.8 | 16.8 |
| Acrolein | VOC | 0.0012 | 0.07 | 9.6 | 9.6 |
| Benzene | VOC | 0.0189 | 0.05 | 6.6 | 6.6 |
| 1,3-butadiene | VOC | 0.0018 | 0.05 | 6.6 | 6.6 |
| Ethylbenzene | VOC | 0.0029 | 0.01 | 0.68 | 0.69 |
| Formaldehyde | VOC | 0.1392 | 0.36 | 48.4 | 48.5 |
| Methyl Alcohol | VOC | 0.0008 | 0.05 | 7.1 | 7.1 |
| Propylene | VOC | 0.0246 | 0.13 | 17.8 | 17.9 |
| Styrene | VOC | 0.0005 | 0.01 | 1.2 | 1.2 |
| Toluene | VOC | 0.0139 | 0.02 | 2.5 | 2.5 |
| Xylene (Total) | VOC | 0.0098 | 0.01 | 1.8 | 1.8 |
| Naphthalene | PAH | 0.0008 | 0.02 | 2.1 | 2.1 |
| Arsenic | PM-Metal | 0.0001 | - | - | - |
| Cadmium | PM-Metal | 0.0001 | - | - | - |
| Chromium VI | PM-Metal | 0.0000 | - | - | - |
| Copper | PM-Metal | 0.0004 | - | - | - |
| Lead | PM-Metal | 0.0018 | - | - | - |
| Manganese | PM-Metal | 0.0030 | - | - | - |
| Mercury | PM-Metal | 0.0001 | - | - | - |
| Nickel | PM-Metal | 0.0002 | - | - | - |
| Selenium | PM-Metal | 0.0000 | - | - | - |
| Vanadium | PM-Metal | 0.0009 | - | - | - |
| Diesel PM | Diesel Exhaust | 0.0550 | - | - | - |
| Chlorine | PM-Inorganics | 0.0111 | - | - | - |
| Silicon | PM-Inorganics | 0.6389 | - | - | - |
| Sulfates | PM-Inorganics | 0.0164 | - | - | - |

NOTES:

HAPs = Hazardous air pollutants

TPY = tons per year

SOURCE: Ricondo & Associates, Inc., March 2014.
PREPARED BY: Ricondo & Associates, Inc., June 2014.

#### 4.5.6.1 No Action Alternative

Under the No Action Alternative, no construction activities would occur at the Project site; therefore the No Action Alternative would have no construction-related GHG emissions. Operational GHG emissions for 2015 and 2020 for the No Action Alternative would be the same as those for the Proposed Action, as shown in **Table 4-11**.

**Table 4-11: Operational $CO_2e$ Emissions**

| | CONSTRUCTION (2015) | | OPERATIONS | |
|---|---|---|---|---|
| ALTERNATIVE | CONSTRUCTION EQUIPMENT | AIRCRAFT OPERATIONS DURING RUNWAY CLOSURE | 2015 | 2020 |
| **No Action** | 0 | 0 | 737,485 | 859,834 |
| **Proposed Action** | 2,995 | 3,951 | 737,485 | 859,834 |

SOURCE: Ricondo & Associates, Inc., March 2014.
PREPARED BY: Ricondo & Associates, Inc., June 2014.

#### 4.5.6.2 Proposed Action

The Proposed Action would increase the construction emissions over the No Action Alternative, as shown in Table 4-11. However, the Proposed Action will not cause a change in aircraft operations or routes, and therefore would not increase operational GHG emissions compared to the No Action Alternative. Construction activity and the shift in aircraft operations during the runway closure would only slightly contribute to global climate change, accounting for less than one-hundredth of a percent of U.S. greenhouse gas emissions.

The cumulative impact of the Proposed Action on global climate when added to other past, present, and reasonably foreseeable future action is not currently scientifically predictable. Aviation has been calculated to contribute approximately three percent of the global $CO_2$ emissions; this contribution may grow to five percent by 2050.[15] Actions are underway within the U.S. and by other nations to reduce aviation's contribution through such measures as new aircraft technologies to reduce emissions and improve fuel efficiency, renewable alternative fuels with lower carbon footprints, more efficient air traffic management, market-based measures and environmental regulations including an aircraft $CO_2$ standard.

The U.S. has goals to achieve carbon-neutral growth for aviation by 2020 compared to a 2005 baseline, and to gain absolute reductions in GHG emissions by 2050. At present, there are no calculations of the extent to which measures individually or cumulatively may affect aviation's $CO_2$ emissions. Moreover, there are large uncertainties regarding aviation's impact on climate. The FAA, with support from the U.S. Global Change

[15] Intergovernmental Panel on Climate Change. Aviation and the Global Atmosphere. *IPCC Special Reports on Climate Change*. (2001)

Research Program and its participating federal agencies, has developed the Aviation Climate Change Research Initiative (ACCRI) in an effort to advance scientific understanding of regional and global climate impacts of aircraft emissions, with quantified uncertainties for current and projected aviation scenarios under changing atmospheric conditions.[16]

### 4.5.7 MITIGATION MEASURES

Estimated operational emissions of criteria pollutants due to the implementation of the Proposed Action would not exceed applicable General Conformity *de minimis* thresholds and, accordingly, they would conform to the area SIP. As a result, operational mitigation measures are not required.

Construction activities associated with the Proposed Action would not exceed the General Conformity thresholds for criteria pollutants. As a result, additional construction mitigation measures are not required beyond the numerous construction reduction measures as specified under the LAX Master Plan EIS/EIR for air quality which include, but are not limited to, fugitive dust suppression, stationary point source controls, diesel emissions reduction plan, vehicle idling and siting limitations, use of alternative fuels, vehicle trip reduction measures, and administrative controls.[17]

## 4.6 Water Resources

The analysis of potential impacts to water resources was prepared in accordance with the principal objectives of the Federal Water Pollution Control Act, as amended, by the Clean Water Act (CWA). The purpose of this section is to describe the existing hydrologic and water quality environment and analyze potential impacts from the Proposed Action.

### 4.6.1 OVERVIEW OF IMPACTS

Under the No Action Alternative none of the proposed improvements would occur within the DSA, and no significant impacts to water resources would occur.

The Proposed Action would result in minor changes to stormwater discharges because it would slightly increase permanent impervious surfaces and would modify the existing Argo Ditch. The Proposed Action would utilize standard best management practices (BMPs) and LAX Master Plan mitigation commitments to minimize significant impacts to stormwater treatment.[18]

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16 Brown, Nathan, et. al. *The Strategy for Taking Aviation Climate Impacts*, (2010). 27th International Congress of the Aeronautical Sciences.

17 U.S. Department of Transportation, Federal Aviation Administration and Los Angeles World Airports, *LAX Master Plan Final EIS/EIR*, 2005.

18 U.S. Department of Transportation, Federal Aviation Administration and Los Angeles World Airports, *LAX Master Plan Final EIS/EIR*, 2005.

### 4.6.2 METHODOLOGY

Federal, state, and local statutes regulating water resources were reviewed for the analysis of potential water quality impacts. The applicable statutes establish water quality standards, control discharges and pollution sources, protect drinking water systems, prevent or minimize the loss of wetlands, and protect aquifers and other sensitive ecological areas. The project site is located within the jurisdictions of the County of Los Angeles Flood Control District and the Regional Water Quality Control Board (RWQCB) Region 4, Los Angeles.

Reports and documents previously prepared by LAWA were used to assess whether the proposed alternatives would impact water quality and water resources. Existing impervious areas and locations where disturbance would occur under the Proposed Action were reviewed to evaluate potential direct and indirect impacts on groundwater and surface water resources. Direct effects include increased turbidity and erosion during construction and increased runoff during operations. Indirect effects can occur when changes in the planned development of an area result in increased water needs or reduced water quality.

Potential impacts on water resources were assessed based on the location, preliminary design plans, and intended function of the Proposed Action. Potential impacts to potable water consumption and domestic wastewater treatment production were assessed based on potential direct impacts or changes in operational activities. According to FAA Order 1050.1E, an action would be considered to have a significant impact when:

- It has the potential to cause an exceedance of water quality standards;
- Would result in water quality problems that cannot be avoided or satisfactorily mitigated; or,
- There would be difficulty in obtaining a permit or authorization.

For projects that have the potential to alter the quality and quantity of stormwater runoff, operational stormwater controls would be required if:

- Post-development pollutant loads exceed pre-project levels;
- The peak runoff flow increases; or,
- The total volume increases.

Details for the application of BMPs at LAX properties are contained in LAWA's *Sustainable Airport Planning, Design and Construction Guidelines Version 6* and in the City of Los Angeles Green Building Code. On an annual basis, LAWA manages the LAX Master Plan Mitigation Monitoring and Reporting Program (MMRP), including the mitigation commitments, which implements LAWA's *Sustainable Airport Planning, Design and Construction Guidelines Version 6* and the City of Los Angeles Green Building Code,[19] and which monitors the progress of BMPs during a project's lifespan.

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[19] City of Los Angeles, Department of Building and Safety, *2011 City of Los Angeles Codes*, online: http://clkrep.lacity.org/onlinedocs/2005/05-0600-s84_ord_178132.pdf, accessed March 2014.

The City of Los Angeles requires any disturbed area greater than one acre to conform to the Standard Urban Stormwater Mitigation Plan (SUSMP) per Ordinance No. 178132 (adopted December 14, 2006).[20] This ordinance requires stormwater from the initial storm flow or first flush to be treated by one or more of the approved BMPs. The BMPs manage, control, remove, reduce, and/or treat urban runoff and stormwater pollution before it reaches receiving waters. Conformance with the SUSMP is monitored by the County and City of Los Angeles. The City of Los Angeles requirements, along with previous Airport reports and documents, provide the tools and guidance on addressing potential effects on water resources.

## 4.6.3 CONSTRUCTION IMPACTS

### 4.6.3.1 No Action Alternative

Under the No Action Alternative, no construction activities would occur within the DSA. There would be no change to the impervious surface area and, therefore, no potential for additional impact to aquifer recharge. The No Action Alternative would not involve grading; therefore, there is no potential for downstream erosion or sedimentation or modified drainage patterns. There is no earthwork associated with the No Action Alternative and accordingly no potential for pollution and contamination impacts nor need for sediment and erosion control. The No Action Alternative would not impact any of LAWA's SWPPP provisions. Therefore, no significant construction impacts on water quality or water resources are anticipated from the No Action Alternative.

### 4.6.3.2 Proposed Action

*Surface Water Quality*

Construction activities would include site preparation, excavation, grading, and installation of drainage structures. Construction activities have the potential to transport sediment, dust, and particles, and construction vehicles and equipment have the potential to leak fuels and oils, which would impact water quality and resources. BMPs would be implemented to minimize the effects of sediment transport and leakage of fluids from vehicles and equipment. BMPs to control sediment transport include the use of gravel bag filters and filter basins. Pollution prevention and waste management plans would be prepared to address the storage, handling, and disposal of fuel, oils, and other wastes from construction.

The sites adjacent to the North Runway Complex are subject to significant jet blast and aircraft exhaust during operations. Jet blast and aircraft exhaust could compromise the effectiveness of many temporary BMP measures, including a silt fence, fiber roll, mulching, temporary seeding, and gravel bags. All temporary construction BMPs would require approval from LAWA Operations to address the need for proper anchorage to prevent compromise, damage, and displacement caused by jet blast and aircraft exhaust. Guidelines for the application of specific BMPs are referenced in LAWA's *Sustainable Airport Planning, Design and Construction Guidelines Version 6* and the City of Los Angeles Green Building Code.

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[20] City of Los Angeles, Department of Building and Safety, *2011 City of Los Angeles Codes*, online: http://clkrep.lacity.org/onlinedocs/2005/05-0600-s84_ord_178132.pdf, accessed March 2014.

The implementation of BMPs and pollution prevention plans would protect the surface water quality of receiving waters during construction. Therefore, the Proposed Action would have less than significant construction impacts related to surface water quality.

### *Stormwater Treatment and Discharge*

Construction activities would require coverage under the State Water Resources Control Board's (SWRCB) National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, 2009-0009-DWQ as amended by 2010-0014-DWQ (General Permit). To obtain coverage under the permit, LAWA would submit Permit Registration Documents that include a Notice of Intent (NOI) to comply with the General Permit; a risk assessment to address project sediment risk and receiving water risk; post-construction calculations; a site map; and a project-specific SWPPP for construction activities, submitted with the appropriate fees.

Construction of the Proposed Action may also require a permit from the City of Los Angeles. The Proposed Action would involve grading, excavation and paving of approximately 6 undeveloped acres to relocate service roads. City criteria require any disturbed area greater than one acre to conform to the SUSMP. This ordinance requires stormwater from initial storm flow or first flush to be treated by one or more of the approved BMPs.

### *Construction-Related Water Quality Impacts*

Construction activities associated with the Proposed Action have the potential to affect surface water and groundwater quality and would be required to comply with federal, state, and local regulations. The Proposed Action would involve grading, excavation, and paving of approximately 6.0 undeveloped acres to relocate service roads. Construction activities that disturb one or more acres are required to apply for coverage under the NPDES General Permit.

The Proposed Action would comply with water quality standards set forth by the State of California in Los Angeles (Region 4) Water Quality Control Plan and adhere to guidelines set forth by LAWA's SWPPP. These guidance documents were prepared in accordance with the General Surface Water Treatment Rule Industrial Permit and the SWRCB General Permit for stormwater discharges associated with industrial activities (Order Number 97-03-DWQ). Construction activities would also need to comply with earthwork, mulching, drainage, and other FAA airport design standards, to minimize erosion and sedimentation. Upon implementation of these permits and regulations, minimal significant impacts related to construction-related water quality would occur.

### *Groundwater*

According to the Earth/Geology Report conducted for the LAX Master Plan EIS/EIR in January 2001, semi-perched, discontinuous groundwater exists in unconfined clay lenses at depths of approximately 20 to 60 feet

below ground surface (bgs).[21] In this vicinity, the Gage Aquifer water level is observed at depths of approximately 100 to 10 feet bgs.[22] Excavation depths for the elements of the Proposed Action Alternative would be 6 feet bgs or less for pavement construction. Installation of storm drain structures and filter devices would not exceed a depth of 10 feet. As maximum excavation associated with the Proposed Action would be substantially above the historic high groundwater elevation of 40 feet bgs, no construction impacts related to groundwater would occur under the Proposed Action. Construction of the Proposed Action would not require the use of groundwater and, thus, would not deplete groundwater supplies. Stormwater within the DSA would drain into the Argo, Imperial, Dominguez, and Culver Drain Sub-Basins. These sub-basins drain into Santa Monica Bay and the San Pedro Harbor. It is not anticipated the Proposed Action would impact groundwater or stormwater that could impact groundwater.

### *Potable Water*

The Proposed Action would not require relocation or disturbance of public drinking water supply pipelines or local distribution systems during construction. An LADWP water main runs north of and parallel to Runway 6L-24R, and would be crossed by a segment of the relocated service road. LAWA would ensure protection of the water main during construction; however, activities in this area will be limited to shallow grading, compaction, and paving; excavation to the depth of the water main would not occur. Additionally, construction activities are not anticipated to require significant amounts of potable water, and the number of construction workers on the project site requiring potable water would be minor compared to the existing needs of LAX passengers and employees. Therefore, no significant construction impacts on potable water supplies are anticipated.

### *Wastewater*

The Proposed Action would not require relocation or disturbance of the sanitary sewer system. Additionally, construction activities and workers are not anticipated to generate substantial volumes of wastewater that would be discharged into the sanitary sewer system compared to the wastewater generated by LAX passengers and employees. Therefore, no significant construction impacts related to wastewater are anticipated.

### *Wetlands*

The Proposed Action would also involve excavation, grading, and covering a portion of the Argo Ditch approximately 720 feet in length with a concrete box-channel. This would result in removal of 0.09 acre of wetland vegetation within the area previously cleared for channel clearing. No significant water quality impacts are anticipated as a result of the wetland vegetation removal. Wetland vegetation removal and impacts to the Argo Ditch would be conducted in accordance with Nationwide Permit No 39; impacts to wetlands are discussed further in Section 4.7.

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21 Camp, Dresser & McKee, Inc., *LAX Master Plan EIS/EIR Technical Report, 12. Earth/Geology Technical Report*, January 2001.

22 *Ibid.*

## 4.6.4 OPERATIONAL IMPACTS

### 4.6.4.1 No Action Alternative

Under the No Action Alternative, none of the proposed improvements would occur within the DSA. Conditions related to water quality and water resources would only change with respect to forecasted growth in aircraft operations and passenger volumes. Therefore, no significant effects related to water quality or water resources would occur under the No Action Alternative.

### 4.6.4.2 Proposed Action

#### *Surface Water Quality*

The Proposed Action would increase the amount of impervious surfaces at the eastern end of Runway 6L-24R, but would not substantially modify existing drainage patterns. The Proposed Action would include the construction of service roads and covering of portions of the Argo Ditch. According to the Drainage Report produced for the project, components of the Proposed Action would result in an increase in the impervious areas of 2 acres in the area north of the eastern end of Runway 6L-24R. Net increase in the runoff for a 25-year storm was calculated to be 1.85 cubic feet per second (cfs). There would be an increase of 0.36 cfs in the water quality volume between Pre- and Post-development conditions. While increased flows do not directly discharge into the Argo Ditch, all of the potential increased flows (1.85 cfs) eventually flow into the Argo Ditch. The increase in flows (1.85 cfs) resulting from the Proposed Action is minimal and would be anticipated to have minimal impact on the Argo Ditch.[23] Drainage in this area would continue to flow to the Argo sub-basin, as under existing conditions. No new sources of pollutants would be introduced, as all of the proposed facilities and activities under the Proposed Action already exist at LAX.

Pollutant discharge into the stormwater drainage system is highly regulated at LAX, and all applicable LAX Master Plan mitigation commitments and existing regulations, including BMPs, would be applied to pollutant runoff at this site (including, but not limited to vegetated swales and strips, oil/water separators, clarifiers, media filtration, catch basin inserts and screens, continuous flow deflective systems, bio-retention and infiltration, and detention basins). Therefore, no significant effects related to surface water quality are anticipated.

#### *Stormwater Treatment and Discharge*

The Proposed Action would cover approximately 720 linear feet of the Argo Ditch at the eastern end of Runway 6L-24R with a culvert drainage structure, constructed in-place. This structure would be designed to handle current stormwater demands and withstand the passage of an Airbus A380 in order to accommodate applicable RSA standards.

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[23] URS, *6L-24R and Runway 6R-24L Runway Safety Area (RSA) Improvements and Runway Rehabilitation, Engineers Design Report, Appendix 2, Drainage Report*, November, 2013.

Additionally, pavement rehabilitation would be conducted on the eastern 7,250 feet of Runway 6L-24R and Taxiway AA. However, these project components would not substantially alter LAX drainage patterns nor would they increase stormwater capacity demand at LAX. No additional impervious surface areas would be added with the Proposed Action.

The service road improvements will have an effect on the hydrology of the North Airfield. The additional asphalt pavement will create more impervious surface area, and in the areas of re-grading, the flow paths and tributaries will be modified. Although a number of changes will be made to the drainage system post-development, the overall flow rate remains the same for the water-quality design storm and increases by 19.09 cfs for the 25-year storm event.[24]

Portions of the existing DSA that would be affected by the Proposed Action contain native ground cover species. Existing LAWA regulations restrict the use of chemicals for fertilizers. These restrictions would remain in effect to prevent potential direct impacts from pollutant discharge to stormwater from the Proposed Action. Regarding erosion control, the DSA is largely flat, although there is some slight sloping. Portions of the Argo Ditch that will have vegetation removed will be replaced with the culvert drainage structure. No significant impacts related to erosion control are anticipated.

Infiltration devices and underground storage tanks are two proposed BMPs to capture, filter, and treat stormwater runoff. The stormwater within the DSA would continue its discharge flow to the Argo Drain Sub-Basin to the east Imperial Storm Drain to the west, the Dominguez Channel to the east, and the Culver Drain to the northwest. Due to the performance of the permanent treatment BMPs in the removal of pollutants, the Proposed Action would improve the quality of the discharge flow from this area.

### *Operational Impacts*

The Proposed Action would add a minimal amount of new impermeable airfield pavement; however, as discussed above, drainage patterns would not be substantially altered. Furthermore, the Proposed Action would not introduce uses that do not already exist at LAX or increase uses that would increase the potential for pollutant release. Therefore, minimal impacts related to water quality are anticipated.

### *Groundwater*

The Proposed Action would not require the use of groundwater resources. The improvements associated with the Proposed Action would not directly affect existing groundwater resources, and the amount of impervious surfaces added would not substantially interfere with groundwater recharge. Therefore, no adverse effects related to groundwater resources would occur if the Proposed Action is implemented.

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[24] URS, *6L-24R and Runway 6R-24L Runway Safety Area (RSA) Improvements and Runway Rehabilitation, Engineers Design Report, Appendix 2, Drainage Report*, November, 2013.

Operation of the Project would not require the use of groundwater, nor an increased use of groundwater as compared with the No Action Alternative and, thus, would not deplete groundwater supplies.

*Potable Water*

The use of potable water under the Proposed Action would be the same as the No Action Alternative, because the Proposed Action would not increase operations at LAX or the number of passengers at LAX. Furthermore, the Proposed Action would not require the relocation or disturbance of public drinking water supply pipelines or local distribution systems.

*Wastewater*

The generation of wastewater under the Proposed Action would be the same as the No Action Alternative, because the Proposed Action would not increase airport activity or the number of passengers at LAX. The Proposed Action would not require the relocation or disturbance of wastewater systems throughout LAX. Therefore, the project wastewater generation after the Proposed Action is implemented would be the same as the No Action Alternative, and no significant impacts are anticipated.

*Wetlands*

The Proposed Action would involve excavation, grading, and covering an approximate 720-foot long portion of the Argo Ditch with a concrete box-channel. This would result in removal of 0.09-acre of wetland vegetation within the area previously cleared for channel clearing. No significant surface water quality impacts are anticipated as a result of the wetland vegetation removal. Wetland vegetation removal and impacts to the Argo Ditch would be conducted in accordance with Nationwide Permit No 39; impacts to wetlands are discussed further in Section 4.7.

### 4.6.5 MITIGATION MEASURES

No significant impacts related to water resources are anticipated, thus, no mitigation measures are required.

## 4.7 Wetlands

Executive Order 11990 requires federal agencies to minimize the destruction, loss, or degradation of wetlands resulting from their actions. Section 404 of the Clean Water Act, as amended, requires regulation of discharges or fill matter into waters of the U.S. The USACE has primary responsibility for implementing, permitting and enforcing the provisions of Section 404.

Wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of

vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar special aquatic habitats.[25]

### 4.7.1 OVERVIEW OF IMPACTS

Under the No Action Alternative none of the proposed improvements would occur within the DSA, and no significant impacts to wetlands would occur.

The Proposed Action would result in impacts to 0.093 acre of jurisdictional wetlands that were previously mitigated in conjunction with the channel clearing that was authorized by USACE pursuant to Nationwide Permit No. 31 in 1998. The Proposed Action would be an allowable activity pursuant to Nationwide Permit No 39 and would proceed under this permit through coordination with the USACE.

### 4.7.2 METHODOLOGY

USFWS records were mapped in order to determine the presence of wetlands and/or Waters of the United States. Field surveys conducted for the Biological Assessment (Appendix C) included observations of potential wetlands and/or Waters of the U.S. Additionally, a Jurisdictional Delineation Report was prepared for the Argo Ditch area in January 2014 to determine if this area qualifies as a wetland or other Waters of the U.S. The jurisdictional delineation report for the Argo Ditch is provided in Appendix D. Wetlands in the vicinity of LAX are displayed on Exhibit 3-9. The Proposed Action would have a significant impact if it would cause any of the following:

- Adversely affect the function of a wetland to protect the quality or quantity of municipal water supplies, including sole source, potable water aquifers.
- Substantially alter the hydrology needed to sustain the functions and values of the affected wetland or any wetlands to which it is connected.
- Substantially reduce the affected wetland's ability to retain floodwaters or storm-associated runoff, thereby threatening public health, safety or welfare.
- Adversely affect the maintenance of natural systems that support wildlife and fish habitat or economically-important timber, food, or fiber resources in the affected or surrounding wetlands.
- Promote the development of secondary activities or services that would affect the resources identified in the previous 4 bullets.
- Would be inconsistent with applicable State wetland strategies.

[25] 33 CFR 328.3(c), 1996.

## 4.7.3 CONSTRUCTION IMPACTS

### 4.7.3.1 No Action Alternative

The No Action Alternative would result in no grading, development, or change to the DSA; therefore, no construction impacts to wetlands or Waters of the United States would occur under the No Action Alternative.

### 4.7.3.2 Proposed Action

The Proposed Action would convert the easternmost portion of the Argo Ditch from a partially earthen-bottom ditch with a 720-foot long concrete apron to a concrete box channel. According to the 2013 delineation (Appendix D), the proposed Project would result in removal of 0.093-acre of wetland vegetation within the area previously cleared for channel clearing. During construction of the Proposed Action, grading and excavation of the previously delineated 0.093 acres of wetlands would occur. These wetlands would then be covered with the concrete box channel to allow conveyance of the Argo Ditch flow. Construction of the Proposed Action would be conducted under Nationwide Permit No. 31 through coordination with the USACE. All construction activities would follow all applicable local, state and federal permits and regulations.

Proceeding under Nationwide Permit No. 39 would require a pre-construction notification to be submitted to the USACE, supported by a jurisdictional delineation and documentation that any required mitigation was completed. No substantial alteration to hydrology, floodwater, or stormwater retention would occur as a reduction of 0.093 acres of wetlands as a result of the Proposed Action. Thus, although the proposed Project would impact 0.093-acre of wetland impact, it would not have a significant impact on wetlands.

As the Argo Ditch is classified as a riverine streambed, construction of the Proposed Action would involve an alteration to the bed of the Argo Ditch. However, as the Proposed Action would only involve a 720-foot section of the Argo Ditch (0.093 acres of delineated wetlands); and as described previously, no significant impacts to plants or wildlife would occur; the Proposed Action would not substantially alter the Argo Ditch streambed. No substantial alteration to hydrology, floodwater, or stormwater retention would occur as a result of construction of the Proposed Action. Nor would the wetland's ability to protect water quality, or quantity of municipal water supplies occur. The Proposed Action would require coordination with CDFW per CDFW Code, Section 1600 requiring agency regulation of projects that may alter the flow, bed, channel, or bank of rivers, streams, and lakes.[26]

## 4.7.4 OPERATIONAL IMPACTS

### 4.7.4.1 No Action Alternative

The No Action Alternative would result in no grading, development, or change to the DSA; therefore, no operational impacts to wetlands or Waters of the United States would occur under the No Action Alternative.

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[26] State of California, California Department of Fish and Wildlife, *Fish and Game Code Sections 1600-1616*. Effective January 1, 2004.

#### 4.7.4.2 Proposed Action Alternative

The 2013 Jurisdictional Delineation of the Argo Ditch identified seven wetland areas within the man-made Argo Ditch for a total of 1.02 acres of wetlands (Appendix D). Most of these wetlands were associated with culverts or concrete areas within the Argo Ditch. All of these wetlands were within the man-made ditch and are subject to periodic clearing of vegetation under current permits.

The Proposed Action would convert the easternmost portion of the Argo Ditch from a partially earthen-bottom ditch with a 720-foot long concrete apron to a concrete box channel. As a result of the 2013 delineation, the Proposed Action would result in removal of 0.093-acre of wetland vegetation within the area previously cleared for channel clearing.

The Argo Ditch is a man-made flood control structure that falls under the jurisdiction of USACE and CDFW. In 1998, USACE had exerted jurisdiction over the Argo Ditch because it ultimately discharges to the storm drainage system, which outfalls to the Pacific Ocean, a navigable water body pursuant to Section 404 of the Clean Water Act. USACE and CDFW agreed to allow LAWA to perform clearance of 0.99-acre of vegetation within the Argo Ditch and to maintain the ditch clear of vegetation. Despite regular clearing outside of the breeding season for birds, vegetation periodically regrows. Many of the wetland plants growing within the Argo Ditch are nonnative or weedy species or are associated with early successional wetlands.

The Proposed Action would be an allowable activity pursuant to Nationwide Permit No 39. Proceeding under Nationwide Permit No. 39 would require a pre-construction notification to be submitted to the USACE, supported by a jurisdictional delineation and documentation that the required mitigation was completed pursuant to the 1998 authorization to complete channel clearing pursuant to Nationwide Permit No. 31. The USACE issues nationwide permits for projects that would have a minimal effect on the aquatic environment. Thus, although the Proposed Action would impact 0.093-acre of wetland impact, it would not have a significant impact on wetlands.

### 4.7.5 MITIGATION MEASURES

Development of the Proposed Action would be conducted in accordance with Nationwide Permit No. 39, in coordination with the USACE. Impacts to the Argo Ditch, including wetland removal, would occur in conjunction with U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife coordination, and mitigation would be implemented to ensure a less than significant impact from construction of the proposed undertaking. Permanent impacts to the Argo Ditch will be mitigated at a minimum ratio of 2:1 due to permanent loss of up to 720 linear feet of the Argo Ditch. Mitigation may include restoration, establishment, enhancement, preservation, mitigation banking, and in-lieu fee or equivalent as coordinated with the respective agencies.

# 4.8 Light Emissions and Visual Impacts

## 4.8.1 OVERVIEW OF IMPACTS

The No Action Alternative would not result in light emission or visual impacts. The Proposed Action would involve minor modifications to existing airfield lighting. Construction impacts are considered short-term and would include implementation of phased construction and LAX Master Plan mitigation commitments to minimize visual impacts to the aesthetic environment.

Operation of the Proposed Action would not have significant impacts on the aesthetic environment. Under the Proposed Action, the runway and service road improvements would be at-grade within existing airport property. Additionally, the potential effect on the visual landscape would be minimized with the implementation of LAX Master Plan mitigation commitments.

## 4.8.2 METHODOLOGY

Light emission impacts associated with the No Action Alternative and the Proposed Action were determined by evaluating construction-related impacts, the extent to which airfield lighting would change, and the potential for the change to create an annoyance among sensitive land uses in the vicinity of LAX that could interfere with normal activities or contrast with existing environments. Thresholds to determine the significance of light emissions and visual effects impacts are:

- Light Emissions: When an action's light emissions create annoyance to interfere with normal activities.
- Visual effects: When consultation with Federal, State, or local agencies, tribes, or the public shows these effects contrast with existing environments and the agencies state the effect is objectionable.

Evaluation of visual impacts considered the potential changes in landscape and views in the vicinity of LAX and whether contrasts with existing environments would occur.

## 4.8.3 CONSTRUCTION IMPACTS

### 4.8.3.1 No Action Alternative

Under the No Action Alternative, the proposed improvements on the Runway 6L-24R and Runway 6R-24L RSAs and associated improvements would not occur. Consequently, there would be no change in light emissions or visual effects in the DSA under the No Action Alternative. Therefore, no significant effects related to construction lighting and visual effects are anticipated.

### 4.8.3.2 Proposed Action

*Lighting Emissions*

Under the Proposed Action, nighttime lighting would be required for any nighttime construction activities on the north airfield. Construction nighttime lighting would be temporary and restricted to the areas of the proposed runway improvements. Implementation of LAX Master Plan mitigation commitments would

minimize impacts during construction (see Section 4.8.5). Therefore, no significant construction lighting emissions impacts are anticipated.

*Visual Effects*

During construction, large trucks and other large-scale construction equipment would be present on the DSA and on the proposed staging areas. The visual impacts resulting from the construction of the proposed runway improvements are considered short-term and would include LAX Master Plan mitigation commitments (in particular MM-DA-1, Construction Fencing) that would minimize impacts to the aesthetic environment. Therefore, no significant construction visual effects are anticipated.

## 4.8.4 OPERATIONAL IMPACTS

### 4.8.4.1 No Action Alternative

Under the No Action Alternative, the proposed RSA improvements on Runway 6L-24R and Runway 6R-24L and the other associated improvements would not occur. Consequently, the lighting conditions and visual effects in the DSA under the No Action Alternative would be similar to existing conditions. The existing lighting has been designed and/or measures have been implemented to reduce the amount of light spillage into residential communities. Therefore, no significant effects related to light emissions or visual impacts are anticipated.

### 4.8.4.2 Proposed Action

*Lighting Emissions*

The Proposed Action would not introduce any new lighting sources but would include the replacement of existing in-pavement lights and the relocation of taxiway holdbar lights. However, because these lights already exist, no significant change to the lighting environment of the north airfield is anticipated to be noticeable to residents and workers in the surrounding area.

*Visual Effects*

Runway and taxiway improvements associated with the Proposed Action would not result in alterations to landforms since they would remain at-grade. Aside from the area that would be graded (but would remain unpaved) on the eastern end of Runway 6L-24R, most of these improvements would have a similar appearance to existing conditions. The Argo Ditch would have approximately 720 linear feet of wetlands (consisting of approximately 0.09 acres) removed and replaced with a concrete box-culvert. Although vegetation would be removed and replaced with the concrete box-culvert for the relocated service road, the wetlands are located within the Argo Ditch channel (below-grade) and are not readily visible from street-level. In addition, this area does not hold any significant aesthetic value and the removal of wetlands would not result in any significant visual effects. Wetland impacts are discussed further in Section 4.7.

The graded and unpaved area at the eastern end of Runway 6L-24R would look slightly different from existing conditions due to reconfigured service roads, but would be consistent with the overall visual character of LAX. The new in-pavement lighting would replace existing lighting and would be consistent with the overall visual

character of LAX. Therefore, no significant visual effects from implementation of the Proposed Action are anticipated.

### 4.8.5 MITIGATION MEASURES

No significant impacts are anticipated with implementation of LAX Master Plan mitigation commitment LI-3, Lighting Controls. This mitigation measure states that prior to final approval of plans for new lighting, LAWA will conduct reviews of lighting type and placement to ensure that lighting will not interfere with aeronautical lights or otherwise impair Airport Traffic Control Tower or pilot operations. Plan reviews will also ensure, where feasible, that lighting is shielded and focused to avoid glare or unnecessary light spillover.

No additional mitigation measures are required.

## 4.9 Natural Resources and Energy Supply

### 4.9.1 OVERVIEW OF IMPACTS

The No Action Alternative would not result in natural resources or energy supply impacts. The Proposed Action would not significantly impact natural resources that are unusual in nature, are in short supply or increase energy demands beyond available supply. The Proposed Action would not increase aircraft operations or alter the use of LAX when compared to the No Action Alternative. Additionally, the Proposed Action would be compliant with LAWA's *Sustainable Airport Planning, Design and Construction Guidelines Version 6* and the City of Los Angeles Green Building Code. These guidelines apply to all LAX projects to promote sustainability in design, planning, and construction and energy conservation. These guidelines would continue to apply under the No Action or Proposed Action Alternative. Therefore, no significant effects related to natural resources or energy supplies are anticipated.

### 4.9.2 METHODOLOGY

Energy, fuel, and natural gas demands associated with the No Action and the Proposed Action Alternative were determined by evaluating the extent to which the Proposed Action's construction, operation, or maintenance would change demands for electricity, fuel, and water, and assessing whether the change would cause demand to exceed available or future natural resource or energy supplies as compared with the No Action Alternative. Significant impacts would occur when an action's construction, operation, or maintenance would cause demands that would exceed available or future (project year) natural resources or energy supplies.

## 4.9.3 CONSTRUCTION IMPACTS

### 4.9.3.1 No Action Alternative

*Natural Resources*

Under the No Action Alternative, the proposed Runway 6L-24R and Runway 6R-24L RSA and associated improvements would not occur. Therefore, no effects related to natural resources associated with construction of the No Action Alternative are would occur.

*Energy Supply*

Under the No Action Alternative, the proposed Runway 6L-24R and Runway 6R-24L RSA and associated improvements would not occur. Therefore, no effects related to energy supply associated with construction of the No Action Alternative are would occur.

### 4.9.3.2 Proposed Action

*Natural Resources*

Construction of the runway and taxiway improvements associated with the Proposed Action would use common materials and minerals that are not unusual or in short supply, such as asphalt, concrete, and soil. These materials are widely available in the Los Angeles area and would not impact natural resource supplies. Operation of construction equipment and vehicles would use diesel and other fuels that are not unusual or in short supply. As discussed above, construction of the Proposed Action would comply with LAWA's *Sustainable Airport Planning, Design and Construction Guidelines Version 6*, the City of Los Angeles Green Building Code, and all applicable sustainable construction requirements to reduce natural resource consumption during construction. Therefore, no significant effects related to natural resources associated with the runway and taxiway improvements are anticipated.

*Energy Supply*

Construction of the runway and taxiway improvements associated with the Proposed Action would use energy for construction lighting, vehicles, and machinery. Construction activities using energy would be temporary, and would comply with LAWA's *Sustainable Airport Planning, Design and Construction Guidelines Version 6*, the City of Los Angeles Green Building Code, and all applicable sustainable construction requirements to reduce energy consumption during construction. Therefore, no significant effects related to energy supply associated with the runway and taxiway improvements are anticipated.

## 4.9.4 OPERATIONAL IMPACTS

### 4.9.4.1 No Action Alternative

*Natural Resources*

Under the No Action Alternative, the proposed Runway 6L-24R and Runway 6R-24L RSA and associated improvements would not occur. Existing projected aviation activity at LAX would not change. Natural resource use at LAX under the No Action Alternative would be the same as what is currently forecasted and

planned. Previously-approved projects at LAX would occur; however, these have already been accounted for in forecasted and planned natural resource supplies, and are not anticipated to require unusual natural resources that are in short supply. Consequently, the No Action Alternative would not cause demands that would exceed available or future natural resource supplies in the GSA. Therefore, no significant effects related to natural resources associated with operation of the No Action Alternative are anticipated.

*Energy Supply*

Energy usage at LAX under the No Action Alternative would be the same as what is currently forecasted and planned. Previously approved projects at LAX would occur; however, these have already been accounted for in forecasted and planned energy supplies and are not anticipated to exceed existing or future energy supplies. Consequently, the No Action Alternative would not cause demands that would exceed available or future energy supplies in the GSA. Therefore, no significant effects related to energy supply associated with operation of the No Action Alternative are anticipated.

#### 4.9.4.2 Proposed Action

*Natural Resources*

Under the Proposed Action, natural resources would be used for the ongoing operation and maintenance of improvements of Runway 6L-24R and Runway 6R-24L, including use of water and paving materials. However, these activities would not use unusual resources that are in short supply or unusual in nature. Additionally, the Proposed Action would not change existing forecasted aviation activity at LAX that could result in demands that would exceed available or future natural resources. Therefore, no significant effects related to natural resources associated with operation of the runway and taxiway improvements are anticipated.

*Energy Supply*

Under the Proposed Action, energy would be required for the ongoing operation and maintenance of the new in-pavement lighting, as well as other signaling and lighting associated with the new improvements. Any lighting changes associated with the Proposed Action would be a minor relocation of existing configurations and would not result in energy demands that would exceed available or future energy supplies.

The Proposed Action would not change existing forecasted aviation activity at LAX that could result in demands that would exceed available or future energy supplies. Therefore, no significant effects related to energy supplies associated with operation of the runway and taxiway improvements are anticipated.

### 4.9.5 MITIGATION MEASURES

No significant impacts are anticipated. Therefore, no mitigation measures are required.

# 4.10 Hazardous Materials, Pollution Prevention, and Solid Waste

## 4.10.1 OVERVIEW OF IMPACTS

Under the No Action Alternative, no construction or alterations to the LAX property would occur. Operational activities would not be altered, and ground disturbance or facility alteration/demolition activities associated with construction would not occur; therefore, no impacts to hazardous materials and solid waste would occur.

Under the Proposed Action, construction would be limited to other already approved and/or funded programs in other areas of LAX property. Construction of the Proposed Action would involve shallow excavation and grading depths of up to 3 feet for the reconstruction of runway concrete. Contaminated soil may be encountered during construction activities; however construction plans and specifications would include provisions for the handling, storage, treatment and/or testing and disposal of any contaminated materials. During construction, fuel, oil, and other petroleum-based products would also be used and stored; however, construction plans would include provisions for appropriate handling of these materials. The use of fuel, oil, and other petroleum-based products necessary for the routine operation of LAX would continue, and is not anticipated to increase as a result of implementation of the Proposed Action because aircraft operations would not increase. Implementation of BMPs would further ensure that no significant impacts would occur.

## 4.10.2 METHODOLOGY

For the purpose of this analysis, locations of facilities that involve hazardous materials and sites of known or potential environmental contamination, located within or adjacent to the GSA, were identified (refer to Exhibit 3-11). This information was then compared to the DSA associated with the No Action and the Proposed Action alternatives. The types of hazardous materials, environmental contamination and/or other regulated substances potentially associated with implementation of the Proposed Action were also evaluated. This assessment was developed from what is known about existing land uses and facilities at LAX, as well as the design and other construction requirements under the Proposed Action. The potential for impacts was further evaluated for the cases where the disturbance areas were located on, or adjacent to, areas where these substances and materials may be encountered.

The findings of these evaluations were compared to appropriate regulatory guidelines, significance thresholds and other appropriate criteria. These include the list of pertinent federal, state, and local regulations summarized in Table 3-18. Relevant safeguards, or precautions, undertaken to help avoid or minimize the potential environmental impacts associated with hazardous materials and/or environmental contamination during both the construction and operational phases of the Proposed Action were also evaluated.

The No Action and the Proposed Action alternatives were evaluated for the potential to result in impacts associated with the generation and/or disposal of municipal solid waste (MSW). Specifically, the evaluation included MSW impacts from:

- Demolition and construction activities;
- Future enplanements at LAX;

- Compliance with the guidelines contained in the FAA's A/C 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports*.

The potential for temporary generation of solid wastes due to demolition and construction activities was analyzed based on the type of construction activities under the Proposed Action. According to FAA A/C 150/5200-33B, waste disposal sites having the potential to attract birds are considered incompatible if located within 10,000 feet of any runway used or planned to be used by turbine-powered aircraft, or are located within a 5-mile radius of a runway that attracts or sustains hazardous bird movements into or across the runways and/or approach and departure patterns of aircraft.

According to FAA Order 1050.1E, a significant impact would occur when a proposed action would involve properties listed (or potentially listed) on the National Priorities List (NPL). Uncontaminated properties within a NPL site's boundary do not always trigger this significance threshold. However, unresolved status can trigger this significance threshold.

## 4.10.3 CONSTRUCTION IMPACTS

### 4.10.3.1 No Action Alternative

Under the No Action Alternative, no construction activities in the DSA would occur. Therefore, no construction impacts related to hazardous materials or solid waste would occur.

### 4.10.3.2 Proposed Action

Construction activities associated with the Proposed Action would involve the use of typical construction-related hazardous materials and excavation of existing surface material (i.e., earth, concrete, and asphalt). The Proposed Action would also require excavation and grading of disturbed and potentially undisturbed fill for the installation of the concrete box culvert in the Argo Ditch. For the components of the RSA improvements that include pavement reconstruction (eastern end of Runway 6L-24R), the pavement reconstruction of the eastern portions of Taxiway AA and construction of service roads, excavation would reach a maximum of 3 feet in depth.

Given the historical uses of LAX, there is potential for encountering contaminated materials during excavation and grading activities. However, LAWA has a defined methodology and protocol in place for handling, storage, and treatment of hazardous materials encountered during construction.[27] Additionally, LAWA also has a methodology and protocol in place for the treatment and/or testing and disposal and recycling of contaminated materials.[28] One known or listed hazardous material or clean-up site is located within the DSA, the Continental Airlines cleanup-site located at 7300 W. World Way and is classified as an "Open/Site Assessment" status (see Table 3-19). However, this site is located within a potential construction staging area. No excavation or grading would occur within the construction staging areas, therefore no significant impact

[27] U.S. Department of Transportation, Federal Aviation Administration and Los Angeles World Airports, *LAX Master Plan Final EIS/EIR,* 2005.

[28] *Ibid*.

would be anticipated from activity in this area. No known or listed hazardous material or clean-up sites are located within areas of the DSA that would be excavated or graded during the construction activities of the Proposed Action (Exhibit 3-11). As such, the potential for hazardous or contaminated materials to be encountered during construction activities is not anticipated to be significant.

The use of hazardous materials during construction would be in quantities that are typical of the construction industry. The removal of existing surface materials (asphalt and concrete) to prepare the new surfaces (reconstructed concrete) would involve relatively shallow excavations. Potential effects on solid waste generation during construction would be offset by LAWA's on-site recycling program in accordance with AB 939, which requires that the City of Los Angeles solid waste disposal be diverted from landfills by 50 percent by 2000.[29] The City of Los Angeles has achieved this diversion rate and has set a solid waste diversion rate of 70 percent by 2020. Any other debris that would potentially include contaminated soils would be disposed at an off-site facility approved for contaminated materials.

Lastly, LAX is not an existing or proposed NPL site. No significant construction impacts related to hazardous materials or solid waste are anticipated.

## 4.10.4 OPERATIONAL IMPACTS

### 4.10.4.1 No Action Alternative

Under the No Action Alternative, operations would remain as already planned and would not include the elements proposed under the Proposed Action. LAX would continue to comply with existing hazardous materials regulations in place. Solid waste generation would not change in the DSA under the No Action Alternative. No significant impacts related to hazardous materials or solid waste is anticipated.

### 4.10.4.2 Proposed Action

Under the Proposed Action, aircraft operations would not change and would be similar to the aircraft operations under the No Action Alternative. LAX would continue to comply with existing hazardous materials regulations in place. Solid waste generation would not change in the DSA under the Proposed Action. In addition, LAX is not an existing or proposed NPL site. Therefore, no significant operational impacts related to hazardous materials or solid waste is anticipated under the Proposed Action.

## 4.10.5 MITIGATION MEASURES

No significant impacts are anticipated. Therefore, no mitigation measures are required.

[29] U.S. Department of Transportation, Federal Aviation Administration and Los Angeles World Airports, *LAX Master Plan Final EIS/EIR,* 2005.

# 4.11 Cumulative Impacts

Cumulative impacts to environmental resources result from the incremental effects of a proposed action when combined with other past, present, and reasonably foreseeable future actions in the area, regardless of the entity (i.e., federal or non-federal) or person that would carry out those actions. In some cases, individually minor but collectively significant actions occurring over a defined period of time can cause cumulative impacts. The LAX development projects that are considered in this assessment of potential cumulative impacts are identified in Section 3.16 (refer to Table 3-20 and Exhibit 3-12).

For this EA, 12 LAX development projects meet the criteria described in Section 3.16: these projects are in various stages of planning and/or construction. The discussion below provides a qualitative analysis of these 12 projects and their potential impacts to the environmental resources presented in this EA, including: noise; compatible land use; socioeconomic impacts, environmental justice, children's environmental health and safety risk; air quality; water resources; wetlands; light emissions and visual impacts; natural resources and energy supply; and hazardous materials, pollution prevention, and solid waste.

As indicated below, past, present, and reasonably foreseeable LAX development projects have the potential to independently impact a number of the resource categories evaluated in this EA, such as air quality, wetlands, lighting and visual character, and noise. The limited impacts associated with the construction of the Proposed Action would be mitigated to the fullest extent practicable through the implementation of on-site avoidance and minimization measures discussed in this EA. The Proposed Action would not result in significant operational changes to the airport and would not increase the type or amount of activity at the airport, when compared to the No Action alternative. Therefore, when considered with the other LAX development projects identified in Table 3-20 of Section 3.16, the Proposed Action is not anticipated to have significant cumulative impacts.

## 4.11.1 NOISE

### 4.11.1.1 Past Actions

Development at LAX that has occurred within the last five years has resulted in short-term increases in noise from construction equipment and activities. Additionally, routine maintenance and runway rehabilitation has resulted in temporary shifts in airport noise contours. Projects at LAX within the last five years have been located entirely on the LAX airfield and have not materially changed the noise contours presented in the LAX Master Plan EIS/EIR.

### 4.11.1.2 Present Actions

Projects at LAX to be constructed concurrently with the Proposed Action would not modify the existing airport noise contours as presented in the LAX Master Plan EIS/EIR. Concurrent projects would, however, contribute to construction equipment and activity noise, temporary shifts in airport noise contours, and noise from construction traffic.

#### 4.11.1.3 Proposed Actions

The Proposed Action Alternative would not change the long-term operational conditions at LAX. When compared to the No Action Alternative, the Proposed Action Alternative would not cause new noise sensitive areas to be located at or above 65 dB CNEL, or existing sensitive and non-sensitive areas to experience a noise increase of at least 1.5 dB CNEL, which is the federal threshold for significant noise impacts. However, during the construction phase of the Proposed Action Alternative, there would be a short-term (estimated 6 months) increase in aircraft noise exposure over some areas east of Runway 6R-24L due to aircraft operations being shifted to this runway during the 4-month runway closure period and the 2-month period that Runway 6L-24R would operate with a displaced threshold of 1,925 feet. Mitigation for these effects would result in a less than significant impact.

#### 4.11.1.4 Future Actions

With the exception of the LAX Master Plan Alternative D, future development projects at LAX would result in minimal operational changes at LAX. Operational noise impacts as part of the LAX Master Plan were analyzed and discussed in the LAX Master Plan Final EIS/EIR. All future actions listed in Table 3-20 would generate construction noise from the use of on-site equipment and from various construction activities. It is anticipated that these future projects would not be constructed concurrently with the Proposed Action, and would therefore have a less than significant cumulative noise impact.

#### 4.11.1.5 Cumulative Impact

The Proposed Action would not contribute to long-term changes to operational conditions at LAX. Additionally, construction noise impacts of the Proposed Action would be mitigated to the fullest extent practicable through implementation of measures discussed in Section 4.2 of this EA. Therefore, when considered in addition to other LAX development projects, the Proposed Action is not anticipated to have significant cumulative noise impacts.

### 4.11.2 COMPATIBLE LAND USE

#### 4.11.2.1 Past Actions

Past actions at LAX within the last five years are limited to development within the LAX boundary and confined to the airfield. No alteration of existing land use surrounding LAX has occurred as a result of past actions. Development at LAX that has occurred within the last five years has resulted in short-term increases in noise from construction equipment and activities. Additionally, routine maintenance and runway rehabilitation has resulted in temporary shifts in airport noise contours. Projects at LAX within the last 5 years have not materially changed land use or noise contours presented in the LAX Master Plan EIS/EIR.

#### 4.11.2.2 Present Actions

Projects at LAX to be constructed concurrently with the Runway 6L-24R and Runway 6R-24L Runway Safety Area and Associated Improvements Project would be constructed on LAX property and would not alter the surrounding existing land uses or modify airport noise contours as presented in the LAX Master Plan EIS/EIR. Concurrent projects would, however, contribute to temporary noise impacts which may extend off-airport.

#### 4.11.2.3 Proposed Actions

During the construction period and temporary closure of Runway 6L-24R, the redistribution of aircraft would result in a 1.5 dB CNEL or higher increase in noise over some noise sensitive areas when compared to the (2015) No Action Alternative. The primary areas that would experience an increase of 1.5 dB CNEL or higher are located directly east of Runway 6R-24L. This increase would impact residential dwellings east of the airport during the runway closure and reduced runway length periods. Incompatible land uses that would be impacted during the construction period of the Proposed Action are eligible for noise mitigation measures. As such, the temporary noise impacts associated with construction of the Proposed Action would not be significant.

The Proposed Action would not result in changes to existing land uses in the vicinity of LAX and would not change the long-term operational conditions at LAX. Noise-sensitive land uses, including residences, schools, churches, hospitals, and recreational uses, would not experience an increase in noise exposure levels as a result of the Proposed Action. Therefore, no significant land use compatibility impacts are anticipated in either 2015 or 2020.

#### 4.11.2.4 Future Actions

With the exception of the LAX Master Plan Alternative D, future development projects at LAX would result in minimal operational changes at LAX. Land use impacts as part of the LAX Master Plan were analyzed and discussed in the LAX Master Plan Final EIS/EIR. The proposed Crenshaw/LAX Transit Corridor Project would occur on existing transit corridors and would not significantly alter land use.

Aside from the LAX Master Plan Alternative D, future actions listed in Table 3-20 would generate construction noise, but would not alter existing land use or existing operational noise contours at LAX. It is anticipated that these future projects would not be constructed concurrently with the Proposed Action, and would therefore have a less than significant cumulative land use impact.

#### 4.11.2.5 Cumulative Impact

The Proposed Action would not contribute to long-term changes to operational conditions at LAX. Alterations to future land uses have been assessed as part of the LAX Master Plan Final EIS/EIR. Construction noise impacts of the Proposed Action would be mitigated to the fullest extent practicable through implementation of measures discussed in Section 4.2 of this EA. Therefore, when considered in addition to other LAX development projects, the Proposed Action is not anticipated to have significant cumulative land use impacts.

### 4.11.3 SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE, CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISK

#### 4.11.3.1 Past Actions

Past actions at LAX within the last five years are limited to development within the LAX boundary and confined to the airfield. Projects over the last five years have not resulted in changes to operational conditions at LAX, and have not resulted in socioeconomic, environmental justice, children's environmental

health and safety risk or surface transportation impacts. Construction of past actions at LAX would have resulted in temporary increases in local surface traffic, noise and air quality. However, these impacts would have been temporary in nature and mitigated through the implementation of LAX Master Plan EIS/EIR commitments and mitigation measures.

#### 4.11.3.2 Present Actions

Projects at LAX to be constructed concurrently with the Proposed Action are limited to development within the LAX boundary. Present actions at LAX would not result in changes to operational conditions at LAX, and would not result in long-term socioeconomic, environmental justice, children's environmental health and safety risk or surface transportation impacts. However, construction of current actions at LAX may result in temporary increases in local traffic, noise, and air quality impacts. Most of these impacts would be temporary in nature and mitigated through the implementation of LAX Master Plan EIS/EIR commitments and mitigation measures.

#### 4.11.3.3 Proposed Actions

Implementation of the Proposed Action would occur within the LAX property boundary and not result in changes to existing capacity or operations of LAX. Implementation of the Proposed Action would not require any land acquisition, displacement of residences or community facilities/utilities. Temporary socioeconomic , environmental justice, children's environmental health and safety risk, and surface transportation impacts could potentially occur during the construction period of the Proposed Action. Construction of the Proposed Action would require a shift in aircraft operations to Runway 6R-24L during the 4-month runway closure period of Runway 6L-24R and a 2-month period that Runway 6L-24R would operate with a displaced threshold of 1,925 feet. During this period there would be a short-term (estimated 6 months) increase in aircraft noise exposure over some areas east of Runway 6R-24L. As discussed above, mitigation for these effects would result in a less than significant impact.

Construction activities would generate increased traffic associated with construction employees and deliveries in the vicinity of the proposed staging areas. Local roads would potentially sustain an increase in traffic due to construction hauling and employee traffic. However, although there may be short-term localized impacts associated with these construction activities, the Proposed Action would not have long-term impacts on GSA roadways levels of service, disrupt surrounding communities, or result in long-term impacts on local businesses, due to implementation of construction traffic mitigation commitments from the LAX Master Plan EIS/EIR. As these LAX Master Plan EIS/EIR mitigation commitments and mitigation measures are incorporated into the design of the Proposed Action, no significant construction traffic impacts would occur.

Construction and operation of the Proposed Action would not result in any significant environmental justice or children's environmental health and safety risk impacts.

#### 4.11.3.4 Future Actions

Future actions at LAX are limited to development within the LAX boundary and confined to the airfield. These actions at LAX would not result in changes to operational conditions at LAX, and would not result in long-term socioeconomic, environmental justice, children's environmental health and safety risk or surface

transportation impacts. However, construction of future actions at LAX may result in temporary increases in local traffic, noise, and air quality impacts. Most of these impacts would be temporary in nature and mitigated through the implementation of LAX Master Plan EIS/EIR commitments and mitigation measures.

Future development projects at LAX would result in minimal changes to air quality operational emissions with the exception of the LAX Master Plan Alternative D. A general conformity analysis for operations and construction of the LAX Master Plan Alternative D was included in the LAX Master Plan EIS/EIR; emissions for the LAX Master Plan were then included in the State Implementation Plan. Other future actions would also generate construction emissions; however, it is anticipated that these project emissions would be below the NAAQS thresholds, and therefore, would have a less than significant impact on socioeconomics, environmental justice, and children's environmental health and safety risk.

#### 4.11.3.5 Cumulative Impact

The Proposed Action would not contribute to long-term changes to operational conditions at LAX. The Proposed Action along with past, present, and future projects would not require any land acquisition, displacement of residences, or community facilities/utilities. Temporary socioeconomic, environmental justice, children's environmental health and safety risk, and surface transportation impacts could potentially occur during the construction period of the Proposed Action. Construction noise, air quality, and surface transportation impacts of the Proposed Action would be mitigated by LAX Master Plan EIS/EIR commitments and mitigation measures.

Therefore, when considered in addition to other LAX development projects, the Proposed Action is not anticipated to have significant cumulative socioeconomic, environmental justice, or children's environmental health and safety impacts.

### 4.11.4 AIR QUALITY

#### 4.11.4.1 Past Actions

LAX development within the last five years has been confined to the airfield or to interior terminal improvements. These past actions have resulted in construction emissions, mainly from on-site equipment, delivery/haul trucks, and worker commute vehicles. Projects within the last five years have not resulted in significant changes to operational emissions at LAX.

#### 4.11.4.2 Present Actions

LAX projects to be developed concurrently with the Proposed Action would not generally modify existing operational conditions at LAX. However, two projects that are expected to be under construction during the same timeframe as the Proposed Action, the Midfield Satellite Concourse and the West Aircraft Maintenance Area projects, would slightly change the taxi patterns of aircraft on the airfield. It is not expected that these changes would result in increased air quality emissions. Construction of all concurrent projects would result in short-term and temporary emissions resulting from construction equipment and activities, but are not expected to exceed NAAQS thresholds.

### 4.11.4.3 Proposed Actions

Construction and operational emissions inventories were prepared to address emissions associated with the Proposed Action; emissions would be below the established General Conformity *de minimis* thresholds for all applicable criteria pollutants, and, therefore, conform to the CAA. No significant impacts related to air quality are anticipated for the Proposed Action Alternative.

### 4.11.4.4 Future Actions

With the exception of the LAX Master Plan Alternative D, future development projects at LAX would result in minimal changes to air quality operational emissions. A general conformity analysis for operations and construction of the LAX Master Plan Alternative D was included in the LAX Master Plan EIS/EIR; emissions for the LAX Master Plan were then included in the State Implementation Plan. Other future actions would also generate construction emissions; however, it is anticipated that these project emissions would be below the NAAQS thresholds, and therefore, would have a less than significant impact on regional air quality.

### 4.11.4.5 Cumulative Impact

The Proposed Action would not significantly contribute to long-term operational changes at LAX, and thus would not significantly change operational emissions. While construction emissions of the Proposed Action would result in a temporary increase in airport emissions at LAX, these emissions would be below the established General Conformity *de minimis* thresholds for all applicable criteria pollutants, conforming to the CAA. For disclosure purposes, a list of past, present, and probable future LAWA projects that could overlap in time for construction are provided in **Table 4-12** along with estimated mass emissions. Emissions for several of these related LAWA projects were estimated or obtained from publicly available and readily accessible environmental documents; construction emissions for other projects were estimated based on the ratio of the project costs as compared to the Proposed Action. As shown, all non-Master Plan projects are individually below *de minimis* for all applicable pollutants. Therefore, when considered in addition to other LAX development projects, the Proposed Action is not anticipated to have significant cumulative air quality impacts.

**Table 4-12: Cumulative Construction Emissions**

| | 2015 ANNUAL CONSTRUCTION EMISSIONS (TONS) | | | | |
|---|---|---|---|---|---|
| **LAX DEVELOPMENT PROJECTS** | **CO** | **VOC** | **$NO_X$** | **$PM_{10}$** | **$PM_{2.5}$** |
| **Non-Master Plan Projects** | | | | | |
| Runway 6L-24R and Runway 6R-24R Runway Safety Area and Associated Improvements | 43 | 5.1 | 9.2 | 3.0 | 1.1 |
| Runway Safety Area Improvements – South Airfield [1/] | 40 | 4.4 | 8.0 | 0.2 | 0.2 |
| North Terminals Improvements [2/] | 1.3 | 0.6 | 1.7 | 0.2 | 0.1 |
| South Terminals Improvements [2/] | 2.4 | 1.0 | 3.0 | 0.4 | 0.2 |
| Central Utility Plant Replacement – Remaining Work [3/] | --- [4/] | --- [4/] | --- [4/] | --- [4/] | --- [4/] |
| Metro Crenshaw / LAX Transit Corridor and Station [5/] | 4.9 | 1.0 | 8.8 | 1.0 | 0.6 |
| | | | | | |
| General Conformity *de minimis* Significance Thresholds [6/] | 100 | 10 | 10 | 70 | 100 |
| Emissions Exceed *de minimis* Threshold? | No | No | No | No | No |
| | | | | | |
| **Master Plan Projects (Separate General Conformity Determination)** | | | | | |
| LAX Bradley West Project – Remaining Work [7/] | 26 | 4.5 | 33 | 7.8 | 2.7 |
| Terminal 3 Connector [7/] | --- [4/] | --- [4/] | --- [4/] | --- [4/] | --- [4/] |
| Midfield Satellite Concourse – North [8/] | 140 | 56 | 31 | 56 | 14 |
| West Aircraft Maintenance Area Project [9/] | 18 | 2.0 | 9.5 | 32 | 0.4 |
| LAX Master Plan Alternative D [10/] | 185 | 37 | 472 | 194 | 31 |

NOTES:

1/ Construction emissions based on *Los Angeles International Airport, Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Project Final Environmental Assessment*, August 2013.

2/ Emissions estimates for all terminal renovation projects are based on the emission rates associated with the United Airlines (UAL) T-7 Improvements Project, as presented in Table III-2 of the *United Airlines T-7 Initial Study* (March 2013), given that the nature of construction activity associated with terminal/concourse renovations would be generally comparable to those of the UAL project. The subject emissions rates of the UAL project were applied to terminal renovation projects based on cost ratios (i.e., emissions per million dollars of construction costs).

3/ Project schedule based on *Los Angeles International Airport, Central Utility Plant Replacement Project Draft Environmental Impact Report (DEIR)*, July 2009.

4/ Construction of the project is not anticipated to occur in 2015.

5/ Los Angeles County Metropolitan Transportation Authority, *Crenshaw/LAX Transit Corridor, Final EIS/EIR*, August 2011. Detailed construction information was not available at the time of this analysis. Estimated emissions based on maximum daily construction emissions presented in the *Crenshaw/LAX Transit Corridor, Project Final EIS/EIR* and converted to tons per quarter based on a 5-day workweek.

6/ For general conformity purposes, emissions associated with each project are compared to the applicable *de minimis* thresholds. If the project emissions are below all applicable *de minimis* thresholds, then the project conforms with the State Implementation Plan (SIP), and no additional air quality analysis is required.

7/ Emissions estimates reflect the ratio of total project costs to the total project emissions as applied to cost of the remaining improvements, based on *Los Angeles International Airport, Bradley West Project Draft Environmental Impact Report (DEIR)*, Table 4.3-9 (total project cost data), Tables 4.4-8 and 4.4-11 (total project emissions data), May 2009.

8/ Construction emissions based on *Los Angeles International Airport, Midfield Satellite Concourse Draft Environmental Impact Report (DEIR)*, March 2014.

9/ Construction emissions based on *Los Angeles International Airport, West Aircraft Maintenance Area Project Draft Environmental Impact Report (DEIR)*, Appendix B.4, October 2013.

10/ It was assumed for the purposes of this analysis that the LAX Master Plan Alternative D, as currently approved, is implemented. Emissions are based on the estimate of average daily construction emissions converted to tons per year.

SOURCES: Los Angeles World Airports, *Los Angeles International Airport, Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Project Final Environmental Assessment*, August 2013; *United Airlines T-7 Initial Study*, March 2013; Los Angeles World Airports, *Los Angeles International Airport, Central Utility Plant Replacement Project Draft Environmental Impact Report (DEIR)*, July 2009; Los Angeles County Metropolitan Transportation Authority, *Crenshaw/LAX Transit Corridor, Final EIS/EIR*, August 2011; Los Angeles World Airports, *Los Angeles International Airport, Bradley West Project Draft Environmental Impact Report (DEIR)*, May 2009; Los Angeles World Airports, *Los Angeles International Airport, Midfield Satellite Concourse Draft Environmental Impact Report (DEIR)*, March 2014; Los Angeles World Airports, *Los Angeles International Airport, West Aircraft Maintenance Area Project Draft Environmental Impact Report (DEIR)*, October 2013; *LAX Master Plan Final EIS/EIR*, 2005.

PREPARED BY: Ricondo & Associates, Inc., June 2014.

## 4.11.5 WATER RESOURCES

### 4.11.5.1 Past Actions

LAX development within the last five years is limited to development within the LAX boundary and confined to the airfield. No significant water resources are located in the vicinity of the past actions. These projects have occurred within developed areas of LAX primarily consisting of existing buildings or paved areas. Construction of these projects may have resulted in short-term and temporary runoff at the airport, but have been minimized through the implementation of LAX Master Plan EIS/EIR commitments and mitigation measures.

### 4.11.5.2 Present Actions

LAX projects to be developed concurrently with the Proposed Action would also be confined to the LAX boundary and would occur on previously developed land. Potential increased runoff and reduced permeability may occur due to the construction of these projects. However, all LAWA projects are required to implement BMPs, follow applicable regulations, and apply project design features and LAX Master Plan EIS/EIR Commitments.

### 4.11.5.3 Proposed Actions

Construction of the Proposed Action would not provide substantial additional sources of polluted runoff due to compliance with the regulatory requirements and implementation of construction treatment BMPs and LAX Master Plan EIS/EIR commitments and mitigation measures. The construction of the Proposed Action would involve grading, excavation, and paving of approximately 2.0 additional undeveloped acres to relocate service roads. Construction of the Proposed Action would require coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, 2009-0009-DWQ as amended by 2010-0014-DWQ (General Permit), which would require a risk assessment and a project-specific SWPPP. City criteria require any disturbed area greater than 1-acre to conform to the SUSMP. This ordinance requires stormwater from initial storm flow or first flush to be treated by one or more of the approved BMPs. Through implementation of LAX Master Plan EIS/EIR commitments and mitigation measures and BMPs, construction of the Proposed Action would conform to the SUSMP and thus, would not have a significant impact on water resources.

Implementation of the Proposed Action would not cause a change in aircraft operations or routes, or any other operations at LAX. Components of the Proposed Action would add a minimal amount of new

impermeable airfield pavement; however, as discussed, drainage patterns would not be substantially altered. Furthermore, the Proposed Action would not introduce uses that do not already exist at LAX or increase uses that would increase the potential for pollutant release. Therefore, minimal impacts related to water resources are anticipated from operation of the Proposed Action.

#### 4.11.5.4 Future Actions

Future actions at LAX are limited to development within the LAX boundary. With the exception of the LAX Master Plan Alternative D, future projects would occur within developed areas of LAX primarily consisting of existing buildings or paved areas, and generally located away from significant water resources. Construction of these projects may also result in short-term and temporary runoff at the airport, but would be minimized through the implementation of LAX Master Plan EIS/EIR commitments and mitigation measures.

#### 4.11.5.5 Cumulative Impact

Cumulatively, projects at LAX have the potential to increase runoff and decrease permeability. However, as discussed above, all LAWA projects would be required to implement BMPs, follow regulations, and apply project design features and LAX Master Plan EIS/EIR commitments and mitigation measures. The Proposed Action includes treatment BMPs specifically designed to reduce water resources impacts to less than significant. Therefore, impacts related to increased runoff under the Proposed Action are not cumulatively considerable, and cumulative impacts would be less than significant.

### 4.11.6 WETLANDS

#### 4.11.6.1 Past Actions

Past actions at LAX within the last five years are limited to development within the LAX boundary and confined to the airfield. No significant wetland resources are located in the vicinity of the past actions. These projects have occurred within developed areas of LAX primarily consisting of existing buildings or paved areas. However, projects within the last five years would have been required to follow LAX Master Plan EIS/EIR commitments and mitigation measures and have not resulted in significant impacts to wetlands.

#### 4.11.6.2 Present Actions

LAX projects to be developed concurrently with the Proposed Action would also be confined to the LAX boundary and would occur on previously developed land. Present actions would not be anticipated to have significant impacts to wetlands. Additionally, all LAWA projects would be required to implement BMPs, follow regulations, and apply LAX Master Plan EIS/EIR commitments and mitigation measures.

#### 4.11.6.3 Proposed Actions

The Proposed Action would involve grading and excavation of the previously delineated 0.093 acres of wetlands along the Argo Ditch. The Proposed Action would be an allowable activity pursuant to Nationwide Permit No 39. No substantial alteration to hydrology, floodwater, or stormwater retention would occur as a reduction of 0.093 acres of wetlands as a result of the Proposed Action. All construction activities for the Proposed Action would follow all applicable local, state, and federal permits and regulations in addition to

LAX Master Plan EIS/EIR commitments and mitigation measures. Therefore, construction of the Proposed Action would not have significant impacts to wetlands.

#### 4.11.6.4 Future Actions

Future LAX projects would mainly occur on previously developed land. These projects are not anticipated to be located near wetland resources or have any impacts to jurisdictional waters of the U.S. Additionally, all LAWA projects would be required to implement BMPs, follow regulations, and apply project design features and LAX Master Plan EIS/EIR commitments and mitigation measures.

#### 4.11.6.5 Cumulative Impact

Past, present and future actions at LAX are not anticipated to have significant wetland impacts. The Proposed Action would result in removal of 0.093-acre of wetland vegetation within the area previously cleared for channel clearing. The Proposed Action would be an allowable activity pursuant to Nationwide Permit No 39. All LAWA projects would be required to implement BMPs, follow regulations, and apply applicable LAX Master Plan EIS/EIR commitments and mitigation measures. The Proposed Action includes permitting, project design features, and BMPs specifically designed to reduce wetland impacts to less than significant. Therefore, wetland impacts related to the Proposed Action would not be cumulatively considerable, and cumulative impacts would be less than significant.

### 4.11.7 LIGHT EMISSIONS AND VISUAL IMPACTS

#### 4.11.7.1 Past Actions

LAX Development completed within the last five years has not resulted in significant light emissions or visual impacts. The aesthetic environment of the airport has generally remained unchanged since what was presented in the LAX Master Plan EIS/EIR.

#### 4.11.7.2 Present Actions

LAX projects to be developed concurrently with the Proposed Action would not generally modify the existing visual character of LAX. Concurrent projects may include modifications to terminals, including the construction of the new Midfield Satellite Concourse, and the relocation of an existing maintenance area, the West Aircraft Maintenance Area. However, these facilities would be well removed from the nearby residential areas and would not significantly change the light emissions or visual impacts of the airport. Construction of the concurrent projects may also result in short-term and temporary visual effects at the airport, but would be minimized through the implementation of LAX Master Plan EIS/EIR commitments and mitigation measures.

#### 4.11.7.3 Proposed Actions

Light emissions as a result of construction of the Proposed Action are considered short-term and would include implementation of phased construction and LAX Master Plan EIS/EIR commitments and mitigation measures to minimize visual impacts to the aesthetic environment. Operation of the Proposed Action would involve minor modifications to existing airfield lighting; however, these modifications would not have significant impacts on the aesthetic environment. Improvements under the Proposed Action would be at-

grade within existing airport property and any potential effect on the visual landscape would be minimized with the implementation of LAX Master Plan EIS/EIR commitments and mitigation measures.

#### 4.11.7.4 Future Actions

Future actions at LAX, with the exception of the LAX Master Plan Alternative D, would not generally modify the existing visual character of LAX. Light emissions and visual impacts associated with the LAX Master Plan were analyzed and discussed in the LAX Master Plan Final EIS/EIR. Other future project actions would be well removed from nearby residential areas and would not significantly change the light emissions or visual impacts of the airport. Construction of these projects may also result in short-term and temporary visual effects at the airport, but would be minimized through the implementation of LAX Master Plan EIS/EIR commitments and mitigation measures.

#### 4.11.7.5 Cumulative Impact

Construction of the Proposed Action would not significantly alter the light emissions or visual impact at LAX. Implementation of LAX Master Plan EIS/EIR commitments and mitigation measures would further ensure that no significant cumulative impacts would occur.

### 4.11.8 NATURAL RESOURCES AND ENERGY SUPPLY

#### 4.11.8.1 Past Actions

LAX development within the last five years has resulted in an increase of material consumption and energy consumption during construction of past actions. However, projects within the last five years have not resulted in significant changes to operational conditions at LAX, and have not resulted in additional facilities that would continue to use or consume materials and energy.

#### 4.11.8.2 Present Actions

In relation to natural resources and energy supply, LAX projects to be developed concurrently with the Proposed Action would result in an increase of material and energy consumption during both construction and operations. However, LAWA requires all LAX development projects to comply with *LAWA's Sustainable Airport Planning, Design and Construction Guidelines Version 6* and the City of Los Angeles Green Building Code, which would reduce potential impacts.

#### 4.11.8.3 Proposed Actions

The Proposed Action would not significantly impact natural resources that are unusual in nature, are in short supply, or increase energy demands beyond available supply. As previously stated, the Proposed Action would not increase aircraft operations or substantially change operational conditions at LAX. Construction of the Proposed Action would increase material and energy consumption. However, the Proposed Action would be compliant with *LAWA's Sustainable Airport Planning, Design and Construction Guidelines Version 6* and the City of Los Angeles Green Building Code to promote sustainability in design, planning, and construction and energy conservation. Therefore, no significant effects related to natural resources or energy supplies are anticipated.

#### 4.11.8.4 Future Actions

Construction and operation of future actions at LAX would result in an increase of material and energy consumption. However, LAWA requires all LAX development projects to comply with *LAWA's Sustainable Airport Planning, Design and Construction Guidelines Version 6* and the City of Los Angeles Green Building Code, which would reduce potential impacts.

#### 4.11.8.5 Cumulative Impact

Construction of the Proposed Action would increase material and energy consumption; however, through the guidance provided in *LAWA's Sustainable Airport Planning, Design and Construction Guidelines Version 6* and the City of Los Angeles Green Building Code, cumulative impacts to natural resources and energy supply would be less than significant.

### 4.11.9 HAZARDOUS MATERIALS, POLLUTION PREVENTION, AND SOLID WASTE

#### 4.11.9.1 Past Actions

LAX development within the last five years has involved the use of hazardous materials, primarily through the use of motor fuels, oils, adhesives, and other petroleum-based products. Implementation of LAX Master Plan EIS/EIR commitments and mitigation measures has reduced impacts to hazardous materials and pollution prevention. Construction waste programs have been implemented to reduce solid waste impacts.

#### 4.11.9.2 Present Actions

Construction and operation of concurrent LAX development projects would result in the use of hazardous materials, primarily through the use of motor fuels, oils, adhesives, and other petroleum-based products. Excavation during concurrent actions may also uncover contaminated soil. Project design features, along with LAX Master Plan EIS/EIR commitments and mitigation measures, as well as *LAWA's Sustainable Airport Planning, Design and Construction Guidelines Version 6*, would reduce impacts from these present projects with respect to hazardous materials, pollution prevention, and solid waste.

#### 4.11.9.3 Proposed Actions

Under the Proposed Action, construction would occur on previously disturbed areas of LAX. Construction of the Proposed Action would require the use of motor fuel, oil, and other petroleum-based products ; however, construction plans would include provisions for appropriate handling of these materials. Excavation and grading during construction may also reveal contaminated soil; construction plans and specifications would be included for the handling, storage, treatment, and/or testing and disposal of any contaminated materials. The use of fuel, oil, and other petroleum-based products necessary for the routine operation of LAX would continue, and is not anticipated to increase as a result of implementation of the Proposed Action, since it would have no effect on the number or type of aircraft operations at LAX. The Proposed Action would not result in an increase of operational solid waste; construction waste would be properly disposed of based on guidance in *LAWA's Sustainable Airport Planning, Design and Construction Guidelines Version 6*, as well as compliance with applicable LAX Master Plan EIS/EIR mitigation measures.

### 4.11.9.4 Future Actions

Construction and operations of future actions at LAX would result in the continued use of hazardous materials, primarily through the use of motor fuels, oils, adhesives, and other petroleum-based products. Excavation during future actions may also uncover contaminated soil. Future project design features, along with LAX Master Plan EIS/EIR commitments and mitigation measures, as well as *LAWA's Sustainable Airport Planning, Design and Construction Guidelines Version 6*, would reduce impacts from future projects with respect to hazardous materials, pollution prevention, and solid waste.

### 4.11.9.5 Cumulative Impact

Construction of the Proposed Action would require the use of motor fuel, oil, and other petroleum-based products at the Project site. However, as operations of the Proposed Action would not increase the use of these hazardous materials or generate additional solid waste, the Proposed Action would not result in a significant cumulative impact to hazardous materials, pollution prevention, or solid waste. Compliance with *LAWA's Sustainable Airport Planning, Design and Construction Guidelines Version 6,* and the implementation of BMPs, would further ensure that no significant cumulative impacts would occur.

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