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## 4.18 Light Emissions

### 4.18.1 Introduction

The light emissions analysis addresses the potential for the Master Plan alternatives to cause adverse lighting effects, as more fully described in Section 4.18, *Light Emissions* (subsection 4.18.1), of the Draft EIS/EIR. Technical Report 9, *Light Emissions Technical Report*, of the Draft EIS/EIR contains detailed information regarding plans and guidelines governing light emissions that apply to the alternatives; field survey data on existing lighting conditions; and analysis of future lighting effects.

### 4.18.2 General Approach and Methodology

The analysis of light emissions presented below is based on the general approach and methodology described in Section 4.18, *Light Emissions* (subsection 4.18.2), of the Draft EIS/EIR. In addition, the analysis completed for this Supplement to the Draft EIS/EIR includes consideration of changes to baseline conditions (see Section 4.18.3 below), using the same methodology applied to the 1996 baseline analysis.

### 4.18.3 Affected Environment/Environmental Baseline

The affected environment/environmental baseline related to light emissions and glare used in this Supplement to the Draft EIS/EIR is the same as described in Section 4.18, *Light Emissions* (subsection 4.18.3), of the Draft EIS/EIR. Evaluation of Year 2000 conditions indicated that no material changes to the affected environment/environmental baseline have occurred that alter the conclusions of the Draft EIS/EIR.

### 4.18.4 Thresholds of Significance

#### 4.18.4.1 CEQA Thresholds of Significance

As stated in Section 4.18, *Light Emissions* (subsection 4.18.4.1), of the Draft EIS/EIR, a significant light emissions impact would occur if the direct and indirect changes in the environment that may be caused by the particular build alternative would potentially result in the following future condition:

- ◆ An increase in lighting intensity of more than 2 footcandles as measured at the property line of a residential property.

A significant glare (reflected light) impact would occur if the direct and indirect changes in the environment that may be caused by the particular build alternative would potentially result in the following future condition:

- ◆ Installation of lighting or signage within an airport hazard area that would make it difficult for pilots to distinguish between said lights and aeronautical lights, or result in glare in the eyes of pilots that would impair their ability to operate aircraft.<sup>238</sup>

These thresholds of significance are utilized because they address the potential concerns relative to light and glare emissions associated with the Master Plan build alternatives, namely spillover of light on sensitive uses and introduction of glare that would impair operation of aircraft. The first threshold reflects general direction provided in the *Draft L.A. CEQA Thresholds Guide*, and specifies the 2-footcandle increase from the City of Los Angeles Municipal Code. The threshold for significant glare is also derived from the City of Los Angeles Municipal Code.

#### 4.18.4.2 Federal Standards

As stated in Section 4.18, *Light Emissions* (subsection 4.18.4.2), of the Draft EIS/EIR, there are no federal standards that define significance for light emission impacts.

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<sup>238</sup> City of Los Angeles, Municipal Code, Section 12.50, March 31, 2000.

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### 4.18.5 Master Plan Commitments

The following Master Plan commitments proposed for light emissions and glare are the same as those presented in Section 4.18, *Light Emissions* (subsection 4.18.5), of the Draft EIS/EIR.

◆ **LI-1. Ring Road Landscaping (Alternative B).**

Prior to approval of final plans for the ring road and the roadway proposed to connect Airport Boulevard to Bellanca Avenue, the alignments of these roadways will be modified by LAWA to provide a minimum 20-foot landscaped setback between residential properties on Morely Street. Said plans will also locate and direct lighting to avoid direct glare or light spillover effects on the residential properties. Baseline measurements of ambient lighting will be made prior to construction of the ring road. The baseline data will be used to estimate potential change in ambient lighting conditions with development of the ring road. Plantings within the setback will include dense evergreen trees and other vegetation selected and located so that roadway lighting is sufficiently screened to ensure that lighting intensity does not increase by more than 2 footcandles over existing levels at the property lines of affected residential uses. Aesthetic enhancement of views along the ring road will also be achieved.

◆ **LI-2. Use of Non-Glare Generating Building Materials (Alternatives A, B, C, and D).**

Prior to approval of final plans LAWA will ensure that proposed LAX facilities will be constructed of non-reflective materials and will not contain undifferentiated expanses of glass.

The following Master Plan commitment has been revised since publication of the Draft EIS/EIR to incorporate specific reference to sensitive flora and fauna within the Habitat Restoration Area.

◆ **LI-3. Lighting Controls (Alternatives A, B, C, and D).**

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. In addition, LAWA or its designee will undertake consultation in selection of appropriate lighting type and placement, where feasible, to ensure that new lights or changes in lighting will not have an adverse effect on the natural behavior of sensitive flora and fauna within the Habitat Restoration Area.

The following Master Plan commitments from other environmental disciplines are also relevant to this analysis:

◆ **LU-1. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] Zoning Conditions for LAX Northside into the LAX Northside/Westchester Southside Project (Alternatives A, B, C, and D).**

◆ **LU-4. Neighborhood Compatibility Program (Alternatives A, B, C, and D).**

The above commitments are provided in their entirety in Chapter 5, *Environmental Action Plan*, of this Supplement to the Draft EIS/EIR.

### 4.18.6 Environmental Consequences

The environmental impacts associated with light emissions and glare under the No Action/No Project Alternative and Alternatives A, B, and C have not changed from those described in Section 4.18, *Light Emissions* (subsection 4.18.6), of the Draft EIS/EIR.

#### 4.18.6.1 **Alternative D - Enhanced Safety and Security Plan**

A complete description of the facilities associated with Alternative D is provided in Chapter 3, *Alternatives* (subsection 3.3.2), of this Supplement to the Draft EIS/EIR. The features that are especially pertinent to the analysis of light emission impacts include runway, taxiway, and terminal improvements; parking and rental car facilities; cargo facilities; ground transportation improvements; and a People Mover.

## **LAX Light Sources**

Alternative D would add several new sources of nighttime illumination on the LAX site by 2015. The relocation and lengthening of Runways 6R/24L and 7R/25L, lengthening of Runway 6L/24R, and new and reconfigured taxiways would involve relocating and adding airfield lighting (e.g., airport beacons, approach lighting, runway/taxiway guidance lighting, runway end identifier lights (REILs) and apron/ramp floodlighting, and ground lighting/markings). Discussion of FAA standards for airfield and terminal area lighting aids and navigational systems at U.S. airports is found in Technical Report 9, *Light Emissions Technical Report*, of the Draft EIS/EIR. Light sources associated with the runway and taxiway improvements could be visible from off-site vantages to the north and south; however, due to their low intensity and distance of over 800 feet from off-site sensitive uses, no significant effects are expected. Light sources associated with the new CTA passenger terminal buildings, the proposed North Linear Concourse, the new West Satellite Concourse, and improvements to the south concourses in the CTA would also be remote from and would not affect sensitive receptors.

Additional nighttime illumination would result from development of the GTC, ITC, RAC, APM, proposed parking facilities on the eastern and western ends of the site, improvements within the Century and South Cargo Complexes, and new maintenance and ancillary facilities primarily in the western and southern portions of the site. The proposed LAX facilities would be constructed of non-reflective materials and would not contain undifferentiated expanses of glass. Master Plan Commitments LI-2, use of Non-Glare Generating Building Materials (Alternatives A, B, C, and D), and LI-3, Lighting Controls (Alternatives A, B, C, and D), would ensure that no building materials or light sources are introduced that could generate glare which would pose an aviation hazard. Therefore, Alternative D is not expected to generate significant glare impacts.

The lighting effects associated with Alternative D along the airport boundaries where sensitive uses are located are discussed below.

## **Lighting Conditions**

### **Southern Boundary**

Limited replacement and upgraded cargo and ancillary facilities would be developed along Imperial Highway along the southern site boundary, similar to the No Action/No Project Alternative. These new facilities would involve light sources similar to those currently used and would incrementally increase ambient light levels over baseline conditions to a minor extent due to a limited intensification of cargo uses within the currently developed and lighted area. Standards for cargo building lighting and landscaping provided in the Airport's Air Cargo Facilities Design Guidelines<sup>239</sup> would be applied to the new facilities, thereby reducing visible illumination. The relatively small increase in illumination combined with a distance to the nearest sensitive receptor of 400 feet would preclude significant impacts on sensitive uses, as further explained below.

Within Section 4.18, *Light Emissions*, of the Draft EIS/EIR, receptor Site A (indicated in Figure 4.18-1, Illuminance Measurement Locations and Sensitive Receptor Areas, of the Draft EIS/EIR), located near the intersection of Imperial Highway and Pershing Drive, was determined to represent the sensitive receptor area along the southern site boundary most likely to be affected by project lighting (see Table 4.18-1, Estimated 2015 Lighting Change, in Section 4.18, *Light Emissions*, of the Draft EIS/EIR). Increases in ambient light levels at this location under Alternatives A, B, and C were estimated at 0.09 *fc*, primarily due to development of a RAC, parking structure, and commercial vehicle holding area at Imperial Highway and Pershing Drive. Since Alternative D does not propose any new development in this area, it can be concluded that any increase in lighting along the southern boundary under Alternative D would be less than 0.09 *fc*, or below the 2 *fc* threshold established in the City of Los Angeles Municipal Code. Light emission impacts in this area, therefore, would be less than significant.

Also under Alternative D, the vacant Continental City site would be developed with the ITC and a parking structure. New sources of light associated with this development would include entrance lighting, light emanating from structure interiors, roof perimeter and parapet lights, street lights, and security lighting. These light sources are expected to be similar in type to those on surrounding commercial and industrial

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<sup>239</sup> The Airport's Air Cargo Facilities Design Guidelines building lighting guidelines are described in Technical Report 9, *Light Emissions Technical Report*, of the Draft EIS/EIR.

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properties. As there are no light-sensitive receptors in the vicinity of the Continental City site, no significant lighting impacts on sensitive receptors would occur. Furthermore, landscape and streetscape treatments implemented in accordance with the LAX Street Frontage and Landscape Development Plan would serve to screen illumination.

The increase in ambient lighting conditions along the south side of LAX under Alternative D would not result in significant impacts, although ambient lighting would be slightly greater than under the No Action/No Project Alternative.

### Western Boundary

Development within the western boundary area would be limited under Alternative D. Improvements would include a new four-level employee parking garage immediately south of World Way West near Pershing Drive; new airline maintenance and ground run-up enclosure (GRE) facilities; and the removal of two airline maintenance complexes and the existing remote aircraft gates north of World Way West near Pershing Drive. Development in this area would not be appreciably intensified, nor would the improvements represent a substantial change or contrast with existing facilities. Nighttime illumination associated with these facilities would primarily include security lighting, roof perimeter and parapet lights, and light emanating from structure interiors. As with existing lighting in the area, these new light sources would be directed or shielded away from the site perimeters and focused on the proposed facilities. Additionally, removal of the existing maintenance buildings and remote aircraft gates would permit a corresponding reduction in light levels in the area. However, even with careful placement and design and the removal of existing facilities, the new light sources would increase ambient light levels over those now at the west end of the airport.

As shown in Table 4.18-1 in Section 4.18, *Light Emissions*, of the Draft EIS/EIR, ambient lighting conditions in the Habitat Restoration Area (receptor Site 1C, depicted in Figure 4.18-1) due to development along the western site boundary under Alternatives A, B, and C are expected to increase by an estimated 0.34 *fc*. This increase is attributable primarily to the west terminal area (WTA) and public parking facility located on Pershing Drive near the existing alignment of World Way West. As discussed in Section 4.18, *Light Emissions* (subsection 4.18.2), of the Draft EIS/EIR, illuminance is a function of, and decreases with, distance; therefore, since the Alternative D employee parking garage proposed south of World Way West would be located further to the east than the facilities contemplated for the other build alternatives, light spillover onto the Habitat Restoration Area to the west would be accordingly reduced. As such, any increase in lighting along the western boundary under Alternative D would be less than 0.34 *fc*, or below the 2 *fc* threshold established in the City of Los Angeles Municipal Code, and light impacts would be less than significant.

With relocation and extension of the north airfield runways, Alternative D would also change navigational aid lighting. Existing facilities would be removed and replaced as necessary, and certain existing navigational aids would remain in their current locations, for a net increase of three light standards within the Habitat Restoration Area. No additional security lighting would be expected. The potential effects of light emissions on biological resources within the Habitat Restoration Area are discussed in Sections 4.10, *Biotic Communities*, and 4.11, *Endangered and Threatened Species of Flora and Fauna*, of this Supplement to the Draft EIS/EIR.

Although the increase in ambient lighting conditions along the western end of LAX under Alternative D would not result in significant impacts, there would be greater levels of ambient lighting as compared to the No Action/No Project Alternative.

### Northern Boundary/LAX Northside

As under the No Action/No Project Alternative, conversion of the vacant LAX Northside area to urban conditions under Alternative D would result in a noticeable increase in ambient light levels. This development would be visible from neighboring areas of Westchester, especially adjacent residences on 91st and Saint Bernard Streets. The northern edge of LAX Northside has been planned for uses that do not normally operate during late hours, and the adjacent residences would be separated from these uses by a range of 15 to 50 feet. Airport-related businesses utilizing higher levels of nighttime illumination are planned south of Westchester Parkway, farthest from the neighboring community.

Given that Alternative D and the No Action/No Project Alternative both include the LAX Northside development project, changes in illuminance over ambient baseline conditions at receptor locations

adjacent to LAX Northside, for Alternative D, would be the same as expected under the No Action/No Project Alternative. As indicated in Section 4.18, *Light Emissions*, of the Draft EIS/EIR, receptor Site L (see Figure 4.18-1 therein) is projected to experience an increase in ambient lighting of 0.8 *fc* under the No Action/No Project Alternative. Therefore, development of LAX Northside under Alternative D would also be expected to generate an ambient lighting increase of 0.8 *fc*, or less than the City's 2 *fc* threshold. This result is supported in part by site design that would meet the conditions of City of Los Angeles Ordinance No. 159,526 (regarding LAX Northside), which would be incorporated into a new LAX Specific Plan/LAX Zone. The conditions establish landscaped buffers and require that lighting be directed onto the site and that no flood-lighting be located within direct view of adjacent residential areas. Lighting impacts, therefore, would be less than significant.

Also proposed as part of Alternative D, new consolidated RAC facilities would replace existing rental car facilities and long-term parking (Lots C and D) immediately east of Sepulveda Boulevard. Approximately 15 percent, or about 24 acres, of the RAC site would be dedicated to open space and landscape requirements, with edge treatments provided in accordance with the Street Frontage and Landscape Plan, with particular sensitivity to the residential neighborhood to the north. The Carl E. Nielsen Youth Park at the north end of the site would remain in place. Since the new facilities would be similar in nature to those now existing, a noticeable change in lighting and light levels would not be expected. As under existing conditions, lights within the RAC surface parking area would be shielded and directed down in order to prevent off-site light spillover. Residential receptors to the north and northeast would not be significantly affected by light emissions associated with the RAC facilities.

The increase in ambient lighting conditions along the north side of LAX under Alternative D would be similar to that expected as part of the No Action/No Project Alternative and would be less than significant.

### **Century Corridor**

Under Alternative D, limited new and redeveloped cargo buildings and ancillary facilities would be constructed along the south side of Century Boulevard between Sepulveda and Aviation Boulevards. These facilities would not intensify development along the Century Corridor to the extent expected under the other build alternatives. New light sources are expected to be shielded and directed down so that light spillover does not extend off-site. Similar to the other build alternatives, Alternative D would include an approximately 50-foot wide continuous landscaped parkway on the south side of Century Boulevard, which would aid in screening lighting from the view of hotel uses along the north side of the street. The effects on the hotels in this area would not be significant, as under existing conditions the entire area around the hotels is developed and brightly lit, and lighting associated with the new development is not expected to meaningfully increase ambient lighting levels. Furthermore, the location and focus of light fixtures, in conformance with the Air Cargo Facilities Design Guidelines, would prevent significant lighting impacts.

Under Alternative D, the Manchester Square area would be developed with the GTC, a group of parallel terminals or "piers," adjacent parking facilities, a commercial vehicle holding area, and a network of access roadways and ramps. New sources of light at the GTC would include entrance lighting, light emanating from structure interiors, roof perimeter and parapet lights, street lights, and security lighting. As development of the GTC would replace an isolated pocket of predominantly residential uses bordered by industrial and commercial uses, the new facilities and associated lighting would be more in character with surrounding development. Nighttime illumination from the GTC would be visible from adjacent off-site commercial and industrial buildings as well as I-405 and would likely operate during later hours than do many existing surrounding uses under current conditions. However, the adjacent off-site commercial and industrial uses are not considered sensitive uses and produce light emissions of similar intensity. Additionally, similar to other development at LAX, the GTC light sources are expected to be shielded and directed down to minimize light spillover. Furthermore, the GTC would be surrounded by landscaped open space, which would serve as a buffer for adjacent off-site uses and roadways, and edge and landscape treatments would be provided in compliance with the Street Frontage and Landscape Plan. Therefore, no significant impacts are expected in this area.

South of the GTC, elevated access roadways would parallel the east side of Aviation Boulevard between Century Boulevard and Imperial Highway, with appropriate street and security lighting introduced. The adjacent off-site commercial and industrial uses are not considered sensitive receptors and produce light emissions of similar intensity to those expected with proposed LAX light sources. Also within this area, a

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long-term surface parking lot would replace existing surface parking on La Cienega Boulevard. Extensive open space/landscape areas would buffer the improvements in this area and line all street frontages in compliance with the Street Frontage and Landscape Plan. In replacing existing industrial, commercial, and parking uses, the new facilities would not generate noticeable changes in ambient lighting or significantly affect adjacent non-sensitive commercial and industrial uses.

Throughout the Century Corridor and eastern boundary area, a state-of-the-art APM and associated infrastructure would be visible. The majority of the APM guideway would consist of an elevated concrete structure approximately 22 to 24 feet above grade, and its alignment, depicted in Figure S3-8, Alternative D 2015 - Enhanced Safety and Security Plan, in Chapter 3, *Alternatives*, would generally parallel 98th Street and Century Boulevard between Sepulveda and Aviation Boulevards, as well as Aviation Boulevard between roughly Arbor Vitae Street and Imperial Highway. Light sources associated with the APM would include low-level security lighting along the guideway and light emanating from APM trains. Such light sources would not be expected to generate bright emissions, and lighting along the guideway would be shielded and focused. Since most of the off-site land uses adjacent to the APM alignment consist of commercial uses which are not considered sensitive, significant light impacts on such uses would not occur. The only sensitive uses located adjacent to the APM are hotels along the north side of Century Boulevard, including those with rooms oriented towards 98th Street. However, as discussed above, the area around the hotels is presently developed and brightly lit, thus lighting associated with the APM is not expected to meaningfully increase ambient lighting levels. Furthermore, the 98th Street and Century Boulevard rights-of-way would separate potentially affected hotel uses from the APM northern and southern alignments, respectively, and any lighting potentially spilling over from APM train interiors would be temporary and transient as trains travel by. Significant lighting impacts, therefore, would not occur.

As with the No Action/No Project Alternative, no significant impacts are expected along the Century Boulevard corridor and the eastern end of LAX under Alternative D.

### **Construction**

Similar to Alternatives A, B, and C, construction activities on the airport under Alternative D may involve nighttime activities that would require lighting of work areas. More concentrated and substantial construction would occur at the LAX Northside, Manchester Square, Continental City, and CTA sites. Other construction activities would not be as extensive and widespread or in view along primary roadways or airport approaches. Construction lighting would be necessarily focused downward and oriented toward airport property, away from adjacent sensitive residential uses. Furthermore, construction hours within the project areas adjacent to sensitive uses would be restricted in accordance with municipal code requirements. Because no nighttime construction or construction lighting would occur in areas close enough to disturb residential uses, no significant impacts from construction lighting are expected with development of Alternative D. Although no significant construction lighting impacts would occur, there would be greater levels of ambient lighting during construction of Alternative D than under the No Action/No Project Alternative.

### **4.18.7 Cumulative Impacts**

The cumulative light emissions and glare impacts associated with the No Action/No Project Alternative and Alternatives A, B, or C, in combination with other past, present, and probable future projects, have not changed from those described in Section 4.18, *Light Emissions* (subsection 4.18.7), of the Draft EIS/EIR.

#### **4.18.7.1 Alternative D - Enhanced Safety and Security Plan**

Similar to the other build alternatives, sitewide improvements and new facilities under Alternative D would add new sources of nighttime illumination and incrementally increase ambient light levels. However, adverse light spillover effects would not occur and lighting impacts would be less than significant.

In considering impacts associated with independent development in the nearby vicinity, the proposed Playa Vista project would be constructed within an area that is currently vacant and could, in combination with development of LAX Northside under Alternative D, result in an increase in ambient lighting conditions in areas between the two projects. Other projects in the vicinity would also increase ambient lighting conditions. However, the combined increase in light emissions associated with such projects

would be ambient in nature and the distance between the sites would not result in cumulatively significant impacts on sensitive receptors. Since significant impacts under Alternative D would be avoided through design features, Master Plan commitments, and regulatory compliance, and recognizing that ambient increases in lighting would occur in the context of infill development within a lit urban environment, cumulative light and glare impacts in association with Alternative D are considered to be less than significant.

### **4.18.8 Mitigation Measures**

With the implementation of Master Plan Commitments LI-1, Ring Road Landscaping (Alternative B), LI-2, Use of Non-Glare Generating Building Materials (Alternatives A, B, C, and D), LI-3, Lighting Controls (Alternatives A, B, C, and D), LU-1, Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] Zoning Conditions for LAX Northside into the LAX Northside/Westchester Southside Project (Alternatives A, B, C, and D), and LU-4, Neighborhood Compatibility Program (Alternatives A, B, C, and D), Alternatives A, B, and C would not have any significant impacts relative to light emissions with the exception of potential impacts from the LAX Expressway. Implementation of Alternative D would not have significant light emission impacts; therefore, no mitigation is required.

The following mitigation measure is the same as that identified in Section 4.18, *Light Emissions* (subsection 4.18.8), of the Draft EIS/EIR and is recommended to reduce light emission impacts from the LAX Expressway:

#### ◆ **MM-LI-1. LAX Expressway Lighting Assessment (Alternatives A, B, and C).**

As part of final design for the LAX Expressway, LAWA shall undertake an assessment of potential adverse lighting effects based on detailed plans. The documentation shall include baseline ambient lighting measurements along the portions of the LAX Expressway adjacent to sensitive uses. The baseline data shall be used to estimate potential change in ambient lighting conditions with development of the Expressway. If it is determined that adverse effects would occur on residential uses, then landscaped buffer areas, setbacks, lighting specifications and placement, or other techniques shall be required to ensure that lighting intensity over baseline conditions for residential uses does not increase by more than 2 footcandles.

### **4.18.9 Level of Significance After Mitigation**

#### **4.18.9.1 Alternatives A, B, and C**

As stated in Section 4.18, *Light Emissions* (subsection 4.18.9), of the Draft EIS/EIR, with implementation of Mitigation Measure MM-LI-1, LAX Expressway Lighting Assessment (Alternatives A, B, and C), lighting impacts to sensitive receptors would be reduced to less than significant levels.

#### **4.18.9.2 Alternative D - Enhanced Safety and Security Plan**

Significant lighting impacts would not occur under Alternative D; therefore, no mitigation is required.

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