

## 5 Environmental Consequences

This chapter discusses the potential environmental impacts that could result from implementing the Proposed Action and the No Action Alternative. Specifically, this EA considers effects on the environmental resource categories identified in Appendix A of FAA Order 1050.1E. Both the Proposed Action and the No Action Alternative were evaluated under forecasted 2016 conditions, which is the first year the Proposed Action could potentially be implemented, and under forecasted 2021 conditions. This evaluation considers the direct, indirect, and cumulative effects associated with the Proposed Action and No Action Alternative, as required under FAA Order 1050.1E.

Potential environmental impacts are identified for the environmental resource categories described in Section 4.3. Neither the Proposed Action nor the No Action Alternative would involve land acquisition; physical changes to the environment resulting from ground disturbance or construction activities; changes in patterns of population movement or growth; increases in public service demands, or business and economic activity; or generation, disturbance, transportation, or treatment of hazardous materials. Therefore, neither alternative is expected to result in impacts to certain environmental resource categories (please see Section 4.2 for a list of excluded categories). The excluded environmental resource categories are not further discussed in this chapter.

**Table 5-1** identifies the environmental impact categories that the Proposed Action could potentially affect, the thresholds of significance used to determine the potential for impacts, and a side-by-side comparative summary of the potential for environmental impacts resulting from implementing the Proposed Action under 2016 and 2021 forecast conditions.

**Table 5-1 Summary of Potential Environmental Impacts (1 of 2)**

Environmental Impact Category	Threshold of Significance	Impact?	
		2016	2021
Noise	A significant noise impact would occur if analysis shows that the proposed action will cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the no action alternative for the same timeframe.	No	No
Compatible Land Use	A significant impact would occur if analysis shows that the proposed action will cause noise-sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the no action alternative for the same timeframe.	No	No

**Table 5-1 Summary of Potential Environmental Impacts (2 of 2)**

<b>Environmental Impact Category</b>	<b>Threshold of Significance</b>	<b>2016</b>	<b>2021</b>
Department of Transportation Act, Section 4(f) Resources	A significant impact would occur pursuant to NEPA when a proposed action either involves more than a minimal physical use of a section 4(f) property or is deemed a "constructive use" substantially impairing the 4(f) property, and mitigation measures do not eliminate or reduce the effects of the use below the threshold of significance (e.g., by replacement in kind of a neighborhood park). Substantial impairment would occur when impacts to section 4(f) lands are sufficiently serious that the value of the site in terms of its prior significance and enjoyment are substantially reduced or lost.	No	No
Historic and Cultural Resources	A significant impact would occur when an action adversely affects a protected property and the responsible FAA official determines that the information from the State and/or Tribal Historic Preservation Officer addressing alternatives to avoid adverse effects and mitigation warrant further study	No	No
Wildlife (Avian and Bat Species)	A significant impact to federally-listed threatened and endangered species would occur when the United States Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS) determines that the proposed action would be likely to jeopardize the continued existence of the species in question, or would result in the destruction or adverse modification of Federally-designated critical habitat in the affected area. An action need not involve a threat of extinction to federally listed species to meet the NEPA standard of significance. Lesser impacts including impacts on non-listed species could also constitute a significant impact.	No	No
Environmental Justice	A significant impact would occur if there were disproportionately high and adverse human health or environmental effects on minority and low-income populations.	No	No
Energy Supply (Aircraft Fuel)	A significant impact 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 and the responsible FAA official determines that additional analysis in an EIS is necessary	No	No
Air Quality	Potentially significant air quality impacts associated with an FAA project or action would be demonstrated by the project or action exceeding one or more of the NAAQS for any of the time periods analyzed.	No	No
Climate	No significance thresholds have been established.	No	No

Source: FAA Order 1050.1E, Chg 1, Appendix A; ATAC Corporation, December 2013.  
Prepared By: ATAC Corporation, April 2016.

The following sections describe the impact findings for each environmental resource category, followed by a discussion of potential cumulative impacts. In summary, no significant impacts to any environmental resource category have been identified.

## 5.1 Noise

This section discusses the analysis of aircraft noise exposure under the Proposed Action and the No Action Alternative, under both 2016 and 2021 forecast conditions. This discussion includes identifying the differences in noise exposure between the Proposed Action and the No Action Alternative. This comparison is used to determine if implementing the Proposed Action would result in significant noise impacts. Additional information on noise metrics and the basics of noise can be found in **Appendix E**. Detailed information on the noise analysis prepared for the SoCal Metroplex Project (“Project”) is included in the *Aircraft Noise Technical Report*, available on the Project website: (<http://www.metroplexenvironmental.com>).

### 5.1.1 Summary of Impacts

Aircraft noise exposure was modeled for both the Proposed Action and the No Action Alternative under 2016 and 2021 forecast conditions. The noise analysis demonstrates that implementing the Proposed Action would not result in a day-night average sound level (DNL) increase of 1.5 dBA or higher in noise-sensitive areas exposed to DNL 65 dB or higher. Therefore, neither the Proposed Action nor No Action Alternative would result in a significant noise impact.

### 5.1.2 Methodology

The noise analysis evaluated noise exposure to communities within the General Study Area from aircraft forecasted to be operating under Instrument Flight Rules (IFR)-filed flight plans, at altitudes between ground level up to 10,000 feet above ground level (AGL). IFR-filed aircraft activity was forecasted for the years 2016 and 2021 and used to model conditions under both the Proposed Action and the No Action Alternative. Noise modeling was conducted using Noise Integrated Routing System (NIRS) Version 7.0b, the FAA-required noise model for projects involving air traffic changes over large areas and altitudes over 3,000 feet AGL.<sup>38</sup>

If the FAA approves the Proposed Action, the agency expects to begin implementation in 2016. Therefore, aircraft noise modeling was conducted for 2016 and five years later (2021), as required by FAA Order 1050.1E. Future year noise exposure levels modeled for the Proposed Action and the No Action Alternative were compared to determine whether there is a potential for noise impacts.

The Proposed Action and the No Action Alternative were modeled under both the 2016 and 2021 forecast scenarios. The overall number and type of aircraft operations will increase between 2016 and 2021. However, the number and type of aircraft operations are the same under both the Proposed Action and No Action Alternative in 2016 and 2021. The Proposed Action does not include developing or constructing facilities, such as runways or terminal expansions, that would be necessary to accommodate an increase in aviation activity; therefore, no additional growth in operations associated with the Proposed Action is anticipated. The noise analysis reflects the change in noise exposure resulting from the

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<sup>38</sup> The Aviation Environmental Design Tool (AEDT) became the FAA’s required noise model for air traffic actions in March 2012 (current version 2b was released in March 2015). However, when the SoCal Metroplex EA Project noise methodology development process began NIRS was the noise model required by the FAA for analysis of air traffic actions.

proposed changes in aircraft routes (i.e., flight tracks) under the Proposed Action compared to the No Action Alternative.

Detailed information on IFR-filed aircraft operations within the General Study Area was assembled for input into NIRS, including the following data:

**Average Annual Day IFR-Filed Aircraft Flight Schedules:** The IFR-filed aircraft flight schedules identify arrival and departure times, aircraft types, and origin/destination information for an average annual day (AAD) in 2016 and in 2021. The AAD represents all the aircraft operations for every day in a study year divided by 365, the number of days in a year. The AAD does not reflect a particular day, but is meant to represent a typical day over a period of a year. The forecast was based on the FAA's 2012 Terminal Area Forecast (TAF),<sup>39</sup> modified for 2016 and 2021 with additional details using previously identified arrival/departure times, aircraft types, and origin/destination information. More detail related to the development of the forecasts is provided in the *SoCal Metroplex Average Annual Day Flight Schedules Technical Report*, available on the Project website: (<http://www.metroplexenvironmental.com>).

**Weather:** The NIRS model requires three meteorological input parameters: temperature, pressure, and humidity. NIRS only allows one set of weather conditions to be defined for a given study, therefore the average weather conditions at LAX Airport was used to represent the SoCal Metroplex. LAX Airport was chosen because it had the most annual flight operations out of all of the SoCal Metroplex study airports.

To calculate the average weather conditions, 40 years (01/01/1973 – 12/31/2012) of weather observations were downloaded from the National Oceanic and Atmospheric Administration (NOAA) website (<http://www.ncdc.noaa.gov>). The weather data consisted of hourly observations with some intermittent data gaps or extra observations for certain days. In order to account for these data gaps and extra observations, the weather parameters were averaged for each day using all available hourly observations. The average daily weather parameters were then averaged over the 40 years of data collected. The resulting average weather parameter values are contained within Section 3.2.2, *Local Environmental Variables*, in the SoCal Noise Technical Report.

**Flight Tracks:** The flight tracks used in modeling were based on radar data collected for the existing conditions (2013), noise analysis, and information provided by FAA Air Traffic Control (ATC) personnel. Aircraft routings under both the No Action Alternative and Proposed Action are depicted on **Exhibits 3-7** and **3-8** in Chapter 3, *Alternatives*. For the Proposed Action, flight tracks were developed from the aircraft procedures created by the SoCal Metroplex Design & Implementation (D&I) Team using the Terminal Area Route Generation, Evaluation, Traffic and Simulation (TARGETS) program. The majority of the No Action Alternative modeled flight tracks are based on the existing conditions noise analysis. The remaining No Action Alternative flight tracks for amended or new procedures were modeled based on input from the air traffic control experts who developed the procedures. Illustrations depicting Existing Conditions radar tracks and Proposed Action procedure designs were developed and shared with the D&I team as part of the consultation process. The consultations were conducted to seek out key model input assumptions such as

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<sup>39</sup> U.S. Department of Transportation, Federal Aviation Administration, Terminal Area Forecast, 2012 (<https://aspm.faa.gov/main/taf.asp>; accessed September 2015).

frequency of Proposed Action procedure usage and air traffic control techniques, such as vectoring. The assumptions were then used for refining model track locations, altitude profiles, and utilization.

TARGETS flyability lines for the Proposed Action procedures served as the center of the 1 nautical mile and 0.3 nautical mile containment area for RNAVs and RNP, respectively. The containment area is generally where dispersed tracks are contained, but during the D&I consultation process, air traffic control experts could indicate the need for vectors off of the RNAV with a rejoin of the RNAV at later point. For those identified cases NIRS model tracks were developed to account for that type of dispersion.

**Runway Use:** Runway use percentages were identified for all runways at the Study Airports. Forecasted aircraft operations were assigned to particular runways representing operating conditions at the Study Airports under Proposed Action and No Action Alternative conditions. The Proposed Action Alternative was not expected to change runway use patterns at the Study Airports compared to the No Action Alternative.

More detail related to the development of the NIRS model input files is provided in the *Aircraft Noise Technical Report*, available on the Project website: (<http://www.metroplexenvironmental.com>).

As discussed in Section 4.3.1.1, the NIRS model was used to compute DNL values for 2016 and 2021 Proposed Action and No Action Alternative conditions at three sets of data points throughout the General Study Area:

1. 175,488 2010 Census block centroids,
2. 87,069 uniform grid points at 0.5-nautical mile (NM) intervals on a uniform grid covering the General Study Area, which were also used to calculate DNL values at potential Department of Transportation Act (DOT), Section 4(f) resources (including National Park Service properties) and historic sites; and
3. 76,966 unique points representing 7,422 Section 4(f) resources too small to be captured in the uniform grid, including 760 unique points representing National Register listed historic sites.

As discussed in Section 4.3.1.1, Section 14, paragraph 14.5e of Appendix A to FAA Order 1050.1E, requires analysis of aircraft noise using the DNL metric. **Table 5-2** provides the criteria used to assess the changes in aircraft noise exposure attributable to the Proposed Action compared with the No Action Alternative. FAA Order 1050.1E defines a significant impact as an increase of DNL 1.5 dB at noise-sensitive land use locations (e.g., residences, schools, etc.) exposed to aircraft noise of DNL 65 dB or higher under the Proposed Action. For example, an increase from 63.5 dB to 65 dB is considered a significant impact.

FAA Order 1050.1E also recommends that when there are DNL increases of 1.5 dB or more at noise-sensitive locations in areas exposed to aircraft noise of DNL 65 dB and higher, DNL increases of 3 dB or more in areas exposed to aircraft noise between DNL 60 dB and 65 dB should also be evaluated and disclosed. It is important to note that DNL increases of 3 dB in areas exposed to aircraft noise below DNL 65 dB are not considered “significant impacts” but are to be considered in the environmental evaluation of a proposed project.

FAA Order 1050.1E also stipulates that changes in exposure of DNL 5 dB or greater in areas exposed to aircraft noise between DNL 45 dB and 60 dB should be considered for

airspace actions, such as changes to air traffic routes. This threshold was established in 1990, following issuance of an FAA noise screening procedure to evaluate whether certain airspace actions above 3,000 feet AGL might increase DNL levels by 5 dB or more. The FAA prepared this noise-screening procedure because experience indicated that DNL increases 5 dB or more at cumulative levels well below DNL 65 dB could be disturbing to people and become a source of public concern. As shown in **Table 5-2**, a 3 dB increase in areas exposed to DNL 60 to 65 dB and a 5 dB increase in areas exposed to DNL 45 to 60 dB are considered reportable noise increases.

**Table 5-2 Criteria for Determining Impact of Changes in Aircraft Noise**

DNL Noise Exposure Level	Increase in DNL with Proposed Action	Aircraft Noise Exposure Change Consideration
DNL 65 and higher	DNL 1.5 dB or more <sup>1/</sup>	Exceeds Threshold of Significance
DNL 60 to 65	DNL 3.0 dB or more <sup>2/</sup>	Reportable Noise Increase (Considered When Evaluating Air Traffic Actions)
DNL 45 to 60	DNL 5.0 dB or more <sup>3/</sup>	Reportable Noise Increase (Information Disclosed When Evaluating Air Traffic Actions)

Notes:

1/ Source FAA, Order 1050.1E, Appendix A, Paragraph 14.3; Title 14 C.F.R. Part 150.21 (2) (d); and Federal Interagency Committee on Noise, Federal Agency Review of Selected Airport Noise Issues, August 1992.

2/ Source FAA Order 1050.1E, Appendix A, Paragraphs 14.4c and 14.5e; and Federal Interagency Committee on Noise, Federal Agency Review of Selected Airport Noise Issues, August 1992.

3/ Source FAA Order 1050.1E, Appendix A, Paragraph 14.5e.

Source: FAA Order 1050.1E, Appendix A. June 8, 2004.

Prepared By: ATAC Corporation, September 2013.

### 5.1.3 Potential Impacts – 2016 and 2021

**Table 5-3** summarizes the results of the noise analysis for 2016 and 2021 conditions. The results for both years indicate that, when compared to the No Action Alternative, the Proposed Action would not result in a DNL 1.5 dB or higher increase in noise-sensitive areas exposed to DNL 65 dB or higher. Furthermore, no population would experience a reportable noise increase in areas exposed to DNL between 60 dB and 65 dB or between 45 dB and 60 dB. These results indicate the Proposed Action would not result in a significant noise exposure impact on population exposed to DNL 65 dB or higher levels under the Proposed Action or produce reportable noise increases in areas exposed to DNL 45 dB to 65 dB.

**Table 5-3 Change in Potential Population Exposed to Aircraft Noise – 2016 and 2021**

DNL Noise Exposure Level Under the Proposed Action	Increase in DNL with the Proposed Action	Population Exposed to Noise that Exceeds the Threshold	
		2016	2021
DNL 65 and higher	DNL 1.5 dB or greater	0	0
DNL 60 to 65	DNL 3.0 dB or greater	0	0
DNL 45 to 60	DNL 5.0 dB or greater	0	0

Source: U.S. Census Bureau, 2010 Census (population centroid data), accessed March 2015; ATAC Corporation, April 2016 (NIRS modeling results).

Prepared by: ATAC Corporation, April 2016.

## 5.2 Compatible Land Use

This section discusses potential impacts to compatible land use under the Proposed Action and the No Action Alternative.

### 5.2.1 Summary of Impacts

Under both the Proposed Action and No Action Alternative, there would be no changes in aircraft noise exposure that would exceed the FAA's significance threshold for noise impacts on people. Likewise, there are no conflicts with federal, regional, state, local land use plans, policies and controls. Therefore, neither the Proposed Action nor the No Action Alternative would result in compatible land use impacts.

### 5.2.2 Methodology

FAA Order 1050.1E requires that EA documents discuss possible conflicts between the proposed action and the objectives of federal, regional, state, local, and tribal land use plans, policies, and controls for the area concerned. Potential impacts to compatible land use were focused on changes in aircraft noise exposure resulting from implementing the Proposed Action. FAA Order 1050.1E states, "The compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of the airport's noise impact. If the noise analysis concludes that there is no significant impact, a similar conclusion usually may be drawn with respect to compatible land use." Air traffic actions like the SoCal Metroplex Project do not result in direct impacts to land such as ground disturbance. Accordingly, the compatible land use analysis relies on changes in aircraft noise exposure between the Proposed Action and the No Action Alternative (discussed in Section 5.1) as the basis for determining compatible land use impacts within the General Study Area.

### 5.2.3 Potential Impacts – 2016 and 2021

As stated in Section 5.1, the Proposed Action, when compared with the No Action Alternative, would not result in changes in aircraft noise exposure in 2016 or 2021 that would exceed the FAA's significance threshold. Likewise, there are no conflicts with federal, regional, state, local land use plans, policies, and controls. Therefore, the Proposed Action would not result in significant compatible land use impacts.

Under the No Action Alternative, there would be no changes to air traffic routing in the General Study Area and no changes in aircraft noise exposure expected to occur in either 2016 or 2021. Therefore, the No Action Alternative would not result in significant compatible land use impacts.

## 5.3 Department of Transportation Act, Section 4(f) Resources

This section discusses potential impacts to Department of Transportation (DOT) Act, Section 4(f) Resources. **Exhibit 4-4** depicts Section 4(f) resources within the General Study Area as described in Section 4.3.3.

### 5.3.1 Summary of Impacts

Evaluating potential impacts to Section 4(f) resources focuses on changes in aircraft noise exposure resulting from implementing the Proposed Action. The FAA's aircraft noise

exposure analysis indicates that the Proposed Action would not substantially change the noise environment at any Section 4(f) resource identified within the General Study Area when compared with the No Action Alternative. Therefore, no constructive use of a Section 4(f) resource associated with the Proposed Action would occur, and no impacts would be anticipated.

Under the No Action Alternative, no changes in air traffic routes in the General Study Area would occur. Therefore, no changes to aircraft noise exposure or aircraft overflight patterns would occur over Section 4(f) resources, and no impacts would be anticipated.

### 5.3.2 Methodology

The FAA evaluates potential effects on Section 4(f) resources in terms of both direct impacts (i.e., physical use) and indirect impacts (i.e., constructive use). A direct impact would occur as a result of land acquisition, construction, or other ground disturbance activities that would result in physical use of all or a portion of a Section 4(f) property. As land acquisition, construction, or other ground disturbance activities would not occur under either the Proposed Action or the No Action Alternative, neither alternative would have the potential to cause a direct impact to a Section 4(f) resource. Therefore, analysis of potential impacts to Section 4(f) resources is limited to identifying indirect impacts resulting from constructive use. A constructive use of a Section 4(f) resource would occur if there were a substantial impairment of the resource to the degree that the activities, features, or attributes of the site that contribute to its significance or enjoyment are substantially diminished. This could occur as a result of both visual and noise impacts. Concerning aircraft noise, a constructive use would occur if noise levels substantially impair the resource.

Noise exposure levels were calculated for grid points placed at Section 4(f) properties (including National Park Service properties). A list of the resources evaluated is provided in the *Aircraft Noise Technical Report* available on the Project website (<http://www.metroplexenvironmental.com>). Section 5.1.2 includes further discussion on the grid points used in the Section 4(f) analysis. The analysis of potential impacts to Section 4(f) resources considered whether these properties would experience a significant noise increase, when comparing the Proposed Action with the No Action Alternative, using the applicable thresholds shown in **Table 5-2**.

FAA Order 1050.1E requires considering additional factors in deciding whether to apply the thresholds listed above to determine the significance of noise impacts on Section 4(f) resources. If a reportable noise increase were to occur, the Section 4(f) properties would be evaluated further to determine if the project-related effects would constitute a constructive use. Further evaluation can include confirming that the property is in fact a Section 4(f) resource and identifying the specific attributes for which the property is managed (e.g., for traditional recreational uses or where other noise is very low and a quiet setting is a generally recognized purpose and attribute).

In cases where Land and Water Conservation Fund Act (LWCF)<sup>40</sup> resources are “used” by a transportation project, FAA Order 1050.1E stipulates that replacement satisfactory to the Secretary of the Interior is required for recreation lands aided by the Department of Interior’s

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<sup>40</sup>16 U.S.C. §§ 4601-4, *et seq.*



LWCF. Therefore, these resources are considered as part of the Section 4(f) impact analysis process.

### **5.3.3 Potential Impacts – 2016 and 2021**

As stated in Section 5.1, the Proposed Action, when compared with the No Action Alternative, would not result in changes in aircraft noise exposure in 2016 or 2021 that would exceed the FAA's significance threshold or result in reportable noise increases. Therefore, the Proposed Action would not result in potential impacts to Section 4(f) resources. Noise analysis results for Section 4(f) properties located within the General Study Area can be found in Appendix 2 in the *Aircraft Noise Technical Report* available on the Project website (<http://www.metroplexenvironmental.com>).

Under the No Action Alternative no changes to air traffic routes in the Southern California Metroplex would occur in either 2016 or 2021, and no effects related to changes in aircraft noise exposure would be anticipated. Therefore, the No Action Alternative would not result in potential impacts to Section 4(f) resources.

## **5.4 Historic and Cultural Resources**

This section discusses the analysis of impacts to historic resources and tribal lands under the Proposed Action and the No Action Alternative. Section 4.3.4 provides information on historic resources and tribal lands within the General Study Area. The FAA initiated consultation with the California State Historic Preservation Officer (SHPO) and Tribal Historic Preservation Officers (THPOs), on February 24, 2015, in accordance with Section 106 of the *National Historic Preservation Act of 1966* (54 U.S.C. § 300101 *et seq.*) and the implementing regulations at 36 C.F.R. Part 800.

### **5.4.1 Summary of Impacts**

The aircraft noise exposure analysis indicates that there would be no substantial change to the noise environment at any historic resources or tribal land under the Proposed Action compared with the No Action Alternative. Furthermore, any changes in aircraft traffic patterns would occur at altitudes and distances from viewers that would not substantially impair the view or setting of historic resources or tribal lands. Therefore, no adverse indirect effects to historic resources or tribal lands under the Proposed Action would be anticipated for 2016 or 2021.

Under the No Action Alternative, no changes to air traffic routes in the Southern California Metroplex would occur in either 2016 or 2021 and no changes to aircraft noise exposure or changes in aircraft overflight patterns over historic resources or tribal lands would be anticipated. Therefore, no historic resources or tribal lands would be affected by aircraft noise, nor would there be any visual impacts at historic resources or tribal lands under the No Action Alternative.

### **5.4.2 Methodology**

The *National Historic Preservation Act of 1966* requires the FAA to consider the effects of its undertakings on properties listed or eligible for listing in the National Register of Historic Places (i.e., National Register). In assessing whether an undertaking, such as the Proposed Action, affects a property listed or eligible for listing on the National Register, FAA must

consider both direct and indirect effects. Direct effects include the physical removal or alteration of an historic resource. Indirect effects include changes in the environment of the historic resource that could substantially alter the characteristics that made it eligible for listing on the National Register. Such changes could include changes in noise exposure impacts.

Federal regulations define an area of potential effects (APE) as the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. An APE has been defined for the SoCal Metroplex Project to assess the potential indirect effects of the Proposed Action on historic resources. The scale and nature of an undertaking influences the APE and it may be different for different kinds of effects caused by the undertaking.

For purposes of this analysis, the APE is contiguous with the General Study Area. **Exhibit 4-5** in Section 4.3.4 shows the historic properties listed on the National Register that are found within the General Study Area. In addition, 60 tribal properties are located within the General Study Area.

All historic and cultural resources identified within the APE require further evaluation by the FAA to determine if the property may experience a potential adverse effect. Therefore, noise exposure levels at points representing historic properties listed on the National Register and tribal lands were calculated for purposes of determining potential adverse effects. A list of the resources evaluated is provided in the *Aircraft Noise Technical Report* available on the Project website (<http://www.metroplexenvironmental.com>). In addition, noise exposure results for the uniform grid points (located at 0.5 NM intervals throughout the General Study Area) were evaluated to identify potential adverse effects to historic properties that are eligible but may not be listed on the National Register. If a significant or reportable noise increase were identified at one of these grid points, the surrounding area would be examined for the presence of eligible-to-be-listed historic properties. On February 24, 2015, the FAA sought concurrence from the California SHPO and THPOs on the proposed methodology for determining impacts to historic resources and the proposed area of potential effects (APE). The SHPO provided a letter of concurrence with the proposed methodology and APE on March 6, 2015. Responses to the FAA's request for concurrence with the proposed methodology and APE were also received from the Agua Caliente Band of Cahuilla Indians, the Rincon Band of Luiseño Indians, and the Syucuan Band of the Kumeyaay Nations.

The analysis of potential impacts to historic and cultural resources considers whether these properties would experience a significant noise increase, when comparing the Proposed Action with the No Action Alternative, using the applicable thresholds shown in **Table 5-2**. Properties exposed to DNL 65 dB or higher under the Proposed Action and an increase of DNL 1.5 dB or higher may be considered to be potentially adversely affected by the Project. If reportable increases in noise were to be detected for properties exposed to DNL between DNL 45 dB and lower than 65 dB, the FAA would consider further whether the increase would result in an adverse effect on historic properties. If the noise analysis indicates a reportable change for the resources, further research and/or survey on the subject property may be conducted to determine if the reportable increase would diminish the integrity of a property's setting for which the setting contributes to historical or cultural significance. A request for concurrence with the FAA's findings was issued to California SHPO and the appropriate THPOs at the same time the Draft EA was released to the public.

### 5.4.3 Potential Impacts – 2016 and 2021

As stated in Section 5.1, when compared with the No Action Alternative, the Proposed Action would not result in changes in aircraft noise exposure in 2016 or 2021 that would exceed FAA's significance threshold or result in reportable noise increases. Therefore, the Proposed Action would not result in potential impacts to historic or cultural resources. Noise analysis results for historic resources located within the General Study Area can be found in Appendix 2 in the *Aircraft Noise Technical Report* available on the Project website (<http://www.metroplexenvironmental.com>).

Under the No Action Alternative no changes to air traffic routes in the Southern California Metroplex would occur in either 2016 or 2021 and no effects related to changes in aircraft noise exposure would be anticipated. Therefore, the No Action Alternative would not result in impacts to historic or cultural resources.

In June 2015, the FAA initiated formal consultation with the California SHPO and the THPOs for 28 tribes located within the General Study Area. Based on the results of the aircraft noise analysis, the FAA requested concurrence with its finding of No Adverse Effect to Historic Properties. Concurrence with the FAA's finding was received from the SHPO on March 21, 2016. Written concurrence was also received from the Pala Band of Mission Indians THPO on June 11, 2015. The FAA received no responses from the other THPOs within the 30 calendar days allotted for review of a finding or determination as provided for under the Section 106 regulations.<sup>41</sup> Copies of the concurrence letters can be found in Appendix A.

## 5.5 Wildlife (Avian and Bat Species) and Migratory Birds

This section discusses the analysis of potential impacts to avian and bat species under the Proposed Action and the No Action Alternative.

### 5.5.1 Summary of Impacts

The greatest potential for impacts to wildlife species would result from wildlife strikes on avian and bat species at altitudes below 3,000 feet AGL. Changes to flight paths under the Proposed Action would primarily occur at or above 3,000 feet AGL. Therefore, the Proposed Action would not result in significant impacts to avian and bat species when compared with the No Action Alternative.

The No Action Alternative would not involve changes to air traffic flows, land acquisition, construction, or other ground disturbance activities. Therefore, the No Action Alternative would not result in significant impacts to fish, wildlife, or plants.

### 5.5.2 Methodology

The FAA's *Wildlife Strike Database* is the best information available for assessing potential impacts of aircraft on wildlife. Strike reports over the past 25 years aggregated nationally as well as for individual airports are available from the database to understand existing

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<sup>41</sup> 36 C.F.R. § 800.3(a)(4).

conditions. Strike reports are comparable to known information on the presence of specific species of concern to corroborate the reports.

This analysis involved a review of wildlife strike reports<sup>42</sup> for the Study Airports under both the Proposed Action and the No Action Alternative, and an evaluation of the potential for the presence of federal- and state-listed threatened and endangered species (i.e., special-status species) within the General Study Area. The FAA compared modifications in flight procedures to the occurrence of special-status species to qualitatively assess the likelihood of whether wildlife strikes might change under the Proposed Action.

### 5.5.3 Potential Impacts – 2016 and 2021

A significant impact would be likely to occur if the Proposed Action were to jeopardize the existence of special-status species or result in destroying or adversely modifying critical habitat in the General Study Area. Changes to flight paths under the Proposed Action would primarily occur at or above 3,000 feet AGL, so there is no potential for these effects in the General Study Area. Accordingly, the analysis is focused on the potential for significant impacts to species resulting from increased wildlife strikes with aircraft.

Since 1990, the FAA has compiled reports of wildlife strikes with aircraft. The information is available to the public through the FAA's *Wildlife Strike Database* and the "Annual Report: Wildlife Strikes to Civil Aircraft in the United States." Between 1990 and September 30, 2014, the Wildlife Strike Database reported 160,818 wildlife strikes nationally.<sup>43</sup> Of the records that identify the type of animal involved in the strike incident, birds represent 96 percent of all strikes.<sup>44</sup> Of those records, 92 percent of the strikes occurred below 3,000 feet AGL or reported no altitude.<sup>45</sup> The Wildlife Strike Database reports that of identified species, mourning doves have the highest occurrence of strikes (20 percent), followed by gulls (16 percent).<sup>46</sup>

**Table 5-4** provides a summary of wildlife strikes reported for the Study Airports between 1990 and September 30, 2014, the latest date for which records for the Study Airports were reported at the time the Draft EA was prepared. In total, 2,899 records provide strike altitude for incidents at the Study Airports involving birds and bats. Of these, a total of 2,584 reported strikes (89 percent of all strike records) occurred at altitudes below 3,000 feet AGL. A total of 1,354 strikes reported at the Study Airports included species identification.

The *Migratory Bird Treaty Act (MBTA) of 1918* (16 U.S.C. §§ 703–712) protects all the bird species identified in these reports. Furthermore, federal and state laws protect listed endangered and threatened species. In Chapter 4, **Table 4-3** identifies the 13 federally-listed bird species found in counties in the General Study Area, and **Table 4-4** identifies the 30 state-listed threatened and endangered bird species found in California. Nine strike reports for the Study Airports include listed species: four strike reports at ONT identify Swainson's hawks (*Buteo swainsoni*), three strike reports at SAN identify least terns (*Sterna*

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<sup>42</sup> U.S. Department of Transportation, Federal Aviation Administration, *Wildlife Strike Database* ([http://www.faa.gov/airports/airport\\_safety/wildlife/database/](http://www.faa.gov/airports/airport_safety/wildlife/database/); accessed April 2015).

<sup>43</sup> Id.

<sup>44</sup> Id.

<sup>45</sup> Id.

<sup>46</sup> Id.

*antillarum browni*), one strike report at LAX identifies the western snowy plover (*Charadrius alexandrinus nivosus*), and one strike report at LAX identifies the bald eagle (*Haliaeetus leucocephalus*). Excluding the bald eagle strike report and one of the Swainson's hawk strike reports, none of the strike reports at the Study Airports report strike altitude. The bald eagle strike occurred at 3,000 feet AGL and the Swainson's hawk strike occurred at 400 feet AGL.

The number of aircraft operations in the Proposed Action and No Action Alternative would be the same. Therefore, the assessment of the potential impacts focuses on changes to flight paths and the potential for impact due to wildlife strikes. As shown in **Table 5-4**, only 11 percent of bird/bat strikes (317 of 2,899 total records) occurred at altitudes above 3,000 feet AGL. The decline in the number of strikes reported above 3,000 feet AGL indicates that there is less likelihood of bird/bat strikes at these altitudes. Under the Proposed Action, changes to proposed flight paths would primarily occur at or above 3,000 feet AGL, and no significant changes to arrival and departure corridors below 3,000 feet AGL would be expected. Therefore, no significant impacts to bird or bat species would be anticipated.

The No Action Alternative would not involve changes to air traffic flows, land acquisition, construction, or other ground disturbance activities. Therefore, no impacts to avian and bat species would occur.

**Table 5-4 FAA Wildlife Strike Database Records for Study Airports by Altitude (1990 - 2014)**  
(1 of 2)

Type of Strike	Airport	3,000 ft. AGL or less	>3,000 ft. AGL to ≤ 10,000 ft. AGL	Greater than 10,000 ft. AGL	Total
Identified Bird and Bat Species	UDD	2	0	0	2
	BUR	122	12	0	134
	CMA	17	0	0	17
	CRQ	6	0	0	6
	FUL	4	0	0	4
	LAX	400	22	0	422
	LGB	121	1	0	122
	NFG	0	0	0	0
	NTD	0	0	0	0
	NKX	0	0	0	0
	NZY	0	0	0	0
	ONT	169	4	0	173
	OXR	26	0	0	26
	PSP	14	0	0	14
	SAN	77	3	1	81
	SBA	174	0	0	174
	SDM	2	0	0	2
	SMO	3	0	0	3
	SNA	97	1	0	98
	TRM	3	0	0	3
VNY	72	1	0	73	
<b>Total</b>		<b>1,309</b>	<b>44</b>	<b>1</b>	<b>1,354</b>

**Table 5-4 FAA Wildlife Strike Database Records for Study Airports by Altitude (1990 - 2014)  
(2 of 2)**

Type of Strike	Airport	3,000 ft. AGL or less	>3,000 ft. AGL to ≤ 10,000 ft. AGL	Greater than 10,000 ft. AGL	Total
Unknown Bird and Bat Species	UDD	1	0	0	1
	BUR	119	34	1	154
	CMA	9	0	0	9
	CRQ	12	1	1	14
	FUL	9	0	0	9
	LAX	349	85	9	443
	LGB	152	6	0	158
	NFG	0	0	0	0
	NTD	0	0	0	0
	NKX	0	0	0	0
	NZY	1	0	0	1
	ONT	198	54	2	254
	OXR	8	1	0	9
	PSP	22	2	0	24
	SAN	135	46	1	182
	SBA	113	0	0	113
	SDM	3	0	0	3
	SMO	8	1	0	9
	SNA	119	22	3	144
	TRM	1	0	0	1
VNY	16	1	0	17	
Total		1,275	253	17	1,545
Grand Total		2,584	297	18	2,899
Percentage		89	10	1	100

Source: U.S. Department of Transportation, Federal Aviation Administration, *FAA Wildlife Strike Database* (<http://wildlife-mitigation.tc.faa.gov/wildlife/default.aspx>) (accessed April 14, 2015).

Prepared by: ATAC Corporation, April 2015.

## 5.6 Environmental Justice

This section presents a summary of the analysis of environmental justice impacts under the Proposed Action and the No Action Alternative.

### 5.6.1 Summary of Impacts

Neither the Proposed Action nor the No Action Alternative would displace people or businesses; therefore, implementing the Proposed Action and No Action Alternative would not result in direct impacts in this category. No areas within the General Study Area would experience significant impacts to air quality or a significant impact related to a change in DNL exposure to people (see Section 5.1). Therefore, no disproportionately high and adverse effects to minority populations or low-income populations would occur under either the Proposed Action or the No Action Alternative.

### 5.6.2 Methodology

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that federal agencies include environmental justice as part of their mission by identifying and addressing as appropriate,

the potential for disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations. Environmental justice applies to all environmental resources. Therefore, a disproportionately high and adverse human health or environmental effect on minority and low-income populations may represent a significant impact.

### **5.6.3 Potential Impacts – 2016 and 2021**

Under the Proposed Action, neither people nor businesses would be displaced. As discussed in Section 5.1, under the Proposed Action, no census block centroids in the General Study Area would experience a change in noise exposure in 2016 or 2021 that exceeds any of the FAA's significance thresholds for noise impacts on people. Therefore, no adverse direct or indirect effects would occur to any environmental justice populations within the General Study Area under the Proposed Action for 2016 and 2021.

Under the No Action Alternative, neither people nor businesses would be displaced. Furthermore, air traffic routes would not change, and there would be no change in aircraft noise exposure in 2016 or 2021 that could result in an indirect impact. Therefore, the No Action Alternative would not result in disproportionately high and adverse human health or environmental effects on minority and low-income populations.

## **5.7 Energy Supply (Aircraft Fuel)**

This section discusses whether changes in the movement of aircraft would result in measurable effects on local energy supplies under the Proposed Action and the No Action Alternative.

### **5.7.1 Summary of Impacts**

In comparison to the No Action Alternative, the Proposed Action would result in a relatively small increase in aircraft fuel burned: 0.41 percent increase in 2016 and 0.44 percent increase in 2021. These increases would not be expected to affect local aircraft fuel supplies. Therefore, no significant impacts to energy supply would be anticipated.

The No Action Alternative would not involve changes to air traffic flows, construction, or other ground disturbance activities. Therefore, the No Action Alternative would not result in the depletion of local energy supply.

### **5.7.2 Methodology**

The Proposed Action would not change the number of aircraft operations relative to the No Action Alternative, but it would involve changes to air traffic flows during the departure, descent, and approach phases of flight. These changes affect both the route an aircraft may follow and as its climb-out and descent profiles. This in turn may directly affect aircraft fuel burn (or fuel expended). Aircraft fuel burn is considered a proxy for determining whether the Proposed Action would have a measurable effect on local energy supplies when compared with the No Action Alternative.

In addition to calculating aircraft noise exposure, the FAA's NIRS model calculates aircraft-related fuel burn (e.g., AAD flight schedules, flight tracks, and runway use). See Section 5.1.2 for further discussion on NIRS input data. Determining the difference in fuel burn

between alternatives can be used as an indicator of changes in fuel consumption resulting from implementation of the Proposed Action when compared with the No Action Alternative.

### 5.7.3 Potential Impacts – 2016 and 2021

**Table 5-5** presents the results of the fuel burn analysis for the Proposed Action and No Action Alternative. In comparison to the No Action Alternative, the Proposed Action would result in approximately 11 metric tons (MT) more fuel burned in 2016 (0.41 percent increase) and approximately 13 MT more fuel burned in 2021 (0.44 percent increase). Given these relatively small increases, the FAA expects that when compared with the No Action Alternative, the Proposed Action would not adversely affect local fuel supplies. Therefore, no significant impacts to energy supply would be anticipated.

**Table 5-5 Energy Consumption Comparison**

	2016		2021	
	No Action Alternative	Proposed Action	No Action Alternative	Proposed Action
Fuel Burn (MT)	2,658.12	2,669.09	3,028.53	3,041.79
Volume Change (MT) (Proposed Action – No Action Alternative)		10.97		13.26
Percent Change from No Action Alternative		0.41		0.44

Note: MT = Metric Ton

Source: ATAC Corporation, April 2016 (NIRS modeling results).

Prepared by: ATAC Corporation, May 2016.

## 5.8 Air Quality

This section discusses the analysis of air quality impacts under the Proposed Action and the No Action Alternative.

### 5.8.1 Summary of Impacts

The Proposed Action would result in a slight increase in emissions when compared to the No Action Alternative. However, changes to flight paths under the Proposed Action would primarily occur at or above 3,000 feet AGL and are presumed to conform with the applicable state implementation plans (SIPs). Furthermore, changes to flight paths below the mixing height are also presumed to conform when modifications to procedures are designed to enhance operational efficiency. The slight increase in emissions is expected to have little if any effect on emissions or ground concentrations. Therefore, no significant impacts to air quality would be anticipated.

The No Action Alternative would not result in a change in the number of aircraft operations or air traffic routes; therefore, no impacts to air quality would be anticipated.



## 5.8.2 Methodology

Typically, significant air quality impacts would be identified if an action would result in the exceedance of one or more of the NAAQS for any time period analyzed.<sup>47</sup> Section 176(c) of the *Clean Air Act* requires that federal actions conform to the appropriate SIP in order to attain the air quality goals identified in the CAA. However, a conformity determination is not required if the emissions caused by a federal action would be less than the *de minimis* levels established in regulations issued by EPA.<sup>48</sup> FAA Order 1050.1E provides that further analysis for NEPA purposes is normally not required where emissions do not exceed the EPA's *de minimis* thresholds.<sup>49</sup> The EPA regulations identify certain actions that would not exceed these thresholds, including ATC activities and adoption of approach, departure, and enroute procedures for aircraft operations above the mixing height specified in the applicable SIP (or 3,000 feet AGL in places without an established mixing height). In addition, the EPA regulations allow federal agencies to identify specific actions as "presumed to conform" (PTC) to the applicable SIP.<sup>50</sup> In a notice published in the Federal Register, the FAA has identified several actions that "will not exceed the applicable *de minimis* emissions levels" and, therefore, are presumed to conform, including ATC activities and adoption of approach, departure, and enroute procedures for air operations.<sup>51</sup> The FAA's PTC notice explains that aircraft emissions above the mixing height do not have an effect on pollution concentrations at ground level. The notice also specifically notes that changes in air traffic procedures above 1,500 feet AGL and below the mixing height "would have little if any effect on emissions and ground concentrations."<sup>52</sup> Furthermore, "air traffic actions below the mixing height are also presumed to conform when modifications to routes and procedures are designed to enhance operational efficiency (i.e., to reduce delay)."<sup>53</sup>

## 5.8.3 Potential Impacts – 2016 and 2021

Under the Proposed Action there would be a slight increase in fuel burn (0.41 percent in 2016 and 0.44 percent in 2021) when compared to the No Action Alternative. While increased fuel burn corresponds with an increase in emissions, operational changes that could result in an increase in fuel burn would occur at 3,000 feet AGL or above and would not result in an increase in emissions and ground concentrations. Any operational changes that could result in an increase in fuel burn would occur at or above 3,000 feet AGL. Procedures above 3,000 feet AGL are considered a *de minimis* action, would have little if any effect on emissions and ground concentrations, and are presumed to conform to all SIPs for criteria pollutants. Therefore, no further air quality analysis is necessary, a conformity determination is not required, and the Proposed Action would not result in a significant impact to air quality. The No Action Alternative would not result in a change in the number of aircraft operations or air traffic routes; therefore, no impacts to air quality would be anticipated.

<sup>47</sup> FAA Order 1050.1E, Chg.1, App. A, sec. 2.3.

<sup>48</sup> 40 C.F.R. § 93.153(b).

<sup>49</sup> FAA Order 1050.1E, Chg. 1, App. A, sec. 2.1c.

<sup>50</sup> Id at 93.153(f).

<sup>51</sup> Federal Presumed to Conform Actions under General Conformity, 72 Fed. Reg. 41565 (July 30, 2007).

<sup>52</sup> Id.

<sup>53</sup> Id.

## 5.9 Climate

This section discusses greenhouse gas (GHG) emissions and effects to the climate as they relate to the Proposed Action and the No Action Alternative.

### 5.9.1 Summary of Impacts

Although fuel burn would increase slightly under the Proposed Action as compared to the No Action Alternative, no significant impacts to the climate would be anticipated.

The No Action Alternative would not result in a change in the number of aircraft operations or air traffic routes; therefore, no impacts to climate would be anticipated.

### 5.9.2 Methodology

In accordance with FAA guidance, estimated CO<sub>2</sub> emissions were calculated from the amount of fuel burned under the No Action Alternative and the Proposed Action in 2016 and 2021 (see Section 5.8). The resulting CO<sub>2</sub> emissions were then reported as CO<sub>2e</sub>.

### 5.9.3 Potential Impacts – 2016 and 2021

**Table 5-6** shows Project-related CO<sub>2e</sub> emissions. In 2016, the Proposed Action would produce approximately 8,421 MT of CO<sub>2e</sub>, and the No Action Alternative would produce approximately 8,386 MT of CO<sub>2e</sub>. This represents a slight increase of approximately 35 MT of CO<sub>2e</sub> or 0.41 percent under the Proposed Action when compared to the No Action Alternative. This would comprise less than 0.0000011 percent of U.S.-based greenhouse gas emissions and less than 0.00000014 percent of global greenhouse gas emissions. Similarly, in 2021, the No Action Alternative would produce approximately 9,555 MT of CO<sub>2e</sub> and the Proposed Action would produce approximately 9,597 MT of CO<sub>2e</sub>. This represents a slight increase of approximately 42 MT of CO<sub>2e</sub> or 0.44 percent under the Proposed Action when compared to the No Action Alternative. This would comprise less than 0.0000011 percent of U.S.-based greenhouse gas emission and less than 0.00000014 percent of global greenhouse gas emissions.

**Table 5-6 CO<sub>2e</sub> Emissions – 2016 and 2021**

	2016		2021	
	No Action Alternative	Proposed Action	No Action Alternative	Proposed Action
CO <sub>2e</sub> Emissions (MT)	8,386.37	8,420.99	9,555.01	9,596.85
Volume Change (MT)		34.61		41.84
(Proposed Action – No Action Alternative)		0.41		0.44

*Note: CO<sub>2e</sub> = Carbon Dioxide Equivalent*

Source: ATAC Corporation, April 2016 (NIRS modeling results).

Prepared by: ATAC Corporation, May 2016.

## 5.10 Cumulative Impacts

Consideration of cumulative impacts applies to the impacts resulting from the implementation of the Proposed Action with other actions. CEQ regulations define a cumulative impact as “an impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future

actions regardless of what agency (federal or non-federal) or person undertakes such other actions.”<sup>54</sup> The regulations also state that cumulative impacts can result from individually minor, but collectively significant actions that take place over a period of time.

### 5.10.1 Summary of Impacts

The implementation of the Proposed Action when considered with other past, present, and reasonably foreseeable future actions would not be expected to result in significant cumulative impacts.

The No Action Alternative would not result in a change in the number of aircraft operations or air traffic routes; therefore, no cumulative impacts would be anticipated.

### 5.10.2 Methodology

**Table 5-7** includes a list of projects on or near the Study Airports that were reviewed to evaluate their potential to contribute to cumulative impacts. All Study Airports were canvassed for planned airport improvement projects that, in combination with the Proposed Action, may result in cumulative environmental impacts. Due to the nature of the resources affected by the Proposed Action, only past, present, and reasonably foreseeable future actions with direct or indirect effects on aircraft flight patterns within the General Study Area were considered. Therefore, projects considered under the cumulative impact analysis were primarily limited to airfield projects, specifically projects that directly affect or involve runways and modifications to parallel taxiways. Reasonably foreseeable future actions refer to projects likely to be completed before 2021 and for which information is available that provides enough specificity to provide meaningful information to a decision maker and the public.

The same significance thresholds used to determine impacts associated with the Proposed Action are applied to determine significant cumulative impacts. Because there is no potential for impact, those environmental resource categories that are not affected by the Proposed Action (listed in Section 4.2) are not further evaluated for cumulative impacts. Similarly, if no impacts to an environmental resource category were identified under the Proposed Action when compared to the No Action Alternative, then no further analysis for cumulative impacts was required. Resource categories in which no impacts were identified that would warrant further analysis for cumulative impacts from this Project or the past, present, and reasonably foreseeable future actions identified in **Table 5-7** include Noise, Compatible Land Use, Department of Transportation Act, Section 4(f) Resources, Historic and Cultural Resources, Wildlife (Avian and Bat Species) and Migratory Birds, and Environmental Justice.

### 5.10.3 Potential Impacts – 2016 and 2021

For each of the relevant past, present, and reasonably foreseeable future projects identified by the FAA, **Table 5-7** presents a summary of the potential for cumulative effects. Additional discussion of potential cumulative impacts, by environmental resource category, follows the table.

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<sup>54</sup> 40 C.F.R § 1508.7

**Table 5-7 Past, Present, and Reasonably Foreseeable Future Actions (1 of 3)**

<b>Airport Runway Related Projects</b>		
<b>Project</b>	<b>Description</b>	<b>Cumulative Effects Analysis</b>
LAX - Proposed RNAV Departure Procedure (DP) to be developed for aircraft that depart LAX Airport from Runway 25L and Runway 25R during Noise Abatement hours (0000L-0630L) when LAX Airport is operating in an Over-Ocean airport configuration.	The LAX Over-Ocean RNAV DP will be used to increase efficiency and comply with FAA criteria for opposite direction traffic. The new RNAV DP has a course/track of 210 after passing the initial waypoint.	The environmental review for this project has not yet been undertaken given that the procedural design process has not yet been completed.
LAX - Runway 6L-24R Runway Safety Area (RSA) and Associated Improvements Project (RSA North)	This project includes bringing the RSA for Runways 6L/24R into compliance with FAA guidelines, to the extent practicable. The project also includes improvements associated with the RWY 6R/25L RSA. The proposed project would involve the covering of portions of the Argo Ditch, the relocation of a portion of a service road along Lincoln Boulevard, closure of a portion of a service road located within the Runway 6L-24R RSA south of the runway, relocation of a portion of a service road located within the Runway 6R-24L RSA north of the runway, and closure of parking areas located within the Runway 6R-24L RSA. The proposed project would also implement declared distances on Runway 24R and Runway 6R.	The Draft Environmental Assessment (DEA) was released to the public in March 2014, and Final Environmental Assessment was released to public in June 2014. The Finding of No Significant Impact (FONSI) and Record of Decision (ROD) was issued on July 16, 2014. The Final EA states that outside of the temporary construction related air quality impacts that there are no significant impacts associated with this project. No significant cumulative impacts are anticipated with the Proposed Action.
LAX - Runway 7L-25R RSA and Associated Improvements Project (RSA North)	This project involves bringing the RSA for Runway 7L/25R into compliance with FAA guidelines, to the extent practicable. The project includes the extension of RWY 7L/25R 832 feet to the west; ensuring an RSA of approximately 500 feet by 168 feet belong the new RWY 7L end; extending parallel Taxiway H 832 to the west; and reconstruction of the eastern portion of RWY 7L/25R and Taxiway B.	This project received a FONSI on Sept 5, 2013. The environmental analysis prepared for this project found no significant impacts to air quality or energy supply. No significant cumulative impacts are anticipated with the Proposed Action. This RSA project is expected to start in January 2016.

**Table 5-7 Past, Present, and Reasonably Foreseeable Future Actions (2 of 3)**

<b>Airport Runway Related Projects</b>		
<b>Project</b>	<b>Description</b>	<b>Cumulative Effects Analysis</b>
LAX - Runway 6R-24L Runway Safety Area (RSA)	<p>This project involves bringing the RSA for Runway 6R/24L into compliance with FAA guidelines to the extent practicable. The project includes the relocation of the end of Runway 6R approximately 200 feet to the east and displacing the threshold of Runway 6R approximately 550 feet. The existing Runway 6R displaced landing threshold would be shifted approximately 420 feet to the east. The existing connector Taxiways E16 and E17 will be shifted east and the glide slope antenna, and Precision Approach Path Indicators (PAPI) will be relocated. The western two Medium Intensity Approach Lighting System with Runway Alignment indicator Lights (MALSR) stations will be removed and the MALSR light stations to the east will be shifted/replaced coincident with existing light station locations. The endpoint of Runway 24L and Taxiway E will be shifted by approximately 800 feet and 500 feet to the east, respectively. Taxiway E7 will be removed, including the existing loop westbound that joins Taxiway V between Runways 24L and 24R. The existing ILS Runway 6R Localizer Antenna will be relocated to the east.</p>	<p>The Draft Environmental Assessment (DEA) was released to the public in March 2014, and Final Environmental Assessment was released to public in June 2014. The FONSI/ROD was issued on July 16, 2014. The Final EA states that outside of the temporary construction related air quality impacts that there are no significant impacts associated with this project. No significant cumulative impacts are anticipated with the Proposed Action.</p>
SAN – RWY 9 Displaced Threshold Relocation	<p>This project allowed RWY 9 to meet FAA criteria for airplane approach Category D, Category I instrument approaches. The project involves relocating the existing displaced threshold on RWY 9 by 300 feet, the relocation of the runway threshold lights and MALSR light station on the RWY 9 end, and the relocation of the glide slope antenna to align with related threshold.</p>	<p>This project received a FONSI on November 7, 2013. The environmental analysis prepared for this project found no significant impacts to air quality or energy supply. No significant cumulative impacts are anticipated with the Proposed Action. The implementation of this project started in April 2015.</p>

**Table 5-7 Past, Present, and Reasonably Foreseeable Future Actions (3 of 3)**

<b>Airport Runway Related Projects</b>		
<b>Project</b>	<b>Description</b>	<b>Cumulative Effects Analysis</b>
OXR - Proposed Relocation of the Displaced Threshold on Runway 25 and the Acquisition of Approximately 23.53 Acres in Fee Simple and 62.5 Acres of Avigation Easement	This project involves bringing the RSA for Runway 25 into compliance with FAA guidelines. The project includes relocation of the Runway 25 displaced threshold 924 feet to the east and replacement of a nonstandard MALSR with a standard Medium intensity Approach Lighting System with Sequenced Flashing Lights (MALSF), acquisition of fee simple ownership of 12.5 acres to the east of the existing airport boundary and South Ventura Road, and acquisition of avigation easements over 84.5 acres north of OXR.	This project received a FONSI in September 2010. The implementation of the project occurred prior to Dec 2013. The environmental analysis prepared for this project found no significant impacts to air quality or energy supply. No significant cumulative impacts are anticipated with the Proposed Action.

Source: Los Angeles World Airports, *Finding of No Significant Impact and Record of Decision for the Proposed Runway 6L-24R and 6R-24L Safety Area Project and Associated Improvements*, July 16, 2014 (<http://www.lawa.org/uploadedFiles/OurLAX/pdf/RSA-North/LAX%20RSA%20North%2024R%20FONSI-ROD%207%2016%202014.pdf>), accessed April 14, 2015; Los Angeles World Airports, *Finding of No Significant Impact and Record of Decision for the Proposed Runway 7L/25R Runway Safety Area & Associated Improvements Project (RSA South)*, September 5, 2013 ([http://www.lawa.org/uploadedFiles/OurLAX/pdf/LAX%20Runway%207L-25R%20RSA\\_Signed%20FONSI-ROD\\_09052013.pdf](http://www.lawa.org/uploadedFiles/OurLAX/pdf/LAX%20Runway%207L-25R%20RSA_Signed%20FONSI-ROD_09052013.pdf)), accessed April 17, 2015; San Diego County Regional Airport Authority, *Finding of No Significant Impact for the Proposed Runway 9 Displaced Threshold Relocation Project*, November 7, 2013; County of Ventura, Department of Airports, *Final Environmental Assessment for the Proposed Relocation of the Displaced Threshold on Runway 25 and the Acquisition of approximately 23.53 Acres in Fee Simple and 62.5 Acres of Avigation Easement*, September 2010 ([http://vcportal.ventura.org/AIRPORTS/docs/NEPA/Final\\_Environmental\\_Assessment.pdf](http://vcportal.ventura.org/AIRPORTS/docs/NEPA/Final_Environmental_Assessment.pdf)), April 14, 2015; U.S. Department of Transportation, Federal Aviation Administration, April 16, 2015.

Prepared by: ATAC Corporation, April 2015.

### 5.10.3.1 Potential Cumulative Impacts on Energy Supply (Aircraft Fuel)

The Proposed Action would result in a slight increase in fuel burn (less than one-half of one percent) when compared to the No Action Alternative: for 2016, an increase of approximately 11 MT (0.41 percent); for 2021, approximately 13 MT (0.44 percent). However, as discussed in Section 5.7, aircraft fuel consumed under the Proposed Action would not exceed local supplies.

**Table 5-7** identifies five projects that in combination with the Proposed Action have the potential for cumulative impacts to energy supply. Environmental documentation completed for both these projects found no significant impacts to energy supply. Accordingly, no cumulative impacts would be anticipated. Therefore, none of the past, present, and reasonably foreseeable projects identified in **Table 5-7** have the potential to contribute cumulatively to impacts to energy supply.

### 5.10.3.2 Potential Cumulative Impacts on Air Quality

As discussed in Section 4.3.8, portions of the General Study Area are in nonattainment for ozone (O<sub>3</sub>), PM<sub>10</sub>, and PM<sub>2.5</sub>. **Table 4-7** identifies the counties that are in nonattainment for

O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> standards. As discussed in Section 5.8, the Proposed Action would not have a significant impact on air quality when compared to the No Action Alternative, and the Proposed Action is presumed to conform with the SIP.

Environmental documentation completed for both the projects identified in **Table 5-7** found no significant long-term impacts to air quality. Therefore, none of the past, present, and reasonably foreseeable projects identified in **Table 5-7** have the potential to contribute cumulatively to impacts to air quality.

#### 5.10.3.3 Potential Cumulative Impacts on Climate

The Proposed Action would result in a very slight increase in emissions of CO<sub>2</sub>e when compared to the No Action Alternative: for 2016, a slight increase of approximately 35 MT of CO<sub>2</sub>e (0.41 percent); for 2021, a slight increase of approximately 42 MT of CO<sub>2</sub>e (0.44 percent). However, as discussed in Section 5.9, this slight increase in CO<sub>2</sub>e would not represent a significant impact.

Environmental documentation completed for the projects identified in **Table 5-7** did not evaluate effects to climate. However, as implementation of project components were not anticipated to result in increases in the amount of fuel burned with corresponding increases in emissions, there should be no effect to climate. Therefore, none of the past, present, and reasonably foreseeable projects identified in **Table 5-7** have the potential to contribute cumulatively to impacts to climate.

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