4.3 Biological Resources

4.3.1 Introduction

The biological resources analysis addresses the potential of the SPAS alternatives to directly affect sensitive habitats, sensitive species, and jurisdictional aquatic features, including jurisdictional waters, wetlands, streams, and riparian habitat. In addition to direct effects, an analysis of potential indirect impacts from light emissions, air pollutant emissions, and noise associated with airport operations is also included in this section.

The LAX Master Plan Final EIR evaluated potential direct and indirect impacts on biotic communities, threatened and endangered species, and wetlands and associated resources, and proposed mitigation measures to address potentially significant impacts. Additionally, three project-specific EIRs for the Bradley West Project,[96] Crossfield Taxiway Project,[97] and South Airfield Improvement Project[98] tiered off of the LAX Master Plan Final EIR and included analyses of potential impacts to biological resources. The results of biological resources surveys and analyses included in the LAX Master Plan EIR and tiered project-level EIRs are included in this analysis when relevant.

For purposes of this analysis, vegetation associations and habitats are considered "sensitive" based on one or more of the following criteria:

- Vegetation associations with global (G) and/or state (S) ranking of category 3 or less by California Department of Fish and Game (CDFG);
- Federally-designated critical habitat;
- Locally-designated natural communities;
- Environmentally Sensitive Habitat Areas (ESHAs); and
- Habitat preservation areas designated pursuant to local ordinances, including the El Segundo Blue Butterfly Habitat Restoration Area.[99]

Wildlife are considered "sensitive" based on one or more of the following criteria:

- Listing or Candidate for listing through the Federal and/or State Endangered Species Act;
- Designation by the State as a California Species of Special Concern (SSC) or California Fully-Protected Species;
- Sensitive or special status species in local or regional plans, policies, or regulations; and
- Meet the criteria for endangered, rare, or threatened under State CEQA Guidelines Section 15380(b).

Plants are considered "sensitive" based on one or more of the following criteria:

- Listing or Candidate for listing through the Federal and/or State Endangered Species Act;
- Designation by the State as a California SSC;
- Classification as rare by the California Native Plant Protection Act (NPPA);
- Listing in the California Native Plant Society (CNPS) Rare Plant Inventory (California Rare Plant Rank (RPR)1B, 2, 3, or 4);[100]

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96 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Bradley West Project, September 2009.

97 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport Crossfield Taxiway Project, January 2009.

98 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport South Airfield Improvement Project, October 2005.

99 The Los Angeles/El Segundo Dunes Habitat Restoration Area was designated as such by City of Los Angeles Ordinance 167,940, which referred to the area as the Dunes Habitat Preserve.

100 CDFG now refers to these lists in its publications as California Rare Plant Rank lists. The change was made to reduce confusion regarding the role of CNPS; rank assignments continue to be managed jointly by CDFG and CNPS. See http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDB_News_Sep_2010.pdf.

- Sensitive or special status species in local or regional plans, policies or regulations; and
- Species that meet the criteria for endangered, rare, or threatened under State CEQA Guidelines Section 15380(b).

A summary of the floral and faunal species evaluated by the LAX Master Plan EIR, associated tiered EIRs, and SPAS for the potential to occur in the biological resources study area is included as Attachment 3 in Appendix D-1, *Floral and Faunal Compendium and Sensitive Plants and Wildlife*. For each sensitive species evaluated, Attachment 3 in Appendix D-1 includes the status, survey results (when applicable), and a description of habitat requirements and distribution.

The jurisdictional aquatic features analysis addresses the potential effects to aquatic features defined as follows:

- Under the jurisdiction of the U.S. Army Corps of Engineers (USACOE) pursuant to Section 404 of the Clean Water Act;
- Under the jurisdiction of CDFG pursuant to Section 1600 of the Fish and Game Code;
- Under the jurisdiction of the State Water Resources Control Board pursuant to the Porter-Cologne Act;
- Wetlands as defined by the California Coastal Act (CCA); and
- Wetlands as classified by the U.S. Fish and Wildlife Service (USFWS) and CDFG under the Cowardin et. al. classification system.

Appendix D-2, *Jurisdictional Delineation*, discusses the findings of the jurisdictional delineation, and also includes information regarding the affected environment relative to jurisdictional aquatic features and the methodology used to assess both the environmental baseline conditions and project impacts.[101]

The biological resources study area includes LAX and the approximately 300-acre Los Angeles/El Segundo Dunes. The study area generally includes all areas within the airport boundary as shown in **Figure 4.3-1**, as well as adjacent areas with biological resources. Biological resources in the vicinity of the airport were also considered; however, as is apparent in **Figure 4.3-1**, areas immediately adjacent to the airport boundaries are fully developed and provide little to no habitat and do not contain biological resources that would be affected by the proposed project or alternatives. Adjacent areas are also separated from the airport by block wall perimeter security fencing, and the Dunes and smaller non-contiguous parcels north of the airport are similarly surrounded by chain-link fencing. Dockweiler State Beach is located west of the Dunes and west of Vista del Mar and is generally maintained for active recreation purposes and, with the exception of a habitat restoration area, provides limited habitat value for sensitive species. The habitat restoration area within Dockweiler State Beach was recently (2007) colonized by the El Segundo blue butterfly. Both the Los Angeles/El Segundo Dunes and the Dockweiler State Beach Habitat Restoration area are within the Airport Dunes recovery unit for the El Segundo blue butterfly. None of the SPAS alternatives propose construction or activities that would affect the resources within the Dockweiler State Beach Habitat Restoration Area. The Los Angeles/El Segundo Dunes has been designated Significant Ecological Area No. 28 (SEA No. 28) by Los Angeles County. Additionally, the Los Angeles/El Segundo Dunes has been designated as an ESHA pursuant to Section 30240 of the CCA. As discussed in Section 4.4, *Coastal Resources*, the City of Los Angeles has not finalized a Local Coastal Program (LCP) that addresses the Los Angeles/El Segundo Dunes for certification by the California Coastal Commission (CCC).[102] Therefore, development within the Los Angeles/El Segundo Dunes is subject to coastal development permit requirements of the CCC.

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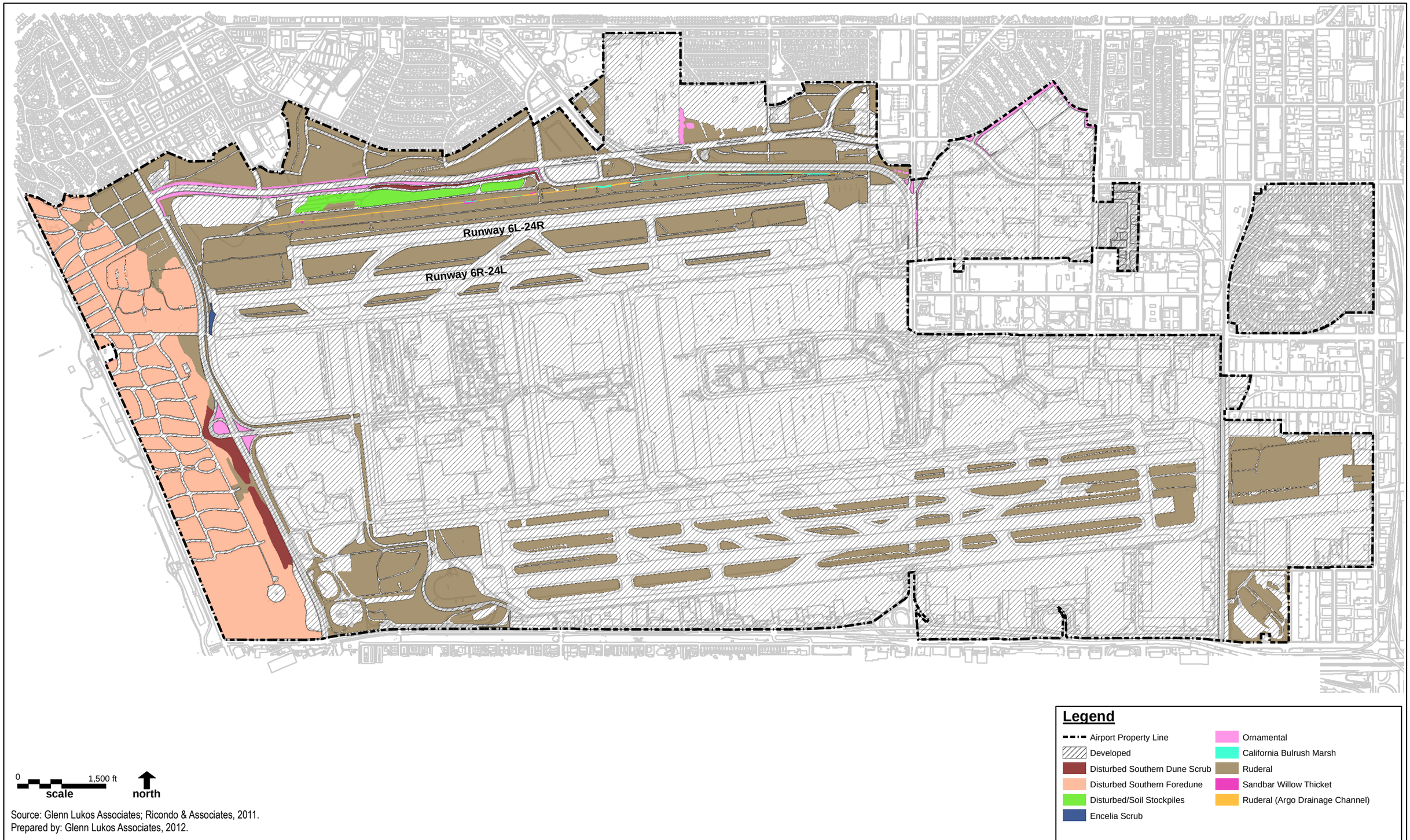
101 The Jurisdictional Delineation (Appendix D-2) is a best effort at estimating the subject jurisdictional boundaries using the most up-to-date regulations and written policy and guidance from the regulatory agencies. Only the regulatory agencies can make a final determination of jurisdictional boundaries.

102 California Coastal Commission, Local Coastal Plan Status and History Report, November 22, 2011, Available: http://www.coastal.ca.gov/la/docs/lcp/LCP_Status_Report_2011.pdf., accessed November 2011.



Source: Glenn Lukos Associates; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

LAX Specific Plan Amendment Study Draft EIR

Vegetation/Land Use Map

Figure
4.3-1

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In the absence of a finalized LCP, other plans have guided the protection of the approximately 300-acre Los Angeles/El Segundo Dunes. In 1992, the City of Los Angeles amended the Westchester-Playa del Rey District Plan pursuant to Ordinance 167,940 to establish the Los Angeles Airport/El Segundo Dunes Specific Plan and applicable land use regulations consistent with the site's environmental sensitivity. The land use regulations apply specifically to habitat restoration and maintenance of the approximately 200-acre El Segundo Blue Butterfly Habitat Restoration Area (Habitat Restoration Area). Consistency of the proposed project with the Los Angeles Airport/El Segundo Dunes Specific Plan is addressed Section 4.9, *Land Use and Planning*. Subsequently, the City of Los Angeles prepared the Long-term Habitat Management Plan for the LAX/El Segundo Dunes in 1994. The habitat preserve referenced in the Los Angeles Airport/El Segundo Dunes Specific Plan has been established. City of Los Angeles Ordinance No. 169,767 (approved April 6, 1994)imposed additional restrictions on development within the 104 contiguous acres north of the Habitat Restoration Area, limiting development to a nature preserve and accessory uses. As discussed in Section 4.4, *Coastal Resources*, as part of the approval of the LAX Master Plan, the FAA issues a Coastal Consistency Determination for the Relocation of Existing Navigational Aids at LAX. In conjunction with the CCC's action on this determination, a Habitat Restoration Plan for the Dunes was developed, which incorporated mitigation measures from the LAX Master Plan EIS/EIR to mitigate impacts associated with the reconfiguration of the navigational aids in the Dunes. Since 1995, LAWA has assigned two full-time landscape personnel to perform maintenance activities within the Habitat Restoration Area in support of the El Segundo blue butterfly, and to perform aesthetic improvement, maintenance, and airport safety activities in the Dunes north of the Habitat Restoration Area. In addition, a qualified, permitted biologist monitors and reports on the population of the federally-endangered El Segundo blue butterfly annually.

The analysis of impacts to biological resources within the Los Angeles/El Segundo Dunes as a result of changes to navigational aids is also addressed in Section 4.4, *Coastal Resources*.

The analysis of the indirect effects of light on sensitive species is based on the data presented in Section 4.1, *Aesthetics*. The analysis of the indirect effects of air quality on sensitive species is based on the data presented in Section 4.2, *Air Quality*. The analysis of the indirect effects of noise on sensitive species is based on the data presented in Section 4.10, *Noise*.

4.3.2 Methodology

This section describes the studies undertaken to characterize the existing biological resources and the approach taken for comparing existing biological resources under baseline conditions with those projected to exist under the SPAS alternatives. Existing conditions pertaining to biological resources impacts are based on surveys and database reviews conduced in late 2011. Conditions in 2011 are sufficiently similar to 2010 to provide for disclosure of impacts relating to biological resources.

As described in Chapter 2, *Project Description*, Alternatives 1 through 4 include airfield, terminal, and ground access improvements. Alternatives 5 through 7 focus on airfield and terminal improvements, and Alternatives 8 and 9 focus on ground access improvements only. Alternatives 1 and 2 include the same ground access improvements, whereas the ground access improvements associated with Alternatives 3, 4, 8, and 9 are each unique. The airfield/terminal improvements associated with Alternatives 1, 2, 5, 6, and 7 could be paired with the ground access improvements associated with Alternatives 1, 2, 8, or 9. Similarly, the ground access improvements associated with Alternatives 1, 2, 8, and 9 could be paired with the airfield improvements associated with Alternatives 1, 2, 5, 6, or 7. The full impacts of any alternative must consider airfield, terminal, and ground access improvements that are ultimately selected by decision-makers. The airfield, terminal, and ground access improvements associated with Alternatives 3 and 4 are specific to each of those alternatives and cannot be paired with other alternatives.

4.3.2.1 Literature Review

The focus of the biological surveys was determined through a review of biological surveys previously performed for the LAX Master Plan, a review of the California Natural Diversity Database (CNDDB)[103] and the CNPS Inventory of Rare and Endangered Plants of California[104] for the U.S. Geologic Survey (USGS) 7.5-minute Venice and Inglewood quadrangles, and six surrounding quadrangle maps including Torrance, San Pedro, Redondo Beach, Beverly Hills, Topanga, and Hollywood, as well as other pertinent literature and knowledge of the region.

The literature review included a thorough review of an existing series of studies and surveys conducted for the LAX Master Plan EIR and tiered EIRs for the Bradley West Project, Crossfield Taxiway Project, and South Airfield Improvement Project, which identified biological resources, including sensitive species and sensitive habitats, threatened and endangered species, and wetlands and associated aquatic resources for the biological resources study area:

- Long-Term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes, June 1994
- LAX Master Plan Final EIR, Appendix J1, *Biological Assessment*, April 2004
- LAX Master Plan Final EIR, Appendix J2, *Jurisdictional Delineation*, April 2004
- LAX Master Plan Final EIR, Technical Report 7, *Biological Resources, Memoranda for the Record on Floral and Faunal Surveys*, April 2004
- LAX Master Plan Final EIR, Appendix S-A, *Agency Consultation Letters*, April 2004
- LAX Master Plan Final EIR, Appendix S-H, *Updated Biological Assessment*, April 2004
- LAX Master Plan Final EIR, Section 4.10, *Biotic Communities*, April 2004
- LAX Master Plan Final EIR, Section 4.11, *Endangered and Threatened Species of Flora and Fauna*, April 2004
- LAX Master Plan Final EIR, Section 4.12, *Wetlands*, April 2004
- LAX Master Plan Final EIR, Appendix F-E, *Biological Opinion(for the LAX Master Plan) from United States Fish and Wildlife Service (USFWS)*, April 2004
- LAX Master Plan Final EIS, Appendix A-3a, *Coastal Zone Management Act (CZMA) Consistency Determination by FAA*, January 2005
- Biological Opinion from United States Fish and Wildlife Service (USFWS) for Operations and Maintenance Activities at LAX, April 2005
- LAX South Airfield Improvement Project Final EIR, Section 4.6, *Biotic Communities*, October 2005
- LAX Crossfield Taxiway Project Final EIR, Appendix F, *Biological Constraints Survey*, January 2009
- LAX Bradley West Project Final EIR, Section 4.7, *Biotic Communities*, September 2009
- LAX Bradley West Project Final EIR, Section 5.5, *Endangered and Threatened Species of Flora and Fauna*, September 2009
- LAX Bradley West Project Final EIR, Section 5.6, *Wetlands*, September 2009
- LAX Bradley West Project Final EIR, Appendix H-1, *Biological Constraints Survey*, September 2009
- U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA-APHIS), Wildlife Services' (USDA-WS) monthly hazardous wildlife abatement reports through personal communication with wildlife biologist Todd Pitlik

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[103] California Department of Fish and Game, California Natural Diversity Database - Rarefind 3, Sacramento, 2011.

[104] California Native Plant Society, Online Inventory of Rare and Endangered Plants of California, 8th Edition, Available: http://www.cnps.org/cnps/rareplants/inventory/, accessed November 2011.

4.3.2.2 Field Survey Methodology

The biological resources study area surveyed for biological resources includes all portions of LAX, with emphasis on the following areas affected by improvements associated with one or more of the SPAS alternatives:

- The north Airport Operations Area (AOA) (specifically, the vegetated areas between and along the north runway complex)
- Open areas located to the west of the north runway complex and to the east of Pershing Drive
- Open areas within the Los Angeles/El Segundo Dunes bounded by Sandpiper, Waterview, and Napoleon Streets, Vista del Mar Boulevard, and Pershing Drive at the northwest corner of the biological resources study area
- Open areas within the Los Angeles/El Segundo Dunes bounded by Sandpiper Street, Imperial Highway, Vista del Mar Boulevard, and Pershing Drive along the western perimeter of the biological resources study area, including the Habitat Restoration Area
- Proposed Construction Staging Areas A, B, C, and D located along the northern boundary of the airport (see Figure 2-15 in Chapter 2, *Project Description*)
- Proposed Construction Staging Area E located at the southeast corner of Arbor Vitae Street and Airport Boulevard, roughly bound to the east by Belford Avenue, located in the area known as Belford
- Proposed Construction Staging Area F, located at Manchester Square
- Proposed Construction Staging Area G, located east of Aviation Boulevard and north of Imperial Highway

For this EIR, biologists conducted a general assessment of biological resources within the unpaved/undeveloped portions of the biological resources study area. On July 7, November 18, and December 1, 2011, on-site surveys of the proposed project construction, staging, and parking areas was conducted by Glenn Lukos Associates to document existing biological resources, map vegetation associations, and delineate jurisdictional aquatic features for each area. Additionally, on July 7 and November 18, 2011, limited focused surveys for sensitive, threatened, and endangered plants were conducted by Glenn Lukos Associates. Prior to the surveys, the CNPS Inventory of Rare and Endangered Vascular Plants of California and CDFG's CNDDB for the topographic quadrangles in which the project occurs (Venice and Inglewood), as well as adjacent quadrangles (Torrance, San Pedro, Redondo Beach, Beverly Hills, Topanga, and Hollywood) were reviewed to identify sensitive, threatened, and endangered plants, wildlife, and habitats known to occur in the vicinity of the project construction, staging, and parking areas. The results of the Glenn Lukos Associates biological resources surveys are included in Appendix D-1, *Floral and Faunal Compendium and Sensitive Plants and Wildlife*, and described below. Additional sources of information regarding the biological resources at the site that were considered in this analysis are listed in Section 4.3.2.1, and are referenced throughout this section.

Analysis of potential impacts to biological resources within the biological resources study area was conducted using the results of past focused and general surveys as well as updated surveys of vegetation, general wildlife use, and sensitive, threatened, and endangered plants for each vegetation association; the locations of those biological resources were then compared to the locations of proposed improvements under the SPAS alternatives.

Vegetation association/land use mapping was conducted using a digital aerial photograph of the biological resources study area boundaries.[105] Using data collected in the field, a map of vegetation associations was generated for the biological resources study area using Geographic Information System (GIS) technology. Plant communities are described in accordance with the definitions provided in

[105] The aerial photograph used for the vegetation mapping was obtained from ArcGIS World Imagery. The aerial photography presents high-resolution satellite imagery from multiple sources, including Esri, i-cubed, USDA FSA, USGS, AEX, GeoEye, AeroGRID, Getmapping, IGP, and the GIS Community, and is updated twice per year. Available: http://www.arcgis.com/home/item.html?id=10df2279f9684e4a9f6a7f08febac2a9, accessed July and December 2011.

Preliminary Descriptions of the Terrestrial Natural Communities of California[106] and in *A Manual of California Vegetation*,[107] as summarized in the *List of Vegetation Alliances and Associations (or Natural Communities List*).[108] As appropriate, site-specific modifications to descriptions found in the aforementioned references were made to more accurately characterize the baseline conditions on-site. The vegetation association/land use map for the biological resources study area was used as a base map from which to analyze impacts under the SPAS alternatives. Using GIS analysis, project alternative maps, provided in Chapter 2, *Project Description*, of this document, were digitally overlaid onto the baseline conditions vegetation association/land use map to determine the acreage of each vegetation association/land use under baseline conditions and the quantity of each vegetation association/land use that would be impacted under the project alternatives. Due to the conceptual nature of the SPAS alternatives, the scope of disturbance associated with relocated navigational aids and service roads in the Los Angeles/El Segundo Dunes for Alternatives 1 through 7 is not available at this level of planning. Therefore, to estimate the impacts associated with navigational aids from each SPAS alternative, the impact analysis for Alternative D in the LAX Master Plan Final EIR Appendix A-3a, *Coastal Zone Management Act (CZMA) Consistency Determination by FAA*, was used as a basis for estimating the approximate size of the footprint of the relocated navigational aids and associated new service roads in the Los Angeles/El Segundo Dunes. The estimate does not take into account potential widening of existing roads, nor potential temporary impacts associated with construction.

The CNDDB, CNPS Inventory, and past survey results for the biological resources study area were initially consulted to determine known occurrences of sensitive plants in the region. From the review of literature resources and knowledge of the region, a list of target sensitive plant species that could occur in the biological resources study area was developed and incorporated into a survey program to achieve the following goals: (1) prepare a detailed floristic compendium; and (2) document the distribution and abundance of any sensitive plant species within the biological resources study area.

A general habitat assessment was conducted in the biological resources study area to identify potential locations of sensitive plants. An aerial photograph and topographic map were used to determine the vegetation associations and other physical features that may support sensitive and other uncommon taxa. Following the habitat assessments, focused surveys were conducted in such a manner as to allow inspection of all areas of potential habitat in the biological resources study area through direct observation by walking meandering transects through areas of suitable habitat following the guidelines adopted by CNPS and CDFG.[109] All plant species encountered during the habitat assessment and focused surveys were identified and recorded following the guidelines adopted by CNPS and CDFG. A complete list of the plant species observed is provided in Attachment 1 of Appendix D-1, *Floral and Faunal Compendium and Sensitive Plants and Wildlife*. Scientific nomenclature and common names used in this report follow widely accepted standard naming conventions.[110,111,112,113]

General and focused surveys were previously undertaken as part of the LAX Master Plan EIR for all plant species that were federally- or state-listed or otherwise classified as sensitive at the time of those surveys

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106 Holland, Robert F, California Department of Fish and Game, Non-Game Heritage Program, Preliminary Descriptions of the Terrestrial Natural Communities of California, 1986.

107 Sawyer J. O. and T. Keeler-Wolf, California Native Plant Society, A Manual of California Vegetation,1995.

108 California Department of Fish and Game, List of Vegetation Alliances and Associations, Vegetation Classification and Mapping Program,2010.

109 California Native Plant Society, CNPS Botanical Survey Guidelines, December 9, 1983, revised June 2, 2001, Available: http://www.cnps.org/cnps/rareplants/pdf/cnps_survey_guidelines.pdf, accessed November 15, 2011.

110 Baldwin, B.G, D.H. Goldman, D.J. Keil, and R. Patterson, Ed, The Jepson Manual: Vascular Plants of California, Second Edition, 2012.

111 Munz, P.A., A Flora of Southern California, 1974.

112 Roberts, F.M, S.D. White, A.C. Sanders, D.E. Bramlet, and S. Boyd, The Vascular Plants of Western Riverside County, California; An Annotated Checklist, 2004.

113 Roberts, F. M. A Checklist of the Vascular Plants of Orange County, California, Second Edition, 1998.

and that were determined to have the potential to exist in the biological resources study area.[114] The list of species surveyed for the LAX Master Plan EIR is included in Attachment 3 of Appendix D-1, *Floral and Faunal Compendium and Sensitive Plants and Wildlife*, which summarizes the federal and state listing status, inclusion on other lists of sensitive species, habitat requirements, and distribution of plant species that are the subject of this analysis.

Additional general and focused surveys were conducted on July 7 and November 18, 2011. The purpose of the fall and summer surveys was to 1) update survey data for those species previously detected within the biological resources study area and detectable at the time of the surveys; and 2) survey for species that have either undergone taxonomic changes and been classified as sensitive species or for which additional distribution or threat data have become available, leading to such species being classified as sensitive species subsequent to publication of the LAX Master Plan EIR. Summer and fall season surveys were determined to be appropriate for species with potential to occur within the biological resources study area, based on literature and database review and qualified expert opinion, whose presence may or may not have been considered or recorded in previous LAX Master Plan EIR, and/or LAX Master Plan project surveys. The list of species evaluated for potential to occur within the biological resources study area, including those species specifically considered in survey efforts undertaken in summer and fall 2011 for SPAS, is also included in Attachment 3 of Appendix D-1, *Floral and Faunal Compendium and Sensitive Plants and Wildlife*.

Habitat assessments for sensitive wildlife and general wildlife surveys were conducted by Glenn Lukos Associates. During these field visits, observations were made and recorded regarding the potential of the biological resources study area to support special status species, wildlife resources present within the biological resources study area, and the proximity to wildlife dispersal or migration corridors. The list of species evaluated for potential to occur within the biological resources study area is also included in Attachment 3 of Appendix D-1, *Floral and Faunal Compendium and Sensitive Plants and Wildlife*. No additional sensitive wildlife species were identified by either the literature review or the CDFG's CNDDB as having potential to occur within the biological resources study area that had not previously been the subject of focused or protocol surveys. Accordingly, no focused or protocol surveys were conducted.

Wildlife species were evaluated and detected during field surveys by sight, call, tracks, and scat. Site reconnaissance was conducted in such a manner as to allow inspection of the biological resources study area by direct observation, including the use of binoculars. Observations of physical evidence and direct sightings of wildlife were recorded in field notes during each visit. A complete list of wildlife species observed within the biological resources study area, as well as wildlife not observed but expected to occur, is provided in Attachment 2, Appendix D-1, *Floral and Faunal Compendium and Sensitive Plants and Wildlife*. Scientific nomenclature and common names for vertebrate species follow the *Complete List of Amphibian, Reptile, Bird, and Mammal Species in California*, *Standard Common and Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians*, and the *American Ornithologists' Union Check-list of North American Birds*.[115,116,117]

General and focused surveys were previously undertaken for all federally- or state-listed or other sensitive wildlife species that were determined to have the potential to occur as part of the LAX Master Plan EIR.[118] The list of species evaluated for potential to occur and subject to surveys as part of the LAX Master Plan EIR is included in Attachment 3 of Appendix D-1, *Floral and Faunal Compendium and*

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114 Sapphos Environmental, Inc., LAX Master Plan EIS/EIR Technical Report 7, Biological Resources, Memoranda for the Record on Floral and Faunal Surveys, January 2001.

115 California Department of Fish and Game, Complete List of Amphibian, Reptile, Bird, and Mammal Species in California, 2006, Available: http://www.dfg.ca.gov/wildlife/docs/generalanimals/species_list.pdf, accessed December 11, 2011.

116 Collins, Joseph T. and Travis W. Taggart, Standard Common and Current Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians, Sixth Edition, 2009.

117 American Ornithologists' Union, Check-list of North American Birds, Available: http://www.aou.org/checklist/north/index.php, accessed December 11, 2011.

118 Sapphos Environmental, Inc., LAX Master Plan EIS/EIR Technical Report 7, Biological Resources, Memoranda for the Record on Floral and Faunal Surveys, January 2001.

Sensitive Plants and Wildlife, which summarizes the federal and state listing status, inclusion on other lists of special status species, habitat requirements, and distribution of wildlife species that are the subject of this analysis.

Focused surveys for the federally-listed El Segundo blue butterfly have been conducted annually by LAWA or its designee since 1984 (with the exception of 1985) at the Los Angeles/El Segundo Dunes. The results of these surveys through 2011 are reported in this section. The surveys have employed a transect count method established in 1984 and modified in 1986. Transect surveys and block counts undertaken in 1995 through 2010 were performed by qualified entomologists under a federal permit issued pursuant to Section 10(a) of the Federal Endangered Species Act by the USFWS. Reports describing the methodology and results of the survey are submitted to the USFWS annually by LAWA.

A jurisdictional delineation was conducted on July 7 and December 1, 2011 within the biological resources study area to identify aquatic features, specifically waters of the United States, including wetlands, and streambeds and associated vegetated riparian habitat potentially under the jurisdiction of USACOE and CDFG, respectively. The methodology and results of the jurisdictional delineation are discussed at length in Appendix D-2, *Jurisdictional Delineation*. Also evaluated was the potential presence of wetlands as defined by the CCA and as classified by USFWS (Cowardin et. al. system),[119] which has also been adopted by the California Fish and Game Commission. As recommended by USACOE's 1987 *Field Guide for Wetland Delineation* (Wetland Delineation Manual),[120] the USGS 7.5-minute topographic series, Venice and Inglewood quadrangles, were reviewed for the presence of wet areas (swamps and marshes) and drainage features (appearing as blue lines on the maps or as characteristic features on topographic maps) that might indicate the potential presence of jurisdictional waters of the United States. Two drainage features were identified on the Venice and Inglewood topographic quadrangles: the Argo Drainage Channel and the Century Boulevard Storm Drain. A review of historical topographic maps and aerial photographs previously conducted for the LAX Master Plan EIR[121] indicated that the Argo Drainage Channel is a man-made flood control structure that was constructed circa 1949. The Argo Drainage Channel does not connect to any river, stream, or lake, but has been determined to flow into the Pacific Ocean through connections with the City of Los Angeles' storm drain system.[122] A field examination of the second "blue-line" drainage depicted on the topographic map was previously conducted for the LAX Master Plan EIR and revealed the Century Boulevard Storm Drain to be a man-made urban flood control structure excavated from a terrestrial upland area. The Century Boulevard Storm Drain parallels Century Boulevard and Aviation Boulevard, and consisted primarily of a concrete box structure. The Century Boulevard Storm Drain has subsequently been converted into an underground structure and therefore is not a jurisdictional feature.

A jurisdictional delineation of the Argo Drainage Channel was previously completed in support of emergency channel maintenance activities in October 1997. This was triggered by CDFG's assertion of jurisdiction over the channel pursuant to Section 1600 of the California Fish and Game Code. Section 1600 of the CDFG Code requires a Streambed Alteration Agreement (SAA) for projects that will divert or obstruct the natural flow of water, change the bed channel, or bank of any stream, or use any material from a streambed. As a man-made structure, LAWA did not identify this feature as subject to the jurisdiction of the CDFG. However, CDFG and USACOE asserted jurisdiction over isolated wetlands and riparian habitat that had formed in the Argo Drainage Channel from a lack of routine operations and maintenance activities over an approximate 20-year period. CDFG and USACOE authorized emergency operations and maintenance activities that involved permanently removing riparian and wetland

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119 Cowardin, Lewis M., Virginia Carter, Francis C. Golet, and Edward T. LaRoe, Classification of Wetlands and Deepwater Habitats of the United States, 1979.

120 Wetland Training Institute, Inc., Field Guide for Wetland Delineation: 1987 Corps of Engineers Manual (WTI 91-2), p. 133, 1991.

121 Sapphos Environmental, Inc., Memorandum for the Record (JN 1067-004.M18), Recommendations for Addressing Regulatory Compliance Issues Related to Areas Subject to the Jurisdiction of the U.S. Army Corps of Engineers and the California Department of Fish and Game at Los Angeles International Airport, City of Los Angeles, California, 1997.

122 Bapna, Victor, County of Los Angeles Department of Public Works, Personal Communication, August 2000.

vegetation not exceeding 1.0 acre from the Argo Drainage Channel for the purpose of airport operational safety pursuant to a Negotiated Agreement[123] and to Nationwide Permit No. 31 issued on January 7, 1998.[124] As required by the CDFG Negotiated Agreement and the USACOE authorization, the removal of isolated wetland and riparian vegetation was mitigated by LAWA through an off-site mitigation program, which consisted of successful native plantings in the existing wetlands at Ken Malloy Regional Park.[125] Because impacted CDFG and USACOE jurisdictional areas largely overlapped, the same off-site mitigation was appropriately used for both agencies. On December 9, 2004 USACOE issued a letter of satisfaction to LAWA recognizing the successful completion of the mitigation work.[126] According to Section 4.12, *Wetlands*, of the LAX Master Plan EIR, USACOE determined that, upon completion of emergency operations and maintenance activities, the Argo Drainage Channel would no longer be subject to its jurisdiction pursuant to Section 404 of the Clean Water Act.[127] However, this has not been confirmed. Therefore, for the purposes of this EIR, it is assumed that Argo Drainage Channel has the potential to continue to be subject to the jurisdiction of USACOE.

Following the review of the history of the on-site jurisdictional aquatic features, suspected jurisdictional areas were field-checked for the presence of definable channels and/or wetland vegetation, soils, and hydrology. Suspected wetland habitats were evaluated using the methodology set forth in the USACOE 1987 *Wetland Delineation Manual*[128] and the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (Arid West Supplement).[129] While in the field, the limits of USACOE and CDFG jurisdiction were recorded onto a large-scale color aerial photograph using visible permanent landmarks. Other data were recorded onto wetland data sheets.

The potential for implementation of the SPAS alternatives to result in impacts on jurisdictional aquatic features was evaluated by using GIS analysis to compare the areas proposed for development under the alternatives with the locations of areas subject to the jurisdiction of USACOE and CDFG.

4.3.2.3 Analysis of Potential Indirect Effects

In addition to the analysis of direct impacts, for which the methodology is discussed above, analysis of potential indirect impacts to sensitive species of flora and fauna from light emissions; air pollutant emissions, including indirect effects of jet exhaust emissions as well as fugitive dust; and both construction and operation noise, is also presented in this section. Indirect impacts from noise on the El Segundo blue butterfly were not evaluated, as this species has no auditory organ and, therefore, no sense of hearing. In addition, for reasons specified in Section 4.3.3.3 below, light emissions would not have indirect impacts on the El Segundo blue butterfly and, therefore, such impacts are not included in the analysis. The general approach and methodology for the analysis of indirect impacts on biological resources is outlined below.

The analysis of potential indirect impacts from lighting conditions considered both baseline and future light emissions within the Habitat Restoration Area, as well as light spillover from adjacent areas into the Habitat Restoration Area, and was based on the findings documented in Section 4.1, *Aesthetics*. The

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123 California Department of Fish and Game, Notification No. 5-480-97 (revision 2), Agreement Regarding Proposed Alteration to Argo Ditch, 1998.

124 U.S. Army Corps of Engineers, Letter to Mr. John Driscoll, Executive Director, Los Angeles World Airports, 1998.

125 City of Los Angeles, Los Angeles World Airports, Letter to Mr. David Castanon, Acting Chief, Regulatory Branch, Department of the Army, July 23, 2004.

126 U.S. Army Corps of Engineers, Letter to Mr. Gary Brown, Environmental Affairs Officer, Los Angeles World Airports, December 9, 2004.

127 The maintenance activity was authorized, and vegetation clearance was completed prior to the preparation of the LAX Master Plan EIR.

128 Environmental Laboratory, Corps of Engineers Wetland Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station, Vicksburg, Mississippi, 1987.

129 U.S. Army Corps of Engineers, Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), 2008.

analysis follows the approach used in the LAX Master Plan EIR, which was substantiated with the findings of published literature.

The analysis of potential indirect impacts from jet exhaust emissions was based on a field investigation of air pollutant emissions and deposition on the Los Angeles/El Segundo Dunes as presented in the LAX Master Plan EIR, and the findings documented in Section 4.2, *Air Quality*, and Appendix C, *Air Quality*. The analysis follows the approach used in the LAX Master Plan EIR, which was substantiated with a review of similar studies conducted at other airports.

The analysis of potential noise impacts was based on the findings documented in Section 4.10.1, *Aircraft Noise*, and Appendix J1, *Aircraft Noise*, as well as Section 4.10.3, *Construction Traffic and Equipment Noise*. This analysis follows the approach used in the LAX Master Plan EIR, which was substantiated with the findings of published literature (see Table F4.10-2, Levels of Noise Causing Disturbance for Sensitive Fauna within the Master Plan Boundaries, of the LAX Master Plan Final EIR). The list of sensitive species evaluated for the potential to occur within the biological resources study area has been updated; however, no new sensitive faunal species that have the potential to occur were identified. For the complete list of species evaluated for potential to occur within the biological resources study area under both the LAX Master Plan EIR and the SPAS EIR, refer to Attachment 3 of Appendix D-1, *Floral and Faunal Compendium and Sensitive Plants and Wildlife*. As discussed in Section 4.10.2 of the LAX Master Plan EIR, the effects of noise on arthropods are unclear, and no noise thresholds can be established based on available scientific evidence. Noise thresholds for each species obtained from published literature were used to evaluate potential impacts associated with future operational noise levels at LAX. Since published literature generally indicates that disturbance occurs when a specific decibel level is reached, rather than duration at a particular decibel level, a conservative approach was used and the assumption was made that disturbance would occur at the moment a threshold noise level for a sensitive species was reached, regardless of duration. The analysis of noise levels was completed through the computation of different noise metrics at regularly spaced grid points located in areas occupied by sensitive species.

4.3.3 Existing Conditions

4.3.3.1 Regulatory Context

CEQA requires the lead government agency to disclose the environmental effects of proposed projects, as well as feasible alternatives or mitigation measures that would avoid or reduce significant adverse environmental effects, to decision-makers, and the public.[130] The State CEQA Guidelines also provide guidance for evaluating impacts to biological resources. In evaluating potential effects on biological resources, the State CEQA Guidelines[131] include mandatory findings of significance[132] and a checklist of biological resource impact questions in State CEQA Guidelines Appendix G. Although the mandatory findings of significance and Appendix G questions are intended to be used in determining whether an EIR must be prepared, they are also useful in identifying appropriate significance thresholds for particular projects. Lead agencies have discretion to use varying thresholds of significance, depending on the area affected.[133]

Floral and faunal species that are listed as federally threatened or endangered or are candidates for listing are protected under the Federal Endangered Species Act.[134] Section 9 of the Federal Endangered

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130 California Environmental Quality Act, Public Resources Code Sections 21000 - 21177, and State CEQA Guidelines Sections 15000 - 15387, CEQA Guidelines Appendices.

131 The State CEQA Guidelines are found in Title 14, Division 6, Chapter 3 of the California Code of Regulations. Appendix G contains a sample environmental checklist form.

132 State CEQA Guidelines, Section 15065(a)(1).

133 See State CEQA Guidelines, Section 15064, and *National Parks and Conservation Assn v. County of Riverside* (1999) 71 Cal. App. 4th 1341.

134 Endangered Species Act of 1973, as amended, 16 U.S.C., Sections 1531 - 1544.

Species Act prohibits the taking of species listed by the USFWS as endangered or threatened. As defined by the Federal Endangered Species Act, "taking" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in such conduct. In recognition that a "take" cannot always be avoided, the Federal Endangered Species Act includes a provision for incidental take of endangered and threatened species that occurs within the parameters of otherwise lawful activities.

The California Endangered Species Act (CESA) prohibits the taking, importation, or sale of state-listed endangered or threatened species except in compliance with permits or conditions specified in CESA.[135] CESA also authorizes CDFG to issue permits for incidental take of endangered or threatened species by general development activities, provided that the proposed project will not jeopardize the continued existence of such species, and that any of the project's negative effects on those species will be minimized and fully mitigated. Finally, whenever a project takes a considerable amount of open space that provides habitat for plants and animals, whether or not any of them are endangered or threatened, CDFG must be consulted through the CEQA process as a trustee agency. CESA authorizes CDFG to enter into a memorandum of understanding with individuals, public agencies, universities, zoological gardens, and scientific or educational institutions to import, export, take, or possess species for scientific, educational, or management purposes. LAWA, as the lead agency under CEQA, is required to consult with CDFG regarding the potential for the proposed project to result in significant impacts on state-listed endangered, threatened, or candidate species.

The California Fish and Game Code classifies some species as "fully protected," and "take" of these species is generally prohibited.[136] In 2011, legislation amended the Fish and Game Code to allow "take" of fully protected species covered under approved natural community conservation plans.

The California NPPA includes measures to preserve, protect, and enhance endangered and rare native plants.[137] The NPPA definitions of endangered and rare differ from those contained in CESA; however, the list of native plants afforded protection by NPPA includes those listed as endangered and threatened under CESA. The NPPA specifies that no person shall import into this state, or take, possess, or sell within this state any endangered or rare native plant, except in compliance with provisions of NPPA.[138] Individual landowners who have been notified by CDFG of the presence of a rare or endangered plant are required to notify CDFG at least ten days in advance of changing land uses to allow CDFG to salvage any endangered or rare native plant material.[139]

The MBTA makes it unlawful to pursue, capture, kill, or possess or attempt to do the same to any migratory bird or part, nest, or egg of such bird listed in wildlife protection treaties between the United States and Great Britain, Mexico, Japan, and the former Soviet Union (now Russia).[140] Migratory birds are those species that breed in latitudes different from those in which they winter. Due to its coastal location, LAX is positioned within the migratory path called the Pacific Flyway and open areas within the airport boundaries potentially provide habitat for migratory birds.

Provisions of the federal Coastal Zone Management Act of 1972 (CZMA), discussed in Section 4.4, *Coastal Resources*, require states to establish comprehensive programs to designate and manage development within the coastal zone. The CCA grants authority to the CCC to regulate development and related resource-depleting activities in a defined coastal zone boundary. LCPs are specific long-term management plans prepared by coastal cities and counties and submitted to the CCC for approval. Until the CCC approves the submitted LCP, it retains authority over development within that portion of the coastal zone.

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135 California Endangered Species Act, Fish and Game Code, Section 2050 et. seq.

136 California Fish and Game Code, Sections 3511, 4700, 5050, and 5515.

137 California Native Plant Protection Act, Fish and Game Code, Sections 1900 - 1913.

138 California Native Plant Protection Act, Fish and Game Code, Section 1908.

139 California Native Plant Protection Act, Fish and Game Code, Section 1913.

140 Migratory Bird Treaty Act, 16 U.S.C. Sections 703-712, as amended.

The Los Angeles/El Segundo Dunes has been designated as an ESHA pursuant to Section 30240 of the CCA. The City of Los Angeles has not finalized an LCP that addresses the Los Angeles/El Segundo Dunes for certification by the CCC. Therefore, development within the Los Angeles/El Segundo Dunes is subject to coastal development permit requirements of the CCC.

Wetlands are afforded a high level of regulatory protection due to their role in providing important hydrologic functions such as flood storage, water quality enhancement, and groundwater recharge. Wetlands also provide important biological functions, including breeding, foraging, and resting for fish and other aquatic and upland wildlife species. Wetlands subject to jurisdiction by USACOE are defined by three parameters: a predominance of wetland vegetation, wetland soils, and hydrology. Section 404 of the Clean Water Act authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill materials into the "waters of the United States," which include wetlands. USACOE[141] and USEPA[142] jointly define wetlands as:

> Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Wetlands within the coastal zone are protected by the CZMA and the CCA. CDFG regulates alterations to the flow, bed, channel, or bank of rivers, streams, and lakes. CEQA and CEQA Guidelines include a more specific description of types of impacts to be considered.

Recognizing the potential hazards wildlife pose to aircraft and human lives, the FAA requires airports that incur bird-aircraft strikes to implement a Wildlife Hazard Management Plan (WHMP).[143] LAX developed a WHMP in cooperation with the USDA-WS, which is periodically reviewed and amended with the approval of FAA. Consistent with the WHMP and FAA guidelines regarding hazardous wildlife attractants on or near airports,[144] the AOA is subject to active control of wildlife species that may pose an aircraft strike risk. Additional wildlife attractants (e.g., lakes, ponds, landfills, etc.) within five miles of the airfield are also addressed as they could potentially attract wildlife in a manner that could jeopardize the safety of air traffic operating into and out of LAX.

4.3.3.2 Existing Biological Resources

Vegetation Communities

The airport and associated facilities are largely developed, and the majority of undeveloped areas support ruderal and ornamental vegetation. The only exception is the area north of Runway 6L/24R, which supports an area of Disturbed Southern Dune Scrub vegetation in an area that previously consisted of residential development, as well as riparian vegetation (Sandbar Willow Thicket and California Bulrush Marsh) associated with the Argo Drainage Channel.

Currently, the biological resources study area supports ten vegetation associations and land use types, as depicted in **Figure 4.3-1**. Three of these vegetation associations, Disturbed Southern Foredune, Disturbed Southern Dune Scrub, and Encelia Scrub, are, for purposes of analysis in this EIR, considered sensitive under the State of California vegetation classification system. The total acreage comprising each vegetation association and land use type is provided in **Table 4.3-1**. Following **Table 4.3-1** is a description of each of the vegetation associations/land uses and their location within the biological resources study area.

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141 33 CFR Part 323, Permits for Discharges of Dredged or Fill Material into Waters of the United States.

142 40 CFR Part 230, Sections 404(b)(1), Guidelines for Specification of Disposal Sites for Dredged or Fill Material.

143 14 CFR 139.337(e), Wildlife Hazard Management.

144 U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports, 2007.

Table 4.3-1

Vegetation Associations/Land Use Types within the SPAS Biological Resources Study Area

Vegetation Association/Land Use	Acres
Disturbed Southern Foredune	216.36
Disturbed Southern Dune Scrub	14.28
Encelia Scrub	0.72
California Bulrush Marsh	1.31
Sandbar Willow Thicket	0.21
Ruderal (Argo Drainage Channel)	2.45
Ruderal	663.65
Ornamental	19.13
Developed	2,880.93
Disturbed/Developed/Soil Stockpiles	15.49
Total	**3,814.53**

Source: Glenn Lukos Associates, 2011.

Disturbed Southern Foredune

Approximately 216.36 acres of the biological resources study area consist of Disturbed Southern Foredune (Southern Foredune, CNDDB Element Code 21230; no CDFG/CNDDB Alliance Code;[145] Global/State Ranking G2 S2.1[146]), all of which is located west of Pershing Drive in the approximately 300-acre Los Angeles/El Segundo Dunes. Where it occurs in a non-disturbed state, or supports sensitive wildlife species such as the El Segundo blue butterfly, the Southern Foredune vegetation association is a state-designated sensitive habitat, with a global ranking of G2 and a state ranking of S2.1.[147] Southern Foredune plant communities are typically dominated by perennial species with a high proportion of suffrutescent (i.e., slightly woody at the base) plants up to 30 centimeters tall.[148] Species such as red sand verbena (*Abronia maritima*), beach bur (*Ambrosia* sp.), and the naturalized species sea rocket (*Cakile maritima*) usually occur in exposed sites, while pink sand verbena (*Abronia umbellata*) and morning-glory (*Calystegia* sp.) occur in less exposed sites.[149] The 1994 *Long-Term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes* identifies approximately 160 species of plants known to occur on the Los Angeles/El Segundo Dunes. The Plan also describes an extensive restoration effort involving the reintroduction of extirpated plant species. Although restoration efforts within the Habitat Restoration Area have attempted restoration over a large area, the Southern Foredune on-site retains its disturbed character. Native species present within the Disturbed Southern Foredune vegetation association in the biological resources study area include beach bur (*Ambrosia chamissonis*), coast buckwheat (*Eriogonum parvifolium*), California buckwheat (*Eriogonum fasciculatum*), lemonadeberry (*Rhus integrifolia*), beach evening primrose (*Camissonia chieranthifolia*), deerweed (*Acmispon glaber*),

145 CNDDB Element Codes and Alliance Codes are classification systems used for categorizing vegetation types. The Element Code system for natural communities is based upon the Holland vegetation classification system (Holland, R. F., California Department of Fish and Game, Non-Game Heritage Program, Preliminary Descriptions of the Terrestrial Natural Communities of California, 1986). CDFG is in the process of replacing the Element Code System with the Alliance Code system.

146 Global and State Rankings refer to the relative rarity of vegetation types as classified by CDFG. Vegetation types are ranked on a scale of 1 to 5, with 1 being the most rare/insecure and 5 being the least. Rankings of 1 and 2 generally indicate a high to moderate degree of rarity/insecurity, a ranking of 3 indicates a low degree of rarity/insecurity, and ranks of 4 or 5 indicate that populations are secure and not rare. The global rank is an overall ranking throughout the range of the vegetation type, while the state rank refers to the relative rarity in California only. The second number after the state rank is the treat rank, with .1 being very threatened, .2 being threatened, and .3 meaning no threats are known.

147 California Department of Fish and Game, California Natural Diversity Database - Rarefind 3, Sacramento, 2011.

148 Holland, R. F., California Department of Fish and Game, Non-Game Heritage Program, Preliminary Descriptions of the Terrestrial Natural Communities of California, 1986.

149 Holland, R. F., California Department of Fish and Game, Non-Game Heritage Program, Preliminary Descriptions of the Terrestrial Natural Communities of California, 1986.

bush lupine (*Lupinus chamissonis*), California croton (*Croton californicus*), coast goldenbush (*Ericameria ericoides*), south coast branching phacelia (*Phacelia ramosissima* var. *austrolitoralis*), and telegraph weed (*Heterotheca gradiflora*). Additional native species in the Dunes were observed in the late 1980s during a comprehensive survey published in detail in the *Long-Term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes* and include less common species such as bladderpod (*Peritoma arborea*) and sand-lettuce (*Dudleya caespitosa*)[150] which were observed by a coastal dunes restoration ecologist during 2011 reference site surveys for the Northern Dunes Improvement Project. Component non-native species, which range from between 20-percent and 80-percent cover over most of the Los Angeles/El Segundo Dunes, include several species of iceplant (including *Carpobrotus edulis* and *C. aequilaterus*), acacia (*Acacia cyclops* and *A. retinoides*), black mustard (*Brassica nigra*), long-billed filaree (*Erodium botrys*), summer mustard (*Brassica geniculata*), slender wild oat (*Avena barbata*), ripgut (*Bromus diandrus*), red brome (*Bromus madritentsis* ssp. *rubens*), and Russian thistle (*Salsola tragus*).

It should be noted that the LAX Master Plan EIR mapped an approximately 17.1-acre area of native needlegrass grassland within the area where this analysis has mapped Disturbed Southern Foredune. For the LAX Master Plan EIR, this mapping was based on the historic presence of needlegrass grassland dominated by nodding needlegrass (*Stipa cernua*), but the EIR stated that extensive disturbance occurred long before any botanical studies could be conducted, and the determination was based upon historical written sources,[151,152] and a photograph of the area taken in 1938 that shows a predominance of forbs over grasses.[153] Given that very little nodding needlegrass and no other native needlegrasses were detected at the time of the botanical studies for the LAX Master Plan EIR, and no nodding needlegrass was detected during the botanical surveys for this SPAS EIR, no needlegrass grassland is mapped within the dune areas. However, given the historic presence of needlegrass grassland, it is still an appropriate target habitat for restoration efforts.

Disturbed Southern Dune Scrub

Approximately 14.28 acres of the biological resources study area is vegetated with Disturbed Southern Dune Scrub (Southern Dune Scrub, CNDDB Element Code 21330; no CDFG/CNDDB Alliance Code; Global/State Ranking G1 S1.1), with 11.59 acres within the Los Angeles/El Segundo Dunes, and 2.69 acres on the northerly edge of the north airfield. Southern Dune Scrub is considered by the CDFG Heritage Program to be among the most highly imperiled natural communities in California, and is a state-designated sensitive habitat, with a global ranking of G1 and a state ranking of S1.1.[154] The Los Angeles/El Segundo Dunes contain virtually the only remaining example of Southern Dune Scrub in mainland Southern California. The host plant and primary food source for the El Segundo blue butterfly, coast buckwheat, is found in this vegetation association. Since the backdune is subject to lower thermal stress and wind dehydration, the vegetative cover of the Southern Dune Scrub community is typically denser than the Southern Foredune community.

Southern Dune Scrub is a dense coastal scrub community typically composed of scattered shrubs, subshrubs, and herbs, generally less than 1 meter in height, often developing considerable cover, and often succulent.[155] Characteristic species include saltbush (*Atriplex leucophylla*), California croton (*Croton californicus*), desert tea (*Ephedra californica*), coast goldenbush (*Isocoma menziesii* var. *vernonioides*), bush lupine (*Lupinus chamissonis*), box thorn (*Lycium californica*), prickly pear (*Opuntia*

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150 Environmental Science Associates, Sapphos Environmental, and Rudolf H.T. Mattoni, Long-Term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes, June 23, 1994.

151 Pierce, W. D. and D. Pool, "The Fauna and Flora of the El Segundo Sand Dunes," Bulletin of the Southern California Academy of Sciences, 37, 1938, pp. 93-97.

152 Mattoni, R., "The Endangered El Segundo Blue Butterfly," Journal of Research on Lepidoptera, 29, 1992, pp. 277-304.

153 City of Los Angeles, Department of Airports, and City of Los Angeles, Environmental Affairs Department, Species Diversity and Habitat Evaluation Across the El Segundo Sand Dunes at LAX, prepared by Mattoni, R.H.T., Agresearch, Inc., 1990.

154 California Department of Fish and Game, California Natural Diversity Database - Rarefind 3, Sacramento, 2011.

155 Holland, R. F., California Department of Fish and Game, Non-Game Heritage Program, Preliminary Descriptions of the Terrestrial Natural Communities of California, 1986.

littoralis), lemonadeberry (*Rhus integrifolia*), jojoba (*Simmondia chinensis*), and the non-native crystalline iceplant (*Mesembryanthemum crystallinum*). Along the coast, Southern Dune Scrub intergrades with the Southern Foredune plant community.[156] Many of the wildlife species in the Southern Foredune are also in the Southern Dune Scrub community.

Within the north airfield, this vegetation association occurs on a long, narrow remnant slope along the northern edge of the north airfield, with component native species including bush lupine (*Lupinus chamissonis*), coast buckwheat (*Eriogonum parvifolium*), telegraph weed (*Heterotheca grandiflora*), and non-native species including yellow starthistle (*Centaurea soltitialis*), summer mustard (*Brassica geniculata*), and acacia (*Acacia cyclops* and *A. retinoides*).

Within the Los Angeles/El Segundo Dunes, component native species include bush lupine (*Lupinus chamissonis*), coast buckwheat (*Eriogonum parvifolium*), telegraph weed (*Heterotheca grandiflora*), California croton (*Croton californicus*), California encelia (*Encelia californica*), and lemonadeberry (*Rhus integrifolia*), and non-native species include iceplant (including *Carpobrotus edulis* and *C. aequilaterus*), acacia (*Acacia cyclops* and *A. retinoides*), and non-native grasses.

Encelia Scrub

Approximately 0.72 acre of Encelia Scrub (no CNDDB Element Code; CDFG/CNDDB Alliance Code 32.050.02; Global/State Ranking G4 S3) occurs east of Pershing Drive near the western end of Runway 6R/24L. This association is a near monoculture of California encelia (*Encelia californica*), with some native telegraph weed (*Heterotheca californica*) and an understory of non-native grasses and forbs typical of the biological resources study area.

California Bulrush Marsh

Approximately 1.31 acres of California Bulrush Marsh (no CNDDB Element Code; CDFG/CNDDB Alliance Code 52.114.00; GlobalState Ranking G5 S4) occurs in the wettest areas along the bottom of the Argo Drainage Channel. Dominant native species include California bulrush (*Schoenoplectus californicus*) and willow smartweed (*Persicaria lapathifolium*), with other component native species including southern cattail (*Typha domingensis*), pale spike-rush (*Eleocharis palustris*), tall umbrella sedge (*Cyperus eragrostis*), and giant horseweed (*Erigeron canadensis*).Component non-native species include barnyard grass (*Echinochloa crus-galli*) and English plantain (*Plantago lanceolata*).

Sandbar Willow Thicket

Approximately 0.21 acre of Sandbar Willow Thicket (no CNDDB Element Code; CDFG/CDDDB Alliance Code 61.209.01; Global/State Ranking G5 S4) occurs in a few small patches in the bottom of the Argo Drainage Channel. The Sandbar Willow Thicket within the biological resources study area consists of dense monocultural sandbar willow (*Salix exigua*), with occasional sparse understory cover of non-native grasses.

Ruderal (Argo Drainage Channel)

Approximately 2.45 acres of the biological resources study area is classified as Ruderal (Argo Drainage Channel)(no CNDDB Element Code; not well described by any CDFG/CDDDB Alliance Code; no Global/State Ranking). This includes portions of the Argo Drainage Channel where riparian and wetland vegetation have not become established, and non-native upland species occur, including yellow-star thistle (*Centaurea solstitialis*), long-beaked filaree (*Erodium botrys*), ripgut (*Bromus diandrus*), wild oat (*Avena fatua*), and Italian ryegrass (*Lolium multiflorum*).

Ruderal

Approximately 663.65 acres of the biological resources study area supports ruderal vegetation (no CNDDB Element Code; not well described by any CDFG/CDDDB Alliance Code; no Global/State

[156] Holland, R. F., California Department of Fish and Game, Non-Game Heritage Program, Preliminary Descriptions of the Terrestrial Natural Communities of California, 1986.

Ranking), which occurs within the open space between and surrounding the runways and taxiways on the airfield, within proposed Construction Staging Areas A, B, C, D, and G, and within the Los Angeles/El Segundo Dunes, including the Habitat Restoration Area. The ruderal areas associated with the airport are subjected to regular operations and maintenance including mowing. This association is dominated by annual forbs, but there is also a component of non-native grasses. Non-native forbs found to be present include filaree (*Erodium* spp.), gazania daisy (*Gazania linearis*), fennel (*Foeniculum vulgare*), sea lavender (*Limonium* spp.), flax-leaved horseweed (*Erigeron bonariensis*), black mustard (*Brassica nigra*), common sow thistle (*Sonchus oleraceus*), yellowstar thistle (*Centaurea solstitialis*), California burclover (*Medicago polymorpha*), yellow sweetclover (*Melilotus indica*), radish (*Raphanus sativus*), and sea fig (*Carpobrotus edulis*). Also present were native forbs including telegraph weed (*Heterotheca californica*), horseweed (*Erigeron canadensis*), fascicled tarplant (*Deinandra fasciculata*), and deerweed (*Acmispon glaber*). Non-native annual grasses found within this association include slender wild oat (*Avena barbata*), wild oat (*Avena fatua*), ripgut (*Bromus diandrus*), softchess (*B. hordaceus*), red brome (*B. madritensis* ssp. *rubens*), Bermuda grass (*Cynodon dactylon*), and kikuyu (*Pennisetum clandestinum*). In addition, many of the ruderal areas in the northerly portion of the biological resources study area that were formerly residential development support ornamental non-native trees that were once street trees.

Ornamental

Areas within the biological resources study area that support ornamental vegetation(no CNDDB Element Code; not well described by any CDFG/CDDDB Alliance Code; no Global/State Ranking) consist mostly of roadway medians, and total 19.13 acres. Ornamental trees include, but are not limited to, Chinese elm (*Ulmus sempervirens*), southern magnolia (*Magnolia grandiflora*), silk oak (*Grevillea robusta*), American sweet gum (*Liquidambar styraciflua*), coral tree (*Erythrina caffra*), myoporum (*Myoporum laetum*), eucalyptus (*Eucalyptus* spp.), acacia (*Acacia* spp.) and ficus (*Ficus* spp.).

Developed

Developed areas within the biological resources study area occupy approximately 2,880.93 acres, and include the AOA, terminals, parking, road, and support facilities. The hardscape associated with this community, consisting of largely paved and built areas, makes it unsuitable to support vegetation. Staging Areas A, B, C, D, and G consist partially of developed areas, and Staging Areas E and F are entirely developed. Also included in this category is the Westchester Golf Course along the northerly boundary of the biological resources study area, a few areas of ornamental vegetation associated with developed areas, the Manchester Square area, which consists of a partially occupied and partially abandoned residential development with mature ornamental trees, and a construction staging area used for storage of construction equipment and materials including large soil stockpiles, located along the eastern side of Pershing Drive, south of World Way West, which have not been hydroseeded and support only non-native weedy plant species.

Disturbed/Soil Stockpiles

The Disturbed/Soil Stockpiles land use type consists of 15.49 acres of soil stockpiles within staging areas for the Bradley West Project, which was under construction at the time of vegetation mapping for this SPAS EIR. The extensive soil stockpiles have been hydroseeded with a water- and resource-conserving native seed mix for erosion control purposes and, although they are artificial features, they support sparse cover of native herbaceous species, including deerweed (*Acmispon glaber*), California poppy (*Eschscholzia californica*), bush lupine(*Lupinus chamissonis*), succulent lupine (*Lupinus succulentus*), telegraph weed (*Heterotheca californica*), bur-sage (*Ambrosia acanthicarpa*), jimsonweed (*Datura wrightii*), and giant horseweed (*Erigeron canadensis*). Non-native colonists include bristlegrass (*Setaria* sp.), filaree (*Erodium* spp.), gazania daisy (*Gazania linearis*), cocklebur (*Xanthium strumarium*), common sow thistle (*Sonchus oleraceus*), yellowstar thistle (*Centaurea solstitialis*), summer mustard (*Brassica geniculata*), acacia (*Acacia* spp.), and sea fig (*Carpobrotus edulis*).

Sensitive Plants

No federally- or state-listed threatened and endangered plant species were detected within the biological resources study area during either the fall 2011 survey effort or the previous survey efforts in support of the LAX Master Plan EIR, and none have the potential to occur due to a lack of suitable habitat.

Two sensitive plant species, Lewis' evening primrose (*Camissonia lewisii*; California RPR 3) and California spineflower (*Mucronea californica*; California RPR 4.2), were detected in the Los Angeles/El Segundo Dunes during the LAX Master Plan EIR survey effort (see **Figure 4.3-2**). One sensitive plant species, southern tarplant (*Centromadia parryi* ssp. *australis*; California RPR 1B.1) was previously detected within the AOA and in the area referred to as Continental City and proposed as SPAS Construction Staging Area G. These populations were removed as part of the Crossfield Taxiway and Bradley West projects, respectively. Southern tarplant was planted in the southwestern portion of the airport as mitigation for those impacts. One additional sensitive plant species, south coast branching phacelia (*Phaceliara mosissima* var. *austrolittoralis*; California RPR 4.2) was detected within the Los Angeles/El Segundo Dunes during general botanical surveys conducted in fall 2011. Two additional sensitive plant species may be present in the Los Angeles/El Segundo Dunes. Information about each of these sensitive plant species is provided below.

Lewis' evening primrose (*Camissonia lewisii*; California RPR 3) was previously reported to be widely distributed within the 200-acre Habitat Restoration Area, with 9,051 individuals detected throughout the Habitat Restoration Area (see **Figure 4.3-2**).[157] Additionally, approximately 300 individuals were identified at the western end of the north airfield during surveys in spring 1998, but no map exists of the exact location of the individuals. A habitat assessment for this species for the Bradley West Project conducted in November 2008 found no suitable habitat within proposed staging areas for that project, some of which coincide with proposed Staging Areas A and D for the SPAS alternatives.[158] Focused surveys conducted in spring 2009 for this species within the western end of the south airfield did not detect this species.[159] Lewis' evening primrose was not detected during the fall 2011 focused botanical surveys in the Los Angeles/El Segundo Dunes; however, the 2011 surveys were conducted outside of this species' blooming period and, since they are small herbaceous plants, they would not have been detectable at the time of the 2011 surveys. This species is assumed present at approximately the same locations previously mapped within the Los Angeles/El Segundo Dunes as it has a low dispersal capability and is not likely to have spread substantially since the 1998 surveys, and is also assumed present within the west end of the north airfield. However, updated surveys would need to be conducted during the blooming period to confirm the current extent of the populations previously detected in the Los Angeles/El Segundo Dunes and the west end of the north airfield.

California spineflower (*Mucronea californica*; California RPR 4.2) was previously reported to occur in the 200-acre Habitat Restoration Area, with a total of 572 individuals identified during summer 1998 surveys (see **Figure 4.3-2**).[160] A habitat assessment for this species for the Bradley West Project conducted in November 2008 found no suitable habitat within proposed staging areas for that project, some of which coincide with proposed Staging Areas A and D for the SPAS alternatives.[161] Focused surveys conducted

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157 Sapphos Environmental Inc., LAX Master Plan EIS/EIR, Technical Report 7, Biological Resources, Memoranda for the Record on Floral and Faunal Surveys, January 2001.

158 BonTerra Consulting, Results of Lewis' Evening-Primrose and California Spineflower Focused Surveys for the Los Angeles International Airport (LAX) Bradley West Project in the City of Los Angeles, Los Angeles County, California, November 4, 2009.

159 BonTerra Consulting, Results of Lewis' Evening-Primrose and California Spineflower Focused Surveys for the Los Angeles International Airport (LAX) Bradley West Project in the City of Los Angeles, Los Angeles County, California, November 4, 2009.

160 Sapphos Environmental Inc., LAX Master Plan EIS/EIR, Technical Report 7, Biological Resources, Memoranda for the Record on Floral and Faunal Surveys, January 2001.

161 BonTerra Consulting, Results of Lewis' Evening-Primrose and California Spineflower Focused Surveys for the Los Angeles International Airport (LAX) Bradley West Project in the City of Los Angeles, Los Angeles County, California, November 4, 2009.

in spring 2009 for this species within the western end of the south airfield did not detect this species.[162] California spineflower was not detected during focused botanical surveys in 2011; however, the 2011 surveys were conducted outside of this species' blooming period and, since they are small herbaceous plants, they would not have been detectable at the time of the 2011 surveys. This species is assumed present at approximately the same locations previously mapped within the Los Angeles/El Segundo Dunes, as it has a low dispersal capability and is not likely to have spread substantially since the 1998 surveys. However, updated surveys would need to be conducted during the blooming period to confirm the current extent of the population previously detected in the Los Angeles/El Segundo Dunes.

Southern tarplant (*Centromadia parryi* ssp. *australis*; California RPR 1B.1) was previously detected during 2008 general reconnaissance surveys for the Bradley West Project and Crossfield Taxiway Project under the LAX Master Plan in various construction sites and staging areas, including the proposed SPAS Staging Area G, an area of ruderal vegetation north of proposed Construction Staging Area G, and an area of ruderal vegetation located south of World Way West. Southern tarplant impacted by the Bradley West and Crossfield Taxiway projects were successfully mitigated through propagation in the southwestern portion of the study area near the retention basins in an otherwise ruderal area (see **Figure 4.3-2**). No SPAS project activities are expected to occur in the southern tarplant mitigation area, or any of the areas where southern tarplant was previously detected, except for proposed Construction Staging Area G. However, proposed construction staging area G has been extensively modified by removal and deposition of soils and no longer supports southern tarplant. Proposed Construction Staging Areas B, C, and D support marginally suitable habitat for southern tarplant; however, this species was not detected by focused surveys in 2011. Given the history of occurrence at LAX, it is possible that southern tarplant may occur in the future in one or more of the proposed construction staging areas or within the north airfield. (See Figure 2-15 for proposed construction staging area locations.)

South coast branching phacelia (*Phacelia ramosissima* var. *austrolitoralis*; California RPR 3) was detected at several locations within the Los Angeles/El Segundo Dunes during focused botanical surveys in fall 2011 as depicted in **Figure 4.3-2**.

Orcutt's pincushion (*Chaenactis glabriusculavar*. *orcuttiana*; California RPR 1B.1) was not detected during botanical surveys in 2011. However; surveys were conducted outside of this species' blooming period and suitable habitat is present within the Los Angeles/El Segundo Dunes. *Chaenactis glabriuscula* var. *orcuttiana* was not a valid taxon at the time of the LAX Master Plan EIR, but has since been recognized as a subspecies of *Chaenactis glabriuscula* and classified as a California RPR 1B.1 species. Given that the floral compendium for the LAX Master Plan EIR reported the presence of *Chaenactis glabriuscula*, and that *Chaenactis glabriuscula* var. *orcuttiana* and other varieties of *Chaenactis glabriuscula* are known to occur in the vicinity of LAX, it is possible that the plants previously identified as *Chaenactis glabriuscula* would now be identified as *Chaenactis glabriuscula* var. *orcuttiana*. Therefore, this species may occur within the Los Angeles/El Segundo Dunes and, for purposes of this analysis, this species is presumed to occur.

Mesa horkelia (*Horkelia cuneata* ssp. *puberula* California RPR 1B.1) was not detected during botanical surveys in 2011. However, surveys were conducted outside of this species' blooming period and suitable habitat is present within the Los Angeles/El Segundo Dunes. *Horkelia cuneata* ssp. *puberula* was not a valid taxon at the time of the LAX Master Plan EIR, but has since been recognized as a subspecies of *Horkelia cuneata* and classified as California RPR 1B.1 species. Given that the floral compendium for the LAX Master Plan EIR reported the presence of *Horkelia cuneata*, and that both *Horkelia cuneata* and *Horkelia cuneata* ssp. *puberula* are known to occur in the vicinity of LAX, it is possible that the plants previously identified as *Horkelia cuneata* would now be identified as *Horkelia cuneata* ssp. *puberula*. Therefore, this species may occur within the Los Angeles/El Segundo Dunes and, for purposes of this analysis, this species is presumed to occur.

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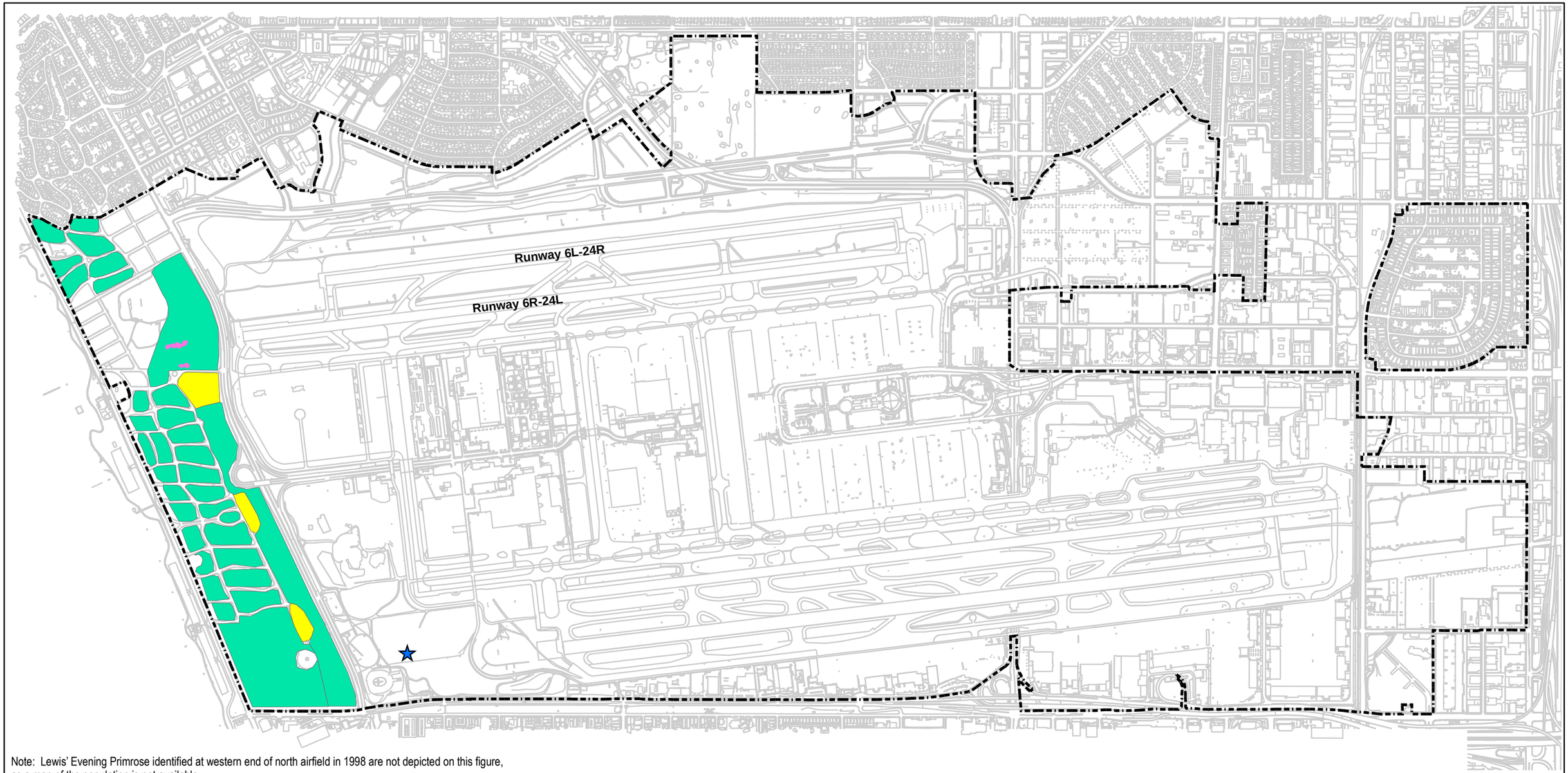
[162] BonTerra Consulting, Results of Lewis' Evening-Primrose and California Spineflower Focused Surveys for the Los Angeles International Airport (LAX) Bradley West Project in the City of Los Angeles, Los Angeles County, California, November 4, 2009.



Note: Lewis' Evening Primrose identified at western end of north airfield in 1998 are not depicted on this figure, as a map of the population is not available.

Legend

- Airport Property Line
- California Spineflower - Mapped in 1998 for Master Plan EIR
- Lewis' Evening Primrose - Mapped in 1998 for Master Plan EIR
- South Coast Branching Phacelia - Mapped in 2011 for SPAS EIR
- Southern Tarplant Mitigation Area

0 1,500 ft
scale
north

Source: Glenn Lukos Associates; Sapphos Environmental Inc, 2000; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

LAX Specific Plan Amendment Study Draft EIR	Sensitive Plant Species Locations	Figure 4.3-2

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Sensitive Wildlife

The Los Angeles/El Segundo Dunes have been identified as an ESHA pursuant to Section 30240 of the CCA, and the 1994 *Long-Term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes* identifies 151 arthropod species (including 28 species associated with coastal distribution and sandy habitats), 3 amphibian species, 15 reptile species, and 12 mammalian species that were recorded at the site. Historical surveys list approximately 70 species of birds that have been recorded at the site, and there are estimates that more than twice that number, including migratory birds, utilize the site.

Wildlife use of the airport is generally limited to common species. The only commonly observed reptile is western fence lizard (*Sceloporus occidentalis*). Bird species observed include Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), killdeer (*Charadrius vociferus*), mourning dove (*Zenaida macrourus*), rock pigeon (*Columba livia*), Anna's hummingbird (*Calypte anna*), northern flicker (*Colaptes auratus*), black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), European starling (*Sturnus vulgaris*), yellow-rumped warbler (*Setophaga coronata*), white-crowned sparrow (*Zonotrichia leucophrys*), western meadowlark (*Sturnella neglecta*), house finch (*Carpodacus mexicanus*), and house sparrow (*Passer domesticus*). Mammals, or their sign, observed within the biological resources study area include California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), and red fox (*Vulpes vulpes*). It should be noted that the AOA is subject to active control of specific hazardous wildlife species that may pose an aircraft strike risk consistent with FAA Advisory Circular 150/5200-33B regarding hazardous wildlife attractants on or near airports,[163] and the LAX Hazardous Wildlife Management Plan. The top hazardous wildlife species are gulls, waterfowl, and raptors. Hazardous wildlife are managed directly through harassment and removal techniques, and are also managed indirectly through prey management (i.e., grasshoppers and gophers) and habitat management.[164] Certain habitat features are considered major attractants of hazardous wildlife species, namely unmowed annual grasslands and water bodies such as wetlands, wastewater treatment facilities, putrescible-waste disposal operations, and dredge spoil containment areas.[165] The Argo Drainage Channel is a potential wildlife attractant that LAWA manages through a contract with the USDA-WS. USDA-WS will continue to use hazardous wildlife harassment and removal techniques on hazardous waterfowl in order to maintain airport operational safety. A complete list of plant and wildlife species detected within the biological resources study area, including those species detected during surveys for the LAX Master Plan EIR, South Airfield Improvement Project, Crossfield Taxiway Project, and Bradley West Project, can be found as an attachment to Appendix D-1, *Floral and Faunal Compendium and Sensitive Plants and Wildlife*.

There were 64 sensitive wildlife species designated by federal or state agencies or conservation groups that were considered for the biological resources study area (see Attachment 3 of Appendix D-1, *Floral and Faunal Compendium and Sensitive Plants and Wildlife*). Extensive surveys conducted between 1996 and 1998 for sensitive wildlife species identified 24 of these species within the biological resources study area. Subsequent surveys did not detect any additional sensitive species; however, wildlife species previously detected are assumed to still occur, with the exception of the San Diego fairy shrimp, spadefoot toad, and San Diego black-tailed jackrabbit, as discussed below. There is one sensitive gastropod species that is limited to the Los Angeles/El Segundo Dunes. There are eight sensitive arthropods present within the biological resources study area: five sensitive insect species and three sensitive arachnids, all of which were located within the Los Angeles/El Segundo Dunes. Several additional sensitive arthropods that were historically present at the Los Angeles/El Segundo Dunes were assumed to occur by the LAX Master Plan EIR, although not detected by focused surveys. With the exception of the El Segundo blue butterfly, sensitive arthropods and gastropods detected during surveys

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163 U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports, 2007.

164 U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Service, 2008 LAWA Wildlife Mitigation Report, January 2010.

165 U.S. Department of Transportation, Federal Aviation Administration, Wildlife Management, Available: http://wildlife-mitigation.tc.faa.gov/wildlife/wildlifemanagement.aspx, accessed February 2012.

for the LAX Master Plan EIR are not discussed further in this section, but are still assumed to occur in the Los Angeles/El Segundo Dunes, and potential impacts to sensitive arthropods and gastropods are discussed in Section 4.3.6 below. One sensitive amphibian was determined present during surveys for the LAX Master Plan EIR, the western spadefoot toad, which was known to breed in ephemeral ponds in the south airfield; however, western spadefoot toad has been extirpated[166] from the site, as discussed below. Two sensitive reptiles, the silvery legless lizard and the coast horned lizard,[167] were determined present within the Los Angeles/El Segundo Dunes (see **Figure 4.3-3**). Two sensitive bird species, the burrowing owl and the loggerhead shrike, were detected in the biological resources study area as discussed below (see **Figure 4.3-3**). The only sensitive mammal that has been detected in the biological resources study area is the San Diego black-tailed jackrabbit, which has been known to utilize the open space area located within the southwestern corner of the airfield; however, this species is likely extirpated from the site as discussed below.[168]

The El Segundo blue butterfly is a federally-listed endangered species that inhabits coastal sand dunes that support populations of its food plant, coast buckwheat (*Eriogonum parviflorum*). Historically this species ranged over the entire Los Angeles/El Segundo Dunes and the northwestern Palos Verdes Peninsula in southwestern Los Angeles County, and is currently distributed on several remnant habitat patches within its former range: Los Angeles/El Segundo Dunes, a 1.5-acre site at the oil refinery located south of the airport, a 0.5-acre site at Malaga Cove approximately 11 miles south of the airport, a few coastal bluff locations on the Palos Verdes Peninsula, and a sand dune remnant at the Ballona wetlands (now believed to be extirpated). Additionally, the species has colonized habitat restoration areas at Dockweiler State Beach, and Redondo Beach.[169] The habitat restoration area at Dockweiler State Beach is considered a second occupied site (in addition to the Habitat Restoration Area in the Los Angeles/El Segundo Dunes) within the Airport Dunes Recovery Unit for this species as set forth by USFWS in the Recovery Plan for the El Segundo blue butterfly;[170] this area is located generally west of the southern runways and immediately west of Vista del Mar within Dockweiler State Beach. All known locations are in Los Angeles County, with the exception of a recently discovered population in Santa Barbara County.[171] The Los Angeles/El Segundo Dunes population represents over 90 percent of the known population of this species. Focused surveys of the El Segundo blue butterfly at the Los Angeles/El Segundo Dunes indicated a continued decline in numbers between 1977 and 1979, with an estimated total of less than 2,000 adults. The City of Los Angeles initiated active habitat management measures for the El Segundo blue butterfly in 1987, and continues those work efforts as part of its annual operations and maintenance activities. This species was determined present within the Los Angeles/El Segundo Dunes during focused surveys performed in 1984 and 1986-2011. Beginning in 1998, the total population was estimated using a formula that takes into account the length of the flight season, the average lifespan of the species in the wild, and the total number of individuals observed. Population estimates for 1998 ranged from approximately 83,000 to 87,000 butterflies. In 2010, the population was estimated at approximately 111,000 to 116,000 individuals, and in 2011, the population was estimated at approximately 121,000 to 126,000 individuals, indicating that the population within the Habitat Restoration

166 An extirpated species is one that has ceased to exist within a chosen geographic area of study, though it still exists elsewhere.

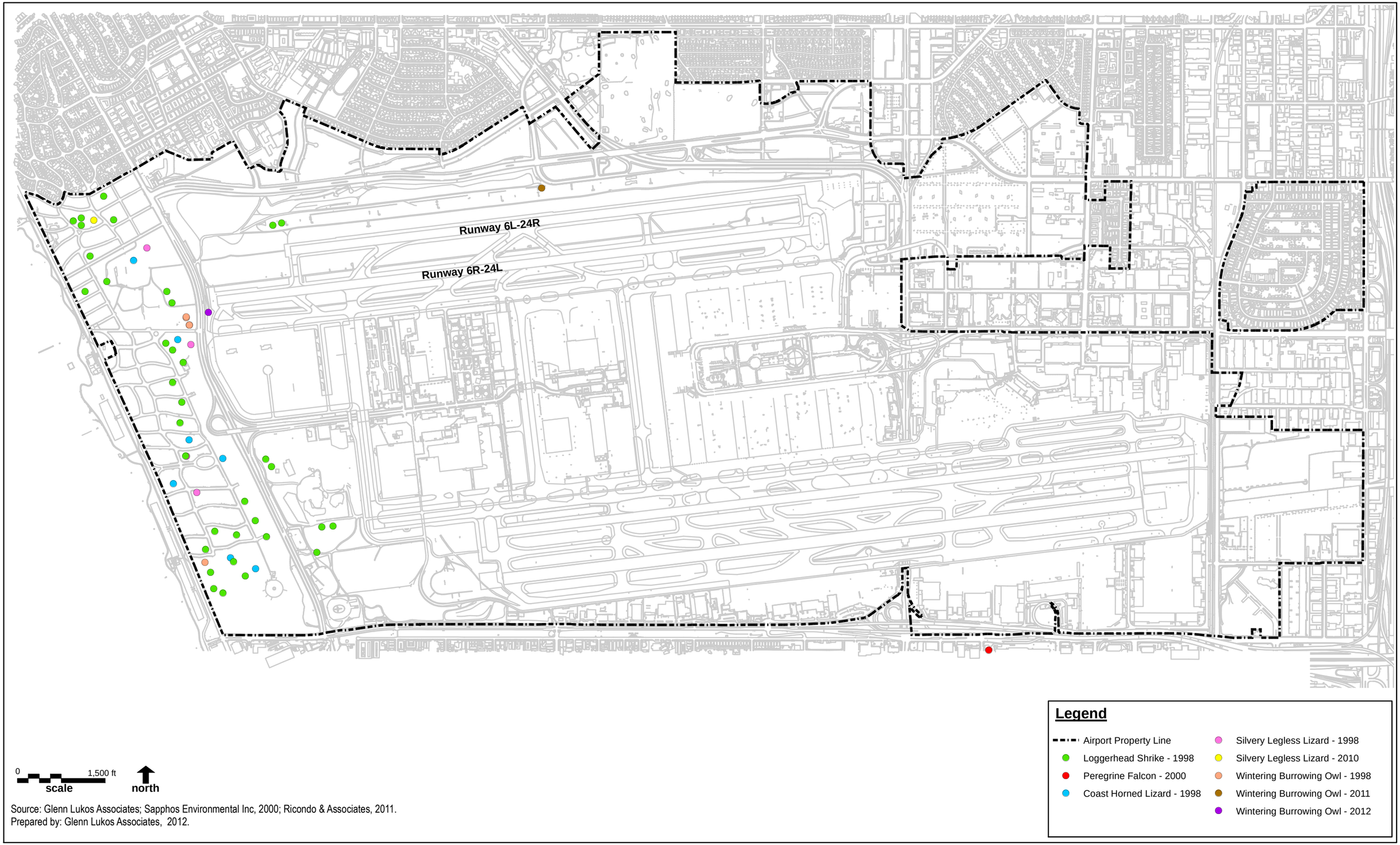
167 Coast horned lizard (*Phrynosoma blainvillii*) was formerly known as San Diego horned lizard (*Phrynosoma coronatum blainvillii*), and was referenced as such by the LAX Master Plan EIR.

168 Surveys conducted in any given study area document the presence of wildlife within that study area; it cannot be determined definitively whether a sighted species actually lives in the study area or simply utilizes the habitat for its particular resources.

169 U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, El Segundo Blue Butterfly (*Euphilotes battoides allyni*) 5 Year-Review: Summary and Evaluation, March 2008.

170 U.S. Fish and Wildlife Service, Recovery Plan for the El Segundo Blue Butterfly (*Euphilotes battoides allyni*), 1998.

171 Entomological Consulting Services Ltd., Report of El Segundo Blue Monitoring Activities in 2011 at the Los Angeles International Airport, January 2012.



Source: Glenn Lukos Associates; Sapphos Environmental Inc, 2000; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

LAX Specific Plan Amendment Study Draft EIR

Sensitive Wildlife Species Locations

Figure
4.3-3

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Area is thriving.[172] Virtually all of the butterflies have been detected in portions of the Los Angeles/El Segundo Dunes that lie to the south of the navigational aids relocation areas associated with the SPAS alternatives. In two of the past ten years, a single butterfly has been identified in the navigational aids relocation area. According to the entomologist who conducts the annual surveys, the navigational aids relocation area supports a much lower density of butterflies due to the few coast buckwheat plants that grow there and the limited numbers of flowerheads that these plants produce. However, due to the rapid pace of the survey methodology, it is possible that eggs, larvae, and pupae may go undetected on the host plants, as well as adults in that area.[173] Therefore, the area is still considered occupied by the El Segundo Blue Butterfly. See **Table 4.3-2** below, and **Figure 4.3-4**.

Table 4.3-2

Los Angeles/El Segundo Dunes El Segundo Blue Butterfly Population Figures

Year	Acreage	Block[1]	Historic Transect[2]	Estimated Population	Number of Annual Aircraft Operations
1995	200	Not Performed	1,240	Not Performed	--
1996[3]	200	2,063	1,455	7,092 to 31,000	763,866
1997	200	723	126	Not Performed	--
1998	200	4,069	2,129	83,000 to 87,000	773,569
1999	200	2,125	1,741	36,624 to 39,282	779,150
2000	200	2,933	2,104	66,650 to 69,584	783,433
2001	200	4,736	2,652	75,773 to 79,109	738,433
2002	200	2,750	1,236	51,725 to 54,002	645,424
2003	200	5,803	2,688	105,183 to 109,814	622,378
2004	200	2,645	2,123	49,617 to 51,801	655,097
2005	200	5,560	2,653	84,088 to 87,790	650,629
2006	200	7,642	3,049	136,708 to 142,727	656,842
2007	200	2,440	777	41,915 to 43,761	680,954
2008	200	4,447	2,173	64,576 to 67,419	622,506
2009	200	4,843	2,859	78,893 to 82,460	544,833
2010	200	5,675	3,898	111,562 to 116,474	575,835
2011	200	5,347	4,690	120,610 to 125,920	603,912

1 Block counts are peak numbers taken during one week of the butterfly's flight season (June 1 through September 30).
2 Historic transects represent numbers of butterflies observed along specific transect lines crossing the El Segundo Blue Butterfly Habitat Restoration Area during the entire flight season.
3 Prior to 1996, only historic transect counts were performed. Block counts were begun during the 1996 flight season. Estimated population numbers from 1998 through 2003 differ from the estimated population numbers given for the same years in the LAX Master Plan EIR due to the use of an updated population estimate methodology.

Source: Entomological Consulting Services, Ltd., Report of El Segundo Blue Butterfly Monitoring Activities in 2011 at the Los Angeles International Airport, February 2012; City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX)Proposed Master Plan Improvements, Section 4.11, April 2004; Los Angeles World Airports, Ten Year Summary of FAA Aircraft Movements, Available: http://lawa.org/welcome_LAX.aspx?id=806.

Embedded cysts of the federally-listed endangered Riverside fairy shrimp were found in soil samples taken from nine locations within the AOA located in the western portion of the LAX Master Plan project area. Despite the optimal conditions that occurred during the winter of 1997/1998 and spring 1998, the Riverside fairy shrimp was not observed in the adult phase of its life cycle within the LAX Master Plan project area during focused surveys of ephemerally wetted areas.[174] Subsequently, the top layer of soil and embedded Riverside fairy shrimp cysts were removed from the occupied ponds pursuant to two Biological Opinions issued by USFWS on April 20, 2004 and April 8, 2005 in preparation for translocation

172 Entomological Consulting Services Ltd., Report of El Segundo Blue Monitoring Activities in 2011 at the Los Angeles International Airport, January 2012.
173 Arnold, Richard, Entomological Consulting Services, Ltd., Personal Communication, April 16, 2012.
174 Sapphos Environmental Inc., LAX Master Plan EIS/EIR, Technical Report 7, Biological Resources, Memoranda for the Record on Floral and Faunal Surveys, January 2001.

to a mitigation site, and thereby, altering the hydrology such that these areas no longer support ponding for fairy shrimp.[175] During the course of biological surveys and habitat assessments for the Bradley West Project, dry season surveys were conducted in summer 2009, and wet season surveys were conducted in rainy season 2008-2009 and rainy season 2009-2010 at the site referred to as Continental City, which is the proposed Construction Staging Area G for the SPAS alternatives and, although the non-listed versatile fairy shrimp (*Branchinecta lindahli*) was detected, no Riverside fairy shrimp were detected.[176,177] Habitat assessments conducted in fall 2011 detected no new potential ephemerally ponded areas that would support this species. As such, it is assumed that Riverside fairy shrimp no longer occurs within the biological resources study area.

Western spadefoot toad (*Spea hammondii*) is endemic to Southern California and Baja California, and can be found along coastal regions inhabiting open chaparral, foothills, grasslands and, occasionally, woodlands. Western spadefoot toad was detected during spring 1996 surveys and was observed to breed in three ephemeral ponds in the south airfield of LAX. Subsequently, the hydrology of the ponds was modified when the top layer of soil and embedded Riverside fairy shrimp cysts were removed pursuant to two Biological Opinions issued by USFWS on April 20, 2004 and April 8, 2005.[178] Habitat assessments and focused surveys were conducted in spring 2009 at the location of the ponds where western spadefoot toad were previously identified; however, because of the change in hydrology, no suitable breeding habitat or western spadefoot toad at any stage of their lifecycle were identified, and none are expected to occur in the future.[179] This population was not observed during fall 2011 general wildlife surveys, and no new potential ephemeral ponds that would support this species were identified during surveys conducted in fall 2011. As such, it is assumed that western spadefoot toad has been extirpated from the biological resources study area.

Silvery legless lizard (*Anniella pulchra pulchra*) is a California SSC that occurs primarily in areas with sandy or loose organic soil, or where there is plenty of leaf litter. This species is associated with coastal sage scrub, chaparral, coastal dunes, valley/foothill grasslands, oak woodlands, and pine forests. Silvery legless lizard was detected within the Los Angeles/El Segundo Dunes during summer 1998 surveys, as depicted in **Figure 4.3-3**. In addition, in April 2010, two voucher specimens were collected in the northern dunes by the UC Berkeley Museum of Vertebrate Zoology. Silvery legless lizard was not observed during fall 2011 general wildlife surveys, and no suitable habitat was identified within the biological resources study area, except for the Los Angeles/El Segundo Dunes. This species is assumed to occur within the Los Angeles/El Segundo Dunes where it was previously detected.

Coast horned lizard (*Phrynosoma blainvillii*) is a California SSC that inhabits the coastal strip of Southern California from Ventura County south to portions of Baja California. Habitat can be characterized as arid and semi-arid regions with soil that is loose and fine. This species was previously detected within the Los Angeles/El Segundo Dunes and the area north of Sandpiper Street, but has not been observed elsewhere in the biological resources study area. This species was not observed during fall 2011 general wildlife surveys and no suitable habitat was identified except in the Los Angeles/El Segundo Dunes. This species is assumed to occur within the Los Angeles/El Segundo Dunes based on past survey results. **Figure 4.3-3** depicts the general location where this species was previously detected.

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175 Sapphos Environmental, Inc., Documentation of Salvage and Storage of Riverside Fairy Shrimp Cyst-Bearing Soil in Support of the April 20, 2004 Biological Opinion for Alternative D and the April 8, 2005 Biological Opinion for Operations and Maintenance, 2005.

176 BonTerra Consulting, Riverside Fairy Shrimp Wet Season Presence/Absence Survey Report, May 2009 (Appendix H-4 LAX Bradley West Project Draft EIR).

177 BonTerra Consulting, 90-Day Report for the Wet Season and Dry Season Presence/Absence Surveys for Vernal Pool Branchiopods Conducted on the Bradley West Project, Los Angeles County, California, June 29, 2010.

178 Sapphos Environmental, Inc., Documentation of Salvage and Storage of Riverside Fairy Shrimp Cyst-Bearing Soil in Support of the April 20, 2004 Biological Opinion for Alternative D and the April 8, 2005 Biological Opinion for Operations and Maintenance, 2005.

179 BonTerra Consulting, Western Spadefoot Presence/Absence Survey Report, May 2009 (Appendix H-3 LAX Bradley West Project Final EIR).

Note: El Segundo blue butterfly population data is not available for the Dockweiler State Beach Habitat Restoration Area at the same level of detail as the Los Angeles/El Segundo Dunes El Segundo Blue Butterfly Habitat Restoration Area; however, the Dockweiler State Beach Habitat Restoration Area was documented to be occupied by El Segundo blue butterfly in 2007

0 850 ft
Scale
north

Source: Entomological Consulting Services, Ltd. November 30, 2010; US Fish and Wildlife Service March, 2008; ESRI World Aerial 2011.
Prepared by: Glenn Lukos Associates, 2012.

Legend

- Airport Property Line
- El Segundo Blue Butterfly Observations
- Block Boundaries
- Los Angeles/El Segundo Dunes El Segundo Blue Butterfly Habitat Restoration Area Boundary
- Dockweiler State Beach Habitat Restoration Area; occupied by El Segundo Blue Butterfly

LAX Specific Plan Amendment Study Draft EIR

El Segundo Blue Butterfly 2010 Survey Results

Figure **4.3-4**

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Western burrowing owl (*Athene cunicularia*) is a California SSC when nesting and at some wintering sites. This species inhabits shortgrass prairies, grasslands, lowland scrub, agricultural lands (particularly rangelands), coastal dunes, desert floors, and some artificial, open areas as a year-long resident. It occupies abandoned ground squirrel burrows as well as artificial structures such as culverts and underpasses. Surveys conducted in 1998 for the LAX Master Plan EIR determined that this species was present as a winter resident within the Los Angeles/El Segundo Dunes and absent from the LAX airfield as a winter resident as depicted in **Figure 4.3-3**. Additionally, this species was determined not to breed within either the LAX airfield or the Los Angeles/El Segundo Dunes based on spring 1998 surveys. Focused breeding season surveys conducted in June 2009 for the Bradley West Project within the western portion of LAX, south of World Way West and just east of Pershing Drive, did not detect any burrowing owls.[180] However, as part of the mitigation for the Bradley West Project, a burrow collapse program was initiated and conducted by LAWA's USDA Wildlife Hazard Biologist to prevent owls from settling within the boundaries of the Bradley West Project construction staging area.[181,182] Additionally, burrowing owls that could present an aircraft strike hazard are either excluded from the site or trapped and relocated off-site.[183] As depicted in **Figure 4.3-3**, a single wintering burrowing owl was reported at the Argo Drainage Channel in fall 2011 by LAX personnel[184] and again on December 1, 2011 by GLA biologists Tony Bomkamp and Erin Trung. An additional observation of a single wintering burrowing owl was reported west of the western end of the northern runways by LAX personnel (Peggy Nguyen and C. Lin Wang) on February 13, 2012 (see **Figure 4.3-3**).

Loggerhead shrike (*Lanius ludovicianus*) is a California SSC when nesting that occurs in the central valley and throughout coastal southern regions. Perch sites are essential components of its habitat and are associated with open areas that have well dispersed bushes and trees. This species was determined present within the Los Angeles/El Segundo Dunes, west of the south airfield, and west of the Argo Drainage Channel during focused surveys conducted in spring 1998 as depicted in **Figure 4.3-3**. The majority of the sightings of this species were in the Los Angeles/El Segundo Dunes, and a few individuals were seen in the westerly portion of the airfield. During that same survey, three pairs of breeding loggerhead shrike were observed within the Habitat Restoration Area.[185] No loggerhead shrikes were detected in the airfield during general biological surveys in fall 2008 and spring 2009 for the Bradley West Project.[186,187] Additionally, no loggerhead shrikes were detected in the airfield or the Los Angeles/El Segundo Dunes during 2011 general wildlife surveys. However, loggerhead shrikes are occasionally seen in the parking lot adjacent to the Proud Bird restaurant near the southeast corner of the airport, and loggerhead shrikes, including juveniles, are sighted occasionally within the Los Angeles/El Segundo Dunes in the summer months by LAWA's USDA Wildlife Hazard Biologist.[188] Although no nesting activity has been observed by LAWA's USDA Wildlife Hazard Biologist, it is assumed that this species persists as a resident breeding species in the Los Angeles/El Segundo Dunes.

The American peregrine falcon is a California Fully Protected Species. This species was formerly a state- and federally-listed endangered species but has been delisted. It is a large falcon with blue-gray above, white below, and a black cap and "moustache" on the head. This species breeds throughout California in

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180 BonTerra Consulting, Results of Focused Burrowing Owl Surveys for the Tom Bradley International Terminal Reconfiguration Project in the City of Los Angeles, Los Angeles County, California, October 6, 2009.

181 BonTerra Consulting, Results of Focused Burrowing Owl Surveys for the Tom Bradley International Terminal Reconfiguration Project in the City of Los Angeles, Los Angeles County, California, October 6, 2009.

182 Pitlik, Todd, Wildlife Biologist, United States Department of Agriculture, Personal Communication, November 10, 2011.

183 Pitlik, Todd, Wildlife Biologist, United States Department of Agriculture, Personal Communication, November 10, 2011.

184 Pitlik, Todd, Wildlife Biologist, United States Department of Agriculture, Personal Communication, November 10, 2011.

185 Sapphos Environmental, Inc., LAX Master Plan EIS/EIR, Technical Report 7, Biological Resources, Memoranda for the Record on Floral and Faunal Surveys, January 2001.

186 BonTerra Consulting, Biological Constraints Survey, May 2009 (Appendix H-1 LAX Bradley West Project Draft EIR).

187 BonTerra Consulting, Results of Focused Burrowing Owl Surveys for the Tom Bradley International Terminal Reconfiguration Project in the City of Los Angeles, Los Angeles County, California, October 6, 2009.

188 Pitlik, Todd, Wildlife Biologist, United States Department of Agriculture, Personal Communication, November 10, 2011 and December 21, 2011.

woodland, forest, and coastal habitats characterized by tall cliffs, ridges, and rocky promontories.[189] Non-breeding habitat occurs in riparian, coastal, and inland wetlands. The peregrine falcon has reoccupied most of its historic breeding range in California, including the Channel Islands, the coast and Cascade ranges, and Sierra Nevada. This species was not observed during focused surveys undertaken in 1995, 1996, and 1998.[190,191,192] Peregrine falcon was observed during 2000 focused surveys flying over and at a foraging roost site in the tall buildings adjacent to LAX as depicted in **Figure 4.3-3**.[193] The American peregrine falcon was not observed within the LAX Master Plan project area during additional directed surveys undertaken in 2002 and 2003.[194] This species was not observed during general biological surveys in fall 2008 and spring 2009 for the Bradley West Project.[195,196] American peregrine falcon was also not observed during general wildlife surveys in 2011. LAX supports foraging roost sites for the American peregrine falcon, which has been observed roosting in the tall buildings and structures adjacent to LAX. However, the American peregrine falcon is not a nesting bird at LAX. Large rock dove (pigeon) populations at LAX may provide a food source for the American peregrine falcon. However, FAA guidelines for Wildlife Hazards Management include measures to control rock dove populations at LAX. For the purpose of this analysis, it is assumed that implementation of Wildlife Hazards Management according to FAA guidelines will continue. The nearest nesting American peregrine falcons to LAX are at Long Beach Harbor and along Wilshire Boulevard.[197]

San Diego black-tailed jackrabbit is a California SSC. This species occupies a variety of habitats, but is most common among shortgrass habitats. It also occurs in sage scrub, but needs open habitats. It inhabits areas where grasses are not abundant, such as deserts, areas of scattered low shrubs, and overgrazed areas. In coastal habitats, it selects grassy areas to forage in and retreats to dense shrubcover. This species does not occur within the Los Angeles/El Segundo Dunes. One individual of this species was previously found during surveys in summer 1997 in the open space area located within the southwestern corner of the airfield. San Diego black-tailed jackrabbit was not detected during construction monitoring activities for the Bradley West Project.[198,199,200,201] San Diego black-tailed jackrabbit has not been seen since 2005 surveys conducted by LAWA's USDA Wildlife Hazard

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189 Johnsgard, P. A., Hawks, Eagles, and Falcons of North America, Smithsonian Institution, 1990.

190 Sapphos Environmental, Inc., LAX Master Plan EIS/EIR, Technical Report 7, Biological Resources, Memoranda for the Record on Floral and Faunal Surveys, January 2001.

191 Sapphos Environmental, Inc., LAX Master Plan EIS/EIR, Technical Report 7, Biological Resources, Memoranda for the Record on Floral and Faunal Surveys, January 2001.

192 Sapphos Environmental, Inc., LAX Master Plan EIS/EIR, Technical Report 7, Biological Resources, Memoranda for the Record on Floral and Faunal Surveys, January 2001.

193 Sapphos Environmental, Inc., LAX Master Plan EIS/EIR, Technical Report 7, Biological Resources, Memoranda for the Record on Floral and Faunal Surveys, January 2001.

194 Sapphos Environmental, Inc., Memorandum for the Record 1049-002.M30, Results of 2002/2003 Directed Surveys for American Peregrine Falcon at LAX/El Segundo Dunes, February 13, 2003.

195 BonTerra Consulting, Biological Constraints Survey, May 2009 (Appendix H-1 LAX Bradley West Project Draft EIR).

196 BonTerra Consulting, Results of Focused Burrowing Owl Surveys for the Tom Bradley International Terminal Reconfiguration Project in the City of Los Angeles, Los Angeles County, California, October 6, 2009.

197 Sapphos Environmental, Inc., LAX Master Plan EIS/EIR, Technical Report 7, Biological Resources, Memoranda for the Record on Floral and Faunal Surveys, January 2001.

198 City of Los Angeles, Los Angeles World Airports, Airports Development Group, Bradley West Project Mitigation Monitoring and Reporting Program Record of Implementation, MM-BC (BWP)-6 Conservation of Faunal Resources: San Diego Black-Tailed Jackrabbit for February 8, 2010, prepared by Todd Pitlik, United States Department of Agriculture, Wildlife Services.

199 Pitlik, Todd, Wildlife Biologist, United States Department of Agriculture, Wildlife Services, Personal Communication, April 14, 2010.

200 City of Los Angeles, Los Angeles World Airports, Airports Development Group, Bradley West Project Mitigation Monitoring and Reporting Program Record of Implementation, MM-BC (BWP)-6 Conservation of Faunal Resources: San Diego Black-Tailed Jackrabbit for April 26, 2010 through May 7, 2010, prepared by Todd Pitlik, United States Department of Agriculture, Wildlife Services.

201 Pitlik, Todd, Wildlife Biologist, United States Department of Agriculture, Wildlife Services, Personal Communication, June 23, 2010.

Biologist.[202] San Diego black-tailed jackrabbit was also not detected during 2011 general wildlife surveys. A security fence, consisting of a solid wall several feet in height topped by fencing, installed subsequent to the September 11, 2001 terrorist attacks has excluded any movement of San Diego black-tailed jackrabbit into the site. Given the presence of the security fence, lack of detection, and hazardous wildlife management activities, this species is likely extirpated from the site.

The MBTA makes it unlawful to pursue, capture, kill, or possess or attempt to do the same to any migratory bird or part, nest, or egg of such bird listed in wildlife protection treaties between the United States and Great Britain, Mexico, Japan, and the former Soviet Union (now Russia). Migratory birds are those species that breed in latitudes different from those in which they winter. Due to its coastal location, LAX is positioned within the migratory path called the Pacific Flyway and open areas within the LAX Master Plan boundaries potentially provide habitat for migratory birds. The California Fish and Game Code provides additional protection for both resident and migratory birds under Section 3503, which makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird; Section 3503.5, which makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird; Section 3511, which prohibits the take or possession of California Fully Protected bird species; and Section 3513, which makes it unlawful to take or possess any migratory nongame bird except as provided for under the Migratory Bird Treaty Act.

Surveys for wintering birds were previously conducted within the Los Angeles/El Segundo Dunes for the LAX Master Plan EIR and detected a typical suite of urban-adapted migratory passerines and raptors as well as avian species that typically occur in larger areas of open habitat. Surveys for breeding birds of prey conducted in March 1996 in the Los Angeles/El Segundo Dunes, and in the open space areas north of the north airfield that historically support mature ornamental trees, did not detect any nesting raptors. Many of the mature trees previously surveyed were removed to allow for construction of the Bradley West Project, but mature trees remain throughout the site, including within proposed Construction Staging Areas B, C, and D.

Groundcover, shrubs, and trees throughout the biological resources study area have potential to support nesting migratory and resident birds, and limited potential for resident and migratory raptors. Mature trees throughout the biological resources study area in areas of ornamental vegetation, the proposed staging areas north of Westchester Parkway, and Manchester Square have low potential to support nesting raptors, as common raptor species typically do not utilize non-native ornamental trees for nesting, with the exception of gum trees (*Eucalyptus* spp.). No nesting raptors were detected in ornamental trees by GLA in 2011; however, surveys were conducted prior to or at the beginning of the breeding season for raptors so it is possible that nesting activity was not detected. Nesting raptors were not detected in the mature trees that formerly existed in Construction Staging Area A during surveys conducted during the breeding season prior to removal of these trees in 2010.[203]

Due to the presence of the perimeter security block wall-type fence, there is no potential for movement of terrestrial wildlife through the airport from the surrounding area, including through the Argo Drainage Channel. The Argo Drainage Channel receives nuisance flows from the airport property at the eastern end, and discharges flow into an underground pipe at the western end and, as such, there are no culverts that could be utilized by wildlife to access adjacent habitat areas. The Dunes and smaller non-contiguous parcels north of the airport are similarly surrounded by chain-link fence for security purposes, thereby precluding the movement of terrestrial wildlife. The habitat areas associated with the Dunes, and to a lesser extent the airfield, may provide "stepping stone" linkages for birds and insects during migration. However, the biological resources study area does not act as a true wildlife corridor, movement pathway, or linkage between larger habitat areas for terrestrial wildlife or establishment of wildlife corridors.

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202 Pitlik, Todd, Wildlife Biologist, United States Department of Agriculture, Personal Communication, November 10, 2011 and December 21, 2011.

203 BonTerra Consulting, Results of the Nesting Raptor Survey for the North Construction Staging Area and Contractor Employee Parking Area Project Site, Los Angeles County, California, May 3, 2010.

Jurisdictional Aquatic Features

The only jurisdictional feature within the biological resources study area is the Argo Drainage Channel (see **Figure 4.3-5**). The Argo Drainage Channel is a drainage feature that carries storm flows through the airport property and is located approximately 450 to 500 feet north of Runway 6L/24R. The feature originates near the northeast corner of the airport, immediately south of Lincoln Boulevard and east of the eastern limits of Runway 6L/24R, where a concrete outlet structure discharges storm water and nuisance water into the feature. Flows travel from east to west for a distance of approximately 9,800 feet and leave the site at a concrete inlet located approximately 300 feet beyond the western terminus of Runway 6L/24R.

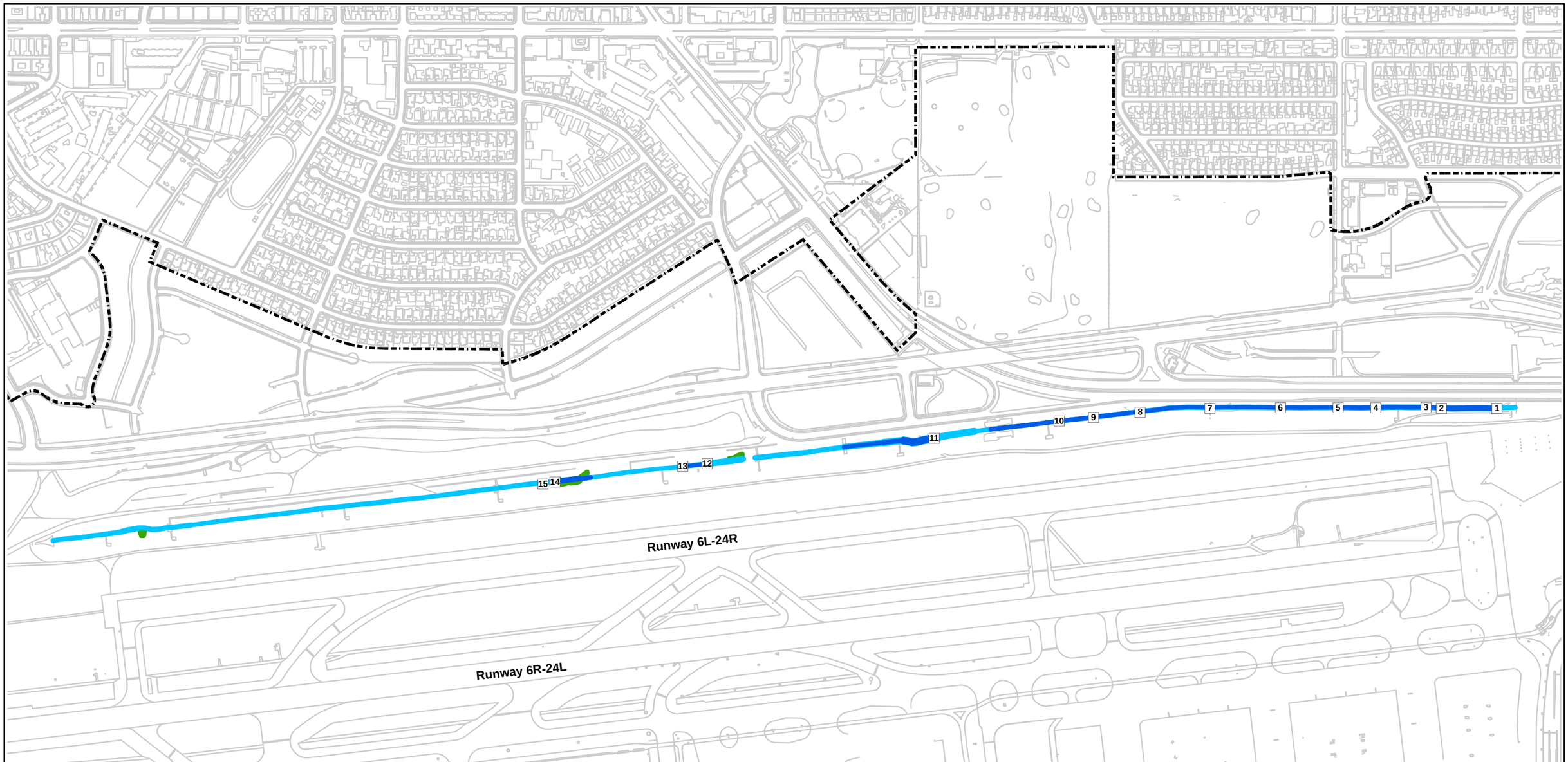
The Argo Drainage Channel varies in depth from approximately 30 to 35 feet and the slopes support upland (UPL) ruderal vegetation dominated by wild oat (*Avena fatua*, UPL), ripgut (*Bromus diandrus*, UPL), fountain grass (*Pennisetum setaceum*, UPL), deerweed (*Acmispon glaber*, UPL), wild radish (*Raphanus sativus*, UPL), Russian thistle (*Salsola tragus*, UPL), yellowstar thistle (*Centaurea solstitialis*, UPL), giant horseweed (*Erigeron canadensis*, facultative, [FAC]), telegraph weed (*Heterotheca grandiflora*, UPL), white sweet-clover (*Melilotus albus*, facultative upland [FACU]), and Spanish clover (*Lotus purshianus*, UPL).

Flows are confined to the bottom of the drainage channel, which varies in width from 12 to 43 feet. Wetlands occur within the majority of the eastern 5,900 feet of the drainage channel and are supported by a combination of storm discharge and nuisance flow. In addition to the storm-drain outlet at the eastern origin of the channel, smaller storm-drain discharge points occur at various points along the Argo Drainage Channel, with the wettest areas concentrated at the discharge points. As such, the wetlands within the Argo Drainage Channel exhibit a range of characteristics, with areas at the discharge points characterized by strong wetland indicators, which weaken with distance from areas of storm or nuisance discharge.

The wettest areas support a predominance of obligate (OBL) wetland plants such as California bulrush (*Schoenoplectus californicus*, OBL), willow smartweed (*Persicaria lapathifolium*, OBL), southern cattail (*Typha domingensis*, OBL), and pale spike-rush (*Eleocharis palustris*, OBL). These areas also exhibit strong indicators for hydric soils such as Black Histic (A3) or Hydrogen Sulfide (A4). The presence of wetland hydrology in these areas was indicted by standing water or soil saturation in the upper 12 inches.

Wetlands within the other portions of the Argo Drainage Channel support a predominance of plants ranging from OBL to FAC with willow smartweed (*Persicaria lapathifolium*, OBL) common, along with California bulrush (*Schoenoplectus californicus*, OBL), barnyard grass (*Echinochloa crus-galli*, facultative wetland [FACW]), tall umbrella sedge (*Cyperus eragrostis*, FACW), giant horseweed (*Erigeron canadensis*, FAC), and English plantain (*Plantago lanceolata*, FAC). Soils in these areas exhibit low chroma matrix with redox concentrations (Redox Dark Surface F6). Indicators for the presence of wetland hydrology included Soil Saturation (A3), Soil Surface Cracks (B6), or two or more secondary indicators such as Sediment Deposits (B2) and Drainage Patterns (B10).

Limited areas of Sandbar Willow Thicket were identified on the banks of the Argo Drainage Channel, typically immediately above some of the wetter storm drain outlets, where the presence of water is more reliable. Where it occurs on the slopes, the willow scrub is dominated by sandbar willow (*Salix exigua*, OBL).



Legend

- Airport Property Line
- USACOE Non-Wetlands Waters/CDFG Unvegetated Streambed
- USACOE Wetlands/CDFG Riparian
- CDFG Riparian Only
- 1 Data Pit Location

0 650 ft
Scale

north

Source: Glenn Lukos Associates; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

LAX Specific Plan Amendment Study Draft EIR	Jurisdictional Delineation Map	Figure 4.3-5

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At approximately 5,900 feet from the eastern origin of the drainage, the wetlands disappear as the conditions become much drier due to the absence of inlet structures discharging storm flows and nuisance flows. The channel width varies in this reach from 12 to 21 feet and the channel bottom is either unvegetated sand or vegetated with a predominance of herbaceous upland species including yellowstar thistle (*Centaurea solstitialis*, UPL), long-beaked filaree (*Erodium botrys*, UPL), ripgut (*Bromus diandrus*, UPL), wild oat (*Avena fatua*, UPL), and Italian ryegrass (*Lolium multiflorum*, UPL).

The boundaries of the waters of the United States are depicted in **Figure 4.3-5**. Areas of potential USACOE jurisdiction (i.e., areas that exhibit either an Ordinary High Water Mark [OHWM] or three criteria wetlands) total 3.78 acres of which 2.45 acres consist of non-wetland waters and 1.33 acres consist of wetlands as described above. In all cases, wetlands within the Argo Drainage Channel are confined to areas within the OHWM of the drainage.

If USACOE asserts jurisdiction over the Argo Drainage Channel, the Regional Water Quality Control Board (RWQCB) would review the project pursuant to Section 401 of the Clean Water Act as necessary for issuance of a Section 401 Water Quality Certification. Should USACOE determine that the Argo Drainage Channel is not a water of the U.S., then RWQCB may assert jurisdiction over the Argo Drainage Channel in accordance with the Porter Cologne Act. In either case, RWQCB jurisdiction would be coincident with the limits of potential USACOE jurisdiction as described above.

Areas of potential CDFG jurisdiction total approximately 3.97 acres, of which 1.52 acres consist of vegetated riparian habitat, including 1.33 acres of California Bulrush Marsh vegetation and 0.19 acre of Sandbar Willow Thicket.[204]

4.3.3.3 Existing Effects from Light, Air Quality, and Noise

As indicated in Section 4.3.2.3, the analysis of indirect effects from light emissions, air pollutant emissions, and noise is based upon the evaluation contained within the LAX Master Plan EIR,[205] which is incorporated by reference into this EIR. Baseline conditions relative to light emissions, air pollutant emissions, and noise are not markedly different from those that existed at the time of the LAX Master Plan EIR. Therefore, conclusions regarding potential impacts associated with baseline conditions at that time are considered to apply to current baseline conditions.

As indicated in the LAX Master Plan EIR, the analysis of potential adverse impacts of air pollutant emissions was based on an investigation of air emissions and deposition undertaken at LAX, as corroborated by studies at other airports, as well as studies of ambient air quality at LAX. The deposition studies determined that, in general, hydrocarbon distributions in soil, water, and ambient particles in the Los Angeles/El Segundo Dunes were not directly linked to aircraft activities at LAX, suggesting that dust and accompanying residual chemical components from airport operations deposited in the Los Angeles/El Segundo Dunes are probably not significant and/or are dissipated over large distances from the airport beyond the Los Angeles/El Segundo Dunes, becoming diluted during aerial transport. Moreover, the LAX Master Plan EIR noted that flora and fauna within the Los Angeles/El Segundo Dunes have undergone restoration efforts for many years. Concurrent monitoring efforts undertaken by LAWA have indicated that vegetation is flourishing. Likewise, annual monitoring efforts for the El Segundo blue butterfly have resulted in a general increasing trend, with near record highs counted in 2011. The LAX Master Plan EIR concluded that, based on the success of vegetation restoration efforts within the Los Angeles/El Segundo Dunes, which have been accompanied by substantial increases in populations of the El Segundo blue butterfly, flora and fauna at LAX are not adversely affected by existing air quality.[206] This is corroborated

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204 Potential areas of USACOE and CDFG jurisdiction largely overlap, although CDFG jurisdiction extends slightly farther than USACOE jurisdiction due to the Sandbar Willow Thicket canopy.

205 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, April 2004.

206 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, April 2004, pp. 4-882 and 4-883.

by **Table 4.3-2**, which shows that El Segundo blue butterfly populations do not correspond to annual aircraft operations.

Sources of lighting in the Los Angeles/El Segundo Dunes are limited to light from navigational aids, security lighting for two small buildings, and spillover lighting from Vista del Mar and Pershing Drive, the majority of which is minimal. The navigational approach lighting systems in the Los Angeles/El Segundo Dunes are only used under two conditions: after midnight when planes approach from the west, and during Santa Ana wind conditions, when planes land from the west. Lighting settings range from 1 to 5. Typically, lights are set at 3, and are only set at 5 under foggy conditions. All security lights are on motion detection settings and are not on when motion stops. The analysis of lighting conditions within the Habitat Restoration Area conducted as part of the LAX Master Plan EIR measured illuminance values (the light energy incident at a given point in foot-candles or *fc*) that ranged from 0.004 to 0.26 *fc*. As a point of reference, illumination associated with natural conditions ranges from 0.004 *fc* on a moonless night, to 25.0 *fc* at dawn, and 125.0 *fc* during a bright day.

An increase in light emissions could result in potential impacts to biotic communities, including sensitive faunal species. An increase in light emissions would result in impacts to fauna that are nocturnal (active at night) or crepuscular (active at dusk and dawn). The following species known or with potential to occur within the biological resources study area are nocturnal or crepuscular: the El Segundo Jerusalem cricket, the El Segundo sun spider, the trapdoor spider, the dunes scarab beetle, and sensitive moth species, the silvery legless lizard, and the burrowing owl. An increase in light emissions would not have significant adverse effects on sensitive diurnal species that occur within the biological resources study area, including Trask's snail, Belkin's dunefly, Monarch butterfly, the globose dune beetle, the south coast dune beetle, the El Segundo crab spider, the Coast horned lizard (formerly the San Diego horned lizard)), or the loggerhead shrike. Specific analysis of research related to the El Segundo blue butterfly was presented in the LAX Master Plan EIR. Butterflies are diurnal species and, in general, do not exhibit flight-to-light behavior. Therefore, impacts from light emissions on the El Segundo blue butterfly are not considered further in this analysis.

Based on the levels of light within the Los Angeles/El Segundo Dunes under then-existing conditions, and the presence of sensitive species within the area, the LAX Master Plan EIR analysis concluded that existing lighting does not adversely affect sensitive species at LAX.[207]

Potential impacts from then-existing noise levels were analyzed in the LAX Master Plan EIR in detail by examining maximum noise levels and the duration for which each site at grid points located in areas occupied by sensitive species would be exposed to noise above various decibel levels. The noise level at which sensitive fauna were expected to be disturbed, based on available literature, was determined to be 95 decibels for species including the silvery legless lizard, coast horned lizard, and black-tailed jackrabbit. Thresholds of noise level disturbance have not been determined for other sensitive species located in the Los Angeles/El Segundo Dunes, including loggerhead shrike, burrowing owl, and sensitive arthropods and gastropods; conclusions regarding potential noise disturbance to these species would be speculative.[208] However, maximum noise levels within the Los Angeles/El Segundo Dunes as evaluated in the LAX Master Plan EIR were found to exceed the 95 decibel threshold; nevertheless, as sensitive species resided at LAX at that time, including at locations subject to these high noise levels, it was determined that existing noise conditions do not adversely affect sensitive species at LAX.[209]

Similar to the LAX Master Plan EIR, the updated analysis of noise levels conducted for the SPAS alternatives uses a grid point analysis and compares the 2009 baseline instantaneous maximum noise level (L_{max}) with projected conditions at full buildout of each of the SPAS Alternatives in 2025. Refer to

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207 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, April 2004, pp. 4-884 and 4-885.

208 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, April 2004, p. 4-853.

209 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, April 2004, pp. 4-887 and 4-888.

Figure 4.10-1-2 in Section 4.10.1, *Aircraft Noise*, and Table 2 in Appendix J1-2, *Grid Point Noise Levels*, for the results of the grid point analysis. Of the three grid points located within or on the edge of the Los Angeles/El Segundo Dunes (RG27, RG28, and RG37), all experience L_{max} levels greater than 95 decibels under baseline conditions. Thus, as was concluded for the LAX Master Plan EIR, the sensitive species that occur within the Dunes are habituated to noise above the 95 decibel threshold.

4.3.4 Thresholds of Significance

Significant impacts to biological resources, including endangered, rare, or threatened species of flora and fauna, would occur if direct and indirect changes in the environment, which may be caused by the particular SPAS alternative, result in one or more of the following future conditions:

- A substantial reduction in federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances, including a substantial reduction in the Los Angeles/El Segundo Dunes, including the Habitat Restoration Area (designated as such by City of Los Angeles Ordinance 167,940 and the Los Angeles Airport/El Segundo Dunes Specific Plan).
- A conflict with the provisions of an adopted HCP, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plans.
- Interference with habitat (e.g., from the introduction of noise, light) such that normal species behaviors are disturbed to a degree that results in substantial adverse impacts to sensitive species.
- A substantial adverse effect, through the loss of individuals or the reduction of existing habitat, on a state- or federally-listed endangered, threatened, rare, protected, or candidate species; sensitive or special status species in local or regional plans, policies or regulations; species that meet the criteria for endangered, rare or threatened under State CEQA Guidelines Section 15380(b); or a SSC.
- The substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species or a substantial reduction in a locally-designated natural habitat or plant community.
- Substantial interference with wildlife movement/migration corridors.
- Substantial interference with nesting during the breeding season (March 15 to August 15) for any avian species afforded protection under MBTA or Fish and Game Code Sections 3503 or 3503.5.
- Conflict with any local policies or ordinances protecting biological resources, such as the City of Los Angeles Protected Tree Ordinance.

These thresholds were adapted from criteria and guidance contained in the L.A. CEQA Thresholds Guide, the California Fish and Game Code, the CCA, the MBTA and the State CEQA Guidelines.

An evaluation of whether or not an impact on biological resources would qualify as significant must consider both the resource itself and how that resource fits into a regional context. The criteria for determining significance of impacts are based on the importance of the resource, the proximity of the resource to the project site, the proportion of the resource that would be affected locally and regionally, the sensitivity of the resource to the type of impact being considered, and the extent and degree of the proposed impact.

With respect to wetlands, a significant impact would occur if direct and indirect changes in the environment, which might be caused by the particular SPAS alternative, could result in one or more of the following future conditions:

- A substantial alteration of the flow, bed, channel, or bank of rivers, streams, or lakes as defined in Section 1600 of the State Fish and Game Code.
- A substantial adverse effect on federally-protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruptions, or other means.

- A substantial adverse effect on state-protected wetlands and waters as defined by the State Water Resources Control Board pursuant to the Porter-Cologne Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruptions, or other means.
- A substantial adverse effect on an existing wetland habitat as defined by California Public Resources Code Section 30121, or as classified under the Cowardin system by USFWS or CDFG.

The above thresholds are utilized in criteria established in Section 404 of the Clean Water Act, the National Wetlands Inventory, Section 1600 of the State Fish and Game Code, the CCA, the L.A. CEQA Thresholds Guide, and the State CEQA Guidelines, including Appendix G. An evaluation of whether or not an impact on wetlands would be significant must consider both the wetland resource and how it fits into a regional context. The criteria for determining the significance of impacts are based on the importance of the wetland area, the proximity of the area to the project site, the proportion of the area that would be affected, the sensitivity of the area to the type of impact being considered, and the extent and degree of the proposed impact.

4.3.5 Applicable LAX Master Plan Commitments and Mitigation Measures

As part of the LAX Master Plan, LAWA adopted a number of mitigation measures pertaining to biotic communities (denoted with "BC") and endangered and threatened species (denoted with "ET") in the Alternative D Mitigation Monitoring and Reporting Program (MMRP). The mitigation measures listed below are relevant to the analysis of biological resources associated with the SPAS alternatives.

- **MM-BC-1. Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area.**

  LAWA or its designee shall take all necessary steps to ensure that the state-designated sensitive habitats within and adjacent to the Habitat Restoration Area are conserved and protected during construction, operation, and maintenance. These steps shall, at a minimum, include the following:

  Implementation of construction avoidance measures in areas where construction or staging are adjacent to the Habitat Restoration Area. Prior to the initiation of construction of LAX Master Plan components to be located adjacent to the Habitat Restoration Area, LAWA or its designee shall conduct a pre-construction evaluation to identify and flag specific areas of state-designated sensitive habitats located within 100 feet of construction areas. Subsequent to the pre-construction evaluation, LAWA or its designee shall conduct a pre-construction meeting and provide written construction avoidance measures to be implemented in areas adjacent to state-designated sensitive habitats. Construction avoidance measures include erecting a 10-foot-high tarped chain-link fence where the construction or staging area is adjacent to state-designated sensitive habitats to reduce the transport of fugitive dust particles related to construction activities. Soil stabilization, watering or other dust control measures, as feasible and appropriate, shall be implemented to reduce fugitive dust emissions during construction activities within 2,000 feet of the El Segundo Blue Butterfly Habitat Restoration Area, with a goal to reduce fugitive dust emissions by 90 to 95 percent. In addition, to the extent feasible, no grading or stockpiling for construction activities should take place within 100 feet of a state designated sensitive habitat. LAWA or its designee shall incorporate provisions for the identification of additional construction avoidance measures to be implemented adjacent to state-designated sensitive areas. All construction avoidance measures that address Best Management Practices shall be clearly stated within construction bid documents. In addition, LAWA shall include a provision in all construction bid documents requiring the presence of a qualified environmental monitor. Construction drawings shall indicate vegetated areas within the Habitat Restoration Area as "Off-Limits Zone."

  Ongoing maintenance and management efforts for the El Segundo Blue Butterfly Habitat Restoration Area. LAWA or its designee shall ensure that maintenance and management efforts prescribed in the

Habitat Management Plan (HMP) for the Habitat Restoration Area shall continue to be carried out as prescribed.

- **MM-BC-2. Conservation of Floral Resources: Lewis' Evening Primrose.**

  LAWA or its designee shall prepare and implement a plan to compensate for the loss of individuals of the sensitive Lewis' evening primrose, currently located at the westerly end of the north runway and within the Habitat Restoration Area. LAWA or its designee shall collect seed from those plants to be removed, and properly clean and store the collected seed until used. If possible, seeds shall be collected in multiple years to ensure an adequate seed supply for planting. A mitigation site of suitable habitat equal to the area of impact shall be delineated within areas of the Los Angeles/El Segundo Dunes as described in MM-BC-13. Collected seed shall be broadcast (distributed) after the first wetting rain. LAWA or its designee shall implement a monitoring plan to monitor the establishment of individuals of Lewis' evening primrose for a period of not more than five years. Performance criteria shall include the establishment of an equal number of plants as that impacted in the first year following the distribution of seed within the mitigation site. Performance criteria shall also include confirmation of recruitment for two years following the first year flowering is observed and establishment of individuals throughout the mitigation area within three years following the first year flowering is observed. Monitoring shall be undertaken in the manner set forth in MM-BC-8.

- **MM-BC-3. Conservation of Floral Resources: Mature Tree Replacement.**

  LAWA or its designee shall prepare and implement a plan to compensate at a ratio of 2:1 for the loss of approximately 300 mature trees, which would occur as a result of implementation of the LAX Northside/Westchester Southside project. The plan shall include provisions to census and map all mature trees with a diameter of at least 8 inches at breast height, which may be removed due to implementation of the Westchester Southside Plan. This information shall be gathered prior to initiation of construction. The plan shall include a program by which replacement (at a ratio of 2:1) of all impacted mature trees shall be included in plans prepared for landscape treatments within the Master Plan boundaries, which would then be implemented by LAWA. The species of newly planted replacement trees shall be local native tree species to the extent feasible. Each mitigation tree shall be at least a 15-gallon or larger specimen.

- **MM-BC-8. Replacement of Habitat Units.**

  LAWA or its designee shall undertake mitigation for the loss of habitat units resulting from implementation of Alternative D. Implementation of Alternative D would result in the loss of 45.43 habitat units. These habitat units shall be replaced at a 1:1 ratio within the Los Angeles/El Segundo Dunes.[210] Opportunities for compensation for the loss of 45.43 habitat units include 13.52 habitat units (16.9 acres x 0.8 Habitat Value) from restoration of Non-Native Grassland/Ruderal habitat to a Valley Needlegrass Grassland; 14.4 habitat units from removal and restoration of 50 percent of the existing roadways to Southern Foredune (36.11 acres of streets within the Los Angeles/El Segundo Dunes x 0.5 x 0.8 Habitat Value); and 59.68 habitat units from restoration of Disturbed Dune Scrub/Foredune to Southern Foredune (74.6 acres x 0.8 Habitat Value). A habitat value of 0.8 is considered to be the maximum feasible target value for restoration and enhancement of biotic communities. The restoration and enhancement of biotic communities as related to the establishment or enhancement of wildlife habitat shall consider and comply with the provisions of FAA Advisory Circular 150/5200-33 regarding hazardous wildlife attractants on or near airports. Additionally, such restoration and enhancement shall take into account, as appropriate, the Memorandum of Agreement between FAA and other federal agencies, including the US Fish and Wildlife Service, pertaining to environmental conditions that could contribute to aircraft-wildlife strikes.

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[210] Subsequent to the approval of the LAX Master Plan, as part of the South Airfield Improvement Project, LAWA entered into an agreement with the Palos Verdes Peninsula Land Conservancy for implementation of a 21-acre restoration plan for the Three Sisters Reserve in partial compliance with MM-BC-8.

Valley Needlegrass Grassland restoration efforts consist of site preparation, propagation and planting of species characteristic of the Valley Needlegrass Grassland community at the Los Angeles/El Segundo Dunes, and maintenance and monitoring of the restoration site. The species to be planted include native perennials as described in the Long-Term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes. The characteristic species include nodding needlegrass (*Nassella cernua*): 1,500 plants/habitat unit; white everlasting (*Gnaphalium microcephalum*): 40 plants/habitat unit; doveweed (*Eremocarpus setigerus*): 40 plants/habitat unit; California croton (*Croton californicus*): 45 plants/habitat unit; and dune primrose (*Camissonia chieranthifolia*): 70 plants/habitat unit. Site preparation includes physical demarcation of the site, mapping of the restoration site onto a one inch equals 40 feet aerial photograph, and removal of all non-native species (weed abatement). Removal of non-native herbaceous species shall take place by mowing prior to seed set, raking to remove cut material, and hand-pulling the remainder. Removal of non-native shrubs shall be undertaken by cutting and daubing with herbicide. Propagation and planting of nodding needlegrass shall be accomplished by propagation from seed collected on-site during late spring/early summer. Seed shall be properly cleaned, dried, and stored until used. In late summer, nodding needlegrass seed shall be propagated at an on-site nursery in two-inch thimble pots and properly maintained. Nodding needlegrass shall be planted at a rate of 1,500 plants per habitat unit within Non-Native Grassland/Ruderal community, within the Los Angeles/El Segundo Dunes, which has undergone site preparation as described above. Planting shall take place in the fall or after the first welling rain. Maintenance of restoration plantings shall consist of adequate irrigation and weed abatement. Given the irregularity of rainfall in Southern California, supplemental irrigation shall be provided for two years to ensure the successful establishment of mitigation plantings. Irrigation of the site shall be adjusted to adequately provide for the establishment of the out-plantings. Weed abatement shall take place on a quarterly basis for a period of five years. Monitoring shall be undertaken on a quarterly basis for the first three years following planting, and twice a year thereafter. Monitoring shall consist of qualitative and quantitative monitoring; quantitative monitoring shall take place once a year. Performance criteria to be met include the attainment of at least a 10 percent cover of native cover in the first year and 20, 30, 40 and 45 percent cover of native species over a five-year period as determined by the point-intercept transect method (the CDFG has adopted a 10 percent threshold of native cover as its criteria for significance of native grasslands). This plan assumes the performance criteria outlined below shall be met. If monitoring discerns any failure in performance goals, remedial plantings shall be undertaken. Habitat restoration shall be conducted by a qualified habitat restoration specialist.

Southern Foredune restoration efforts consist of site preparation, propagation, and planting of the species characteristic of the Southern Foredune community at the Los Angeles/El Segundo Dunes, and maintenance and monitoring of the restoration site. The species to be planted include primary and secondary perennial plants as described in the Long-Term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes. Site preparation, propagation and planting, and maintenance and monitoring shall take place as described above. Performance criteria to be met include the attainment of 10, 20, 30, 40, and 45 percent cover of native species over a five-year period as determined by the point intercept method. The Long-Term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes assumes the performance criteria stated above shall be met. If monitoring discerns any failure in performance goals, remedial plantings shall be undertaken. Habitat restoration shall be conducted by a qualified habitat restoration specialist.

Any combination of habitat replacement completed by LAWA or its designee drawn from the opportunities listed under Alternative D that equals at least 45.43 habitat units shall be considered sufficient replacement for loss of habitat units resulting from implementation of Alternative D.

- **MM-BC-9. Conservation of Faunal Resources.**

LAWA or its designee shall develop and implement a relocation and monitoring plan to compensate for the loss of 1.34 habitat units (0.3 habitat units + 1.04 habitat units) of occupied western spadefoot toad habitat and for the loss of western spadefoot toad individuals currently in the southwestern

portion of the AOA. LAWA or its designee shall identify possible relocation sites in consultation with the CDFG and USFWS and shall develop and implement a monitoring plan to monitor the success of the relocated tadpoles for a period of not more than five years. LAWA or its designee shall relocate the western spadefoot toad population currently inhabiting three locations on the AOA. One potential site is the Madrona Marsh Nature Center in Torrance, 20 miles south of LAX, which supports several vernal pools and one large pond capable of supporting western spadefoot toads. Spadefoot toad experts suggest the best approach to accomplish relocation is to transport tadpoles and metamorphs only, as adults return to their birth site. Site preparation shall include confirmation by a permitted biologist that no predators, such as mosquitofish or bullfrogs, are present within the proposed relocation site or in waterways surrounding the relocation site. The CDFG has suggested that if the first relocation effort is not successful, another attempt should be made the following year. Therefore, western spadefoot toads shall be collected two consecutive years prior to construction activities taking place in existing occupied spadefoot toad habitat. In addition, since the western spadefoot toad is known to become reproductively mature within three years, an additional performance criterion shall be the identification of tadpoles at the relocation site between years three and four. The success criteria should be 50 percent survival of all tadpoles and metamorphs for the first, second, and third years following the last relocation. This shall be accomplished through a five-year monitoring plan, with bi-monthly monitoring between January 31 and June 1, to document the success of this relocation effort.

LAWA or its designee shall develop and implement a relocation and monitoring plan to compensate for the loss of 2.38 habitat units of occupied San Diego black-tailed jackrabbit habitat located within the AOA. LAWA or its designee shall relocate the San Diego black-tailed jackrabbit population currently inhabiting the AOA. Relocation efforts shall be coordinated with CDFG. The San Diego black-tailed jackrabbit shall be captured on the AOA using live traps and shall be released into the Habitat Restoration Area. Compensation for the loss of 2.38 habitat units shall be the utilization of at least 2.38 habitat units within the Los Angeles/El Segundo Dunes by the San Diego black-tailed jackrabbit individuals relocated to the site. Black-tailed jackrabbit is currently absent for the Los Angeles/El Segundo Dunes. Opportunities for compensation for the loss of 2.38 habitat units include 13.52 habitat units from restoration of Non-Native Grassland/Ruderal habitat to a Valley Needlegrass Grassland; 14.4 habitat units from removal and restoration of 50 percent of the existing roadways to Southern Foredune; and 59.68 habitat units from restoration of Disturbed Dune Scrub/Foredune to Southern Foredune. LAWA or its designee shall implement a monitoring plan to monitor the success of the relocated individuals for a period of not more than five years. Performance criteria shall include confirmed success of survival for three years of the San Diego black-tailed jackrabbit within the Habitat Restoration Area. This shall be accomplished through a quarterly monitoring plan to document the success or failure of this relocation effort.

LAWA or its designee shall compensate for the loss of areas utilized by loggerhead shrike currently located on the western airfield and composed of 10.83 habitat units (equivalent to 83.25 acres). Compensation for the loss of 10.83 habitat units of habitat utilized by the loggerhead shrike shall be the utilization of at least 10.83 habitat units within the Los Angeles/El Segundo Dunes. Opportunities for compensation for the loss of 10.83 habitat units include 13.52 habitat units from restoration of Non-Native Grassland/Ruderal habitat to a Valley Needlegrass Grassland; 14.4 habitat units from removal and restoration of 50 percent of the existing roadways to Southern Foredune; and 59.68 habitat units from restoration of Disturbed Dune Scrub/Foredune to Southern Foredune. Compensation for the loss of at least 10.83 habitat units shall take place prior to construction. LAWA or its designee shall implement a monitoring program for a period of not more than five years. Performance criteria shall include the use of at least 10.83 habitat units of improved habitat by the loggerhead shrike for foraging and nesting. Monitoring shall take place quarterly for the first three years and biannually thereafter. Monitoring shall be timed appropriately to include monitoring during the breeding period, which is between February and June.

As a means of minimizing incidental take of active nests of loggerhead shrike, LAWA, or its designee shall have all areas to be graded surveyed by a qualified biologist at least 14 days before construction

activities begin to ensure maximum avoidance to active nests for loggerhead shrike. Construction avoidance measures shall include flagging of all active nests for loggerhead shrike and a 300 feet wide buffer area shall be designated around the active nests. A biological monitor shall be present to ensure that the buffer area is not infringed upon during the active nesting season, March 15 to August 15. In addition, LAWA or its designee shall require that vegetation clearing within the designated 300 feet buffer be undertaken after August 15 and before March 15.

LAWA or its designee shall conduct pre-construction surveys to determine the presence of individuals of sensitive arthropod species, the silvery legless lizard, the San Diego horned lizard, and the burrowing owl within the proposed area of impact within the Los Angeles/El Segundo Dunes. Surveys will be conducted at the optimum time to observe these species. Should an individual be observed, they will be relocated to suitable habitat for that species within the Habitat Restoration Area. Prior to construction, LAWA or its designee shall develop and implement a relocation plan to avoid the potential loss of individuals from the installation of navigational aids and associated service roads. Relocation efforts shall be undertaken by a qualified biologist, in coordination with CDFG.

- **MM-BC-13. Replacement of State-Designated Sensitive Habitats.**

LAWA or its designee shall undertake mitigation for the loss of State-designated sensitive habitat within the Los Angeles/El Segundo Dunes, including the Habitat Restoration Area. Installation of navigational aids and associated service roads under Alternative D would result in impacts to 66,675 square feet (1.53 acres) of State-designated sensitive habitat within the Los Angeles/El Segundo Dunes, including 33,334 square feet (0.77 acre) within the Habitat Restoration Area (of which 10,597 square feet (0.24 acre) are within habitat occupied by the El Segundo blue butterfly. These square feet shall be replaced at a no net loss ratio of 1:1 ratio within the Los Angeles/El Segundo Dunes. The replacement of 66,675 square feet (1.53 acres) of State-designated sensitive habitat shall be undertaken through restoration of 66,675 square feet (1.53 acres). Opportunities for restoration include: 16.9 acres of Non-Native Grassland/Ruderal habitat to a Valley Needlegrass Grassland; 36.11 acres from removal and restoration of 50 percent of the existing roadways to Southern Foredune; and 74.6 acres of Disturbed Dune Scrub/Foredune to Southern Foredune. The restoration and enhancement of biotic communities as related to the establishment or enhancement of wildlife habitat shall consider and comply with the provisions of the FAA Advisory Circular 150/5200-33 regarding hazardous wildlife attractants on or near airports. Additionally, such restoration and enhancement shall take into account, as appropriate, the Memorandum of Agreement between the FAA and other federal agencies, including the USFWS, pertaining to environmental conditions that could contribute to aircraft-wildlife strikes.

Valley Needlegrass Grassland restoration efforts consist of site preparation, propagation and planting of Valley Needlegrass Grassland species, and maintenance and monitoring of the restoration site as described in Mitigation Measure MM-BC-8, Replacement of Habitat Units.

Southern Foredune restoration efforts consist of site preparation, propagation, and planting of the species characteristic of the Southern Foredune community at the Los Angeles/El Segundo Dunes, and maintenance and monitoring of the restoration site as described in Mitigation Measure MM-BC-8, Replacement of Habitat Units.

Replacement of the 10,597 square feet (0.24 acre) of habitat occupied by the El Segundo blue butterfly shall be undertaken as described in Mitigation Measure MM-ET-4, El Segundo Blue Butterfly Conservation: Habitat Restoration.

- **MM-ET-3. El Segundo Blue Butterfly Conservation: Dust Control.**

To reduce the transport of fugitive dust particles related to construction activities, soil stabilization, watering or other dust control measures, as feasible and appropriate, shall be implemented with a goal to reduce fugitive dust emissions by 90 to 95 percent during construction activities within 2,000 feet of the El Segundo Blue Butterfly Habitat Restoration Area. In addition, to the extent feasible, no

grading or stockpiling for construction activities should take place within 100 feet of occupied habitat of the El Segundo blue butterfly.

- **MM-ET-4. El Segundo Blue Butterfly Conservation: Habitat Restoration.**

  LAWA or its designee shall take all necessary steps to avoid the flight season of the El Segundo blue butterfly (June 14 - September 30) when undertaking installation of navigational aids and associated service roads proposed under Master Plan Alternative D within habitat occupied by the El Segundo blue butterfly. Installation of navigational aids within the Habitat Restoration Area should be required to take place between October 1st and May 31st. In conformance with the Biological Opinion, activities associated with navigational aids development shall be limited to the existing roads and proposed impacts areas as depicted in the Final EIS/EIR. Coast buckwheat shall be planted a minimum of three years prior to the impact, not only to allow for establishment of the plants, but also to ensure that the plants are mature enough to bloom. The plantings of coast buckwheat shall be located within the southwest corner of subsite 23 of the Habitat Restoration Area, as depicted in Figure F5-5, and shall encompass 1.25 acres in conformance with the Biological Opinion. Coast buckwheat plants will be planted at an initial density of 200 plants per acre to ensure the long-term planting density target (130 plants per acre). Coast buckwheat plants will be placed in clusters or groupings based on microtopographic features present within subsite 23 to better support the El Segundo blue butterfly, which is known to prefer large clusters of plants for nectaring and shelter. As possible, depending on the location and condition of individual plants, FAA and LAWA shall salvage existing coast buckwheat plants and any larvae on the plant or pupae in the soil below the plant that would be removed to accommodate the replacement navigational aids to further conserve this species. These plants shall be salvaged immediately prior to the installation of the replacement navigational aids outside of the butterfly flight season. These salvaged plants shall be transported in a suitable container and replanted after the onset of winter rains in subsite 23 near the restored area as described in MM-BC-13, Replacement of State-Designated Sensitive Habitats. This area shall be the designated mitigation site for planting coast buckwheat and the site to which El Segundo blue butterfly pupae shall be relocated. Gathering of coast buckwheat seed shall take place from September 15 through June 1. Propagation and planting methodologies successfully employed by LAWA during 1984 through 1994 restoration efforts shall be employed for propagation of additional coast buckwheat plants. An existing irrigation system proximal to subsite 23 will be used to increase the success of the restoration effort. Prior to navigational aid installation, a permitted and qualified biologist shall salvage El Segundo blue butterfly larvae in coordination with the USFWS in order to minimize impacts to the butterfly. Based on LAWA's restoration experience within the Habitat Restoration Area, occupation of restored habitat can occur within two to three years of restoration efforts. Therefore, there would be no net loss in acres or value of occupied habitat. Additionally, after the navigational aid system is in place and during the first subsequent flight season of the El Segundo blue butterfly, LAWA shall document El Segundo blue butterfly behavior with respect to the lighting system and submit a monitoring report to USFWS.

  Lastly, LAWA shall coordinate with the USFWS to create educational materials on the El Segundo blue butterfly for integration into LAWA's public outreach program.

4.3.6 Impacts Analysis

4.3.6.1 Alternative 1

Habitats/Vegetation Associations

The analysis of impacts to habitats and vegetation associations is presented in two parts. The first part addresses impacts associated with development of the north airfield--including the relocation of Runway 6L/24R and associated high-speed taxiway exits, the construction of a centerfield taxiway, the reconstruction of the western portion of Taxiway E and the westerly extension of Taxilane D, and the structural covering of the Argo Drainage Channel--as well as the use of construction staging areas around the perimeter of the airport. Also considered in the analysis are the roadway modifications,

terminal/concourse modifications, Intermodal Transportation Facility (ITF), dedicated busway, and parking area on the eastern side of the airport; however, as these facilities would occur in areas that are currently either developed or highly disturbed on the east side of the airport and well-removed from sensitive biological resources, these improvements are not discussed further in this section, with the exception of vegetation in developed areas that may support nesting birds. The second part addresses impacts specifically associated with the relocation of navigational aids. The analysis of navigational aids considers impacts associated with new light standards and foundations. At this level of planning, the location of construction staging areas and temporary access roads associated with the relocation of the navigational aids, and potential permanent service roads for navigational aids, have not yet been determined. However, as discussed in Section 4.3.2, *Methodology*, the extent of the new permanent service roads has been estimated based on plans generated for the LAX Master Plan EIR (Alternative D), and impacts based on these estimates are considered herein.

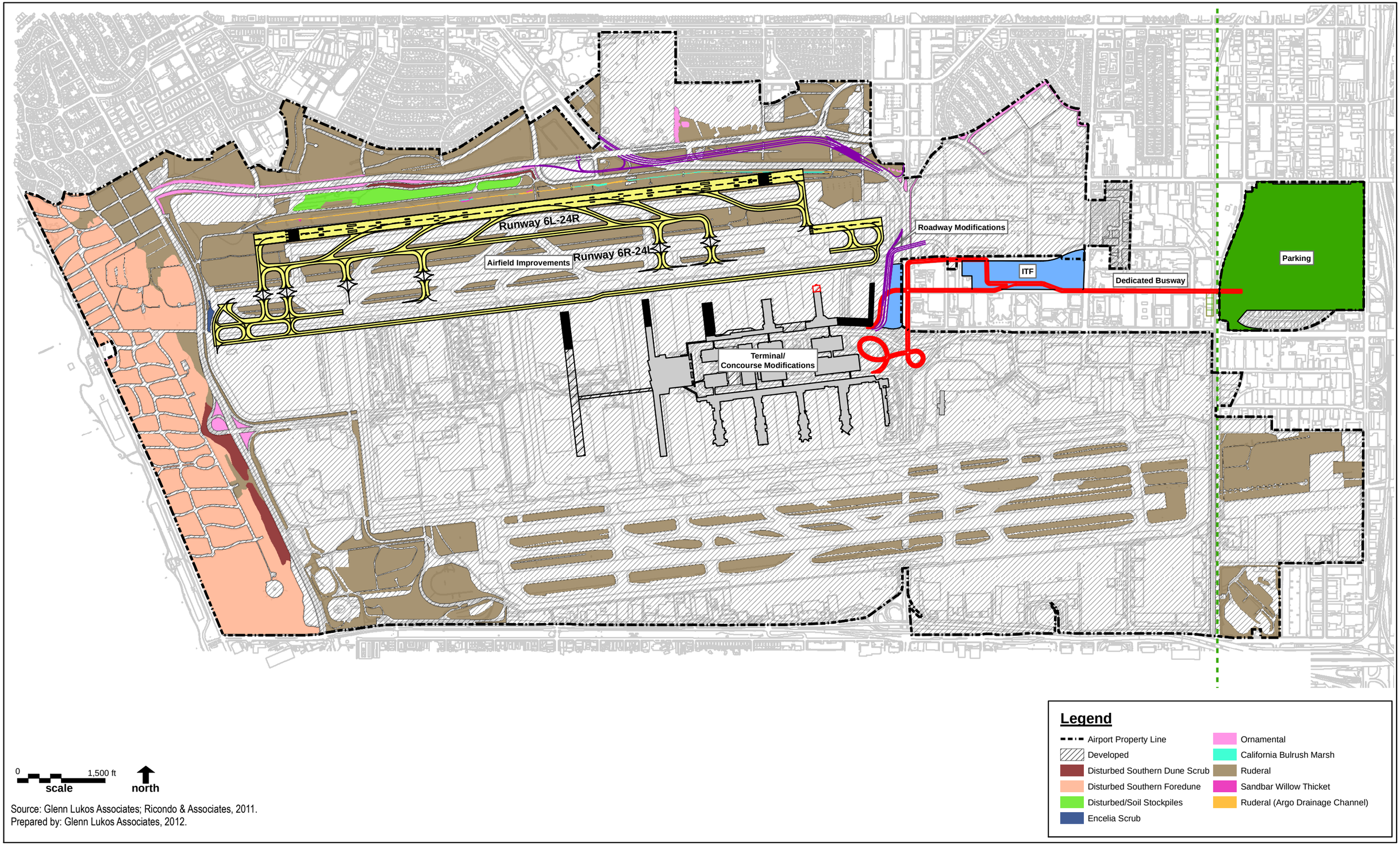
North Airfield and Construction Staging Areas

Figure 4.3-6 depicts impacts to vegetation associations under Alternative 1 associated with development of the north airfield and use of construction staging areas. (For ease of viewing the vegetation associations, not all proposed project improvements are labeled in **Figure 4.3-6**. Refer to Figure 2-1 for a complete depiction of all improvements associated with Alternative 1, and Figure 2-15 for proposed construction staging areas.) The acreage of each vegetation association affected by Alternative 1, and the acreage that would remain following implementation of this alternative, are included in **Table 4.3-3**.

There are approximately 637.47 acres of undeveloped area located east of Pershing Drive, including areas within the airfield and Construction Staging Areas A, B, C, D, and G. Vegetation associations within the undeveloped portions of this area include: Disturbed Southern Dune Scrub; Encelia Scrub; California Bulrush Marsh; Sandbar Willow Thicket; ruderal (Argo Drainage Channel); and ruderal vegetation. Implementation of the improvements under Alternative 1 would reduce the total undeveloped area from the baseline conditions of 637.47 acres within this area by 128.37 acres to 509.10 acres (refer to **Table 4.3-3**). Impacts to 128.37 acres of undeveloped area includes 121.71 acres of ruderal vegetation associated with the north airfield and with proposed Construction Staging Areas A, B, C, D, and G, and 2.69 acres of Disturbed Southern Dune Scrub within Construction Staging Area A. Additional impacts associated with structurally covering the Argo Drainage Channel include 1.31 acres of California Bulrush Marsh, 0.21 acre of Sandbar Willow Thicket, and 2.45 acres of ruderal (Argo Drainage Channel).

With respect to ruderal vegetation, areas classified as ruderal are not locally- or state-designated sensitive habitat; ruderal vegetation areas are also subject to regular operations and maintenance, including mowing. For these reasons, impacts to ruderal vegetation are not significant.

Construction of the north airfield improvements under Alternative 1 would result in the permanent loss of 2.69 acres of Disturbed Southern Dune Scrub (refer to **Table 4.3-3**). Southern Dune Scrub is a state-designated sensitive habitat with a global ranking of G1 and a state ranking of S1.1, indicating that there are less than 2,000 acres throughout both its global and state range, and that it is very threatened. However, the Disturbed Southern Dune Scrub associated with the north airfield occurs in a long, narrow strip covering approximately 2.69 acres along Westchester Parkway, is surrounded by developed and ruderal areas, and is highly disturbed, having been previously developed for residential use. Because this area is highly disturbed, isolated, colonized by invasive, non-native species, and provides greatly diminished habitat value relative to the Disturbed Southern Dune Scrub in the Dunes, it is not consistent with the definition of the state-designated sensitive habitat (i.e., Southern Dune Scrub), despite the presence of indicator species. Nevertheless, this impact is considered significant. To address this impact, Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below, is proposed. This measure would provide compensatory mitigation for this loss of habitat. With implementation of Mitigation Measure MM-BIO (SPAS)-14, impacts to Disturbed Southern Dune Scrub habitat in this area would be less than significant. See Other Impacts, below, for additional discussion of this mitigation.



Source: Glenn Lukos Associates; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

LAX Specific Plan Amendment Study Draft EIR

Vegetation/Land Uses: Alternative 1

Figure
4.3-6

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Construction of the north airfield improvements under Alternative 1 would result in the permanent loss of all vegetation associated with the Argo Drainage Channel, including 0.21 acre of Sandbar Willow Thicket, 1.31 acres of California Bulrush Marsh, and 2.45 acres of ruderal vegetation within the channel (refer to **Table 4.3-3**). None of these vegetation associations are state-designated sensitive habitats or otherwise considered sensitive, and impacts would be less than significant. Impacts to Sandbar Willow Thicket, California Bulrush Marsh, and ruderal (Argo Drainage Channel) within potential USACOE and CDFG jurisdiction are further addressed under the heading Jurisdictional Aquatic Features.

Under Alternative 1, operation of the proposed improvements would not have an impact on sensitive habitats and vegetation associations, as operation would not result in any additional disturbance leading to a substantial reduction in any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 1, there would be no conflict with the provisions of an adopted HCP, Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plans, as there are no adopted HCP or NCCP plans covering any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 1, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Navigational Aids

Under Alternative 1, relocation of navigational aids would result in permanent impacts to 0.31 acre of undeveloped area within the north airfield east of Pershing Drive, including impacts to 0.03 acre of Encelia Scrub and 0.28 acre of ruderal vegetation (refer to **Table 4.3-4** and **Figure 4.3-7**). Additional temporary impacts to ruderal vegetation and Encelia Scrub may occur during construction associated with temporary access roads. Since ruderal is not a sensitive vegetation association for the reasons discussed above, impacts to ruderal habitat would be less than significant.

Under Alternative 1, 0.03 acre of Encelia Scrub would be impacted for construction on the western end of the north airfield. The Encelia Scrub vegetation association has a Global/State Ranking G4 S3, meaning that it is apparently secure in its global range, but there are approximately 10,000 to 50,000 acres of this association in its state range. However, the Encelia Scrub occurrence associated with the north airfield consists of a long, narrow habitat fragment covering approximately 0.72 acre at the western boundary of the airfield at the end of Runway 6R/24L and adjacent to Pershing Drive, and is surrounded by developed and ruderal areas. Because this strip of Encelia Scrub is isolated, shows evidence of human disturbance, provides greatly diminished habitat value relative to larger contiguous habitat areas in the region, and includes non-native, invasive species, it is not consistent with the definition of the state-designated sensitive habitat. As such, impacts to Encelia Scrub would be less than significant.

Under Alternative 1, relocation of navigational aids and construction of new service roads would result in permanent impacts to 0.89 acre of undeveloped area within the Los Angeles/El Segundo Dunes, including impacts to 0.54 acre of Disturbed Southern Foredune, and 0.35 acre of ruderal (refer to **Table 4.3-4** and **Figure 4.3-7**). Southern Foredune is a state-designated sensitive habitat with a global ranking of G2 and a state ranking of S2.1, indicating that there are 2,000-10,000 acres throughout both its global and state range, and that it is very threatened. Permanent loss of 0.54 acre of Disturbed Southern Foredune would occur in two locations: within the Habitat Restoration Area (0.19 acre) and north of the Habitat Restoration Area (0.35 acre). Given the relative rarity of Southern Foredune, and because these areas are contiguous with other habitat, thus providing better habitat quality and connectivity than isolated patches, the permanent loss of 0.54 acre of Disturbed Southern Foredune constitutes a substantial reduction in state-designated sensitive habitat, and would be a significant impact. Moreover, temporary impacts associated with minor grading and construction-related access roads would occur within Disturbed Southern Foredune and would be significant. The permanent loss of 0.35 acre of ruderal vegetation for new navigational aids and associated service roads, as well as additional temporary

construction impacts, would not be significant, as ruderal vegetation is not a state- or locally-designated sensitive habitat. To address impacts to state-designated habitats associated with the relocation of navigational aids within the Dunes, Mitigation Measure MM-BIO (SPAS)-1, Replacement of State Designated Habitats, described in Section 4.3.7 below, is proposed. This measure would provide for restoration of habitat within the Dunes. With implementation of Mitigation Measure MM-BIO (SPAS)-1, impacts to sensitive habitats would be less than significant.

Under Alternative 1, impacts to sensitive habitats associated with operation of the navigational aids would be less than significant, as maintenance and other operational activities would be limited to existing roads and graded pads or those constructed under Alternative 1, and therefore would not result in any additional disturbance of or reduction in any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 1, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 1, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Other Impacts

As noted above, construction activities associated with Alternative 1 would occur in the Dunes, both within and adjacent to the El Segundo Blue Butterfly Habitat Restoration Area. Implementation of LAX Master Plan Mitigation Measure MM-BC-1, Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area, would ensure the protection of this habitat.

Alternative 1 would result in the loss of 21.06 habitat units (see **Table 4.3-5**). In accordance with the LAX Master Plan mitigation program for biological resources, specifically, LAX Master Plan Mitigation Measure MM-BC-8, Replacement of Habitat Units, the loss of habitat units would be mitigated through a habitat replacement program. Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below, outlines the habitat replacement program as it would apply to the SPAS alternatives. Pursuant to this program, a habitat value of 0.8 would apply to the replacement acreage. Therefore, 26.33 acres would be required to mitigate the loss of habitat units.

The relocation of Lincoln Boulevard would result in the removal of mature trees. In addition, mature trees may be removed in conjunction with the use of Construction Staging Areas B, C, and D. Implementation of LAX Master Plan Mitigation Measure MM-BC-3, Conservation of Floral Resources: Mature Tree Replacement, would ensure that associated impacts would be less than significant.

Table 4.3-3

Vegetation Associations/Land Use Types under the SPAS Alternatives - North Airfield Improvements and Construction Staging Areas

		Alt. 1		Alt. 2		Alt. 3		Alt. 4		Alt. 5		Alt. 6		Alt. 7		Alt. 8		Alt. 9	
Vegetation/Land Cover	**Existing Acres**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project**
LAX East of Pershing Drive																			
Disturbed Southern Foredune	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Disturbed Southern Dune Scrub	2.69	2.69	0	2.69	0	2.69	0	2.69	0	2.69	0	2.69	0	2.69	0	2.69	0	2.69	0
Encelia Scrub	0.72	0	0.72	0	0.72	0.21	0.51	0	0.72	0	0.72	0	0.72	0	0.72	0	0.72	0	0.72
California Bulrush Marsh	1.31	1.31	0	0	1.31	0	1.31	0	1.31	1.31	0	0.41	0.90	0	1.31	0	1.31	0	1.31
Sandbar Willow Thicket	0.21	0.21	0	0	0.21	0	0.21	0	0.21	0.21	0	0	0.21	0	0.21	0	0.21	0	0.21
Ruderal (Argo Drainage Channel)	2.45	2.45	0	0	2.45	0	2.45	0	2.45	2.45	0	0.15	2.30	0	2.45	0	2.45	0	2.45
Ruderal	630.09	121.71	508.38	62.99	567.10	122.55	507.54	56.98	573.11	124.06	506.03	98.35	531.74	81.19	548.90	56.95	573.14	56.95	573.14
Ornamental	17.35	3.73	13.62	3.73	13.62	5.68	11.67	5.68	11.67	3.73	13.62	3.73	13.62	3.73	13.62	3.73	13.62	3.73	13.62
Developed																			
Existing Developed Area	2,828.70	286.99	2,541.71	272.49	2,556.21	598.32	2,230.38	343.86	2,484.84	316.17	2,512.53	308.29	2,520.41	347.46	2,481.24	240.54	2,588.16	245.59	2,583.11
New Future Developed Area	NA	NA	434.47	NA	357.28	NA	744.83	NA	424.59	NA	466.00	NA	429.00	NA	450.45	NA	319.29	NA	324.34
Acquisition Areas[1]	NA	NA	22.23	NA	22.23	NA	54.28	NA	31.67	NA	NA	NA	NA	NA	NA	NA	22.23	NA	22.23
Disturbed/Soil Stockpiles	15.49	15.38	0.11	15.38	0.11	15.38	0.11	15.38	0.11	15.38	0.11	15.38	0.11	15.38	0.11	15.38	0.11	15.38	0.11
Subtotal	**3,499.01**	**434.47**	**3,521.24**	**357.28**	**3,521.24**	**744.83**	**3,553.29**	**424.59**	**3,530.68**	**466.00**	**3,499.01**	**429.00**	**3,499.01**	**450.45**	**3,499.01**	**319.29**	**3,521.24**	**324.34**	**3,521.24**
Los Angeles/El Segundo Dunes																			
Disturbed Southern Foredune	216.36	0	216.36	0	216.36	0	216.36	0	216.36	0	216.36	0	216.36	0	216.36	0	216.36	0	216.36
Disturbed Southern Dune Scrub	11.59	0	11.59	0	11.59	0	11.59	0	11.59	0	11.59	0	11.59	0	11.59	0	11.59	0	11.59
Encelia Scrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
California Bulrush Marsh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sandbar Willow Thicket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ruderal (Argo Drainage Channel)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ruderal	33.56	0	33.56	0	33.56	0	33.56	0	33.56	0	33.56	0	33.56	0	33.56	0	33.56	0	33.56
Ornamental	1.78	0	1.78	0	1.78	0	1.78	0	1.78	0	1.78	0	1.78	0	1.78	0	1.78	0	1.78
Developed																			
Existing Developed Area	52.23	0	52.23	0	52.23	0	52.23	0	52.23	0	52.23	0	52.23	0	52.23	0	52.23	0	52.23
New Future Developed Area	NA	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0
Disturbed/Soil Stockpiles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	**315.52**	**0**	**315.52**	**0**	**315.52**	**0**	**315.52**	**0**	**315.52**	**0**	**315.52**	**0**	**315.52**	**0**	**315.52**	**0**	**315.52**	**0**	**315.52**
Total	**3,814.53**	**434.47**	**3,836.76**	**357.28**	**3,836.76**	**744.83**	**3,868.81**	**424.59**	**3,846.20**	**466.00**	**3,814.53**	**429.00**	**3,814.53**	**450.45**	**3,814.53**	**319.29**	**3,836.76**	**324.34**	**3,836.76**

Note:

Alternatives 1 through 4 consist of airfield, terminal, and ground access improvements. Alternatives 5 through 7 focus on airfield and terminal improvements only. Alternatives 8 and 9 focus on ground access improvements only. The airfield/terminal improvements associated with Alternatives 1, 2, 5, 6, and 7 could be paired with the ground access improvements associated with Alternatives 1, 2, 8, or 9. Similarly, the ground access improvements associated with Alternatives 1, 2, 8, and 9 could be paired with the airfield improvements associated with Alternatives 1, 2, 5, 6, or 7. The full impacts of any alternative must consider airfield, terminal, and ground access contributions. The airfield, terminal, and ground access improvements associated with Alternatives 3 and 4 are specific to each of those alternatives and cannot be paired with other alternatives.

[1] The amount of area to be acquired varies among the alternatives; therefore, the total acreage associated with each alternative differs. For purposes of this analysis, the LAUSD school site is not considered acquisition but, rather, is included in the "Developed" acreage numbers.

Source: Glenn Lukos Associates, 2012.

Table 4.3-4

Vegetation Associations/Land Use Types under the SPAS Alternatives - Navigational Aids

		Alt. 1		Alt. 2		Alt. 3		Alt. 4		Alt. 5		Alt. 6		Alt. 7		Alt. 8		Alt. 9	
Vegetation/Land Use	**Existing Acres**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project**	**Acres Impacted**	**Total Acres w/ Project[1]**	**Acres Impacted**	**Total Acres w/ Project[1]**
LAX East of Pershing Drive																			
Disturbed Southern Foredune	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
Disturbed Southern Dune Scrub	2.69	0	2.69	0	2.69	0	2.69	0	2.69	0	2.69	0	2.69	0	2.69	NA	NA	NA	NA
Encelia Scrub	0.72	0.03	0.69	0.03	0.69	0.03	0.69	0.03	0.69	0.03	0.69	0.03	0.69	0	0.72	NA	NA	NA	NA
California Bulrush Marsh	1.31	0	1.31	0	1.31	0	1.31	0	1.31	0	1.31	0	1.31	0	1.31	NA	NA	NA	NA
Sandbar Willow Thicket	0.21	0	0.21	0	0.21	0	0.21	0	0.21	0	0.21	0	0.21	0	0.21	NA	NA	NA	NA
Ruderal(Argo Drainage Channel)	2.45	0	2.45	0	2.45	0	2.45	0	2.45	0	2.45	0	2.45	0	2.45	NA	NA	NA	NA
Ruderal	630.09	0.28	629.81	0	630.09	0.36	629.73	0	630.09	0.31	629.78	0.28	629.81	0.03	630.06	NA	NA	NA	NA
Ornamental	17.35	0	17.35	0	17.35		17.35	0	17.35	0	17.35	0	17.35	0	17.35	NA	NA	NA	NA
Developed																			
Existing Developed Area	2,828.70	0.05	2,828.65	0.05	2,828.65	0.86	2,827.84	0.05	2,828.65	0.05	2,828.65	0.08	2,828.62	0.05	2,828.65	NA	NA	NA	NA
New Future Developed Area	NA	NA	0.36	NA	0.08	NA	1.25	NA	0.08	NA	0.39	NA	0.39	NA	0.08	NA	NA	NA	NA
Acquisition Areas[2]	NA	NA	22.23	NA	22.23	NA	54.28	NA	31.67	NA	0	NA	0	NA	0	NA	NA	NA	NA
Disturbed/Soil Stockpiles	15.49	0	15.49	0	15.49	0	15.49	0	15.49	0	15.49	0	15.49	0	15.49	NA	NA	NA	NA
Subtotal	**3,499.01**	**0.36**	**3,521.24**	**0.08**	**3,521.24**	**1.25**	**3,553.29**	**0.08**	**3,530.68**	**0.39**	**3,499.01**	**0.39**	**3,499.01**	**0.08**	**3,499.01**	NA	NA	NA	NA
Los Angeles/El Segundo Dunes[3]																			
Disturbed Southern Foredune	216.36	0.54	215.82	0.33	216.03	1.03	215.33	0.33	216.03	0.57	215.79	0.51	215.85	0.83	215.53	NA	NA	NA	NA
Disturbed Southern Dune Scrub	11.59	0	11.59	0	11.59	0	11.59	0	11.59	0	11.59	0	11.59	0	11.59	NA	NA	NA	NA
Encelia Scrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
California Bulrush Marsh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
Sandbar Willow Thicket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
Ruderal (Argo Drainage Channel)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
Ruderal	33.56	0.35	33.21	0	33.56	0.08	33.48	0	33.56	0.29	33.27	0.38	33.18	0	33.56	NA	NA	NA	NA
Ornamental	1.78	0	1.78	0	1.78	0	1.78	0	1.78	0	1.78	0	1.78	0	1.78	NA	NA	NA	NA
Developed																			
Existing Developed Area	52.23	0	52.23	0	52.23	0.11	52.12	0	52.23	0	52.23	0.03	52.20	0	52.23	NA	NA	NA	NA
New Future Developed Area	NA	NA	0.89	NA	0.33	NA	1.22	NA	0.33	NA	0.86	NA	0.92	NA	0.83	NA	NA	NA	NA
Disturbed/Soil Stockpiles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA
Subtotal	**315.52**	**0.89**	**315.52**	**0.33**	**315.52**	**1.22**	**315.52**	**0.333**	**315.52**	**0.86**	**315.52**	**0.92**	**315.52**	**0.83**	**315.52**	NA	NA	NA	NA
Total	**3,814.53**	**1.25**	**3,836.76**	**0.41**	**3,836.76**	**2.459**	**3,868.81**	**0.414**	**3,846.20**	**1.249**	**3,814.53**	**1.306**	**3,814.53**	**0.914**	**3,814.53**	NA	NA	NA	NA

Note:

Alternatives 1 through 4 consist of airfield, terminal, and ground access improvements. Alternatives 5 through 7 focus on airfield and terminal improvements only. Alternatives 8 and 9 focus on ground access improvements only. The airfield/terminal improvements associated with Alternatives 1, 2, 5, 6, and 7 could be paired with the ground access improvements associated with Alternatives 1, 2, 8, or 9. Similarly, the ground access improvements associated with Alternatives 1, 2, 8, and 9 could be paired with the airfield improvements associated with Alternatives 1, 2, 5, 6, or 7. The full impacts of any alternative must consider airfield, terminal, and ground access contributions. The airfield, terminal, and ground access improvements associated with Alternatives 3 and 4 are specific to each of those alternatives and cannot be paired with other alternatives.

[1] There are no modifications to navigational aids associated with Alternative 8 and Alternative 9.
[2] The amount of area to be acquired varies among the alternatives; therefore, the total acreage associated with each alternative differs. For purposes of this analysis, the LAUSD school site is not considered acquisition but, rather, is included in the "Developed" acreage numbers.
[3] The acreage figures for future conditions represent conditions prior to implementation of LAX Master Plan Mitigation Measure MM-ET-4, which requires restoration of El Segundo blue butterfly habitat.

Source: Glenn Lukos Associates, 2012.

Table 4.3-5

Habitat Unit Impacts and Required Mitigation

Vegetation Associations/ Habitats[1]	Habitat Unit Value	Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5			Alternative 6			Alternative 7			Alternative 8			Alternative 9		
		Impacts (Acres)	Impacts (Habitat Units)	Acres Needed for Mitigation	Impacts (Acres)	Impacts (Habitat Units)	Acres Needed for Mitigation	Impacts (Acres)	Impacts (Habitat Units)	Acres Needed for Mitigation	Impacts (Acres)	Impacts (Habitat Units)	Acres Needed for Mitigation	Impacts (Acres)	Impacts (Habitat Units)	Acres Needed for Mitigation	Impacts (Acres)	Impacts (Habitat Units)	Acres Needed for Mitigation	Impacts (Acres)	Impacts (Habitat Units)	Acres Needed for Mitigation	Impacts (Acres)	Impacts (Habitat Units)	Acres Needed for Mitigation	Impacts (Acres)	Impacts (Habitat Units)	Acres Needed for Mitigation
LAX East of Pershing Drive - North Airfield Improvements and Construction Staging Areas																												
Disturbed Southern Dune Scrub[2]	0.35	2.69	0.94	1.18	2.69	0.94	1.18	2.69	0.94	1.18	2.69	0.94	1.18	2.69	0.94	1.18	2.69	0.94	1.18	2.69	0.94	1.18	2.69	0.94	1.18	2.69	0.94	1.18
Encelia Scrub[2]	0.35	0	0	0	0	0	0	0.21	0.07	0.09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ruderal[3]	0.15	121.71	18.26	22.82	62.99	9.45	11.81	122.55	18.38	22.98	56.98	8.55	10.68	124.06	18.61	23.26	98.35	14.75	18.44	81.19	12.18	15.22	56.95	8.54	10.68	56.95	8.54	10.68
Ornamental[4]	0.05	3.73	0.19	0.23	3.73	0.19	0.23	5.68	0.28	0.36	5.68	0.28	0.36	3.73	0.19	0.23	3.73	0.19	0.23	3.73	0.19	0.23	3.73	0.19	0.23	3.73	0.19	0.23
Disturbed/Soil Stockpiles[5]	0.1	15.38	1.54	1.92	15.38	1.54	1.92	15.38	1.54	1.92	15.38	1.54	1.92	15.38	1.54	1.92	15.38	1.54	1.92	15.38	1.54	1.92	15.38	1.54	1.92	15.38	1.54	1.92
LAX East of Pershing Drive - Navigational Aids																												
Encelia Scrub[2]	0.35	0.03	0.01	0.01	0.03	0.01	0.01	0.03	0.01	0.01	0.03	0.01	0.01	0.03	0.01	0.01	0.03	0.01	0.01	0	0	0	NA	NA	NA	NA	NA	NA
Ruderal[3]	0.15	0.28	0.04	0.05	0	0	0	0.36	0.05	0.07	0	0	0	0.31	0.05	0.06	0.28	0.04	0.05	0.03	0.01	0.01	NA	NA	NA	NA	NA	NA
Los Angeles/El Segundo Dunes - Navigational Aids																												
Ruderal[6]	0.25	0.35	0.09	0.11	0	0	0	0.08	0.02	0.03	0	0	0	0.29	0.07	0.09	0.38	0.10	0.12	0	0	0	NA	NA	NA	NA	NA	NA
TOTAL		**144.17**	**21.06**	**26.33**	**84.82**	**12.13**	**15.16**	**146.98**	**21.30**	**26.63**	**80.76**	**11.32**	**14.15**	**146.49**	**21.40**	**26.76**	**120.84**	**17.57**	**21.96**	**103.02**	**14.85**	**18.57**	**78.75**	**11.21**	**14.01**	**78.75**	**11.21**	**14.01**

Notes:

1 This analysis is based on the habitat unit methodology established in the LAX Master Plan EIR. Loss of habitats associated with jurisdictional aquatic features and state-designated habitat in the Los Angeles/El Segundo Dunes is addressed separately in this analysis.
2 Equivalent to Disturbed Foredune/Dune Scrub (as assessed in the Dunes) in the LAX Master Plan EIR.
3 Equivalent to Non-Native Grassland/Ruderal (as assessed at LAX east of Pershing Drive) in the LAX Master Plan EIR.
4 Equivalent to Landscaped in the LAX Master Plan EIR.
5 Equivalent to Disturbed/Bare Ground in the LAX Master Plan EIR.
6 Equivalent to Non-Native Grassland/Ruderal (as assessed in the Dunes) in the LAX Master Plan EIR.

Source: Glenn Lukos Associates, 2012.

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Note: Lewis' Evening Primrose identified at western end of north airfield in 1998 are not depicted on this figure, as a map of the population is not available.

0 300 ft
Scale
north

Source: Glenn Lukos Associates; Sapphos Environmental Inc, 2000/Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

Legend

- Airport Property Line
- El Segundo Blue Butterfly Habitat Restoration Area
- Proposed Navigational Aids
- Existing Navigational Aids to be Removed
- Developed
- Disturbed Southern Foredune
- Encelia Scrub
- Ruderal
- Sandbar Willow Thicket
- Ruderal (Argo Drainage Channel)
- South Coast Branching Phacelia - Mapped in 2011 for SPAS EIR
- California Spineflower - Mapped in 1998 for Master Plan EIR
- Lewis' Evening Primrose - Mapped in 1998 for Master Plan EIR
- Loggerhead Shrike - 1998
- San Diego Horned Lizard - 1998
- Silvery Legless Lizard - 1998
- Silvery Legless Lizard - 2010
- Wintering Burrowing Owl - 1998
- Wintering Burrowing Owl - 2012

LAX Specific Plan Amendment Study Draft EIR

Vegetation/Land Uses and Sensitive Species: Navigational Aids - Alternative 1

Figure
4.3-7

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Sensitive Plants

As discussed above, six sensitive plant species are either known to occur or have potential to occur in the biological resources study area, within the navigational aids relocation area and/or construction staging areas under Alternative 1. Two species, Lewis' evening primrose and California spineflower, were identified in the Los Angeles/El Segundo Dunes during past surveys conducted for the LAX Master Plan EIR. As discussed above, Lewis' evening primrose was also detected on the westerly end of the north airfield, and is assumed to be present at locations affected by the relocation of navigational aids. One species, south coast branching phacelia, was detected in 2011 in the vicinity of the navigational aids relocation area. Two other recently recognized sensitive species, a subspecies of mesa horkelia and a variety of Orcutt's pincushion, have potential to occur within the Los Angeles/El Segundo Dunes, but surveys were conducted after the time of year when these species can be detected, so, although it cannot be confirmed that they occur within areas that would be affected by navigational aids relocation under this alternative, for purposes of this analysis, these taxa are assumed to occur. One species, southern tarplant, was previously detected in Construction Staging Area G and in two other locations not within the SPAS impact area, and was subsequently impacted as part of the Bradley West and Crossfield Taxiway projects. Southern tarplant was planted in the southwestern portion of the airport as mitigation for those impacts. During the course of work associated with the Bradley West and Crossfield Taxiway projects, Construction Staging Area G was modified such that it would no longer support southern tarplant, and no impacts are proposed in the vicinity of the Southern Tarplant Mitigation Area, or the other two locations were southern tarplant was previously detected. Southern tarplant was not detected during 2011 focused surveys; however, given the history of occurrence on-site, for purposes of this analysis it is assumed that southern tarplant may occur within the biological resources study area, and specifically the north airfield and Construction Staging Areas B, C, and D.

The relocation of navigational aids under Alternative 1, the construction of improvements in the north airfield, and the disturbance associated with the Construction Staging Areas B, C, and D would result in habitat alteration or removal and may result in a significant impact to these species, depending on the total population size present on-site and the percentage of the population that would be affected. As the number and distribution of the species varies from year to year and these fluctuations can be extreme, and the presence or absence of some species was not able to be determined during preparation of this EIR, it is assumed that significant impacts to sensitive plant species would occur as a result of construction of Alternative 1. To address impacts to sensitive plant species, a series of mitigation measures is proposed, as described in Section 4.3.7 below, including MM-BIO (SPAS)-2, Conservation of Floral Resources: South Coast Branching Phacelia, MM-BIO (SPAS)-3, Conservation of Floral Resources: Lewis' Evening Primrose, MM-BIO (SPAS)-4, Conservation of Floral Resources: California Spineflower, MM-BIO (SPAS)-5, Conservation of Floral Resources: Mesa Horkelia, MM-BIO (SPAS)-6, Conservation of Floral Resources: Orcutt's Pincushion, and MM-BIO (SPAS)-7, Conservation of Floral Resources: Southern Tarplant. With implementation of these mitigation measures, impacts to sensitive plants would be less than significant.

Upon completion of construction, operation of facilities associated with Alternative 1 would not result in impacts to sensitive plant species, as operation would not involve additional disturbance of habitat, including maintenance access, as routine access would be limited to existing roads and roads constructed as part of the Alternative 1. Under Alternative 1, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no such plant species are known to occur within the biological resources study area.

Sensitive Wildlife

Six sensitive wildlife species have been detected in and around the biological resources study area during surveys conducted for the LAX Master Plan EIR: Riverside fairy shrimp, El Segundo blue butterfly, western spadefoot toad, loggerhead shrike, western burrowing owl, and San Diego black-tailed jackrabbit. As previously discussed, Riverside fairy shrimp and western spadefoot toad are believed extirpated from the biological resources study area, and are not discussed further in this section.

As noted above, relocation of navigational aids in the Los Angeles/El Segundo Dunes associated with implementation of Alternative 1 would result in permanent impacts to at least 0.89 acre of undeveloped area in the Los Angeles/El Segundo Dunes, of which approximately 0.54 acre consists of state-designated sensitive habitat (Disturbed Southern Dune Scrub), and additional temporary impacts associated with project construction. The undeveloped areas in the Los Angeles/El Segundo Dunes support several species of sensitive arthropods and gastropods, silvery legless lizard, and coast horned lizard. As the permanent loss of 0.89 acre would not result in a substantial adverse effect, through the reduction of existing habitat, impacts to these species through habitat loss would be less than significant. However, construction activities could result in the loss of individuals through direct take of sensitive arthropod and gastropod species, the silvery legless lizard, and the coast horned lizard, which is considered to be a significant impact. Various detection methods are available to locate individuals and would be used to find and relocate them, in order to reduce the level of take. With implementation of Mitigation Measure MM-BIO (SPAS)-8, Conservation of Faunal Resources: Sensitive Reptiles, Arthropods, and Gastropods, described in Section 4.3.7 below, impacts to these sensitive wildlife species would be less than significant.

Loggerhead shrike may occasionally visit or forage in the AOA, but is not expected to nest within the AOA. Loggerhead shrike was reported to occur at the westerly end of the airfield in 1998, but has not been detected in subsequent formal biological surveys within the biological resources study area for projects associated with the LAX Master Plan. However, LAWA's USDA Wildlife Hazard Biologist reports occasional sightings since 2005 in the parking lot adjacent to the Proud Bird restaurant in the southeast corner of LAX. The vast majority of the loggerhead shrike occurrences mapped in 1998 were in the Los Angeles/El Segundo Dunes and, since occurrences in the airfield are rare, it is assumed that the Los Angeles/El Segundo Dunes provide far greater habitat value for the shrike than the airfield. The areas of ruderal vegetation that would to be affected by runway relocation are directly adjacent to the current runways, and do not provide habitat value to loggerhead shrike under baseline conditions because of the proximity to these active runways. The sightings of shrikes in the urbanized area in the southwest corner of the airport indicate that the population on the airport utilizes both undeveloped areas as well as the edges of developed areas for foraging. The loss of ruderal habitat that is rarely used by the species does not constitute a substantial adverse effect through reduction of existing habitat, especially given that shrikes are known to use the edges of developed areas associated with LAX, and are not restricted to or rely heavily upon the ruderal habitat in the airfield. Therefore, impacts to loggerhead shrike through habitat loss within the AOA would be less than significant under Alternative 1.

There is no potential for construction of Alternative 1 to result in loss of adult individuals, as loggerhead shrikes can avoid construction areas. Loggerhead shrikes are not known to nest in the airfield or the proposed staging areas, but if loggerhead shrikes were to nest within a construction or staging area, implementation could have a significant impact on this species through interference with nesting activity. With implementation of Mitigation Measure MM-BIO (SPAS)-9, Conservation of Faunal Resources: Loggerhead Shrike, described in Section 4.3.7 below, impacts to this sensitive wildlife species associated with use of construction or staging areas would be less than significant.

Loggerhead shrike is a resident species that has been documented to nest within the Los Angeles/El Segundo Dunes. In addition to observations made in 1998 surveys for the LAX Master Plan EIR, LAWA's USDA Wildlife Hazard Biologist has reported occasional sightings in the Los Angeles/El Segundo Dunes during the summer months, including sightings of fledglings. Relocation of navigational aids and construction of related service roads would result in the permanent loss of approximately 0.89 acre of open space area suitable for loggerhead shrike, as well as temporary impacts associated with construction, including temporary access roads. Since only a small proportion of habitat within the 302-acre dunes complex would be permanently affected, this does not constitute a substantial adverse effect, through the reduction of existing habitat, and thus impacts to loggerhead shrike through habitat loss in the Dunes would be less than significant. As discussed above, it is assumed that this species persists as a resident breeding species in the Los Angeles/El Segundo Dunes. Removal and replacement of navigational aids and service roads is therefore considered to result in a significant impact on this species through interference with nesting activity. With implementation of Mitigation Measure MM-BIO (SPAS)-9,

Conservation of Faunal Resources: Loggerhead Shrike, described in Section 4.3.7 below, impacts to this sensitive wildlife species associated with the relocation of navigational aids would be less than significant.

Burrowing owl may occasionally occur on the edges of the AOA as wintering individuals. As previously discussed, a wintering burrowing owl was detected by Glenn Lukos Associates biologists and by LAWA personnel along the Argo Drainage Channel in December 2011 and at the western end of Runway 6R/24L by LAWA personnel in February 2012. For wintering burrowing owls that occasionally use the AOA, improvements associated with the north airfield and use of the construction staging areas would result in the loss of 121.71 acres of ruderal vegetation in the airfield and 2.45 acres of ruderal vegetation in the Argo Drainage Channel that could provide foraging area. However, 508.38 acres of ruderal vegetation would remain within the airfield, with additional foraging area available in the 302-acre Dunes, where burrowing owls were documented by the LAX Master Plan EIR to occur as wintering individuals. Burrowing owl home ranges have been calculated to comprise between 280 acres in irrigated farmland to 600 acres in pastureland.[211] Given that upwards of 770 acres of undeveloped open space would remain in the AOA and Dunes under Alternative 1, there would be no substantial adverse effect through the reduction of habitat on burrowing owl, and impacts would be less than significant. For burrowing owl within the Los Angeles/El Segundo Dunes, relocation of navigational aids and related service roads would result in permanent impacts to 0.89 acre of open space ruderal vegetation and Disturbed Southern Foredune habitat, as well as limited temporary impacts associated with construction. Since impacts to this small amount of acreage do not constitute a substantial adverse effect, through the reduction of existing habitat, impacts to burrowing owl through habitat loss would be less than significant.

If burrowing owl is present in areas associated with construction, including the construction staging areas, Argo Drainage Channel, the AOA east of Pershing Drive, or the navigational aids relocation area in the Los Angeles/El Segundo Dunes, project implementation would have a significant impact on this species. With implementation of Mitigation Measure MM-BIO (SPAS)-10, Conservation of Faunal Resources: Burrowing Owl, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

One individual San Diego black-tailed jackrabbit was found to use the southwestern airfield in 1997. Due to changes in site management since then, along with installation of airfield perimeter security fencing with a solid block base and tightly-spaced grids that greatly restrict or preclude wildlife movement, the species is likely extirpated from the biological resources study area. There is a very low chance that this species may persist within the AOA despite lack of recent detection. Since San Diego black-tailed jackrabbit represents a potential safety hazard to aviation (i.e., is an attractant to raptors, which can lead to a birdstrike hazard for aircraft), it is anticipated that the presence of an individual jackrabbit, albeit unlikely, would be addressed by LAWA's USDA Wildlife Hazard Biologist pursuant to FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan." San Diego black-tailed jackrabbit is not known to occur within the Los Angeles/El Segundo Dunes. Since this species is likely extirpated from the biological resources study area and, even if one or more individuals persist, impacts to this species through either habitat modification or loss of individuals would be less than significant.

Implementation of Alternative 1 would result in the permanent conversion of occupied habitat of the El Segundo blue butterfly within the Habitat Restoration Area associated with relocation of navigational aids, because the navigational aids relocation activities would occur in an area that is occupied by this species, albeit at very low densities due to the small quantity of host plants with low flowerhead density. In accordance with LAX Master Plan Mitigation Measures MM-ET-3, El Segundo Blue Butterfly Conservation: Dust Control, and MM-ET-4, El Segundo Blue Butterfly Conservation: Habitat Restoration, and the Biological Opinion for the project that was issued by the USFWS, impacts to the El Segundo blue

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211 Gervais, J. A., D. K. Rosenberg, and L. A. Comrack, Burrowing Owl (Athene cunicularia) in Shuford, W.D. and T. Gardali, editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California, Studies of Western Birds 1, Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento, California, USA.

butterfly and habitat occupied by the El Segundo blue butterfly would be addressed through dust control during construction, habitat replacement, and avoidance of the flight season. With implementation of these measures, impacts to El Segundo blue butterfly would be less than significant.

Use of proposed Construction Staging Areas B, C, D, and F under Alternative 1 would have the potential to result in the removal of mature trees used for nesting by raptors or birds. Such removal would have the potential to result in impacts to nesting birds or raptors protected under the MBTA and/or California Fish and Game Code Sections 3503, 3503.5, 3511, and 3513. The LAX Master Plan Final EIR concluded that removal of any mature ornamental trees would be a significant impact requiring replacement with native trees at a 2:1 ratio because the trees may provide nesting sites for raptors; however, raptor nesting in ornamental trees within the biological resources study area was not documented by the LAX Master Plan EIR.[212] Additionally, evidence of raptor nesting in ornamental trees within Construction Staging Area A was not found during field surveys conducted for the Bradley West Project in 2010, nor within the biological resources study area during field surveys conducted by Glenn Lukos Associates in 2011. Although the 2011 surveys were conducted on July 7, November 18, and December 1, 2011 at the end of, and outside of, the raptor breeding season (January 1 - September 15), past evidence of raptor nesting, such as nesting materials and whitewash, would likely have been detectable. Additionally, the majority of the ornamental trees in the biological resources study are not the types typically preferred by common raptor species in Southern California, with the exception of eucalyptus trees, which may be used by red-tailed and red-shouldered hawks, and palm trees, which may be used by American kestrels. Since the ornamental trees on-site are not subject to a tree-replacement ordinance, and are not known to provide nesting sites for sensitive raptors, removal of mature trees is not a significant impact unless such trees are documented to support nesting.

Under Alternative 1, construction activities may result in substantial interference with nesting during the breeding season (March 15 to August 15) through either close proximity of construction activity or removal of vegetation that supports avian species afforded protection under the MBTA or Fish and Game Code 3503 or 3503.5. Such impacts would be significant. With implementation of Mitigation Measures MM-BIO (SPAS)-11, Conservation of Faunal Resources: Mature Tree Replacement - Nesting Raptors, and MM-BIO (SPAS)-12, Conservation of Faunal Resources: Nesting Birds/Raptors, described in Section 4.3.7 below, impacts to nesting birds and raptors would be less than significant.

Upon completion of construction, operation of the facilities associated with Alternative 1 would not result in significant impacts to sensitive wildlife species. In the Los Angeles/El Segundo Dunes, operation of the relocated navigational aids would be largely automated and/or controlled remotely. Vehicular access for maintenance would be limited to existing roads and cleared areas, and offroad activity would be limited to technicians on foot. Therefore, no sensitive species would be impacted either through habitat loss or direct take. Operations and maintenance of the airport improvements would be conducted following the same procedures currently in use, with continued maintenance mowing in the airfield. However, no sensitive species would be impacted through either habitat loss or direct take, except when required for hazardous wildlife management pursuant to FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan."

Under Alternative 1, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no locally-designated wildlife species are known to occur within the biological resources study area. There are no wildlife movement/migration corridors associated with any portion of the biological resources study area, including the Argo Drainage Channel. Therefore, Alternative 1 would not result in interference with wildlife movement/migration corridors.

Jurisdictional Aquatic Features

Alternative 1 would have an impact on all USACOE and CDFG jurisdictional areas associated with the Argo Drainage Channel by structurally covering the Channel in order to relocate Runway 6L/24R 260 feet

[212] Sapphos Environmental, Inc., LAX Master Plan EIS/EIR, Technical Report 7, Biological Resources, Memoranda for the Record on Floral and Faunal Surveys, January 2001.

north of its current location. Impacts to USACOE jurisdictional areas would include 3.78 acres, of which 1.33 acres consists of wetlands vegetated with California Bulrush Marsh (1.31 acres) and Sandbar Willow Thicket (0.02 acre), and 2.45 acres consists of non-wetland waters of the U.S. vegetated with the ruderal (Argo Drainage Channel) association. Impacts to CDFG jurisdictional areas would include 3.97 acres, of which 2.45 acres consist of streambed and banks vegetated with the ruderal (Argo Drainage Channel) association, and 1.52 acres consist of vegetated riparian habitat (0.21 acre of Sandbar Willow Thicket and 1.31 acres of California Bulrush Marsh). These impacts would constitute a substantial alteration of the flow, bed, channel, or bank of rivers, streams, or lakes as defined in Section 1600 of the State Fish and Game Code and a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruptions, or other means, and would be significant. With implementation of Mitigation Measure MM-BIO (SPAS)-13, Replacement of Jurisdictional Aquatic Features, described in Section 4.3.7 below, impacts relating to USACOE and CDFG jurisdictional areas would be less than significant.

Indirect Impacts

Under Alternative 1, increased concentrations of air pollutants would result from construction activities and from operations at build out in 2025 (see Section 4.2, *Air Quality*). Due to prevailing wind conditions, operational concentrations would be highest within the eastern portion of the airport, away from the locations of sensitive species. However, construction activities would result in increased concentrations of nitrogen dioxide (NO_2) at construction sites, which would occur in various locations, including those on the west end of the airport. Sensitive species within the Dunes are currently exposed to air pollutant concentrations from existing airport operations and other sources in the airport environs. As discussed in Section 4.3.3.3, *Existing Effects from Light, Air Quality, and Noise*, the success of vegetation restoration efforts and increases in populations of the El Segundo blue butterfly indicate that flora and fauna at LAX are not adversely affected by existing air quality. Moreover, El Segundo blue butterfly populations do not correspond to annual aircraft populations. Similarly, it is not anticipated that implementation of Alternative 1 would result in significant indirect impacts to biological resources, including sensitive floral and faunal species.

Construction of Alternative 1, particularly construction of airfield improvements at the west end of the north airfield in close proximity to the Los Angeles/El Segundo Dunes and the El Segundo Blue Butterfly Habitat Restoration Area, would have the potential to deposit fugitive dust within state-designated sensitive habitats that support a listed species, the El Segundo blue butterfly. With implementation of LAX Master Plan Mitigation Measures MM-BC-1, Conservation of State-Designated Sensitive Habitat within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area, and MM-ET-3, El Segundo Blue Butterfly Conservation: Dust Control, impacts associated with fugitive construction dust would be less than significant.

The analysis of light emissions conducted for the LAX Master Plan EIR found that increased light would have no effect on the El Segundo blue butterfly, as it is a diurnal species, does not exhibit flight-to-light behavior, and remains perched around the coast buckwheat foodplant at night. With respect to other sensitive species, the analysis found that, although light emissions would be slightly increased within the Los Angeles/El Segundo Dunes, impacts to sensitive biological resources would be less than significant. An updated light analysis for the SPAS EIR, provided in Section 4.1, *Aesthetics*, similarly shows that increased light emissions associated with Alternative 1 would not result in spillover into the Los Angeles/El Segundo Dunes or Habitat Restoration Area, due to their distance (135 or more feet), and the low profile of airfield-related lights. Light emissions associated with the relocated navigational aids within the Los Angeles/El Segundo Dunes would be similar to existing light emissions from this light source, as the number, color, intensity, and usage of the lighting would remain the same. As a result, impacts from light emissions on biological resources under Alternative 1 would be less than significant.

The analysis of potential noise impacts conducted for the LAX Master Plan found that maximum noise levels would not increase with implementation of the Master Plan, and impacts to sensitive biological resources from noise would be less than significant. The analysis of potential noise impacts for the SPAS

EIR (see Section 4.10,1 *Aircraft Noise*) found that maximum noise levels within the Los Angeles/El Segundo Dunes and Habitat Restoration Area would decrease at two grid points and slightly increase at a third under Alternative 1. Under baseline conditions, the maximum noise level at grid points 27, 28, and 37 in the Dunes is 101, 105.2, and 111.9 decibels, respectively. Under Alternative 1 at project buildout in 2025, the project maximum noise level at the same grid points would be 92.5, 106.5, and 103.2 decibels, indicating a decrease for grid points 27 and 37, and a slight increase of 1.3 decibels for grid point 28, corresponding with the northerly move of Runway 6L/24R. Given that noise levels are already above the maximum threshold for those sensitive species with known thresholds, the effect of a rise of 1.3 decibels for grid point 28 would be speculative. Furthermore, multiple occurrences of sensitive species, including loggerhead shrike, burrowing owl, San Diego horned lizard, and silvery legless lizard, have been observed at grid points 27, 28, and 37 under baseline conditions, and it is assumed that the sensitive species that utilize the Dunes have habituated to the baseline noise level. As maximum noise levels would decrease over much of the Dunes under Alternative 1, and the increase at grid point 28 would be minimal, the impacts to sensitive species from aircraft noise would be less than significant.

Construction noise originating in the airfield would have little effect on sensitive biological resources. Noise levels from the noisiest outdoor construction activities, independent of background ambient noise levels, are typically 86 dBA L_{eq}[213] at 50 feet from the noise source. These activities include excavation and grading. This type of sound typically dissipates at a rate of 4.5 dBA to 6.0 dBA for each doubling of distance. Based on a sound dissipation rate of 4.5 dBA per doubling of distance, a sound level of 86 dBA at 50 feet from the noise source would be approximately 81.5 dBA at a distance of 100 feet, 77 dBA at a distance of 200 feet, and so on. That sound drop off rate does not take into account any intervening shielding or barriers, such as structures or hills between the noise source and noise receptor. Under Alternative 1, the nearest construction to the Los Angeles/El Segundo Dunes and associated sensitive biological resources where substantial excavation and grading would occur would be for the relocation of Runway 6L/24R and associated high-speed taxiway exits at the western end of the north airfield, which is roughly 275 feet from the Habitat Restoration Area. At that distance, construction noise levels would be expected to be less than 75 dBA at any given time. As discussed in the LAX Master Plan EIR, the level at which a noise event becomes a disturbance to the sensitive species in the Dunes is generally at L_{max}[214] of 95 dBA. Therefore, the impact of construction noise originating in the airfield on sensitive biological resources in the Dunes would be less than significant. As indicated in Section 4.10.3, *Construction Traffic and Equipment Noise*, the relocation of navigational aids would require little, if any, use of heavy-duty construction equipment, and therefore impacts would be less than significant.

Construction noise originating in the airfield may also affect sensitive biological resources in the airfield, such as burrowing owl and loggerhead shrike. Under Alternative 1, construction noise associated with structurally covering the Argo Drainage Channel and the use of Construction Staging Area A would be the closest sources of noise to mapped locations of loggerhead shrike and burrowing owl. As Construction Staging Area A has been previously developed and in continuous use for the Bradley West and Crossfield Taxiway projects, the use of the area under Alternative 1 would not constitute a significant change from baseline noise levels and, as such, impacts would be less than significant. Regarding construction noise from covering the Argo Drainage Channel, as burrowing owls and loggerhead shrikes could avoid the area, impacts would be less than significant.

4.3.6.2 Alternative 2

Habitats/Vegetation Associations

The analysis of impacts to habitats and vegetation associations is presented in two parts. The first part addresses impacts associated with development of the north airfield--including the reconstruction of the

213 L_{eq} = equivalent noise level.

214 L_{max} is the maximum or peak sound level during a noise event. The metric only accounts for the instantaneous peak intensity of the sound, and not for the duration of the event. As an aircraft passes by an observer, the sound level increases to a maximum level and then decreases.

western portion of Taxiway E and the westerly extension of Taxilane D--as well as the use of construction staging areas around the perimeter of the airport. Also considered in the analysis are the roadway modifications, terminal/concourse modifications, Intermodal Transportation Center (ITC), dedicated busway, and parking area on the eastern side of the airport; however, as these facilities would occur in areas that are currently either developed or highly disturbed on the east side of the airport and well-removed from sensitive biological resources, these improvements are not discussed further in this section, with the exception of vegetation in developed areas that may support nesting birds. The second part addresses impacts specifically associated with the relocation of navigational aids. The analysis of navigational aids considers impacts associated with new light standards and foundations. No new permanent service roads associated with navigational aids would be required under Alternative 2.

North Airfield and Construction Staging Areas

Figure 4.3-8 depicts impacts to vegetation associations under Alternative 2 associated with development of the north airfield and use of construction staging areas. (For ease of viewing the vegetation associations, not all proposed project improvements are labeled in **Figure 4.3-8**. Refer to Figure 2-2 for a complete depiction of all improvements associated with Alternative 2, and Figure 2-15 for proposed construction staging areas.) The acreage of each vegetation association affected by Alternative 2, and the acreage that would remain following implementation of this alternative, are presented in **Table 4.3-3**.

As discussed under Alternative 1, there are approximately 637.47 acres of undeveloped area located east of Pershing Drive, including areas within the airfield and Construction Staging Areas A, B, C, D, and G. Vegetation associations within the undeveloped portions of this area include: Disturbed Southern Dune Scrub; Encelia Scrub; California Bulrush Marsh; Sandbar Willow Thicket; ruderal (Argo Drainage Channel); and ruderal vegetation. Implementation of the improvements under Alternative 2 would reduce the total undeveloped area from the baseline conditions of 637.47 acres within this area by 65.68 acres to 571.79 acres (refer to **Table 4.3-3**). Impacts to 65.68 acres of undeveloped area consist of impacts to 62.99 acres of ruderal vegetation associated with the north airfield and with proposed Construction Staging Areas A, B, C, D, and G, and 2.69 acres of Disturbed Southern Dune Scrub within Construction Staging Area A.

Under Alternative 2, impacts to ruderal vegetation would be similar to those described for Alternative 1. As with Alternative 1, because ruderal vegetation is not a state- or locally-designated sensitive habitat and is subject to regular operations and maintenance, including mowing, these impacts would be less than significant.

Under Alternative 2, impacts to Disturbed Southern Dune Scrub would be the same as described for Alternative 1. As with Alternative 1, the permanent loss of Disturbed Southern Dune Scrub would be a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below, this impact would be less than significant.

Because there would be no northerly relocation of Runway 6L/24R under Alternative 2, there would be no modifications to the Argo Drainage Channel (other than those required under existing conditions to meet federal Runway Safety Area (RSA) requirements) and no loss of vegetation in the drainage channel.

Under Alternative 2, operation of the proposed improvements would not have an impact on sensitive habitats and vegetation associations, as operation would not result in any additional disturbance of, or reduction in, any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 2, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 2, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Navigational Aids

Under Alternative 2, relocation of navigational aids would result in permanent impacts to 0.03 acre of undeveloped area within the north airfield east of Pershing Drive, all of which consists of Encelia Scrub located east of Pershing near the western end of Runway 6R/24L (refer to **Table 4.3-4** and **Figure 4.3-9**). Additional temporary impacts may occur during construction. As with Alternative 1, because this is not a state-designated sensitive habitat, this impact would be less than significant.

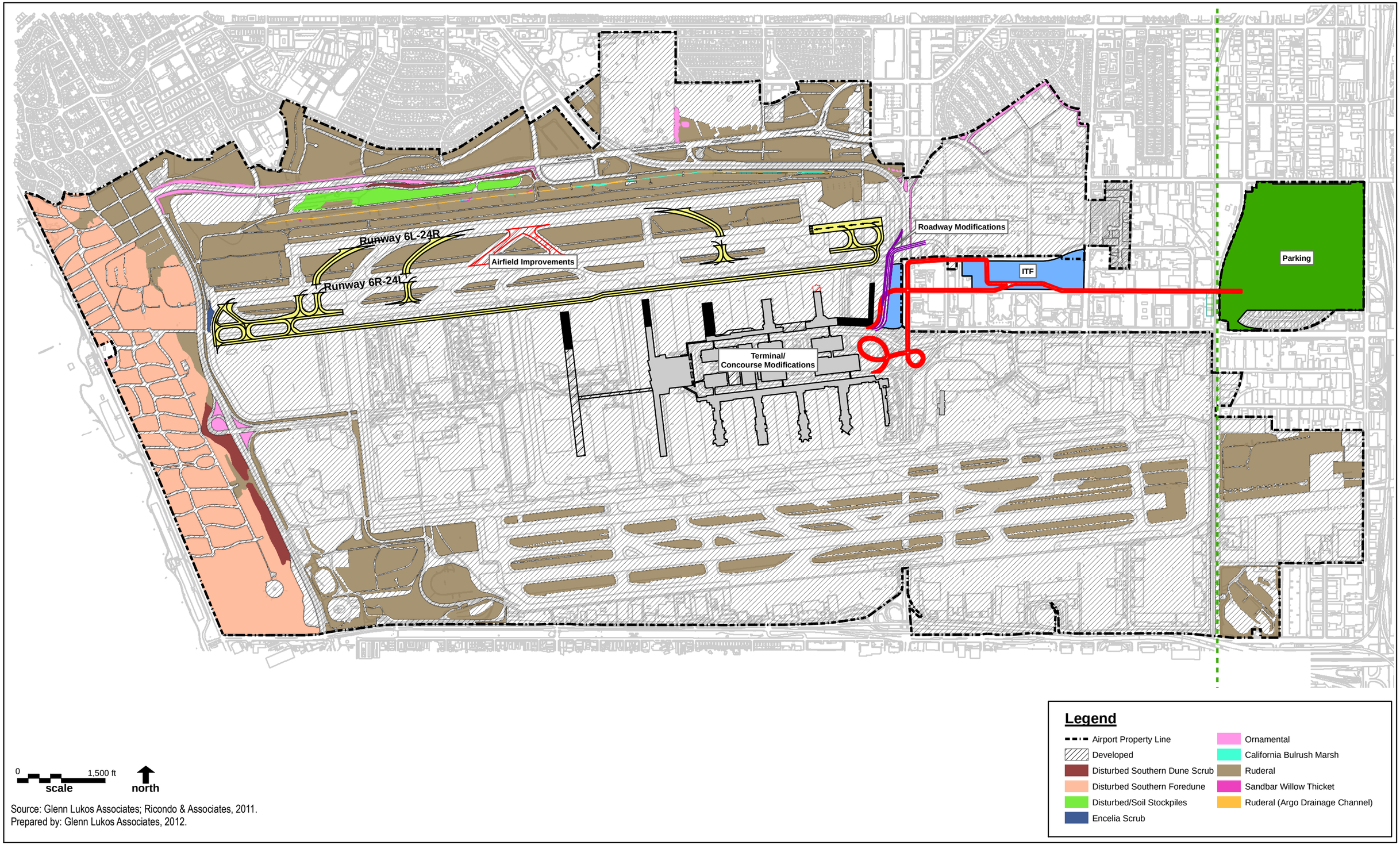
Under Alternative 2, relocation of navigational aids would result in impacts to 0.33 acre of undeveloped area within the Los Angeles/El Segundo Dunes, all of which consists of Disturbed Southern Foredune, which is a state-designated sensitive habitat (refer to **Table 4.3-4** and **Figure 4.3-9**). It is not anticipated that new service roads would be required for the relocated navigational aids under Alternative 2. Of the impacts to undeveloped area, 0.19 acre would occur within the Habitat Restoration Area. Moreover, temporary impacts associated with minor grading and construction-related access roads would occur. As with Alternative 1, under Alternative 2, the loss of 0.33 acre of Disturbed Southern Foredune, along with additional construction-related impacts, would be significant. To address impacts to state-designated habitats associated with the relocation of navigational aids within the Dunes, Mitigation Measure MM-BIO (SPAS)-1, Replacement of State Designated Habitats, described in Section 4.3.7 below, is proposed. This measure would provide for restoration of habitat within the Dunes. With implementation of Mitigation Measure MM-BIO (SPAS)-1, impacts to sensitive habitats would be less than significant.

Under Alternative 2, impacts to sensitive habitats associated with operation of the navigational aids would be less than significant, as maintenance and other operational activities would be limited to existing roads and graded pads and, therefore, would not result in any additional disturbance of or reduction in any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 2, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 2, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Other Impacts

As noted above, construction activities associated with Alternative 2 would occur in the Dunes, both within and adjacent to the El Segundo Blue Butterfly Habitat Restoration Area. Implementation of LAX Master Plan Mitigation Measure MM-BC-1, Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area, would ensure the protection of this habitat.

Alternative 2 would result in the loss of 12.13 habitat units (see **Table 4.3-5**). In accordance with the LAX Master Plan mitigation program for biological resources, specifically, LAX Master Plan Mitigation Measure MM-BC-8, Replacement of Habitat Units, the loss of habitat units would be mitigated through a habitat replacement program, as outlined in Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below. Pursuant to this program, a habitat value of 0.8 would apply to the replacement acreage. Therefore, 15.16 acres would be required to mitigate the loss of habitat units.



Source: Glenn Lukos Associates; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

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Vegetation/Land Uses: Alternative 2

Figure
4.3-8

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Note: Lewis' Evening Primrose identified at western end of north airfield in 1998 are not depicted on this figure, as a map of the population is not available.

0 300 ft
Scale
north

Source: Glenn Lukos Associates; Sapphos Environmental Inc, 2000; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

Legend

- Airport Property Line
- El Segundo Blue Butterfly Habitat Restoration Area
- Proposed Navigational Aids
- Existing Navigational Aids to be Removed
- Developed
- Disturbed Southern Foredune
- Encelia Scrub
- Ruderal
- Sandbar Willow Thicket
- Ruderal (Argo Drainage Channel)
- South Coast Branching Phacelia - Mapped in 2011 for SPAS EIR
- California Spineflower - Mapped in 1998 for Master Plan EIR
- Lewis' Evening Primrose - Mapped in 1998 for Master Plan EIR
- Loggerhead Shrike - 1998
- San Diego Horned Lizard - 1998
- Silvery Legless Lizard - 1998
- Silvery Legless Lizard - 2010
- Wintering Burrowing Owl - 1998
- Wintering Burrowing Owl - 2012

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Vegetation/Land Uses and Sensitive Species: Navigational Aids - Alternative 2

Figure
4.3-9

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Mature trees may be removed in conjunction with the use of Construction Staging Areas B, C, and D. Implementation of LAX Master Plan Mitigation Measure MM-BC-3, Conservation of Floral Resources: Mature Tree Replacement, would ensure that associated impacts would be less than significant.

Sensitive Plants

Under Alternative 2, impacts to sensitive plants from construction would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, five sensitive plant species--including Lewis' evening primrose, California spineflower, south coast branching phacelia, mesa horkelia, and Orcutt's pincushion--have the potential to occur in the navigational aids relocation area, and one species, southern tarplant, has potential to occur in Construction Staging Areas B, C, and D. As the number and distribution of the species could be extremely variable from year to year, and the presence or absence of some species was not able to be determined during preparation of this EIR, it is assumed that significant impacts to these sensitive plant species would occur as a result of construction of Alternative 2. To address impacts to sensitive plant species, a series of mitigation measures is proposed, as described in Section 4.3.7 below, including MM-BIO (SPAS)-2, Conservation of Floral Resources: South Coast Branching Phacelia, MM-BIO (SPAS)-3, Conservation of Floral Resources: Lewis' Evening Primrose, MM-BIO (SPAS)-4, Conservation of Floral Resources: California Spineflower, MM-BIO (SPAS)-5, Conservation of Floral Resources: Mesa Horkelia, MM-BIO (SPAS)-6, Conservation of Floral Resources: Orcutt's Pincushion, and MM-BIO (SPAS)-7, Conservation of Floral Resources: Southern Tarplant. With implementation of these mitigation measures, impacts to sensitive plants would be less than significant.

Upon completion of construction, operation of facilities associated with Alternative 2 would not result in impacts to sensitive plant species, as routine access would be limited to existing roads. Under Alternative 2, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no such plant species are known to occur within the biological resources study area.

Sensitive Wildlife

Under Alternative 2, impacts to sensitive arthropods and gastropods, silvery legless lizard, and coast horned lizard associated with the relocation of navigational aids within the Los Angeles/El Segundo Dunes would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, construction activities could result in the loss of individuals through the direct take of these species, which is considered to be a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-8, Conservation of Faunal Resources: Sensitive Reptiles, Arthropods, and Gastropods, described in Section 4.3.7 below, impacts to these sensitive wildlife species would be less than significant.

Under Alternative 2, impacts to loggerhead shrike associated with construction within the AOA and with the relocation of navigational aids in the Los Angeles/El Segundo Dunes would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, impacts to loggerhead shrike through habitat loss would be less than significant. However, because loggerhead shrike are assumed to be a resident breeding species in the Los Angeles/El Segundo Dunes, construction activities that interfere with nesting activity would result in a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-9, Conservation of Faunal Resources: Loggerhead Shrike, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

Under Alternative 2, impacts to burrowing owl would be the same as or substantially similar to the impacts described for Alternative 1. Similar to Alternative 1, if burrowing owl is present within the construction staging areas, the AOA, and/or the navigational aids relocation area, impacts to this species would be significant. With implementation of Mitigation Measure MM-BIO (SPAS)-10, Conservation of Faunal Resources: Burrowing Owl, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

As with Alternative 1, under Alternative 2, impacts to San Diego black-tailed jackrabbit through habitat modification or loss of individuals would be less than significant.

Under Alternative 2, impacts to El Segundo blue butterfly from relocation of navigational aids would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, navigational aids relocation activities would occur in an area that is occupied by this species, albeit at very low densities due to the small quantity of host plants with low flowerhead density. In accordance with LAX Master Plan Mitigation Measures MM-ET-3, El Segundo Blue Butterfly Conservation: Dust Control, and MM-ET-4, El Segundo Blue Butterfly Conservation: Habitat Restoration, and the Biological Opinion for the project that was issued by the USFWS, impacts to the El Segundo blue butterfly and habitat occupied by the El Segundo blue butterfly would be addressed through dust control during construction, habitat replacement, and avoidance of the flight season. With implementation of these measures, impacts to El Segundo blue butterfly would be less than significant.

Under Alternative 2, impacts to nesting migratory birds and raptors, and mature trees that may be used as nesting sites, would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, use of Construction Staging Areas B, C, D, and F would have the potential to result in the removal of mature trees used by nesting raptors. In addition, construction activities may result in substantial interference with nesting during the breeding season through either close proximity of construction activity or removal of vegetation that supports protected avian species. Such impacts would be significant. With implementation of Mitigation Measures MM-BIO (SPAS)-11, Conservation of Faunal Resources: Mature Tree Replacement - Nesting Raptors, and MM-BIO (SPAS)-12, Conservation of Faunal Resources: Nesting Birds/Raptors, described in Section 4.3.7 below, impacts to nesting birds and raptors would be less than significant.

As with Alternative 1, upon completion of construction, impacts to sensitive wildlife species associated with operation of the facilities associated with Alternative 2 would be less than significant. Moreover, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no locally-designated wildlife species are known to occur within the biological resources study area. There are no wildlife movement/migration corridors associated with any portion of the biological resources study area. Therefore, Alternative 2 would not result in interference with wildlife movement/migration corridors.

Jurisdictional Aquatic Features

Under Alternative 2, modifications to USACOE and CDFG jurisdictional areas associated with the Argo Drainage Channel (other than those required under existing conditions to meet federal RSA requirements) would be avoided. Therefore, no impacts to USACOE jurisdictional waters and wetlands and CDFG jurisdictional streambed and associated vegetated riparian habitat would occur as a result of implementing Alternative 2.

Indirect Impacts

Under Alternative 2, indirect impacts to biological resources from changes in air quality due to airport operations relative to baseline conditions would be the same as described above for Alternative 1. As with Alternative 1, prevailing wind conditions would result in peak operational concentrations within the eastern portion of the airport, away from the locations of sensitive species, although increased construction-related concentrations would occur at various locations, including those on the west end of the airport. Evidence indicates that biological resources in the Dunes are not adversely affected by existing air quality and it is not anticipated that implementation of Alternative 2 would result in significant indirect impacts to biological resources related to air quality. In addition, fugitive dust associated with construction activities located in proximity to the Los Angeles/El Segundo Dunes would be reduced with implementation of LAX Master Plan Mitigation Measures MM-BC-1 and MM-ET-3. For these reasons, indirect impacts associated with air quality would be less than significant.

Under Alternative 2, indirect impacts to biological resources from changes in light emissions relative to baseline conditions would be the same as described for Alternative 1. As with Alternative 1, changes to

light emissions within the western portion of the airfield would not result in spillover into the Los Angeles/El Segundo Dunes, and light emissions associated with the relocation of navigational aids within the Los Angeles/El Segundo Dunes would be similar to existing light emissions. For these reasons, indirect impacts associated with light emissions would be less than significant.

The analysis of potential noise impacts for the SPAS EIR (see Section 4.10,1 *Aircraft Noise*) found that maximum noise levels within the Los Angeles/El Segundo Dunes and Habitat Restoration Area would decrease under Alternative 2. Under baseline conditions, the maximum noise level at grid points 27, 28, and 37 in the Dunes is 101, 105.2, and 111.9 decibels, respectively. Under Alternative 2 at project buildout in 2025, the project maximum noise level at the same grid points would be 92.5, 98.3, and 103.2 decibels. Given that noise levels would decrease under Alternative 2, the impacts to sensitive species from aircraft noise would be less than significant.

Under Alternative 2, construction noise impacts on sensitive species in the Dunes from noise originating both in the airfield and in the Dunes would be similar to Alternative 1, and would be less than significant.

Under Alternative 2, construction noise impacts on sensitive species in the airfield would be similar to Alternative 1, with Construction Staging Area A being the closest source of noise to mapped locations of loggerhead shrike and burrowing owl. As Construction Staging Area A has been previously developed and in continuous use for the Bradley West and Crossfield Taxiway projects, the use of the area under Alternative 2 would not constitute a significant change from baseline noise levels and, as such, impacts would be less than significant.

4.3.6.3 Alternative 3

Habitats/Vegetation Associations

The analysis of impacts to habitats and vegetation associations is presented in two parts. The first part addresses impacts associated with development of the north airfield--including the westerly extension of Runway 6L/24R, relocation of Runway 6R/24L, the construction of a centerfield taxiway and high speed taxiway exits from Runway 6L/24R, the relocation of Taxiway E, and the westerly extension of Taxilane D as well as the use of construction staging areas around the perimeter of the airport. Also considered in the analysis are the Ground Transportation Center (GTC), Consolidated Rental Car Facility (CONRAC), ITC, and new roadways on the eastern side of the airport; however, as these facilities would occur in areas that are currently either developed or highly disturbed on the east side of the airport and well-removed from sensitive biological resources, these improvements are not discussed further in this section, with the exception of vegetation in developed areas that may support nesting birds. The second part addresses impacts specifically associated with the relocation of navigational aids. The analysis of navigational aids considers impacts associated with new light standards and foundations, as well as the impacts from new service roads as determined as part of the *Coastal Zone Management Act (CZMA) Consistency Determination by FAA*, and included in the LAX Master Plan Final EIR Appendix A-3a.

North Airfield and Construction Staging Areas

Figure 4.3-10 depicts impacts to vegetation associations under Alternative 3 associated with development of the north airfield and use of construction staging areas. (For ease of viewing the vegetation associations, not all proposed project improvements are labeled in **Figure 4.3-10**. Refer to Figure 2-3 for a complete depiction of all improvements associated with Alternative 3, and Figure 2-15 for proposed construction staging areas.) The acreage of each vegetation association affected by Alternative 3, and the acreage that would remain following implementation of this alternative, are presented in **Table 4.3-3**.

There are approximately 637.47 acres of undeveloped area located east of Pershing Drive, including areas within the airfield and Construction Staging Areas A, B, C, D, and G. Vegetation associations within the undeveloped portions of this area include: Disturbed Southern Dune Scrub; Encelia Scrub; California Bulrush Marsh; Sandbar Willow Thicket; ruderal (Argo Drainage Channel); and ruderal vegetation. Implementation of the improvements under Alternative 3 would reduce the total undeveloped

area from the baseline conditions of 637.47 acres within this area by 125.45 acres to 512.02 acres (refer to **Table 4.3-3**). Impacts to 125.45 acres of undeveloped area consist of 122.55 acres of ruderal vegetation associated with the north airfield, parking and the ITC east of Aviation Boulevard, and proposed Construction Staging Areas A, B, C, D, and G; 2.69 acres of Disturbed Southern Dune Scrub within Construction Staging Area A; and 0.21 acre of Encelia Scrub west of the relocated Runway 6R/24L.

Under Alternative 3, impacts to ruderal vegetation would be similar to those described above for Alternative 1. As with Alternative 1, because ruderal vegetation is not a state- or locally-designated sensitive habitat and is subject to regular operations and maintenance, including mowing, these impacts would be less than significant.

Under Alternative 3, impacts to Disturbed Southern Dune Scrub would be the same as described above for Alternative 1. As with Alternative 1, the permanent loss of Disturbed Southern Dune Scrub would be a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below, this impact would be less than significant.

Under Alternative 3, 0.21 acre of Encelia Scrub would be permanently impacted for construction on the western end of the north airfield. As described previously for Alternative 1, the Encelia Scrub is not consistent with the definition of the state-designated sensitive habitat. As such, impacts to Encelia Scrub would be less than significant.

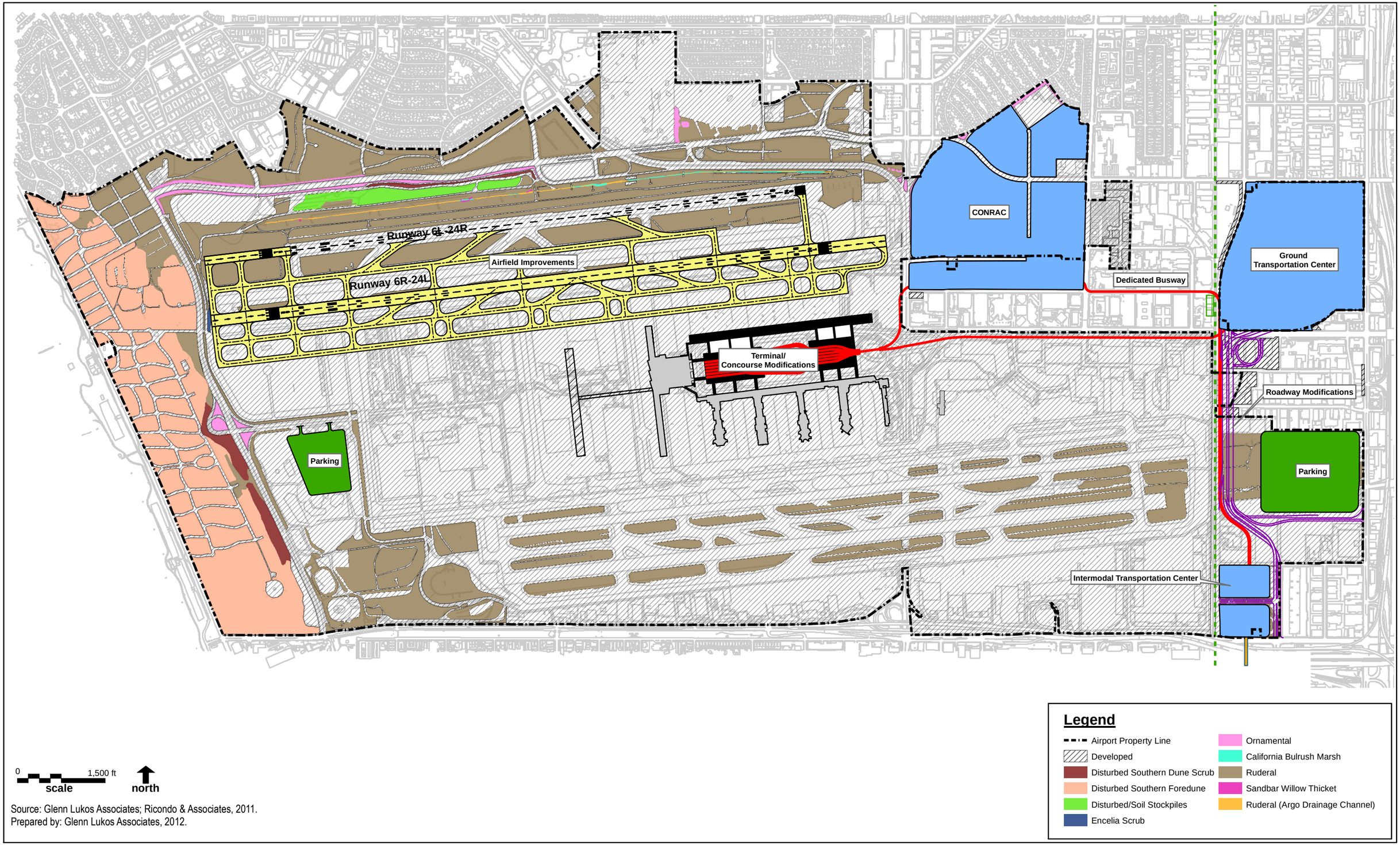
Because there would be no northerly relocation of Runway 6L/24R under Alternative 3, there would be no modifications to the Argo Drainage Channel (other than those required under existing conditions to meet federal RSA requirements) and no loss of vegetation in the drainage channel.

Under Alternative 3, operation of the proposed improvements would not have an impact on sensitive habitats and vegetation associations, as operation would not result in any additional disturbance of, or reduction in, any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 3, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 3, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Navigational Aids

Under Alternative 3, relocation of navigational aids would result in permanent impacts to 0.39 acre of undeveloped area within the north airfield east of Pershing Drive, including impacts to 0.03 acre of Encelia Scrub and 0.36 acre of ruderal vegetation (refer to **Table 4.3-4** and **Figure 4.3-10**), with additional minor temporary impacts related to construction. As with Alternative 1, because these are not sensitive habitats, these impacts would be less than significant.

Under Alternative 3, relocation of navigational aids and construction of new service roads would result in impacts to 1.12 acres of undeveloped area within the Los Angeles/El Segundo Dunes, including impacts to 1.03 acres of Disturbed Southern Foredune, which is a state-designated sensitive habitat, and 0.08 acre of ruderal vegetation (refer to **Table 4.3-4** and **Figure 4.3-11**). Of the impacts to undeveloped area, 0.59 acre of Disturbed Southern Foredune would occur within the Habitat Restoration Area. Moreover, temporary impacts associated with minor grading and construction-related access roads would occur. Under Alternative 3, impacts to Disturbed Southern Foredune and ruderal vegetation would be similar to those discussed above for Alternative 1. As with Alternative 1, the loss of 1.03 acres of Disturbed



Source: Glenn Lukos Associates; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

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Vegetation/Land Uses: Alternative 3

Figure
4.3-10

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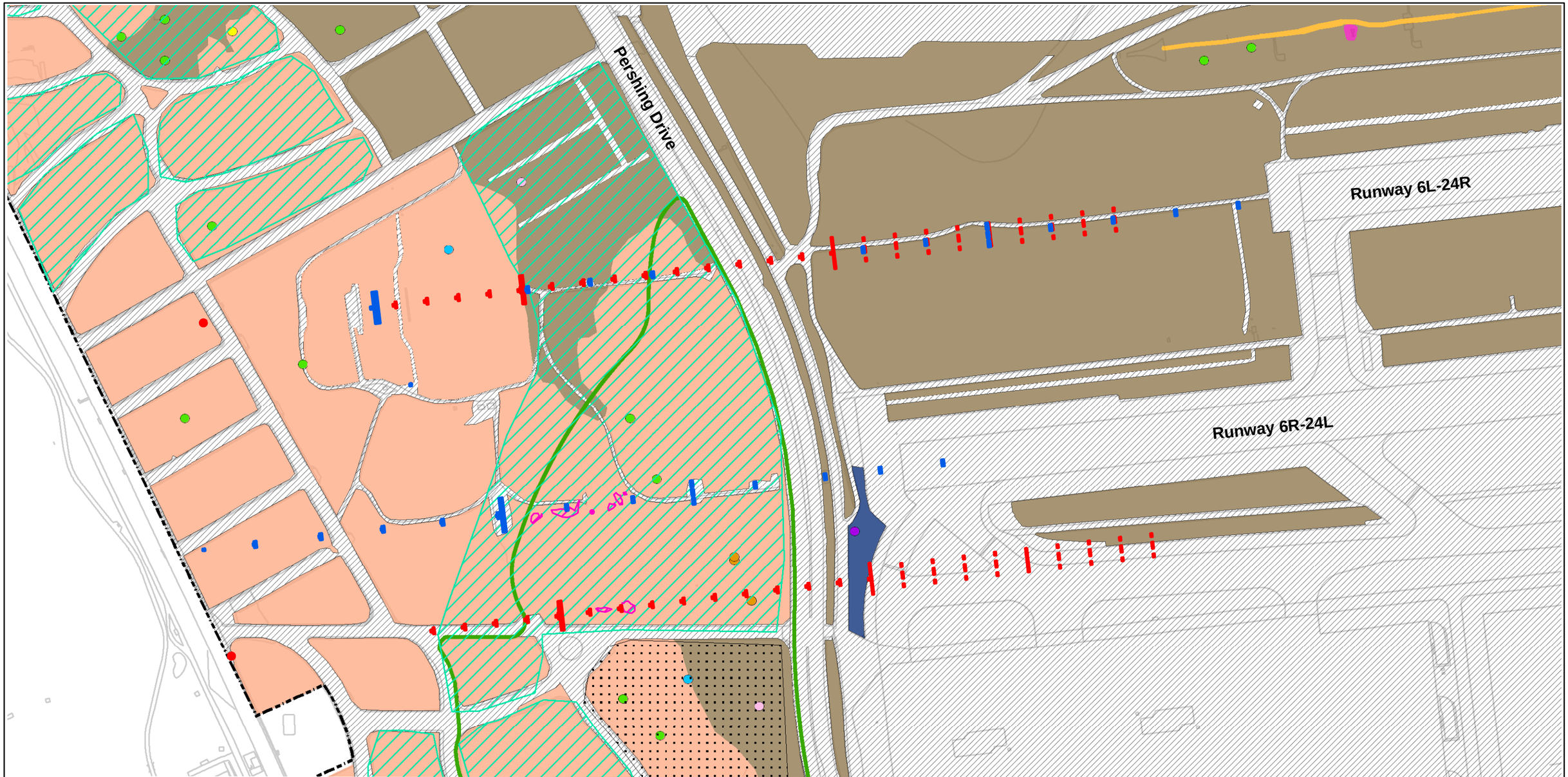

Note: Lewis' Evening Primrose identified at western end of north airfield in 1998 are not depicted on this figure, as a map of the population is not available.

0 300 ft
Scale
north

Source: Glenn Lukos Associates; Sapphos Environmental Inc, 2000; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

Legend

- Airport Property Line
- El Segundo Blue Butterfly Habitat Restoration Area
- Proposed Navigational Aids
- Existing Navigational Aids to be Removed
- Developed
- Disturbed Southern Foredune
- Encelia Scrub
- Ruderal
- Sandbar Willow Thicket
- Ruderal (Argo Drainage Channel)
- South Coast Branching Phacelia - Mapped in 2011 for SPAS EIR
- California Spineflower - Mapped in 1998 for Master Plan EIR
- Lewis' Evening Primrose - Mapped in 1998 for Master Plan EIR
- Loggerhead Shrike - 1998
- San Diego Horned Lizard - 1998
- Silvery Legless Lizard - 1998
- Silvery Legless Lizard - 2010
- Wintering Burrowing Owl - 1998
- Wintering Burrowing Owl - 2012

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Vegetation/Land Uses and Sensitive Species: Navigational Aids - Alternative 3

Figure
4.3-11

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Southern Foredune, along with additional construction-related impacts, would be significant. The loss of 0.09 acre of ruderal vegetation, as well as any temporary construction-related impacts, would not be significant, as ruderal vegetation is not a state- or locally-designated sensitive habitat. To address impacts to state-designated habitats associated with the relocation of navigational aids within the Dunes, Mitigation Measure MM-BIO (SPAS)-1, Replacement of State Designated Habitats, described in Section 4.3.7 below, is proposed. This measure would provide for restoration of habitat within the Dunes. With implementation of Mitigation Measure MM-BIO (SPAS)-1, impacts to sensitive habitats would be less than significant.

Under Alternative 3, impacts to sensitive habitats associated with operation of the navigational aids would be less than significant, as maintenance and other operational activities would be limited to existing roads and graded pads or those constructed under Alternative 3 and, therefore, would not result in any additional disturbance of or reduction in any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 3, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 3, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Other Impacts

As noted above, construction activities associated with Alternative 3 would occur in the Dunes, both within and adjacent to the El Segundo Blue Butterfly Habitat Restoration Area. Implementation of LAX Master Plan Mitigation Measure MM-BC-1, Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area, would ensure the protection of this habitat.

Alternative 3 would result in the loss of 21.30 habitat units (see **Table 4.3-5**). In accordance with the LAX Master Plan mitigation program for biological resources, specifically, LAX Master Plan Mitigation Measure MM-BC-8, Replacement of Habitat Units, the loss of habitat units would be mitigated through a habitat replacement program, as outlined in Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below. Pursuant to this program, a habitat value of 0.8 would apply to the replacement acreage. Therefore, 26.63 acres would be required to mitigate the loss of habitat units.

Mature trees may be removed in conjunction with the use of Construction Staging Areas B, C, and D. Implementation of LAX Master Plan Mitigation Measure MM-BC-3, Conservation of Floral Resources: Mature Tree Replacement, would ensure that associated impacts would be less than significant.

Sensitive Plants

Under Alternative 3, impacts to sensitive plants from construction would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, five sensitive plant species--including Lewis' evening primrose, California spineflower, south coast branching phacelia, mesa horkelia, and Orcutt's pincushion--have the potential to occur in the navigational aids relocation area, and one species, southern tarplant, has potential to occur in Construction Staging Areas B, C, and D. As the number and distribution of the species could be extremely variable from year to year, and the presence or absence of some species was not able to be determined during preparation of this EIR, it is assumed that significant impacts to these sensitive plant species would occur as a result of construction of Alternative 3. To address impacts to sensitive plant species, a series of mitigation measures is proposed, as described in Section 4.3.7 below, including MM-BIO (SPAS)-2, Conservation of Floral Resources: South Coast Branching Phacelia, MM-BIO (SPAS)-3, Conservation of Floral Resources: Lewis' Evening Primrose, MM-BIO (SPAS)-4, Conservation of Floral Resources: California Spineflower, MM-BIO (SPAS)-5, Conservation of Floral Resources: Mesa Horkelia, MM-BIO (SPAS)-6, Conservation of Floral

Resources: Orcutt's Pincushion, and MM-BIO (SPAS)-7, Conservation of Floral Resources: Southern Tarplant. With implementation of these mitigation measures, impacts to sensitive plants would be less than significant.

Upon completion of construction, operation of facilities associated with Alternative 3 would not result in impacts to sensitive plant species, as routine access would be limited to existing roads and roads constructed as part of the Alternative 3. Under Alternative 3, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no such plant species are known to occur within the biological resources study area.

Sensitive Wildlife

Under Alternative 3, impacts to sensitive arthropods and gastropods, silvery legless lizard, and coast horned lizard associated with the relocation of navigational aids within the Los Angeles/El Segundo Dunes would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, construction activities could result in the loss of individuals through the direct take of these species, which is considered to be a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-8, Conservation of Faunal Resources: Sensitive Reptiles, Arthropods, and Gastropods, described in Section 4.3.7 below, impacts to these sensitive wildlife species would be less than significant.

Under Alternative 3, impacts to loggerhead shrike associated with construction within the AOA and with the relocation of navigational aids in the Los Angeles/El Segundo Dunes would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, impacts to loggerhead shrike through habitat loss would be less than significant. However, because loggerhead shrike are assumed to be a resident breeding species in the Los Angeles/El Segundo Dunes, construction activities that interfere with nesting activity would result in a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-9, Conservation of Faunal Resources: Loggerhead Shrike, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

Under Alternative 3, impacts to burrowing owl would be the same as or substantially similar to the impacts described for Alternative 1. Similar to Alternative 1, if burrowing owl is present within the construction staging areas, the AOA, and/or the navigational aids relocation area, impacts on this species would be significant. With implementation of Mitigation Measure MM-BIO (SPAS)-10, Conservation of Faunal Resources: Burrowing Owl, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

As with Alternative 1, under Alternative 3, impacts to San Diego black-tailed jackrabbit through habitat modification or loss of individuals would be less than significant.

Under Alternative 3, impacts to El Segundo blue butterfly from relocation of navigational aids would be the same as or substantially similar to the impacts described above for Alternative 1. As with Alternative 1, navigational aids relocation activities would occur in an area that is occupied by this species, albeit at very low densities due to the small quantity of host plants with low flowerhead density. In accordance with LAX Master Plan Mitigation Measures MM-ET-3, El Segundo Blue Butterfly Conservation: Dust Control, and MM-ET-4, El Segundo Blue Butterfly Conservation: Habitat Restoration, and the Biological Opinion for the project that was issued by the USFWS, impacts to the El Segundo blue butterfly and habitat occupied by the El Segundo blue butterfly would be addressed through dust control during construction, habitat replacement, and avoidance of the flight season. With implementation of these measures, impacts to El Segundo blue butterfly would be less than significant.

Under Alternative 3, impacts to nesting migratory birds and raptors, and mature trees that may be used as nesting sites, would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, use of Construction Staging Areas B, C, D, and F would have the potential to result in the removal of mature trees used by nesting raptors. In addition, construction activities may result in substantial interference with nesting during the breeding season through either close proximity of

construction activity or removal of vegetation that supports protected avian species. Such impacts would be significant. With implementation of Mitigation Measures MM-BIO (SPAS)-11, Conservation of Faunal Resources: Mature Tree Replacement - Nesting Raptors, and MM-BIO (SPAS)-12, Conservation of Faunal Resources: Nesting Birds/Raptors, described in Section 4.3.7 below, impacts to nesting birds and raptors would be less than significant.

As with Alternative 1, upon completion of construction, impacts to sensitive wildlife species associated with operation of the facilities associated with Alternative 3 would be less than significant. Moreover, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no locally-designated wildlife species are known to occur within the biological resources study area. There are no wildlife movement/migration corridors associated with any portion of the biological resources study area. Therefore, Alternative 3 would not result in interference with wildlife movement/migration corridors.

Jurisdictional Aquatic Features

Under Alternative 3, modifications to USACOE and CDFG jurisdictional areas associated with the Argo Drainage Channel (other than those required under existing conditions to meet federal RSA requirements) would be avoided. Therefore, no impacts to USACOE jurisdictional waters and wetlands and CDFG jurisdictional streambed and associated vegetated riparian habitat would occur as a result of implementing Alternative 3.

Indirect Impacts

Under Alternative 3, indirect impacts to biological resources from changes in air quality due to airport operations relative to baseline conditions would be the same as described above for Alternative 1. As with Alternative 1, prevailing wind conditions would result in peak operational concentrations within the eastern portion of the airport, away from the locations of sensitive species, although increased construction-related concentrations would occur at various locations, including those on the west end of the airport. Evidence indicates that biological resources in the Dunes are not adversely affected by existing air quality and it is not anticipated that implementation of Alternative 3 would result in significant indirect impacts to biological resources related to air quality. In addition, fugitive dust associated with construction activities located in proximity to the Los Angeles/El Segundo Dunes would be reduced with implementation of LAX Master Plan Mitigation Measures MM-BC-1 and MM-ET-3. For these reasons, indirect impacts associated with air quality would be less than significant.

Under Alternative 3, indirect impacts to biological resources from changes in light emissions relative to baseline conditions would be similar to Alternative 1. As with Alternative 1, changes to light emissions within the western portion of the airfield would not result in spillover into the Los Angeles/El Segundo Dunes. The new navigational aids associated with Alternative 3 would result in an increase in the number of navigational aids in both the Dunes and the Habitat Restoration Area. However, this would not result in a substantial increase in light spillover or generate substantial glare, as the color, intensity, and usage of the lighting would be the same as existing light emissions. For these reasons, indirect impacts associated with light emissions would be less than significant.

The analysis of potential noise impacts for the SPAS EIR (see Section 4.10,1 *Aircraft Noise*) found that maximum noise levels within the Los Angeles/El Segundo Dunes and Habitat Restoration Area would decrease under Alternative 3. Under baseline conditions, the maximum noise level at grid points 27, 28, and 37 in the Dunes is 101, 105.2, and 111.9 decibels, respectively. Under Alternative 3 at project buildout in 2025, the project maximum noise level at the same grid points would be 94, 98.4, and 103.3 decibels. Given that noise levels would decrease under Alternative 3, the impacts to sensitive species from aircraft noise would be less than significant.

Under Alternative 3, construction noise impacts on sensitive species in the Dunes from noise originating both in the airfield and in the Dunes would be similar to Alternative 1, and would be less than significant.

Under Alternative 3, construction noise impacts on sensitive species in the airfield would be similar to Alternative 1, with Construction Staging Area A being the closest source of noise to mapped locations of loggerhead shrike and burrowing owl. As Construction Staging Area A has been previously developed and in continuous use for the Bradley West and Crossfield Taxiway projects, the use of the area under Alternative 3 would not constitute a significant change from baseline noise levels and, as such, impacts would be less than significant.

4.3.6.4 Alternative 4

Habitats/Vegetation Associations

The analysis of impacts to habitats and vegetation associations is presented in two parts. The first part addresses impacts associated with development of the north airfield--including the easterly extension of Runway 6R/24L, the extension of Taxiway E, as well as the use of construction staging areas around the perimeter of the airport. Also considered in the analysis is the CONRAC and Parking Facility in the southeast corner of the airport; however, as these facilities would occur in areas that are currently either developed or highly disturbed on the east side of the airport and well-removed from sensitive biological resources, these improvements are not discussed further in this section, with the exception of vegetation in developed areas that may support nesting birds. The second part addresses impacts specifically associated with the relocation of navigational aids. The analysis of navigational aids considers impacts associated with new light standards and foundations. No new permanent service roads associated with navigational aids would be required under Alternative 4.

North Airfield and Construction Staging Areas

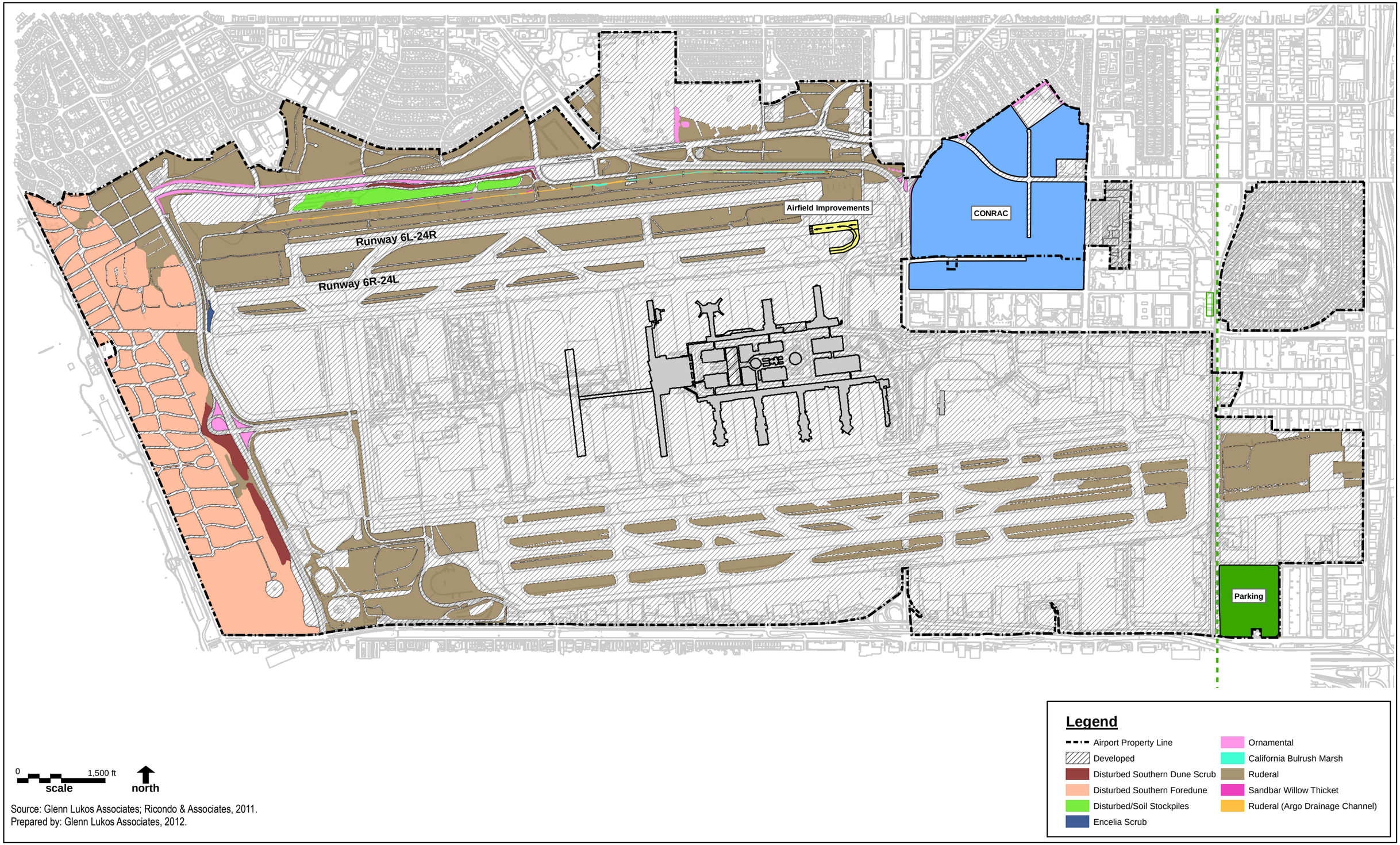
Figure 4.3-12 depicts impacts to vegetation associations under Alternative 4 associated with development of the north airfield and use of construction staging areas. (For ease of viewing the vegetation associations, not all proposed project improvements are labeled in **Figure 4.3-12**. Refer to Figure 2-4 for a complete depiction of all improvements associated with Alternative 4, and Figure 2-15 for proposed construction staging areas.) The acreage of each vegetation association affected by Alternative 4, and the acreage that would remain following implementation of this alternative, are presented in **Table 4.3-3**.

As discussed under Alternative 1, there are approximately 637.47 acres of undeveloped area located east of Pershing Drive, including areas within the airfield and Construction Staging Areas A, B, C, D, and G. Vegetation associations within the undeveloped portions of this area include: Disturbed Southern Dune Scrub; Encelia Scrub; California Bulrush Marsh; Sandbar Willow Thicket; ruderal (Argo Drainage Channel); and ruderal vegetation. Implementation of the improvements under Alternative 4 would reduce the total undeveloped area from the baseline conditions of 637.47 acres within this area by 59.67 acres to 577.80 acres (refer to **Table 4.3-3**). Impacts to 59.67 acres of undeveloped area consist of 56.98 acres of ruderal vegetation associated with proposed Construction Staging Areas A, B, C, D, and G, and 2.69 acres of Disturbed Southern Dune Scrub within Construction Staging Area A.

Under Alternative 4, impacts to ruderal vegetation would be the same as described for Alternative 1. As with Alternative 1, because ruderal vegetation is not a state- or locally-designated sensitive habitat and is subject to regular operations and maintenance, including mowing, these impacts would be less than significant.

Under Alternative 4, impacts to Disturbed Southern Dune Scrub would be the same as described for Alternative 1. As with Alternative 1, the permanent loss of Disturbed Southern Dune Scrub would be a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below, this impact would be less than significant.

Because there would be no northerly relocation of Runway 6L/24R under Alternative 4, there would be no modifications to the Argo Drainage Channel (other than those required under existing conditions to meet federal RSA requirements) and no loss of vegetation in the drainage channel.



Source: Glenn Lukos Associates; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

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Vegetation/Land Uses: Alternative 4

Figure
4.3-12

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Under Alternative 4, operation of the proposed improvements would not have an impact on sensitive habitats and vegetation associations, as operation would not result in any additional disturbance of, or reduction in, any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 4, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 4, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Navigational Aids

Under Alternative 4, relocation of navigational aids would result in permanent impacts to 0.03 acre of undeveloped area within the north airfield east of Pershing Drive, all of which consists of Encelia Scrub (refer to **Table 4.3-4** and **Figure 4.3-13**), with additional temporary impacts related to construction. As with Alternative 1, because this is not a state-designated sensitive habitat, this impact would be less than significant.

Under Alternative 4, relocation of navigational aids would result in impacts to 0.33 acre of undeveloped area within the Los Angeles/El Segundo Dunes, all of which consists of Disturbed Southern Foredune, which is a state-designated sensitive habitat (refer to **Table 4.3-4** and **Figure 4.3-13**). It is not anticipated that new service roads would be required for the relocated navigational aids under Alternative 4. Of the impacts to undeveloped area, 0.18 acre of Disturbed Southern Foredune would occur within the Habitat Restoration Area. Moreover, temporary impacts associated with minor grading and construction-related access roads would occur. As with Alternative 1, under Alternative 4, impacts to Disturbed Southern Foredune would be significant. To address impacts to state-designated habitats associated with the relocation of navigational aids within the Dunes, Mitigation Measure MM-BIO (SPAS)-1, Replacement of State Designated Habitats, described in Section 4.3.7 below, is proposed. This measure would provide for restoration of habitat within the Dunes. With implementation of Mitigation Measure MM-BIO (SPAS)-1, impacts to sensitive habitats would be less than significant.

Under Alternative 4, impacts to sensitive habitats associated with operation of the navigational aids would be less than significant, as maintenance and other operational activities would be limited to existing roads and graded pads and, therefore, would not result in any additional disturbance of or reduction in any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 4, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 4, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Other Impacts

As noted above, construction activities associated with Alternative 4 would occur in the Dunes, both within and adjacent to the El Segundo Blue Butterfly Habitat Restoration Area. Implementation of LAX Master Plan Mitigation Measure MM-BC-1, Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area, would ensure the protection of this habitat.

Alternative 4 would result in the loss of 11.32 habitat units (see **Table 4.3-5**). In accordance with the LAX Master Plan mitigation program for biological resources, specifically, LAX Master Plan Mitigation Measure MM-BC-8, Replacement of Habitat Units, the loss of habitat units would be mitigated through a habitat replacement program, as outlined in Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below. Pursuant to this program, a habitat value of 0.8 would apply to the replacement acreage. Therefore, 14.15 acres would be required to mitigate the loss of habitat units.

Mature trees may be removed in conjunction with the use of Construction Staging Areas B, C, and D. Implementation of LAX Master Plan Mitigation Measure MM-BC-3, Conservation of Floral Resources: Mature Tree Replacement, would ensure that associated impacts would be less than significant.

Sensitive Plants

Under Alternative 4, impacts to sensitive plants from construction would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, five sensitive plant species--including Lewis' evening primrose, California spineflower, south coast branching phacelia, mesa horkelia, and Orcutt's pincushion--have the potential to occur in the navigational aids relocation area, and one species, southern tarplant, has potential to occur in Construction Staging Areas B, C, and D. As the number and distribution of the species could be extremely variable from year to year, and the presence or absence of some species was not able to be determined during preparation of this EIR, it is assumed that significant impacts to these sensitive plant species would occur as a result of construction of Alternative 4. To address impacts to sensitive plant species, a series of mitigation measures is proposed, as described in Section 4.3.7 below, including MM-BIO (SPAS)-2, Conservation of Floral Resources: South Coast Branching Phacelia, MM-BIO (SPAS)-3, Conservation of Floral Resources: Lewis' Evening Primrose, MM-BIO (SPAS)-4, Conservation of Floral Resources: California Spineflower, MM-BIO (SPAS)-5, Conservation of Floral Resources: Mesa Horkelia, MM-BIO (SPAS)-6, Conservation of Floral Resources: Orcutt's Pincushion, and MM-BIO (SPAS)-7, Conservation of Floral Resources: Southern Tarplant. With implementation of these mitigation measures, impacts to sensitive plants would be less than significant.

Upon completion of construction, operation of facilities associated with Alternative 4 would not result in impacts to sensitive plant species, as routine access would be limited to existing roads. Under Alternative 4, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no such plant species are known to occur within the biological resources study area.

Sensitive Wildlife

Under Alternative 4, impacts to sensitive arthropods and gastropods, silvery legless lizard, and coast horned lizard associated with the relocation of navigational aids within the Los Angeles/El Segundo Dunes would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, construction activities could result in the loss of individuals through the direct take of these species, which is considered to be a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-8, Conservation of Faunal Resources: Sensitive Reptiles, Arthropods, and Gastropods, described in Section 4.3.7 below, impacts to these sensitive wildlife species would be less than significant.

Under Alternative 4, impacts to loggerhead shrike associated with the relocation of navigational aids in the Los Angeles/El Segundo Dunes would be the same as or substantially similar to the impacts described above for Alternative 1. As with Alternative 1, impacts to loggerhead shrike through habitat loss would be less than significant. However, because loggerhead shrike are assumed to be a resident breeding species in the Los Angeles/El Segundo Dunes, construction activities that interfere with nesting activity would result in a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-9, Conservation of Faunal Resources: Loggerhead Shrike, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

Note: Lewis' Evening Primrose identified at western end of north airfield in 1998 are not depicted on this figure, as a map of the population is not available.

0 300 ft
Scale
north

Source: Glenn Lukos Associates; Sapphos Environmental Inc, 2000; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

Legend

- Airport Property Line
- El Segundo Blue Butterfly Habitat Restoration Area
- Proposed Navigational Aids
- Existing Navigational Aids to be Removed
- Developed
- Disturbed Southern Foredune
- Encelia Scrub
- Ruderal
- Sandbar Willow Thicket
- Ruderal (Argo Drainage Channel)
- South Coast Branching Phacelia - Mapped in 2011 for SPAS EIR
- California Spineflower - Mapped in 1998 for Master Plan EIR
- Lewis' Evening Primrose - Mapped in 1998 for Master Plan EIR
- Loggerhead Shrike - 1998
- San Diego Horned Lizard - 1998
- Silvery Legless Lizard - 1998
- Silvery Legless Lizard - 2010
- Wintering Burrowing Owl - 1998
- Wintering Burrowing Owl - 2012

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Vegetation/Land Uses and Sensitive Species: Navigational Aids - Alternative 4

Figure
4.3-13

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Under Alternative 4, impacts to burrowing owl would be the same as or substantially similar to the impacts described for Alternative 1. Similar to Alternative 1, if burrowing owl is present within the construction staging areas and/or the navigational aids relocation area, impacts to this species would be significant. With implementation of Mitigation Measure MM-BIO (SPAS)-10, Conservation of Faunal Resources: Burrowing Owl, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

Under Alternative 4, impacts to San Diego black-tailed jackrabbit through habitat modification or loss of individuals would be less than significant.

Under Alternative 4, impacts to El Segundo blue butterfly from relocation of navigational aids would be the same as or substantially similar to the impacts described above for Alternative 1. As with Alternative 1, navigational aids relocation activities would occur in an area that is occupied by this species, albeit at very low densities due to the small quantity of host plants with low flowerhead density. In accordance with LAX Master Plan Mitigation Measures MM-ET-3, El Segundo Blue Butterfly Conservation: Dust Control, and MM-ET-4, El Segundo Blue Butterfly Conservation: Habitat Restoration, and the Biological Opinion for the project that was issued by the USFWS, impacts to the El Segundo blue butterfly and habitat occupied by the El Segundo blue butterfly would be addressed through dust control during construction, habitat replacement, and avoidance of the flight season. With implementation of these measures, impacts to El Segundo blue butterfly would be less than significant.

Under Alternative 4, impacts to nesting migratory birds and raptors, and mature trees that may be used as nesting sites, would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, use of Construction Staging Areas B, C, D, and F would have the potential to result in the removal of mature trees used by nesting raptors. In addition, construction activities may result in substantial interference with nesting during the breeding season through either close proximity of construction activity or removal of vegetation that supports protected avian species. Such impacts would be significant. With implementation of Mitigation Measures MM-BIO (SPAS)-11, Conservation of Faunal Resources: Mature Tree Replacement - Nesting Raptors, and MM-BIO (SPAS)-12, Conservation of Faunal Resources: Nesting Birds/Raptors, described in Section 4.3.7 below, impacts to nesting birds and raptors would be less than significant.

As with Alternative 1, upon completion of construction, impacts to sensitive wildlife species associated with operation of the facilities associated with Alternative 4 would be less than significant. Moreover, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no locally-designated wildlife species are known to occur within the biological resources study area. There are no wildlife movement/migration corridors associated with any portion of the biological resources study area. Therefore, Alternative 4 would not result in interference with wildlife movement/migration corridors.

Jurisdictional Aquatic Features

Under Alternative 4, modifications to USACOE and CDFG jurisdictional areas associated with the Argo Drainage Channel (other than those required under existing conditions to meet federal RSA requirements) would be avoided. Therefore, no impacts to USACOE jurisdictional waters and wetlands and CDFG jurisdictional streambed and associated vegetated riparian habitat would occur as a result of implementing Alternative 4.

Indirect Impacts

Under Alternative 4, indirect impacts to biological resources from changes in air quality due to airport operations relative to baseline conditions would be the same as described above for Alternative 1. As with Alternative 1, prevailing wind conditions would result in peak operational concentrations within the eastern portion of the airport, away from the locations of sensitive species, although increased construction-related concentrations would occur at various locations, including those on the west end of the airport. Evidence indicates that biological resources in the Dunes are not adversely affected by existing air quality and it is not anticipated that implementation of Alternative 4 would result in significant

indirect impacts to biological resources related to air quality. In addition, fugitive dust associated with construction activities located in proximity to the Los Angeles/El Segundo Dunes would be reduced with implementation of LAX Master Plan Mitigation Measures MM-BC-1 and MM-ET-3. For these reasons, indirect impacts associated with air quality would be less than significant.

Under Alternative 4, the only source of lighting in the Dunes would be from the new navigational aids. As with Alternative 1, light emissions associated with the installation of new navigational aids within the Los Angeles/El Segundo Dunes would be similar to existing light emissions. For this reason, indirect impacts associated with light emissions would be less than significant.

The analysis of potential noise impacts for the SPAS EIR (see Section 4.10,1 *Aircraft Noise*) found that maximum noise levels within the Los Angeles/El Segundo Dunes and Habitat Restoration Area would decrease under Alternative 4. Under baseline conditions, the maximum noise level at grid points 27, 28, and 37 in the Dunes is 101, 105.2, and 111.9 decibels, respectively. Under Alternative 4 at project buildout in 2025, the project maximum noise level at the same grid points would be 92.4, 98.3, and 103.2 decibels. Given that noise levels would decrease under Alternative 4, the impacts to sensitive species from aircraft noise would be less than significant.

Under Alternative 4, construction noise impacts on sensitive species in the Dunes from noise originating both in the airfield and in the Dunes would be similar to Alternative 1, and would be less than significant.

Under Alternative 4, construction noise impacts on sensitive species in the airfield would be similar to Alternative 1, with Construction Staging Area A being the closest source of noise to mapped locations of loggerhead shrike and burrowing owl. As Construction Staging Area A has been previously developed and in continuous use for the Bradley West and Crossfield Taxiway projects, the use of the area under Alternative 4 would not constitute a significant change from baseline noise levels and, as such, impacts would be less than significant.

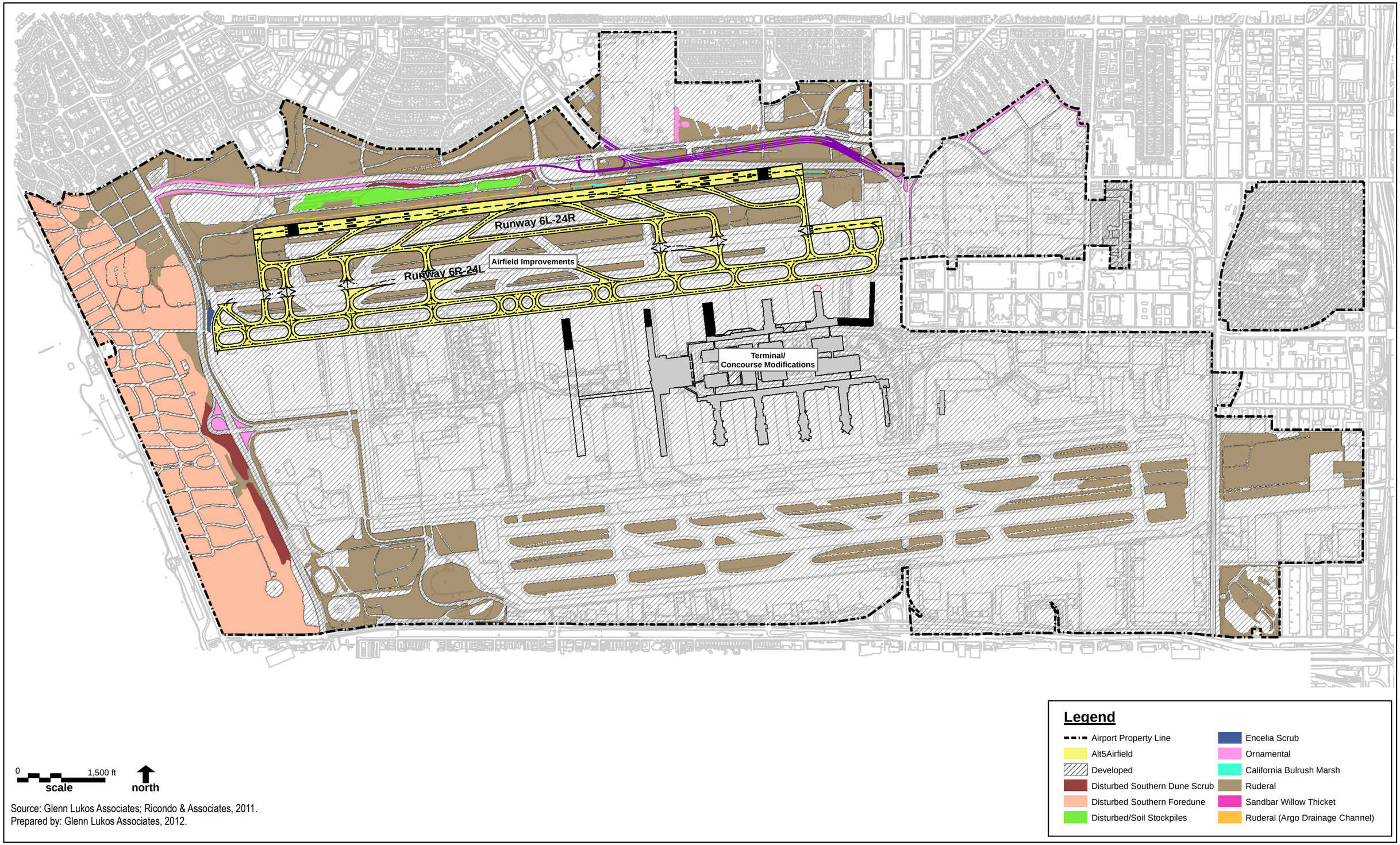
4.3.6.5 Alternative 5

Habitats/Vegetation Associations

The analysis of impacts to habitats and vegetation associations is presented in two parts. The first part addresses impacts associated with development of the north airfield--including the relocation of Runway 6L/24R and associated high-speed taxiway exits, the construction of a centerfield taxiway, the relocation of Taxiway E and the westerly extension of Taxilane D, and the structural covering of the Argo Drainage Channel--as well as the use of construction staging areas around the perimeter of the airport. As the terminal/concourse modifications would occur in areas that are currently developed and well-removed from sensitive biological resources, these improvements are not discussed further in this section. The second part addresses impacts specifically associated with the relocation of navigational aids. The analysis of navigational aids considers impacts associated with new light standards and foundations. At this level of planning, the location of construction staging areas and temporary access roads associated with the relocation of the navigational aids, and potential permanent service roads for the navigational aids, have not yet been determined. However, as discussed in Section 4.3.2, *Methodology*, the extent of the permanent service roads has been estimated based on engineering plans generated for the LAX Master Plan EIR (Alternative D) and impacts based on these estimates are considered herein.

North Airfield and Construction Staging Areas

Figure 4.3-14 depicts impacts to vegetation associations under Alternative 5 associated with development of the north airfield and use of construction staging areas. (For ease of viewing the vegetation associations, not all proposed project improvements are labeled in **Figure 4.3-14**. Refer to Figure 2-5 for a complete depiction of all improvements associated with Alternative 5, and Figure 2-15 for proposed construction staging areas.) The acreage of each vegetation association affected by Alternative 5, and the acreage that would remain following implementation of this alternative, are presented in **Table 4.3-3**.



Source: Glenn Lukos Associates; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

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Vegetation/Land Uses: Alternative 5

Figure
4.3-14

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There are approximately 637.47 acres of undeveloped area located east of Pershing Drive, including areas within the airfield and Construction Staging Areas A, B, C, D, and G. Vegetation associations within the undeveloped portions of this area include: Disturbed Southern Dune Scrub; Encelia Scrub; California Bulrush Marsh; Sandbar Willow Thicket; ruderal (Argo Drainage Channel); and ruderal vegetation. Implementation of the improvements under Alternative 5 would reduce the total undeveloped area from the baseline conditions of 637.47 acres within this area by 130.72 acres to 506.75 acres (refer to **Table 4.3-3**). Impacts to 130.72 acres of undeveloped area include 124.06 acres of ruderal vegetation associated with the north airfield and Construction Staging Areas A, B, C, D, and G, and 2.69 acres of Disturbed Southern Dune Scrub within Construction Staging Area A. Additional impacts associated with structurally covering the Argo Drainage Channel include 1.31 acres of California Bulrush Marsh, 0.21 acre of Sandbar Willow Thicket, and 2.45 acres of ruderal (Argo Drainage Channel).

Under Alternative 5, impacts to ruderal vegetation would be similar to those described for Alternative 1. As with Alternative 1, because ruderal vegetation is not a state- or locally-designated sensitive habitat and is subject to regular operations and maintenance, including mowing, these impacts would be less than significant.

Under Alternative 5, impacts to Disturbed Southern Dune Scrub would be the same as described for Alternative 1. As with Alternative 1, the permanent loss of Disturbed Southern Dune Scrub would be a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below, this impact would be less than significant.

Under Alternative 5, impacts to Sandbar Willow Thicket, California Bulrush Marsh, and ruderal (Argo Drainage Channel) would be the same as described above for Alternative 1 and would be less than significant. Impacts to Sandbar Willow Thicket, California Bulrush Marsh, and ruderal (Argo Drainage Channel) are further addressed under the heading Jurisdictional Aquatic Features.

Under Alternative 5, operation of the proposed improvements would not have an impact on sensitive habitats and vegetation associations, as operation would not result in any additional disturbance of or reduction in any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 5, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 5, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Navigational Aids

Under Alternative 5, relocation of navigational aids would result in permanent impacts to 0.34 acre of undeveloped area within the north airfield east of Pershing Drive, including impacts to 0.03 acre of Encelia Scrub and 0.31 acre of ruderal vegetation (refer to **Table 4.3-4** and **Figure 4.3-15**), with additional temporary impacts related to construction. As with Alternative 1, because these are not sensitive habitats, these impacts would be less than significant.

Under Alternative 5, relocation of navigational aids and construction of new service roads would result in impacts to 0.86 acre of undeveloped area within the Los Angeles/El Segundo Dunes, of which 0.29 acre consists of ruderal vegetation, and 0.57 acre consists of Disturbed Southern Foredune, which is a state-designated sensitive habitat (refer to **Table 4.3-4** and **Figure 4.3-15**). Of the impacts to undeveloped area, 0.17 acre would occur within the Habitat Restoration Area. Moreover, temporary impacts associated with minor grading and construction-related access roads would occur. Under Alternative 5, impacts to Disturbed Southern Foredune and ruderal vegetation would be similar to those discussed above for Alternative 1. As with Alternative 1, the loss of 0.57 acre of Disturbed Southern Foredune, along with additional construction-related impacts, would be significant. As with Alternative 1, the

permanent loss of 0.29 acre of ruderal vegetation, as well as temporary construction-related impacts, would not be considered significant as ruderal vegetation is not a state- or locally-designated sensitive habitat. To address impacts to state-designated habitats associated with the relocation of navigational aids within the Dunes, Mitigation Measure MM-BIO (SPAS)-1, Replacement of State Designated Habitats, described in Section 4.3.7 below, is proposed. This measure would provide for restoration of habitat within the Dunes. With implementation of Mitigation Measure MM-BIO (SPAS)-1, impacts to sensitive habitats would be less than significant.

Under Alternative 5, impacts to sensitive habitats associated with operation of the navigational aids would be less than significant, as maintenance and other operational activities would be limited to existing roads and graded pads or those constructed under Alternative 5 and, therefore, would not result in any additional disturbance of or reduction in any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 5, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 5, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Other Impacts

As noted above, construction activities associated with Alternative 5 would occur in the Dunes, both within and adjacent to the El Segundo Blue Butterfly Habitat Restoration Area. Implementation of LAX Master Plan Mitigation Measure MM-BC-1, Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area, would ensure the protection of this habitat.

Alternative 5 would result in the loss of 21.40 habitat units (see **Table 4.3-5**). In accordance with the LAX Master Plan mitigation program for biological resources, specifically, LAX Master Plan Mitigation Measure MM-BC-8, Replacement of Habitat Units, the loss of habitat units would be mitigated through a habitat replacement program, as outlined in Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below. Pursuant to this program, a habitat value of 0.8 would apply to the replacement acreage. Therefore, 26.76 acres would be required to mitigate the loss of habitat units.

The relocation of Lincoln Boulevard would result in the removal of mature trees. In addition, mature trees may be removed in conjunction with the use of Construction Staging Areas B, C, and D. Implementation of LAX Master Plan Mitigation Measure MM-BC-3, Conservation of Floral Resources: Mature Tree Replacement, would ensure that associated impacts would be less than significant.

Sensitive Plants

Under Alternative 5, impacts to sensitive plants from construction would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, five sensitive plant species--including Lewis' evening primrose, California spineflower, south coast branching phacelia, mesa horkelia, and Orcutt's pincushion--have the potential to occur in the navigational aids relocation area, and one species, southern tarplant, has potential to occur in Construction Staging Areas B, C, and D. As the number and distribution of the species could be extremely variable from year to year, and the presence or absence of some species was not able to be determined during preparation of this EIR, it is assumed that significant impacts to these sensitive plant species would occur as a result of construction of Alternative 5. To address impacts to sensitive plant species, a series of mitigation measures is proposed, as described in Section 4.3.7 below, including MM-BIO (SPAS)-2, Conservation of Floral Resources: South Coast Branching Phacelia, MM-BIO (SPAS)-3, Conservation of Floral Resources: Lewis' Evening

Note: Lewis' Evening Primrose identified at western end of north airfield in 1998 are not depicted on this figure, as a map of the population is not available.

0 300 ft
Scale
north

Source: Glenn Lukos Associates; Sapphos Environmental Inc, 2000; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

Legend

- Airport Property Line
- El Segundo Blue Butterfly Habitat Restoration Area
- Proposed Navigational Aids
- Existing Navigational Aids to be Removed
- Developed
- Disturbed Southern Foredune
- Encelia Scrub
- Ruderal
- Sandbar Willow Thicket
- Ruderal (Argo Drainage Channel)
- South Coast Branching Phacelia - Mapped in 2011 for SPAS EIR
- California Spineflower - Mapped in 1998 for Master Plan EIR
- Lewis' Evening Primrose - Mapped in 1998 for Master Plan EIR
- Loggerhead Shrike - 1998
- San Diego Horned Lizard - 1998
- Silvery Legless Lizard - 1998
- Silvery Legless Lizard - 2010
- Wintering Burrowing Owl - 1998
- Wintering Burrowing Owl - 2012

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Vegetation/Land Uses and Sensitive Species: Navigational Aids - Alternative 5

Figure
4.3-15

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Primrose, MM-BIO (SPAS)-4, Conservation of Floral Resources: California Spineflower, MM-BIO (SPAS)-5, Conservation of Floral Resources: Mesa Horkelia, MM-BIO (SPAS)-6, Conservation of Floral Resources: Orcutt's Pincushion, and MM-BIO (SPAS)-7, Conservation of Floral Resources: Southern Tarplant. With implementation of these mitigation measures, impacts to sensitive plants would be less than significant.

Upon completion of construction, operation of facilities associated with Alternative 5 would not result in impacts to sensitive plant species, as routine access would be limited to existing roads. Under Alternative 5, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no such plant species are known to occur within the biological resources study area.

Sensitive Wildlife

Under Alternative 5, impacts to sensitive arthropods and gastropods, silvery legless lizard, and coast horned lizard associated with the relocation of navigational aids within the Los Angeles/El Segundo Dunes would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, construction activities could result in the loss of individuals through the direct take of these species, which is considered to be a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-8, Conservation of Faunal Resources: Sensitive Reptiles, Arthropods, and Gastropods, described in Section 4.3.7 below, impacts to these sensitive wildlife species would be less than significant.

Under Alternative 5, impacts to loggerhead shrike associated with construction within the AOA and with the relocation of navigational aids in the Los Angeles/El Segundo Dunes would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, impacts to loggerhead shrike through habitat loss would be less than significant. However, because loggerhead shrike are assumed to be a resident breeding species in the Los Angeles/El Segundo Dunes, construction activities that interfere with nesting activity would result in a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-9, Conservation of Faunal Resources: Loggerhead Shrike, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

Under Alternative 5, impacts to burrowing owl would be the same as or substantially similar to the impacts described for Alternative 1. Similar to Alternative 1, if burrowing owl is present within the construction staging areas, the AOA, the Argo Drainage Channel, and/or the navigational aids relocation area, impacts to this species would be significant. With implementation of Mitigation Measure MM-BIO (SPAS)-10, Conservation of Faunal Resources: Burrowing Owl, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

As with Alternative 1, under Alternative 5, impacts to San Diego black-tailed jackrabbit through habitat modification or loss of individuals would be less than significant.

Under Alternative 5, impacts to El Segundo blue butterfly from relocation of navigational aids would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, navigational aids relocation activities would occur in an area that is occupied by this species, albeit at very low densities due to the small quantity of host plants with low flowerhead density. In accordance with LAX Master Plan Mitigation Measures MM-ET-3, El Segundo Blue Butterfly Conservation: Dust Control, and MM-ET-4, El Segundo Blue Butterfly Conservation: Habitat Restoration, and the Biological Opinion for the project that was issued by the USFWS, impacts to the El Segundo blue butterfly and habitat occupied by the El Segundo blue butterfly would be addressed through dust control during construction, habitat replacement, and avoidance of the flight season. With implementation of these measures, impacts to El Segundo blue butterfly would be less than significant.

Under Alternative 5, impacts to nesting migratory birds and raptors, and mature trees that may be used as nesting sites, would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, use of Construction Staging Areas B, C, D, and F would have the potential to result

in the removal of mature trees used by nesting raptors. In addition, construction activities may result in substantial interference with nesting during the breeding season through either close proximity of construction activity or removal of vegetation that supports protected avian species. Such impacts would be significant. With implementation of Mitigation Measures MM-BIO (SPAS)-11, Conservation of Faunal Resources: Mature Tree Replacement - Nesting Raptors, and MM-BIO (SPAS)-12, Conservation of Faunal Resources: Nesting Birds/Raptors, described in Section 4.3.7 below, impacts to nesting birds and raptors would be less than significant.

As with Alternative 1, upon completion of construction, impacts to sensitive wildlife species associated with operation of the facilities associated with Alternative 5 would be less than significant. Moreover, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no locally-designated wildlife species are known to occur within the biological resources study area. There are no wildlife movement/migration corridors associated with any portion of the biological resources study area, including the Argo Drainage Channel. Therefore, Alternative 5 would not result in interference with wildlife movement/migration corridors.

Jurisdictional Aquatic Features

Under Alternative 5, impacts to USACOE and CDFG jurisdiction, including jurisdictional wetlands and vegetated riparian habitat (Sandbar Willow Thicket and California Bulrush Marsh) associated with structurally covering the Argo Drainage Channel would be the same as described above for Alternative 1. These impacts would constitute a substantial alteration of the flow, bed, channel, or bank of rivers, streams, or lakes as defined in Section 1600 of the State Fish and Game Code and a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruptions, or other means, and would be significant. With implementation of Mitigation Measure MM-BIO (SPAS)-13, Replacement of Jurisdictional Aquatic Features, described in Section 4.3.7 below, impacts relating to USACOE and CDFG jurisdictional areas would be less than significant.

Indirect Impacts

Under Alternative 5, indirect impacts to biological resources from changes in air quality due to airport operations relative to baseline conditions would be the same as described above for Alternative 1. As with Alternative 1, prevailing wind conditions would result in peak operational concentrations within the eastern portion of the airport, away from the locations of sensitive species, although increased construction-related concentrations would occur at various locations, including those on the west end of the airport. Evidence indicates that biological resources in the Dunes are not adversely affected by existing air quality and it is not anticipated that implementation of Alternative 5 would result in significant indirect impacts to biological resources related to air quality. In addition, fugitive dust associated with construction activities located in proximity to the Los Angeles/El Segundo Dunes would be reduced with implementation of LAX Master Plan Mitigation Measures MM-BC-1 and MM-ET-3. For these reasons, indirect impacts associated with air quality would be less than significant.

Under Alternative 5, indirect impacts to biological resources from changes in light emissions relative to baseline conditions would be the same as described for Alternative 1. As with Alternative 1, changes to light emissions within the western portion of the airfield would not result in spillover into the Los Angeles/El Segundo Dunes, and light emissions associated with the relocation of navigational aids within the Los Angeles/El Segundo Dunes would be similar to existing light emissions. For these reasons, indirect impacts associated with light emissions would be less than significant.

Under Alternative 5, indirect impacts to biological resources from changes in noise relative to baseline conditions would be similar to those described for Alternative 1, including a decrease at grid points 27 and 37 and a slight increase (1.9 decibels) at grid point 28. As maximum noise levels are expected to decrease over much of the Dunes under Alternative 5, and the increase at grid point 28 is expected to be minimal, impacts to sensitive species from aircraft noise would be less than significant.

Under Alternative 5, construction noise impacts on sensitive species in the Dunes from noise originating both in the airfield and in the Dunes would be similar to Alternative 1, and would be less than significant.

Under Alternative 5, construction noise impacts on sensitive species in the airfield would be similar to Alternative 1, with the Argo Drainage Channel and Construction Staging Area A being the closest source of noise to mapped locations of loggerhead shrike and burrowing owl. As Construction Staging Area A has been previously developed and in continuous use for the Bradley West and Crossfield Taxiway projects, the use of the area under Alternative 5 would not constitute a significant change from baseline noise levels and, as such, impacts would be less than significant. Regarding construction noise from covering the Argo Drainage Channel, as burrowing owls and loggerhead shrikes could avoid the area, impacts would be less than significant.

4.3.6.6 Alternative 6

Habitats/Vegetation Associations

The analysis of impacts to habitats and vegetation associations is presented in two parts. The first part addresses impacts associated with development of the north airfield--including the relocation of Runway 6L/24R and associated high-speed taxiway exits, the construction of a centerfield taxiway, the reconstruction of the western portion of Taxiway E and the westerly extension of Taxilane D, and the partial structural covering of the Argo Drainage Channel--as well as the use of construction staging areas around the perimeter of the airport. As the terminal/concourse modifications would occur in areas that are currently developed and well-removed from sensitive biological resources, these improvements are not discussed further in this section. The second part addresses impacts specifically associated with the relocation of navigational aids. The analysis of navigational aids considers impacts associated with new light standards and foundations. At this level of planning, the location of construction staging areas and temporary access roads associated with the relocation of the navigational aids, and potential permanent service roads for the navigational aids, have not yet been determined. However, as discussed in Section 4.3.2, *Methodology*, the extent of the permanent service roads has been estimated based on engineering plans generated for the LAX Master Plan EIR (Alternative D) and impacts based on these estimates are considered herein.

North Airfield and Construction Staging Areas

Figure 4.3-16 depicts impacts to vegetation associations under Alternative 6 associated with development of the north airfield and use of construction staging areas. (For ease of viewing the vegetation associations, not all proposed project improvements are labeled in **Figure 4.3-16**. Refer to Figure 2-6 for a complete depiction of all improvements associated with Alternative 6, and Figure 2-15 for proposed construction staging areas.) The acreage of each vegetation association affected by Alternative 6, and the acreage that would remain following implementation of this alternative, are included in **Table 4.3-3**.

As discussed under Alternative 1, there are approximately 637.47 acres of undeveloped area located east of Pershing Drive, including areas within the airfield and Construction Staging Areas A, B, C, D, and G. Vegetation associations within the undeveloped portions of this area include: Disturbed Southern Dune Scrub; Encelia Scrub; California Bulrush Marsh; Sandbar Willow Thicket; ruderal (Argo Drainage Channel); and ruderal vegetation. Implementation of the improvements under Alternative 6 would reduce the total undeveloped area from the baseline conditions of 637.47 acres within this area by 101.60 acres to 535.87 acres (refer to **Table 4.3-3** and **Figure 4.3-16**). Impacts to 101.60 acres of undeveloped area consist of 98.35 acres of ruderal vegetation associated with the north airfield and with Construction Staging Areas A, B, C, D, and G, and 2.69 acres of Disturbed Southern Dune Scrub within Construction Staging Area A. Additional impacts associated with structurally covering approximately 1,400 linear feet of the Argo Drainage Channel would occur, and would consist of 0.41 acre of California Bulrush Marsh and 0.15 acre of ruderal (Argo Drainage Channel).

Under Alternative 6, impacts to ruderal vegetation would be similar to those described above for Alternative 1. As with Alternative 1, because ruderal vegetation is not a state- or locally-designated sensitive habitat and is subject to regular operations and maintenance, including mowing, these impacts would be less than significant.

Under Alternative 6, impacts to Disturbed Southern Dune Scrub would be the same as described for Alternative 1. As with Alternative 1, the permanent loss of Disturbed Southern Dune Scrub would be a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below, this impact would be less than significant.

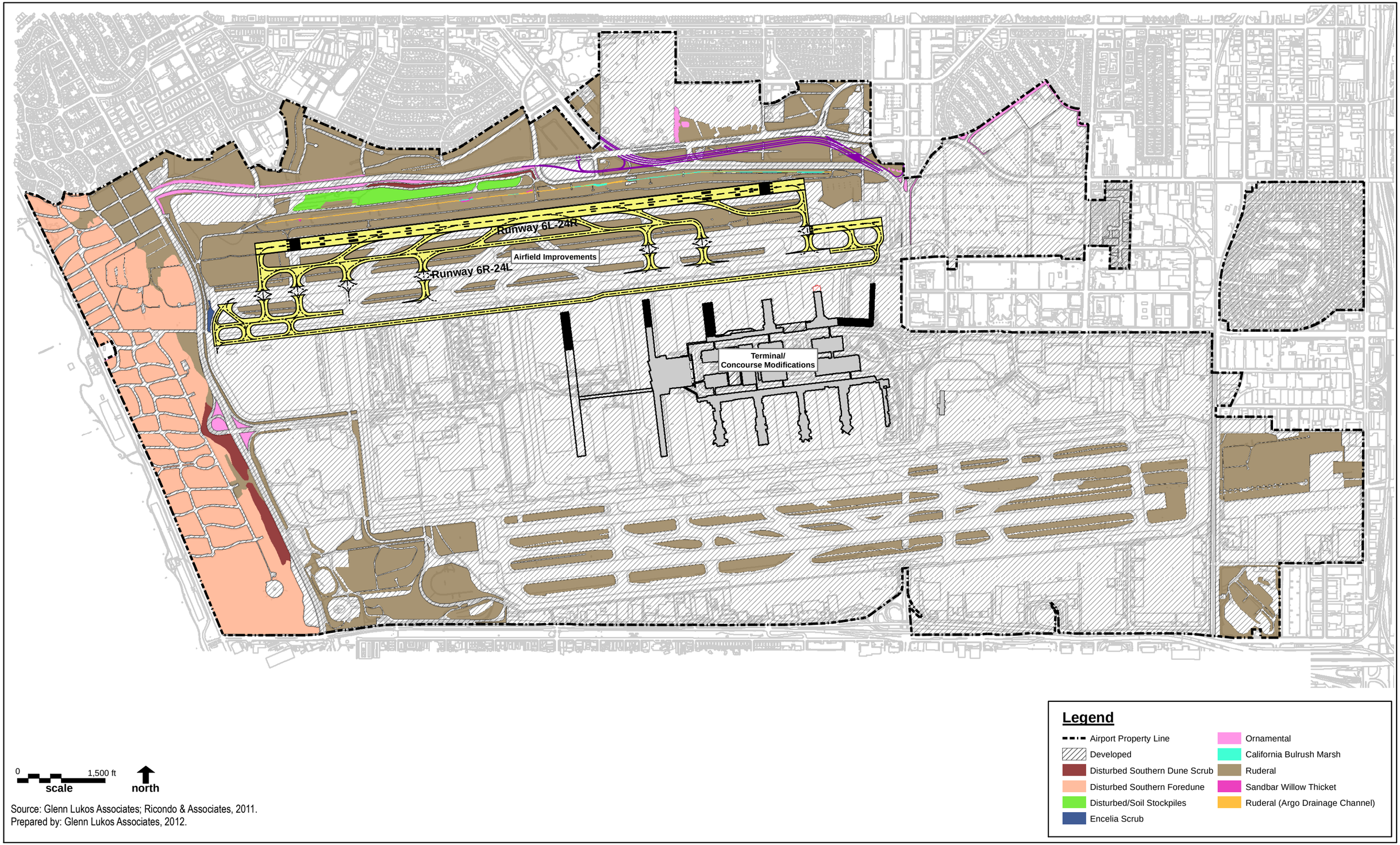
Under Alternative 6, impacts to Sandbar Willow Thicket, California Bulrush Marsh, and ruderal (Argo Drainage Channel) would be less than previously described above for Alternative 1, as the Argo Drainage Channel would only be partially structurally covered. As with Alternative 1, the loss of California Bulrush Marsh and ruderal (Argo Drainage Channel) would be less than significant. Impacts to California Bulrush Marsh and ruderal (Argo Drainage Channel) are further addressed under the heading Jurisdictional Aquatic Features.

Under Alternative 6, operation of the proposed improvements would not have an impact on sensitive habitats and vegetation associations, as operation would not result in any additional disturbance of or reduction in any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 6, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 6, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Navigational Aids

Under Alternative 6, relocation of navigational aids would result in permanent impacts to 0.31 acre of undeveloped area within the north airfield east of Pershing Drive, including impacts to 0.03 acre of Encelia Scrub and 0.28 acre of ruderal vegetation (refer to **Table 4.3-4** and **Figure 4.3-17**), with additional temporary impacts related to construction. As with Alternative 1, because these are not sensitive habitats, these impacts would be less than significant.

Under Alternative 6, relocation of navigational aids and construction of new service roads would result in permanent impacts to 0.89 acre of undeveloped area within the Los Angeles/El Segundo Dunes, of which 0.38 acre consists of ruderal vegetation, and 0.51 acre consists of Disturbed Southern Foredune, which is a state-designated sensitive habitat (refer to **Table 4.3-4** and **Figure 4.3-17**). Of the impacts to undeveloped area, 0.19 acre of Disturbed Southern Foredune and 0.01 of ruderal vegetation would occur within the Habitat Restoration Area. Moreover, temporary impacts associated with minor grading and construction-related access roads would occur. As with Alternative 1, the loss of 0.51 acre of Disturbed Southern Foredune, along with additional temporary construction impacts, would be significant. As with Alternative 1, the permanent loss of 0.38 acre of ruderal vegetation, as well as temporary construction impacts, would not be considered significant as ruderal vegetation is not a state- or locally-designated sensitive habitat. To address impacts to state-designated habitats associated with the relocation of navigational aids within the Dunes, Mitigation Measure MM-BIO (SPAS)-1, Replacement of State Designated Habitats, described in Section 4.3.7 below, is proposed. This measure would provide for restoration of habitat within the Dunes. With implementation of Mitigation Measure MM-BIO (SPAS)-1, impacts to sensitive habitats would be less than significant.



Source: Glenn Lukos Associates; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

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Vegetation/Land Uses: Alternative 6

Figure
4.3-16

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Note: Lewis' Evening Primrose identified at western end of north airfield in 1998 are not depicted on this figure, as a map of the population is not available.

0 300 ft
Scale
north

Source: Glenn Lukos Associates; Sapphos Environmental Inc, 2000; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

Legend

- Airport Property Line
- El Segundo Blue Butterfly Habitat Restoration Area
- Proposed Navigational Aids
- Existing Navigational Aids to be Removed
- Developed
- Disturbed Southern Foredune
- Encelia Scrub
- Ruderal
- Sandbar Willow Thicket
- Ruderal (Argo Drainage Channel)
- South Coast Branching Phacelia - Mapped in 2011 for SPAS EIR
- California Spineflower - Mapped in 1998 for Master Plan EIR
- Lewis' Evening Primrose - Mapped in 1998 for Master Plan EIR
- Loggerhead Shrike - 1998
- San Diego Horned Lizard - 1998
- Silvery Legless Lizard - 1998
- Silvery Legless Lizard - 2010
- Wintering Burrowing Owl - 1998
- Wintering Burrowing Owl - 2012

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Vegetation/Land Uses and Sensitive Species: Navigational Aids - Alternative 6

Figure
4.3-17

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Under Alternative 6, impacts to sensitive habitats associated with operation of the navigational aids would be less than significant, as maintenance and other operational activities would be limited to existing roads and graded pads or those constructed under Alternative 6 and, therefore, would not result in any additional disturbance of or reduction in any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 6, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 6, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Other Impacts

As noted above, construction activities associated with Alternative 6 would occur in the Dunes, both within and adjacent to the El Segundo Blue Butterfly Habitat Restoration Area. Implementation of LAX Master Plan Mitigation Measure MM-BC-1, Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area, would ensure the protection of this habitat.

Alternative 6 would result in the loss of 17.57 habitat units (see **Table 4.3-5**). In accordance with the LAX Master Plan mitigation program for biological resources, specifically, LAX Master Plan Mitigation Measure MM-BC-8, Replacement of Habitat Units, the loss of habitat units would be mitigated through a habitat replacement program, as outlined in Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below. Pursuant to this program, a habitat value of 0.8 would apply to the replacement acreage. Therefore, 21.96 acres would be required to mitigate the loss of habitat units.

The relocation of Lincoln Boulevard would result in the removal of mature trees. In addition, mature trees may be removed in conjunction with the use of Construction Staging Areas B, C, and D. Implementation of LAX Master Plan Mitigation Measure MM-BC-3, Conservation of Floral Resources: Mature Tree Replacement, would ensure that associated impacts would be less than significant.

Sensitive Plants

Under Alternative 6, impacts to sensitive plants from construction would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, five sensitive plant species--including Lewis' evening primrose, California spineflower, south coast branching phacelia, mesa horkelia, and Orcutt's pincushion--have the potential to occur in the navigational aids relocation area, and one species, southern tarplant, has potential to occur in Construction Staging Areas B, C, and D. As the number and distribution of the species could be extremely variable from year to year, and the presence or absence of some species was not able to be determined during preparation of this EIR, it is assumed that significant impacts to these sensitive plant species would occur as a result of construction of Alternative 6. To address impacts to sensitive plant species, a series of mitigation measures is proposed, as described in Section 4.3.7 below, including MM-BIO (SPAS)-2, Conservation of Floral Resources: South Coast Branching Phacelia, MM-BIO (SPAS)-3, Conservation of Floral Resources: Lewis' Evening Primrose, MM-BIO (SPAS)-4, Conservation of Floral Resources: California Spineflower, MM-BIO (SPAS)-5, Conservation of Floral Resources: Mesa Horkelia, MM-BIO (SPAS)-6, Conservation of Floral Resources: Orcutt's Pincushion, and MM-BIO (SPAS)-7, Conservation of Floral Resources: Southern Tarplant. With implementation of these mitigation measures, impacts to sensitive plants would be less than significant.

Upon completion of construction, operation of facilities associated with Alternative 6 would not result in impacts to sensitive plant species, as routine access would be limited to existing roads. Under Alternative 6, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a

locally-designated species, as no such plant species are known to occur within the biological resources study area.

Sensitive Wildlife

Under Alternative 6, impacts to sensitive arthropods and gastropods, silvery legless lizard, and coast horned lizard associated with the relocation of navigational aids within the Los Angeles/El Segundo Dunes would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, construction activities could result in the loss of individuals through the direct take of these species, which is considered to be a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-8, Conservation of Faunal Resources: Sensitive Reptiles, Arthropods, and Gastropods, described in Section 4.3.7 below, impacts to these sensitive wildlife species would be less than significant.

Under Alternative 6, impacts to loggerhead shrike associated with construction within the AOA and with the relocation of navigational aids in the Los Angeles/El Segundo Dunes would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, impacts to loggerhead shrike through habitat loss would be less than significant. However, because loggerhead shrike are assumed to be a resident breeding species in the Los Angeles/El Segundo Dunes, construction activities that interfere with nesting activity would result in a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-9, Conservation of Faunal Resources: Loggerhead Shrike, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

Under Alternative 6, impacts to burrowing owl would be the same as or substantially similar to the impacts described for Alternative 1. Similar to Alternative 1, if burrowing owl is present within the construction staging areas, the AOA, the Argo Drainage Channel, and/or the navigational aids relocation area, impacts to this species would be significant. With implementation of Mitigation Measure MM-BIO (SPAS)-10, Conservation of Faunal Resources: Burrowing Owl, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

As with Alternative 1, under Alternative 6, impacts to San Diego black-tailed jackrabbit through habitat modification or loss of individuals would be less than significant.

Under Alternative 6, impacts to the El Segundo blue butterfly from relocation of navigational aids would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, navigational aids relocation activities would occur in an area that is occupied by this species, albeit at very low densities due to the small quantity of host plants with low flowerhead density. In accordance with LAX Master Plan Mitigation Measures MM-ET-3, El Segundo Blue Butterfly Conservation: Dust Control, and MM-ET-4, El Segundo Blue Butterfly Conservation: Habitat Restoration, and the Biological Opinion for the project that was issued by the USFWS, impacts to the El Segundo blue butterfly and habitat occupied by the El Segundo blue butterfly would be addressed through dust control during construction, habitat replacement, and avoidance of the flight season. With implementation of these measures, impacts to El Segundo blue butterfly would be less than significant.

Under Alternative 6, impacts to nesting migratory birds and raptors, and mature trees that may be used as nesting sites, would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, use of Construction Staging Areas B, C, D, and F would have the potential to result in the removal of mature trees used by nesting raptors. In addition, construction activities may result in substantial interference with nesting during the breeding season through either close proximity of construction activity or removal of vegetation that supports protected avian species. Such impacts would be significant. With implementation of Mitigation Measures MM-BIO (SPAS)-11, Conservation of Faunal Resources: Mature Tree Replacement - Nesting Raptors, and MM-BIO (SPAS)-12, Conservation of Faunal Resources: Nesting Birds/Raptors, described in Section 4.3.7 below, impacts to nesting birds and raptors would be less than significant.

As with Alternative 1, upon completion of construction, impacts to sensitive wildlife species associated with operation of the facilities associated with Alternative 6 would be less than significant. Moreover, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no locally-designated wildlife species are known to occur within the biological resources study area. There are no wildlife movement/migration corridors associated with any portion of the biological resources study area, including the Argo Drainage Channel. Therefore, Alternative 5 would not result in interference with wildlife movement/migration corridors.

Jurisdictional Aquatic Features

Alternative 6 would have an impact on USACOE and CDFG jurisdictional areas associated with the Argo Drainage Channel by structurally covering the eastern 1,400 feet of the Channel. Impacts would include 0.56 acre of USACOE jurisdiction, of which 0.41 acre consists of wetlands vegetated with California Bulrush Marsh, and 0.56 acre of CDFG jurisdiction, of which 0.41 acre is vegetated riparian habitat (California Bulrush Marsh), in order to relocate Runway 6L/24R 100 feet north of its current location. These impacts would constitute "a substantial alteration of the flow, bed, channel, or bank of rivers, streams, or lakes as defined in Section 1600 of the State Fish and Game Code and a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruptions, or other means, and would be significant. With implementation of Mitigation Measure MM-BIO (SPAS)-13, Replacement of Jurisdictional Aquatic Features, described in Section 4.3.7 below, impacts relating to USACOE and CDFG jurisdictional areas would be less than significant.

Indirect Impacts

Under Alternative 6, indirect impacts to biological resources from changes in air quality due to airport operations relative to baseline conditions would be the same as described above for Alternative 1. As with Alternative 1, prevailing wind conditions would result in peak operational concentrations within the eastern portion of the airport, away from the locations of sensitive species, although increased construction-related concentrations would occur at various locations, including those on the west end of the airport. Evidence indicates that biological resources in the Dunes are not adversely affected by existing air quality and it is not anticipated that implementation of Alternative 6 would result in significant indirect impacts to biological resources related to air quality. In addition, fugitive dust associated with construction activities located in proximity to the Los Angeles/El Segundo Dunes would be reduced with implementation of LAX Master Plan Mitigation Measures MM-BC-1 and MM-ET-3. For these reasons, indirect impacts associated with air quality would be less than significant.

Under Alternative 6, indirect impacts to biological resources from changes in light emissions relative to baseline conditions would be the same as described for Alternative 1. As with Alternative 1, changes to light emissions within the western portion of the airfield would not result in spillover into the Los Angeles/El Segundo Dunes, and light emissions associated with the relocation of navigational aids within the Los Angeles/El Segundo Dunes would be similar to existing light emissions. For these reasons, indirect impacts associated with light emissions would be less than significant.

Under Alternative 6, indirect impacts to biological resources from changes in noise relative to baseline conditions would be the same as described above for Alternative 2. As with Alternative 2, under Alternative 6, L_{max} levels would decrease at all three grid points within the Dunes. Given that noise levels would decrease under Alternative 6, impacts to sensitive species from aircraft noise would be less than significant.

Under Alternative 6, construction noise impacts on sensitive species in the Dunes from noise originating both in the airfield and in the Dunes would be similar to Alternative 1, and would be less than significant.

Under Alternative 6, construction noise impacts on sensitive species in the airfield would be similar to Alternative 1, with the Argo Drainage Channel and Construction Staging Area A being the closest source of noise to mapped locations of loggerhead shrike and burrowing owl. As Construction Staging Area A has been previously developed and in continuous use for the Bradley West and Crossfield Taxiway

projects, the use of the area under Alternative 6 would not constitute a significant change from baseline noise levels and, as such, impacts would be less than significant. Regarding construction noise from covering the Argo Drainage Channel, as burrowing owls and loggerhead shrikes could avoid the area, impacts would be less than significant.

4.3.6.7 Alternative 7

Habitats/Vegetation Associations

The analysis of impacts to habitats and vegetation associations is presented in two parts. The first part addresses impacts associated with development of the north airfield--including the relocation of Runway 6R/24L, construction of a centerfield taxiway and high speed taxiway exits from Runway 6L/24R, the relocation of Taxiway E, and the westerly extension of Taxilane D--as well as the use of construction staging areas around the perimeter of the airport. As the terminal/concourse modifications would occur in areas that are currently developed and well-removed from sensitive biological resources, these improvements are not discussed further in this section. The second part addresses impacts specifically associated with the relocation of navigational aids. At this level of planning, the location of construction staging areas and temporary access roads associated with the relocation of the navigational aids, and potential permanent service roads for the navigational aids, have not yet been determined. However, as discussed in Section 4.3.2, *Methodology*, the extent of the permanent service roads has been estimated based on engineering plans generated for the LAX Master Plan EIR (Alternative D) and impacts based on these estimates are considered herein.

North Airfield and Construction Staging Areas

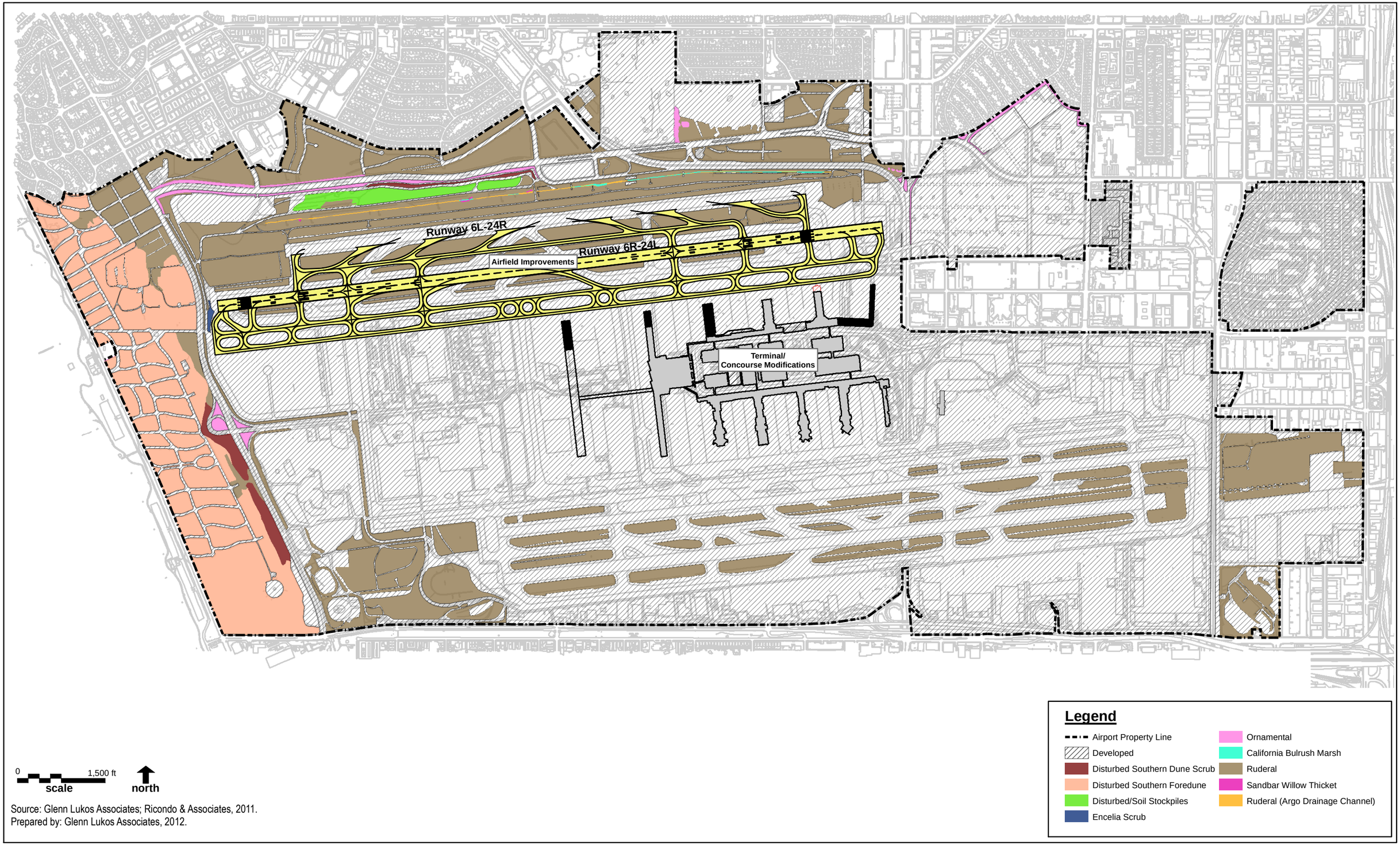
Figure 4.3-18 depicts impacts to vegetation associations under Alternative 7 associated with development of the north airfield and use of construction staging areas. (For ease of viewing the vegetation associations, not all proposed project improvements are labeled in **Figure 4.3-18**. Refer to Figure 2-7 for a complete depiction of all improvements associated with Alternative 7, and Figure 2-15 for proposed construction staging areas.) The acreage of each vegetation association affected by Alternative 7, and the acreage that would remain following implementation of this alternative, are included in **Table 4.3-3**.

As discussed under Alternative 1, there are approximately 637.47 acres of undeveloped area located east of Pershing Drive, including areas within the airfield and Construction Staging Areas A, B, C, D, and G. Vegetation associations within the undeveloped portions of this area include: Disturbed Southern Dune Scrub; Encelia Scrub; California Bulrush Marsh; Sandbar Willow Thicket; ruderal (Argo Drainage Channel); and ruderal vegetation. Implementation of the improvements under Alternative 7 would reduce the total undeveloped area from the baseline conditions of 637.47 acres within this area by 83.88 acres to 553.59 acres (refer to **Table 4.3-3** and **Figure 4.3-18**). Impacts to 83.88 acres of undeveloped area include 81.19 acres of ruderal vegetation associated with the north airfield and with Construction Staging Areas A, B, C, D, and G, and 2.69 acres of Disturbed Southern Dune Scrub within Construction Staging Area A.

Under Alternative 7, impacts to ruderal vegetation would be similar to those described above for Alternative 1. As with Alternative 1, because ruderal vegetation is not a state- or locally-designated sensitive habitat and is subject to regular operations and maintenance, including mowing, these impacts would be less than significant.

Under Alternative 7, impacts to Disturbed Southern Dune Scrub would be the same as described for Alternative 1. As with Alternative 1, the permanent loss of Disturbed Southern Dune Scrub would be a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below, this impact would be less than significant.

Because there would be no northerly relocation of Runway 6L/24R under Alternative 7, there would be no modifications to the Argo Drainage Channel (other than those required under existing conditions to meet federal RSA requirements) and no loss of vegetation in the drainage channel.



Source: Glenn Lukos Associates; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

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Vegetation/Land Uses: Alternative 7

Figure
4.3-18

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Under Alternative 7, operation of the proposed improvements would not have an impact on sensitive habitats and vegetation associations, as operation would not result in any additional disturbance of or reduction in any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 7, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 7, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Navigational Aids

Under Alternative 7, relocation of navigational aids would result in permanent impacts to 0.03 acre of undeveloped area within the north airfield east of Pershing Drive, all of which consists of ruderal vegetation (refer to **Table 4.3-4** and **Figure 4.3-19**), with additional temporary impacts related to construction. As with Alternative 1, because this is not a sensitive habitat, this impact would be less than significant.

Under Alternative 7, relocation of navigational aids and construction of new service roads would result in permanent impacts to 0.83 acre of undeveloped area within the Los Angeles/El Segundo Dunes, all of which consists of Disturbed Southern Foredune, which is a state-designated sensitive habitat (refer to **Table 5.3-6** and **Figure 4.3-19**). Of the impacts to undeveloped area, 0.50 acre of Disturbed Southern Foredune would occur in the Habitat Restoration Area. Moreover, temporary impacts associated with minor grading and construction-related access roads would occur. Under Alternative 7, impacts to Disturbed Southern Foredune would be similar to those discussed above for Alternative 1, and would be significant. To address impacts to state-designated habitats associated with the relocation of navigational aids within the Dunes, Mitigation Measure MM-BIO (SPAS)-1, Replacement of State Designated Habitats, described in Section 4.3.7 below, is proposed. This measure would provide for restoration of habitat within the Dunes. With implementation of Mitigation Measure MM-BIO (SPAS)-1, impacts to sensitive habitats would be less than significant.

Under Alternative 7, impacts to sensitive habitats associated with operation of the navigational aids would be less than significant, as maintenance and other operational activities would be limited to existing roads and graded pads or those constructed under Alternative 7, and therefore would not result in any additional disturbance of or reduction in any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 7, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 7, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Other Impacts

As noted above, construction activities associated with Alternative 7 would occur in the Dunes, both within and adjacent to the El Segundo Blue Butterfly Habitat Restoration Area. Implementation of LAX Master Plan Mitigation Measure MM-BC-1, Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area, would ensure the protection of this habitat.

Alternative 7 would result in the loss of 14.85 habitat units (see **Table 4.3-5**). In accordance with the LAX Master Plan mitigation program for biological resources, specifically, LAX Master Plan Mitigation Measure MM-BC-8, Replacement of Habitat Units, the loss of habitat units would be mitigated through a habitat replacement program, as outlined in Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below. Pursuant to this program, a habitat value of 0.8 would apply to the replacement acreage. Therefore, 18.57 acres would be required to mitigate the loss of habitat units.

Mature trees may be removed in conjunction with the use of Construction Staging Areas B, C, and D. Implementation of LAX Master Plan Mitigation Measure MM-BC-3, Conservation of Floral Resources: Mature Tree Replacement, would ensure that associated impacts would be less than significant.

Sensitive Plants

Under Alternative 7, impacts to sensitive plants from construction would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, five sensitive plant species--including Lewis' evening primrose, California spineflower, south coast branching phacelia, mesa horkelia, and Orcutt's pincushion--have the potential to occur in the navigational aids relocation area, and one species, southern tarplant, has potential to occur in Construction Staging Areas B, C, and D. As the number and distribution of the species could be extremely variable from year to year, and the presence or absence of some species was not able to be determined during preparation of this EIR, it is assumed that significant impacts to these sensitive plant species would occur as a result of construction of Alternative 7. To address impacts to sensitive plant species, a series of mitigation measures is proposed, as described in Section 4.3.7 below, including MM-BIO (SPAS)-2, Conservation of Floral Resources: South Coast Branching Phacelia, MM-BIO (SPAS)-3, Conservation of Floral Resources: Lewis' Evening Primrose, MM-BIO (SPAS)-4, Conservation of Floral Resources: California Spineflower, MM-BIO (SPAS)-5, Conservation of Floral Resources: Mesa Horkelia, MM-BIO (SPAS)-6, Conservation of Floral Resources: Orcutt's Pincushion, and MM-BIO (SPAS)-7, Conservation of Floral Resources: Southern Tarplant. With implementation of these mitigation measures, impacts to sensitive plants would be less than significant.

Upon completion of construction, operation of facilities associated with Alternative 7 would not result in impacts to sensitive plant species, as routine access would be limited to existing roads. Under Alternative 7, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no such plant species are known to occur within the biological resources study area.

Sensitive Wildlife

Under Alternative 7, impacts to sensitive arthropods and gastropods, silvery legless lizard, and coast horned lizard associated with the relocation of navigational aids within the Los Angeles/El Segundo Dunes would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, construction activities could result in the loss of individuals through the direct take of these species, which is considered to be a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-8, Conservation of Faunal Resources: Sensitive Reptiles, Arthropods, and Gastropods, described in Section 4.3.7 below, impacts to these sensitive wildlife species would be less than significant.

Note: Lewis' Evening Primrose identified at western end of north airfield in 1998 are not depicted on this figure, as a map of the population is not available.

0 300 ft
Scale
north

Source: Glenn Lukos Associates; Sapphos Environmental Inc, 2000; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

Legend

- Airport Property Line
- El Segundo Blue Butterfly Habitat Restoration Area
- Proposed Navigational Aids
- Existing Navigational Aids to be Removed
- Developed
- Disturbed Southern Foredune
- Encelia Scrub
- Ruderal
- Sandbar Willow Thicket
- Ruderal (Argo Drainage Channel)
- South Coast Branching Phacelia - Mapped in 2011 for SPAS EIR
- California Spineflower - Mapped in 1998 for Master Plan EIR
- Lewis' Evening Primrose - Mapped in 1998 for Master Plan EIR
- Loggerhead Shrike - 1998
- San Diego Horned Lizard - 1998
- Silvery Legless Lizard - 1998
- Silvery Legless Lizard - 2010
- Wintering Burrowing Owl - 1998
- Wintering Burrowing Owl - 2012

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Vegetation/Land Uses and Sensitive Species: Navigational Aids - Alternative 7

Figure
4.3-19

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Under Alternative 7, impacts to loggerhead shrike associated with construction within the AOA and with the relocation of navigational aids in the Los Angeles/El Segundo Dunes would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, impacts to loggerhead shrike through habitat loss would be less than significant. However, because loggerhead shrike are assumed to be a resident breeding species in the Los Angeles/El Segundo Dunes, construction activities that interfere with nesting activity would result in a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-9, Conservation of Faunal Resources: Loggerhead Shrike, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

Under Alternative 7, impacts to burrowing owl would be the same as or substantially similar to the impacts described for Alternative 1. Similar to Alternative 1, if burrowing owl is present within the construction staging areas, the AOA, and/or the navigational aids relocation area, impacts to this species would be significant. With implementation of Mitigation Measure MM-BIO (SPAS)-10, Conservation of Faunal Resources: Burrowing Owl, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

As with Alternative 1, under Alternative 7, impacts to San Diego black-tailed jackrabbit through habitat modification or loss of individuals would be less than significant.

Under Alternative 7, impacts to the El Segundo blue butterfly from relocation of navigational aids would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, navigational aids relocation activities would occur in an area that is occupied by this species, albeit at very low densities due to the small quantity of host plants with low flowerhead density. In accordance with LAX Master Plan Mitigation Measures MM-ET-3, El Segundo Blue Butterfly Conservation: Dust Control, and MM-ET-4, El Segundo Blue Butterfly Conservation: Habitat Restoration, and the Biological Opinion for the project that was issued by the USFWS, impacts to the El Segundo blue butterfly and habitat occupied by the El Segundo blue butterfly would be addressed through dust control during construction, habitat replacement, and avoidance of the flight season. With implementation of these measures, impacts to El Segundo blue butterfly would be less than significant.

Under Alternative 7, impacts to nesting migratory birds and raptors, and mature trees that may be used as nesting sites, would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, use of Construction Staging Areas B, C, D, and F would have the potential to result in the removal of mature trees used by nesting raptors. In addition, construction activities may result in substantial interference with nesting during the breeding season through either close proximity of construction activity or removal of vegetation that supports protected avian species. Such impacts would be significant. With implementation of Mitigation Measures MM-BIO (SPAS)-11, Conservation of Faunal Resources: Mature Tree Replacement - Nesting Raptors, and MM-BIO (SPAS)-12, Conservation of Faunal Resources: Nesting Birds/Raptors, described in Section 4.3.7 below, impacts to nesting birds and raptors would be less than significant.

.As with Alternative 1, upon completion of construction, impacts to sensitive wildlife species associated with operation of the facilities associated with Alternative 7 would be less than significant. Moreover, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no locally-designated wildlife species are known to occur within the biological resources study area. There are no wildlife movement/migration corridors associated with any portion of the biological resources study area, including the Argo Drainage Channel. Therefore, Alternative 5 would not result in interference with wildlife movement/migration corridors.

Jurisdictional Aquatic Features

Under Alternative 7, modifications to USACOE and CDFG jurisdictional areas associated with the Argo Drainage Channel (other than those required under existing conditions to meet federal RSA requirements) would be avoided. Therefore, no impacts to USACOE jurisdictional waters and wetlands and CDFG jurisdictional streambed and associated vegetated riparian habitat would occur as a result of implementing Alternative 7.

Indirect Impacts

Under Alternative 7, indirect impacts to biological resources from changes in air quality due to airport operations relative to baseline conditions would be the same as described for Alternative 1. As with Alternative 1, prevailing wind conditions would result in peak operational concentrations within the eastern portion of the airport, away from the locations of sensitive species, although increased construction-related concentrations would occur at various locations, including those on the west end of the airport. Evidence indicates that biological resources in the Dunes are not adversely affected by existing air quality and it is not anticipated that implementation of Alternative 7 would result in significant indirect impacts to biological resources related to air quality. In addition, fugitive dust associated with construction activities located in proximity to the Los Angeles/El Segundo Dunes would be reduced with implementation of LAX Master Plan Mitigation Measures MM-BC-1 and MM-ET-3. For these reasons, indirect impacts associated with air quality would be less than significant.

Under Alternative 7, indirect impacts to biological resources from changes in light emissions relative to baseline conditions would be the same as described for Alternative 1. As with Alternative 1, changes to light emissions within the western portion of the airfield would not result in spillover into the Los Angeles/El Segundo Dunes, and light emissions associated with the relocation of navigational aids within the Los Angeles/El Segundo Dunes would be similar to existing light emissions. For these reasons, indirect impacts associated with light emissions would be less than significant.

Under Alternative 7, indirect impacts to biological resources from changes in noise relative to baseline conditions would be the same as described above for Alternative 2. As with Alternative 2, under Alternative 7, L_{max} levels would decrease at all three grid points within the Dunes. Given that noise levels would decrease under Alternative 7, impacts to sensitive species from aircraft noise would be less than significant.

Under Alternative 7, construction noise impacts on sensitive species in the Dunes from noise originating both in the airfield and in the Dunes would be similar to Alternative 1, and would be less than significant.

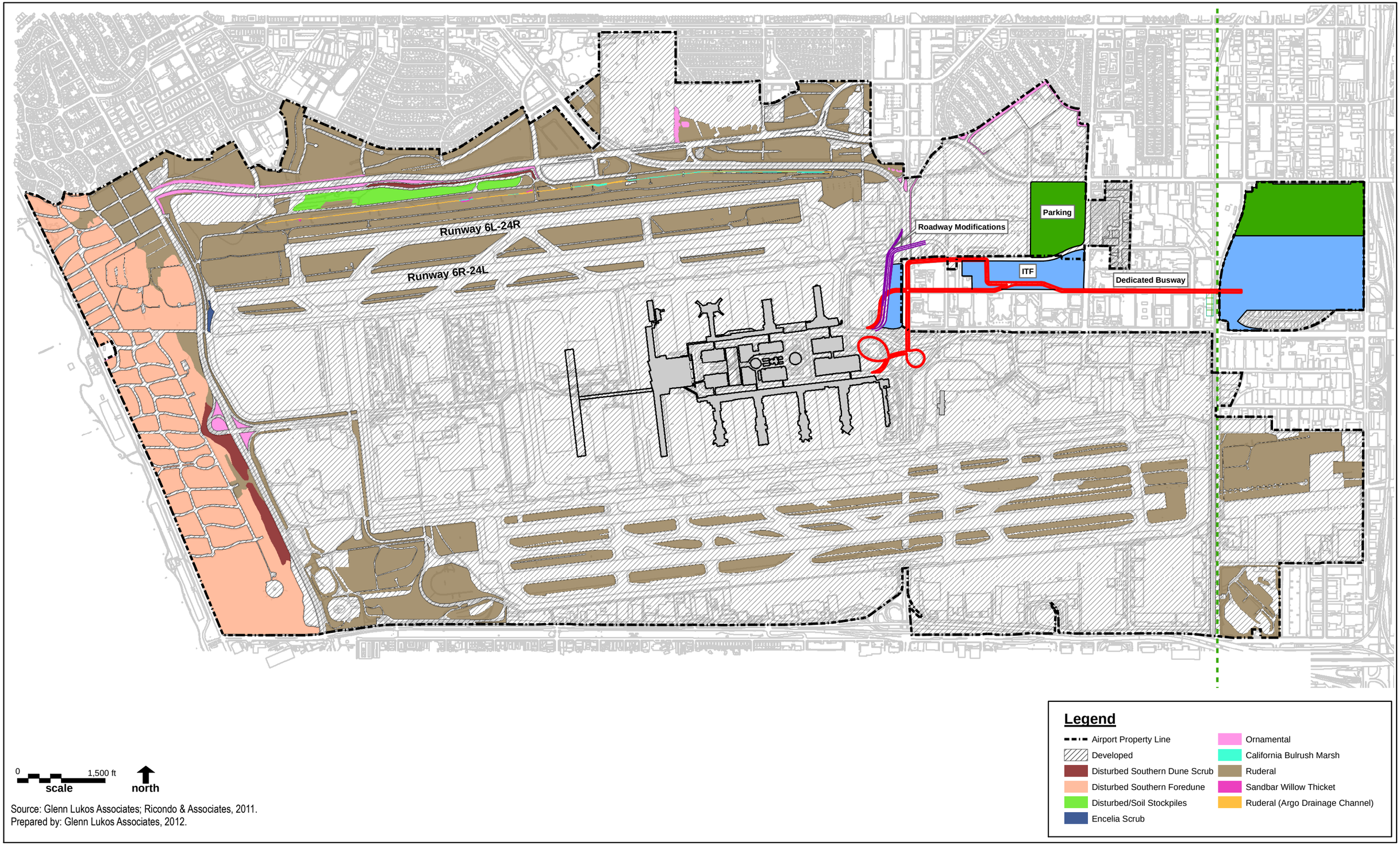
Under Alternative 7, construction noise impacts on sensitive species in the airfield would be similar to Alternative 1, with Construction Staging Area A being the closest source of noise to mapped locations of loggerhead shrike and burrowing owl. As Construction Staging Area A has been previously developed and in continuous use for the Bradley West and Crossfield Taxiway projects, the use of the area under Alternative 7 would not constitute a significant change from baseline noise levels, and as such impacts would be less than significant.

4.3.6.8 Alternative 8

Habitats/Vegetation Associations

Unlike Alternatives 1 through 7, Alternative 8 does not include runway/taxiway improvements, or associated navigational aids relocation. The analysis focuses on impacts associated with use of construction staging areas around the perimeter of the airport during construction of improvements associated with Alternative 8. Also considered in the analysis are the roadway modifications, ITF, dedicated busway, CONRAC, and parking areas on the eastern side of the airport; however, as these facilities would occur in areas that are currently either developed or highly disturbed on the east side of the airport and well-removed from sensitive biological resources, these improvements are not discussed further in this section, with the exception of vegetation in developed areas that may support nesting birds.

Figure 4.3-20 depicts impacts to vegetation associations under Alternative 8 associated with use of construction staging areas. (For ease of viewing the vegetation associations, not all proposed project improvements are labeled in **Figure 4.3-20**. Refer to Figure 2-8 for a complete depiction of all improvements associated with Alternative 1, and Figure 2-15 for proposed construction staging areas.) The acreage of each vegetation association affected by Alternative 8, and the acreage that would remain following implementation of this alternative, are included in **Table 4.3-3**.



Source: Glenn Lukos Associates; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

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Vegetation/Land Uses: Alternative 8

Figure
4.3-20

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There are approximately 637.47 acres of undeveloped area located east of Pershing Drive, including areas within the airfield and Construction Staging Areas A, B, C, D, and G. Vegetation associations within the undeveloped portions of this area include: Disturbed Southern Dune Scrub; Encelia Scrub; California Bulrush Marsh; Sandbar Willow Thicket; ruderal (Argo Drainage Channel); and ruderal vegetation. Implementation of the improvements under Alternative 8 would reduce the total undeveloped area from the baseline conditions of 637.47 acres within this area by 59.64 acres to 577.83 acres (refer to **Table 4.3-3** and **Figure 4.3-20**). Impacts to 59.64 acres of undeveloped area include 56.95 acres of ruderal vegetation within the various construction staging areas and 2.69 acres of Disturbed Southern Dune Scrub within Construction Staging Area A.

Under Alternative 8, impacts to ruderal vegetation would be similar to those described for Alternative 1. As with Alternative 1, because ruderal vegetation is not a state- or locally-designated sensitive habitat and is subject to regular operations and maintenance, including mowing, these impacts would be less than significant.

Under Alternative 8, impacts to Disturbed Southern Dune Scrub would be the same as described above for Alternative 1. As with Alternative 1, the permanent loss of Disturbed Southern Dune Scrub would be a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below, this impact would be less than significant.

Because there would be no improvements within the airfield under Alternative 8, there would be no modifications to the Argo Drainage Channel and no loss of vegetation in the drainage channel. In addition, there would be no relocation of navigational aids under Alternative 8 and, accordingly, there would be no impacts to sensitive habitats and species associated with the Los Angeles/El Segundo Dunes.

Under Alternative 8, operation of the proposed improvements would not have an impact on sensitive habitats and vegetation associations, as operation would not result in any additional disturbance of or reduction in any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 8, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 8, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Other Impacts

Alternative 8 would result in the loss of 11.21 habitat units (see **Table 4.3-5**). In accordance with the LAX Master Plan mitigation program for biological resources, specifically, LAX Master Plan Mitigation Measure MM-BC-8, Replacement of Habitat Units, the loss of habitat units would be mitigated through a habitat replacement program, as outlined in Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below. Pursuant to this program, a habitat value of 0.8 would apply to the replacement acreage. Therefore, 14.01 acres would be required to mitigate the loss of habitat units.

Mature trees may be removed in conjunction with the use of Construction Staging Areas B, C, and D. Implementation of LAX Master Plan Mitigation Measure MM-BC-3, Conservation of Floral Resources: Mature Tree Replacement, would ensure that associated impacts would be less than significant.

Sensitive Plants

Under Alternative 8, there would not be any potential for impacts to any sensitive plant species, except for southern tarplant. Of the six sensitive plant species with potential to occur within the biological resources study area, four species--California spineflower, south coast branching phacelia, mesa horkelia, and

Orcutt's pincushion--only occur within the Los Angeles/El Segundo Dunes. One species, Lewis' evening primrose, has been documented in both the Los Angeles/El Segundo Dunes and the west end of the north airfield; however, Alternative 8 does not propose any construction in the Los Angeles/El Segundo Dunes or the airfield. Southern tarplant has potential to occur in Construction Staging Areas B, C, and D. As the number and distribution of the southern tarplant could be extremely variable from year to year, and the presence or absence of this species within Construction Staging Areas B, C, and D was not able to be determined during preparation of this EIR, it is assumed that a significant impact to southern tarplant would occur as a result of construction of Alternative 8. With implementation of Mitigation Measure MM-BIO (SPAS)-7, Conservation of Floral Resources: Southern Tarplant, as described in Section 4.3.7 below, impacts to sensitive plants would be less than significant.

Upon completion of construction, operation of facilities associated with Alternative 8 would not result in impacts to sensitive plant species, as no additional individuals would be disturbed by operations or maintenance access. Under Alternative 8, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no such plant species are known to occur within the biological resources study area.

Sensitive Wildlife

Under Alternative 8, there would be no potential for impacts to sensitive wildlife species, with the exception of burrowing owl and nesting birds and raptors (addressed below), since Alternative 8 does not propose any construction in the Los Angeles/El Segundo Dunes or the airfield. Construction would be limited to the largely developed eastern areas of LAX, as well as the construction staging areas, none of which provide habitat for sensitive wildlife, with the exception of burrowing owl.

Under Alternative 8, impacts to burrowing owl would be similar to the impacts described for Alternative 1. Similar to Alternative 1, if burrowing owl is present within the construction staging areas, impacts to this species would be significant. With implementation of Mitigation Measure MM-BIO (SPAS)-10, Conservation of Faunal Resources: Burrowing Owl, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

Under Alternative 8, impacts to nesting migratory birds and raptors, and mature trees that may be used as nesting sites, would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, use of Construction Staging Areas B, C, D, and F would have the potential to result in the removal of mature trees used by nesting raptors. In addition, construction activities may result in substantial interference with nesting during the breeding season through either close proximity of construction activity or removal of vegetation that supports protected avian species. Such impacts would be significant. With implementation of Mitigation Measures MM-BIO (SPAS)-11, Conservation of Faunal Resources: Mature Tree Replacement - Nesting Raptors, and MM-BIO (SPAS)-12, Conservation of Faunal Resources: Nesting Birds/Raptors, described in Section 4.3.7 below, impacts to nesting birds and raptors would be less than significant.

Impacts to sensitive wildlife species associated with operation of the improvements associated with Alternative 8 would be less than significant. Moreover, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no locally-designated wildlife species are known to occur within the biological resources study area. There are no wildlife movement/migration corridors associated with any portion of the biological resources study area. Therefore, Alternative 8 would not result in interference with wildlife movement/migration corridors.

Jurisdictional Aquatic Features

Alternative 8 would completely avoid impacts to USACOE and CDFG jurisdictional areas associated with the Argo Drainage Channel. Therefore, no impacts to USACOE jurisdictional waters and wetlands and CDFG jurisdictional streambed and associated vegetated riparian habitat would occur under Alternative 8.

Indirect Impacts

As noted above, improvements associated with Alternative 8 would not occur within areas that contain sensitive wildlife species and, accordingly, there would be no indirect air quality, light, or aircraft noise impacts to sensitive wildlife species under this alternative.

Under Alternative 8, no construction would occur in the Dunes. Construction noise impacts on sensitive species in the Dunes would be less than under Alternative 1, as no construction is proposed for the airfield and the nearest potential construction noise source would be Construction Staging Area A. Impacts from construction noise would be less than significant.

Under Alternative 8, construction noise impacts on sensitive species in the airfield would be similar to Alternative 1, with Construction Staging Area A being the closest source of noise to mapped locations of loggerhead shrike and burrowing owl. As Construction Staging Area A has been previously developed and in continuous use for the Bradley West and Crossfield Taxiway projects, the use of the area under Alternative 8 would not constitute a significant change from baseline noise levels and, as such, impacts would be less than significant.

4.3.6.9 Alternative 9

Habitats/Vegetation Associations

As with Alternative 8, Alternative 9 does not include runway/taxiway improvements, or associated navigational aids relocation. The analysis focuses on impacts associated with use of construction staging areas around the perimeter of the airport during construction of improvements associated with Alternative 9. Also considered in the analysis are the roadway modifications, ITF, CONRAC, Automated People Mover (APM), and parking areas on the eastern side of the airport; however, as these facilities would occur in areas that are currently either developed or highly disturbed on the east side of the airport and well-removed from sensitive biological resources, these improvements are not discussed further in this section, with the exception of vegetation in developed areas that may support nesting birds.

Figure 4.3-21 depicts impacts to vegetation associations under Alternative 9 associated with use of construction staging areas. (For ease of viewing the vegetation associations, not all proposed project improvements are labeled in **Figure 4.3-21**. Refer to Figure 2-9 for a complete depiction of all improvements associated with Alternative 9, and Figure 2-15 for proposed construction staging areas.) The acreage of each vegetation association affected by Alternative 9, and the acreage that would remain following implementation of this alternative, are included in **Table 4.3-3**.

There are approximately 637.47 acres of undeveloped area located east of Pershing Drive, including areas within the airfield and Construction Staging Areas A, B, C, D, and G. Vegetation associations within the undeveloped portions of this area include: Disturbed Southern Dune Scrub; Encelia Scrub; California Bulrush Marsh; Sandbar Willow Thicket; ruderal (Argo Drainage Channel); and ruderal vegetation. Implementation of the improvements under Alternative 9 would reduce the total undeveloped area from the baseline conditions of 637.47 acres within this area by 59.64 acres to 577.83 acres (refer to **Table 4.3-3** and **Figure 4.3-21**). Impacts to 59.64 acres of undeveloped area include 56.95 acres of ruderal vegetation within the various construction staging areas and 2.69 acres of Disturbed Southern Dune Scrub within Construction Staging Area A.

Under Alternative 9, impacts to ruderal vegetation would be similar to those described for Alternative 1. As with Alternative 1, because ruderal vegetation is not a state- or locally-designated sensitive habitat and is subject to regular operations and maintenance, including mowing, these impacts would be less than significant.

Under Alternative 9, impacts to Disturbed Southern Dune Scrub would be the same as described above for Alternative 1. As with Alternative 1, the permanent loss of Disturbed Southern Dune Scrub would be a significant impact. With implementation of Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below, this impact would be less than significant.

Because there would be no improvements within the airfield under Alternative 9, there would be no modifications to the Argo Drainage Channel and no loss of vegetation in the drainage channel. In addition, as with Alternative 8, there would be no relocation of navigational aids under Alternative 9 and, accordingly, there would be no impacts to sensitive habitats and species associated with the Los Angeles/El Segundo Dunes.

Under Alternative 9, operation of the proposed improvements would not have an impact on sensitive habitats and vegetation associations, as operation would not result in any additional disturbance of or reduction in any federally-designated critical habitat, locally-designated natural communities including state-designated sensitive habitats, ESHAs, and habitat preservation areas designated pursuant to local ordinances. Operation of the proposed improvements would also not conflict with any local policies or ordinances protecting biological resources. Under both construction and operation of the improvements associated with Alternative 9, there would be no conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans, as no such plan covers any portion of the biological resources study area. Under both construction and operation of the improvements associated with Alternative 9, there would be no substantial reduction in a locally-designated natural habitat or plant community, as no such habitats or plant communities are associated with the biological resources study area.

Other Impacts

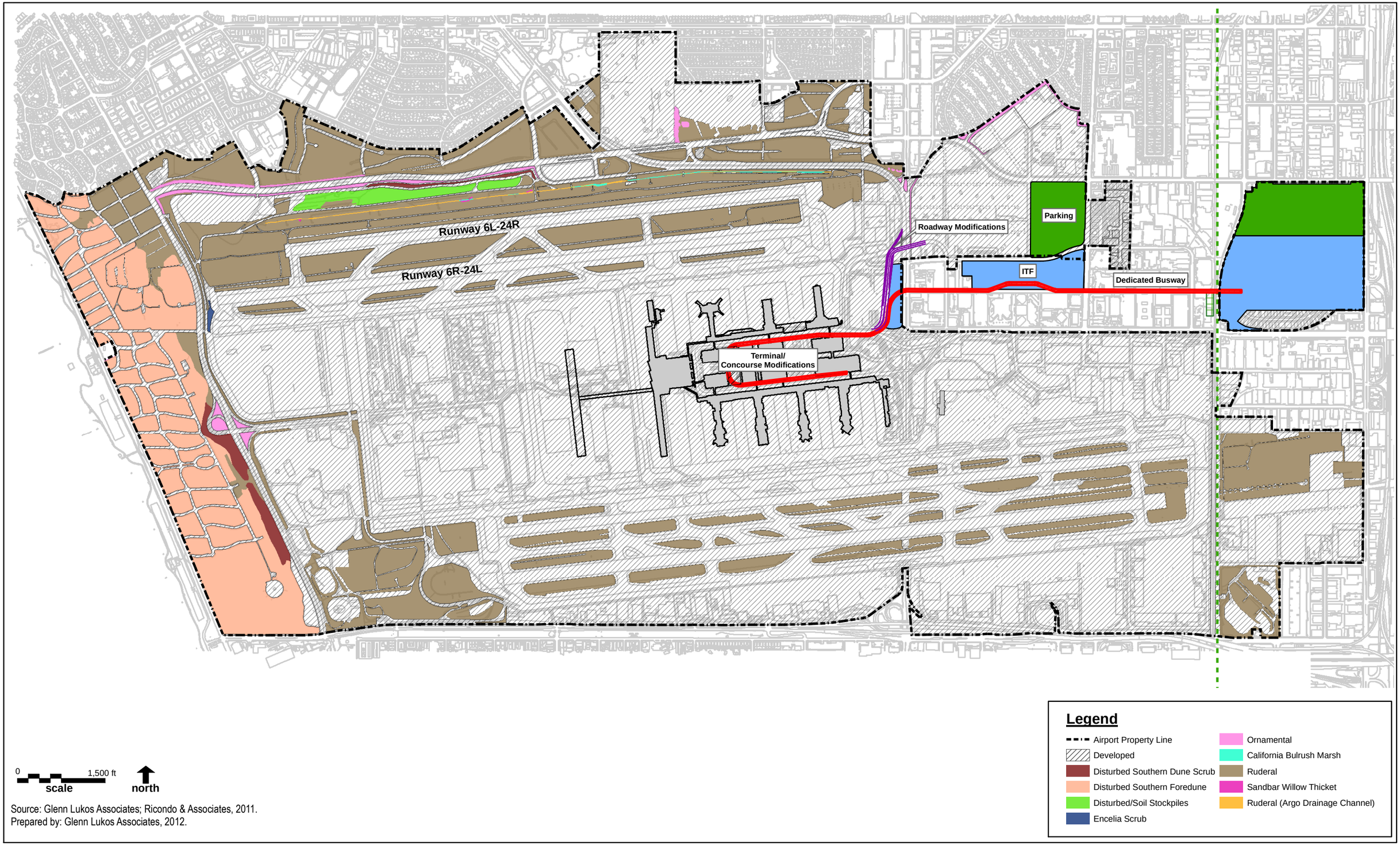
Alternative 9 would result in the loss of 11.21 habitat units (see **Table 4.3-5**). In accordance with the LAX Master Plan mitigation program for biological resources, specifically, LAX Master Plan Mitigation Measure MM-BC-8, Replacement of Habitat Units, the loss of habitat units would be mitigated through a habitat replacement program, as outlined in Mitigation Measure MM-BIO (SPAS)-14, Replacement of Habitat Units, described in Section 4.3.7 below. Pursuant to this program, a habitat value of 0.8 would apply to the replacement acreage. Therefore, 14.01 acres would be required to mitigate the loss of habitat units.

Mature trees may be removed in conjunction with the use of Construction Staging Areas B, C, and D. Implementation of LAX Master Plan Mitigation Measure MM-BC-3, Conservation of Floral Resources: Mature Tree Replacement, would ensure that associated impacts would be less than significant.

Sensitive Plants

Under Alternative 9, there would not be any potential for impacts to any sensitive plant species, except for southern tarplant. Of the six sensitive plant species with potential to occur within the biological resources study area, four species--California spineflower, south coast branching phacelia, mesa horkelia, and Orcutt's pincushion--only occur within the Los Angeles/El Segundo Dunes. One species, Lewis' evening primrose, has been documented in both the Los Angeles/El Segundo Dunes and the west end of the north airfield; however, Alternative 9 does not propose any construction in the Los Angeles/El Segundo Dunes or the airfield. Southern tarplant has potential to occur in Construction Staging Areas B, C, and D. As the number and distribution of the southern tarplant could be extremely variable from year to year, and the presence or absence of this species within Construction Staging Areas B, C, and D was not able to be determined during preparation of this EIR, it is assumed that a significant impact to southern tarplant would occur as a result of construction of Alternative 8. With implementation of Mitigation Measure MM-BIO (SPAS)-7, Conservation of Floral Resources: Southern Tarplant, as described in Section 4.3.7 below, impacts to sensitive plants would be less than significant.

Upon completion of construction, operation of facilities associated with Alternative 9 would not result in impacts to sensitive plant species as no additional individuals would be disturbed by operations or maintenance access. Under Alternative 9, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no such plant species are known to occur within the biological resources study area.



Source: Glenn Lukos Associates; Ricondo & Associates, 2011.
Prepared by: Glenn Lukos Associates, 2012.

LAX Specific Plan Amendment Study Draft EIR

Vegetation/Land Uses: Alternative 9

Figure
4.3-21

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Sensitive Wildlife

Under Alternative 9, there would be no potential for impacts to sensitive wildlife species, with the exception of burrowing owl and nesting birds and raptors (addressed below), since Alternative 9 does not propose any construction in the Los Angeles/El Segundo Dunes or the airfield. Construction would be limited to the largely developed eastern areas of LAX, as well as the construction staging areas, none of which provide habitat for sensitive wildlife, with the exception of burrowing owl.

Under Alternative 9, impacts to burrowing owl would be similar to the impacts described for Alternative 1. Similar to Alternative 1, if burrowing owl is present within the construction staging areas, impacts to this species would be significant. With implementation of Mitigation Measure MM-BIO (SPAS)-10, Conservation of Faunal Resources: Burrowing Owl, described in Section 4.3.7 below, impacts to this sensitive wildlife species would be less than significant.

Under Alternative 9, impacts to nesting migratory birds and raptors, and mature trees that may be used as nesting sites, would be the same as or substantially similar to the impacts described for Alternative 1. As with Alternative 1, use of Construction Staging Areas B, C, D, and F would have the potential to result in the removal of mature trees used by nesting raptors. In addition, construction activities may result in substantial interference with nesting during the breeding season through either close proximity of construction activity or removal of vegetation that supports protected avian species. Such impacts would be significant. With implementation of Mitigation Measures MM-BIO (SPAS)-11, Conservation of Faunal Resources: Mature Tree Replacement - Nesting Raptors, and MM-BIO (SPAS)-12, Conservation of Faunal Resources: Nesting Birds/Raptors, described in Section 4.3.7 below, impacts to nesting birds and raptors would be less than significant.

Impacts to sensitive wildlife species associated with operation of the improvements associated with Alternative 9 would be less than significant. Moreover, there would be no substantial loss of individuals or the substantial reduction of existing habitat of a locally-designated species, as no locally-designated wildlife species are known to occur within the biological resources study area. There are no wildlife movement/migration corridors associated with any portion of the biological resources study area. Therefore, Alternative 9 would not result in interference with wildlife movement/migration corridors.

Jurisdictional Aquatic Features

Alternative 9 would completely avoid impacts to USACOE and CDFG jurisdictional areas associated with the Argo Drainage Channel. Therefore, no impacts to USACOE jurisdictional waters and wetlands and CDFG jurisdictional streambed and associated vegetated riparian habitat would occur under Alternative 9.

Indirect Impacts

As noted above, improvements associated with Alternative 9 would not occur within areas that contain sensitive wildlife species and, accordingly, there would be no indirect air quality, light, or aircraft noise impacts to sensitive wildlife species under this alternative.

Under Alternative 9, no construction would occur in the Dunes. Construction noise impacts on sensitive species in the Dunes would be less than under Alternative 1, as no construction is proposed for the airfield and the nearest potential construction noise source would be Construction Staging Area A. Impacts from construction noise would be less than significant.

Under Alternative 9, construction noise impacts on sensitive species in the airfield would be similar to Alternative 1, with Construction Staging Area A being the closest source of noise to mapped locations of loggerhead shrike and burrowing owl. As Construction Staging Area A has been previously developed and in continuous use for the Bradley West and Crossfield Taxiway projects, the use of the area under Alternative 9 would not constitute a significant change from baseline noise levels and, as such, impacts would be less than significant.

4.3.6.10 Summary of Impacts

A summary of the impacts to biological resources associated with the SPAS alternatives is provided in **Table 4.3-6** and in the text below. **Table 4.3-6** identifies impacts following the implementation of SPAS-specific mitigation measures, which are identified in Section 4.3.7.

Table 4.3-6

Summary of Biological Resources Impacts After Mitigation

	Alternative								
Habitats/Vegetation Associations	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 6**	**Alt. 7**	**Alt. 8**	**Alt. 9**
LAX East of Pershing									
Disturbed Southern Foredune	NI	NI	NI	NI	NI	NI	NI	NI	NI
Disturbed Southern Dune Scrub	SM	SM	SM	SM	SM	SM	SM	SM	SM
Encelia Scrub	LS	LS	LS	LS	LS	LS	NI	NI	NI
California Bulrush Marsh	LS[1]	NI	NI	NI	LS[1]	LS[1]	NI	NI	NI
Sandbar Willow Thicket	LS[1]	NI	NI	NI	LS[1]	NI	NI	NI	NI
Ruderal (Argo Drainage Channel)	LS[1]	NI	NI	NI	LS[1]	LS[1]	NI	NI	NI
Ruderal	LS	LS	LS	LS	LS	LS	LS	LS	LS
Los Angeles/El Segundo Dunes									
Disturbed Southern Foredune	SM	SM	SM	SM	SM	SM	SM	NI	NI
Disturbed Southern Dune Scrub	NI	NI	NI	NI	NI	NI	NI	NI	NI
Ruderal	LS	NI	LS	NI	LS	LS	NI	NI	NI
Other Impacts									
El Segundo Blue Butterfly Habitat	LS	LS	LS	LS	LS	LS	LS	NI	NI
Loss of Habitat Units	SM	SM	SM	SM	SM	SM	SM	SM	SM
Removal of Mature Trees	LS	LS	LS	LS	LS	LS	LS	LS	LS
Sensitive Plants									
Lewis' Evening Primrose	SM	SM	SM	SM	SM	SM	SM	NI	NI
California Spineflower	SM	SM	SM	SM	SM	SM	SM	NI	NI
Southern Tarplant	SM	SM	SM	SM	SM	SM	SM	SM	SM
South Coast Branching Phacelia	SM	SM	SM	SM	SM	SM	SM	NI	NI
Mesa Horkelia	SM	SM	SM	SM	SM	SM	SM	NI	NI
Orcutt's Pincushion	SM	SM	SM	SM	SM	SM	SM	NI	NI
Sensitive Wildlife									
Arthropods/Gastropods/Reptiles	SM	SM	SM	SM	SM	SM	SM	NI	NI
Loggerhead Shrike	SM	SM	SM	SM	SM	SM	SM	NI	NI
Burrowing Owl	SM	SM	SM	SM	SM	SM	SM	SM	SM
San Diego Black-Tailed Jackrabbit	LS	LS	LS	LS	LS	LS	LS	NI	NI
El Segundo Blue Butterfly	LS	LS	LS	LS	LS	LS	LS	NI	NI
Nesting Birds/Raptors	SM	SM	SM	SM	SM	SM	SM	SM	SM
Jurisdictional Aquatic Features	SM	NI	NI	NI	SM	SM	NI	NI	NI
Indirect Impacts	LS	LS	LS	LS	LS	LS	LS	LS	LS

Notes:

NI = No Impact
LS = Less Than Significant Impact
SM = Significant Impact (but mitigable to Less Than Significant)

[1] The impact to this habitat/vegetation association is further addressed in association with jurisdictional aquatic features.

Source: CDM Smith, Glenn Lukos Associates, 2012.

Habitats/Vegetation Associations

Alternatives 1 through 7 would each affect a different quantity of the vegetation associations within undeveloped areas of LAX east of Pershing Drive (specifically the north airfield and Construction Staging Areas A, B, C, D, and G); however, the scale of the impacts associated with each alternative is similar. Alternatives 8 and 9 would not have an impact on undeveloped areas associated with the north airfield, and impacts to undeveloped areas would be limited to Construction Staging Areas A, B, C, D, and G. Under all of the alternatives, impacts to Disturbed Southern Dune Scrub would be significant prior to mitigation. Significant impacts associated with Alternatives 1 through 9 to Disturbed Southern Dune Scrub would be less than significant with implementation of mitigation measures, as discussed later in this section.

Alternatives 1 through 7 would each affect a different quantity of the vegetation associations within the Los Angeles/El Segundo Dunes, including state-designated sensitive habitats (i.e., Disturbed Southern Foredune); however, the scale of the impacts associated with each alternative is similar, and all impacts to state-designated sensitive habitats would be significant prior to mitigation. Alternatives 8 and 9 do not propose relocation of navigational aids and, therefore, there would be no impacts in the Los Angeles/El Segundo Dunes under Alternatives 8 and 9. All potentially significant impacts associated with Alternatives 1 through 7 to state-designated sensitive habitats would be less than significant with implementation of mitigation measures, as discussed later in this section.

Construction activities associated with Alternatives 1 through 7 would occur within and adjacent to the El Segundo Blue Butterfly Habitat Restoration Area. With implementation of the applicable LAX Master Plan mitigation measure, no significant impacts would occur. No impacts to the Habitat Restoration Area would occur under Alternatives 8 and 9.

The relocation of Lincoln Boulevard under Alternatives 1, 5, and 6 would result in the removal of mature trees. In addition, mature trees may be removed in conjunction with the use of Construction Staging Areas B, C, and D under all of the alternatives. With implementation of the applicable LAX Master Plan mitigation measure, no significant impacts would occur.

There would be a loss of habitat units under all of the alternatives. Impacts associated with habitat loss would be less than significant with implementation of mitigation measures, as discussed later in this section.

Sensitive Plants

Alternatives 1, 2, 3, 5, 6, and 7 each have similar potential to have a significant impact on Lewis' evening primrose within the western end of the north airfield, as each of these alternatives proposes relocation of runways and/or taxiways in the north airfield. There are no potential impacts to Lewis' evening primrose associated with runway/taxiway relocation for Alternatives 4, 8, and 9; however, Alternative 4 could potentially impact Lewis' evening primrose in the airfield due to navigational aids relocation. All potentially significant impacts associated with Alternatives 1 through 7 to Lewis' evening primrose in the north airfield would be less than significant with implementation of mitigation measures, as discussed later in this section.

Alternatives 1 through 9 each have similar potential to have a significant impact on southern tarplant in Construction Staging Areas B, C, and D. All such impacts would be reduced to a level that is less than significant with implementation of mitigation measures, as discussed later in this section.

Alternatives 1 through 7 each have similar potential to have a significant impact on Lewis' evening primrose, California spineflower, south coast branching phacelia, mesa horkelia, and Orcutt's pincushion in the Los Angeles/El Segundo Dunes due to navigational aids relocation. All such impacts would be reduced to a level that is less than significant with implementation of mitigation measures, as discussed later in this section. Alternatives 8 and 9 would not have an impact on sensitive plants within the Los Angeles/El Segundo Dunes.

Sensitive Wildlife

Alternatives 1 through 7 each have similar potential to have a significant impact on sensitive arthropods, gastropods, and reptiles in the Los Angeles/El Segundo Dunes due to navigational aids relocation. All potentially significant impacts associated with Alternatives 1 through 7 to sensitive arthropods, gastropods, and reptiles would be less than significant with implementation of mitigation measures, as discussed later in this section. No impacts to sensitive arthropods, gastropods, and reptiles would occur under Alternatives 8 and 9.

Alternatives 1 through 7 each have similar potential to have a significant impact on loggerhead shrike in the airfield and in the Los Angeles/El Segundo Dunes due to navigational aids relocation. All potentially significant impacts associated with Alternatives 1 through 7 to loggerhead shrike would be less than significant with implementation of mitigation measures, as discussed later in this section. No impacts to loggerhead shrike would occur under Alternatives 8 and 9.

Alternatives 1, 5, and 6 each have similar potential to have a significant impact on burrowing owl from construction in the airfield, the Argo Drainage Channel, and the Los Angeles/El Segundo Dunes, as well as from the use of construction staging areas. Alternatives 2, 3, 4, and 7 would have similar potential to have an impact on burrowing owl from construction in the airfield and the Los Angeles/El Segundo Dunes, as well as from the use of construction staging areas, but would not have potential to affect burrowing owl within the Argo Drainage Channel. Alternatives 8 and 9 would have similar potential to have an impact on burrowing owl from use of the construction staging areas. All potentially significant impacts to burrowing owl would be reduced to a level that is less than significant with implementation of mitigation measures, as discussed later in this section.

Alternatives 1 through 9 each have similar potential to impact San Diego black-tailed jackrabbit, but impacts would be less than significant. No impacts to San Diego black-tailed jackrabbit would occur under Alternatives 8 and 9.

Alternatives 1 through 7 would each involve the relocation of navigational aids, some of which would be located within the Habitat Restoration Area for the El Segundo blue butterfly. The navigational aids relocation would occur in an area that is occupied by this species, albeit at very low densities. With implementation of applicable LAX Master Plan mitigation measures, no significant impacts would occur. No impacts to El Segundo blue butterfly would occur under Alternatives 8 and 9.

Alternatives 1 through 9 each have similar potential to have a significant impact on nesting migratory birds and raptors, and mature trees that may be used as raptor nesting sites, in the construction staging areas. All potentially significant impacts associated with Alternatives 1 through 9 to nesting migratory birds and mature trees that may be used as nesting raptor sites would be less than significant with implementation of mitigation measures, as discussed later in this section.

Jurisdictional Aquatic Features

Alternatives 1 and 5 would require major improvements to the entire length of the Argo Drainage Channel, and Alternative 6 would require modifications to a portion of the channel. These modifications would result in a significant impact with respect to USACOE jurisdictional waters and wetlands and CDFG jurisdictional streambed and associated vegetated riparian habitat. These impacts would be reduced to a level that is less than significant with implementation of mitigation as discussed later in this section. No impacts to jurisdictional aquatic features would occur as a result of implementation of Alternatives 2, 3, 4, 7, 8, and 9.

Indirect Impacts

Under Alternatives 1 through 7, indirect impacts on sensitive wildlife species from air quality, light emissions, and noise would be less than significant. Under Alternatives 8 and 9, indirect impacts on sensitive wildlife species and habitat from construction noise would be less than significant. Alternatives

8 and 9 would have no indirect impacts on sensitive wildlife species from air quality, light emissions, or aircraft noise.

4.3.7 Mitigation Measures

Implementation of LAX Master Plan Mitigation Measures MM-BC-1, MM-ET-3, and MM-ET-4 would ensure that impacts to the El Segundo blue butterfly and the Habitat Restoration Area associated with Alternatives 1 through 7 would be less than significant. Implementation of LAX Master Plan Mitigation Measure MM-BC-3 would ensure that impacts related to the removal of mature trees associated with Alternatives 1 through 9 would be less than significant.

To address the potential significant impacts to state-designated sensitive habitats associated with Alternatives 1 through 7; sensitive plants associated with Alternatives 1 through 9; sensitive wildlife, including nesting birds/raptors, and mature trees utilized by nesting raptors, associated with Alternatives 1 through 9; and jurisdictional aquatic features associated with Alternatives 1, 5, and 6, the following mitigation measures specific to SPAS are proposed:

- **MM-BIO (SPAS)-1. Replacement of State-Designated Sensitive Habitats (Alternatives 1, 2, 3, 4, 5, 6, and 7).**[215]

  LAWA or its designee shall undertake mitigation for the loss of state-designated sensitive habitat within the Los Angeles/El Segundo Dunes, including the Habitat Restoration Area, by restoring areas of temporary disturbance and by restoring additional areas of sensitive habitat to compensate for temporary and permanent impacts. Installation of navigational aids and associated temporary construction impacts may result in impacts to state-designated sensitive habitat within the Los Angeles/El Segundo Dunes within habitat occupied by the El Segundo blue butterfly. Impacts to state-designated sensitive habitat within the Los Angeles/El Segundo Dunes shall be replaced at a ratio of 2:1 within the Los Angeles/El Segundo Dunes as described in the "Los Angeles/El Segundo Dunes Habitat Restoration Plan." The replacement of state-designated sensitive habitat shall be undertaken through restoration procedures as described in the "Los Angeles/El Segundo Dunes Habitat Restoration Plan." The restoration and enhancement of sensitive habitat as related to the establishment or enhancement of wildlife habitat shall consider and comply with the provisions of FAA Advisory Circular 150/5200-33B regarding hazardous wildlife attractants on or near airports. Additionally, restoration and enhancement shall take into account, as appropriate, the Memorandum of Agreement between the FAA and other federal agencies, including USFWS, pertaining to environmental conditions that could contribute to aircraft-wildlife strikes.

  Valley Needlegrass Grassland restoration efforts consist of site preparation, propagation and planting of Valley Needlegrass Grassland species, and maintenance and monitoring of the restoration site as described in the "Los Angeles/El Segundo Dunes Habitat Restoration Plan."

  Southern Foredune restoration efforts consist of site preparation, propagation, and planting of the species characteristic of the Southern Foredune community at the Los Angeles/El Segundo Dunes, and maintenance and monitoring of the restoration site as described in the "Los Angeles/El Segundo Dunes Habitat Restoration Plan."

- **MM-BIO (SPAS)-2. Conservation of Floral Resources: South Coast Branching Phacelia (Alternatives 1, 2, 3, 4, 5, 6, and 7).**

  Prior to any work activities (i.e., vegetation clearing, invasive species removal and/or spraying, and sediment removal) within suitable habitat on the project site, including construction staging areas, pre-construction focused surveys shall be conducted during the period of March through August by a qualified botanist to determine the presence or absence of south coast branching phacelia. Known populations of this species shall be monitored to determine the best time to conduct pre-construction

[215] For purposes of the identified SPAS alternatives, this measure satisfies the intent of LAX Master Plan Mitigation Measure MM-BC-13.

surveys. The surveys shall follow guidelines developed by the CNPS and the CDFG. If this species is not observed, no further mitigation shall be required; however, if it is identified within work areas, then further mitigation as described below is required.

If this species is observed, LAWA or its designee shall prepare and implement a plan to compensate for the loss of individuals of the sensitive south coast branching phacelia. LAWA or its designee shall collect seed from those plants to be removed, and properly clean and store the collected seed until used. A mitigation site of suitable habitat equal to the area of impact shall be delineated within the boundaries of LAX or at a suitable off-site location. If a site at LAX is selected, site selection will occur in consultation with a qualified restoration biologist, as well as LAWA's USDA Wildlife Hazard Biologist and will be consistent with FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan" to avoid increasing wildlife hazards to aircraft. Ninety-percent of the collected seed shall be broadcast (distributed) after the first wetting rain with 10 percent maintained as a contingency and used as needed to meet performance criteria. LAWA or its designee shall implement a monitoring plan to monitor the establishment of individuals of south coast branching phacelia for a period of not more than five years. Performance criteria shall include the establishment of an equal number of plants as that impacted in the first year following the distribution of seed within the mitigation site. Performance criteria shall also include confirmation of recruitment for two years following the first year flowering is observed and establishment of individuals throughout the mitigation area within three years following the first year flowering is observed.

- **MM-BIO (SPAS)-3. Conservation of Floral Resources: Lewis' Evening Primrose (Alternatives 1, 2, 3, 4, 5, 6, and 7).**[216]

  Prior to any work activities (i.e., vegetation clearing, invasive species removal and/or spraying, and sediment removal) within suitable habitat on the project site, including construction staging areas, pre-construction focused surveys shall be conducted during the period of March through June by a qualified botanist to determine the presence or absence of Lewis' evening primrose. Known populations of this species shall be monitored to determine the best time to conduct pre-construction surveys. The surveys shall follow guidelines developed by the CNPS and the CDFG. If this species is not observed, no further mitigation shall be required; however, if it is identified within work areas, then further mitigation as described below is required.

  If this species is observed, LAWA or its designee shall prepare and implement a plan to compensate for the loss of individuals of the sensitive Lewis' evening primrose. LAWA or its designee shall collect seed from those plants to be removed, and properly clean and store the collected seed until used. A mitigation site of suitable habitat equal to the area of impact shall be delineated within the boundaries of LAX or at a suitable off-site location. If a site at LAX is selected, site selection will occur in consultation with a qualified restoration biologist, as well as LAWA's USDA Wildlife Hazard Biologist and will be consistent with FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan" to avoid increasing wildlife hazards to aircraft. Ninety-percent of the collected seed shall be broadcast (distributed) after the first wetting rain with 10 percent maintained as a contingency and used as needed to meet performance criteria. LAWA or its designee shall implement a monitoring plan to monitor the establishment of individuals of Lewis' evening primrose for a period of not more than five years. Performance criteria shall include the establishment of an equal number of plants as that impacted in the first year following the distribution of seed within the mitigation site. Performance criteria shall also include confirmation of recruitment for two years following the first year flowering is observed and establishment of individuals throughout the mitigation area within three years following the first year flowering is observed.

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216 For purposes of the identified SPAS alternatives, this measure satisfies the intent of LAX Master Plan Mitigation Measure MM-BC-2.

- **MM-BIO (SPAS)-4. Conservation of Floral Resources: California Spineflower (Alternatives 1, 2, 3, 4, 5, 6, and 7).**

  Prior to any work activities (i.e., vegetation clearing, invasive species removal and/or spraying, and sediment removal) within suitable habitat on the project site, including construction staging areas, pre-construction focused surveys shall be conducted during the period of March through August by a qualified botanist to determine the presence or absence of California spineflower. Known populations of this species shall be monitored to determine the best time to conduct pre-construction surveys. The surveys shall follow guidelines developed by the CNPS and the CDFG. If this species is not observed, no further mitigation shall be required; however, if it is identified within work areas, then further mitigation as described below is required.

  If this species is observed, LAWA or its designee shall prepare and implement a plan to compensate for the loss of individuals of the sensitive California spineflower. LAWA or its designee shall collect seed from those plants to be removed, and properly clean and store the collected seed until used. A mitigation site of suitable habitat equal to the area of impact shall be delineated within the boundaries of LAX or at a suitable off-site location. If a site at LAX is selected, site selection will occur in consultation with a qualified restoration biologist, as well as LAWA's USDA Wildlife Hazard Biologist and will be consistent with FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan" to avoid increasing wildlife hazards to aircraft. Ninety-percent of the collected seed shall be broadcast (distributed) after the first wetting rain with 10 percent maintained as a contingency and used as needed to meet performance criteria. LAWA or its designee shall implement a monitoring plan to monitor the establishment of individuals of California spineflower for a period of not more than five years. Performance criteria shall include the establishment of an equal number of plants as that impacted in the first year following the distribution of seed within the mitigation site. Performance criteria shall also include confirmation of recruitment for two years following the first year flowering is observed and establishment of individuals throughout the mitigation area within three years following the first year flowering is observed.

- **MM-BIO (SPAS)-5. Conservation of Floral Resources: Mesa Horkelia (Alternatives 1, 2, 3, 4, 5, 6, and 7).**

  Prior to any work activities(i.e., vegetation clearing, invasive species removal and/or spraying, and sediment removal) within suitable habitat on the project site, pre-construction focused surveys shall be conducted during the period of February through September by a qualified botanist to determine the presence or absence of mesa horkelia subspecies puberula. Known populations of this taxon shall be monitored to determine the best time to conduct pre-construction surveys. The surveys shall follow guidelines developed by the CNPS and the CDFG. If the common *Horkelia cuneata* is identified by a qualified botanist, then no further mitigation is required. If the sensitive *Horkelia cuneata* ssp. *pupurbula* is identified within work areas, then further mitigation as described below is required.

  If this species is observed, LAWA or its designee shall prepare and implement a plan to compensate for the loss of individuals of the sensitive mesa horkelia subspecies puberula. LAWA or its designee shall collect seed from those plants to be removed, and properly clean and store the collected seed until used. A mitigation site of suitable habitat equal to the area of impact shall be delineated within the boundaries of LAX or at a suitable off-site location. If a site at LAX is selected, site selection will occur in consultation with a qualified restoration biologist, as well as LAWA's USDA Wildlife Hazard Biologist and will be consistent with FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan" to avoid increasing wildlife hazards to aircraft. Ninety-percent of the collected seed shall be broadcast (distributed) after the first wetting rain with 10 percent maintained as a contingency and used as needed to meet performance criteria. LAWA or its designee shall implement a monitoring plan to monitor the establishment of individuals of mesa horkelia for a period of not more than five years. Performance criteria shall include the establishment of an equal number of plants as that impacted in

the first year following the distribution of seed within the mitigation site. Performance criteria shall also include confirmation of recruitment for two years following the first year flowering is observed and establishment of individuals throughout the mitigation area within three years following the first year flowering is observed.

- **MM-BIO (SPAS)-6. Conservation of Floral Resources: Orcutt's Pincushion (Alternatives 1, 2, 3, 4, 5, 6, and 7).**

  Prior to any work activities (i.e., vegetation clearing, invasive species removal and/or spraying, and sediment removal) within suitable habitat on the project site, pre-construction focused surveys shall be conducted during the period of January through August by a qualified botanist to determine the presence or absence of Orcutt's pincushion (*Chaenactis glabriuscula* var. *orcuttiana*). Known populations of this taxon shall be monitored to determine the best time to conduct pre-construction surveys. The surveys shall follow guidelines developed by the CNPS and the CDFG. If the common *Chaenactis glabriuscula* is identified by a qualified botanist, then no further mitigation is required. If the sensitive *Chaenactis glabriuscula* var. *orcuttiana* is identified within work areas, then further mitigation as described below is required.

  If this species is observed, LAWA or its designee shall prepare and implement a plan to compensate for the loss of individuals of the sensitive Orcutt's pincushion. LAWA or its designee shall collect seed from those plants to be removed, and properly clean and store the collected seed until used. A mitigation site of suitable habitat equal to the area of impact shall be delineated within the boundaries of LAX or at a suitable off-site location. If a site at LAX is selected, site selection will occur in consultation with a qualified restoration biologist, as well as LAWA's USDA Wildlife Hazard Biologist and will be consistent with FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan" to avoid increasing wildlife hazards to aircraft. Ninety-percent of the collected seed shall be broadcast (distributed) after the first wetting rain with 10 percent maintained as a contingency and used as needed to meet performance criteria. LAWA or its designee shall implement a monitoring plan to monitor the establishment of individuals of Orcutt's pincushion for a period of not more than five years. Performance criteria shall include the establishment of an equal number of plants as that impacted in the first year following the distribution of seed within the mitigation site. Performance criteria shall also include confirmation of recruitment for two years following the first year flowering is observed and establishment of individuals throughout the mitigation area within three years following the first year flowering is observed.

- **MM-BIO (SPAS)-7. Conservation of Floral Resources: Southern Tarplant (Alternatives 1, 2, 3, 4, 5, 6, 7, 8, and 9).**

  Prior to any work activities (i.e., vegetation clearing, invasive species removal and/or spraying, and sediment removal) within suitable habitat on the project site, including construction staging areas, pre-construction focused surveys shall be conducted during the period of May through November by a qualified botanist to determine the presence or absence of southern tarplant. Known populations of this species shall be monitored to determine the best time to conduct pre-construction surveys. The surveys shall follow guidelines developed by the CNPS and the CDFG. If this species is not observed, no further mitigation shall be required; however, if it is identified within work areas, then further mitigation as described below is required.

  If this species is observed, LAWA or its designee shall prepare and implement a plan to compensate for the loss of individuals of the sensitive southern tarplant. LAWA or its designee shall collect seed from those plants to be removed, and properly clean and store the collected seed until used. A mitigation site of suitable habitat equal to the area of impact shall be delineated within the boundaries of LAX or at a suitable off-site location. If a site at LAX is selected, site selection will occur in consultation with a qualified restoration biologist, as well as LAWA's USDA Wildlife Hazard Biologist and will be consistent with FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan" to avoid increasing wildlife

hazards to aircraft. Ninety-percent of the collected seed shall be broadcast (distributed) after the first wetting rain with 10 percent maintained as a contingency and used as needed to meet performance criteria. LAWA or its designee shall implement a monitoring plan to monitor the establishment of individuals of southern tarplant for a period of not more than five years. Performance criteria shall include the establishment of an equal number of plants as that impacted in the first year following the distribution of seed within the mitigation site. Performance criteria shall also include confirmation of recruitment for two years following the first year flowering is observed and establishment of individuals throughout the mitigation area within three years following the first year flowering is observed.

- **MM-BIO (SPAS)-8. Conservation of Faunal Resources: Sensitive Reptiles, Arthropods, and Gastropods (Alternatives 1, 2, 3, 4, 5, 6, and 7).**[217]

  LAWA or its designee shall have a qualified restoration biologist conduct pre-construction surveys to determine the presence of individuals of sensitive arthropod and gastropod species, the silvery legless lizard, and the San Diego horned lizard within the proposed area of impact within the Los Angeles/El Segundo Dunes. Surveys will be conducted at the optimum time to observe these species using the methodology as described in Section 6.1 of the "Los Angeles/El Segundo Dunes Habitat Restoration Plan," including pitfall traps and active opportunistic searching, as well as any additional appropriate methodology as determined by the qualified wildlife biologist. Immediately prior to grubbing of clearing of vegetation, all herbaceous and non-herbaceous plants will be individually shaken to flush out insects. Should an individual be observed, they will be relocated by a qualified wildlife biologist to suitable habitat for that species within the Habitat Restoration Area. Prior to construction, LAWA or its designee shall have a qualified wildlife biologist develop and implement a relocation plan to avoid the potential loss of individuals from the installation of navigational aids and associated temporary impact areas. Relocation efforts shall be undertaken by a qualified biologist.

- **MM-BIO (SPAS)-9. Conservation of Faunal Resources: Loggerhead Shrike (Alternatives 1, 2, 3, 4, 5, 6, and 7).**[218]

  Vegetation removal for the proposed project shall be conducted outside the nesting season for the loggerhead shrike (March 15 to August 15), if feasible. If this is not feasible, a qualified wildlife biologist shall inspect the shrubs/trees at least 14 days prior to construction activities to ensure that no nesting shrikes are present. If a nest is present, construction avoidance measures implemented by the qualified wildlife biologist shall include flagging of all active nests and a 300-foot wide buffer area around the active nests. These construction avoidance measures will be coordinated with LAWA's USDA Wildlife Hazard Biologist and will be consistent with FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan" to avoid increasing wildlife hazards to aircraft. In addition, a Biological Monitor shall be present to ensure the buffer area is not infringed upon and vegetation clearing within the designated 300-foot buffer only takes place from August 16 to March 14.

- **MM-BIO (SPAS)-10. Conservation of Faunal Resources: Burrowing Owl (Alternatives 1, 2, 3, 4, 5, 6, 7, 8, and 9).**[219]

  Prior to any work activities (i.e., vegetation clearing, invasive species removal and/or spraying, and sediment removal), a survey for burrows by a qualified wildlife biologist will be conducted by walking through the suitable habitat within the site (generally the Argo Drainage Channel and Los Angeles/El Segundo Dunes, as well as any other area deemed suitable by the qualified biologist) in accordance

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217 For purposes of the identified SPAS alternatives, this measure satisfies the intent of relevant portions of LAX Master Plan Mitigation Measure MM-BC-9.

218 For purposes of the identified SPAS alternatives, this measure satisfies the intent of relevant portions of LAX Master Plan Mitigation Measure MM-BC-9.

219 For purposes of the identified SPAS alternatives, this measure satisfies the intent of relevant portions of LAX Master Plan Mitigation Measure MM-BC-9.

with CDFG-accepted protocols. If a work site contains burrows that could be used by burrowing owls, four additional surveys will be conducted during the burrowing owl breeding season (April 15 through July 15). If an active burrow is observed during the nesting season, the burrow will be protected until nesting activity has ended. Nesting activity for burrowing owl normally occurs from February 1 through August 31. To protect any active burrow, the following restrictions are required between February 1 and August 31 (or until burrows are no longer active as determined by a qualified wildlife biologist): (1) clearing limits will be established a minimum of 300 feet in any direction from any occupied nest and (2) access and surveying will be restricted within 200 feet of any occupied nest. Any encroachment into the 300/200 foot buffer area around the known nest will only be allowed if it is determined by a qualified wildlife biologist that the proposed activity will not disturb the nest occupants. These avoidance measures will be coordinated with LAWA's USDA Wildlife Hazard Biologist and will be consistent with FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan."

If nesting individuals are observed, LAWA or its designee shall have a qualified wildlife biologist develop and implement a habitat replacement plan to compensate for the loss of habitat associated with the project. The habitat replacement plan shall replace lost habitat value with equal or greater habitat value, and shall follow the methodology outlined in the CDFG *Staff Report on Burrowing Owl Mitigation*.[220] The habitat replacement will occur in the Los Angeles/El Segundo Dunes in a location approved by LAWA's USDA Wildlife Hazard Biologist that will be consistent with FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan", or at an off-site location to avoid potential conflicts with aircraft activities at LAX.

Whether or not any nesting burrowing owls are identified on-site, after the end of the nesting period (August 31), LAWA or its designee will remove all burrows from the immediate area in and around the construction and construction staging areas on a monthly basis between September and January. Removal may include physically collapsing the burrows or installing one-way exit doors in burrow entrances. Such maintenance will continue annually until such time as construction areas are fully in use and/or developed and no longer contain suitable habitat for burrowing owls.

- **MM-BIO (SPAS)-11. Conservation of Floral Resources: Mature Tree Replacement - Nesting Raptors (Alternatives 1, 2, 3, 4, 5, 6, 7, 8, and 9).**

  For those areas of the project site that have a potential for nesting raptors, prior to the initiation of construction activities during the nesting season (February 1 to June 30), all mature trees will be inspected for current or past raptor nesting activity. Inspections shall be conducted by a qualified biologist, and may be conducted outside of nesting season. The wildlife biologist shall identify active nests and/or evidence of past raptor nesting in mature trees to be removed from the construction area.

  LAWA or its designee shall compensate at a ratio of 2:1 for the loss of mature trees with either active nests or evidence of past raptor nesting, which would occur as a result of implementation of any of the project components. The species of newly planted replacement trees shall be local native tree species to the extent feasible. Each mitigation tree shall be at least a 15-gallon or larger specimen. The replacement will be implemented within the boundaries of LAX or at a suitable off-site location. It mitigation occurs within LAX boundaries, the replacement site and tree species will be determined in consultation with LAWA's USDA Wildlife Hazard Biologist and will be consistent with FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan" to avoid increasing wildlife hazards to aircraft.

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220 State of California, Natural Resources Agency, Department of Fish and Game, Staff Report on Burrowing Owl Mitigation, March 7, 2012.

- **MM-BIO (SPAS)-12. Conservation of Faunal Resources: Nesting Birds/Raptors (Alternatives 1, 2, 3, 4, 5, 6, 7, 8, and 9).**

  For those areas of the project site that have a potential for nesting birds/raptors, if construction is scheduled to occur during the nesting season for birds/raptors (generally February 1 to June 30 for raptors and March 15 to August 15 for nesting birds), vegetation clearing for the proposed project shall be conducted outside the nesting season if feasible. If this is not feasible, then a qualified wildlife biologist shall inspect the shrubs/trees prior to project activities to ensure that no nesting birds/raptors are present. If the biologist finds an active nest within the construction area and determines that the nest may be impacted, the wildlife biologist will delineate an appropriate buffer zone; the size of the buffer zone will depend on the species and the type of construction activity. Only construction activities (if any) that have been approved by a Biological Monitor will take place within the buffer zone until the nest is vacated. The wildlife biologist shall serve as a construction monitor during those periods when construction activities shall occur near active nest areas to ensure that no inadvertent impacts on these nests shall occur. Netting or other bird exclusion methods shall be used to discourage birds from nesting in construction equipment and facilities, if determined by the wildlife biologist to be necessary. These construction avoidance measures will be coordinated with LAWA's USDA Wildlife Hazard Biologist and will be consistent with FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan" to avoid increasing wildlife hazards to aircraft.

- **MM-BIO (SPAS)-13. Replacement of Jurisdictional Aquatic Features (Alternatives 1, 5, and 6).**

  LAWA will consult with USACOE to obtain a determination of the jurisdictional area associated with the Argo Drainage Channel, if any, within its jurisdiction pursuant to Section 404 of the Clean Water Act. Mitigation for impacts to the Argo Drainage Channel shall be determined in consultation with USACOE, and at a minimum will ensure that no net loss of wetlands occurs. For previous maintenance impacts to the Argo Drainage Channel, LAWA has restored/enhanced 2.44 acres of wetlands at Ken Malloy Regional Park, which may be counted towards future impacts to the Argo Drainage Channel.

  LAWA will consult with CDFG to obtain a determination of the jurisdictional area associated with the Argo Drainage Channel, if any, within its jurisdiction pursuant to Section 1600 of the Fish and Game Code. Mitigation for impacts to the Argo Drainage Channel shall be determined in consultation with CDFG, and at a minimum will ensure that no net loss of wetlands occurs. For previous maintenance impacts to the Argo Drainage Channel, LAWA has restored/enhanced 2.44 acres of wetlands at Ken Malloy Regional Park, which may be counted towards future impacts to the Argo Drainage Channel.[221]

  If the Argo Drainage Channel is not found to be jurisdictional by USACOE, LAWA will consult with the Los Angeles Regional Water Quality Control Board (LARWQCB) to obtain a determination of the area associated with the Argo Drainage Channel that would be subject to Waste Discharge Requirements pursuant to the Porter Cologne Act, if any. If applicable, mitigation for impacts to the Argo Drainage Channel shall be determined in consultation with LARWQCB, with the 2.44 acres of wetlands noted above applied to final mitigation totals.

  If a mitigation site at LAX is selected, site selection will occur in consultation with LAWA's USDA Wildlife Hazard Biologist and will be consistent with FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan" to avoid increasing wildlife hazards to aircraft.

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[221] The 2.44 acres of mitigation was required by USACOE and CDFG to compensate for the loss of wetland/riparian habitat from maintenance of the channel, including removal of all vegetation and remedial grading to allow unimpeded flows within the channel. Although the vegetation has been allowed to regrow, the loss of the resource has already been mitigated elsewhere, and the 2.44 acres should be counted towards the mitigation obligations that would be incurred with structural covering of the Argo Drainage Channel associated with Alternatives 1, 5, and 6. Any additional mitigation requirements established by USACOE or LARWQCB and CDFG beyond the 2.44 acres would require establishment of additional off-site mitigation.

- **MM-BIO (SPAS)-14. Replacement of Habitat Units (Alternatives 1, 2, 3, 4, 5, 6, 7, 8, and 9).**[222]

  LAWA or its designee shall undertake mitigation for the loss of habitat units resulting from implementation of the selected SPAS alternative. The habitat units shall be replaced at a 1:1 ratio within the Los Angeles/El Segundo Dunes, or at a suitable off-site location. Opportunities for compensation for the loss of habitat units include, but are not limited to, restoration of ruderal habitat to Valley Needlegrass Grassland, and/or Southern Foredune, removal and restoration of existing roadways to Southern Foredune; and restoration of Disturbed Dune Scrub/Disturbed Southern Foredune to Southern Foredune. A habitat value of 0.8 is considered to the maximum feasible target value for restoration and enhancement. The restoration and enhancement of habitat as related to the establishment or enhancement of wildlife habitat shall consider and comply with the provisions of FAA Advisory Circular 150/5200-33 regarding hazardous wildlife attractants on or near airports. Additionally, restoration and enhancement shall take into account, as appropriate, the Memorandum of Agreement between the FAA and other federal agencies, including USFWS, pertaining to environmental conditions that could contribute to aircraft-wildlife strikes.

  Valley Needlegrass Grassland restoration efforts consist of site preparation, propagation and planting of species characteristic of the Valley Needlegrass Grassland community at the Los Angeles/El Segundo Dunes, and maintenance and monitoring of the restoration site. The species to be planted include native perennials as described in the Long-Term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes. The characteristic species include nodding needlegrass (*Stipa cernua*): 1,500 plants/habitat unit; white everlasting (*Pseudognaphalium microcephalum*): 40 plants/habitat unit; doveweed (*Croton setigerus*): 40 plants/habitat unit; California croton (*Croton californicus*): 45 plants/habitat unit; and dune primrose (*Camissonia chieranthifolia*): 70 plants/habitat unit. Site preparation includes physical demarcation of the site, mapping of the restoration site onto a high resolution aerial photograph, and removal of all non-native species (weed abatement). Removal of non-native herbaceous species shall take place by mowing prior to seed set, raking to remove cut material, and hand-pulling the remainder. Removal of non-native shrubs shall be undertaken by cutting and daubing with herbicide. Propagation and planting of nodding needlegrass shall be accomplished by propagation from seed collected on-site during late spring/early summer. Seed shall be properly cleaned, dried, and stored until used. In late summer, nodding needlegrass seed shall be propagated at an on-site nursery in two-inch thimble pots and properly maintained. Nodding needlegrass shall be planted at a rate of 1,500 plants per habitat unit within areas of ruderal vegetation, within the Los Angeles/El Segundo Dunes, which has undergone site preparation as described above. Planting shall take place in the fall or after the first wetting rain. Maintenance of restoration plantings shall consist of adequate irrigation and weed abatement. Given the irregularity of rainfall in Southern California, supplemental irrigation shall be provided for two years to ensure the successful establishment of mitigation plantings. Irrigation of the site shall be adjusted to adequately provide for the establishment of the out-plantings. Weed abatement shall take place on a quarterly basis for a period of five years. Monitoring shall be undertaken on a quarterly basis for the first three years following planting, and twice a year thereafter. Monitoring shall consist of qualitative and quantitative monitoring; quantitative monitoring shall take place once a year. Performance criteria to be met include the attainment of at least a 10 percent cover of native cover in the first year and 20, 30, 40 and 45 percent cover of native species over a five-year period as determined by the point-intercept transect method (the CDFG has adopted a 10 percent threshold of native cover as its criteria for significance of native grasslands). This plan assumes the performance criteria outlined herein shall be met. If monitoring discerns any failure in performance goals, remedial plantings shall be undertaken. Habitat restoration shall be conducted by a qualified habitat restoration specialist.

  Southern Foredune restoration efforts consist of site preparation, propagation, and planting of the species characteristic of the Southern Foredune community at the Los Angeles/El Segundo Dunes,

[222] For purposes of the identified SPAS alternatives, this measure satisfies the intent of LAX Master Plan Mitigation Measure MM-BC-8.

and maintenance and monitoring of the restoration site. The species to be planted include primary and secondary perennial plants as described in the Long-Term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes. Site preparation, propagation, and planting, and maintenance and monitoring shall take place as described above. Performance criteria to be met include the attainment of 10, 20, 30, 40, and 45 percent cover of native species over a five-year period as determined by the point intercept method. The Long-Term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes assumes the performance criteria stated above shall be met. If monitoring discerns any failure in performance goals, remedial plantings shall be undertaken. Habitat restoration shall be conducted by a qualified habitat restoration specialist.

Any combination of habitat replacement completed by LAWA or its designee drawn from the opportunities listed above that equals at least the number of habitat units that would be lost shall be considered sufficient replacement for loss of habitat units resulting from implementation of the selected SPAS alternative.

4.3.8 Level of Significance After Mitigation

Implementation of SPAS Mitigation Measures MM-BIO (SPAS)-1 through MM-BIO (SPAS)-14 would reduce all significant impacts to biological resources associated with Alternatives 1 through 9 to a level that is less than significant.

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