

Appendix
LAX Master Plan Supplement to the Draft EIS/EIR

**S-F. Supplemental Department of
Transportation Act
Section 4(f) Report**

June 2003

Prepared for:

Los Angeles World Airports

U.S. Department of Transportation
Federal Aviation Administration

Prepared by:

PCR Services Corporation

Table of Contents

1.	Introduction	1
1.1	Applicable Regulatory Requirements	1
1.2	The Proposed Action	1
1.3	Master Plan Alternatives	2
1.3.1	Alternative D - Enhanced Safety and Security Plan	2
2.	Determination of Applicability of Section 4(f) Resources	3
2.1	Methodology.....	8
2.2	Direct Effects.....	8
2.2.1	Land Acquisition or Change in Land Use	8
2.3	Indirect Effects	8
2.3.1	Noise	9
2.3.2	Access.....	11
2.3.3	Visual	11
2.3.4	User Demand.....	11
2.3.5	Vibration	11
2.3.6	Ecological.....	11
3.	Impacts to Section 4(f) Resources.....	12
3.1	Parks and Recreation Areas.....	12
3.2	Historic, Architectural, and Archaeological Resources.....	14
3.3	Wildlife and Waterfowl Refuges	15
3.3.1	Description	15
3.3.2	Potential Wildlife Refuge Impacts	16
3.4	Findings.....	19
4.	Avoidance Alternatives	20
5.	Measures to Minimize Harm/Mitigation.....	26
6.	Coordination.....	26
7.	References.....	26
7.1	Parks and Recreation	26
7.2	Ecological/Wildlife Refuges.....	27
7.3	Historic/Architectural.....	27
7.4	Archaeological	29
8.	List of Acronyms and Abbreviations	29

List of Tables

Table S1	Section 4(f) Park and Recreation Area Inventory	7
Table S2	Section 4(f) Historic Resources Inventory	7
Table S3	Land Use Compatibility Guidelines FAR Part 150.....	10
Table S4	Section 4(f) Effects - Alternative D.....	13
Table S5	Habitat Restoration Area Avoidance Alternatives.....	25

List of Figures

Figure S1	Section 4(f) Resources Within Study Area	5
Figure S2	Habitat Restoration Area Aerial Photograph.....	17
Figure S3	Alternative D Navigational Aids.....	21
Figure S4	Alternative D Affected Areas.....	23

This Page Intentionally Left Blank

1. INTRODUCTION

The Los Angeles World Airports (LAWA) and the Federal Aviation Administration (FAA) prepared and circulated a Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to address the potential environmental effects associated with three alternative proposals for the Los Angeles International Airport (LAX) Master Plan. A Department of Transportation (DOT) Act Section 4(f) Report was prepared and circulated with the Draft EIS/EIR (as Appendix H) in January 2001, although no use of a Section 4(f) resource was identified for Alternative C, the LAWA staff-preferred alternative at that time. Subsequent to the publication of the Draft EIS/EIR, LAWA defined an additional Master Plan alternative, Alternative D - Enhanced Safety and Security Plan, which is now LAWA's staff-preferred alternative. This document updates and expands the information contained in the previous DOT Act Section 4(f) Report by incorporating an evaluation of Alternative D pursuant to the requirements of DOT Act Section 4(f). This report has been prepared as a supporting appendix for the Supplement to the Draft EIS/EIR and, in combination with the DOT Act Section 4(f) Report appended to the Draft EIS/EIR, constitutes a draft DOT Act Section 4(f) evaluation.

1.1 Applicable Regulatory Requirements

The purpose of this DOT Act Section 4(f) evaluation is to identify and evaluate the potential impacts to Section 4(f) resources resulting from implementation of the proposed LAX Master Plan alternatives. This evaluation addresses direct and indirect impacts to public parks, recreation areas, wildlife and waterfowl refuges, and historic sites within the study area. The study area includes Section 4(f) resources within and adjacent to existing and proposed LAX boundaries as well as areas within the Master Plan build alternatives' combined 65 decibel (dB) community noise equivalent level (CNEL) noise contour.

Section 4(f) of the DOT Act of 1966 (recodified, as amended, at 49 USC Section 303(c)) permits use of land from a publicly-owned park, recreation area, wildlife or waterfowl refuge, or public or privately-owned historic site of national, state, or local significance¹ for a transportation project only when the Secretary of Transportation has determined that there is no feasible and prudent alternative to such use and the project includes all possible planning to minimize harm to the property resulting from such use.

"Use," within the meaning of Section 4(f), occurs when a project requires a physical taking or other direct control of the land for the purpose of the project. For example, acquiring and developing a portion of a park to build a transportation improvement would be considered a use. Use also includes adverse indirect impacts, or a "constructive use."² A constructive use may occur when impacts substantially impair the activities, features or attributes of the resource that contribute to its significance or its enjoyment.³ Substantial impairment occurs when the activities, features or attributes of a resource are substantially diminished. For example, if building a roadway in the area would significantly increase noise levels at a park with an outdoor amphitheater and would substantially impair the use of the amphitheater, the roadway may represent a constructive use, even though there would be no acquisition or development within the park. As discussed in the analysis provided below in Section 3.3.2, Alternative D would potentially result in a use within the El Segundo Blue Butterfly Habitat Restoration Area (Habitat Restoration Area), which is considered a Section 4(f) resource. Therefore, a final Section 4(f) evaluation will need to be completed after this draft evaluation has been circulated and following coordination with all affected federal jurisdictions. Additionally, if the use within the Habitat Restoration Area cannot be avoided, the FAA will need to determine that no feasible and prudent alternatives exist and that all possible mitigation has been incorporated into the project prior to the approval of Alternative D.

1.2 The Proposed Action

LAX is located in the southwest portion of Los Angeles County adjacent to the Santa Monica Bay and fourteen miles southwest of downtown Los Angeles. It is bounded on the north by the communities of Westchester and Playa del Rey; on the south by Imperial Highway, the City of El Segundo, and the

¹ For purposes of this analysis, publicly-owned parks, recreation areas, wildlife and waterfowl refuges, and public or privately-owned historic sites of national, state, or local significance are collectively referred to as "Section 4(f) resources."

² Federal standards regarding "use" and "constructive use" are set forth in agency regulations and guidelines, including FAA Order 5050.4A, *Airport Environmental Handbook*, as well as federal case law.

³ FAA Order 1050.1D, Change 4, Attachment 2, Paragraph 5(b)(4).

community of Del Aire; on the east by Aviation Boulevard, the City of Inglewood, and the community of Lennox; and on the west by Vista del Mar Street, Dockweiler Beach State Park, and the Santa Monica Bay. Encompassing 3,641 acres within the City of Los Angeles, LAX constitutes a large industrial district presently made up of the following facilities and uses:

- ◆ 4 runways;
- ◆ 4 million square feet of passenger terminal space, occupied by 9 terminals and 165 aircraft gates;
- ◆ 197 acres of cargo area, including 2.8 million square feet of building space;
- ◆ 364 acres of ancillary space, including 30 acres of LAWA and FAA administrative and support facilities;
- ◆ 28,869 on-airport parking stalls; and
- ◆ 900 acres of open space, including the approximately 307-acre Los Angeles/El Segundo Dunes.

Land uses surrounding the airport are primarily residential (both single and multi-family), commercial, industrial (largely airport-related), recreational, or transportation-related. The cities of Los Angeles, Inglewood, and El Segundo, and the County of Los Angeles have jurisdiction over various portions of the project area.

The FAA and LAWA have prepared a Supplement to the Draft EIS/EIR to identify the potential environmental effects associated with implementation of the proposed improvements to LAX under Master Plan Alternative D. This Section 4(f) report has been prepared as a supporting appendix to the Supplement to the Draft EIS/EIR and is considered supplemental to the Section 4(f) report included as Appendix H to the Draft EIS/EIR, published in January 2001. Prior to preparing the Draft EIS/EIR, a range of alternatives to the proposed project were analyzed to determine which alternatives might feasibly meet the Purpose and Need of the proposed project. As a result, and to support compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), the FAA and LAWA identified four alternative airfield concepts. Alternatives A, B, C, and D were selected as representative of a range of reasonable, prudent, and feasible alternatives for LAX.

The purpose and objectives of the LAX Master Plan are to provide in an environmentally sound manner, a level of airport passenger and freight improvements to support the future economic growth and vitality of the Los Angeles region.

Federal funding for airfield and other public-use improvements may be requested from the Airport Improvement Program, a federal grant-in-aid program authorized by the Airport and Airway Improvement Act of 1982, as amended,⁴ administered by the FAA and financed from the Aviation Trust Fund. FAA approval may also be requested for authority to use Passenger Facility Charges collected by the airlines directly from passengers using LAX.

1.3 Master Plan Alternatives

A brief description of the No Action/No Project Alternative and Alternatives A, B, and C, as well as a Section 4(f) analysis of build Alternatives A, B, and C, is provided in Appendix H, *Department of Transportation Act Section 4(f) Report*, of the Draft EIS/EIR. A DOT Section 4(f) analysis for the No Action/No Project Alternative is not required since the No Action/No Project Alternative is not considered an expansion or build alternative.

1.3.1 Alternative D - Enhanced Safety and Security Plan

Alternative D would allow modest increases in passenger activity relative to that expected under Alternatives A, B, and C, accommodating roughly the same level of passenger activity projected to occur under the No Action/No Project Alternative. Alternative D would not add any additional runways to the airfield. This alternative would provide a new landside Ground Transportation Center (GTC) north of Century Boulevard and south of Arbor Vitae between Aviation and La Cienega Boulevards. An Intermodal Transportation Center (ITC) with connection to the Metropolitan Transportation Authority (MTA) Green Line would be located north of Imperial Highway and east of Aviation Boulevard. East of Sepulveda Boulevard and north of 98th Street, new consolidated Rent-a-Car (RAC) facilities would replace existing rental car facilities and long-term parking (Lot C). The GTC, ITC, RAC, and Central

⁴ Recodified at Title 49 USC 47107 et seq.

Terminal Area (CTA) would be connected via an Automated People Mover (APM) system. Runways 6L/24R and 6R/24L would be extended, and Runway 6R/24L would be moved south to allow a parallel taxiway to be constructed between the north runways in order to reduce the potential for runway incursions. Runway 7R/25L would also be extended and moved to the south to allow construction of a parallel taxiway between the south runways. A linear concourse would replace existing Terminals 1 through 3 would be reconfigured to accommodate one continuous east/west flight line. Terminals 4 through 7 would be reconfigured as necessary to improve passenger facilities and integrate the concourses with the new passenger terminal buildings. The TBIT would be reconfigured with a new linear concourse on the west side of the existing building, and a new West Satellite Concourse immediately west of the TBIT would also be constructed. The LAX Northside project, consisting of approximately 340 acres of airport-owned land, would be developed pursuant to the provisions of Final Tract Map 34836. The LAX Northside project is already approved for a total potential build out 4.5 million square feet of commercial, recreational, and airport-related industrial land uses. Under Alternative D, however, the total amount of development allowed within the LAX Northside area would be controlled through implementation of a proposed vehicle trip cap [refer to Chapter 4, *Affected Environment, Consequences and Mitigation Measures*, (Analytical Framework section), of the Supplement to the Draft EIS/EIR].

Alternative D has been selected as LAWA's staff-preferred alternative as it is seen as providing the best balance between meeting aviation demand and minimizing impacts to the community and the environment among the four build alternatives.

2. DETERMINATION OF APPLICABILITY OF SECTION 4(F) RESOURCES

To identify potentially affected Section 4(f) resources within the study area, an inventory and evaluation of parks, recreation areas, wildlife and waterfowl refuges, and historic sites was conducted. Initially, 32 potential park and recreation areas, one wildlife refuge, and seven historic sites were identified within the study area. However, two recreational facilities within the study area that are owned by LAWA were not included in the inventory pursuant to FAA Order 5050.4A (paragraph 47(e)(7)(3)), which exempts property from a Section 4(f) evaluation that is owned by and is currently designated for use by a transportation agency and is used as a park or recreation area on an interim basis. The two properties screened out of the Section 4(f) evaluation based on the exemption cited above are Carl E. Nielson Youth Park⁵ and Westchester Golf Course.⁶ Bikeways that are located along roadways that would be only temporarily affected during Master Plan construction activities were also excluded from this Section 4(f) analysis. As stated in the Federal Highway Administration's (FHWA) *Section 4(f) Policy Paper*, Section 4(f) does not apply to temporary construction easements.⁷ The names of each park within the study area by jurisdiction are listed in **Table S1**, Section 4(f) Park and Recreation Area Inventory, and keyed to **Figure S1**, Section 4(f) Resources Within Study Area.

Parks and recreation areas within the study area were identified through information obtained from agency correspondence, local street maps, and a tax assessor parcel-level Geographic Information System (GIS) database.⁸ A general park site inventory form was completed for each of the 30 sites. A detailed park site inventory form was completed for each site potentially affected by the proposed alternatives. The detailed form includes such information as the types of recreational uses and facilities, unusual characteristics (e.g., steep slopes, flooding), types of improvements in process and/or proposed improvements, park size, estimated number of visitors, types of access, and functional classification (e.g., neighborhood, community, or regional park). The completed general and detailed park inventory forms for each site are included in Attachment 1 of Appendix H, *Department of Transportation Act Section 4(f) Report*, of the Draft EIS/EIR.

⁵ Per Replacement Lease between the City of Los Angeles and the Westchester-Playa Del Rey Youth Foundation, Inc., signed May 19, 1997.

⁶ Per Lease Number LAA-6410, as amended, between the City of Los Angeles and American Golf.

⁷ U.S. Department of Transportation, Federal Highway Administration, *Section 4(f) Policy Paper*, September 2, 1987 (Revised June 7, 1989). Furthermore, it is uncertain whether these bikeways would qualify for the protection of Section 4(f) as "recreation areas."

⁸ GIS database provided by Psomas, April 2000.

As shown in **Figure S1**, there is one site within the study area considered to qualify for protection as a wildlife refuge under Section 4(f). This site is an area that the City of Los Angeles has designated on the western edge of the airport property managed by LAWA to protect and restore habitat for the long-term conservation of the federally endangered El Segundo blue butterfly.⁹ The El Segundo Blue Butterfly Habitat Restoration Area comprises approximately 203 acres within the Los Angeles/El Segundo Dunes and is indicated as Site No. 38 in **Figure S1**. The Habitat Restoration Area is described in more detail below in Section 3.3 as well as in Section 4.10, *Biotic Communities*, and Section 4.11, *Endangered and Threatened Species of Flora and Fauna*, of the Draft EIS/EIR. While the Habitat Restoration Area is not specifically designated as a Wildlife and Waterfowl Refuge pursuant to DOT Act Section 4(f), it is considered by the FAA to be comparable to a wildlife refuge because it is used on a permanent basis to conserve a federally endangered wildlife species.

Table S2, Section 4(f) Historic Resources Inventory, lists historic resources within the study area that are either on or have been identified as eligible for listing on the National Register of Historic Places (sites listed are keyed to **Figure S1**). The FAA's determination of historic properties and consultation with the California State Historic Preservation Officer (SHPO) and the FHWA is currently ongoing and the results of the consultation will be included in the Final EIS/EIR. Section 4.9, *Historic/Architectural and Archaeological/Cultural and Paleontological Resources*, of the Draft EIS/EIR contains a detailed description of each of these historic resources. No historic or archaeological resources listed or eligible for listing in the National Register beyond those identified in the Draft EIS/EIR are identified in this Supplemental DOT Act Section 4(f) Report.

⁹ City of Los Angeles Department of City Planning, Los Angeles Airport/El Segundo Dunes Specific Plan (Ordinance No. 167,940), June 28, 1992. Amended by Ordinance No. 169,767, April 6, 1994.

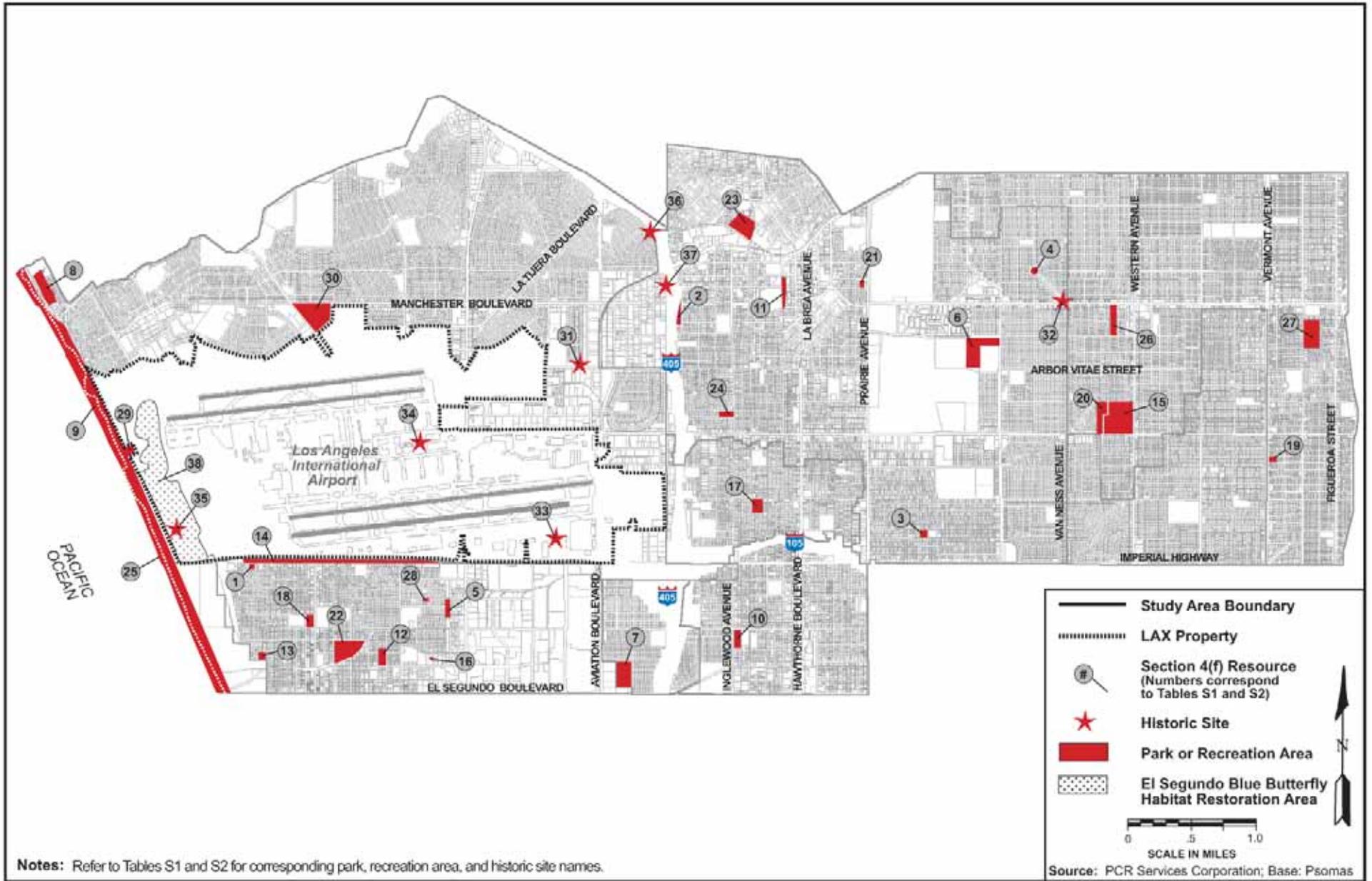


Table S1

Section 4(f) Park and Recreation Area Inventory

Number¹	Name	Jurisdiction
1	Acacia Park	City of El Segundo
2	Ashwood Park	City of Inglewood
3	Center Park	City of Inglewood
4	Circle Park	City of Los Angeles
5	Constitution Park	City of El Segundo
6	Darby Park	City of Inglewood
7	Del Aire Park	County of Los Angeles
8	Del Rey Lagoon	City of Los Angeles
9	Dockweiler Beach State Park	County of Los Angeles
10	Eucalyptus Park	City of Hawthorne
11	Grevillea Park	City of Inglewood
12	Hilltop Park	City of El Segundo
13	Holly Valley Park	City of El Segundo
14	Imperial Strip	City of El Segundo
15	Jesse Owens County Park	County of Los Angeles
16	Kansas Park	City of El Segundo
17	Lennox Park	County of Los Angeles
18	Library Park	City of El Segundo
19	Little Green Acres Park	City of Los Angeles
20	Maggie Hathaway Golf Course	County of Los Angeles
21	Queen Park	City of Inglewood
22	Recreation Park	City of El Segundo
23	Rogers Park	City of Inglewood
24	Siminski Park	City of Inglewood
25	South Bay Bicycle Trail	County of Los Angeles
26	St. Andrews Recreation Center	City of Los Angeles
27	Sutton Algin Recreation Center	City of Los Angeles
28	Sycamore Park	City of El Segundo
29	Vista del Mar Park	City of Los Angeles
30	Westchester Park Recreation Center	City of Los Angeles

¹ Numbers are keyed to Figure S1, Section 4(f) Resources Within Study Area.

Source: PCR, 2003.

Table S2

Section 4(f) Historic Resources Inventory

Number¹	Type	Jurisdiction	National Register Status
31	Merle Norman Headquarters Complex	City of Los Angeles	Eligible ²
32	Academy Theatre	City of Inglewood	Eligible ²
33	Hangar One	City of Los Angeles (LAX)	Listed
34	Theme Building	City of Los Angeles (LAX)	Eligible ²
35	WW II Munitions Storage Bunker ³	City of Los Angeles (LAX)	Eligible ²
36	Centinela Adobe	City of Inglewood	Listed
37	Randy's Donuts	City of Inglewood	Eligible ²

¹ Numbers are keyed to Figure S1, Section 4(f) Resources Within Study Area.

² Subject to concurrence with State Historic Preservation Officer.

³ As a contributor to a thematic district.

Source: PCR, 2003.

One archaeological site, CA-LAN-2345, is located within the study area, but is not included in **Figure S1** because archaeological sites are not subject to public disclosure pursuant to Title II Section 304 of the National Historic Preservation Act of 1966, as amended, to prevent harm and unauthorized disturbance of

the sites. A description of this site is included in Section 4.9, *Historic/Architectural and Archaeological/Cultural and Paleontological Resources*, of the Draft EIS/EIR.

2.1 Methodology

The determination of use of Section 4(f) resources involved consideration of direct and indirect impacts associated with each of the Master Plan build alternatives with respect to the definitions of use and constructive use discussed below. In undertaking the analysis, the characteristics of the resources and the types of activities and facilities potentially affected were considered. Direct effects were determined by evaluating land acquisition and the physical development of airport facilities proposed under the build alternatives. The evaluation of indirect effects focused on projected noise, visual intrusions, or other effects that could substantially impair the value of a site in terms of its environmental, recreational, ecological, or historical importance.

2.2 Direct Effects

The Master Plan alternatives are evaluated in this report to determine whether a potential use of Section 4(f) resources would occur. "Use," within the meaning of Section 4(f), occurs when the project requires a physical taking or other direct control of the land for the purpose of the project. For example, acquiring and developing a portion of a park or a historic site to build a road would be considered a "use." Another example of "use" is temporary occupancy of a property resulting in a change in use from a park or recreation area to a different type of use.

"Use" of an archaeological site would occur if a site that has value for preservation in place were disturbed or destroyed. If it is determined that the archaeological resource is important chiefly because of what can be learned by data recovery and it has minimal value for preservation in place, Section 4(f) would not apply.¹⁰

2.2.1 Land Acquisition or Change in Land Use

Areas proposed for development under the Master Plan build alternatives were evaluated to determine whether or not a Section 4(f) resource would be subject to acquisition, alteration or demolition. Local street maps and a GIS database along with the Master Plan project description (see Chapter 3, *Alternatives*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR) were used in the analysis to determine the extent of land acquisition and potential direct impacts. Direct effects on Section 4(f) resources due to changes in land use were also evaluated where such uses are located on LAX property, as applies to the Habitat Restoration Area.

2.3 Indirect Effects

"Use," pursuant to Section 4(f), also includes adverse indirect impacts or what is termed "constructive use." When applied to transportation projects developed near Section 4(f) resources, a constructive use may occur when impacts, due to proximity of the project, substantially impair the activities, features or attributes of the resource that contribute to its significance or enjoyment.¹¹ Substantial impairment occurs when the protected activities, features or attributes of a resource are substantially diminished. For example, if building a roadway in the area would significantly increase noise levels at a park with an outdoor amphitheater and would substantially impair the use of the amphitheater, the roadway may represent a constructive use, even though there would be no acquisition or development within the park.

Based on FAA Order 5050.4A, paragraph 47e(7)(b), constructive use is defined as follows:

When there is no physical taking but there is the possibility of use of or adverse impacts to section 4(f) land, the FAA must determine if the activity associated with the proposal conflicts with or is compatible with the normal activity associated with this land. The proposed action is compatible if it would not affect the normal activity or aesthetic value of a public park, recreation area, refuge, or historic site. When so construed, the action would not constitute use and would not, therefore, invoke section 4(f) of the DOT Act.

¹⁰ 23 CFR 771.135(g)(2).

¹¹ FAA Order 1050.1D, Change 4, Attachment 2, Paragraph 5(b)(4).

2.3.1 Noise

FAA Land Use Compatibility Guidelines for Airport Noise Evaluation, as referenced in Federal Aviation Regulation (FAR) Part 150, are used to determine acceptable noise levels over those Section 4(f) lands involved that are dedicated to traditional recreation uses as categorized in FAR Part 150.

A constructive use to Section 4(f) resources due to aircraft noise may occur when:

- ◆ Noise exposure levels due to the proposed project exceed the FAA Land Use Compatibility Guidelines contained in FAR Part 150 (see **Table S3**, Land Use Compatibility Guidelines FAR Part 150), such that the value or normal use of the resource is substantially impaired.
- ◆ A determination is made through the Section 106 consultation process that the project will have an "effect" or an "adverse effect" upon sites that are listed, or eligible for listing, in the National Register of Historic Places.

FHWA, the federal agency with jurisdiction relating to major transportation components of the project, provides guidance indicating that constructive use of a historic site may occur when the "projected noise level increase attributable to the project substantially interferes with the use and enjoyment of a noise sensitive facility of a resource protected by section 4(f)." This includes the "enjoyment of a historic site where a quiet setting is a generally recognized feature or attribute of the site's significance."¹² FAA Order 5050.4A, *Airport Environmental Handbook*, also indicates that constructive use could occur if the aesthetic value of a historic site is substantially impaired. Additionally, a Section 4(f) use of historic properties could occur as a result of noise mitigation measures that involve replacement of windows and/or elements of a structure, such that the property no longer retains the qualities which make it eligible for listing in the National Register.

Projected noise levels for each Master Plan alternative were evaluated to determine if Section 4(f) resources would be adversely affected by future aircraft noise levels within the study area.¹³ This evaluation was based on the noise contours and grid point noise levels contained in Technical Report 1, *Land Use Technical Report*, and Appendix D, *Aircraft Noise Technical Report*, of the Draft EIS/EIR (Alternatives A, B, and C), and in Technical Report S-1, *Supplemental Land Use Technical Report*, and Appendix S-C, *Supplemental Aircraft Noise Technical Report*, of the Supplement to the Draft EIS/EIR (Alternative D).

¹² Federal Highway Administration, Technical Advisory T6640.8a, Guidance for Preparing and Processing Environmental and Section 4(f) Documents, Environmental Guidebook, Tab 2, Section (p)(4)(i).

¹³ Noise contours are illustrated in Section 4.2, *Land Use*, of the Draft EIS/EIR (Alternatives A, B, and C). Noise contours are illustrated in Section 4.2, *Land Use*, of the Supplement to the Draft EIS/EIR (Alternative D).

Table S3

Land Use Compatibility Guidelines FAR Part 150

Land Use ⁹	Yearly Day-Night Average Sound Level (DNL) in Decibels ^{11,12,13,14}					
	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential						
Residential, other than Mobile Homes and Transient Lodgings	Y	N ¹	N ¹	N	N	N
Mobile Home Parks	Y	N	N	N	N	N
Transient Lodgings	Y	N ¹	N ¹	N ¹	N	N
Public Use						
Schools, Hospitals, Nursing Homes ¹⁰	Y	25	30	N	N	N
Churches, Auditoriums, and Concert Halls	Y	25	30	N	N	N
Governmental Services	Y	Y	25	30	N	N
Transportation	Y	Y	Y ²	Y ³	Y ⁴	N ⁴
Parking	Y	Y	Y ²	Y ³	Y ⁴	N
Commercial Use						
Offices, Business and Professional	Y	Y	25	30	N	N
Wholesale and Retail-Building Materials, Hardware, and Farm Equipment	Y	Y	Y ²	Y ³	Y ⁴	N
Retail Trade, General	Y	Y	25	30	N	N
Utilities	Y	Y	Y ²	Y ³	Y ⁴	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing, General	Y	Y	Y ²	Y ³	Y ⁴	N
Photographic and Optical	Y	Y	25	30	N	N
Agriculture (except livestock) and Forestry	Y	Y ⁶	Y ⁷	Y ⁸	Y ⁸	Y ⁸
Livestock Farming and Breeding	Y	Y ⁶	Y ⁷	N	N	N
Mining and Fishing, Resource Production, and Extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor Sports Arenas and Spectator Sports	Y	Y	Y ⁵	N ⁵	N	N
Outdoor Music Shells, Amphitheaters	Y	N	N	N	N	N
Nature Exhibits and Zoos	Y	Y	N	N	N	N
Amusement Parks, Resorts, and Camps	Y	Y	Y	N	N	N
Golf Courses, Riding Stables, and Water Recreation	Y	Y	25	30	N	N

¹ Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25dB and 30dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20dB, thus, the reduction requirements are often stated as 5, 10, or 15dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.

² Measures to achieve NLR of 25dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

³ Measures to achieve NLR of 30dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

⁴ Measures to achieve NLR of 35dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

⁵ Land use compatible provided special sound reinforcement systems are installed.

⁶ Residential buildings require a NLR of 25.

⁷ Residential buildings require a NLR of 30.

⁸ Residential buildings not permitted.

⁹ The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under FAR Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

¹⁰ Nursing Homes, Hospitals, and Convalescent are used interchangeably throughout this analysis.

¹¹ Y (Yes) Land Use and related structures compatible without restrictions.

¹² N (No) Land Use and related structures are not compatible and should be prohibited.

¹³ NLR Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

¹⁴ 25, 30, 35 Land Use and related structures generally compatible; measures to achieve or NLR of 25, 30, or 35dB must be incorporated into design and construction of structure.

Source: FAR Part 150.

2.3.2 Access

Potential changes to access were evaluated by comparing the existing roadway network and pedestrian routes with the proposed surface transportation system. Possible permanent changes in vehicle access to park facilities and pedestrian access to parks were evaluated to determine the potential for constructive use. Pedestrian, bicycle, and vehicular access to parks and recreation areas is further evaluated in Sections 4.4.4, *Community Disruption and Alteration of Surface Transportation Patterns*, 4.14, *Coastal Zone Management and Coastal Barriers*, and 4.26.3, *Parks and Recreation*, of the Draft EIS/EIR (Alternatives A, B, and C), and in the same sections of the Supplement to the Draft EIS/EIR (Alternative D).

2.3.3 Visual

Visual impacts were evaluated by comparing existing visual conditions with projected future conditions expected with implementation of the proposed Master Plan build alternatives, at each park and historic site location. Changes in views attributable to the implementation of the Master Plan build alternatives that would substantially impair the value of park or historic sites were evaluated to identify the potential for constructive use. Section 4.21, *Design, Art and Architecture Application/Aesthetics*, of the Draft EIS/EIR (Alternatives A, B, and C) and the respective section of the Supplement to the Draft EIS/EIR (Alternative D) contain detailed discussions of the LAX viewsheds and potential project-related visual intrusions.

2.3.4 User Demand

User demand effects were evaluated by noting land acquisition of residential properties in the vicinity of each park and considering the function and the current sufficiency/deficiency of facilities to serve the local residential population. Parks and recreation areas that would experience a substantial change in potential user demand as a result of implementation of the Master Plan build alternatives such that the value or normal use of the areas would be substantially impaired would constitute a use.

2.3.5 Vibration

Generally, fixed-wing, subsonic aircraft do not generate vibration levels of the frequency or intensity to result in damage to structures. It has been found that exposure to normal weather conditions, such as thunder and wind, usually have more potential to result in substantial structural vibration than aircraft.¹⁴ Recent studies on aircraft operation vibration effects upon sensitive historic structures concluded that aircraft operations do not result in substantial structural vibration. Based on these conclusions, damage to historic structures in the study area as a result of vibration from aircraft is not expected.

2.3.6 Ecological

Constructive use of a wildlife or waterfowl refuge may occur when the "ecological intrusion of the project substantially diminishes the value of wildlife habitat in a wildlife or waterfowl refuge adjacent to the project or substantially interferes with the access to a wildlife or waterfowl refuge, when such access is necessary for established wildlife migration or critical life cycle process."¹⁵ The only resource within the study area determined to qualify for protection as a wildlife or waterfowl refuge is the Habitat Restoration Area.

As discussed further below in Section 3.3, the Habitat Restoration Area encompasses approximately 203 acres and is located adjacent to the western boundary of and within the LAX property. The City of Los Angeles set aside the area to protect and restore habitat that supports the federally endangered El Segundo blue butterfly.¹⁶ Further information regarding project-related impacts to the Habitat Restoration Area is contained in Section 4.10, *Biotic Communities*, and Section 4.11, *Endangered and Threatened Species of Flora and Fauna*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR.

¹⁴ Federal Aviation Administration, Report No. FAA-EE-85-2, *Aviation Noise Effects*, 1985.

¹⁵ Federal Highway Administration, Technical Advisory T6640.8a, [Guidance for Preparing and Processing Environmental and Section 4\(f\) Documents](#), Environmental Guidebook, Tab 2, Section (p)(4)(i).

¹⁶ City of Los Angeles, Department of City Planning, [Los Angeles Airport/El Segundo Dunes Specific Plan \(Ordinance No. 167,940\)](#), June 28, 1992, Amended by Ordinance No. 169,767, April 6, 1994.

No other wildlife or waterfowl refuges are located within the study area.

3. IMPACTS TO SECTION 4(f) RESOURCES

Table S4, Section 4(f) Effects - Alternative D, summarizes the direct and indirect effects for each potentially affected Section 4(f) park, recreation area, wildlife refuge, and historic site under LAWA's staff-preferred alternative, Alternative D. The effects summarized in **Table S4** do not necessarily constitute a use or constructive use as defined in Section 4(f) of the DOT Act. The potential for use or constructive use of Section 4(f) resources associated with Alternative D is indicated in the following discussion.

A Section 4(f) analysis of build Alternatives A, B, and C is provided in Appendix H, *Department of Transportation Act Section 4(f) Report*, of the Draft EIS/EIR. The conclusions regarding impacts to Section 4(f) resources under Alternatives A, B, and C have not changed from those described therein, with the exception of relevant information pertaining to existing operations, discussed in Sections 3.3.1 and 3.3.2 below.

3.1 Parks and Recreation Areas

Vista del Mar Park (Site No. 29) is a small, 1.8-acre, passive recreation park located immediately west of the North Runway Complex on the west-facing slope of the Los Angeles/El Segundo Dunes. Its primary feature is a grassy knoll, with a few picnic tables and playground equipment. The park has ocean views and is a prime location for viewing aircraft arriving and departing LAX. Normal use of Vista del Mar Park has not been affected by security improvements including roadway closures that have been implemented subsequent to the events of September 11, 2001. The park has a noise level of 79 dB CNEL under 1996 baseline conditions and a noise level of 75.8 dB CNEL under Year 2000 conditions. Despite its high noise levels, the park is frequently used.

Under Alternative D, the park would experience a 0.1 dB CNEL increase compared to the 1996 baseline, for a total CNEL noise level of 79.1 dB CNEL by 2015. Compared to Year 2000 conditions the park would experience a 3.3 dB CNEL increase under Alternative D. Although this noise level increase compared to Year 2000 conditions represents a substantial increase in noise to a currently non-compatible Section 4(f) resource, the resulting noise level would represent a minor increase (0.1 dB CNEL under Alternative D) over the 1996 baseline noise level, which did not interfere with normal use of the park in the past. Furthermore, as Vista del Mar Park has been and is currently exposed to high noise levels from both aircraft and vehicular traffic and is a prime location for viewing aircraft overhead, this increase in noise would not substantially interfere with the normal use of the park. Therefore, if Alternative D were adopted, the increase in noise at the park would not constitute a constructive use.

Just west of Vista del Mar Park lies Dockweiler Beach State Park (Site No. 9) and the South Bay Bicycle Trail (Site No. 25). Dockweiler Beach State Park is 4 miles long and 500 feet wide, and encompasses a total of 288 acres between Vista Del Mar and the Pacific Ocean. The South Bay Bicycle Trail traverses Dockweiler Beach State Park and extends from Torrance County Beach to Will Rogers State Beach. In areas nearest LAX, these two sites have noise levels ranging from 64 dB CNEL to 79 dB CNEL under 1996 baseline conditions and noise levels ranging from 62 dB CNEL to 75.8 dB CNEL under Year 2000 conditions. Despite their high noise levels, the beach and bicycle trail are frequently used. Under Alternative D, both Dockweiler Beach State Park and the South Bay Bicycle Trail would experience an overall decrease in the area exposed to high noise levels. However, with implementation of Alternative D certain portions of these two sites would experience noise level increases greater than 1.5 dB CNEL (i.e., the threshold used to identify a substantial increase in noise exposure) as compared to Year 2000 conditions, with total CNEL noise levels ranging from 59.2 dB CNEL to 79.1 dB CNEL. The higher noise level of 79.1 dB CNEL at these sites would represent a 3.3 dB CNEL increase over the maximum Year 2000 noise level; however, as applies to Vista del Mar Park, this would only equate to a 0.1 dB CNEL increase over the 1996 baseline noise level. Similar to Vista del Mar Park, the projected noise level increase would not substantially interfere with the normal use of the beach or the bicycle trail, as these sites have experienced high noise levels in the past and continue to experience high noise levels under current conditions. Therefore, if Alternative D were adopted, the noise level increases in a portion of Dockweiler Beach State Park and the South Bay Bicycle Trail would not constitute a constructive use.

Table S4

Section 4(f) Effects - Alternative D

No.	Name	Jurisdiction	Eco-logical	Acqui-sition	Access	Visual	Existing Noise	Noise 2015 (CNEL)	1.5dB Noise Increase
1	Acacia Park	City of El Segundo	N/A ¹	No	No	No	No	No	No
2	Ashwood Park	City of Inglewood	N/A	No	No	No	No	No	No
3	Center Park	City of Inglewood	N/A	No	No	No	No	No	No
4	Circle Park	City of Los Angeles	N/A	No	No	No	No	No	No
5	Constitution Park	City of El Segundo	N/A	No	No	No	No	No	No
6	Darby Park	City of Inglewood	N/A	No	No	No	No	No	No
7	Del Aire Park	County of Los Angeles	N/A	No	No	No	No	No	No
8	Del Rey Lagoon	City of Los Angeles	N/A	No	No	No	No	No	No
9	Dockweiler Beach State Park	County of Los Angeles	N/A	No	No	No	Yes (75+)	Yes (75+)	Yes
10	Eucalyptus Park	City of Hawthorne	N/A	No	No	No	No	No	No
11	Grevillea Park	City of Inglewood	N/A	No	No	No	No	No	No
12	Hilltop Park	City of El Segundo	N/A	No	No	No	No	No	No
13	Holly Valley Park	City of El Segundo	N/A	No	No	No	No	No	No
14	Imperial Strip	City of El Segundo	N/A	No	No	No	Yes (75+)	No	No
15	Jesse Owens County Park	County of Los Angeles	N/A	No	No	No	No	No	No
16	Kansas Park	City of El Segundo	N/A	No	No	No	No	No	No
17	Lennox Park	County of Los Angeles	N/A	No	No	No	No	No	No
18	Library Park	City of El Segundo	N/A	No	No	No	No	No	No
19	Little Green Acres Park	City of Los Angeles	N/A	No	No	No	No	No	No
20	Maggie Hathaway Golf Course	County of Los Angeles	N/A	No	No	No	No	No	No
21	Queen Park	City of Inglewood	N/A	No	No	No	No	No	No
22	Recreation Park	City of El Segundo	N/A	No	No	No	No	No	No
23	Rogers Park	City of Inglewood	N/A	No	No	No	No	No	No
24	Siminski Park	City of Inglewood	N/A	No	No	No	No	No	No
25	South Bay Bicycle Trail	County of Los Angeles	N/A	No	No	No	Yes (75+)	Yes (75+)	Yes
26	St. Andrews Recreation Center	City of Los Angeles	N/A	No	No	No	No	No	No
27	Sutton Algin Recreation Center	City of Los Angeles	N/A	No	No	No	No	No	No
28	Sycamore Park	City of El Segundo	N/A	No	No	No	No	No	No
29	Vista del Mar Park	City of Los Angeles	N/A	No	No	No	Yes (75+)	Yes (75+)	Yes
30	Westchester Park Recreation Center	City of Los Angeles	N/A	No	No	No	No	No	No
31	Merle Norman Headquarters Complex	City of Los Angeles	N/A	Yes	No	No	Yes (70)	Yes (70)	No
32	Academy Theatre Building	City of Inglewood	N/A	No	No	No	No	Yes (65)	No
33	Hangar One	City of Los Angeles	N/A	No	No	No	Yes (75+)	Yes (70)	No
34	Theme Building	City of Los Angeles	N/A	No	No	No	Yes (70)	Yes (70)	No
35	WW II Munitions Storage Bunker	City of Los Angeles	N/A	No	No	No	Yes (75+)	Yes (75+)	No
36	Centinela Adobe	City of Inglewood	N/A	No	No	No	No	No	No
37	Randy's Donuts	City of Inglewood	N/A	No	No	No	No	No	No
38	El Segundo Blue Butterfly Habitat Restoration Area	City of Los Angeles	Yes	Yes	No	No	Yes (75+)	Yes (75+)	Yes

¹ N/A = Not Applicable

Source: PCR, 2003.

No other park or recreation area would experience a substantial increase in noise levels that would interfere with its normal use under Alternative D. Additional information regarding noise levels associated with Alternative D is provided in Appendix S-C, *Supplemental Aircraft Noise Technical Report*, Section 4.1, *Noise*, and Section 4.2, *Land Use*, of the Supplement to the Draft EIS/EIR.

Under Alternative D, development of cargo facilities and other ancillary facilities near the southern boundary of the airport would alter views from Imperial Strip, a passive recreational park that serves as a buffer between the City of El Segundo and LAX. From Imperial Strip (Site No. 14), views would include new and replacement cargo facilities. Also, with the development of the LAX Northside project, views from the Westchester Park Recreation Center (Site No. 30) toward the south would change. While open areas of the LAX Northside project site would become urbanized and new development would occur along Imperial Highway, these areas would be attractively designed and would incorporate landscaping

and landscaped buffer areas. As concluded in Section 4.21, *Design, Art, and Architecture Application/Aesthetics*, of the Supplement to the Draft EIS/EIR, these changes in views/aesthetic conditions would not result in substantial adverse impacts under Alternative D. Therefore, constructive use of parks or recreation areas due to changes in views/aesthetic conditions would not occur under Alternative D.

Several roadways have been closed for security purposes since the Draft EIS/EIR was published in January 2001 due to the events of September 11, 2001, including Sandpiper Street (between Pershing Drive and Vista del Mar). However, the closure of this roadway does not inhibit access to Vista del Mar Park, Dockweiler Beach State Park, or the South Bay Bicycle Trail as primary access to these areas is provided via Vista del Mar Boulevard. The other roadway closures required for security purposes were evaluated and do not have the potential to affect access to recreational facilities.

Vehicular access to Dockweiler Beach State Park and bicycle path use and access to Dockweiler Beach State Park via Imperial Highway and Westchester Parkway would not be inhibited by implementation of Alternative D. As described in Chapter 5, *Environmental Action Plan*, of the Supplement to the Draft EIS/EIR, Master Plan Commitment ST-18, Detour Plan (Alternatives A, B, C, and D), would ensure that notification regarding alternate routes is provided during the construction period for the roadways. Furthermore, implementation of Master Plan Commitment LU-5, Comply with City of Los Angeles Transportation Element Bicycle Plan (Alternative D), would ensure that new replacement bicycle lanes are provided along Imperial Highway and that a bicycle path is incorporated into the LAX Northside development to maintain bicycle access to Dockweiler Beach State Park, as is currently provided along Westchester Parkway (see Section 4.14, *Coastal Zone Management and Coastal Barriers*, in the Supplement to the Draft EIS/EIR). In summary, no use of a bicycle path or constructive use associated with restricted access would occur.

A decrease in local user demand for parks and recreation areas would occur under Alternative D due to an expected decrease in the local residential population associated with a decline in local airport-related employment.¹⁷ Therefore, no adverse effects to user demand would occur as a result of implementation of Alternative D. Section 4.26.3, *Parks and Recreation*, of the Supplement to the Draft EIS/EIR (Alternative D) contains detailed discussion of user demand effects on parks and recreation facilities in the immediate LAX vicinity.

No use or physical taking of any park or recreation area would occur with implementation of Alternative D.

3.2 Historic, Architectural, and Archaeological Resources

No use of any historic resource identified as significant at the federal level would occur under Alternative D. Additionally, none of the historic resources evaluated have features or attributes that contribute to their significance that are an integral part of a quiet setting; therefore, no constructive use associated with this aspect of increased noise levels would occur.

Under Alternative D, the archaeological record searches and other literature received and reviewed for the proposed action indicate that the likelihood of discovering archaeological/cultural resources within or near the study area is relatively high, particularly given the record of sites recorded in the vicinity of the airport. This conclusion suggests that unanticipated discoveries may occur from construction-related activities such as grading and excavation. Section 4(f) does not apply when an archeological site is important chiefly because of what can be learned by data recovery and it has minimal value for preservation in place.¹⁸ However, the disturbance or destruction of potentially significant undiscovered archaeological/cultural sites by construction-related activities would be considered a potential use under Section 4(f), if these sites are considered to have greater value if preserved in place.

¹⁷ Implementation of Alternative D would result in a net decrease in on-airport and locally-based airport-related employment over the entire planning period (2015), which would cause a corresponding decrease in the local residential population, as discussed in Section 4.5, *Induced Socio-Economic Impacts (Growth Inducement)* (subsection 4.5.6.1), of the Supplement to the Draft EIS/EIR.

¹⁸ 23 CFR 771.135(g)(2).

Alternative D, LAWA's staff-preferred alternative, would have no direct or indirect effect on National Register listed or eligible historic or archaeological resources. Therefore, no use of these resources would occur under Alternative D.

3.3 Wildlife and Waterfowl Refuges

3.3.1 Description

The Habitat Restoration Area encompasses approximately 203 acres within the 307-acre Los Angeles/El Segundo Dunes. As shown in **Figure S2**, Habitat Restoration Area Aerial Photograph, the Los Angeles/El Segundo Dunes are adjacent to the western boundary of the airport between Pershing Drive and Vista del Mar Boulevard. The Habitat Restoration Area was established by the City of Los Angeles to protect and restore habitat that supports the federally endangered El Segundo blue butterfly.

Historic Background

Prior to the early 1900s, the Los Angeles/El Segundo Dunes were relatively undisturbed and were part of an extensive complex of habitat along the Santa Monica Bay. Beginning in the early 1900s, development within and adjacent to the Los Angeles/El Segundo Dunes fragmented the coastal dune ecosystem. Historically, the El Segundo blue butterfly ranged over the entire Los Angeles/El Segundo Dunes and the northwestern Palos Verdes Peninsula. Three remnant habitats have endured development: 150 acres of occupied habitat in the Habitat Restoration Area; a 1.5-acre site at the oil refinery located south of the airport; and a half-acre site at Malaga Cove on the Palos Verdes Peninsula.

Substantial activity and development has occurred over time within the area now known as the Habitat Restoration Area. During World War II, a coastal defense gun block unit, known as the El Segundo Battery, was constructed in the southern portion of what is now the Habitat Restoration Area. The El Segundo Battery consisted of two gun mounts, a base-end station, blast mats, trench, and an underground munitions storage bunker. Remnants of this installation still remain in place today. Following World War II, between 1945 and 1964, approximately 822 residences were constructed within the Los Angeles/El Segundo Dunes, and throughout the area now known as the Habitat Restoration Area. Between 1965 and 1972, LAWA purchased and removed the residential neighborhood that existed in the Dunes to avoid exposing residents to unhealthy noise levels. Although the homes were removed, streets and other evidence of the residential neighborhood remain but are fenced and restricted from public access. In 1950, the FAA installed a Very High Omni Range Navigation Beacon (VOR) on 5 acres in the southern portion of the Habitat Restoration Area. The navigational aids associated with the airport's existing runways and located within the Los Angeles/El Segundo Dunes and Habitat Restoration Area were initially installed on July 27, 1962.

Biological Studies and Applicable Plans

Despite its previous use and developed condition, an extensive study of the biological habitat in the Dunes resulted in listing of the El Segundo blue butterfly as a federally endangered species in 1976. That same year, Los Angeles County designated the Los Angeles/El Segundo Dunes as a Significant Ecological Area. Detailed biological inventories and analysis were completed in 1989, when the City adopted the concept and boundaries of the Habitat Restoration Area. The California Coastal Commission approved three interim ecological restoration plans, which were implemented in 1987, 1990, and 1992 with restoration efforts continuing today. In 1994, the City of Los Angeles prepared the *Long-Term Habitat Management Plan for the Los Angeles Airport/El Segundo Dunes*.¹⁹ Although the plan has not yet been adopted, LAWA is following its recommendations regarding management of the Habitat Restoration Area.

The City of Los Angeles more formally set aside the area to protect and restore habitat to support the federally endangered El Segundo blue butterfly in 1992 with the adoption of the Los Angeles International Airport/El Segundo Dunes Specific Plan (Specific Plan).²⁰ The Specific Plan was enacted to:

¹⁹ Environmental Science Associates in Association with Sapphos Environmental, Inc. and Rudolf H. T. Mattoni, Ph. D., Long-term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes, prepared for City of Los Angeles, Environmental Affairs Department, July 23, 1992.

²⁰ Environmental Science Associates in Association with Sapphos Environmental, Inc. and Rudolf H. T. Mattoni, Ph. D., Long-term

-
- ◆ Restore and preserve the natural ecology of the dunes and native dune-dependant species;
 - ◆ Provide for active recreation in the form of a public golf course and related facilities; and
 - ◆ Provide for passive recreation in the form of paths, a visitor center, and viewing areas that will give visitors an opportunity to learn about sand dune ecology, observe airfield activities, and observe the scenic beauty of the dunes and the ocean.

The Specific Plan delineates an approximately 100-acre proposed golf course, an approximately 200-acre habitat preserve (the "Habitat Restoration Area"), and a one-acre park. The golf course has not been implemented. Permitted uses within the Habitat Restoration Area include "existing Airport navigational and safety facilities" as well as "development of additional navigational and safety facilities," as long as "placement of such facilities shall be compatible with the preservation of habitat values."²¹

A 1996 El Segundo blue butterfly habitat suitability study indicated that there was no suitable habitat for the butterfly in the areas within the Los Angeles/El Segundo Dunes that are outside of the Habitat Restoration Area.²²

Habitat Restoration Area Current Conditions

The El Segundo blue butterfly occupies approximately 150 acres of the 203-acre Habitat Restoration Area. Presently, the Habitat Restoration Area is completely surrounded by a fence with several locked gates. In addition to the abandoned street network that served the former residences, the Habitat Restoration Area contains remnants of the El Segundo Battery and is developed with aircraft navigational aids, including the VOR, lighting systems, and localizer instruments. Primary access is provided through gates along Pershing Drive at the western end of the airfield and along the northern boundary of the site. The FAA accesses the Habitat Restoration Area via existing internal roadways to operate and maintain the navigational aids. In addition, LAX operations staff, landscaping staff conducting periodic maintenance, airport police patrolling the area, and biologists conducting annual surveys for the El Segundo blue butterfly all access the Habitat Restoration Area. All people authorized to access the Habitat Restoration Area have had specialized training and have been directed to avoid sensitive habitat areas.

In the context of existing airport operations, use of the Habitat Restoration Area occurs presently due to the operation of runway navigational aids within the resource area. As such, under existing conditions a use, as defined by DOT Act Section 4(f), occurs within the Habitat Restoration Area in association with the navigational aid light standards and associated service roads.

3.3.2 Potential Wildlife Refuge Impacts

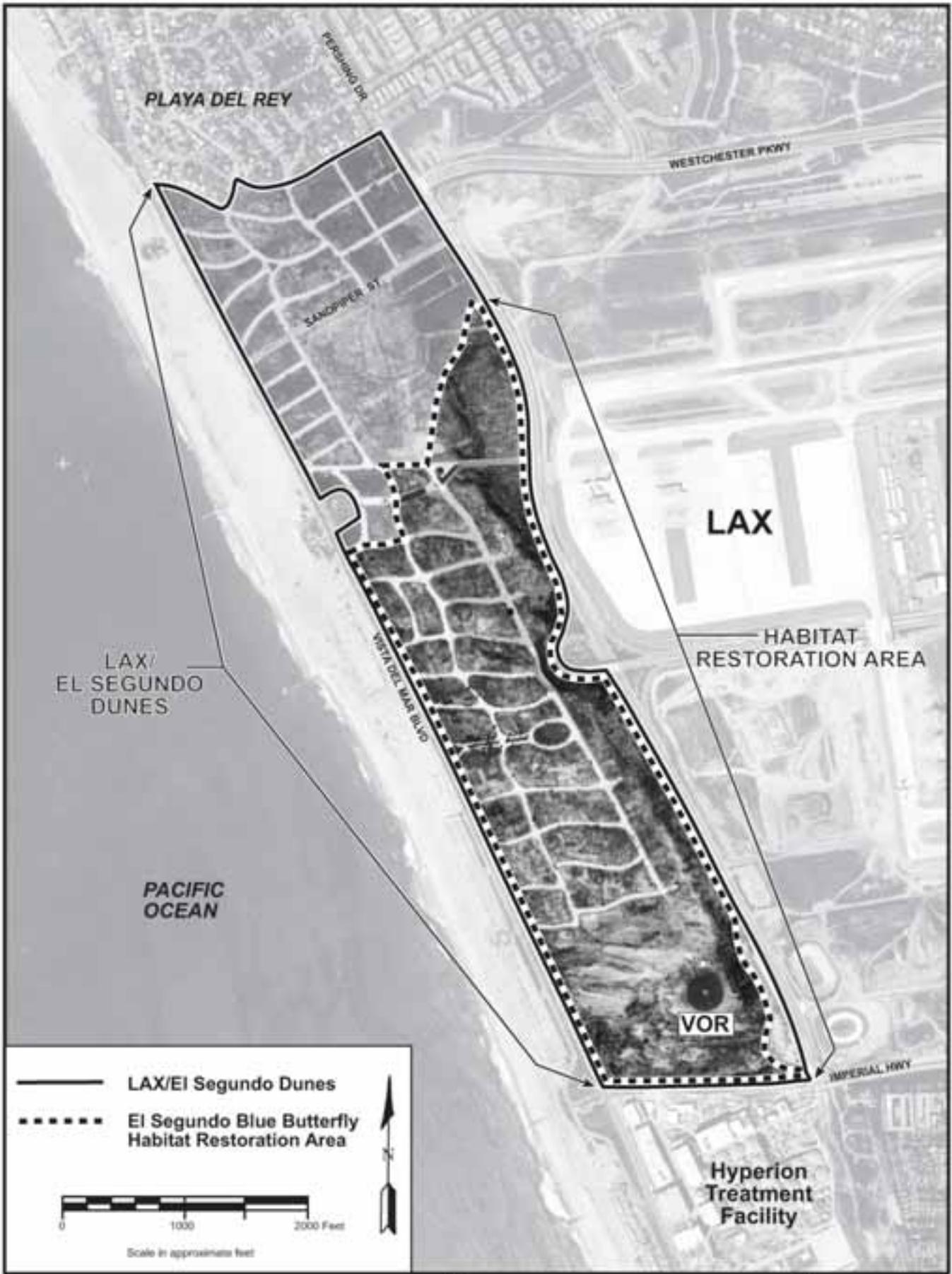
As previously mentioned, a DOT Section 4(f) analysis for the No Action/No Project Alternative is not required since it is not considered an expansion or build alternative. It is noted, however, that although the No Action/No Project Alternative would not involve activities constituting a use or constructive use of Section 4(f) resources, implementation of this alternative would involve the continuation of an existing use within the Habitat Restoration Area due to continued operation of existing navigational aids.

The conclusions regarding impacts to Section 4(f) resources under Alternatives A, B, and C have not changed from those described in Appendix H, *Department of Transportation Act Section 4(f) Report*, of the Draft EIS/EIR, with the exception of relevant information pertaining to the existing use within the Habitat Restoration Area due to the operation of existing navigational aids, described above. However, the square footage within the Habitat Restoration Area affected by navigational aids has been recalculated for Alternatives A, B, and C to include buffer areas and service roads. The new calculations

Habitat Management Plan for Los Angeles Airport/El Segundo Dunes, prepared for City of Los Angeles, Environmental Affairs Department, July 23, 1992.

²¹ Environmental Science Associates in Association with Sapphos Environmental, Inc. and Rudolf H. T. Mattoni, Ph. D., Long-term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes, prepared for City of Los Angeles, Environmental Affairs Department, July 23, 1992.

²² Sapphos Environmental, LAX Master Plan – Phase 1 Biological Resources Literature Review, prepared for City of Los Angeles, Department of Airports, November 8, 1996.



**LAX Master Plan
 Supplement to the Draft EIS/EIR**

**Habitat Restoration Area
 Aerial Photograph**

**Figure
 S2**

indicate a change in the extent of affected area previously identified, but do not alter the impact conclusions provided in the Draft EIS/EIR. Refer to Section 4.10, *Biotic Communities*, and Section 4.11, *Endangered and Threatened Species of Flora and Fauna*, of the Supplement to the Draft EIS/EIR for additional information regarding the new calculations.

As discussed in Appendix H, *Department of Transportation Act Section 4(f) Report*, of the Draft EIS/EIR, Alternatives A and B would result in a use within the Habitat Restoration Area due to the installation of replacement navigational aids west of the North Runway Complex.²³ Alternative A, as proposed, would result in the use of 30,261 square feet (0.70 acre) of the Habitat Restoration Area due to the installation of new and replacement navigational aids associated with the North Runway Complex. Implementation of Mitigation Measure MM-BC-10, Replacement of State-Designated Sensitive Habitat (Alternative A), would provide for replacement of the lost 30,261 square feet (0.70 acre). Although there would be no net loss of habitat, the impact within the Habitat Restoration Area would constitute a potential use under Section 4(f) if Alternative A were adopted. This conclusion that a Section 4(f) use would potentially occur under Alternative A is consistent with the conclusion previously provided in Appendix H, *Department of Transportation Act Section 4(f) Report*, of the Draft EIS/EIR.

Similarly, Alternative B, as proposed, would result in the use of 16,811 square feet (0.39 acre) within the Habitat Restoration Area due to the installation of replacement navigational aids associated with the North Runway Complex. Implementation of Mitigation Measure MM-BC-11, Replacement of State-Designated Sensitive Habitat (Alternative B), would provide for replacement of 16,811 square feet (0.39 acre) of habitat. Although there would be no net loss of habitat, the impact on habitat would constitute a potential use under Section 4(f) if Alternative B were adopted. This conclusion that a Section 4(f) use would potentially occur under Alternative B is consistent with the conclusion previously provided in Appendix H, *Department of Transportation Act Section 4(f) Report*, of the Draft EIS/EIR.

In addition, although Alternative C would not introduce new development or activities constituting a use or constructive use of Section 4(f) resources, implementation of this alternative would involve the continuation of an existing use within the Habitat Restoration Area due to continued location of existing navigational aids, described above.

The installation of replacement navigational aids under Alternative D,²⁴ if adopted, would result in development of 27,354 square feet (0.63 acre) of the Habitat Restoration Area (see **Figure S3**, Alternative D Navigational Aids). Of the 27,354 square feet (0.63 acre), 10,597 square feet (0.24 acre) of the affected area contains habitat occupied by the El Segundo blue butterfly (see **Figure S4**, Alternative D Affected Areas). Implementation of Mitigation Measure MM-BC-13, Replacement of State-Designated Sensitive Habitats (Alternative D), would provide for replacement of the lost habitat at a 1:1 ratio by improving existing habitat within the Los Angeles/El Segundo Dunes. Although there would be no net loss of habitat, if Alternative D were adopted, the development of 27,354 square feet (0.63 acre) of area in the Habitat Restoration Area with navigational aids could potentially represent a use under Section 4(f). In addition, since some of the existing navigational aids located in the Habitat Restoration Area would remain in their current location, the continuation of an existing use within the Habitat Restoration Area would occur under Alternative D.

No constructive use or indirect effects due to increased ambient light, glare, or exhaust emissions on the Habitat Restoration Area would occur under Alternative D as discussed further in Section 4.10, *Biotic Communities*, and Section 4.11, *Endangered and Threatened Species of Flora and Fauna*, of the Supplement to the Draft EIS/EIR.

3.4 Findings

As indicated above, LAWA's staff-preferred alternative, Alternative D, would involve a potential use within the Habitat Restoration Area due to placement of navigational aids. The installation of the replacement navigational aids, occupying 27,354 square feet (0.63 acre) of area, could reduce the overall restoration

²³ The relocation of existing navigational aids under Alternatives A and B would involve the removal of existing light standards and installation of replacement navigational aids in modified locations.

²⁴ In conjunction with the runway improvements under Alternative D, existing navigational aids would be removed and replaced in the Habitat Restoration Area as necessary and certain existing navigational aids would remain in their current locations, for a net increase of three light standards within the Habitat Restoration Area, as discussed in Section 4.18, *Light Emissions* (subsection 4.18.6.1) of the Supplement to the Draft EIS/EIR.

potential of the Habitat Restoration Area. Identification of this potential use requires that the FAA and LAWA investigate all feasible and prudent alternatives to the use and that they take steps to ensure that all possible planning has been undertaken to minimize harm to the property resulting from the use. As further described below in Section 4.0, a number of avoidance alternatives have been investigated to date, and mitigation measures are proposed in the Supplement to the Draft EIS/EIR to minimize harm. Furthermore, during public circulation of the Supplement to the Draft EIS/EIR, the FAA will undertake further coordination with LAWA to ensure that all feasible avoidance alternatives and measures to minimize harm have been considered. With this input a final Section 4(f) evaluation will be completed to document these efforts and make a final determination of whether Alternative D would result in a use. Implementation of Mitigation Measure MM-BC-13, Replacement of State-Designated Sensitive Habitat (Alternative D), would provide for the replacement of the lost habitat at a 1:1 ratio by improving existing habitat within the Habitat Restoration Area.

The only other potential use that applies to LAWA's Staff-preferred alternative (Alternative D) is the potential for discovering archaeological/cultural sites within or near the study area during construction-related activities such as grading and excavation. The disturbance or destruction of a potentially significant undiscovered archaeological/cultural site would, however, only be considered a use if a discovered site is determined to be significant at the National Register level, if adverse effects cannot be mitigated, and if the site is considered to have greater value if preserved in place.

Alternative D would not involve the use of any public parks, recreation areas, or historic resources.

4. AVOIDANCE ALTERNATIVES

As previously discussed, a DOT Act Section 4(f) Report was prepared and circulated with the LAX Master Plan Draft EIS/EIR in January 2001, although no use of a Section 4(f) resource was identified for Alternative C, the LAWA Staff-preferred alternative at that time. Subsequent to the publication of the Draft EIS/EIR, Alternative D was formulated and is now considered to be LAWA's Staff-preferred alternative for the LAX Master Plan.

As indicated above, the placement of navigational aids within the Habitat Restoration Area with implementation of Alternative D may potentially result in a use under Section 4(f). **Table S5**, Habitat Restoration Area Avoidance Alternatives, illustrates the effects of each Master Plan alternative on the Habitat Restoration Area. Similar to Alternative D, Alternatives A and B would also involve the installation of replacement navigational aids within the Habitat Restoration Area, potentially resulting in a use of this Section 4(f) resource. Alternatives A and B were not selected as LAWA's Staff-preferred alternative in part because they would result in greater environmental impacts on nearby residents due to aircraft noise and residential acquisition. Although implementation of Alternative C would not involve installation of replacement navigational aids within the Habitat Restoration Area, it would also result in greater environmental impacts due to aircraft noise and residential acquisition compared to Alternative D.



LEGEND

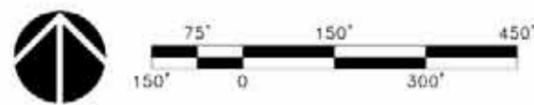


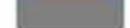
- Habitat Restoration Area (HRA) Boundary
- Sand Dunes
- El Segundo Blue Butterfly HRA
- Existing Roadways
- Airport Landside
- Proposed Navigational Aids
- Existing Navigational Aids to remain
- Existing Navigational Aids to be removed

Prepared by: Landrum & Brown, May 2003



LEGEND



- | | |
|--|--|
|  Habitat Restoration Area (HRA) Boundary |  Proposed Navigational Aids |
|  Sand Dunes |  Proposed Navigational Aids within HRA (affected areas) |
|  El Segundo Blue Butterfly HRA |  Existing Navigational Aids to remain |
|  Existing Roadways |  Existing Navigational Aids to be removed |
|  Airport Landside | |

Prepared by: Landrum & Brown, May 2003

Table S5

Habitat Restoration Area Avoidance Alternatives

Alternative	Effects in the Habitat Restoration Area	Effects Outside of the Habitat Restoration Area	Section 4(f) Use
A	30,261 SF ¹ (8,514 SF occupied habitat)	Aircraft noise effects on residential uses (14,690 dwelling units), property acquisition (273 acres)	Yes
B	16,811 SF (2,316 SF occupied habitat)]	Aircraft noise effects on residential uses (19,690 dwelling units), property acquisition (345 acres)	Yes
C	No direct effects in Habitat Restoration Area, but continuation of existing use	Aircraft noise effects on residential uses (14,640 dwelling units), property acquisition (216 acres)	No
D	27,354 SF (10,597 SF occupied habitat)	Aircraft noise effects on residential uses (13,520 dwelling units), property acquisition (77 acres)	Yes
Option 1	Substantial grading and construction effects	Aircraft noise effects on residential uses and acquisition (roughly equivalent to Alternative D)	Yes
Option 2	Similar to Alternative D	Surface transportation disruption, aircraft noise effects on residential uses (more dwelling units than Alternative D)	Yes
Option 3	Bridge construction in Habitat Restoration Area, substantial grading	Aircraft noise effects on residential uses (equal to, or greater than, Alternative D)	Yes

¹ SF = square feet

Source: Sapphos Environmental and PCR Services Corporation, 2003.

As part of the LAX Master Plan planning process for Alternative D, several options for north airfield configurations were explored. The goal was to improve operations and efficiency by lengthening the departure runway on the north airfield, which would allow for balanced operations between the north and south airfields. Options were considered that would minimize the impact to the Habitat Restoration Area to the west and the surface transportation network and development areas to the east. The options explored were:

- ◆ **Option 1.** Move Runway 6R/24L south and extend it to the west into the dunes, while maintaining the easterly end of the runway in its present location.
- ◆ **Option 2.** Move Runway 6R/24L south and extend it east of Sepulveda to avoid the dunes, while maintaining the westerly end of the runway in its present location.
- ◆ **Option 3.** Build a bridge across Pershing Drive and create a 1,000 square foot runway safety area, while keeping the westerly end of Runway 6R/24L out of the dunes.

Option 1 was eliminated from consideration because it would have resulted in substantially more grading in the Dunes and construction impacts in the Habitat Restoration Area than the other options. Option 2 was eliminated from consideration due to substantial costs, disruption of the surface transportation network, replacement of a surface parking lot, and limitations that would be placed on development of properties east of the end of the runway to comply with safety regulations. Furthermore, shifting the runway to the east would subject more dwelling units to impacts than Alternative D due to increased aircraft noise under Option 2. Option 3 was eliminated from consideration because it would require construction of a bridge in the Habitat Restoration Area and substantial grading in the Dunes.

Ultimately the runway configuration for Alternative D was selected over the other options because it extended Runway 6R/24L to create an 11,700-foot long runway while minimizing impacts to the Habitat Restoration Area to the west, to the surface transportation network, and to developed areas to the east. Furthermore, this configuration, while having some effects on the Habitat Restoration Area, would have the least effects from aircraft noise on sensitive residential uses to the east of LAX.

Additional avoidance alternatives are being investigated by the FAA and LAWA and will be explored during circulation of this Draft DOT Act Section 4(f) evaluation and the Supplement to the Draft EIS/EIR.

5. MEASURES TO MINIMIZE HARM/MITIGATION

As previously discussed, identification of a potential use of Section 4(f) resources requires that the FAA determine that all possible mitigation has been incorporated into the project. To date, substantial efforts have been undertaken to develop all feasible mitigation to address the potential effects of the Master Plan alternatives on the Habitat Restoration Area. These mitigation measures are provided in the Supplement to the Draft EIS/EIR in Section 4.10, *Biotic Communities*, and Section 4.11, *Endangered and Threatened Species of Flora and Fauna*. As further described in Section 4.10, *Biotic Resources*, implementation of Mitigation Measure MM-BC-13, Replacement of State-Designated Sensitive Habitats (Alternative D), would provide for the replacement of lost habitat at a 1:1 ratio by improving existing habitat within the Los Angeles/EI Segundo Dunes and Habitat Restoration Area, including the monitoring/management of restored/created habitat for a period of not less than five years. Mitigation Measure MM-BC-1, Conservation of State-Designated Sensitive Habitat Within and Adjacent to the EI Segundo Blue Butterfly Habitat Restoration Area (Alternatives A, B, C, and D), includes several steps to ensure that resources within the Habitat Restoration Area are conserved and protected during construction, operation, and maintenance associated with the Master Plan alternatives. Section 4.11, *Endangered and Threatened Species of Flora and Fauna*, also addresses the potential use within the Habitat Restoration Area through Mitigation Measure MM-ET-4, EI Segundo Blue Butterfly Conservation: Habitat Restoration (Alternative D). This measure requires 1:1 replacement of habitat occupied by the EI Segundo blue butterfly within the Habitat Restoration Area, including salvage and relocation of EI Segundo blue butterfly larvae in coordination with the U.S. Fish and Wildlife Service. This measure indicates, based on LAWA's restoration experience within the Habitat Restoration Area, that occupation of restored habitat can occur within two to three years of restoration efforts, resulting in no net loss in acres or value of occupied habitat.

If currently undiscovered archaeological resources and/or human remains are found during construction activities associated with Alternative D, they would be mitigated through the implementation of Mitigation Measures MM-HA-4 through MM-HA-10 (see Section 4.9.1, *Historic/Architectural and Archaeological/Cultural Resources*, of the Supplement to the Draft EIS/EIR).

No Section 4(f) parks, recreation areas, or historic sites would be directly or indirectly affected by LAWA's Staff-preferred alternative, Alternative D.

6. COORDINATION

A public involvement program for the EIS/EIR has been underway since the early stages of the project to ensure that input from the general public and public agencies is received and reviewed throughout the EIS/EIR process. To date this program has included a scoping meeting, public workshops, and public hearings. Press releases, newspaper advertisements, and direct mailings were used to inform the public of changes, progress, and the status of the study. In addition, beginning in 1997, the FAA consulted with the U.S. Department of the Interior Fish and Wildlife Service and the California Department of Fish and Game regarding biological resources, including the potential effects of the LAX Master Plan build alternatives on resources within the Habitat Restoration Area. As previously indicated, coordination with LAWA will continue during the circulation period for this Draft DOT Act Section 4(f) evaluation and the Supplement to the Draft EIS/EIR. This coordination will include assistance with the identification of avoidance alternatives and the development of all feasible measures to minimize harm within the Habitat Restoration Area. The outcome of this coordination, with consideration of other input received during the public circulation period, will be incorporated into a final determination regarding the potential for Alternative D to result in a use pursuant to DOT Act Section 4(f).

7. REFERENCES

7.1 Parks and Recreation

California Department of Parks and Recreation, *Grant Program History List*, April 8, 2002.

California Department of Parks and Recreation, *All Projects Funded by Agency*, April 13, 1999.

Department of Transportation Office of the Secretary Washington, D.C., Order 5610.1C, *Procedures for Considering Environmental Impacts*, September 18, 1979.

Federal Aviation Administration, *Section 303 and 6(f) Evaluation Lambert-St. Louis International Airport*, December 1997.

Federal Aviation Administration, FAR Part 150, *Airport Noise Compatibility Planning*, October 25, 1989.

Federal Aviation Administration, Order 1050.1D, *Policies and Procedures for Considering Environmental Impacts*, December 5, 1986.

Federal Aviation Administration, Order 5050.4A, *Airport Environmental Handbook*, October 8, 1985.

Federal Aviation Administration, Report No. FAA-EE-85-2, *Aviation Noise Effects*, 1985.

Federal Highway Administration, FHWA Technical Advisory T 6640.8A, *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*, October 30, 1987.

King, Odel, Manager of Local Services Section, Grants Program, California Department of Parks and Recreation, personal communication, October 20, 1999.

Land and Water Conservation Fund (L&WCF) Act of 1965, U.S. Code, Title 16, Sections 460I-8(f)(3), Public Law 88-578.

7.2 Ecological/Wildlife Refuges

City of Los Angeles, Environmental Affairs Department, *Long-Term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes*, June 23, 1994.

City of Los Angeles, Department of City Planning, *Los Angeles Airport/El Segundo Dunes Specific Plan (Ordinance No. 167,940)*, June 28, 1992, amended by Ordinance No. 169,767, April 6, 1994.

7.3 Historic/Architectural

Albrecht, Donald, ed. *World War II and the American Dream*. Cambridge: The MIT Press, 1995.

AVIA Development. *Facts for Hangar One Redication*. Los Angeles: AVIA, 1990.

Blumenson, John. *Identifying American Architecture*. New York: W.W. Norton & Company, 1989.

Carley, Rachel. *The Visual Dictionary of American Domestic Architecture*. New York: Henry Holt and Company, 1994.

City of Los Angeles Cultural Heritage Board Notice, Re: Hangar One. November 17, 1966.

City of Los Angeles. *Los Angeles Department of Airport Historical Review*. Los Angeles: Department of Airport, 1994.

Cunningham, William Glenn. *Aircraft Industry: A Study in Industrial Location*.

Elliott, Arlene. "The Rise of Aeronautics in California, 1849-1940." *Southern California Quarterly*. Los Angeles: Historical Society of Southern California, 1970.

Federal Highway Administration, Technical Advisory T6640.8a, *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*, Environmental Guidebook, Tab 2, Section (p)(4)(i).

Gebhard, David and Robert Winter. *Architecture in Los Angeles*. Salt Lake City: Peregrine Smith Books, 1994.

Gleye, Paul. *The Architecture of Los Angeles*. Los Angeles: Rosebud Books, 1981.

Grenier, Judson A. *A Guide to Historic Places in Los Angeles County*. Dubuque, Iowa: Kendall/Hunt Publishing Company, 1981.

Harris, Cyril, ed. *Illustrated Dictionary of Historic Architecture*. New York: Dover Publications, 1977.

Hatfield, D.D. *Los Angeles Aeronautics 1920-1929*. Los Angeles: Northrop Institute of Technology, 1973.

Hise, Greg. "Home Building and Industrial Decentralization in Los Angeles: The Roots of the Postwar Urban Region," *Journal of Urban History*, February 1993.

Hise, Greg. *Magnetic Los Angeles*. Baltimore: The John Hopkins University Press, 1997.

Hudson, Karen. *Paul R. Williams, Architect: A Legacy of Style*. New York: Rizzoli, 1993.

Lewis, Atherton. *Main Street on the Middle Border*. Bloomington: Indiana University Press, 1954.

McAlester, Virginia & Lee. *A Field Guide to American Houses*. New York: Alfred A. Knopf, 1997.

McWilliams, Carey. *Southern California: An Island on the Land*. Salt Lake City: Peregrine Smith Books, 1988.

Moffat, Susan. "Landing A Landmark: LAX Monument to 1960s Optimism Granted Historical Status." *Los Angeles Times*, December 9, 1992, p.B1.

Moran, Tom. *Los Angeles International Airport: From Lindbergh's Landing Strip to World Air Center*. Canoga Park, California: CCA Publications. 1993.

National Register of Historic Places Inventory-Nomination Form: Hangar One. Los Angeles. Completed by Historic Resources Group, 1992.

"Los Angeles Times Magazine," *Los Angeles Times*. December 8, 1996.

Office of State Historic Preservation. *California Historic Resources Inventory, Survey Workbook* (excerpts). State of California: Sacramento, 1986/1995.

Office of State Historic Preservation. *Historic Properties Directory (Los Angeles/Inglewood)*. Sacramento: State of California, 2000.

Phillips, Alice Mary. *Los Angeles: A Guide Book*. Los Angeles: The Neuner Company, 1907.

Robinson, W.W. *Inglewood: A Calendar of Events in the Making of a City*. Los Angeles: Title Insurance and Trust Company, 1955.

Sanborn Fire Insurance Company Maps-Los Angeles, Inglewood, California.

Smith, Doug. "Hangar: Old Building in Path of Demolition." *Los Angeles Conservancy News*. Volume 4, Number 1. Spring, 1982.

Southwest Builder and Contractor, August 23, 1929.

Starr, Kevin. *Inventing the Dream: California Through the Progressive Era*. New York: Oxford University Press, 1985.

Stoff, Joshua. *Picture History of World War II American Aircraft Production*. New York: Dover Publications, 1993.

"Training Service Hangar Completed." *Los Angeles Times*. October 14, 1929. Section 5, p. 8.

United States Department of the Interior. *National Register Bulletin 15*, "How to Apply the National Register Criteria for Evaluation." Washington, DC: National Park Service, Interagency Resources Division, rev, 1991.

United States Department of the Interior. *National Register Bulletin 24*, "Guidelines For Local Surveys: A Basis For Preservation Planning." Washington, DC: National Park Service, Interagency Resources Division, rev, 1985.

Valentine, Maggie. *The Show Starts on the Sidewalk: An Architectural History of the Movie Theatre*. New Haven: Yale University Press, 1994.

Valentine, Maggie. *The Show Starts on the Sidewalk: The Contribution of S. Charles Lee to Motion Picture Theatre Architecture* (dissertation). Los Angeles: University of California Los Angeles, 1990.

Whiffen, Marcus. *American Architecture Since 1780*. Cambridge: The MIT Press, 1992.

Zukowsky, John, ed. *Building for Air Travel: Architecture and Design for Commercial Aviation*. New York: Prestel, 1996.

7.4 Archaeological

Bean, Lowell John and Charles R. Smith. *Gabrielino*. In *Handbook of North American Indians: California*, Robert F. Heizer, editor, Vol. 8, pp. 538-549. Washington, D.C.: Smithsonian Institution, 1978.

California Department of Parks and Recreation. *California Historical Landmarks*. Sacramento: Office of Historic Preservation, California Department of Parks and Recreation, 1990.

Chartkoff, Joseph L. and Kerry K. Chartkoff. *The Archaeology of California*. Stanford: Stanford Press, 1984.

Cramer, Esther R. "The Pastoral Period." *A Hundred Years of Yesterdays*. Santa Ana, California: Orange County Centennial, Inc., 1988.

Dixon, E. James. *Quest for the Origins of the First Americans*. Albuquerque: University of New Mexico Press, 1993.

Driver, Harold E. *The Indians of North America*. Riverside, California: Rubidoux Printing Company, 1969.

Drover, Christopher, Henry Koerper and Paul Langenwalter, *Early Holocene Human Adaptation on the Southern California Coast: A Summary Report of Investigations at the Irvine Site (CA-ORA-64)*. Newport Bay, Orange County, California: *Pacific Coast Archaeological Society Quarterly*, Vol. 19, No. 3 and 4, 1969.

Griner, E.L. and P.R. Pryde, *Climate, Soils, and Vegetation In San Diego: An Introduction to the Region*. Dubuque: Kendall/Hunt Publishing Co., 1976.

Hester, T. *Chronological Ordering of Great Basin Prehistory*. Berkeley: University of California Archaeological Research Facility, 1973.

Kroeber, A.L. *Handbook of the Indians of California*. Washington, D.C.: Bureau of American Ethnology Bulletin 78, Smithsonian Institution, 1925.

Leonard, Nelson. *Archaeological Study of LAX*. On file at the South Central Coastal Information, University of California, Los Angeles, n.d.

Leonard, Nelson. *Hiperion Plant*. On file at the South Central Coastal Information, University of California, Los Angeles, 1975.

Moratto, Michael J. *California Archaeology*. San Diego: Academic Press, 1984.

Office of Archaeology and Historic Preservation, *National Register of Historic Places*. Washington, D.C.: Office of Archaeology and Historic Preservation, National Park Service, 1994.

Olson Laboratories. *Los Angeles International Airport Series, Volume I, Draft Environmental Impact Statement*. On file at the South Central Coastal Information, University of California, Los Angeles, 1975.

Rosen, Martin D. *Evaluation of the Archaeological Resources and Potential Impact of the Proposed Construction of Route 105 Freeway from El Segundo to Norwalk*. On file at the South Central Coastal Information, University of California, Los Angeles, 1975.

Van Horn, David M. *Mitigation of Impacts to Cultural Resources: Salvage Excavation at the Hughes Site (LAN-59)*. On file at the South Central Coastal Information, University of California, Los Angeles, 1984.

Van Horn, David M. and J.R. Murray. *The Loyola Marymount Archaeological Project: Salvage Excavations at Lan-61A-C*. On file at the South Central Coastal Information, University of California, Los Angeles, 1985.

8. LIST OF ACRONYMS AND ABBREVIATIONS

APM	Automated People Mover
CEQA	California Environmental Quality Act
CTA	Central Terminal Area
dB CNEL	Decibel Community Noise Equivalent Level
DNL	Day-Night Average Sound Level
DOT	Department of Transportation
EIS/EIR	Environmental Impact Statement/Environmental Impact Report

FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FHWA	Federal Highway Administration
GIS	Geographic Information System
GTC	Ground Transportation Center
ITC	Intermodal Transportation Center
L&WCF	Land and Water Conservation Fund
LAWA	Los Angeles World Airports
LAX	Los Angeles International Airport
MTA	Metropolitan Transit Authority
NEPA	National Environmental Policy Act
NLR	Noise Level Reduction
RAC	Rent-a-Car Facility
SHPO	State Historic Preservation Officer
TBIT	Tom Bradley International Terminal
USC	United States Code
VOR	Very High Omni Range Navigation Beacon