Draft Environmental Assessment

Proposed Westchester Golf Course Three-Hole Expansion Project

Los Angeles International Airport
Los Angeles, California

Prepared for:

CITY OF LOS ANGELES
LOS ANGELES WORLD AIRPORTS
Airports and Facilities Planning Division

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
As lead Federal Agency pursuant to the National Environmental Policy Act of 1969

Prepared by:

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May 2009

This environmental assessment becomes a Federal Document when evaluated, signed, and dated by the Responsible FAA Official.

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Responsible FAA Official Date

Table of Contents

Appendices

List of Tables

List of Figures

1. PURPOSE AND NEED

1.1 Introduction

This Environmental Assessment (EA) documents the potential environmental effects associated with the construction and operation of improvements to the Westchester Golf Course, located within the boundaries of Los Angeles International Airport (LAX), including the addition of three new holes and the modification of two existing holes. This EA was prepared in accordance with federal guidelines, including Federal Aviation Administration (FAA) Order 1050.1E, *Environmental Impacts: Policies and Procedures*,[1] and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*.[2]

LAX is owned by the City of Los Angeles, and operated by Los Angeles World Airports (LAWA), a department of the city. LAWA is the airport sponsor for this project.

The area currently being considered for the location of the three new holes is located to the east of the existing Westchester Golf Course, within a much larger vacant parcel. The entire parcel is bound by the existing golf course to the west, West 88th Street to the north, Emerson Avenue to the east, and Westchester Parkway to the south. Surrounding land uses include the existing golf course to the west, residential land uses to the north, a church to the northeast, a city fire station and adult education facility to the east, and Westchester Parkway and the northern runways of LAX to the south. A noise wall approximately 20 feet in height[3] is located along the entire northern boundary of the parcel, and separates the project site from the residential uses to the north.

1.2 Purpose and Need

The Westchester Golf Course, located within the northern portion of property owned by LAWA known as LAX Northside, is an executive golf course[4] open to the public. It was constructed in the mid-1960s with 18 holes; however, the three southernmost holes were eliminated with the subsequent construction of Westchester Parkway in the early 1990s. LAWA proposes to replace/reinstall the three holes using vacant land owned by LAWA located immediately east of the southern half of the golf course. In addition, LAWA proposes to modify two existing holes. The proposed action would restore the golf course to an 18-hole golf course serving the recreational needs of the community. Regional and local location maps are provided in **Figures 1** and **2**, respectively.

As indicated above, the project site is located within the northern portion of property owned by LAWA known as LAX Northside. LAX Northside, part of the LAX Master Plan approved by the City of Los Angeles in 2004, is an airport collateral development project that includes future development of 4.5 million square feet of commercial and airport-related industrial land uses to be built on 340 acres of vacant land located north of Runway 6L/24R (the northernmost runway at LAX) along Westchester Parkway. LAX Northside is a future *landside* development project unrelated to the *airside* development on the northern portion of LAX. FAA's federal actions approved in the May 20, 2005 Record of Decision for the LAX Master Plan Improvements[5] include unconditional approval of the Airport Layout Plan (ALP)

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1 U.S. Department of Transportation, Federal Aviation Administration, Order 1050.1E, Change 1, Environmental Impacts: Policies and Procedures, March 20, 2006.

2 U.S. Department of Transportation, Federal Aviation Administration, Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions, April 28, 2006.

3 For purposes of this EA, the wall is identified as having an overall height of approximately 20 feet; the "wall" consists of a 12-foot-high architecturally treated masonry wall on the crest of an 8-foot-high landscaped berm within a 50-foot setback from West 88th Street. The landscaped berm is not present on the south side of the wall. Therefore, on airport property, the wall is higher.

4 An executive course is comprised of many par-3s plus a small number of par-4s and par-5s so that it is much shorter and has a much lower par than a regulation 18-hole course.

5 U.S. Department of Transportation, Federal Aviation Administration, Record of Decision, Proposed LAX Master Plan Improvements, Los Angeles International Airport, May 20, 2005.

for Los Angeles International Airport (LAX) to depict the proposed improvements described in Alternative D (the approved Master Plan), *except* for LAX Northside. To date, the FAA has taken no action relating to LAX Northside. The proposed Westchester Golf Course Three-Hole Expansion Project is a result of ongoing discussions between LAWA and the community of Westchester regarding the proposed future development within LAX Northside. The proposed action addresses development of the proposed Westchester Golf Course Three-Hole Expansion Project only; it does not include consideration or approval of LAX Northside as a whole or any other improvements associated with LAX Northside.

1.3 Alternatives Considered and Proposed Action

Project Objectives

The proposed addition of the three holes would be confined to the northern portion of the parcel. Objectives for this project include the following:

- To provide three new golf holes that fit into the layout and functionality of the existing golf course and provide an equivalent, or better, golf experience.
- To return the golf course to an 18-hole golf course, preferably at its original par[6] of 63 (the current par is 52).

In addition, in the past FAA had recommended restoring the three holes to increase the revenue potential from the golf course.

LAWA originally identified a 7-acre area within the northwest portion of the parcel for the golf course expansion. The initial alternatives were developed with this constraint in mind. Subsequently, LAWA increased the area available for the new holes. However, LAWA would like to retain the southern portion of the parcel for future uses.

As noted above, one of the project objectives is to restore the golf course to its original par, which would require the addition of 11 strokes. (When Westchester Parkway was constructed, two par 3 holes and one par 4 hole were removed. In addition, one hole was reduced from a par 4 to a par 3).

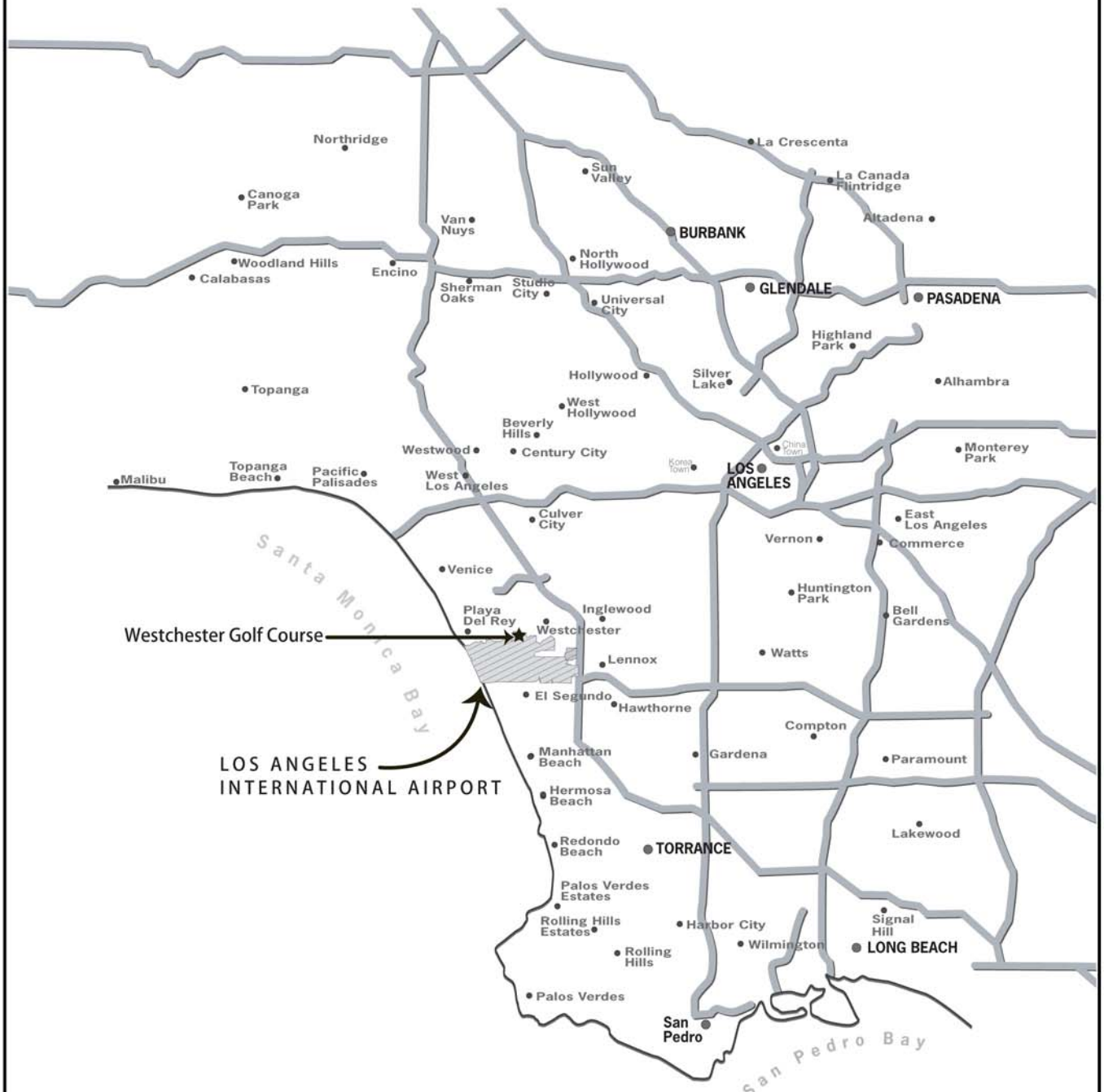
On-site and off-site safety is another planning issue that was considered in the development of conceptual layout plans. On-site safety refers to the safety of other golfers. Proper layout and separation of holes play a key role in determining on-site safety. Adjacent land uses present an off-site safety consideration, with respect to the potential for errant golf shots to go beyond the site boundaries. Residential uses are located to the north of the project site, north of West 88th Street. A 20-foot noise wall separates these residences from the project site.

As described in Section 1.2 above, the proposed action addresses development of the proposed Westchester Golf Course Three-Hole Expansion Project only; it does not include consideration or approval of LAX Northside as a whole or any other improvements associated with LAX Northside. To date, the FAA has taken no action relating to LAX Northside.

Alternatives Considered

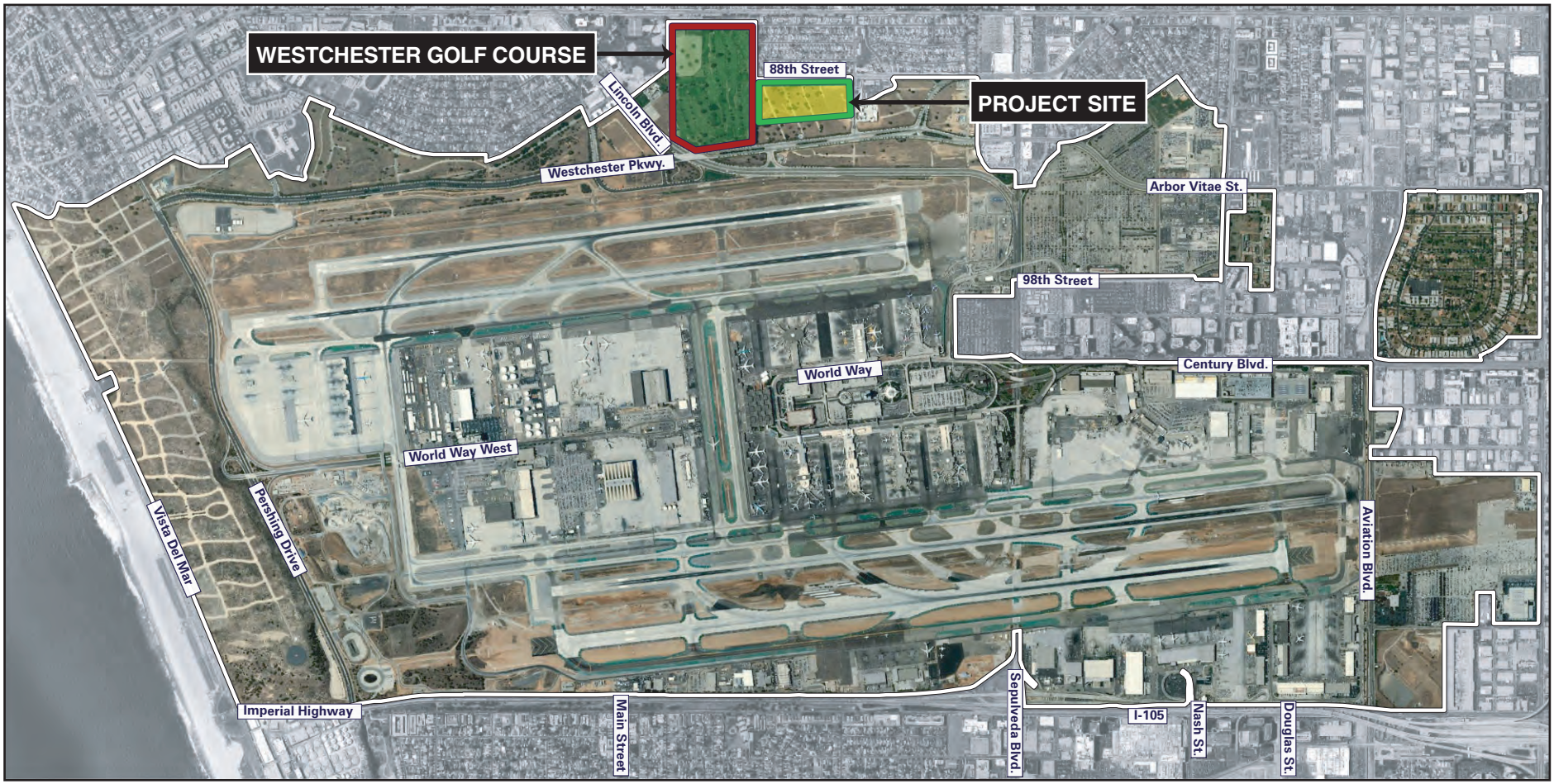
Nine alternative configurations for the additional golf holes, ranging in size from 7 acres to 22.5 acres, as well as a no action alternative were evaluated to determine if they met the Purpose and Need as required by 40 CFR 1502.14. All of the alternatives, except the no action alternative, would provide for three new golf holes, although not all would provide the same number of strokes and the same level of safety. Moreover, not all of the alternatives would return the golf course to its original par, one of the project objectives. A complete description and concept drawings for each of the nine alternatives considered is provided in Section 3 of Appendix A, along with a discussion of the process by which the preferred alternative was selected. **Table 1-1** provides comparative statistics associated with each of the alternatives.

[6] In golf, a par is a predetermined number of strokes that a golfer should require to complete a hole, a round (the sum of the total pars of the played holes, also called the course rating), or a tournament (the sum of the total pars of each round).



Prepared by: CDM, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	Regional Location Map	Figure 1



north

Not to Scale

Prepared by: CDM, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Project Location**	Figure **2**

Table 1-1

Westchester Golf Course Alternatives Considered

Alternative	Acres	Par of Added Holes[1]			Added Strokes	Total Strokes
		3-Par	4-Par	5-Par		
A	7	3	0	0	9	61
B	7	3	0	0	9	61
C	7	2	1	0	10	62
D	18.5	1	2	0	11	63
D1	18.75	1	2	0	11	63
E	20.5	1	2	0	11	63
F	19	1	2	0	11	63
G	21	1	1	1	12	64
H	22.5	1	1	1	12	64

[1] Original Par of Golf Course: 63; Current Par of Golf Course: 52

Source: CDM, 2008.

Development of the alternatives was an iterative process. Initially, LAWA intended to provide 7 acres for the three new holes. Three concepts that met this constraint were developed. However, none of the alternatives would restore the golf course to its original par, and the acreage was not sufficient to provide adequate setbacks for safety purposes. Subsequently, six additional alternatives were developed, ranging in size from 18.5 acres to 22.5 acres, that would fully restore the par and would provide adequate setbacks. Of these six alternatives, two would increase the par of the golf course by one stroke by providing a challenging 5-par hole. Several of these alternatives had unfavorable walk distances between holes or presented a safety risk associated with errant balls. Alternative H was determined to be the preferred alternative, as further described below.

Preferred Alternative

Based on the criteria noted above, LAWA selected Alternative H as the preferred alternative on the basis of the following considerations:

- Good circulation on the golf course, with the least amount of walk back of the alternative concepts
- Adequate setbacks for safety purposes
- Provides a challenging par 5 hole and returns Hole 18 to a par 4
- Adds one stroke to the par of the original golf course

In addition to adding three new holes, the preferred alternative would modify Hole 14 from a par 4 to a par 3 and would convert existing Hole 15 (Hole 18 under the preferred alternative) to a par 4. An illustration of the golf course with the proposed improvements is provided in **Figure 3**. A Route Plan for the preferred alternative is provided in **Figure 4**. **Table 1-2** provides a comparison of the existing course par with the par as proposed under the preferred alternative.

Table 1-2

Westchester Golf Course Existing Par and Par with Proposed Action

Hole #	Existing Par	Hole # with Proposed Action	Par with Proposed Action
1	3	1	3
2	4	2	4
3	3	3	3
4	3	4	3
5	4	5	4
6	4	6	4
7	4	7	4
8	3	8	3
9	4	9	4
Subtotal	**32**		**32**
10	4	10	4
11	3	11	3
12	3	12	3
13	3	13	3
14	4	14	3
15	3	18	4
		15	5
		16	3
		17	4
Subtotal	**20**		**32**
TOTAL	**52**		**64**

Source: CDM, 2008.

The preferred alternative would not include any water features. However, new drainage facilities would be constructed, and lighting would be provided to allow for nighttime play.

The alternatives considered by LAWA all consist of various configurations of the additional three holes. The most substantial variation between the alternatives is the amount of acreage associated with each, which would range from 7 acres to approximately 22.5 acres. Alternative sites for the proposed action were not considered, as the subject parcel is the only vacant land adjacent to the existing golf course, and the southern portion of the parcel is reserved by LAWA for future airport-related uses. Due to the similarities among the various alternatives, it is not expected that there would be a material difference in impacts between the alternatives. Therefore, the environmental consequences portion of this EA only addresses the impacts associated with the preferred alternative as well as the no action alternative.

Construction Characteristics

Construction of the proposed improvements would take approximately six months from the start of construction to reopening of the holes. Initial site work, including demolition of existing pavement and rough grading, is expected to take two weeks. Fine grading and trenching is expected to take another nine weeks. Another two weeks will be needed for hydroseeding and placement of sod. The remaining time would be necessary for grow in and maturation of the course, as well as for work that does not involve grading, such as lighting installation. It is estimated that the total crew size would be fewer than 20 workers through completion of fine grading and trenching, after which time the construction crew would drop to a complement of five workers.

Card of the Course

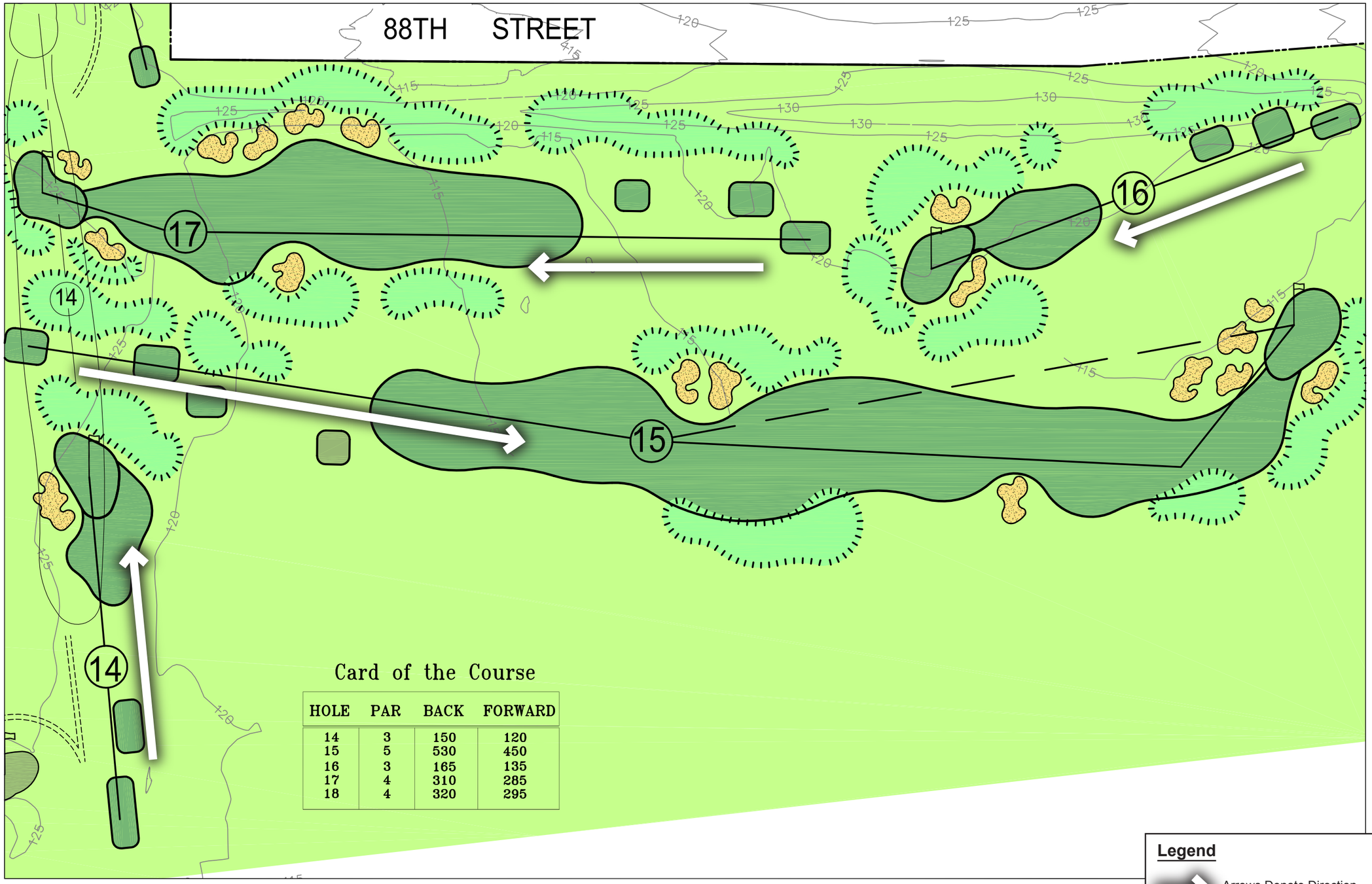
HOLE	PAR	BACK	FORWARD
1	3	108	108
2	4	317	317
3	3	176	166
4	3	145	145
5	4	267	255
6	4	287	287
7	4	286	286
8	3	141	133
9	4	336	314
OUT	32	2063	2011
10	4	340	340
11	3	160	149
12	3	148	138
13	3	148	135
14	3	150	120
15	5	530	450
16	3	165	135
17	4	310	285
18	4	320	295
IN	32	2271	2047
TOTAL	64	4334	4058

Source: Howard Maurer Design Group, 2008.
Prepared by: CDM, 2009.

Westchester Golf Course Three-Hole Expansion Project
Environmental Assessment

Westchester Golf Course with Proposed Improvements

Figure
3



Card of the Course

HOLE	PAR	BACK	FORWARD
14	3	150	120
15	5	530	450
16	3	165	135
17	4	310	285
18	4	320	295

Legend

Arrows Denote Direction of Ball Movement

north
Not to Scale

Source: Howard Maurer Design Group, 2008.
Prepared by: CDM, 2009.

Westchester Golf Course Three-Hole Expansion Project
Environmental Assessment

Proposed Conceptual Route Plan for New and Modified Holes

Figure
4

1.4 Requested Federal Action

The requested FAA actions include the following:

- The current Airport Layout Plan (ALP) for LAX does not designate a use for the project site. Three abandoned city streets are identified within the project site on the ALP. The requested federal action is unconditional approval of that portion of the ALP that depicts the project site for golf course uses, in accordance with 49 United States Code (USC) §47107(a)(16).
- A determination under Title 14 of the Code of Federal Regulations (14 CFR) Part 77 regarding obstructions to navigable airspace.

1.5 Organization of this EA

This EA is organized as follows:

Chapter 1 - Purpose and Need: This chapter identifies the purpose and need for the proposed golf course improvements. It also includes a discussion of the alternatives considered, including a no action alternative, and identifies the proposed action and the reasons for its selection. Requested federal actions are also identified.

Chapter 2 - Affected Environment: This chapter provides an overview of the physical setting of the project site. Details regarding the affected environment associated with individual resource areas are included in Chapter 3.

Chapter 3 - Environmental Consequences and Mitigation: Chapter 3 describes each affected resource, the environmental consequences of the proposed action and the no action alternative on that resource and, where applicable, recommended mitigation measures. Although NEPA documents often discuss these issues in separate chapters, they are combined in one chapter in this EA in order to enhance the readability of the document. Each subsection of the chapter evaluates the operational impacts of the proposed action as well as any applicable construction impacts. This chapter also identifies significance thresholds for each resource as defined in FAA Order 1050.1E.

Chapter 4 - References: This chapter lists the references used in the environmental analysis.

Chapter 5 - List of Preparers: Chapter 5 identifies personnel involved in the preparation of this EA.

Appendices: The following appendices provide additional information related to the proposed action and its impacts;

Appendix A - Westchester Golf Course 3 Hole Expansion Project, Los Angeles International Airport, Final Conceptual Planning Study

Appendix B - Agency Consultation

Appendix C - Air Quality Data

Appendix D - Phase I Archaeological Resources Assessment

Appendix E - Biological Constraints Survey

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2. AFFECTED ENVIRONMENT

The project site is located within the portion of the airport property known as LAX Northside on a 31-acre parcel abutting the 60.3-acre Westchester Golf Course to the west and West 88th Street to the north. Surrounding land uses include the existing golf course to the west, residential land uses to the north, a church to the northeast, a city fire station and Los Angeles Unified School District Emerson Community Adult School to the east, and Westchester Parkway and the northern runways of LAX to the south. **Figure 5** provides an aerial view of the existing golf course and the project site.

The proposed project is located on land previously developed with residential uses. The structures were removed in the 1970s and the land has lain fallow. Four paved roads remain on the parcel. A noise wall approximately 20 feet in height is located along the entire northern boundary of the project site. The noise wall is set back from West 88th Street by approximately 50 feet. On-site vegetation consists of ornamental trees, primarily along the northern and western boundaries of the site, and ruderal (weedy) plant species. Photographs of the project site, and a photograph key, are provided in **Figures 6** and **7**.

Following removal of the residences, the 340-acre property known as LAX Northside was approved for the development of commercial, recreational, and airport-related industrial land uses totaling 4.5 million square feet.[7] With the exception of the construction of Westchester Parkway, none of the LAX Northside improvements have been implemented to date.

[7] City of Los Angeles, Department of Airports, Final Environmental Impact Report, LAX North Side Development Project, prepared by Williams-Kuebelbeck & Associates, April 1983.

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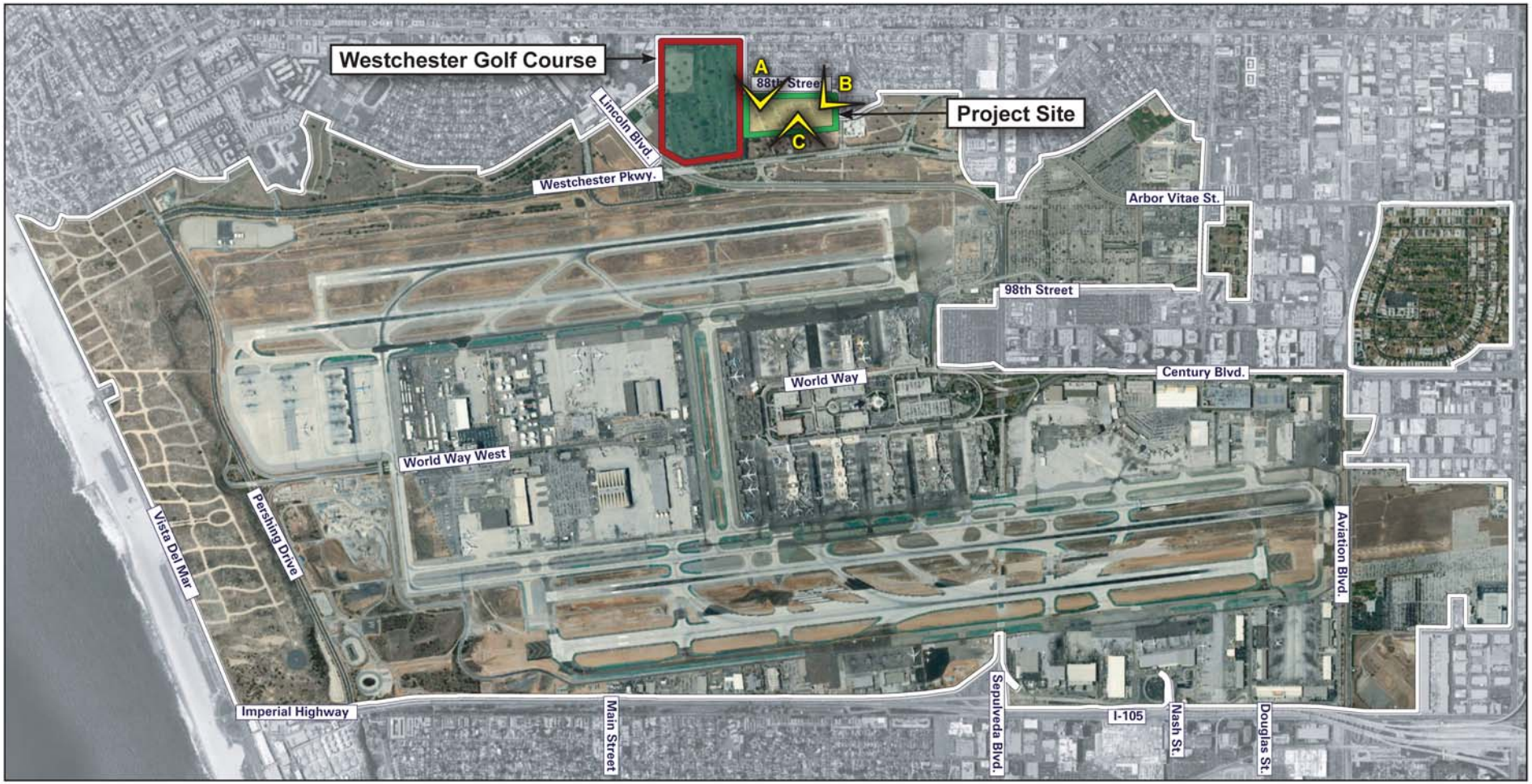
north

Not to Scale

Prepared by: CDM, 2009.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Aerial View of Project Site**	Figure **5**



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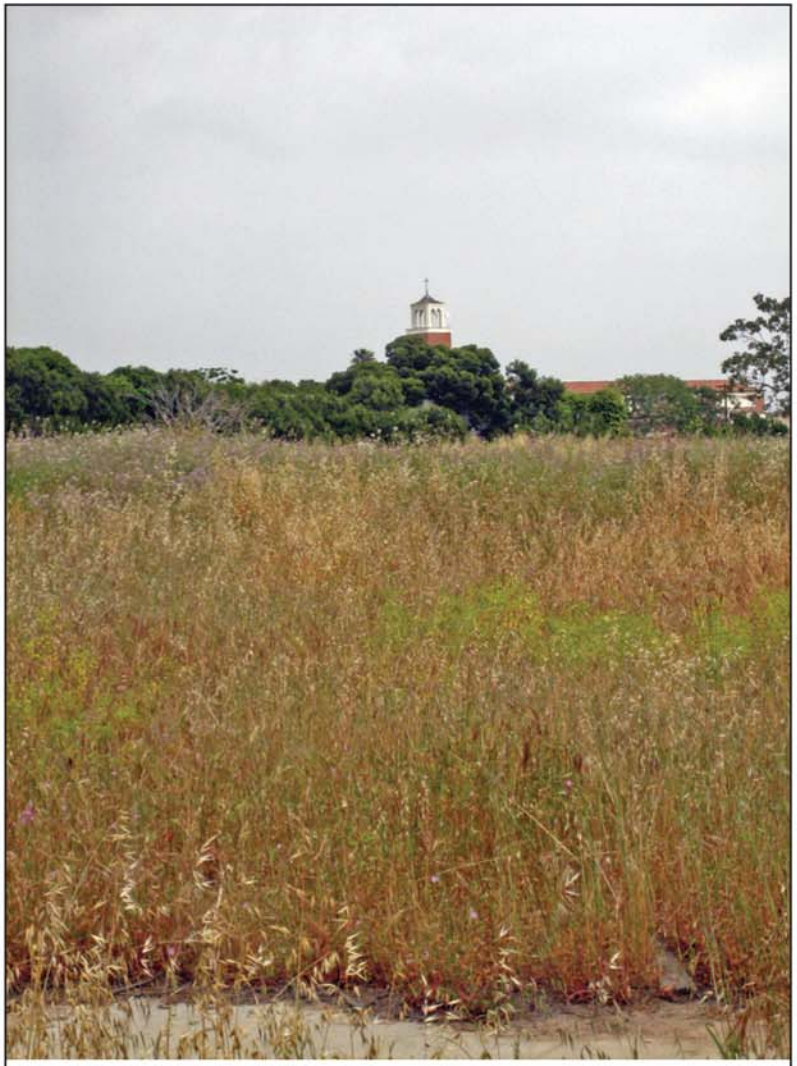
Prepared by: CDM, 2009.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Photograph Location Map**	Figure **6**



B: View to the northeast, with Visitation Catholic Elementary School in the background.

A: View of noise wall at the project site's northern boundary.

C: View to the south of LAX Control Tower and Central Terminal Area Theme Building.

Westchester Golf Course
Three-Hole Expansion Project
Environmental Assessment

Project Site Photographs

Figure
7

3. ENVIRONMENTAL CONSEQUENCES AND MITIGATION

3.1 Noise

FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, requirements for a noise analysis pertain to evaluating potential increases in aviation-related noise from a proposed action. The proposed expansion of an existing golf course would not result in any changes to existing aircraft operations at LAX. As such, a noise analysis per FAA Orders 1050.1E and 5050.4B is not required for this EA. Potential noise impacts to adjacent land uses during construction and operation of the proposed action, as well as the potential for the proposed action to expose people to high aircraft noise levels, are addressed in Section 3.2, Compatible Land Use/Consistency with Applicable Planning Documents.

3.2 Compatible Land Use/Consistency with Applicable Planning Documents

In accordance with Section 4.1 of FAA Order 1050.1E, the following provides a discussion of the potential for the proposed action to disrupt communities or expose noise-sensitive uses to high levels of aircraft noise. In addition, this section addresses consistency of the proposed action with applicable planning documents.

3.2.1 Affected Environment

Existing Land Use

The proposed project site is a vacant 22.5-acre parcel abutting Westchester Golf Course to the west and West 88th Street to the north. Surrounding land uses include the existing golf course to the west, residential land uses to the north, a church to the northeast, a city fire station and Los Angeles Unified School District Emerson Community Adult School to the east, and Westchester Parkway and the northern runways of LAX to the south. A noise wall approximately 20 feet in height is located along the entire northern boundary of the parcel, and separates the project site from the residential uses to the north.

Applicable Planning Documents

The project site is located within the LAX Plan area. The LAX Plan, part of the General Plan of the City of Los Angeles, provides goals, objectives, policies, and programs that establish a framework for the development of facilities within the LAX Plan area. The LAX Specific Plan establishes zoning and development regulations and standards consistent with the LAX Plan.

The LAX Specific Plan is divided into three subareas: Airport Airside, Airport Landside, and LAX Northside. The project site is located within the LAX Northside Subarea, which serves as an airport buffer zone for the Westchester community. As discussed in Section 1.2 above, as part of the May 20, 2005, Record of Decision for the LAX Master Plan Improvements, FAA took no action on the portion of the ALP that depicts LAX Northside. As such, one of the purposes for preparation of this EA is to allow FAA to take the federal action of approving that portion of the ALP that depicts the project site for golf course uses.

LAX Northside is divided into fifteen areas. The project site is located within Areas 12A and 12B. Allowable uses identified in the LAX Specific Plan for Area 12A include commercial uses, including offices, hotel, restaurant, service and retail uses; and for Area 12B include a commercial golf course, including golf driving tees and ranges and similar commercial golf course uses.

Applicable LAX Specific Plan requirements for development within the LAX Northside Subarea include:

- All lighting shall be directed onto the site and no flood-lighting shall be located as to be seen directly by the adjacent residential areas.
- All utilities within the project shall be installed underground.

Applicable goals contained in the LAX Plan include:

- Goal 4: Recognize the responsibility to minimize intrusions on the physical environment.
- Goal 5: Acknowledge neighborhood context and promote compatibility between LAX and the surrounding community.
  - Minimize negative impacts to surrounding residential uses.
  - Maximize the public benefits of airport development, particularly to adjacent land uses.

The project site is in the LAX N Zone with any underlying zone of [T][Q]C2-1, which allows a golf course use. Per Section 12.9.1 of the City of Los Angeles Municipal Code, no building, structure or land shall be used and no building or structure shall be erected, structurally altered, enlarged, or maintained within the LAX Zone, except as permitted by the LAX Specific Plan.

In addition, the project site is within the boundaries of the Coastal Transportation Corridor Specific Plan (Ordinance No. 168,999, effective September 22, 1993). The Coastal Transportation Corridor Specific Plan is intended to provide a mechanism to fund specific transportation improvements due to transportation impacts generated by new commercial and industrial development within the corridor. Projects on airport property are specifically exempted from payment of Transportation Impact Assessment fees otherwise required by the Specific Plan and are also exempted from the requirement to prepare a Phasing Program.

Existing Noise Setting

The existing noise setting at the project site and surrounding areas is dominated by aircraft noise. According to LAX noise contours for the fourth quarter of 2007,[8] the project site, as well as the existing Westchester Golf Course, is located within the 65 and 70 db Community Noise Equivalent Level (CNEL) noise contours. Other notable noise sources in the project area include noise from vehicular traffic along adjacent streets, particularly Westchester Parkway, and sirens from emergency response vehicles responding from calls out of the adjacent fire station.

3.2.2 Environmental Consequences

The environmental consequences of the proposed action are evaluated below. The no action alternative would not result in any changes to existing on-site land uses, would not result in any incompatibilities with surrounding land uses, and would not be in conflict with any applicable planning documents. However, the no action alternative would not result in the beneficial impact of enhancing recreational facilities within the project area.

FAA Order 1050.1E does not establish any significance thresholds for compatible land use, with the exception of thresholds related to the potential for a proposed action to result in increases in aviation-related noise, which are not applicable to the proposed action.

Community Disruption/Compatibility with Adjacent Uses

The proposed action could result in impacts to surrounding uses during construction related to noise and traffic, and during operations related to public safety, noise, light emissions, and traffic. These potential impacts are discussed below.

[8] City of Los Angeles, Los Angeles World Airports, LAX Airport Impact Area: CNEL 65, 70, and 75 dB Contours, 4Q07, Available: http://www.lawa.org/welcome_LAX.aspx?id=1090.

Environmental Impacts During Construction

Construction activities would cause a short-term increase in noise due to operation of heavy equipment and pavement removal. Construction noise is most directly regulated by the City of Los Angeles Noise Ordinance which limits noise from construction as follows:

- It is a violation to engage in construction, repair, or excavation work with any construction type device, or job-site delivering construction materials without a Police Commission permit:
  - Between the hours of 9:00 p.m. and 7:00 a.m.;
  - In any residential zone, or within 500 feet of land so occupied, before 8:00 a.m. or after 6:00 p.m. on any Saturday, nor at any time on any Sunday;
  - In a manner as to disturb the peace and quiet of neighboring residents or any reasonable person of normal sensitiveness residing in the area.
- Between the hours of 7:00 a.m. and 10:00 p.m., in any residential zone of the City within 500 feet thereof, no person shall operate or cause to be operated any powered equipment or powered hand tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 feet there from:
  - 75 dB(A) for construction equipment
  - 65 dB(A) for powered equipment intended for repetitive use in residential areas, including lawn mowers, backpack blowers, small lawn and garden tools, and riding tractors.

Construction is expected to begin in early 2009 and is anticipated to occur a maximum of 10 hours per day. Construction would occur during normal business hours, and would not be conducted outside of the hours of 7:00 a.m. to 9:00 p.m. Monday through Friday. Typical construction equipment expected to be needed for this project includes bulldozers for site preparation and grading, a chain-saw, a front-end loader, a roller, a backhoe, a ditch witch, an air compressor, and various types and numbers of heavy- and light-duty trucks.

Typical noise levels for these types of construction equipment/vehicles are between approximately 81 and 88 dBA at 50 feet from the construction site. Noise reducing features, such as mufflers, would be utilized and would reduce the construction equipment noise levels by a minimum of 5 dBA, reducing the expected highest noise level to 83 dBA at 50 feet from the construction site. The nearest residential property is approximately 100 feet to the north of the project site. Noise levels diminish at a rate of approximately 6 dBA per doubling distance. Thus, the noise level of 83 dBA expected at the reference point of 50 feet would be about 77 dBA at 100 feet. Further, a concrete noise wall approximately 20 feet in height is located along the entire northern boundary of the project site, between the site and residential uses north of West 88th Street. Given its height, the noise wall is anticipated to provide a minimum 10 dBA reduction in noise levels. As such, it is conservatively estimated that construction noise levels of approximately 67 dBA could be experienced at residential properties to the north of the project site. As all construction activities would occur within the allowed hours specified in the City's noise ordinance, and that the expected construction noise level would not conflict with noise limits specified in the City's noise ordinance, no significant construction noise impacts would occur.

With respect to construction traffic impacts, the time from the start of construction until the new holes are ready to play is expected to be six months. Initial site work, including demolition of existing pavement and rough grading, is expected to take two weeks. Fine grading and trenching is expected to take another nine weeks. Another two weeks will be needed for hydroseeding and placement of sod. The remaining time would be necessary for grow in and maturation of the course, as well as for work that does not involve grading, such as lighting installation. It is anticipated that there would be 20 workers on-site from start of construction through completion of fine grading and trenching, after which time the construction crew would drop to a complement of five workers. The addition of construction vehicles associated with 20 construction workers for a short-term period of 6 months is not expected to substantially contribute to vehicular noise in the project area, nor to contribute to traffic such that disruption to the community would result.

Construction of the proposed project would not result in adverse effects with respect to the safe and efficient use of navigable airspace by aircraft or the safety of persons or property on the ground. Please see Appendix B for a copy of completed FAA Form 7460-1, Notice of Proposed Construction or Alteration, for the proposed project and FAA's Final Determination stating that they do not object to the construction of the proposed project provided that the project complies with the requirements set forth in FAA Advisory Circular 150/5370-2E, "Operational Safety on Airports During Construction."

Environmental Impacts During Operations

As described in Section 1.3, on-site and off-site safety was considered in the development of the proposed alternative. The new three holes and two modified holes have been designed in a way to minimize errant golf shots. The golf course expansion final design will include appropriate netting, trees, and other vegetation to prevent golf balls from going beyond the site boundaries, to the extent possible.

Notable on-site noise sources would be limited to golf course maintenance equipment (such as lawn mowers) which would be used on an intermittent basis. Due to the distance of the project site from adjacent residences, and the presence of a 20-foot noise wall between the project site and residential uses, operational noise levels would not exceed the City Noise Ordinance noise limit of 65 dB(A) at 50 feet for powered equipment intended for repetitive use in residential areas, including lawn mowers.

Both construction lighting, if needed, and long-term night lighting would be directed onto the site property and flood-lighting would be located in a manner as to not be seen directly by the residential area to the north. Thus, the proposed action would not result in significant adverse light emissions effects that would be incompatible with adjacent residential land uses.

The proposed action would not result in any new long-term employment opportunities. However, it is anticipated that the enlarged course would attract additional patronage that is interested in playing this more challenging course. The vehicle traffic associated with such additional patronage is not expected to substantially contribute to vehicular noise in the project area, nor to contribute to traffic such that disruption to the community would result.

Consistency with Applicable Plans

The proposed action is consistent with the uses allowed in the LAX Northside Subarea 12A. The City, in a previous Zoning Administrator's Interpretation, ZAI 99-0202(ZAI), determined that a Golf Course is allowable on the land zoned [T][Q]C2-1 located between 88th Street and Westchester Parkway and the eastern boundary of the existing Golf Course and Emerson Avenue. The Chief Zoning Administrator based his determination on the golf course use being consistent with the underlying C2 zone and that the wording of the condition for Parcel 12A, permitting commercial uses, including offices, hotel, restaurant, service and retail use, was not exclusive.

As described above, lighting for the proposed project would be directed onto the site property and flood-lighting would be located in a manner as to not be seen directly by the residential area to the north. Further, all utilities within the project site would be installed underground. Thus, the proposed action would be consistent with the applicable LAX Specific Plan requirements for development within the LAX Northside Subarea identified in the Affected Environment discussion above.

The proposed project has been designed to minimize negative impacts to surrounding communities and maximize the public benefits associated with development on airport property. The proposed action would restore the golf course to an 18-hole golf course serving the recreational needs of the community. Impacts to the surrounding community would be minimized by maintaining the existing landscaping along the northern boundary and installing lighting in a manner such that no flood-lighting would be seen directly by adjacent residential uses. Thus, the proposed action would be consistent with the applicable LAX Plan goals identified in the Affected Environment discussion above.

Aircraft Noise Exposure

Per Title 14, Code of Federal Regulations (CFR) Part 150 (also referenced as Federal Aviation Regulation (FAR) Part 150), land use incompatibility is based on the sensitivity of various land uses to aircraft noise, as defined by the Day Night Average Sound Level (DNL). These same guidelines are also applicable to the Community Noise Equivalent Level (CNEL) noise metric on which airport noise evaluations are based in California. Per FAR Part 150, Table 1, golf courses are considered a compatible use within the 65 to 70 db DNL/CNEL noise contour environment, and are generally compatible within the 70 to 75 and 75-80 db DNL/CNEL noise contour environment. As the project site, as well as the existing golf course, is currently exposed to aircraft noise in the range of 65 to 70 db CNEL, and as it is not expected that the site would be exposed to aircraft noise in excess of 80 db CNEL, the proposed use (golf course expansion) is a compatible land use under FAR Part 150.

3.3 Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks

The proposed action would not cause adverse socioeconomic impacts, because it would not result in: (1) relocation of residents; (2) relocation of community businesses; (3) disruptions of local traffic patterns that substantially reduce the levels of service of the roads serving the airport and its vicinity; or (4) notable change in employment or loss in community tax base.

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*,[9] and DOT Order 5610.2, *Environmental Justice in Minority and Low-Income Populations*,[10] require Federal agencies to determine whether a proposed action would have disproportionately high and adverse human health or environmental effects on minority or low-income populations. Based on Year 2000 U.S. Census data, no minority or low income populations are located adjacent to or in the vicinity of the project site.[11] Therefore, the proposed action would not result in a disproportionately high and adverse human health or environmental effect on minority or low-income populations.

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*,[12] requires Federal agencies to determine whether a proposed action would result in environmental health risks and safety risks[13] that may disproportionately affect children. As described in Sections 3.4, Air Quality, and 3.10, Water Quality, the proposed action would not result in significant air quality or water quality impacts. As described in Section 3.11, Hazardous Materials, the proposed action would not result in the exposure of humans to hazardous substances. Therefore, the proposed action would not result in environmental health risks and safety risks that may disproportionately affect children that reside or play in the project area.

The no action alternative would not have any impacts pertaining to socioeconomics, environmental justice, or children's environmental health and safety.

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9 Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 FR 7629, February 16, 1994.

10 U.S. Department of Transportation, Order 5610.2, Environmental Justice in Minority and Low-Income Populations, April 15, 1997.

11 U.S. Department of Transportation, Federal Aviation Administration, Final Environmental Impact Statement, Los Angeles International Airport Proposed Master Plan Improvements, Section 4.4.3, January 2005.

12 Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, 62 CFR 19883, April 23, 1997.

13 Per Executive Order 13045, environmental health risks and safety risks are risks to health or to safety that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air that is breathed, food, water, soil, and products that are used or that the child may be exposed to.

3.4 Air Quality

3.4.1 Affected Environment

The proposed project is located on property of the Los Angeles International Airport (LAX). The airport is located within the South Coast Air Basin of California, a 6,600 square-mile area encompassing all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties.

Regulatory Setting

Air quality is regulated by federal, state, and local laws. In addition to rules and standards contained in the federal Clean Air Act and the California Clean Air Act, air quality in the Los Angeles region is subject to the rules and regulations established by the California Air Resources Board (CARB) and the South Coast Air Quality Management District (SCAQMD) with oversight provided by the United States Environmental Protection Agency (EPA), Region IX.

The federal Clean Air Act (CAA) requires all air quality planning regions in the country to be designated according to the National Ambient Air Quality Standards (NAAQS) for criteria air pollutants, (i.e., pollutants causing human health impacts due to their release from numerous sources), and to achieve those standards by specific mandated dates. If air pollutant concentrations in these regions do not exceed the NAAQS, they are designated attainment areas. If such concentrations do exceed the NAAQS they are designated nonattainment areas. The following criteria pollutants have been identified as having NAAQS: ozone (O_3), coarse particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM10), fine particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers (PM2.5), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb). NAAQS for these pollutants are shown in **Table 3-1**. The CAA also mandates that each state submit and implement a State Implementation Plan (SIP) to demonstrate how the NAAQS will be attained and maintained.

As noted above, the CAA requires all air quality planning regions to be formally designated as attainment or nonattainment. Under the CAA, nonattainment designations for O_3 are further categorized into five levels of severity: (1) marginal, (2) moderate, (3) serious, (4) severe, and (5) extreme, and nonattainment designations for PM10 are categorized into two levels of severity: (1) moderate and (2) serious. The South Coast Air Basin, within which the proposed project site is located, is currently designated by EPA under the NAAQS as a "severe" nonattainment area for O_3, a "serious" nonattainment area for PM10, and a basic nonattainment area for PM2.5.

Table 3-1

National Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS[1] Primary	NAAQS[1] Secondary
Ozone (O_3)	8-Hour	0.075 ppm[2] (147 µg/m^3) [3]	Same as Primary
Carbon Monoxide (CO)	8-Hour	9 ppm (10 mg/m^3) [4]	N/A[5]
	1-Hour	35 ppm (40 mg/m^3)	N/A
Nitrogen Dioxide (NO_2)	Annual	0.053 ppm (100 µg/m^3)	Same as Primary
Sulfur Dioxide (SO_2)	Annual	0.03 ppm (80 µg/m^3)	N/A
	24-Hour	0.14 ppm (365 µg/m^3)	N/A
	3-Hour	N/A	0.5 ppm (1300 µg/m^3)
Respirable Particulate Matter (PM10)	24-Hour	150 µg/m^3	Same as Primary
Fine Particulate Matter (PM2.5)	Annual	15.0 µg/m^3	Same as Primary
	24-Hour	35 µg/m^3	Same as Primary
Lead (Pb)	Quarterly	1.5 µg/m^3	Same as Primary

1 NAAQS = National Ambient Air Quality Standards
2 ppm = parts per million (by volume)
3 µg/m^3 = micrograms per cubic meter
4 mg/m^3 = milligrams per cubic meter
5 N/A = Not applicable

Source: CDM, 2008.

Ambient Air Quality Monitoring

The SCAQMD maintains a network of air quality monitoring stations located throughout the Basin. The closest monitoring station, and most representative of existing air quality conditions in the project area, is the Southwest Coastal Los Angeles Monitoring Station. Through 2003, this station was located at 5234 West 120th Street (Hawthorne), or about 2.4 miles southeast of the LAX Theme Building and 0.75 mile southeast of the southeast corner of the airport. In April 2004, the station was moved to 7201 W. Westchester Parkway (Westchester), roughly 1.5 miles northwest of the Theme Building and less than 0.5 mile from Runway 24R (northern most LAX runway). This station monitors ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, and PM10. Data available from this monitoring station were collected for the five-year period of 2003 - 2007. The data are summarized in **Table 3-2**.

Table 3-2

Southwest Coastal Los Angeles Monitoring Station Ambient Air Quality Data

	2003	2004[1]	2005	2006	2007
Ozone (O_3)					
Maximum Concentration 1-hr period (ppm)[2]	0.110	0.069	0.086	0.08	0.087
Maximum Concentration 8-hr period (ppm)	0.078	0.060	0.076	0.066	0.074
Carbon Monoxide (CO)					
Maximum Concentration 1-hr period (ppm)	7	6	3	3	3
Maximum Concentration 8-hr period (ppm)	5	4.4	2.1	2.3	2.4
Nitrogen Dioxide (NO_2)					
Maximum Concentration 1-hr period (ppm)	0.12	0.08	0.09	0.10	0.08
Annual Arithmetic Mean (AAM)	0.0238	0.0310	0.0134	0.0155	0.0140
Sulfur Dioxide (SO_2)					
Maximum Concentration 1-hr period (ppm)	0.03	0.03	0.04	0.02	0.02
Annual Arithmetic Mean (AAM)	NA[3]	NA	NA	0.0020	0.0028
Maximum Concentration 24-hr period (ppm)	0.006	0.004	0.012	0.006	0.009
Respirable Particulate Matter (PM10)					
Maximum Concentration 24-hr period ($\mu g/m^3$)[4]	58	52	44	45	96
Annual Arithmetic Mean (AAM)	29.7	30.9	22.9	26.5	27.7

[1] Monitoring station relocated during 2004; data collected for less than full year and may not be representative.
[2] ppm = parts per million (by volume)
[3] NA = not applicable
[4] $\mu g/m^3$ = micrograms per cubic meter

Source: South Coast Air Quality Management District Air Quality Data, 2003 to 2007.

3.4.2 Environmental Consequences and Mitigation

The environmental consequences of the proposed action are evaluated below. The no action alternative would not result in any air quality emissions and, therefore, would have no impacts to air quality.

Environmental Impacts During Construction

The time from the start of construction until the new holes are ready to play is expected to be six months. Initial site work, including demolition of existing pavement and rough grading, is expected to take two weeks. Fine grading and trenching is expected to take another nine weeks. Another two weeks will be needed for hydroseeding and placement of sod. The remaining time would be necessary for grow in and maturation of the course, as well as for work that does not involve grading, such as lighting installation. It is anticipated that there would be 20 workers on-site from start of construction through completion of fine grading and trenching, after which time the construction crew would drop to a complement of five workers.

Construction is expected to begin in early 2009 and is expected to run 10 hours per day Monday through Friday. Typical construction equipment expected to be needed for this project includes bulldozers for site preparation and grading, a front-end loader, a roller, a backhoe, a ditch witch, an air compressor, and various types and numbers of heavy- and light-duty trucks. Emissions estimates from construction equipment and vehicle trips to and from the CFTP site by construction workers are provided in Tables C-1 through C-12 in Appendix C of this EA. Emissions would occur as a result of the combustion of fuels in the mobile construction equipment and possibly some dust from site activities. Emissions would also be

associated with the use of a rock crusher, currently located on the west side of the airport, to allow for the reuse of concrete removed from the project site. The construction emission estimates also include trips to and from the site by construction workers, construction-related deliveries, and trips to and from the rock crusher. All site activities would be in compliance with all applicable LAWA construction commitments, City of Los Angeles codes, SCAQMD rules, and good construction practices.

Minor quantities of criteria pollutants would be generated during construction, as presented in **Table 3-3**. No emissions of the criteria pollutant lead (Pb) are expected to be associated with the proposed action. Equipment parameters (number of units, size, load factors, and hours of operation), construction activity emission factors, and emission inventories are included in Appendix C.

Table 3-3

Estimated Emissions of Criteria Pollutants During Construction

Pollutant	Total Estimated Emissions (tons)
Carbon Monoxide (CO)	2.04
Nitrogen Oxides (NO_x)[1]	2.75
Volatile Organic Compounds (VOC)	0.48
Sulfur Dioxide (SO_2)	0.003
Respirable Particulate Matter (PM10)	2.38
Fine Particulate Matter (PM2.5)	0.58

[1] Emissions of NO_x are assumed to convert 100 percent to NO_2.

Source: CDM, 2008.

Environmental Impacts During Operations

As noted elsewhere in this document, upon completion of construction of the three new holes and modification to two existing holes, the course would become an 18-hole, par 64 public golf course. It is anticipated that the enlarged course would attract additional patronage that is interested in playing this more challenging course. According to American Golf, the current operator of the Westchester Golf Course, approximately 82,000 to 85,000 rounds of golf are currently played at the Westchester Golf Course per year. With the added holes, the number of rounds could increase by approximately 5,000 per year, or 13 to 15 additional rounds per day.[14] While the golf course improvements would include no new emission sources in and of themselves, there may be some incremental increase in criteria pollutant emissions regionally as a result of the expansion. For example, the incremental increase in patronage related to the larger course may result in a slight increase in regional vehicle miles travelled (VMT) and the associated emissions, both on and off airport property, that attend that increase in VMT. There may also be a slight increase in emissions related to grounds keeping for the three new holes, either directly from the use of small fossil fueled engines on-site (e.g., mowing, trimming) or indirectly from the generation of electricity used to charge electric landscaping equipment. There may also be a slight increase in indirect emissions associated with the generation of electricity used for additional lighting installed with the three new holes and for charging of electric golf carts used on-site attributable to the incremental increase in patronage at the golf course. It is anticipated that any incremental increase in emissions related to the operation of the three new holes would be negligible. There would be no overlap of emissions during operation with emissions during construction.

[14] Bourgeois, Scott, American Golf, Personal Communication, May 14, 2008.

General Conformity

A demonstration of conformity with the purpose of the SIP must be made for a proposed federal action (i.e., the preferred alternative) in a nonattainment or maintenance area when incremental emission rates attributable to the proposed action would exceed the conformity applicability thresholds outlined in the Code of Federal Regulations.[15,16] Implementation of the proposed action would require the approval and support of FAA. Therefore, it will be necessary to determine the applicability of the conformity requirements to the proposed action.

The conformity requirements consist of transportation and general conformity regulations. The proposed action would be expected to have negligible impact on transportation conformity, as that applies to transportation plans, transportation improvement programs, and transportation projects. For applicability of the general conformity requirement, the differences in total project emissions (including on-airport operations and construction emissions) between the action and the no action will be compared to the general conformity applicability thresholds. The criteria pollutants potentially subject to general conformity in the South Coast Air Basin include CO, VOC, NO_x, NO_2, PM10, and PM2.5. The general conformity applicability thresholds for the South Coast Air Basin are as follows:

- 100 tons per year for emissions of CO
- 100 tons per year for emissions of NO_2
- 25 tons per year for emissions of NO_x as a precursor of O_3
- 25 tons per year for emissions of VOC as a precursor of O_3
- 70 tons per year for emissions of PM10
- 100 tons per year for emissions of PM2.5
- 100 tons per year for emissions of NO_x or SO_2 as precursors of PM2.5

Emissions that are below these thresholds are considered to be de minimis.

As indicated in **Table 3-3**, emissions of all pollutants associated with the proposed action are below these thresholds and are therefore considered to be de minimis. As a result, the general conformity requirements are not applicable to this action.

Significance of Impacts

In accordance with FAA Order 1050.1E, an action is considered to have a significant impact if it would result in an exceedance of one or more of the NAAQS. Moreover, as noted in FAA Order 1050.1E, Appendix A, Section 2.1c, "[n]ormally, further analysis would not be required for pollutants where emissions do not exceed general conformity thresholds." As noted above, the proposed action would not exceed any general conformity thresholds. Therefore, no further analysis, such as dispersion modeling, of air quality impacts is required.

Although the proposed action is expected to generate minor quantities of criteria pollutants during construction, the quantities are estimated to be negligible and would not be expected to cause an exceedance of any NAAQS. Similarly, the slight increases in emissions of criteria pollutants attributable to the operation of the expanded golf course are expected to be minimal and are similarly not expected to cause an exceedance of any NAAQS.

Cumulative Impacts

As noted above, construction of the proposed golf course improvements would result in minor quantities of criteria pollutant emissions. These emissions would contribute to cumulative concentrations of criteria pollutants in the South Coast Air Basin. As noted previously, the South Coast Air Basin is currently

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15 U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, General Conformity Guidance: Questions and Answers, July 13, 1994.

16 40 CFR 93, Subpart B, July 1, 2008.

designated as a "severe" nonattainment area for O_3, a "serious" nonattainment area for PM10, and a basic nonattainment area for PM2.5 relative to the NAAQS. The incremental emissions from project construction would be very small, and would occur over a very short duration (approximately 3 months). The operational emissions would also be very slight. Neither construction-related nor operational pollutant emissions would result in a notable contribution to cumulative air quality impacts in the region.

Mitigation Measures

Even though unmitigated construction-related emissions are not anticipated to result in a significant impact, because the South Coast Air Basin is a nonattainment area for O_3, PM10, and PM2.5, LAWA will incorporate the regulatory requirements and mitigation measures listed below into the construction activities to reduce the adverse air quality impacts of the proposed action and to comply with applicable EPA, CARB, and SCAQMD regulations. These measures would reduce fugitive dust during construction, including PM10 and PM2.5, as well as other criteria pollutants associated with the use of construction equipment and the burning of fossil fuel.

Measures required by existing regulation or statute:

- Site watering, using non-potable water if possible, and/or other measures to comply with SCAQMD Rule 403, Fugitive Dust.
- Cover trucks transporting material to and from the project site.
- Restrict traffic flows to stabilized construction roads and limit travel speed to 15 miles per hour.
- Require use of ultra low sulfur diesel fuel for heavy construction equipment.
- Implement idling limits for diesel-fueled vehicles of no more than 5 minutes, as required by CARB 13 CCR Chapter 10 Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling.
- Comply with CARB 17 CCR Section 93116, Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater.

Additional measures proposed by LAWA:

- Implement diesel particulate filters for construction equipment, if available and technologically feasible.
- Utilize construction equipment having the minimum practical engine size (i.e., lowest appropriate horsepower rating for intended job).
- Require that all construction equipment working on-site is properly maintained at all times in accordance with manufacturers' specifications and schedules.
- Use electricity from power poles instead of fossil-fueled electrical generators, if feasible. Where generators are required, use portable generators using cleaner burning diesel fuel and all technologically feasible emission controls.
- Use on-airport rock crushing facility, if feasible, to minimize off-site truck haul trips.

3.5 Department of Transportation Act Section 4(f)

Section 4(f) of the U.S. Department of Transportation Act of 1966, recodified as 49 U.S.C. 303, prohibits use of a publicly owned park, recreation area, wildlife or waterfowl refuge, or public or privately owned historic site of national, state, or local significance for a transportation project unless 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 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. Use, pursuant to Section 4(f), also includes adverse indirect impacts or what is termed "constructive use." A constructive use may occur

when impacts substantially impair or diminish the activities, features, or attributes of the resource that contribute to its significance or enjoyment.

A project would result in a use under Section 4(f) if it would:

- Require the physical taking of any Section 4(f) resource.
- Result in a constructive use of a Section 4(f) resource through noise, visual intrusions, or other indirect effects that substantially impair the value of the site, in terms of its environmental, recreational, ecological, or historical significance.

FAA Order 1050.1E establishes the following significance threshold for Section 4(f) resources:

- A significant impact would occur pursuant to NEPA when the proposed action involves more than a minimal physical use of a Section 4(f) property or its constructive use substantially impairs the 4(f) property.

There are no Section 4(f) resources on or adjacent to the project site. Section 6.2c of FAA Order 1050.1E exempts property from a Section 4(f) evaluation if it is owned by and is currently designated for use by a transportation agency and is used as a park or recreational area on an interim basis. Although Westchester Golf Course is a recreational use open to the public, it is on property owned by LAWA and is used on an interim basis.[17] As such, use of the property is not subject to protection under the Department of Transportation Act, Section 4(f) and, therefore, it is not a 4(f) protected property. Moreover, the proposed action would not result in any adverse impacts to the Westchester Golf Course. Rather, the action would improve the golf course and enhance its use as a recreational resource.

The closest 4(f) resource to the project site is Westchester Park Recreation Center, which is approximately 0.25 miles northwest of the project site, on the western side of Westchester Golf Course. Due to the distance of the Westchester Park Recreation Center from the project site, no adverse indirect impacts associated with construction of the proposed action (i.e., air pollutant emissions and noise) are anticipated to extend to this 4(f) resource (refer to Sections 3.2 and 3.4 of this EA). As such, the proposed action would not have any direct or indirect (constructive use) adverse impacts on Section 4(f) resources.

The no action alternative would not have any direct or constructive use impacts on Section 4(f) resources.

3.6 Historic, Architectural, Archaeological, and Cultural Resources

The U.S. Department of the Interior, National Park Service, is the federal agency primarily responsible for the preservation of historic resources in the United States. A historic property is defined as any prehistoric or historic building, site, district, structure, or object that meets accepted criteria of significance. The National Register of Historic Places (National Register) is the official list of the nation's cultural resources worthy of preservation. To be eligible for listing in the National Register, a resource should be over 50 years of age[18] and must possess significance in American history and culture, architecture, or archaeology at the national, state, or local level. At the federal level, the two primary laws governing historic, architectural, archeological and cultural resources are the National Historic Preservation Act of 1966, as amended, and the Archaeological and Historic Preservation Act of 1974, as amended.

FAA Order 1050.1E establishes the following significance threshold for historic, architectural, archeological, and cultural resources:

- A significant impact would occur pursuant to NEPA when an action adversely affects a protected property and the responsible FAA official determines that information from the State and/or Tribal

[17] Per Lease Number LAA-6410, as amended, between the LAX Northside Los Angeles and American Golf.

[18] Properties less than 50 years old may be eligible for listing in the National Register under National Register Criteria Consideration G: Properties that Have Achieved Significance within the Past Fifty Years.

Historic Preservation Officer addressing alternatives to avoid adverse effects and mitigation warrants further study.

The LAX Master Plan Final EIR identified ten historic properties within the vicinity of LAX that are of federal, state or local significance.[19] None of these historic properties is within the project site or in the immediate vicinity. In addition, within a radius of approximately two miles of LAX, 36 previously recorded archeological sites were identified, including eight sites located on LAX property.[20] None of the eight sites identified on LAX property are located within the boundaries of the project site or in the immediate vicinity. During preparation of this EA, an updated records search that included a review of all recorded cultural resource reports on file and registries of historic resources was conducted by the California Historic Resources Inventory South Central Coastal Information Center (CHRIS-SCCIC)[21] (a copy of the records search results is provided in Appendix B). The results of this records search confirmed that no archaeological sites, historic structures, or other cultural resources have been identified within the project site. Two resources were identified within a half-mile of the site. No information was provided as to the specific location and nature of these resources, however, as they are not located within the project site, they would not be adversely impacted. As recommended by CHRIS-SCCIC, an updated Phase I pedestrian survey was performed on March 19 2009 to determine if any cultural resources were present on-site. As described in the Phase I Archaeological Resources Assessment (Appendix D), no historic properties or archeological resources were identified on-site.[22]

FAA Order 1210.20 *American Indian and Alaska Native Tribal Consultation Policy and Procedures*[23] and FAA Order 5050.4B *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects*[24] provide guidelines for consultation and cooperation with Native American tribes to identify historic properties outside of tribal lands that may have religious and cultural significance to tribal members. Pursuant to these requirements, the Native American Heritage Commission (NAHC) was requested to conduct a Sacred Lands File records search and provided a Native American contact list. The Sacred Lands File Search did not indicate the presence of Native American cultural resources in the project area. FAA initiated Native American consultation by sending letters on March 16, 2009 to the five contacts provided by NAHC. The letters invited the Tribes to consult with the FAA regarding the proposed project. No responses have been received to date. Copies of all relevant correspondence are provided in Appendix B.

As discussed above, based on the results of site surveys and records searches, there are no known significant historic or architectural resources on or in the vicinity of the site.[25] Furthermore, the project site has been extensively disturbed from previous grading activities associated with the construction and subsequent demolition of residential structures and related infrastructure. The proposed project would involve an average excavation depth of two feet with a maximum of seven feet. This soil has likely been previously disturbed during the rough grading for the former residential structures and therefore, it is extremely unlikely that any previously undisturbed soils would be encountered during construction of the proposed project. Any resources that may have existed prior to the disturbances are likely to have been displaced, and, as a result, the overall sensitivity of the site with respect to buried resources is low.

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19 U.S. Department of Transportation, Federal Aviation Administration, Final Environmental Impact Statement, Los Angeles International Airport Proposed Master Plan Improvements, Section 4.9.1, January 2005.

20 U.S. Department of Transportation, Federal Aviation Administration, Final Environmental Impact Statement, Los Angeles International Airport Proposed Master Plan Improvements, Section 4.9.1, January 2005.

21 South Central Coastal Information Center, Letter to Mr. Herb Glasgow, Los Angeles World Airports from Michelle, Galaz regarding Records Search for 6990 West Manchester Avenue, Los Angeles, CA 90045, SCCIC #9310.6273, March 9, 2009.

22 PCR Services Corporation, Results of the Phase I Archaeological Resources Assessment of the Approximately 22.5-acre Expansion of the Westchester Golf Course, Los Angeles County, California, March 31, 2009.

23 U.S. Department of Transportation, Federal Aviation Administration, Order 1210.20, American Indian and Alaska Native Tribal Consultation Policy and Procedures, January 28, 2004.

24 U.S. Department of Transportation, Federal Aviation Administration, Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions, April 28, 2006.

25 U.S. Department of Transportation, Federal Aviation Administration, Final Environmental Impact Statement, Los Angeles International Airport Proposed Master Plan Improvements, Section 4.9.1, January 2005.

If resources are unexpectedly encountered during project implementation, ground disturbing activities would be halted in area of a paleontological or archaeological find, until such time as a resource expert can review the find and determine its significance and appropriate treatment, as required by the City of Los Angeles for public projects pursuant to the City of Los Angeles General Plan Conservation Element and Section 6-3.2 the *Standard Specifications for Public Works Construction*.[26]

The presence of significant archaeological/cultural resources on-site is unlikely, and therefore, no impacts to these resources are anticipated.

The no action alternative would not have any impacts on historic, architectural, archaeological, or cultural resources.

3.7 Fish, Wildlife, and Plants

3.7.1 Affected Environment

Regulatory Setting

Floral (plant) and faunal (animal) species that are listed by the U.S. Fish and Wildlife Service (USFWS) as federally endangered or threatened are protected under the Federal Endangered Species Act (FESA). Section 9 of FESA prohibits the taking of species listed by the USFWS as endangered or threatened. As defined by FESA, "taking" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in such conduct. As indicated in FAA Order 1050.1E, Section 7 of FESA applies to federal agency actions and sets forth requirements for consultation to determine if a proposed action may affect endangered or threatened species and to ensure that any action the agency authorizes, funds, or carries out is not likely to jeopardize the continued existence of any federally-listed endangered or threatened species or result in the destruction or adverse modification of designated critical habitat.

In addition to the FESA, 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. Further special status species have been given recognition by federal and/or state agencies, as well as private conservation organizations, because of perceived or documented decline in the population size or geographic range of the species.

On-site Resources

As described in Chapter 2, the proposed project is located on land previously developed with residential uses. The structures were removed in the 1970s and the land has lain fallow. Four paved roads remain on the parcel. A biological survey, including a literature review and on-site field visit, was conducted by BonTerra Consulting to evaluate the potential for habitats on the project site to support special status plant and wildlife species, including federally- and state-listed endangered and threatened species. The results of the literature review and biological survey are included as Appendix E of this EA and summarized below.

The literature review conducted to determine the potential special status plant and wildlife species known to occur in the project vicinity that may occur on the project site included review of the following lists/databases: the California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California, the California Department of Fish and Game (CDFG) and USFWS species lists, and the California Natural Diversity Database (CNDDB). The field visit of the project site was conducted on June 25, 2008.

The results of the biological survey determined that no native vegetation types are present on the project site. Vegetation on the project site includes a number of trees, primarily ornamental, such as various gum trees (*Eucalyptus* spp.), pine trees (*Pinus* spp.), and palm trees (*Washingtonia robusta*). In addition, two western sycamore trees (*Platanus racemosa*), a locally-protected Southern California native tree

[26] City of Los Angeles, L.A. CEQA Thresholds Guide, 2006. Section D - Cultural Resources.

species,[27] are present on the vacant parcel within which the project site is located. However, these two trees are located outside the area of disturbance for the proposed project and would not be removed or otherwise adversely affected as part of the proposed action.

Other vegetation on the project site includes landscaping species planted as ground cover adjacent to roads, and ruderal species. Within the ruderal area, species observed included wild radish (*Raphanus sativus*), brome grasses (*Bromus* spp.), and crown daisy (*Chrysanthemum coronarium*).

As discussed in Section 3.8, Wetlands, below, a small patch of riparian vegetation was found around a street drain (gutter) at the northern end of the project site. Species present in this small area included narrow-leaved willow (*Salix exigua*), cattail (*Typha latifolia*), and tall umbrella-sedge (*Cyperus eragrostis*).

Vegetation on the project site provides very little habitat for native wildlife species. Wildlife species observed or expected to occur on the project site include species associated with urban habitats. Common reptile species observed or expected to occur on the project site include western fence lizard (*Sceloporus occidentalis*). Common bird species observed or expected to occur include rock pigeon (*Columba livia*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), house finch (*Carpodacus mexicanus*), and European starling (*Sturnus vulgaris*). Mammal species observed or expected to occur on the project site include Virginia opossum (*Didelphis virginiana*), California ground squirrel (*Spermophilus beecheyi*), and house mouse (*Mus musculus*). Several ground squirrel burrows were observed during the site visit.

Certain vegetation types are considered to have special status because of limited distribution in southern California and also because of the potential to support special status plant and wildlife species. There are no special status vegetation types on the project site. However, as described above, there are two western sycamore trees, a locally protected native tree species, on the vacant parcel within which the project site is located. As indicated previously, these two trees are located outside the area of disturbance for the proposed project and would not be removed or otherwise adversely affected as part of the proposed action.

As described above, special status species have been given recognition by federal and/or state agencies, as well as private conservation organizations, because of perceived or documented decline in the population size or geographic range of the species. Although several special status plant and wildlife species are known to occur in the project region, only one plant species (southern tarplant [*Centromadia parryi* ssp. *australis*]) may be expected to occur on the project site. The remaining species would not be expected to occur on the project site due to the lack of suitable habitat.

3.7.2 Environmental Consequences and Mitigation

FAA Order 1050.1E establishes the following significance thresholds for fish, wildlife, and plants:

- For federally-listed species: A significant impact to Federally-listed threatened and endangered species would occur when the U.S. Fish and Wildlife Service or the National Marine Fisheries Service determines a proposed action would likely jeopardize a species' continued existence or destroy or adversely affect a species' critical habitat.
- For non-listed species: A significant impact to non-listed species could occur based on project effects on population dynamics and sustainability, including reproductive success rates; natural and non-natural mortality (such as aircraft strikes); and the minimum population size required to maintain the affected population, as determined by scientific literature and in consultation with agencies and organizations having jurisdiction or special expertise concerning the protection and/or management of the affected species.

[27] The western sycamore is one of the Southern California native tree species protected under the City of Los Angeles' Native Tree Protection Ordinance, as amended in 2006. The western sycamore is not a state- or federally-listed threatened or endangered species.

On October 22, 2008, FAA submitted a letter to the USFWS initiating informal consultation for the proposed project under Section 7 of the Endangered Species Act of 1973 (Act), as amended. On March 5, 2009, FAA received a letter from USFWS stating their concurrence with FAA that the proposed project would not affect any federally listed endangered or threatened species of flora or fauna or designated critical habitat, concluding the interagency consultation requirements of Section 7 the Act (refer to Appendix B for copies of the FAA and USFWS letters).

Implementation of the proposed action would affect existing developed and disturbed areas and ornamental plantings. The project site is of low biological value to plant and wildlife species. Therefore, no impacts on special status plants or wildlife species are expected to occur. However, large gum, palm, and other ornamental trees on the project site have a limited potential to support nesting raptors. Activities having the potential to disturb active raptor nests are prohibited by CDFG regulations. This protection generally ceases once nesting activity is completed, typically by July. Impacts to this species can typically be avoided through implementation of standard construction practices.

The no action alternative would not have any impacts on fish, wildlife, or plants.

Mitigation Measures

Implementation of the following mitigation measure would ensure that no significant impacts to active raptor nests would occur as a result of the proposed action. Implementation of this mitigation measure would reduce potential impacts to active raptor nests to a level that is less than significant.

- Prior to construction activities that may disturb/remove ornamental trees and that are conducted during the raptor breeding season (February 1 through August 31), a survey for active nests shall be conducted by a qualified biologist seven days prior to commencement of construction. Any occupied nests found during survey efforts will be mapped on the construction plans. Some restrictions on construction activities may be required in the vicinity of the nest until the nest is no longer active as determined by a qualified biologist.

3.8 Wetlands

Executive Order 11990, *Protection of Wetlands*,[28] USDOT Order 5660.1A, *Preservation of the Nation's Wetlands*,[29] the Rivers and Harbors Act of 1899, and Section 404 of the Clean Water Act address activities in wetlands. The U.S. Army Corps of Engineers' (ACOE) Wetland Delineation Manual[30] defines wetland areas that have positive indicators for hydrophytic vegetation, wetland hydrology, and hydric soils as "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." The ACOE typically takes jurisdiction over wetlands only when they lie within or adjacent to navigable waters, or tributaries of such waters where those tributaries bear an ordinary high water mark. An ordinary high water mark is defined as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, presence of litter or debris, or other appropriate means that consider the characteristics of the surrounding areas." In addition, the CDFG regulates alterations to the flow, bed, channel, or bank of rivers, streams, and lakes pursuant to Sections 1600-1603 of the California Fish and Game Code.

In accordance with FAA Order 1050.1E, a significant impact to wetlands would occur were the proposed action to do any of the following:

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28 Executive Order 11990, Protection of Wetlands, 42 FR 26961, May 24, 1977.

29 U.S. Department of Transportation, Order 5660.1A, Preservation of the Nation's Wetlands, August 24, 1978.

30 U.S. Army Corps of Engineers, Corps of Engineers Wetlands Delineation Manual, prepared by Environmental Laboratory, January 1987.

- Adversely affect a wetland's function to protect the quality or quantity of a municipal water supply, including sole source aquifers and a potable water aquifer
- Substantially alter the hydrology needed to sustain the affected wetland's values and functions or those of a wetland to which it is connected
- Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare
- Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically-important timber, food, or fiber resources of the affected or surrounding wetlands
- Promote development that causes any of the above impacts
- Be inconsistent with applicable State wetland strategies

As part of the biological survey conducted for the proposed project, described in Section 3.7, Fish, Wildlife, and Plants, above and included as Appendix E of this EA, the potential for the presence of jurisdictional wetlands was evaluated. During the on-site survey by BonTerra Consulting, a small patch of riparian vegetation was identified around a street drain (gutter) at the northern end of the project site. Species present in this small area included narrow-leaved willow (*Salix exigua*), cattail (*Typha latifolia*), and tall umbrella-sedge (*Cyperus eragrostis*). This area does not contain the features that would render the area under the jurisdiction of the ACOE nor the CDFG. Therefore, no impacts to wetlands would occur as a result of the proposed action.

The no action alternative would not have any impacts on wetlands.

3.9 Floodplains and Floodways

Executive Order 11988, *Floodplains Management*,[31] directs federal agencies to take actions to "reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains." FAA's policies and procedures for implementing this executive order are contained in USDOT Order 5650.2, *Floodplain Management and Protection*.[32] The executive order and the USDOT order establish a policy to avoid taking an action within a 100-year floodplain where practicable.

In accordance with FAA Order 1050.1E, floodplain impacts would be significant pursuant to NEPA if notable adverse impacts on natural and beneficial floodplain values would occur.

No 100-year floodplain areas are located within or in the vicinity of the project site.[33] As such, the proposed action would not encroach upon a 100-year floodplain and therefore, no adverse impacts on natural and beneficial floodplain values would occur. Further, as described in Section 3.10 below, the proposed action would not substantially alter drainage patterns on-site and thus, would not expose people or structures to a significant risk of loss, injury, or death involving flooding.

The no action alternative would not have any impacts on floodplains or flooding.

3.10 Water Quality

3.10.1 Affected Environment

Regulatory Setting

The Federal Water Pollution Control Act, as amended (commonly referred to as the Clean Water Act or CWA), provides the authority to establish water quality standards, control discharges, and regulate other

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31 Executive Order 11988, Floodplains Management, 42 FR 26951, May 24, 1977.

32 U.S. Department of Transportation Order 5650.2, Floodplain Management and Protection, April 23, 1979.

33 U.S. Department of Transportation, Federal Aviation Administration, Final Environmental Impact Statement, Los Angeles International Airport Proposed Master Plan Improvements, Section 4.13 and Appendix F-C, January 2005.

issues concerning water quality. In accordance with the CWA, the U.S. Environmental Protection Agency promulgated regulations for permitting storm water discharges, including those from construction activities, through the National Pollutant Discharge Elimination System (NPDES) program. The NPDES program for construction applies to activities that disturb an area of one acre or more. As required under the SWRCB General Permit for Construction Activities, LAWA has prepared a Storm Water Guidance Manual for Construction Activities. This document outlines the procedures for preparing and implementing a construction Storm Water Pollution Prevention Plan (SWPPP) before beginning construction operations to ensure that the activities are in compliance with the general permit.

The State Water Resources Control Board (SWRCB) develops statewide policy and regulations for water quality control. The agency with local jurisdiction over water quality at LAX is the Los Angeles Regional Water Quality Control Board (RWQCB).

Water Quality Setting

The project site is located within the Argo Drain Subbasin on LAX. Existing stormwater travels by sheet flow to a storm water basin located at the southern boundary of the parcel on which the project site is located. In addition, several roadways from the historical residential development exist on-site. These roadways convey both stormwater flows as well as dry weather flows from the residential neighborhood located to north into storm drains located in the street gutters. Off-site stormwater and dry weather flows from the area to the north flow onto the project site through a culvert underneath the noise wall that lies along the northern edge of the property. Stormwater and dry weather flows are ultimately discharged through the Argo Drain into Santa Monica Bay.

Santa Monica Bay is an open embayment of the Pacific Ocean with a designated surface area of approximately 266 square miles and is the receiving water body for surface water drainage from approximately 414 square miles of land.[34] Regionally, urban, industrial, and open space land uses comprise most of the Santa Monica Bay watershed and surface water runoff from these areas has drastically altered the natural environment of the bay. According to the SWRCB *1994 Water Body Fact Sheet*[35] and the RWQCB, the waters of the Santa Monica Bay have been assigned an impaired rating. This rating is based on findings that the waters preclude, compromise, or do not support their designated beneficial uses. Pollutants of concern in the Santa Monica Bay include both point sources and non-point sources. Runoff from urban areas is the most important uncontrolled source of pollution discharging into the Bay.[36]

3.10.2 Environmental Consequences

In accordance with FAA Order 1050.1E, a significant water quality impact would occur if there is a potential for exceeding water quality standards, if water quality problems are identified that cannot be avoided or satisfactorily mitigated, or if difficulties in obtaining required permits are anticipated.

Environmental Impacts During Construction

Construction of the proposed improvements could create sources of pollution that could potentially affect water quality. Sedimentation and erosion from stormwater runoff are the greatest construction-related water quality concerns. In addition, diesel fuels, gasoline, oil and grease, and hydraulic fluid used in construction equipment have the potential to affect water quality through entrainment of leak and spill residue in stormwater runoff. Construction activities associated with the proposed improvements would comply with all requirements under the State General Construction Permit and the City Municipal Separate Storm Sewer System (MS4) Permit. In addition, since the proposed improvements would affect an area of greater than one acre, LAWA's existing construction policy would require the development of a

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34 U.S. Department of Transportation, Federal Aviation Administration, Final Environmental Impact Statement, Los Angeles International Airport Proposed Master Plan Improvements, Section 4.7, January 2005.

35 California State Water Resources Control Board, Water Body Fact Sheet, May 18, 1994.

36 Santa Monica Bay Restoration Project, Taking the Pulse of the Bay - State of the Bay 1998, April 1998.

project-specific construction SWPPP in compliance with the state's NPDES construction permit. Applicable best management practices related to erosion and sedimentation control to be included in the SWPPP could include silt fencing to control sedimentation, and hay bales, collection dikes, and berms to control erosion. Best management practices addressing spill prevention and control would also be included in the SWPPP. With implementation of temporary best management practices (BMPs) during construction, the proposed action would not have an adverse impact on water quality.

The no action alternative would not result in any construction-related impacts to water quality.

Environmental Impacts During Operations

As indicated previously, stormwater and dry weather flows currently traverse the site as sheet flow or travel through the gutters into storm drains located within the abandoned roadways. As part of the project implementation, subsurface drainage facilities would be constructed to capture surface water flows from the project site.

The proposed project would involve construction of three golf course holes on an area currently occupied by open space and vacated residential roadways. As part of project construction, the vacated roadways would be removed and replaced with golf course greens and landscaping. This would result in a decrease in impervious surfaces on the project site, which would be beneficial in terms of drainage and water quality. Golf course greens would be maintained with common landscaping materials, which could include herbicides and fertilizers. There would be a potential for these compounds to be taken up by stormwater and discharged into Santa Monica Bay. As part of project design, LAWA will provide structural and treatment control BMPs, such as vegetated swales, that would result in infiltration or treatment of stormwater runoff and dry weather flows. As a result, no significant impacts to the water quality in Santa Monica Bay would result.

No waters of the United States, such as rivers, arroyos, or wetlands subject to regulation under the Clean Water Act, exist in the project area. Therefore, there would be no impoundment, diversion, drainage control, or modification of streams or water bodies. The proposed action would not have adverse impacts on a subsurface aquifer since the proposed construction would not involve deep foundations and no subsurface discharges would occur.

The no action alternative would not alter existing drainage patterns or water quality. However, under this alternative, existing abandoned roadways would remain on-site, resulting in a greater amount of impervious surfaces than under the proposed action.

3.11 Hazardous Materials

Section 10.1d of FAA Order 1050.1E states that "FAA actions to fund, approve, or conduct an activity may require consideration of hazardous material,[37] pollution prevention, and solid waste impacts in NEPA documentation." In addition, Executive Order 12088, as amended,[38] directs federal agencies to comply with applicable pollution control standards.

In accordance with FAA Order 1050.1E, a proposed action would have a significant impact if it were to involve a property on or eligible for the National Priorities List (NPL). There are no known contaminated sites, including NPL sites, on or adjacent to the project site.[39] In addition, the project site was previously a residential area. It is not expected that any undocumented hazardous materials/wastes would be encountered during excavation and grading work. In the unlikely event that hazardous materials/wastes

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37 Per Section 10.1d(1) of FAA Order 1050.1E, a hazardous material is “any substance or material that has been determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce.”

38 Executive Order 12088, Federal Compliance with Pollution Control Standards, 43 FR 17707, October 13, 1978, amended by Executive Order 12580, January 23, 1987.

39 U.S. Department of Transportation, Federal Aviation Administration, Final Environmental Impact Statement, Los Angeles International Airport Proposed Master Plan Improvements, Section 4.23, January 2005.

are encountered during construction activities, such materials/wastes would be properly identified, handled, and disposed of in accordance with all applicable federal, state, and local regulations.

Construction activities would include the use and transport of hazardous substances, including fuels for construction equipment. As such, there is the potential for an accidental discharge of hazardous substances during construction activities. Compliance with safety precautions and federal, state, and local hazardous materials regulatory requirements would be required and would reduce the risk of an accidental release of hazardous materials. Therefore, no significant impacts related to the accidental discharge of hazardous substances during construction activities would occur.

Golf course maintenance products may include chemicals that could be considered to be hazardous (such as solvents). All golf course maintenance products would be used in accordance with manufacturers' guidelines to ensure that golf course employees and golfers are not exposed to any harmful substances. All hazardous substances used for maintenance of the golf course would continue to be used, stored, and disposed of in accordance with all applicable federal, state, and local regulations. Therefore, no significant impacts related to the potential exposure of golf course employees and golfers to harmful substances would occur.

The no action alternative would not have any impacts related to hazardous materials.

3.12 Solid Waste

As indicated in Section 3.11, Hazardous Materials, Section 10.1d of FAA Order 1050.1E states that "FAA actions to fund, approve, or conduct an activity may require consideration of…solid waste impacts in NEPA documentation." However, the Order does not establish any significance thresholds for solid waste.

Construction and demolition waste comprises 28 percent of the solid waste stream statewide, with wood waste as the largest component. Other major components include concrete, asphalt, and ferrous materials.[40] Waste generated by construction and demolition activities is considered to be inert material and can be disposed of at unclassified landfills, which include a greater number of facilities than those that accept municipal solid waste. These facilities are often abandoned gravel pits. There is no shortfall in disposal capacity for inert waste within Los Angeles County.[41]

During construction, some inert waste would be generated. It is anticipated that, since the area has already been cleared of structures, most of the inert waste generated would be limited to concrete and asphalt. Suitable concrete and asphalt would be transported to an on-site rock crushing facility at LAX for reuse on other construction projects. It is anticipated that little fill would be generated that would need to be removed from the project site. Excess fill and construction waste would be minimized to the greatest extent feasible and would be disposed of in a manner consistent with local solid waste collection and disposal regulations. Therefore, no significant impacts related to construction solid waste generation and disposal would occur.

Operation of the expanded golf course would have a minimal impact on the amount of solid waste generated in the region. Additional solid waste would be limited to the landscaping waste that would be diverted from landfills to the greatest extent possible. Therefore, no significant impacts related to operations-related solid waste generation and disposal would occur.

The no action alternative would not have any impacts related to solid waste.

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40 U.S. Department of Transportation, Federal Aviation Administration, Final Environmental Impact Statement, Los Angeles International Airport Proposed Master Plan Improvements, Section 4.19, January 2005.

41 U.S. Department of Transportation, Federal Aviation Administration, Final Environmental Impact Statement, Los Angeles International Airport Proposed Master Plan Improvements, Section 4.19, January 2005.

3.13 Visual Resources/Light Emissions

The proposed project site is part of the LAX Northside project, which extends nearly 2.5 miles from the Westchester business district at Sepulveda Boulevard west to Pershing Drive. Formerly a residential area, the property was acquired by the airport as a buffer between the airport and residential neighborhoods. LAWA has determined that the property should be developed so it is aesthetically compatible with adjoining neighborhoods while the land returns to a productive use.

The northern boundary of the LAX Northside site, along West 88th Street between Sepulveda Westway and the Westchester Golf Course, and including the proposed project site, primarily borders residential uses. To screen the airport property from this residential area, LAWA has constructed 20-foot-high buffers, consisting of 12-foot-high architecturally treated masonry walls on the crest of 8-foot-high landscaped berms within a 50 foot setback from West 88th Street. (The landscaped berms are not present on the south side of the wall. Therefore, on airport property, the wall is higher.) The 50-foot setback was created from lots cleared for expansion of the airport. The landscaping associated with the completed wall project and associated buffering east of the Westchester Golf Course includes grass lawns with trees and sloping berms landscaped with ornamental vegetation.[42]

FAA Order 1050.1E does not establish any significant thresholds for lighting or visual resources. As noted above, the proposed project site is separated from nearby residences by a 12-foot-high masonry wall atop an 8-foot-high landscaped berm, effectively shielding any views of the site from nearby residences. The project site would be visible to motorists on Westchester Parkway. Views of the new golf holes would be consistent with views of the adjacent golf course.

Specific requirements for planting, walls, and fences within the LAX Northside development were established in the 1989 *Design Plan and Development Guidelines for LAX Northside*[43] and were updated in the *Los Angeles International Airport Street Frontage and Landscape Development Plan Update*.[44] In addition, as part of the LAX Master Plan Mitigation Monitoring and Reporting Program, LAWA is committed to compensate for the loss of mature trees resulting from development within LAX Northside. These provisions would ensure aesthetic values would be incorporated into the project design.

Consistent with the existing golf course, the new golf holes would be lighted until 10:00 p.m. Light standards associated with the new holes would be approximately 30 feet high. Although they would likely be visible from nearby residences, the light standards would be located over 100 feet from the nearest homes and, consistent with applicable LAX Specific Plan requirements for development within the LAX Northside Subarea, the lighting would be directed downward onto the project site and no flood-lighting would be located as to be seen directly by the adjacent residential areas. Therefore, no significant impacts associated with lighting would occur.

3.14 Energy Supply and Natural Resources

FAA Order 1050.1E does not establish any significance thresholds for energy supply or natural resources. The Order requires the proposed action to be examined to identify any proposed major changes that would have a measurable effect on local supplies of energy or natural resources. However, the Order states that "[t]he use of natural resources other than for fuel need be examined only if the action involves a need for unusual materials or those in short supply." The Order further states that "[f]or most actions, changes in energy demands or other natural resource consumption will not result in significant impacts."

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42 U.S. Department of Transportation, Federal Aviation Administration, Final Environmental Impact Statement, Los Angeles International Airport Proposed Master Plan Improvements, Section 4.21, January 2005.

43 City of Los Angeles, Department of Airports, Design Plan and Development Guidelines, LAX Northside, prepared by Albert C. Martin & Associates, April 20, 1989.

44 City of Los Angeles, Los Angeles World Airports, Los Angeles International Airport Street Frontage and Landscape Development Plan Update, March 2005.

The proposed action would involve the use of energy and other natural resources during both construction and operation. During construction, fuel would be used by construction workers and construction vehicles. In addition, electricity or diesel fuel would be required to provide power on-site during construction. Mitigation measures aimed at reducing air quality impacts (see Section 3.4), such as implementing idling limits for diesel-fueled construction vehicles, would also reduce energy consumption. Water would be used during construction to control fugitive dust. If available and feasible, LAWA would use non-potable water for dust control. Project construction would not require unusually large volumes of energy or natural resources. Moreover, active construction would occur over a relatively short time period (approximately three months) and would not have a significant impact on local supplies.

During construction, on-site roadways would be removed. If the material is found to be suitable, LAWA would transport the material to the on-airport rock crushing facility so that it can be reused in other airport construction projects.

During operations, electricity would be used in night lighting and reclaimed water would be used to irrigate the expanded area of the golf course. Amounts of electricity and water used would not be unusually large and impacts on local resources would not be significant.

The no action alternative would not have any impacts related to energy supply and natural resources.

3.15 Coastal Resources

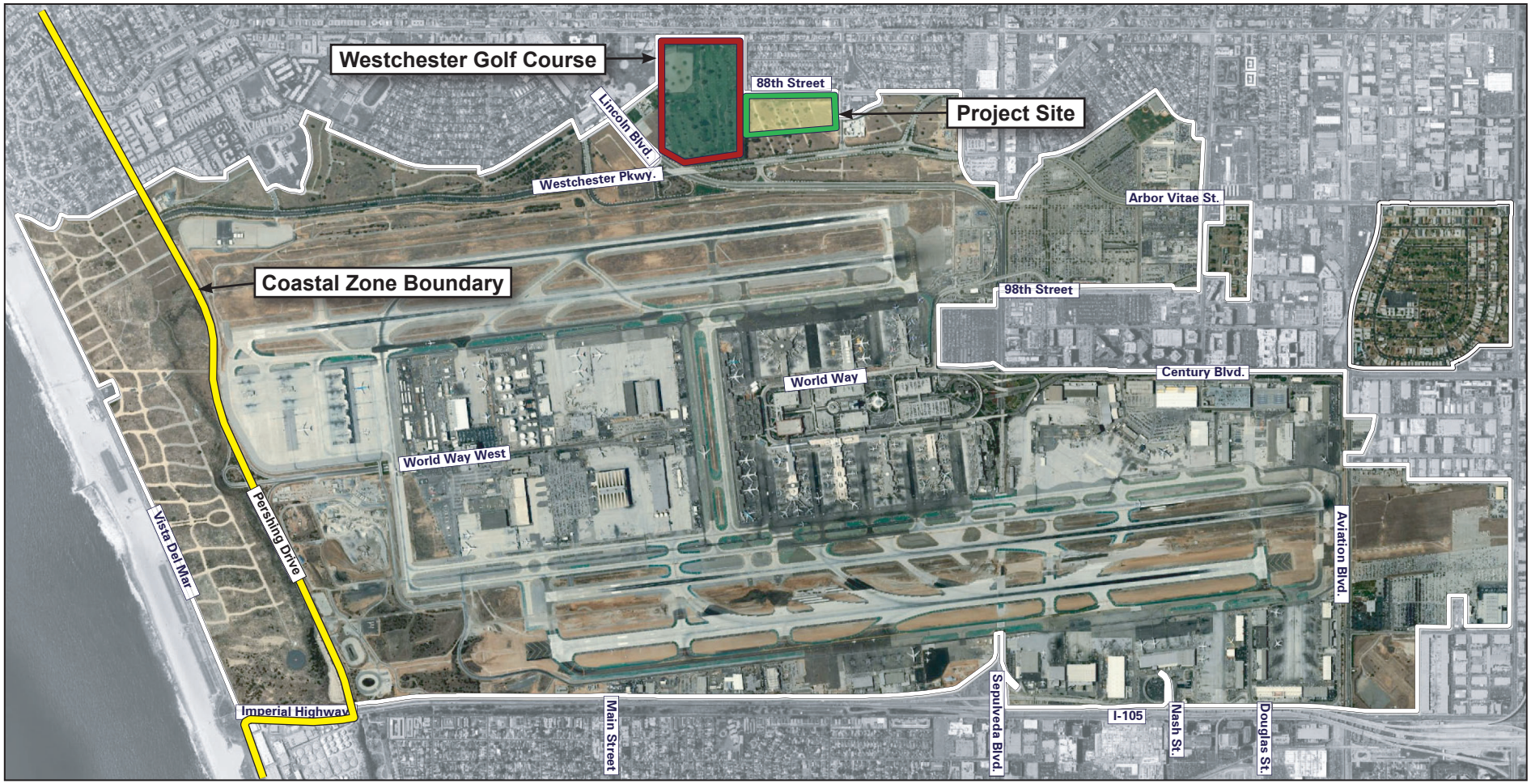
Federal activities involving or affecting coastal resources are governed by the Coastal Barriers Resources Act (CBRA) of 1982, the Coastal Zone Management Act (CZMA), as amended, and Executive Order 13089, Coral Reef Protection. As defined by the CBRA, there are no coastal barriers along the Pacific Coast. Therefore, the CBRA is not applicable to the proposed action.

FAA Order 1050.1E does not establish any significant thresholds for coastal resources.

The project site is located approximately 2 miles east of the coastal zone boundary, which extends along the east (inland) side of Pershing Drive (see **Figure 8**). Therefore, the proposed action would not result in development in the coastal zone and would not conflict with California's coastal zone management program. Further, given the distance of the coastal zone from the project site, no impacts to coastal resources would occur from implementation of the proposed action.

3.16 Farmlands

The Farmland Protection Policy Act regulates Federal actions with the potential to convert farmland to non-agricultural uses.



Prepared by: CDM, 2009.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Coastal Zone Boundary**	Figure **8**

In accordance with FAA Order 1050.1E, a proposed action would have a significant impact if the combined score on Form AD-1006, Farmland Conversion Impact Rating, ranges between 200 and 260 points. There are no farmlands in the vicinity of the project site, including prime or unique farmlands,[45] or farmland of statewide or local importance. Therefore, the proposed action would not remove any farmland from active production or otherwise adversely affect farmland.

3.17 Wild and Scenic Rivers

The U.S. Department of the Interior, National Park Service, maintains a national inventory of river segments that qualify for inclusion in the National Wild and Scenic Rivers System.

FAA Order 1050.1E does not establish any significant thresholds for wild and scenic rivers. According to the National Rivers Inventory, the two closest wild and scenic river segments to the project site, a 33-mile segment of the Sisquoc River and a 31.5-mile segment of the Sespe Creek, are located over 50 miles to the northwest in Santa Barbara County in the Los Padres National Forest.[46] In addition, no wild or scenic river segments listed pursuant to the California Wild and Scenic Rivers Act[47] are within the City of Los Angeles. Due to the substantial distance from the project site and the intervening mountains between the project site and these river segments, the proposed action would not adversely affect any wild and scenic rivers.

3.18 Secondary/Induced Impacts

Construction of the three new golf holes would be performed by LAWA's construction and maintenance personnel. As a result, the proposed action would not result in any new construction jobs. In addition, the new holes would not result in any new long-term employment opportunities and, therefore, no secondary/induced impacts are anticipated.

3.19 Cumulative Effects

Per Section 405f(c) of FAA Order 1050.1E, an EA must discuss the reasonably foreseeable environmental consequences of the proposed action, including cumulative effects and their significance. Cumulative effects may result from individually minor but collectively significant actions taking place over a period of time.

As described in this EA, no significant adverse effects would occur during operation of the proposed project. The operational emissions of air pollutants associated with the proposed action would be very minimal. These emissions would not result in a notable contribution to cumulative air quality impacts in the region.

No ongoing, proposed, or reasonably foreseeable private projects are expected to be under construction near the project site during the six month construction period, starting in early 2009, for the proposed project. However, LAWA has several projects in the planning or implementation stages that are anticipated to be under construction during the same timeframe as the proposed project. These projects include the following:

- **Tom Bradley International Terminal (TBIT) Interior Improvements Program:** This project provides for the renovation of interior public spaces within TBIT. Construction activities for this project began in February 2007 and are anticipated to be complete by February 2010.

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45 Farmland can be designated as prime, unique, or of statewide or local importance. Prime Farmland is land that "has the best combination of physical and chemical characteristics for producing food, feed, and fiber . . . without intolerable soil erosion" as determined by the California Secretary of Agriculture. Unique farmland is land other than prime farmland that is used for production of specific high value food and fiber crops, as determined by the California Secretary of Agriculture.

46 U.S. Department of the Interior, National Wild and Scenic Rivers System, Wild & Scenic Rivers State-By-State List, Available: http://www.rivers.gov/wildriverslist.html.

47 Public Resources Code §5093.50 et seq.

- **In-Line Baggage Screening Systems:** This project calls for the construction of in-line baggage screening systems in the CTA terminals pursuant to the requirements of the federal Transportation Security Administration. Construction activities for the installation of in-line baggage screening systems within Terminal 3 began in August 2007 and are anticipated to be complete by January 2010. It is anticipated that improvements within Terminal 4 could be underway in early 2009.
- **Airfield Intersection Improvements -- Phase 2:** This project provides for improvements at various airfield intersections and associated modifications to certain service road locations in order to provide safe taxiing routes for current large aircraft and future new large aircraft. Construction activities for this project began in July 2008 and are anticipated to be complete by August 2009. The subject improvements will be conducted on an intersection-by-intersection basis within limited working hours in order to minimize the number and dispersion of construction equipment on the airfield at any given time. As such, the intensity and physical extent of construction activity associated with this project would typically be very limited on any given day during its overall construction duration.
- **Airfield Operating Area (AOA) Perimeter Fence Enhancements -- Phase III (World Way West):** This project is a continuation of the LAX Perimeter Security Enhancement Program and includes enhancing approximately 6 miles of AOA perimeter fence along World Way West. Construction activities for this project are anticipated to occur between October 2008 and October 2009. The nature of this project substantially limits the intensity and location of construction activity typical for any given day during the 1-year construction duration.
- **Terminal 1 Finish Upgrades Project:** This project provides for interior design concepts and theme design at individual passenger terminals within Terminal 1.
- **North Airfield Waterline Repair:** This project involves the replacement of a 12-inch diameter water line beneath the north airfield runways (Runways 24R-6L and 24L-6R) just west of Taxiway AA. Installation of the line would occur by "jacking" (i.e., pushing) segments of pipe through the ground beneath the paved surfaces. The construction activities would be generally limited to the jacking/receiving pit at each end of the pipeline route and the need for, and use of, construction equipment would be very limited. The work on this project is anticipated to begin in early 2009 and take approximately 8-10 weeks to complete.
- **Crossfield Taxiway Project:** The proposed Crossfield Taxiway Project consists of construction of a crossfield taxiway between the north and south runway complexes and an associated extension of existing Taxiway D. The project also includes construction of a new vehicle service road; realignment and suppression of a portion of World Way West; a utility corridor; five "remain overnight" (RON) aircraft parking locations; a vehicle parking lot; and a new fire station/aircraft rescue and fire fighting (ARFF) facility. To facilitate these improvements, certain ancillary and support facilities would be removed and, if necessary, relocated to other areas within the airport. Construction is proposed to begin in the second quarter of 2009 and extend for approximately 16 months.
- **Korean Air Cargo Terminal Improvement Project:** This project would include additional warehouse and office space, as well as a more efficient truck loading and docking area at the existing Korean Air facility at LAX, which is located on West Imperial Highway within the South Cargo Complex East. Upon completion, the facility would have a square footage of 183,506, a net increase of 25,150 square feet. At this time, it is estimated that construction would begin in early to mid-2009 and extend for approximately one year.
- **Miscellaneous Construction and Maintenance Activities:** As part of ongoing construction and maintenance at LAX, and in accordance with its Capital Improvement Program, LAWA expects to undertake a number of projects within the CTA, the airfield, and other portions of the airport. These projects consist of routine upgrades and enhancements to existing facilities, and are generally smaller in scale than the other projects identified in this section.

Several of the projects identified above consist entirely of interior improvements and, as such, would not contribute to cumulative air quality or construction traffic impacts. Other projects, such as the Airfield Intersection Improvement project, the AOA Perimeter Fence Enhancement project, and the North Airfield Waterline Repair, will involve minimal construction activity on any given day. The Korean Air Cargo Terminal Improvement Project is located on the south side of LAX, on the other side of the airport as compared to the Westchester Golf Course expansion project. Due to uncertainty regarding the timing of the Korean Air Cargo project, construction activities may or may not overlap with the golf course construction period. The Crossfield Taxiway Project is located in the central portion of the airport, west of the Tom Bradley International Terminal. Construction of this project may overlap with golf course construction, although it is possible that the majority of the earthwork activities associated with the golf course would be complete prior to initiation of the Crossfield Taxiway Project construction. Due to the distance from the Korean Air Cargo and Crossfield Taxiway project sites to the proposed project site, no cumulative construction impacts related to issues such as noise or traffic would occur. However, as noted above, construction of the proposed golf course improvements would result in criteria pollutant emissions. These emissions would contribute to cumulative concentrations of criteria pollutants in the South Coast Air Basin, including concentrations from the Crossfield Taxiway Project and the Korean Air Cargo Terminal Improvement Project. As noted previously, the South Coast Air Basin is currently designated as a "severe" nonattainment area for O_3, a "serious" nonattainment area for PM10, and a nonattainment area for PM2.5 relative to the NAAQS. The incremental emissions from project construction would be very small, and would occur over a very short duration (approximately 3 months). Construction-related pollutant emissions would not result in a notable contribution to cumulative air quality impacts in the region.

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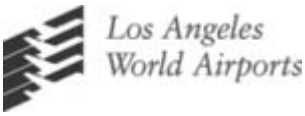
Appendix A

Westchester Golf Course 3 Hole Expansion Project
Los Angeles International Airport
Final Conceptual Planning Study

Westchester Golf Course 3 Hole Expansion Project

Los Angeles International Airport
Final Conceptual Planning Study

June 2008



Prepared for:

Los Angeles World Airports
Airports and Facilities Planning Division

Prepared by:

CDM

Contents

Executive Summary

The Westchester Golf Course is an executive, public golf course located within the northern portion of the property boundary of Los Angeles International Airport (LAX). Originally constructed in the mid 1960s with 18 holes, three holes were subsequently eliminated with the construction of Westchester Parkway. Los Angeles World Airports (LAWA) currently proposes to replace the three holes using vacant land owned by LAWA located immediately east of the southern half of the golf course, with the intent of restoring the golf course to its original par (63) with an efficient use of land. Howard Maurer Design Group (HMDG), in a collaborative effort with LAWA staff and the existing golf course operator, American Golf Corporation, prepared a number of conceptual layout plans for the three additional holes. Concept development proceeded in three phases: first iteration concept development, second iteration concept development, and final concept development.

For the first iteration of the concept development phase, HMDG initially prepared four layouts, Concept Plans A through D. Three of the four concepts would fit into the 7-acre parcel originally designated by LAWA for the project. However, only one of the concepts (Concept D) would fully restore the golf course to its original par.

LAWA subsequently decided to increase the available acreage in order to meet the objective of restoring the golf course to its original status while providing adequate setbacks from surrounding land uses and adequate safety standards for the users. In the second iteration, five new concepts were developed. These concepts required substantially more acreage than the first iteration concepts, ranging from approximately 18 acres to 21 acres. All of the second iteration concepts would fully restore the par of the golf course; two of the concepts (Concept G and Concept H) would increase the par of the course by one stroke.

Based on its unique combination of features, including excellent circulation, designing to current setbacks and safety standards, more than full restoration of the par of the original golf course, inclusion of a challenging par 5 hole, and the return of Hole 18 to 4 par, Concept H was selected as the preferred alternative.

The estimated construction cost is $942,500.

Section 1
Project Background

The Westchester Golf Course, located within the northern portion of the property boundary of Los Angeles International Airport (LAX), is an executive golf course open to the public. It was constructed in the mid 1960s with 18 holes; however, the three southernmost holes were eliminated with the subsequent construction of Westchester Parkway. LAWA currently proposes to replace the three holes using vacant land owned by LAWA located immediately east of the southern half of the golf course.

Camp Dresser & McKee Inc. (CDM), with Howard Maurer Design Group (HMDG), was directed by LAWA to provide professional consulting services pertaining to preliminary design and environmental approval of the golf course, including preparation of a conceptual layout plan for the additional holes and an analysis of how they will fit in to the play of the existing 15 holes.

This report summarizes the findings of Task 1-1, Preliminary Planning (Phase I). This task included preparation of alternative conceptual layout plans for the golf course expansion; development of a route plan depicting all required features, including tees, fairways, bunkers and greens, for the selected layout; and a preliminary opinion of probable construction costs for the selected layout. The conceptual design process proceeded in three phases: first iteration concept development, second iteration concept development, and final concept development.

Section 2
Planning Considerations

2.1 Project Objectives

The purpose of the proposed golf course expansion is to replace the three holes that were lost with the development of Westchester Parkway. Objectives for this project include the following:

- To provide three new holes that fit into the layout and functionality of the existing golf course, and provide an equivalent golf experience.

- To return the golf course to an 18-hole golf course, preferably at its original par of 63 (the current par is 52.)

2.2 Planning Issues

The area currently being considered for the location of the three new holes is located to the east of the existing Westchester Golf Course, within a much larger vacant parcel. The entire parcel is bound by the existing golf course to the west, West 88th Street to the north, Emerson Avenue to the east, and Westchester Parkway to the south. LAWA originally identified a 7-acre area within the northwest portion of the parcel for the golf course expansion. The first iteration concepts were developed with this constraint in mind. Subsequently, LAWA increased the area available for the new holes. However, LAWA would like to retain the southwestern portion of the parcel for future uses, which could include relocation of the Federal Aviation Administration's airport surveillance radar (ASR) facility, now located on the south side of Westchester Parkway.

As noted above, one of the project objectives is to restore the golf to its original par, which would require the addition of 11 strokes. (When Westchester Parkway was constructed, two par 3 holes and one par 4 hole were removed. In addition, one hole was reduced from a par 4 to a par 3). This could include (1) restoring Hole 15 (previously Hole 18) to its original par of 4 and providing two new par 3s and one new par 4, or (2) providing two new par 4s and one new par 3.

Onsite and offsite safety is another planning issue that was considered in the development of conceptual layout plans. Onsite safety refers to the safety of other golfers. Proper layout and separation of holes play a key role in determining onsite safety. Adjacent land uses present an additional safety consideration. Residential uses are located to the north of the project site, north of West 88th Street. A 15+-foot sound wall separates these residences from the project site. Adequate setbacks would need to be included in the project design to provide adequate safety for these residences.

Section 3
Development of Conceptual Layouts

The conceptual design process proceeded in three phases: first iteration concept development, second iteration concept development, and final concept development. This section discusses the results of each phase.

3.1 First Iteration Concept Development

For the first iteration of the concept development phase, HMDG initially prepared four layouts, Concept Plans A through D. Exhibits depicting each of these layouts are provided in Attachment A, and details of each are summarized below.

- **Concept Plan A** would provide three par 3 holes on 7 acres. This concept would involve relatively lengthy walk backs (the distance between the end of one hole and the beginning of the next hole) from Hole 16 to Hole 17 and from Hole 17 to Hole 18. At a total of 61 par, this concept would be two strokes short of the original par of the course.

- **Concept Plan B** would also provide three par 3 holes on 7 acres. As with Concept Plan A, this concept would involve relatively lengthy walk backs, in this case from Hole 15 to Hole 16 and from Hole 17 to Hole 18. At a total of 61 par, this concept would not restore the golf course to its original par.

- **Concept Plan C** would include one par 4 and two par 3 holes, for a total of 62 par, one par short of the original golf course. This concept would involve relatively lengthy walk backs from Hole 16 to Hole 17 and from Hole 17 to Hole 18. Although the layout would fit into 7 acres, this concept would be more viable if additional land to the south could be used.

- **Concept Plan D** has a similar layout as Concept Plan C, but would use additional acreage to the south and east, for a total of approximately 18.5 acres. It includes two par 4s and one par 3, and is the only concept in the first iteration that would fully restore the par of the golf course.

At a meeting held on April 15, 2008 to discuss the first iteration concepts, LAWA determined that, in order to meet the objective of restoring the golf course to its original status, additional golf course designs should be developed that would fully restore the par and provide adequate setbacks, even if this would require greater than 7 acres.

3.2 Second Iteration Concept Development

To respond to LAWA's direction, for the second iteration of the concept development phase, HMDG prepared four new conceptual layouts, Concept Plans D1, E, F and G.

Exhibits depicting each of these layouts are provided in Attachment A, and details of each are summarized below.

- **Concept D1** follows the basic layout of Concept D, but includes more appropriate setbacks, utilizing additional acreage to the south, for a total of 18.75 acres. This concept would include one new par 3 and two new par 4 holes, fully restoring the par of the golf course. This concept would require a bit of a walk back from Hole 17.

- **Concept E** also includes one par 3 and two par 4 holes, fully restoring the par of the golf course. At 20.5 acres, the concept includes good setbacks from property lines and would provide an easier walk back to Hole 18. This concept may present a concern that errant balls off of Hole 14 could interfere with golfers on Hole 17 and possibly Hole 16.

- As with Concepts D1 and E, **Concept F** would include one par 3 and two par 4 holes, fully restoring the par of the golf course. This concept would require approximately 19 acres, and includes the greatest setback from the residences to the north. Concept F may also present an errant ball concern.

- Unique among the original second iteration concepts, **Concept G** includes one par 5 hole, as well as a par 4 hole and a par 3 hole, for a net gain of one stroke over the original golf course. This concept would require the greatest acreage at 21 acres.

At a meeting held on May 14, 2008, where the second iteration concepts were discussed, a fifth concept was developed:

- **Concept H** would reverse the circulation compared to Concept G, with Hole 17 on the north and Hole 15 on the south. It would include one par 3 hole, one par 4 hole, and one par 5 hole. This concept would convert Hole 18 to a 4 par hole and decrease the par of Hole 14 from 4 to 3, resulting in a par of 64 for the course, a gain of one stroke over the original golf course. The concept would require approximately 22.5 acres.

3.3 Final Concept Development

At the May 14 meeting, it was decided that Concept H would be the preferred alternative. The benefits of Concept H include:

- Good circulation on the golf course, with the least amount of walk back of the alternative concepts

- Adequate setbacks for safety purposes

- Provides a challenging par 5 hole and returns Hole 18 to a par 4

- Adds one stroke to the par of the original golf course

This concept would have slightly higher costs than the other second iteration concepts, as it would require reconstruction of one of the greens at Hole 14.

A Route Plan for this concept is provided in Attachment B.

Section 4
Statement of Probable Cost

In conjunction with the preparation of the Route Plan for Concept H, HMDG developed an estimate of probable costs for construction. The estimate is based on the following assumptions:

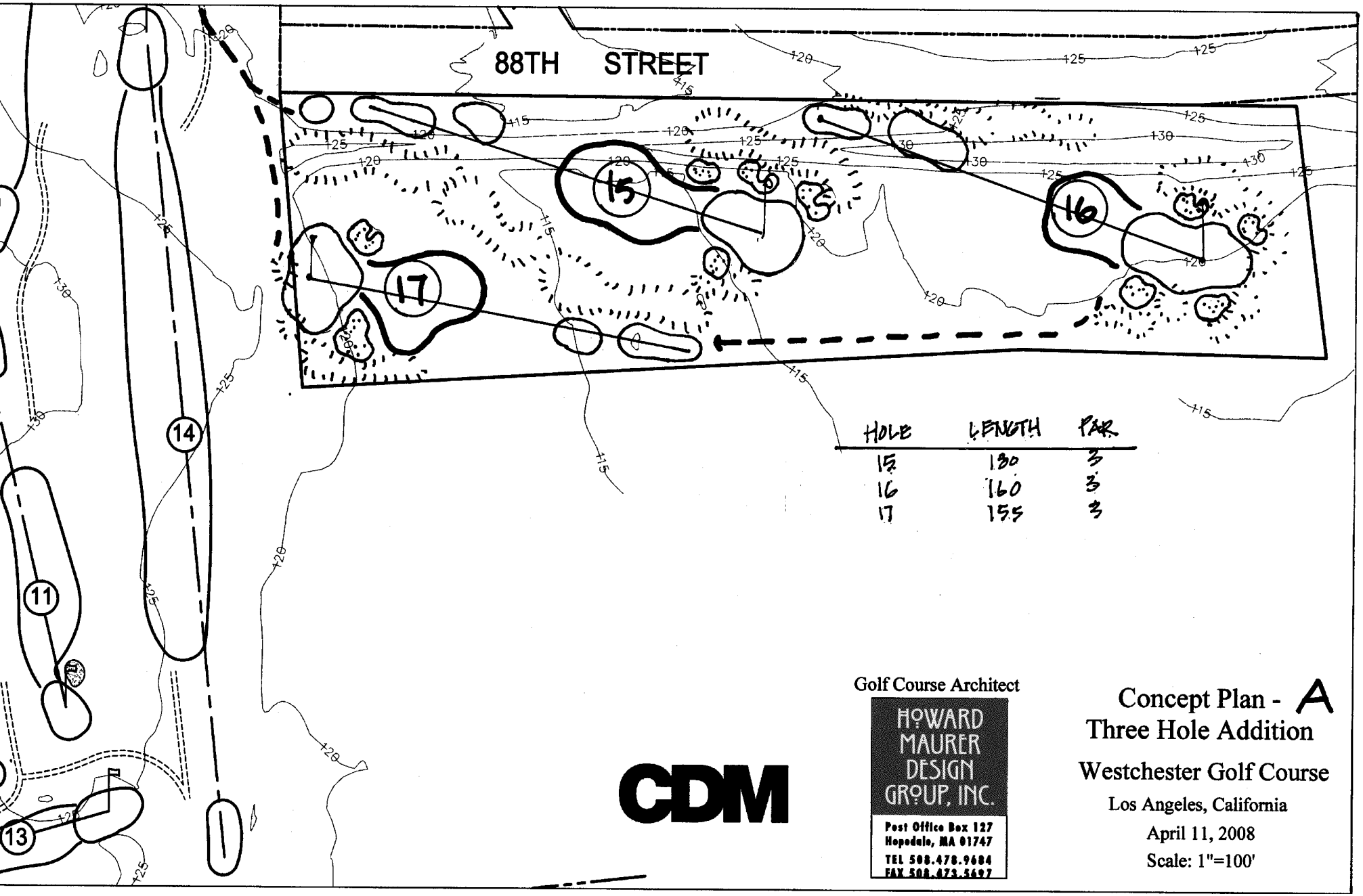
- Pricing is for contractor-built holes; in-house construction may result in savings.
- Pricing does not include demolition of existing roads and utilities, landscaping or lighting, stormwater management, or pumping system upgrades.

Based on these assumptions, the estimate of probable construction cost is $942,500.00. A detailed breakdown of these costs is provided in Attachment C.

Attachment A
Preliminary Concepts

CDM

Westchester Golf Course 3 Hole Expansion Project
June 2008



HOLE	LENGTH	PAR
15	130	3
16	160	3
17	155	3

Golf Course Architect

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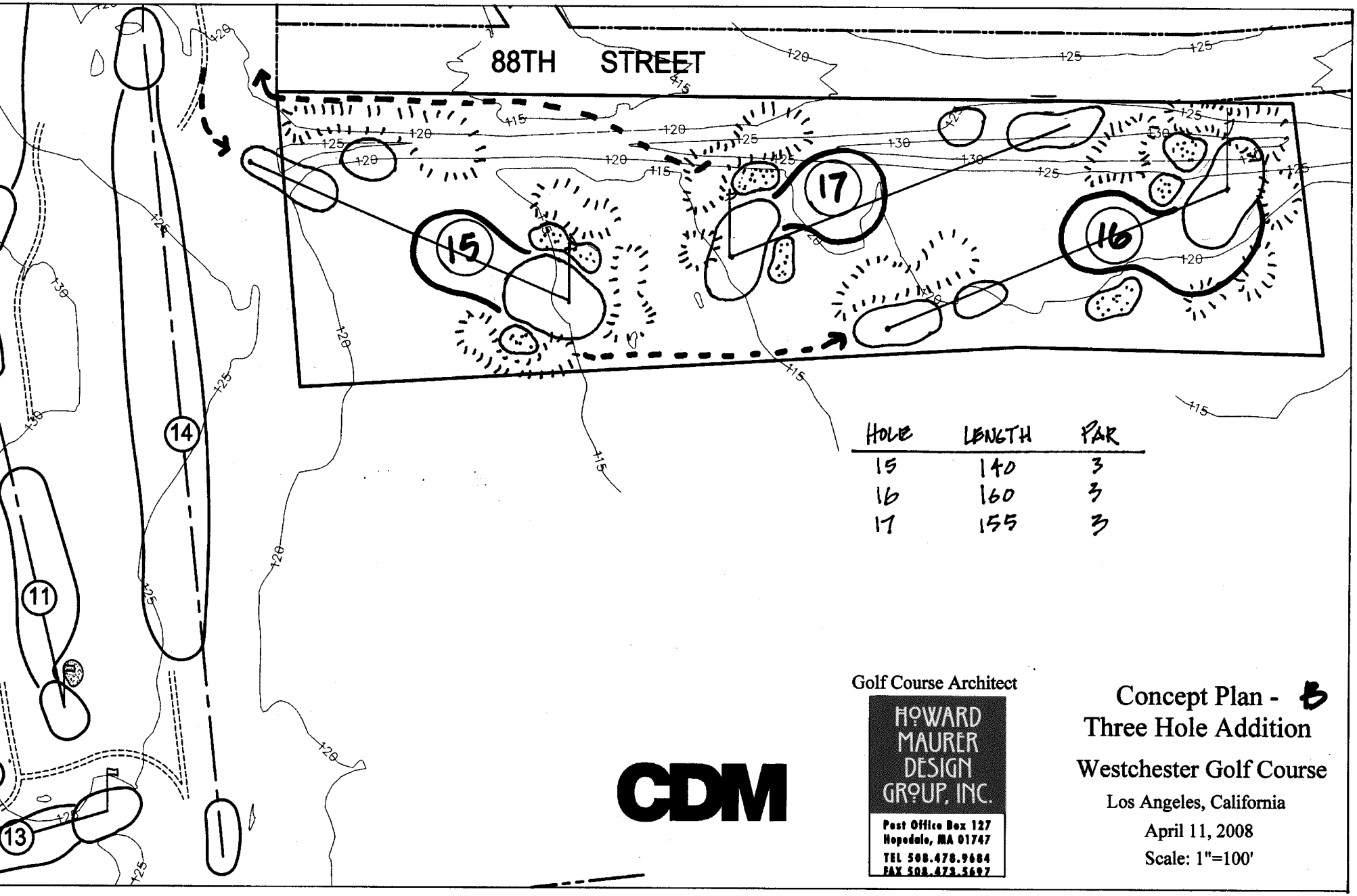
CDM

Concept Plan - A
Three Hole Addition
Westchester Golf Course

Los Angeles, California

April 11, 2008

Scale: 1"=100'



HOLE	LENGTH	PAR
15	140	3
16	160	3
17	155	3

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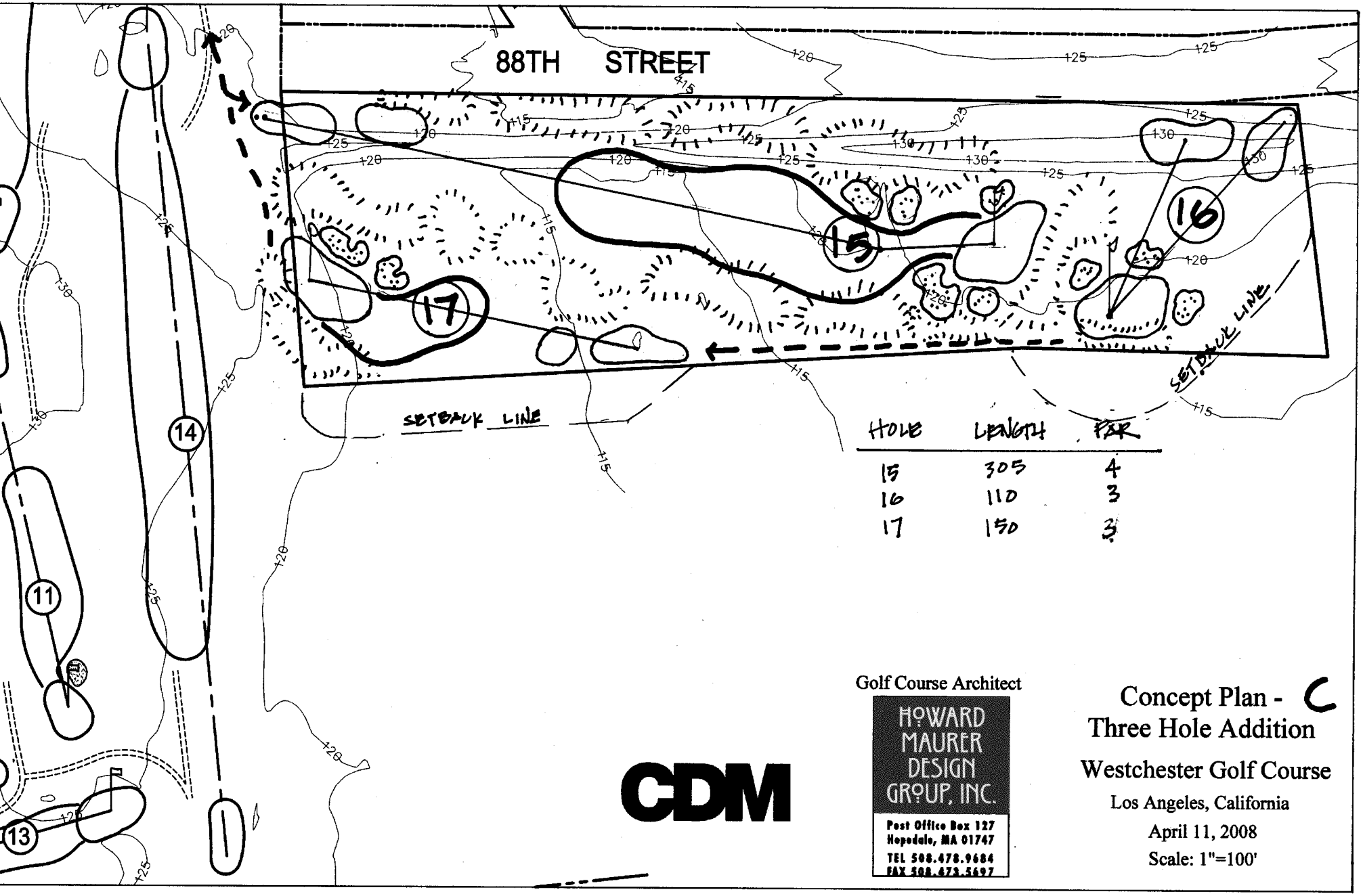
Concept Plan - B
Three Hole Addition

Westchester Golf Course

Los Angeles, California

April 11, 2008

Scale: 1"=100'



HOLE	LENGTH	PAR
15	305	4
16	110	3
17	150	3

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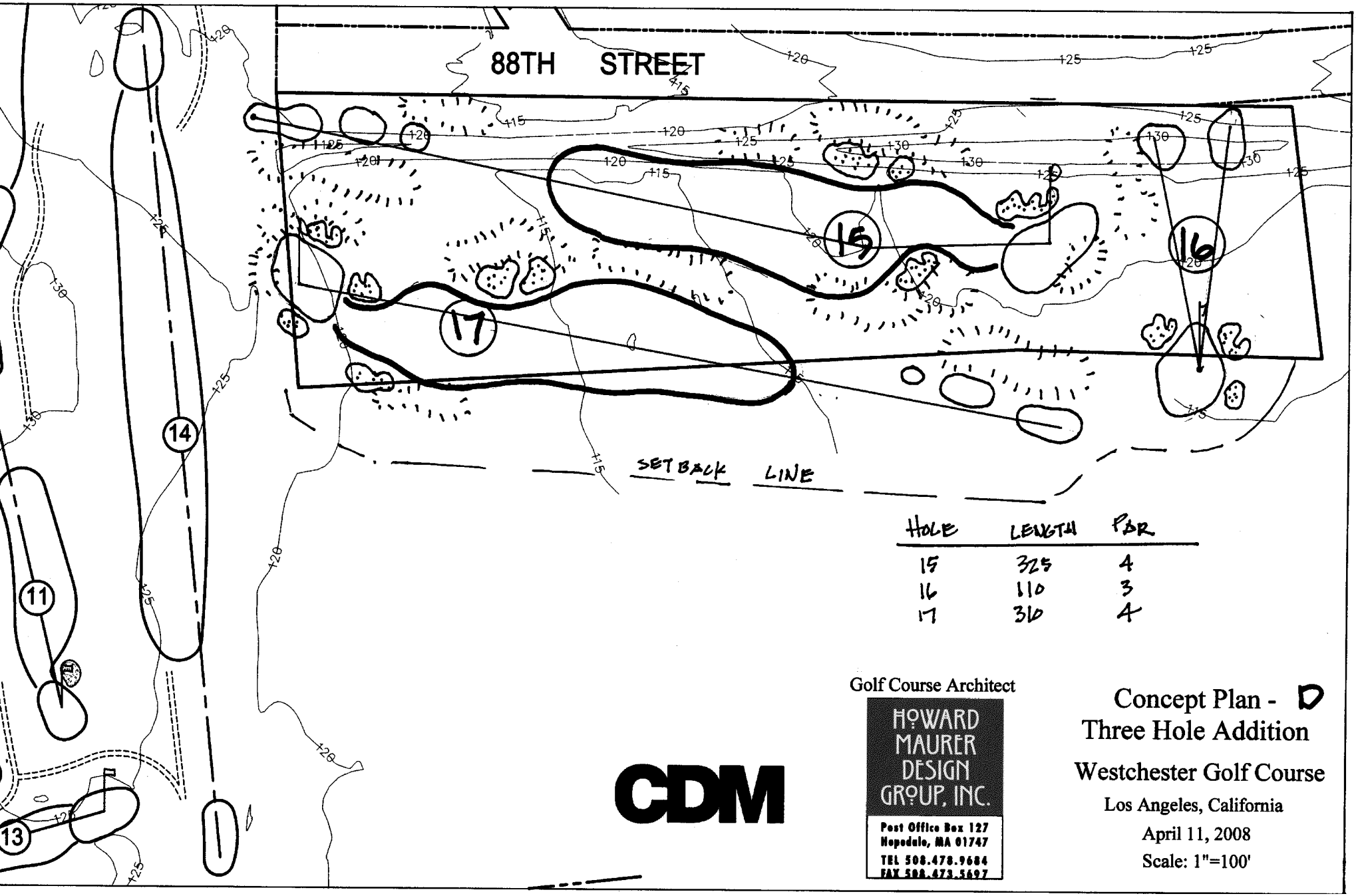
Concept Plan - C
Three Hole Addition
Westchester Golf Course

Los Angeles, California

April 11, 2008

Scale: 1"=100'



HOLE	LENGTH	PAR
15	325	4
16	110	3
17	360	4

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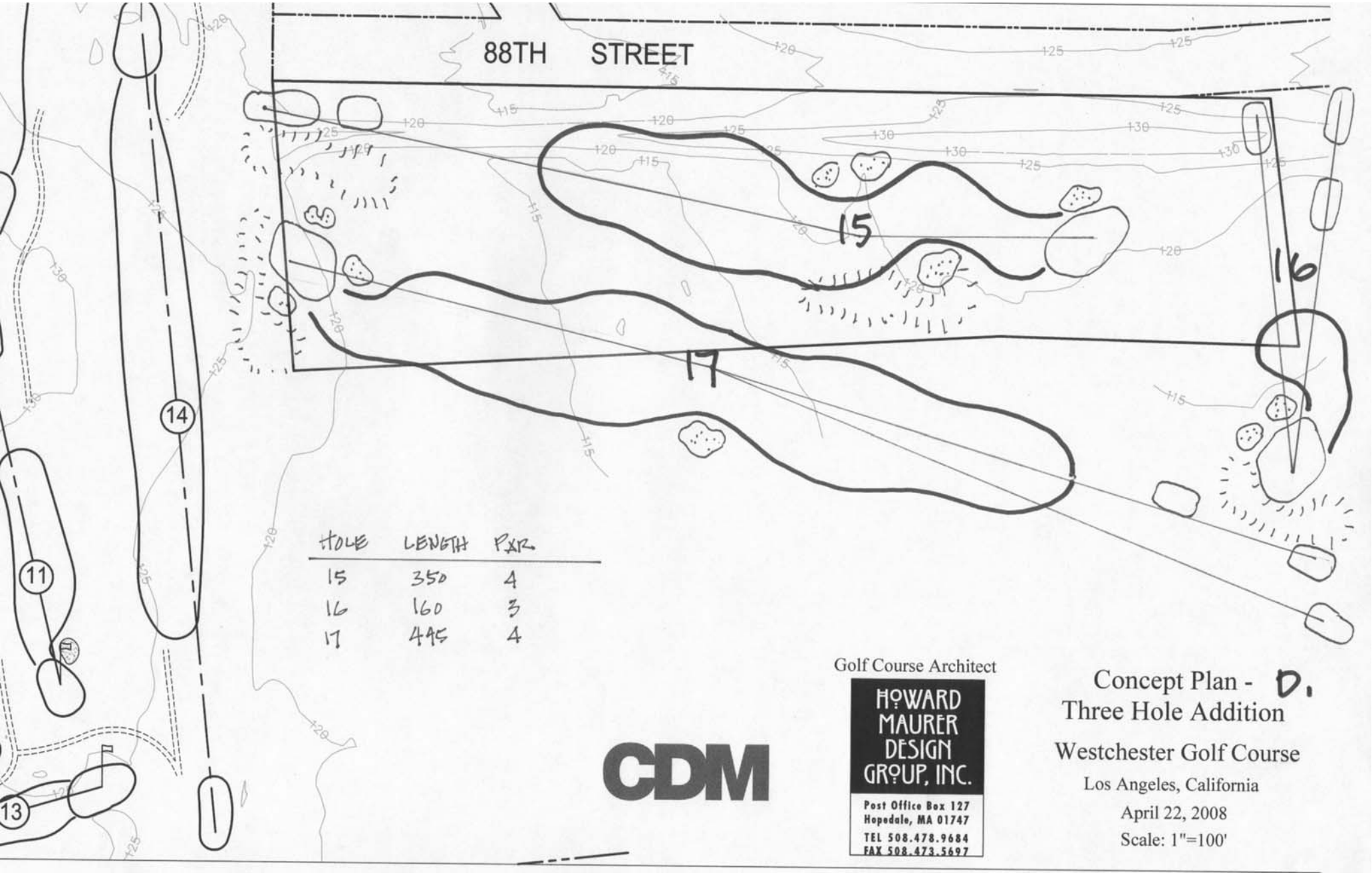
Concept Plan - D
Three Hole Addition
Westchester Golf Course

Los Angeles, California

April 11, 2008

Scale: 1"=100'



HOLE	LENGTH	PAR
15	350	4
16	160	3
17	445	4

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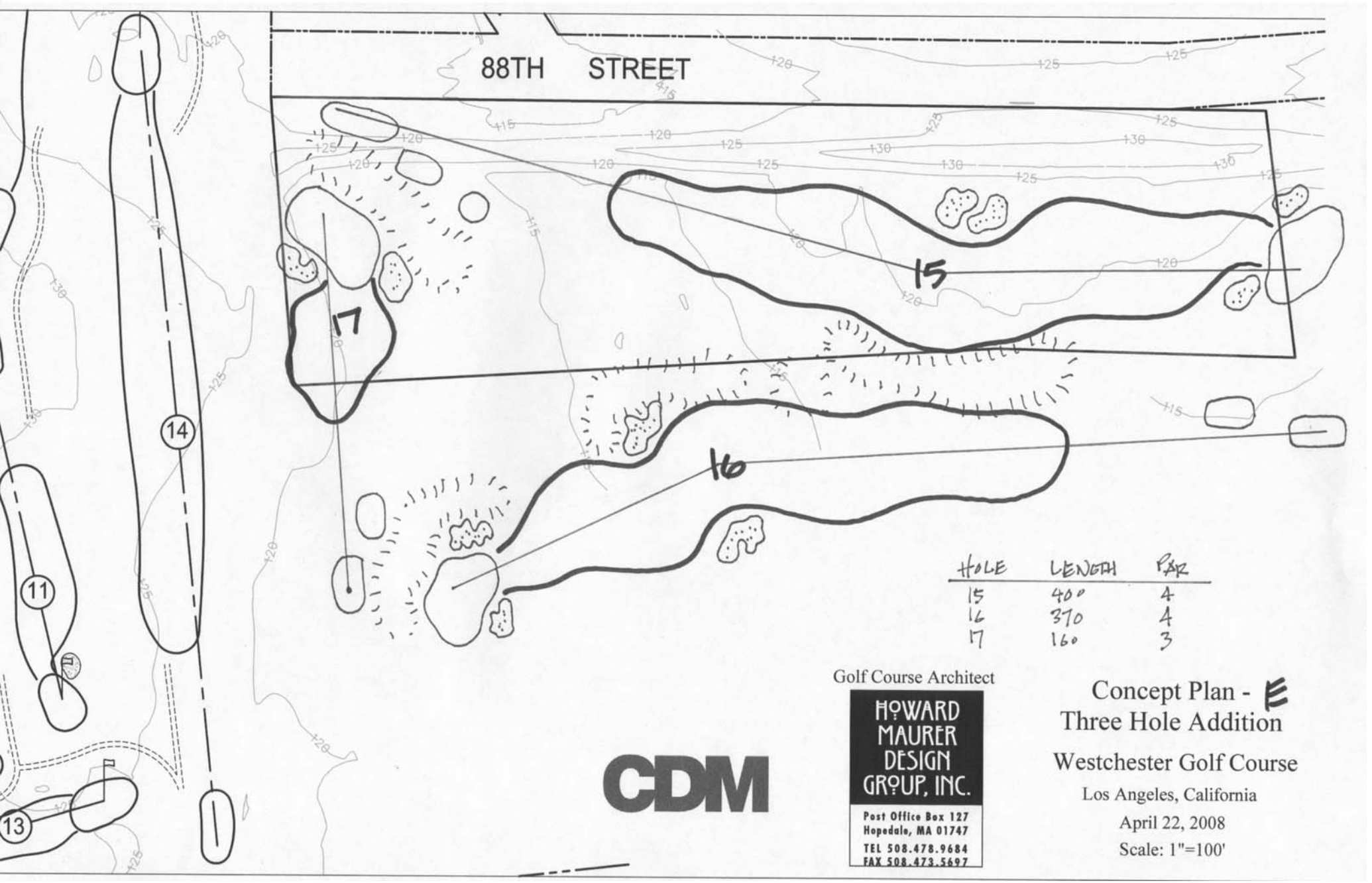
Concept Plan - D.
Three Hole Addition

Westchester Golf Course

Los Angeles, California

April 22, 2008

Scale: 1"=100'



HOLE	LENGTH	PAR
15	400	4
16	370	4
17	160	3

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CDM

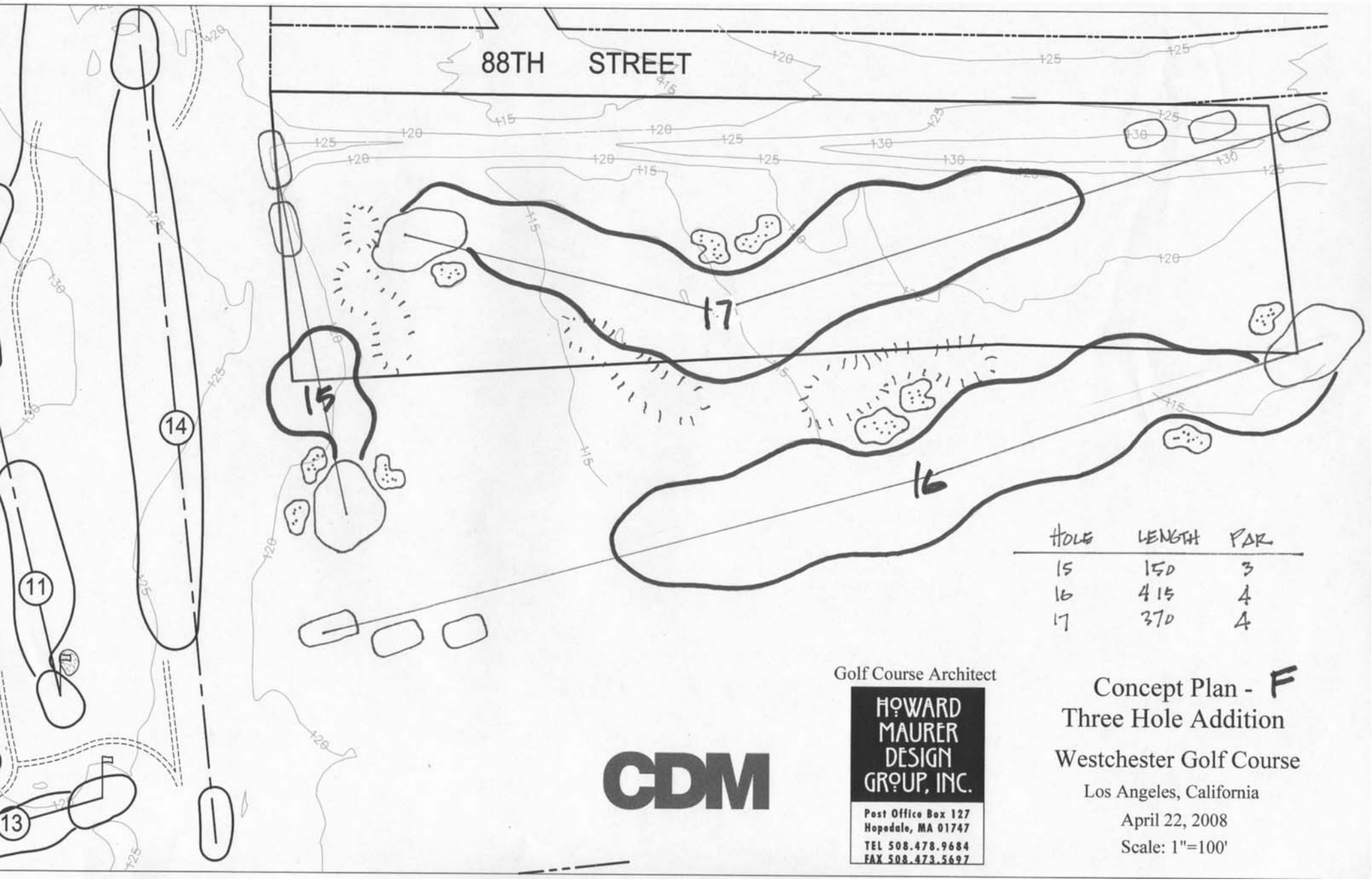
Concept Plan - E
Three Hole Addition

Westchester Golf Course

Los Angeles, California

April 22, 2008

Scale: 1"=100'



HOLE	LENGTH	PAR
15	150	3
16	415	4
17	370	4

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CDM

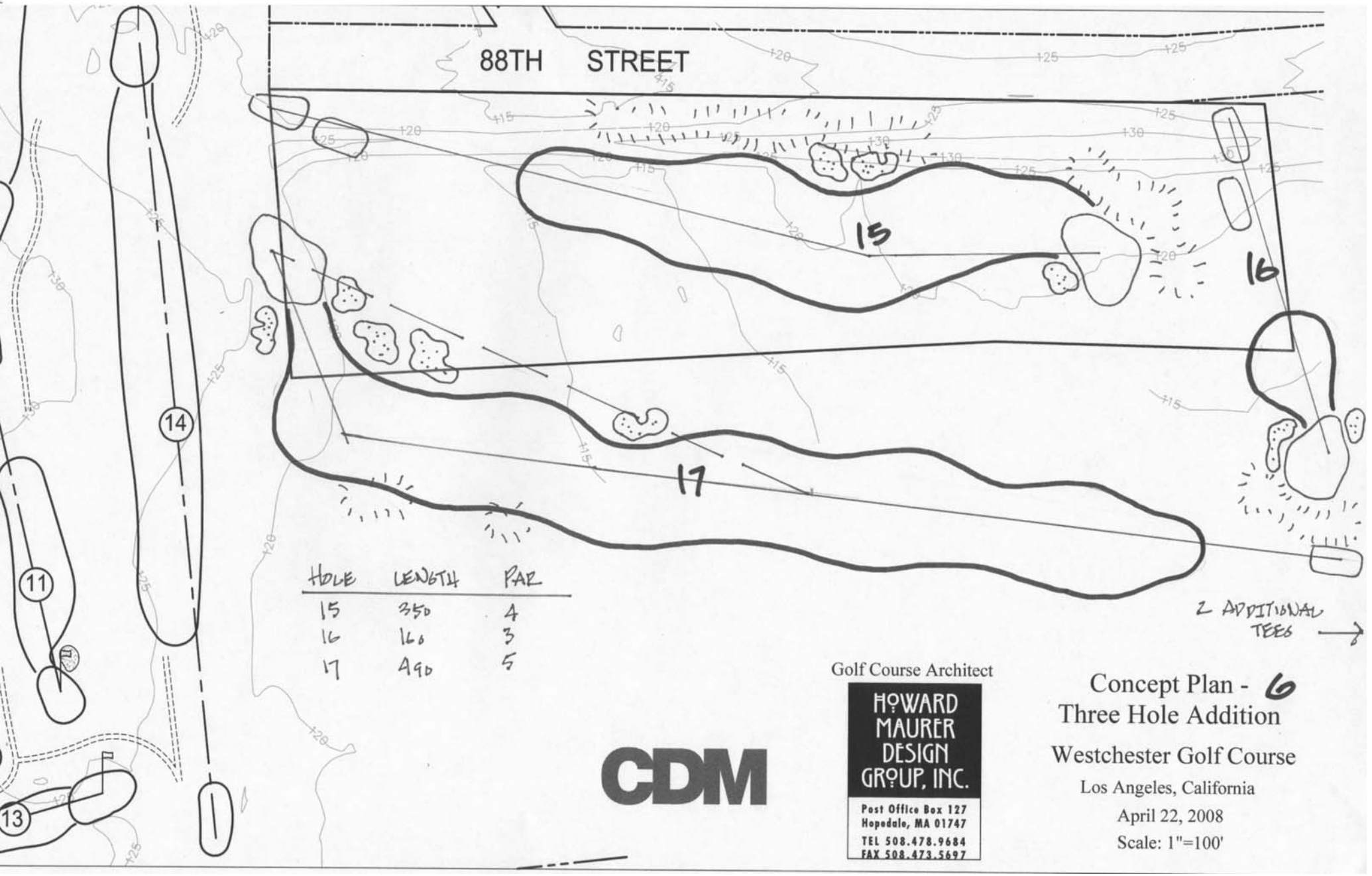
Concept Plan - F
Three Hole Addition

Westchester Golf Course

Los Angeles, California

April 22, 2008

Scale: 1"=100'



HOLE	LENGTH	PAR
15	350	4
16	160	3
17	490	5

CDM

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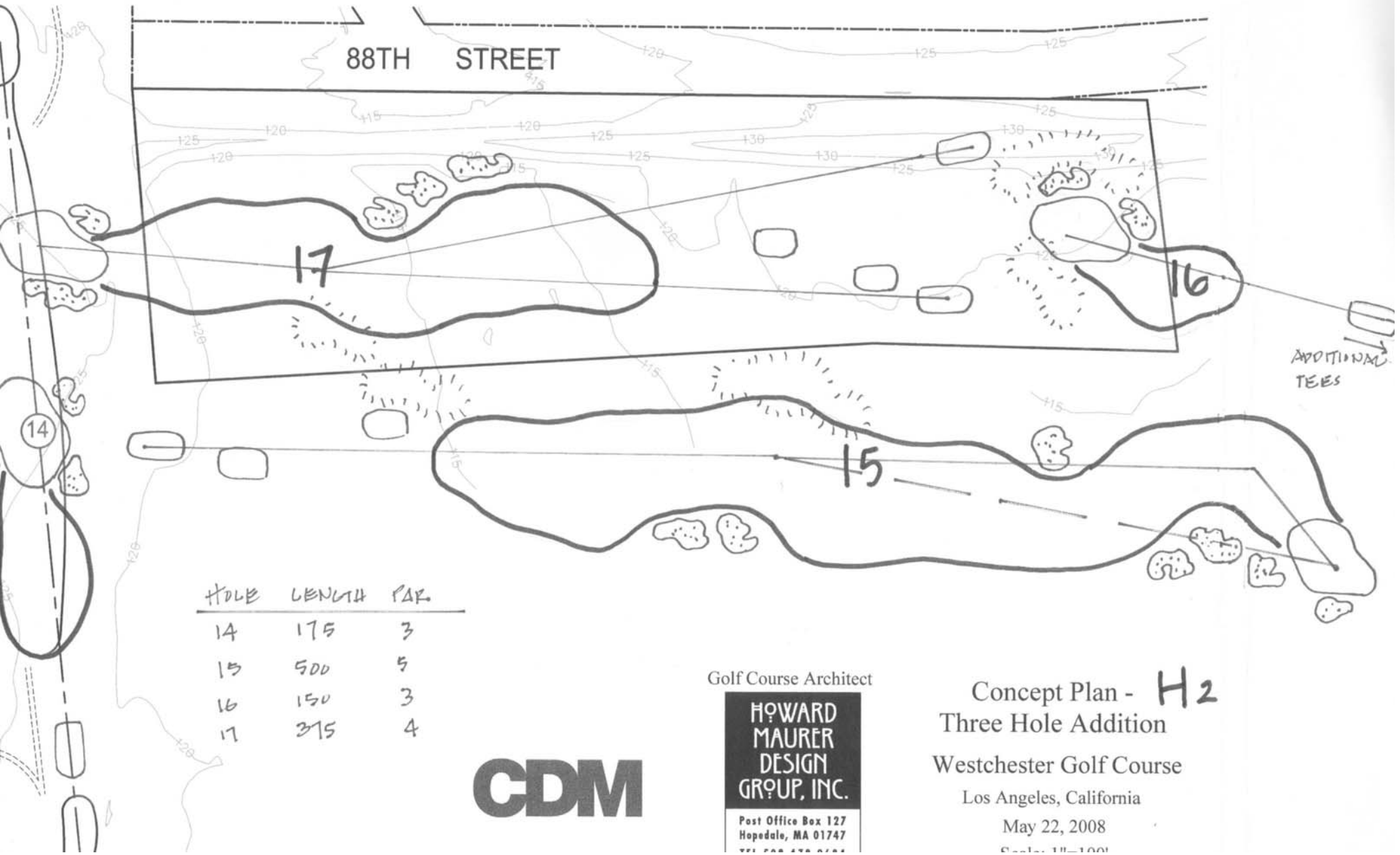
Concept Plan - 6
Three Hole Addition

Westchester Golf Course

Los Angeles, California

April 22, 2008

Scale: 1"=100'



HOLE	LENGTH	PAR
14	175	3
15	500	5
16	150	3
17	375	4

CDM

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Concept Plan - H2
Three Hole Addition
Westchester Golf Course

Los Angeles, California

May 22, 2008

Scale: 1"=100'

Attachment B
Route Plan for Preferred Concept

CDM

Westchester Golf Course 3 Hole Expansion Project
June 2008

ROUTE 42

Paved Parking

Bldg.

Bldg.

Potential Net

86TH PLACE

87TH STREET

87TH PLACE

MCCONNELL AVENUE

88TH STREET

CITY PARK

Driving Range

Lot 13-A
80± acres

Pond

Pond

EASEMENT

FAA ASDE–3

LINCOLN BOULEVARD

WESTCHESTER PARKWAY

EMERSON AVE.

Card of the Course

HOLE	PAR	BACK	FORWARD
1	3	108	108
2	4	317	317
3	3	176	166
4	3	145	145
5	4	267	255
6	4	287	287
7	4	286	286
8	3	141	133
9	4	336	314
OUT	32	2063	2011
10	4	340	340
11	3	160	149
12	3	148	138
13	3	148	135
14	3	150	120
15	5	530	450
16	3	165	135
17	4	310	285
18	4	320	295
IN	32	2271	2047
TOTAL	64	4334	4058

Route Plan - Three Hole Addition

Westchester Golf Course

Los Angeles, California

May 28, 2008

Scale: 1"=100'

CDM

100 0 50 100 200

SCALE: 1 INCH = 100 FEET

Golf Course Architect

HOWARD MAURER DESIGN GROUP, INC.
Post Office Box 127
Hopedale, MA 01747
TEL 508.478.9684
FAX 508.473.5697

1

88TH STREET

14

15

16

17

Card of the Course

HOLE	PAR	BACK	FORWARD
14	3	150	120
15	5	530	450
16	3	165	135
17	4	310	285
18	4	320	295

Route Plan - Three Hole Addition

Westchester Golf Course

Los Angeles, California

May 28, 2008

Scale: 1"=100'

CDM

Golf Course Architect

HOWARD MAURER DESIGN GROUP, INC.
Post Office Box 127
Hopedale, MA 01747
TEL 508.478.9684
FAX 508.473.5697

Attachment C
Estimate of Probable Cost

CDM

Westchester Golf Course 3 Hole Expansion Project
June 2008

Westchester Golf Course - Los Angeles, CA

Howard Maurer Design Group, Inc, - Hopedale, MA 28-May-07

Statement of Probable Cost

Work Description	Type	Units	Unit Price		Total Cost
Mobilization/Insurance	LS	1.00		$	40,000.00
Bonding	LS	1.00		$	9,000.00
Erosion Control/Silt Fence	LF	2.50	2,000.00	$	5,000.00
Erosion Control/Hay Bales	EA	12.00	250.00	$	6,000.00
Clearing	AC	2.00	3,500.00	$	7,000.00
Select clearing	AC	2.00	3,950.00	$	7,900.00
Strip existing grass/topsoil stock	CY	11,000.00	1.75	$	19,250.00
Topsoil replacement	CY	11,000.00	4.80	$	52,800.00
Earthwork	CY	10,000.00	1.90	$	19,000.00
Drainage - allowance	LS	1.00	85,000.00	$	85,000.00
Rough shaping	LS	1.00	65,000.00	$	65,000.00
Green construction	LS	1.00	105,000.00	$	105,000.00
Tee construction	LS	1.00	57,000.00	$	57,000.00
Bunker construction	LS	1.00	59,000.00	$	59,000.00
Irrigation - per head	PH	205.00	950.00	$	194,750.00
Fine shaping	LS	1.00	25,200.00	$	25,200.00
Planting prep	AC	18.00	1,500.00	$	27,000.00
Planting prep - amendments	LS	1.00	10,000.00	$	10,000.00
Green fumigation (if necessary)	SF	20,000.00	0.24	$	4,800.00
Grassing - greens	SF	20,000.00	0.26	$	5,200.00
Grassing - fairways	AC	6.00	1,100.00	$	6,600.00
Grassing - tees	SF	40,000.00	0.09	$	3,600.00
Grassing - roughs	AC	12.00	1,150.00	$	13,800.00
Sod (allowance)	SF	75,000.00	0.40	$	30,000.00
Hydro Mulch	AC	12.00	1,800.00	$	21,600.00
Erosion Repair	LS	1.00	12,000.00	$	12,000.00
Cart path (asphalt 8')	LF	3,000.00	17.00	$	51,000.00
Grand Total				**$**	**942,500.00**

LS - Lump sum EA - Each LF - Linear feet AC - Acre CY - Cubic yard PH - Per head SF - Square feet

Notes:

Pricing is for contractor built golf holes, in-house construction may result in substantial savings
Does not include landscaping or lighting
Does not include upgrade of pumping systems
Does not include stormwater management
Does not include demolition of existing roads and utilities

Appendix B

Agency Consultation

U.S. Department
of Transportation

**Federal Aviation
Administration**

15000 Aviation Blvd. Rm 3012
Hawthorne, CA 90261

September 09, 2008

Los Angeles World Airports
Attn: Rick Wells
1 World Way Room 208
Los Angeles, CA 90045

RE: *(See attached Table 1 for referenced case(s))*
FINAL DETERMINATION

Table 1 - Letter Referenced Case(s)

ASN	Prior ASN	Location	Latitude (NAD83)	Longitude (NAD83)	AGL (Feet)	AMSL (Feet)
2008-AWP-531-NRA		LOS ANGELES, CA	33-57-21.00N	118-24-29.00W	1	116

Description: This proposed golf course alteration/construction cosists of alteration of two existing holes and the addition of three new holes. Included will be the cart path, bunkers and required utilities, lighting, drainage, etc., needed for a golf course.

We do not object to the construction described in this proposal provided:

You comply with the requirements set forth in FAA Advisory Circular 150/5370-2E, "Operational Safety on Airports During Construction."

A separate notice to the FAA is required for any construction equipment, such as temporary cranes, whose working limits would exceed the height and lateral dimensions of your proposal.

This determination does not constitute FAA approval or disapproval of the physical development involved in the proposal. It is a determination with respect to the safe and efficient use of navigable airspace by aircraft and with respect to the safety of persons and property on the ground.

In making this determination, the FAA has considered matters such as the effects the proposal would have on existing or planned traffic patterns of neighboring airports, the effects it would have on the existing airspace structure and projected programs of the FAA, the effects it would have on the safety of persons and property on the ground, and the effects that existing or proposed manmade objects (on file with the FAA), and known natural objects within the affected area would have on the airport proposal.

If you have any questions concerning this determination contact Eduardo Arriola, (310) 725-3648, eduardo.arriola@faa.gov.

Eduardo Arriola
ADO

U.S Department
of Transportation
**Federal Aviation
Administration**

Western-Pacific Region
Los Angeles Airports District Office

P.O. Box 92007
Los Angeles, CA 90009

October 22, 2008

Mr. Ken Corey
Division Chief
U.S. Fish & Wildlife Service
6010 Hidden Valley Road
Carlsbad, CA 92011

**Los Angeles International Airport
Los Angeles, California
Section 7 Coordination**

Dear Mr. Corey:

The Federal Aviation Administration (FAA) is in the process of preparing environmental documentation for the development or construction on a federally obligated airport at Los Angeles International Airport (LAX). The airport is owned by the City of Los Angeles and operated by Los Angeles World Airports (LAWA) as a public use airport. The proposed undertaking will allow for a three-hole expansion of the Westchester Golf Course, and modification to two holes located on Los Angeles International Airport.

The proposed undertaking is located entirely within the main portion of LAX. The proposed project consists of the design, construction, and installation of three holes using vacant land owned by LAWA located immediately east of the southern half of the golf course. In addition, LAWA proposes to modify two existing holes. The proposed action would restore the golf course to an 18-hole golf course serving the recreational needs of the community. The proposed project site is a vacant 22.5-acre parcel abutting Westchester Golf Course to the west and West 88th Street to the north. The three southernmost holes were eliminated with the subsequent construction of Westchester Parkway in the early 1990s.

The FAA has determined that the Area of Proposed Effect (APE) is identified as the areas outlined in red in the attached figures identified as *Figure 3, Aerial View of the Project Site*. The APE is disturbed and the proposed project would not affect any federally listed endangered or threatened species of flora and fauna or designated critical habitat. I have also provided additional figures of the project area to assist you in your review.

The project area was previously surveyed and no federally listed or endangered resources were found in the APE (See attached, *Biological Constraints Survey for the Westchester Golf Course Expansion, BonTerra, 2008*). However, a large gum palm, and other ornamental trees on the project site have a limited potential to support nesting raptors. If any ornamental trees will be impacted during the raptor breeding season of February 1 through August 31, a survey for active nests will be initiated seven days prior to commencement of construction. Any occupied nests found during survey efforts will be mapped on the construction plans. Some restrictions on construction activities may be required in the vicinity of

the nest until the nest is no longer active as determined by a qualified biologist.

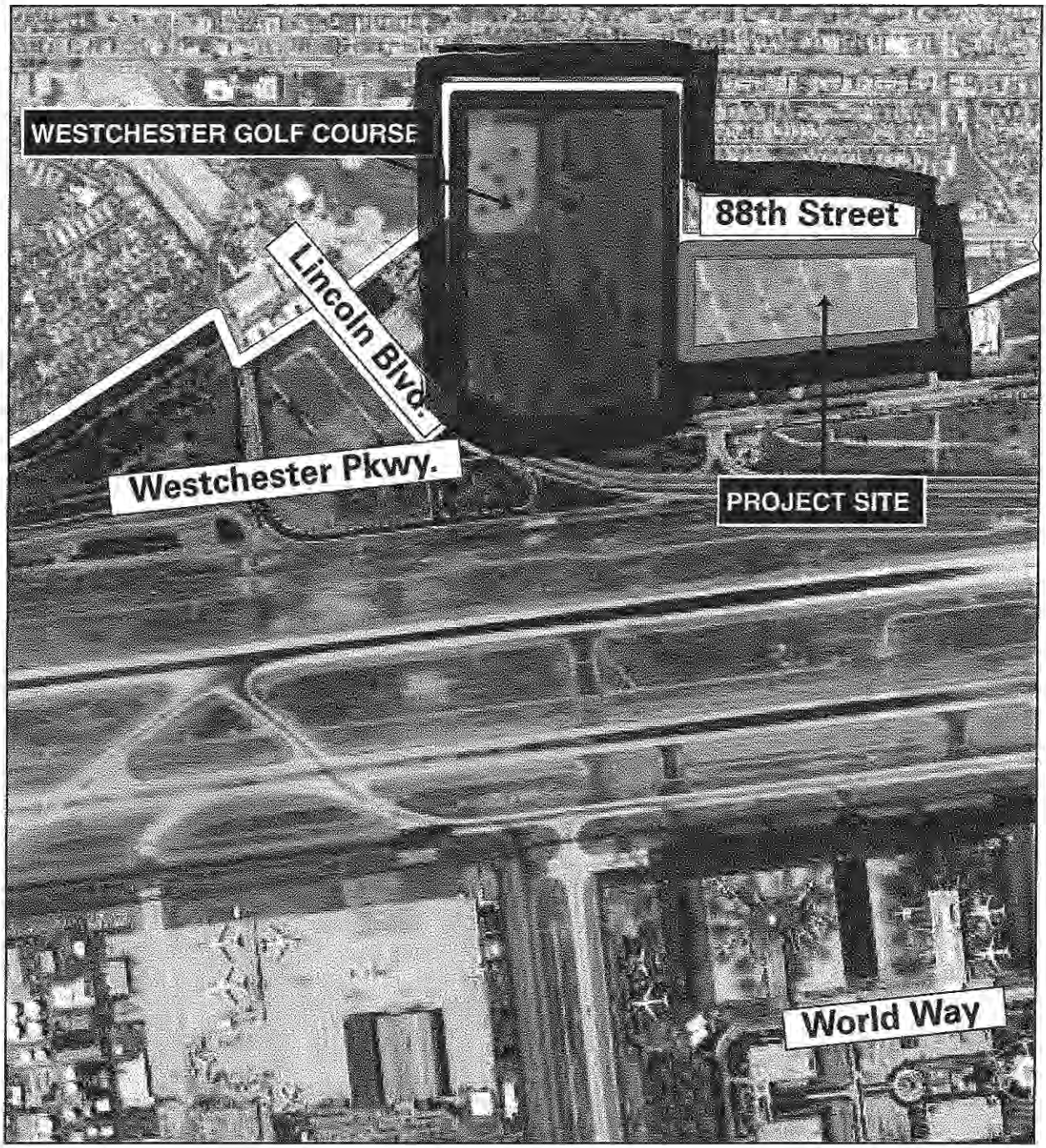
The FAA has determined that the proposed undertaking of the Los Angeles International Airport Proposed Westchester Golf Course Three-Hole Expansion project will not affect any federally listed endangered or threatened species of flora and fauna or designated critical habitat. We request your written concurrence with our determination.

Please contact me at (310)725-3637 or victor.globa@faa.gov if you have any questions or require additional information.

Sincerely,

Victor Globa
Environmental Protection Specialist

Attachments



north
Not to Scale

Prepared by: CDM, 2008.

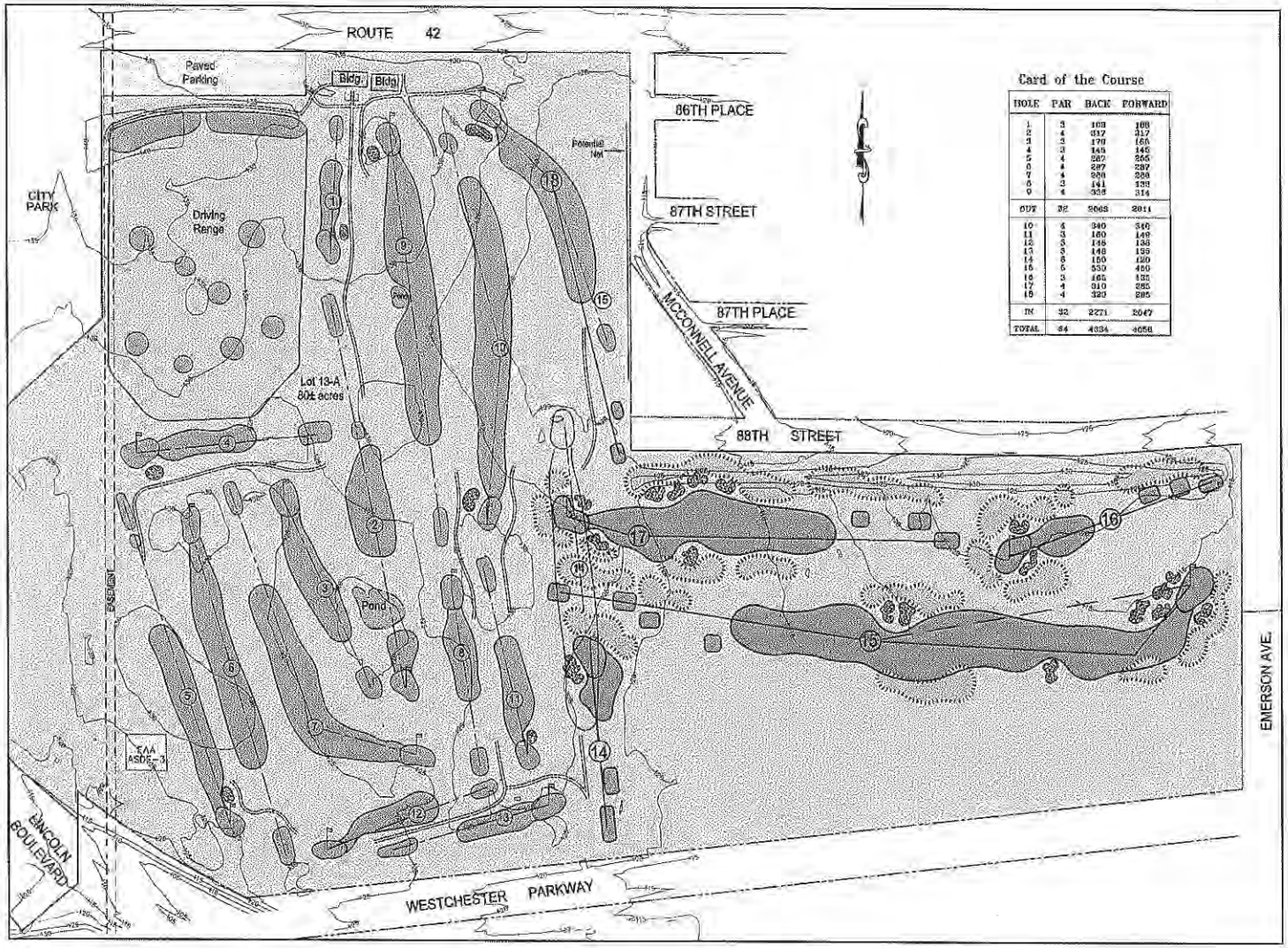
Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Aerial View of Project Site**	Figure 3

north

Not to Scale

Prepared by: CDM, 2008.

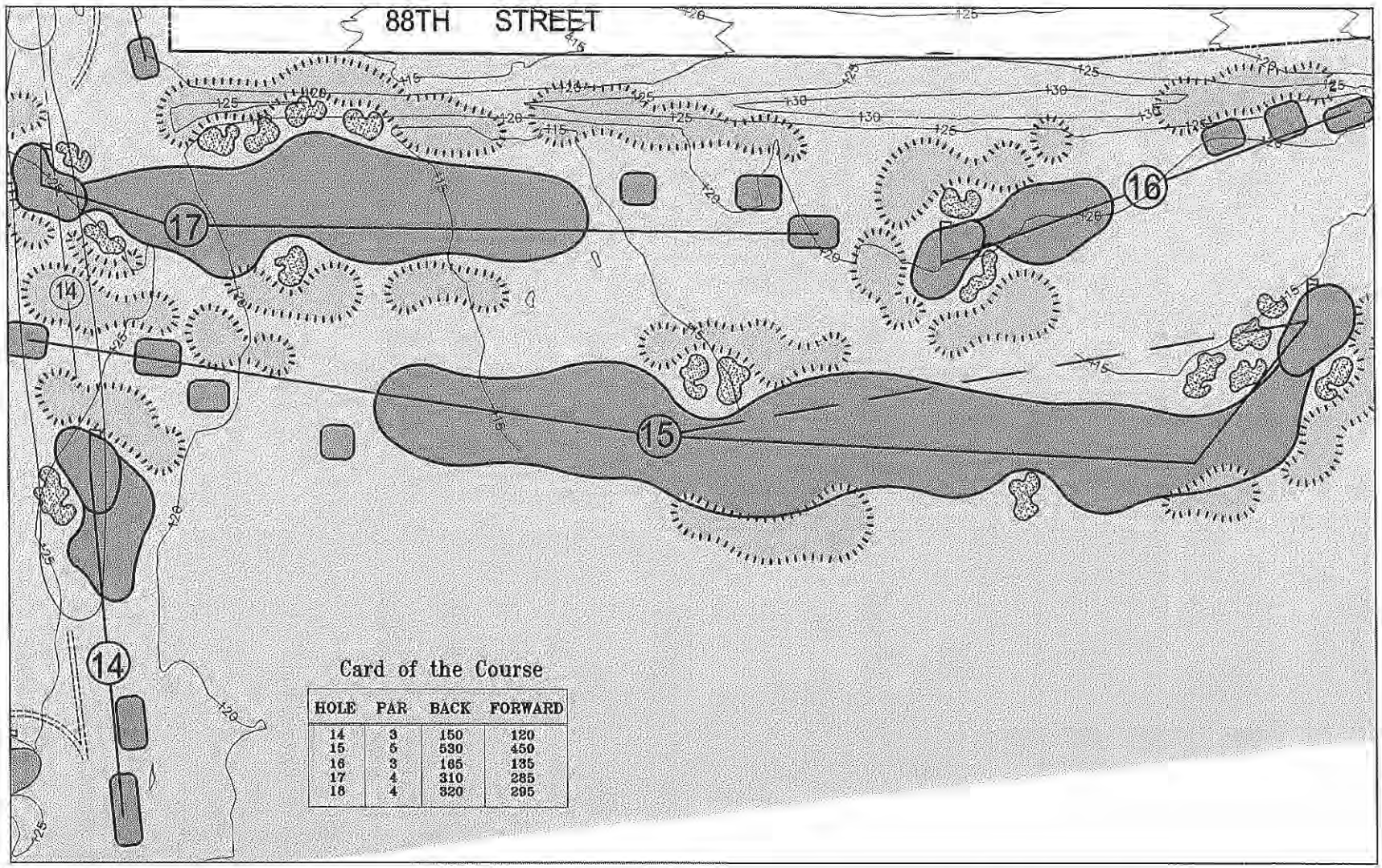
Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Project Location**	Figure **2**



north
Not to Scale

Source: Howard Maurer Design Group, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Westchester Golf Course with Proposed Improvements**	Figure 4



Source: Howard Maurer Design Group, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessments	Proposed Conceptual Route Plan for New and Modified Holes	Figure 5

BonTerra CONSULTING

COSTA MESA PASADENA TEMECULA

T: (714) 444-9199 F: (714) 444-9599 | 151 Kalmus Drive, Suite E-200
www.BonTerraConsulting.com | Costa Mesa, CA 92626

September 10, 2008

Ms. Robin E. Ijams
Camp Dresser & McKee
111 Academy, Suite 150
Irvine, California 92617-3030

VIA EMAIL AND MAIL
IjamsRE@cdm.com

Subject: Biological Constraints Survey for the Westchester Golf Course Expansion

Dear Ms. Ijams:

This Letter Report summarizes the biological constraints survey findings for the proposed expansion of the Westchester Golf Course onto 21 acres of Los Angeles International Airport Property (hereafter referred to as the project site), located in the City of Los Angeles, California. The purpose of the survey was to map the existing vegetation and evaluate any potential biological constraints associated with expansion of the Westchester Golf Course on the project site.

PROJECT LOCATION AND DESCRIPTION

The project site is located in the southwest portion of the City of Los Angeles, within Los Angeles County, California (Exhibit 1). The project site is bordered to the north by 88th Street, to the south by Westchester Parkway, to the west by the Westchester Golf Course and to the east by Emerson Avenue (Exhibit 2). Land uses in the vicinity of the proposed project are commercial to the south and east, residential to the north and a golf course to the west.

The proposed project would expand the current Westchester Golf Course onto the project site.

SURVEY METHODS

A literature review was conducted prior to the initiation of the field survey in order to determine the potential special status plant and wildlife species known to occur in the project vicinity that may occur on the project site. The California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California (CNPS 2008), the California Department of Fish and Game's (CDFG) and the United States Fish and Wildlife Service's (USFWS) species lists, and the California Natural Diversity Database (CNDDB) (CDFG 2008) were reviewed during the literature review.

The biological constraints survey was conducted on June 25, 2008, by BonTerra Consulting Biologist Jeff Crain and Ecologist Allison Rudalevige, to describe the vegetation and evaluate the potential of habitats to support special status plant and wildlife species on the project site. All plant species observed were recorded in field notes. Plant species were identified in the field or collected for future identification. Plants were identified using keys in Hickman (1993), Munz (1974), and Abrams (1923–1960). Taxonomy follows Hickman (1993) and current scientific data (e.g., scientific journals) for scientific and common names. The

Sunset Western Garden Book (Brenzel 1995) was used for ornamental species that were not included in the references listed above.

All wildlife species detected during the course of the survey were documented in field notes. Active searches for reptiles and amphibians included lifting, overturning, and carefully replacing rocks and debris. Birds were identified by visual and auditory recognition. Surveys for mammals were conducted during the day and included searching for and identifying diagnostic sign, including scat, footprints, scratch-outs, dust bowls, burrows, and trails. Taxonomy and nomenclature for wildlife generally follows Fisher and Case (1997) for amphibians and reptiles, American Ornithologists' Union (2006) for birds, and Baker et al. (2003) for mammals.

SURVEY RESULTS

Vegetation

No native vegetation types are present on the project site. The project site is primarily surrounded by development that would be categorized as commercial. Vegetation on the project site consists of ornamental trees, landscaping species planted as ground cover adjacent to roads and freeway on- and off-ramps, and ruderal species (Exhibit 3).

Ornamental vegetation present includes various gum trees (*Eucalyptus* spp.), pine trees (*Pinus* spp.), and palm trees (*Washingtonia robusta*). In addition, two western sycamore trees (*Platanus racemosa*) were observed. This species is often included as part of ornamental landscaping. Within the ruderal area, species observed included wild radish (*Raphanus sativus*), brome grasses (*Bromus* spp.), and crown daisy (*Chrysanthemum coronarium*).

A small patch of riparian vegetation was found around a street drain (gutter) at the northern end of the project. Species present in this small area included narrow-leaved willow (*Salix exigua*), cattail (*Typha latifolia*), and tall umbrella-sedge (*Cyperus eragrostis*). This area does not contain the features that would render the area under the jurisdiction of the United States Army Corps of Engineers nor the CDFG.

Wildlife

Vegetation on the project site provides very little habitat for native wildlife species. Wildlife species observed or expected to occur on the project site include species associated with urban habitats. Common reptile species observed or expected to occur on the project site include western fence lizard (*Sceloporus occidentalis*). Common bird species observed or expected to occur include rock pigeon (*Columba livia*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), house finch (*Carpodacus mexicanus*), and European starling (*Sturnus vulgaris*). Mammal species observed or expected to occur on the project site include Virginia opossum (*Didelphis virginiana*), California ground squirrel (*Spermophilus beecheyi*), and house mouse (*Mus musculus*). Several ground squirrel burrows were observed during the site visit.

Regional Species and Habitats of Concern

Certain vegetation types are considered to have special status because of limited distribution in southern California and also because of the potential to support special status plant and wildlife species. There are no special status vegetation types on the project site.

Special status species have been given recognition by federal and/or state agencies, as well as private conservation organizations, because of perceived or documented decline in the population size or geographic range of the species. Although several special status plant and wildlife species are known to occur in the project region, only one plant species (southern tarplant [*Centromadia parryi* ssp. *australis*]) may have potential to occur on the project site; however, the species was not observed during the site visit. The remaining species would not be expected to occur on the project site due to the lack of suitable habitat.

CONCLUSIONS/RECOMMENDATIONS

Implementation of the proposed project would impact existing developed and disturbed areas and ornamental plantings and is of low biological value to plant and wildlife species. Therefore, no impacts on special status plants or wildlife species are expected to occur. However, large gum, palm, and other ornamental trees on the project site have a limited potential to support nesting raptors. Activities having the potential to disturb active raptor nests are prohibited by CDFG regulations. This protection generally ceases once nesting activity is completed, typically by July. However, impacts to this species can typically be avoided through implementation of standard construction practices.

Pre-Construction Nesting Raptor Survey

Raptor nests are protected by Fish and Game Code Section 3503.5, which prohibits the disturbance of nests during the breeding season of raptors. Therefore, if the ornamental trees will be impacted within the breeding season (February 1 through August 31), a survey for active nests would be required seven days prior to commencement of construction during the breeding season between February 1 and August 31. Any occupied nests found during survey efforts will be mapped on the construction plans. Some restrictions on construction activities may be required in the vicinity of the nest until the nest is no longer active as determined by a qualified biologist.

Please contact Ann Johnston at (714) 444-9199 if you have any questions or comments.

Sincerely,

BONTERRA CONSULTING

for Ann M. Johnston
Principal, Biological Services

Jeffrey S. Crain
Botanist/Restoration Ecologist

Enclosures: Exhibits 1, 2, and 3

cc: Magda Pavlak-Chiaradia, via email
Julie Gaa, via email

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REFERENCES

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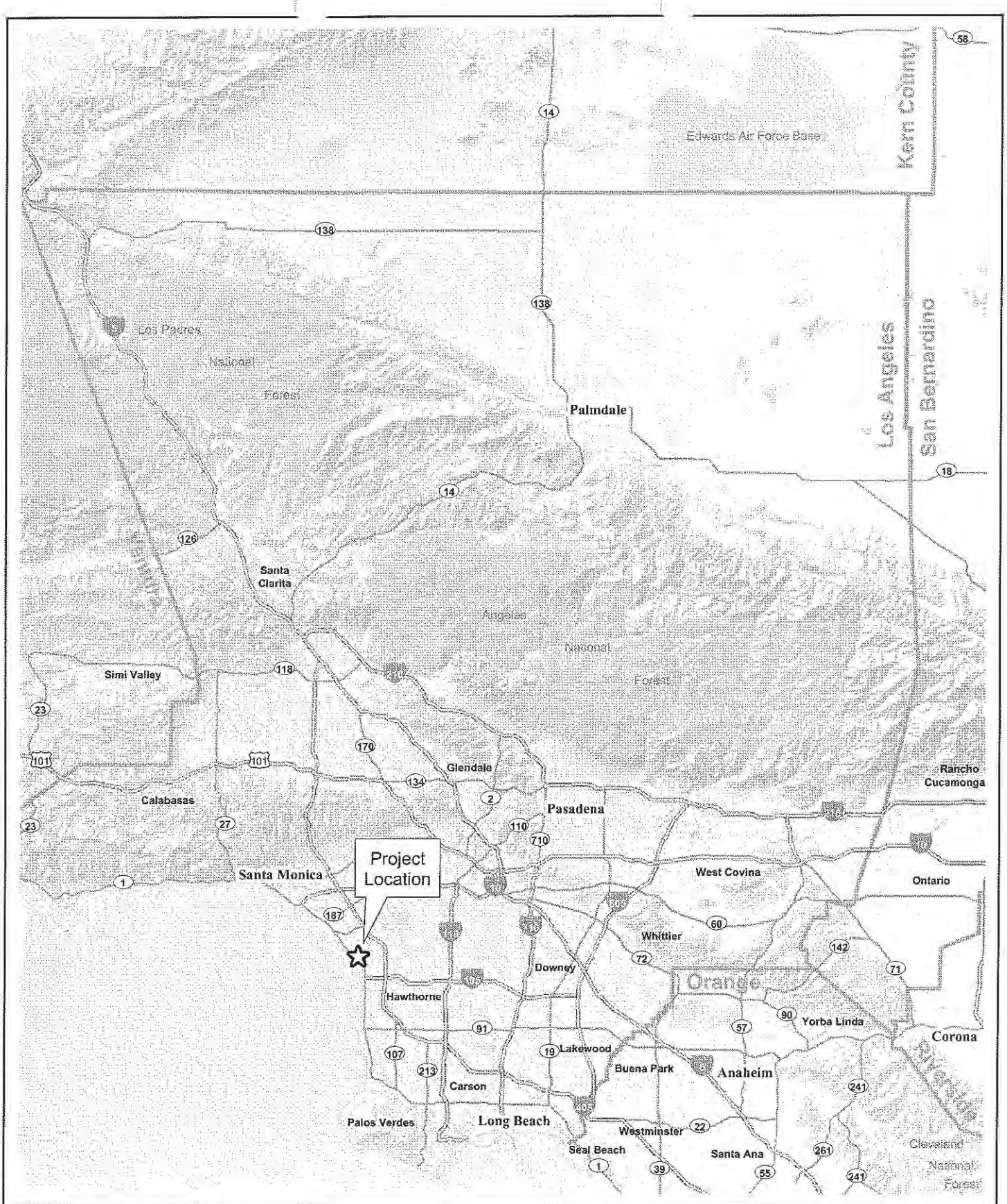

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Regional Location

Exhibit 1

Approximately 21 Acres of LAX Property

N
W E
S

10 5 0 10

Miles

BonTerra CONSULTING

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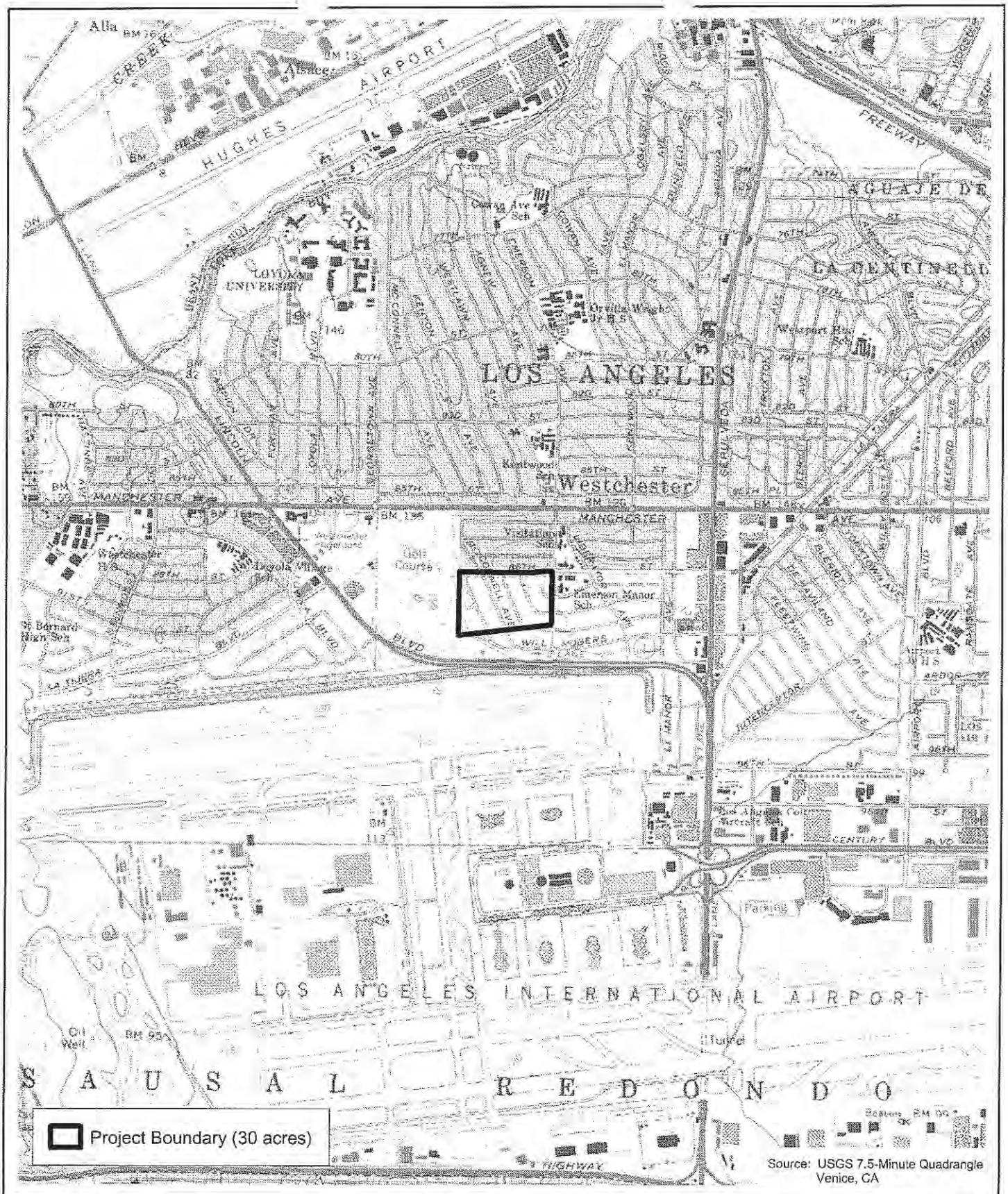

Source: USGS 7.5-Minute Quadrangle
Venice, CA

Local Vicinity

Exhibit 2

Approximately 21 Acres of LAX Property

N
W E
S

2,000 1,000 0 2,000
Feet

BonTerra CONSULTING

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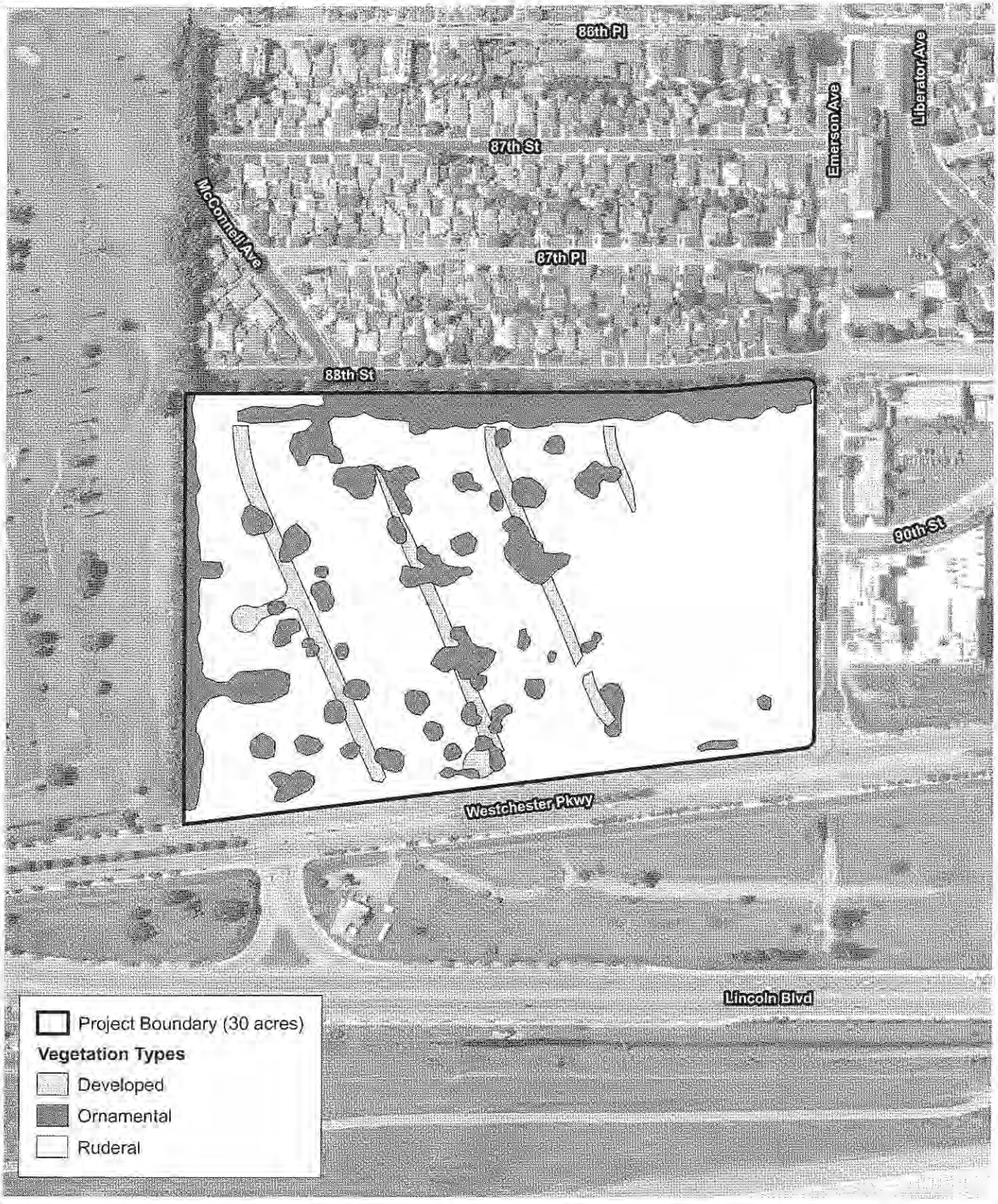

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Vegetation Types

Exhibit 3

Approximately 21 Acres of LAX Property

N
W E
S

300 150 0 300

Feet

Bonterra CONSULTING

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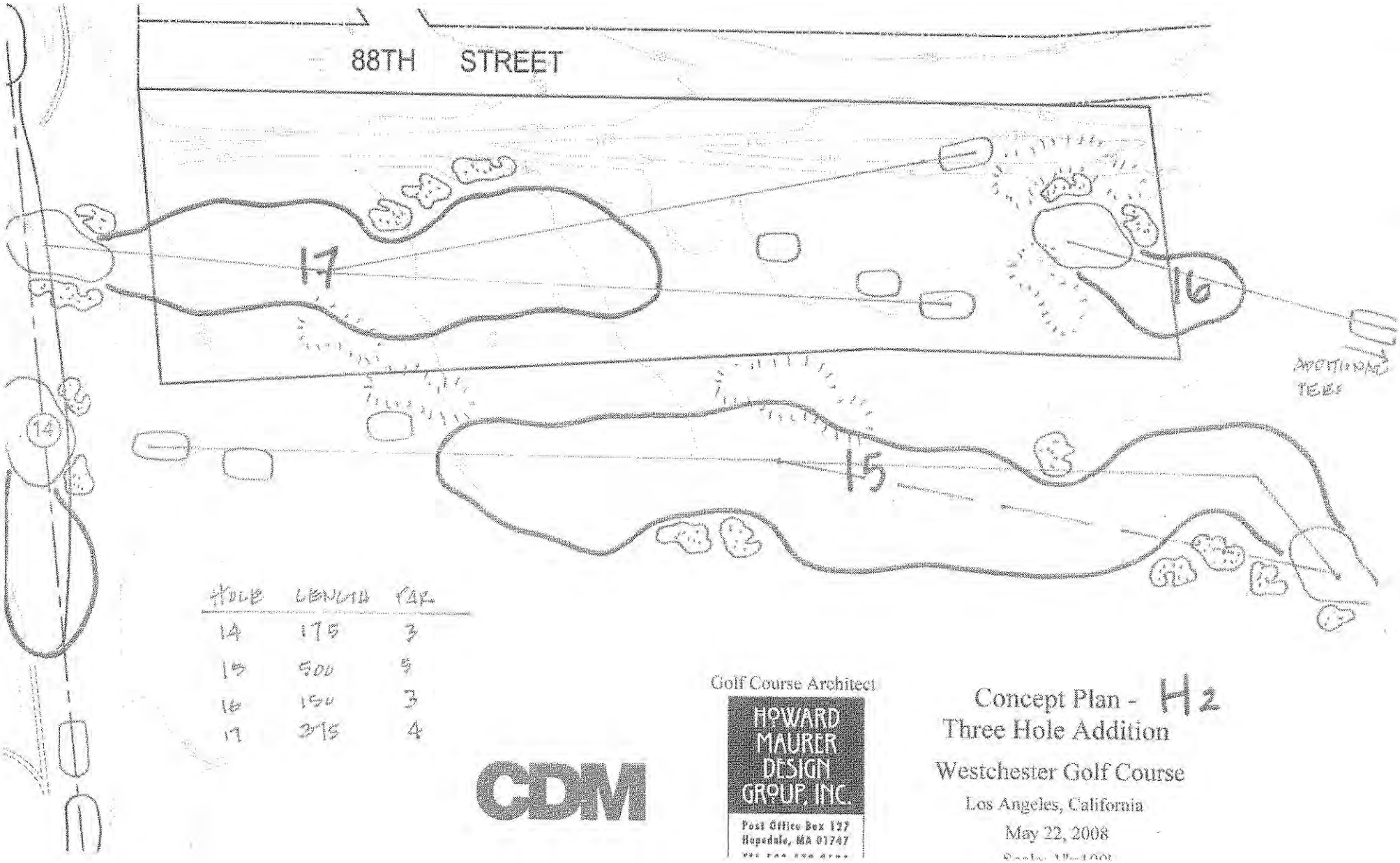


HOLE	LENGTH	PAR
14	175	3
15	500	5
16	150	3
17	315	4

CDM

Golf Course Architect

HOWARD MAURER DESIGN GROUP, INC.

Post Office Box 127
Hopedale, MA 01747

Concept Plan - H2
Three Hole Addition
Westchester Golf Course
Los Angeles, California

May 22, 2008

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

In Reply Refer To:
FWS-LA-09B0120-09I0258

MAR 05 2009

Victor Globa
Environmental Protection Specialist
Federal Aviation Administration
PO Box 92007
Los Angeles, California 90009

Subject: Request for Section 7 Informal Consultation for the Expansion of the Westchester Golf Course, Los Angeles International Airport (LAX), Los Angeles, California

Dear Mr. Globa:

This is in response to the letter received on October 23, 2008, regarding the proposed expansion of the Westchester Golf Course, Los Angeles International Airport (LAX), Los Angeles, California. In your letter, you stated that pursuant to section 7 of the Endangered Species Act of 1973 (Act), as amended, the proposed project would not affect federally listed endangered or threatened species of flora or fauna or designated critical habitat.

The proposed project consists of design, construction, and installation of three holes of golf and the modification of two existing holes of golf on 22.5 acres owned by Los Angeles World Airports adjacent to the existing Westchester Golf Course on the north edge of LAX. The area surrounding the proposed project site is completely urbanized including the northern runway at LAX. This project requires unconditional approval from the Federal Aviation Administration.

The proposed project site primarily consists of non-native vegetation and disturbed open ground. A majority of the site was previously either housing or a golf course. A survey of the site conducted on June 25, 2008 by BonTerra consulting concluded that there is no potential for the site to support federally listed species. In addition, a search of existing databases in 2008 by BonTerra consulting revealed no previous locations of federally listed species on the proposed project site.

Based on the information summarized above, we concur that the proposed project will not affect federally listed species. Therefore, the interagency consultation requirements of section 7 of the Act have been satisfied. Although our concurrence ends informal consultation, obligations under section 7 of the Act will be reconsidered if new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not previously

considered or this action is subsequently modified in a manner that was not considered in this assessment.

We appreciate your coordination on this project. Should you have any questions regarding this letter, please contact Fish and Wildlife Biologist Anna Schmidt of my staff at (760) 431-9440 extension 227.

Sincerely,

for Karen A. Goebel
Assistant Field Supervisor

cc:
Ann Johnston, Bonterra Consulting

U.S Department
of Transportation

**Federal Aviation
Administration**

Western-Pacific Region
Los Angeles Airports District Office

PO Box 92007
Los Angeles, CA 90009

October 22, 2008

Mr. Milford Wayne Donaldson
State Historic Preservation Officer
California Department of Parks and Recreation
Office of Historic Preservation
1416 9th Street, Room 1442
Sacramento, California 95814

Los Angeles International Airport
Los Angeles, California
Section 106 Coordination

Dear Mr. Donaldson:

The Federal Aviation Administration (FAA) is in the process of preparing environmental documentation for the development or construction on a federally obligated airport at Los Angeles International Airport (LAX). The airport is owned by the City of Los Angeles and operated by Los Angeles World Airports (LAWA) as a public use airport. The proposed undertaking will allow for a three-hole expansion of the Westchester Golf Course, and modification to two holes located on Los Angeles International Airport.

The proposed undertaking is located entirely within the main portion of LAX. The proposed project consists of the design, construction, and installation of three holes using vacant land owned by LAWA located immediately east of the southern half of the golf course. In addition, LAWA proposes to modify two existing holes. The proposed action would restore the golf course to an 18-hole golf course serving the recreational needs of the community. The proposed project site is a vacant 22.5-acre parcel abutting Westchester Golf Course to the west and West 88th Street to the north. The three southernmost holes were eliminated with the subsequent construction of Westchester Parkway in the early 1990s.

The purpose of this consultation effort is to seek concurrence that there are no historic architectural, archeological or cultural resources impacts of the proposed project that occur or are likely to occur in the vicinity of the project site.

The FAA has determined that the Area of Proposed Effect (APE) is identified as the areas outlined in red in the attached figure identified as Figure 3, Aerial View of the Project Site. The APE is disturbed and the proposed project would not affect any documented historic or prehistoric resources onsite or in the project area. There are no significant historic or architectural resources on or in the vicinity of the site. Furthermore, there are no previously recorded archaeological/cultural resources onsite. (See attached *Section 4.9, Historic/Architectural and Archaeological /Cultural and Paleontological Resources, U.S. Department of Transportation, Federal Aviation Administration, Final Environmental Impact Statement, Los Angeles International Airport Proposed Master Plan Improvements, January 2005*). I have also provided additional figures of the project area to assist you in your review.

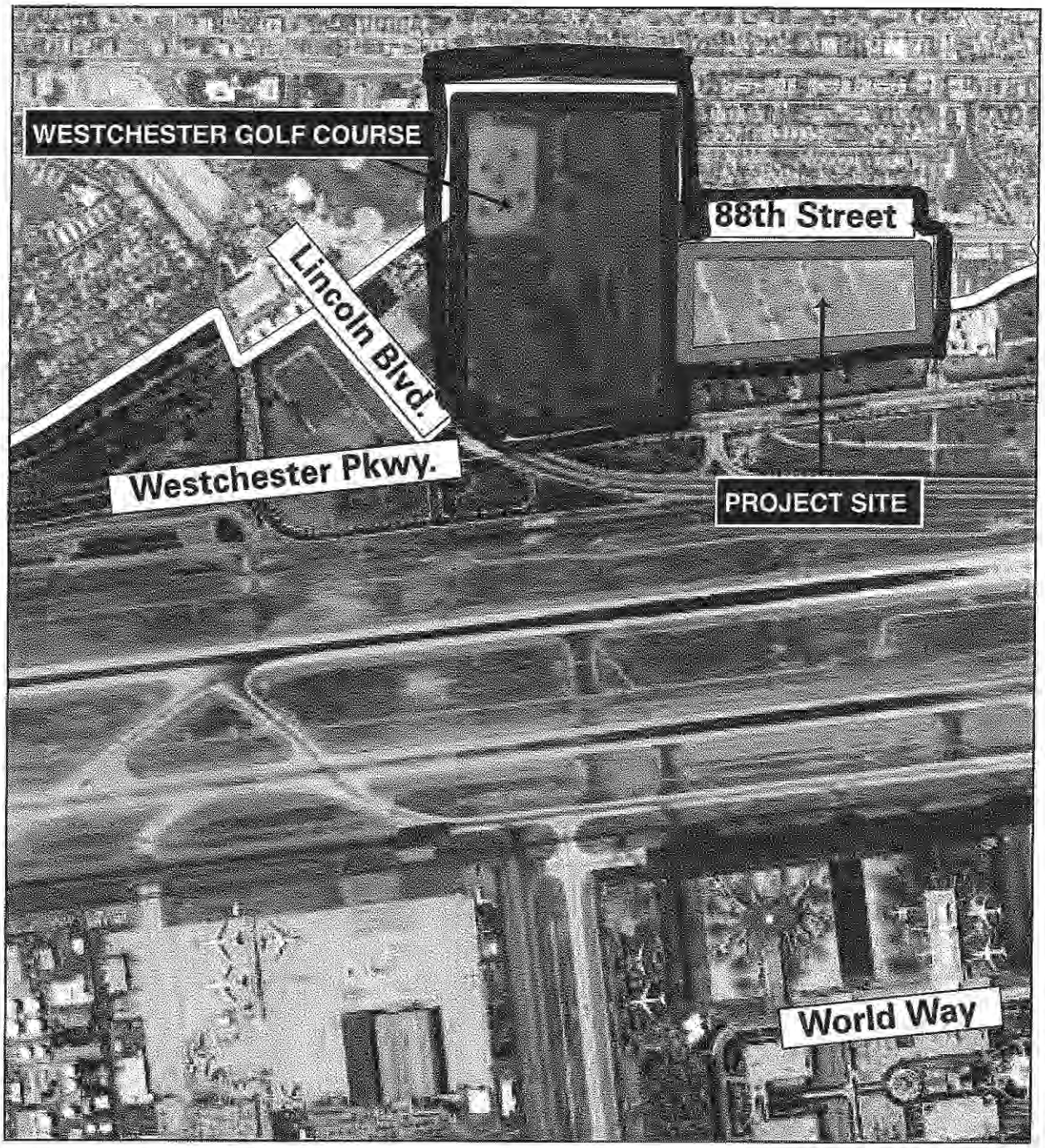
The project site has been extensively disturbed from previous grading activities associated with the construction and subsequent demolition of residential structures and related infrastructure. The presence of significant archaeological/cultural resources onsite is unlikely and no impacts to these resources are anticipated.

Based on this information, the FAA has determined that the proposed undertaking for the three-hole expansion of the Westchester Golf Course, and modification to two holes, will not affect any prehistoric, historic, archaeological, or cultural resources. We request your written concurrence with the APE and our determination of no effect. Please provide your written response within thirty days, or we will presume you have no comments regarding the proposed undertaking. If you have any questions or require additional information, please feel free to contact me at (310)725-3637 or victor.globa@faa.gov.

Sincerely,

Victor Globa
Environmental Protection Specialist

Attachments



north
Not to Scale

Prepared by: CDM, 2008.

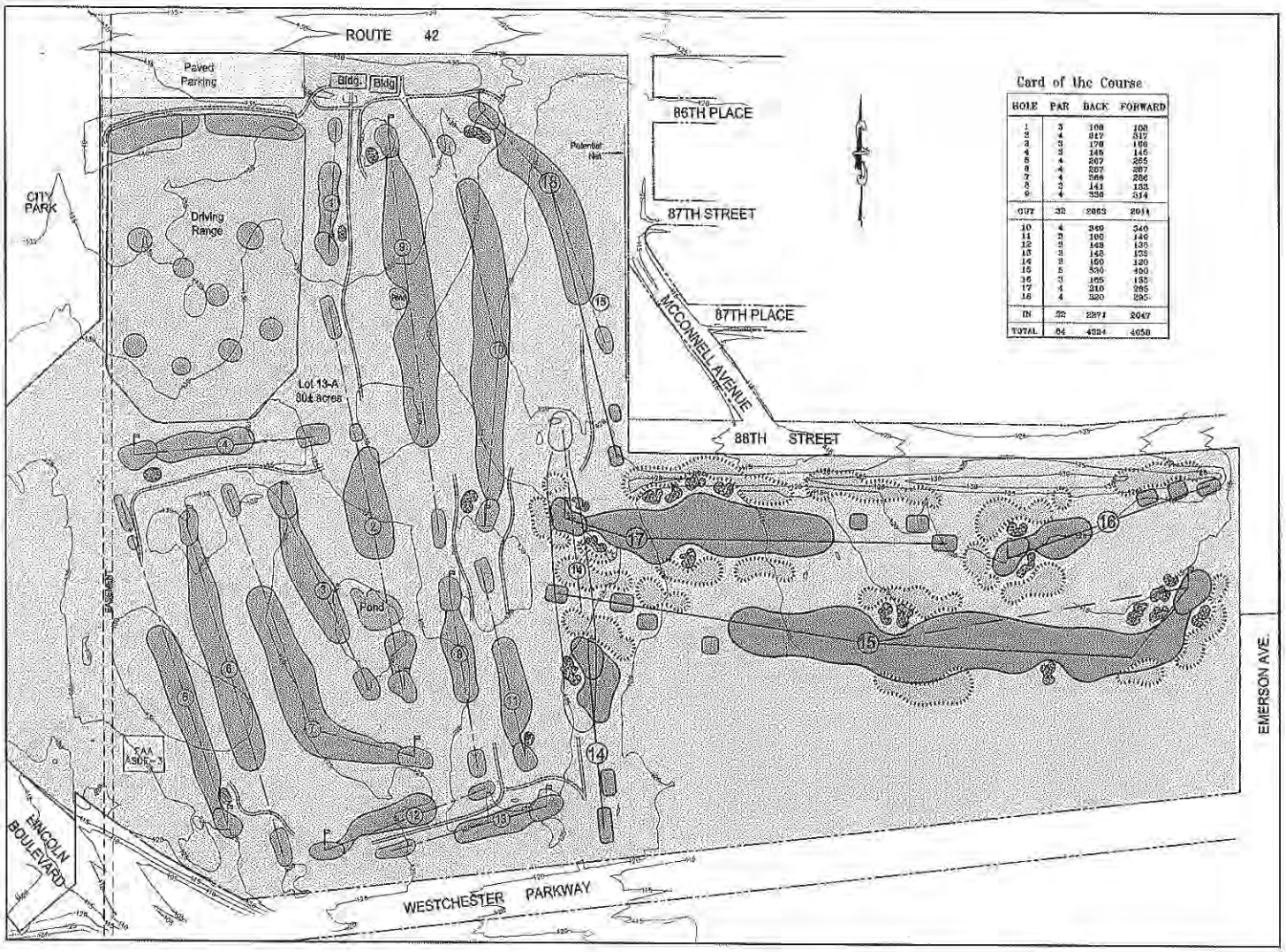
Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Aerial View of Project Site**	Figure **3**

north

Not to Scale

Prepared by: CDM, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Project Location**	Figure **2**

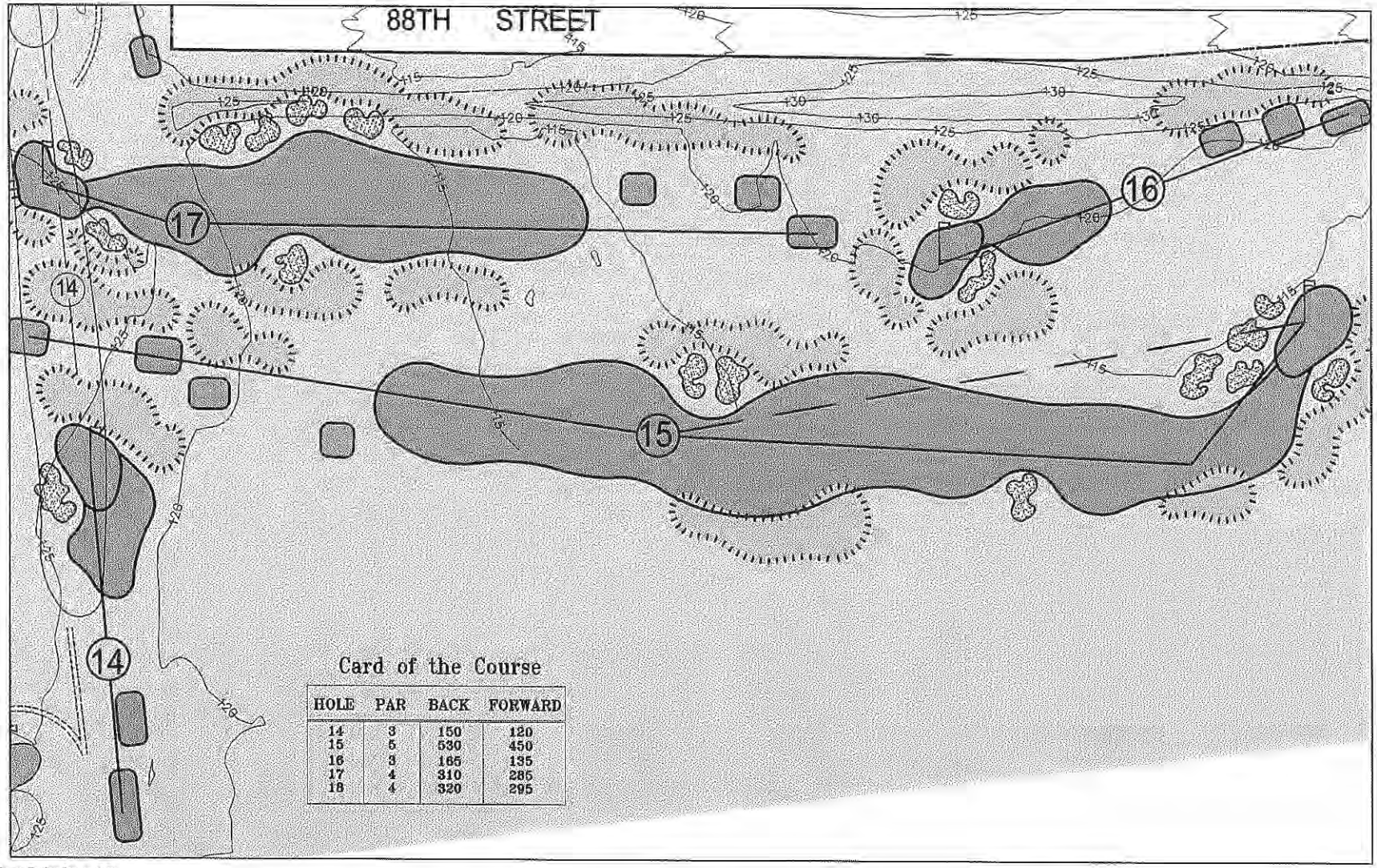


north
Not to Scale

Source: Howard Maurer Design Group, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Westchester Golf Course with Proposed Improvements**	Figure 4

Confidential Draft Deliberative Material



Source: Howard Maurer Design Group, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessments	Proposed Conceptual Route Plan for New and Modified Holes	Figure 5

4.9 Historic/Architectural and Archaeological/ Cultural and Paleontological Resources

4.9.1 Historic/Architectural and Archaeological/Cultural Resources

4.9.1.1 Introduction

This historic/architectural and archaeological/cultural resources analysis addresses the potential for the Master Plan alternatives to adversely impact prehistoric and historic resources. This section is based in part on more comprehensive information contained in Appendices I, *Section 106 Report*, and S-G, *Supplemental Section 106 Report*. Impacts on prehistoric and historic resources of federal, state, and local significance, pursuant to Section 4(f) of the Department of Transportation Act, are addressed in Section 4.8, *Department of Transportation Act, Section 4(f)*. Impacts on paleontological resources are addressed in Section 4.9.2, *Paleontological Resources*.

4.9.1.2 General Approach and Methodology

A historic property is defined as any prehistoric or historic building, site, district, structure, or object that meets accepted criteria of significance. The National Register of Historic Places (National Register), the California Register of Historical Resources (California Register), and local jurisdiction criteria were utilized to evaluate resources. The term "eligible for inclusion in the National Register, California Register, or local register" includes both properties formally determined eligible and all other properties that meet the specific criteria.

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires Federal agencies to take into account the effects of their undertakings (projects) on historic properties and provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on Federal projects prior to implementation. The identification of historic properties and the analysis of project impacts on those resources identified as historically significant have been addressed within this section pursuant to the Section 106 process, which is codified in 36 CFR Part 800, "Protecting Historic Properties."

Criteria for Evaluation

National Register of Historic Resources

To be eligible for listing in the National Register, a resource should be over 50 years of age[423] and must possess significance in American history and culture, architecture, or archaeology at the national, state, or local level. Federal regulations for evaluating properties state: "The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- That are associated with events that have made a significant contribution to the broad patterns of our history; or
- That are associated with the lives of persons significant in our past; or
- That embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- That yield, or may be likely to yield, information important in prehistory or history."[424]

423 Properties less than fifty years old may be eligible for listing in the National Register under National Register Criteria Consideration G: Properties that Have Achieved Significance within the Past Fifty Years.

424 36 CFR Part 60.4.

California Register of Historical Resources

Eligibility for the California Register is based upon National Register criteria. Certain resources are included in the California Register by statute, including California properties formally determined eligible for, or listed in, the National Register; State Historical Landmark No. 770 and all consecutively numbered historical landmarks following No. 770; and Points of Interest that have been reviewed by the California State Office of Historic Preservation (OHP) and recommended for listing by the State Historical Resources Commission. Other resources that are eligible for the California Register include designations under local ordinances that meet certain requirements and/or which have been identified and evaluated by historic surveys conducted according to OHP guidelines.

A resource must meet one or more of the following criteria for listing on the California Register of Historical Resources:

- Is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California;
- Is associated with the lives of persons important in local, California or national history;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
- Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Unique Archaeological Resources (CEQA)

As defined under CEQA (Public Resources Code Section 21083.2) a "unique archaeological resource" is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; or
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

County of Los Angeles (County)

The County utilizes the State's Statement of Policy for State Historical Landmark Registration and Points of Interest Registration as its mechanism for the evaluation and designation of historic resources. The State Historical Landmarks program recognizes buildings, objects, sites, and structures of statewide significance, while the Points of Historical Interest program recognizes resources of county-wide and regional importance.

A resource must meet one or more of the following criteria for designation as a State Historical Landmark:

- Is the first, last, only or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California);
- Is associated with an individual or group having a profound influence on the history of California; and/or
- Is a prototype of, or is an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer or master builder.

This same criteria apply for designation as a State Point of Historical Interest, but pertain to local and county regions.

City of Los Angeles

According to the Los Angeles Administrative Code, "a historical or cultural monument is any site (including significant trees or other plant-life located thereon), building, or structure of particular historic or cultural significance to the City of Los Angeles, such as historic structures or sites in which the broad

cultural, political, economic or social history of the nation, state, or community is reflected or exemplified, or which are identified with historic personages or with important events in the main currents of national, state, or local history, or which embody the distinguishing characteristics of an architectural-type specimen, inherently valuable for a study of a period style or method of construction, or a notable work of a master builder, designer, or architect whose individual genius influenced his age."

To qualify as a City Historic Preservation Overlay Zone (HPOZ) the structures, natural features, or sites within the involved area, or the area as a whole, must meet one or more of the following criteria:

- Adds to the historic architectural qualities or historic associations for which a property is significant because it was present during the period of significance, and possesses historic integrity reflecting its character at that time; or
- Owing to its unique location or singular physical characteristics, represents an established feature of the neighborhood, community, or city; or
- Retaining the structure would help preserve and protect an historic place or area of historic interest in the City.

City of El Segundo

As stated in Section 15-14-4 B of the City of El Segundo's Municipal Code, a cultural resource may be designated if it meets the following criteria:

- Must be at least 50 years old; and
- It is associated with persons or events significant in local, state, or national history; or
- It reflects or exemplifies a particular period of national, state, or local history; or
- It embodies the distinctive characteristics of a type, style, period of architecture, or method of construction.

Area of Potential Effects

An evaluation of the effects that a proposed project may have on properties listed or eligible for listing in the National Register, California Register, or for local designation begins with the identification of the project's Area of Potential Effects (APE). The APE is defined as "the geographic area or areas within which an undertaking (project) may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist."[425] The APE is influenced by the scale and nature of a project and may be different for different kinds of effects caused by a project.[426] Such changes may include: a) the destruction of all or part of a resource; b) the isolation of a resource or changes in its setting; c) the introduction of visual, audible, and atmospheric elements that can affect those characteristics that make the resource eligible for or listed in the National Register, California Register, and/or a local jurisdiction register; or d) the transfer, lease, or sale of a historic resource.[427]

Based on these factors, the APE for this project includes land presently owned by LAWA, parcels that would be acquired by LAWA as part of the Master Plan alternatives, and areas along the proposed LAX Expressway right-of-way. The APE also includes areas newly exposed to 65 CNEL noise levels or to increases of 1.5 CNEL within the existing 65 CNEL contour. In addition, areas of 3 CNEL increases located between the 60 and 65 CNEL contours were surveyed to identify those potential historic resources whose character-defining elements could be adversely affected by indirect (noise) impacts. However, no historic resources with unique sensitivity to indirect impacts were identified. Therefore, those properties were not included in the APE.

The archaeological APE includes lands presently owned by LAWA and those parcels that would be acquired by LAWA as part of the build alternatives. The archaeological APE includes all locations associated with the Master Plan alternatives that would result in the alteration and disturbance of surface and subsurface soils that contain or have the potential to contain archaeological sites. The discontiguous APE boundary was defined with the assistance of the FAA and the California State Historic Preservation Officer (SHPO). The overall APE for the LAX Master Plan, which includes both historic and archaeological resources, is illustrated in **Figure F4.9.1-1**, Composite Area of Potential Effects Map.

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425 36 CFR 800.16(d).
426 36 CFR 800.16(d).
427 36 CFR 800.5(a)(2).

Areas that may be subject to archeological and historic resource impacts associated with alternative alignments proposed for the LAX Expressway are evaluated in Appendix K, *Supplemental Environmental Evaluation for LAX Expressway and State Route 1 Improvements*. Because the LAX Expressway, proposed under Alternatives A, B, and C, is considered a supplemental component of the LAX Master Plan, a separate Section 106 report with an APE covering the two proposed LAX Expressway alignments (Split Viaduct and Single Viaduct [preferred alterative]) along the I-405 was prepared. As further described in Appendix K, *Supplemental Environmental Evaluation for LAX Expressway and State Route 1 Improvements*, this Section 106 review was coordinated by the FAA with the Federal Highway Administration (FHWA) and the California Department of Transportation (Caltrans) involvement. The Section 106 process for this project included the identification and evaluation of historic properties within the supplemental APE, as well as an assessment and resolution of potential adverse effects to identified historic resources. SHPO concurrence is assumed by the FAA for findings and conclusions proposed within the Section 106 Report prepared for the LAX Expressway project since no comments have been received from SHPO and the 30 day review period, as specified in 36 CFR 800.3(c)(4), has long passed.

Methodology

As further discussed in Appendix I, *Section 106 Report* and Appendix S-G, *Supplemental Section 106 Report*, the methods used to determine the presence of archaeological, historic, and architectural resources included archival research, pedestrian field investigations, architectural reconnaissance-level survey, and consultation with the Native American Heritage Commission. Copies of all relevant correspondence are included in Appendix I, *Section 106 Report* and Appendix S-G, *Supplemental Section 106 Report*. A records search was conducted in 1995 by the South Central Coastal Information Center (SCCIC) to identify previously surveyed areas or recorded archaeological and historic resources within the APE. The SCCIC performed additional searches in 1997 and 2000 to cover the changes in the APE. These searches included a review of the National Register of Historic Places, the California Historical Resources Inventory database, the City of Los Angeles' Historic-Cultural Monuments listing, completed site records, and survey reports.

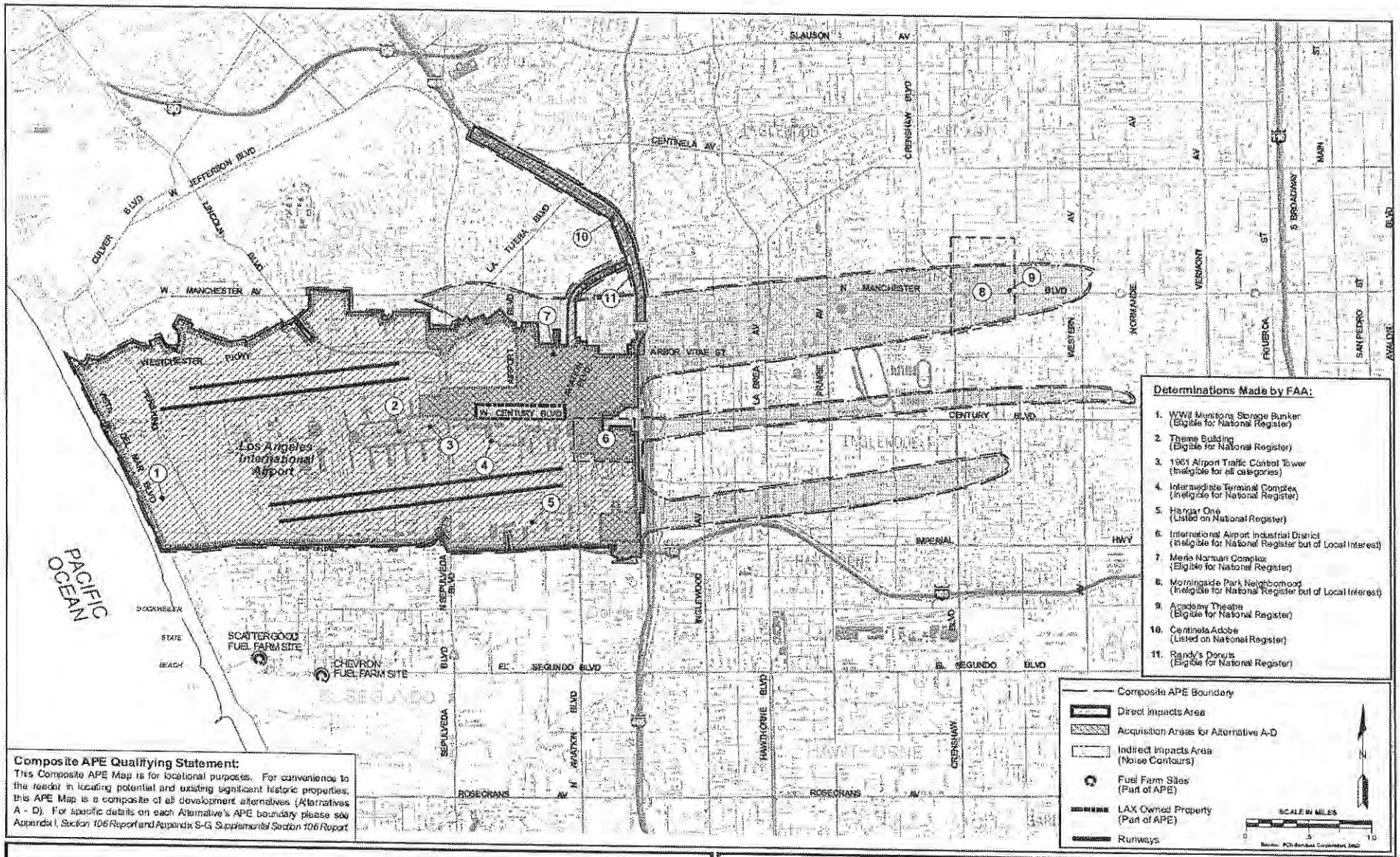
In addition to completing a Phase 1 archaeological survey (review of records search materials and relevant literature), a pedestrian examination with parallel transects spaced at approximately 10 to 15 meters (33 to 49 feet) and minimal subsurface testing was undertaken by RMW Paleo Associates (RMW) on undeveloped areas of LAX in 1995. Areas that were developed or exhibited a high level of disturbance were examined through a more cursory archaeological pedestrian survey.

An initial historic and architectural resources survey of the airport was conducted by Historic Resources Group (HRG) in 1995. To address changes to the Master Plan and the APE, two additional historic and architectural surveys were conducted by PCR Services Corporation (PCR) in 1998 and 2000. Historical and architectural research involved examination of primary and secondary materials, including building permits, tax assessor records, Sanborn Fire Insurance Maps, historic atlases and plat maps, newspapers, and other publications. PCR reviewed and analyzed ordinances, statutes, regulations, bulletins, and technical materials relating to federal, state, and local historic preservation designations and assessment programs. PCR also conducted on-site field inspections of the APE and photographed potential historic properties. Those identified as potentially eligible for federal, state, and/or local designation were evaluated based upon criteria used by the National Register, the California Register, and the City of Los Angeles Cultural Heritage Ordinance, and survey methodology of the California State Office of Historic Preservation.

4.9.1.3 Affected Environment/Environmental Baseline

Federal Regulations

The United States Department of the Interior, the National Park Service, is the federal agency primarily responsible for the preservation of historic resources in the United States. In 1935, the Historic Sites Act was enacted, creating the National Register of Historic Places (National Register). The National Register is the official list of the nation's cultural resources worthy of preservation. The National Historic Preservation Act of 1966 (NHPA), and its subsequent amendments, expanded the scope of the National Register, which now includes prehistoric and historic resources of national, state, and/or local



Determinations Made by FAA:

1. WWII Munitions Storage Bunker (Eligible for National Register)
2. Theme Building (Eligible for National Register)
3. 1961 Airport Traffic Control Tower (Ineligible for all categories)
4. Intermediate Terminal Complex (Ineligible for National Register)
5. Hangar One (Listed on National Register)
6. International Airport Industrial District (Ineligible for National Register but of Local Interest)
7. Merle Norman Complex (Eligible for National Register)
8. Morningside Park Neighborhood (Ineligible for National Register but of Local Interest)
9. Academy Theatre (Eligible for National Register)
10. Centinela Adobe (Listed on National Register)
11. Randy's Donuts (Eligible for National Register)

- Composite APE Boundary
- Direct Impacts Area
- Acquisition Areas for Alternative A-D
- Indirect Impacts Area (Noise Contours)
- Fuel Farm Sites (Part of APE)
- LAX Owned Property (Part of APE)
- Runways

SCALE IN MILES: 0 .5 1.0

Composite APE Qualifying Statement:
This Composite APE Map is for locational purposes. For convenience to the reader in locating potential and existing significant historic properties, this APE Map is a composite of all development alternatives (Alternatives A - D). For specific details on each Alternative's APE boundary please see Appendix I, *Section 106 Report* and Appendix S-G *Supplemental Section 106 Report*.

LAX Master Plan Final EIS/EIR

Composite Area of Potential Effects Map

Figure F4.9.1-1

significance, and created the Advisory Council on Historic Preservation. Section 106 of NHPA requires federal agencies with jurisdiction over federally assisted undertakings to take into account the effects of such undertakings on properties that are listed or eligible for listing in the National Register. Section 106 gives the Advisory Council on Historic Preservation (ACHP) the opportunity to comment. The general process undertaken to comply with Federal requirements under Section 106 is summarized below:

- Initiate the Section 106 process by determining if it has a project that could affect historic properties;
- Identify and evaluate historic properties within the Area of Potential Effects (APE) for the National Register;
- Assess adverse effects on those historic properties eligible for inclusion in the National Register by applying the criteria of adverse effect;
- Resolve adverse effects by consulting among interested parties, including the State Historic Preservation Officer (SHPO), the federal agency (FAA), the Advisory Council on Historic Preservation (ACHP), local agencies, and representatives of the relevant Native American group(s);
- Consultation usually results in a Memorandum of Agreement (MOA), which outlines agreed-upon measures that the Federal agency will take to avoid, minimize, or mitigate the adverse effects;
- Proceed with the undertaking once a MOA is executed or the mitigations are incorporated into a DEIS' or EIS' record of decision.[428]

Federal agencies are further obligated under the Archaeological and Historic Preservation Act (AHPA) of 1974[429] to notify the Secretary of the Interior when their actions may cause the loss or destruction of significant scientific, historical, archaeological, or paleontological data.

State Regulations

California Environmental Quality Act (CEQA)

When a proposed project may adversely affect a unique archaeological resource or historic resource, CEQA requires the Lead Agency to carefully consider the possible impacts before proceeding. The 1998 amendment to CEQA has highlighted the importance of evaluating possible impacts upon unique archaeological resources and historic resources. Although the California Register serves as the authoritative guide to historic resources that are to be considered under CEQA, the lack of a listing of a resource does not mean that it is not a significant historic resource. Such a resource could still be subject to CEQA environmental review and/or be of significance. Additionally, Section 21083.2 of CEQA ensures that potential effects on unique archaeological resources are considered as part of a project's environmental analysis.

California Register of Historical Resources (California Register)

The California Register is an authoritative guide in California used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change. As previously discussed, California properties formally determined eligible for, or listed in, the National Register; State Historical Landmarks and Points of Historical Interest; and other resources that are locally designated or have been identified according to OHP guidelines are included in the California Register.

Local Regulations

The APE for this undertaking (project) includes properties that are located in four jurisdictions: the County of Los Angeles, and the cities of Los Angeles, Inglewood, and El Segundo.

County of Los Angeles (County)

Established in 1966, the Historical Landmarks and Records Commission (Commission) acts in an advisory capacity for the County of Los Angeles Board of Supervisors. The Commission is charged with the responsibility of reviewing and recommending to the Board local historical landmarks defined to be worthy of registration by the State of California -- either as "California Historical Landmarks" or as "Points

428 36 CFR Part 800.

429 16 USC 469-469c.

of Interest." The Commission also reviews and recommends applications of Los Angeles County properties to the National Register.

City of Los Angeles

The Los Angeles Cultural Heritage Ordinance, adopted in 1962 and amended in 1985, was established for the purpose of designating local landmarks (Historic-Cultural Monuments) and providing protection against the demolition and/or alteration of historic resources (Sections 22.120 et. seq. of the City's Administrative Code). The ordinance also established the City's Cultural Heritage Commission and empowered it to recommend the designation of Historic-Cultural Monuments to the City Council. The Historic Preservation Overlay Zone (HPOZ) Ordinance (Section 12.20.3 of the City's Municipal Code) was first adopted in 1979 and revised in 1997. The HPOZ Ordinance is a planning tool that enables the designation of historic districts. The City of Los Angeles Conservation Element of the General Plan makes provisions for the preservation and protection of archaeological sites.

City of El Segundo

In 1993, the City of El Segundo enacted a historic preservation ordinance in 1993, by adding chapter 20.52 to the Municipal Code.[430] This chapter empowers the Planning Commission to make recommendations to the City Council regarding the designation of cultural resources and historic districts in the city. Designated cultural resources may not be altered on the exterior or demolished without first obtaining a Certificate of Appropriateness.

City of Inglewood

The City of Inglewood has no mechanism for the designation or protection of historic resources within its jurisdictional boundaries.

Existing Conditions

A brief overview of the prehistory and history of LAX and vicinity is presented for historic context.

Archaeological Setting

As further discussed in Appendix I, *Section106 Report* and Appendix S-G, *Supplemental Section 106 Report*, the oldest directly dated human remains from coastal southern California are those of the "Los Angeles Man." These remains were uncovered in a fragmentary condition at a depth of approximately four meters (13 feet) below the surface in a river bed near Ballona Creek which is approximately 1.75 miles north of LAX.[431] The discovery was made in 1936, and in the months that followed, the remains of a mammoth were found at the same general depth some 400 meters (approximately 1,300 feet) from the human skeleton. "The skull is the oldest directly dated (>23,600 years B.P.-before present) human fossil in the Americas."[432] It is believed that the Ballona Creek region had a human population prior to the extinction of the North American Mammoth.

Los Angeles County's oldest possible remains associated with the Milling Stone period (6,500-3,000 B.P.) are those of "La Brea Woman." This skeletal material was recovered from the La Brea Tar Pits along with a mano (milling stone). The bones were radiocarboned and dated to 9,000 years (+/- 80) before present.[433] Thus, the earliest date we have for the Milling Stone period in this region is circa 7,000 B.C. None of the sites within the boundaries of the APE were identified as having a definite association with the Milling Stone period.

The Intermediate period is little known in most areas of the U.S., but is generally thought to have begun around 1,500 to 1,000 B.C. and to have lasted through about 500 A.D. During this period, the mortar and pestle came into common usage. The mortar and pestle were used to grind the acorns. Sites dating to

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430 As a result of a zoning code update, information regarding historic preservation is currently available under Title 15, Chapter 14 of the City of El Segundo Municipal Code.

431 Lopatin, Ivan A., "Anthropos Institute 35-36," 1940; Berger, R., "Results in Radiocarbon Dating: Early Man in North America," World Archaeology 7, 1981; and Meighan, Clement W., "A late complex in Southern California Prehistory," Southwestern Journal of Anthropology 10(2), not dated.

432 Berger, R., "Results in Radiocarbon Dating: Early Man in North America," World Archaeology 7, 1981.

433 UCLA-1292BB.

the Intermediate period are rare in Los Angeles County, as they are rare everywhere. Many regional coastal sites which probably included Intermediate deposits have been destroyed.[434]

During the Late Prehistoric period, the Shoshonean-speaking people of the Great Basin migrated westward into what are now Los Angeles and Orange counties. This resulted in the displacement of the indigenous populations either northward into Ventura County or south of the San Luis Rey River in San Diego County (areas which were inhabited respectively by the Chumash and Diegenos when the Spanish arrived). Judging by dialectical differences among the various branches of the Shoshonean language, it is estimated that the "Shoshonean Migration" may have taken place at least 1,000 years ago and perhaps as many as 1,500 years ago.[435]

Cultural Setting

The APE lies within a region that was occupied during the late prehistoric period by Native American groups now known as the Gabrielino.[436] The Gabrielino may have numbered as many as 5,000 people at their peak in the pre-European contact period (estimated as 1769 in the Los Angeles basin). However, population estimates are very difficult to make because many of the Indians did not come under Spanish control and, consequently, were not included in census counts.

Generally, the California Native American groups were quite peaceful and did not often offer warlike resistance to European settlement. Consequently, they did not gain any great notoriety during the settlement period. Also, the original Californians were first under the control of the Spanish and Mexican governments and only later, after most of their culture had been destroyed by disease and displacement, did they come under the control of the United States. There was only a minor Native American presence remaining in California when it became a United States possession and massive development began. Consequently, very little interest in the Native Americans and their prehistory was generated. It was many years later that the size, complexity, and extent of archaeological deposits in the state became apparent and of interest.

Historic Setting

LAX began as Mines Field in 1928, when the City of Los Angeles leased 640 acres of the Bennett Rancho. The first permanent building at the airfield was constructed in 1929 by the Curtiss-Wright Flying School. Known as *Hangar One*, the building was designed by Los Angeles architects Gable and Wyant in a distinctive Spanish Colonial Revival style. Additional construction followed, until there were five hangars, a 2,000-foot paved runway, and administrative offices for the then Department of Aviation.

Plans for a new modern airport were derailed by World War II. Wartime production activity at the aircraft manufacturing plants on and around the airport intensified dramatically. In 1942, the federal government assumed control of the airport and the Army Air Corps stationed planes and men at the field. After the war, a master plan envisioning two stages of development, an initial stage to immediately accommodate commercial operations and a long-range expansion of the field, was implemented. The Intermediate Facilities, consisting of four passenger terminals, new administrative buildings, and hangars for individual airlines, were opened on the north side of the airfield in 1946.

A boom in commercial air travel followed, accompanied by marked increases in air freight traffic. A new master plan for the Los Angeles International Airport, so named in 1949, began to be developed. In 1954, in the midst of the Cold War, a Nike missile surface-to-air defense battery was located by the Army on the northwest corner of the airport; it was one of several such facilities located around the Los Angeles basin.

In 1956, a new master plan for a "jet-age" airport was developed by an architectural joint venture of several prominent Los Angeles architects. Their innovative scheme incorporated a U-shaped access road flanked by seven ticketing buildings that in turn were connected via subterranean passageways to remote satellite buildings containing the actual boarding gates. The center of the "U" contained parking, an administrative building surmounted by a state-of-the-art control tower, support facilities, and an

434 Wallace 1984.

435 Kroeber, A.L., "Handbook of the Indians of California," Bureau of American Ethnology Bulletin 78, 1925.

436 Bean, Lowell John and Charles R. Smith, "Gabrielin," in Handbook of North American Indians, Robert F. Heizer, editor, Vol. 8, 1978.

eye-catching Theme Building. This jet-age structure, composed of parabolic arches from which a flying saucer shaped restaurant was suspended, became the symbol and centerpiece of the new airport.

Continuing growth of both commercial and freight traffic at the airport has resulted in numerous improvements over the last few decades. These have included the development of two cargo centers, Cargo City (late 1960s) and the Imperial Cargo Complex (1980s); the Bradley International Terminal (1984); and a new Airport Traffic Control Tower (1996).

Concurrent with the evolution of the airport has been the development of an industrial center around it. Soon after the airfield opened, a few aircraft manufacturers set up shop close to the airfield. The most notable early milestones in the growth of the aircraft industry in the vicinity were the establishment of the Douglas El Segundo plant in 1932 and the construction of the North American Aviation Inglewood factory in 1934. After the end of World War II in 1945, industries down-sized. New avenues of growth were offered in the post-war period by the Korean Conflict, the growth of civilian and commercial air traffic, the replacement of the propeller-driven fleet with jet aircraft, and the Cold War with its accompanying arms and space races. The giants of the industry such as Douglas and North American secured new contracts, and new companies appeared.

The demand for industrial space by non-aircraft concerns also resulted in the expansion of the airport industrial area. One development in particular was notable. Located just east of the south runway, the International Airport Industrial District (1950-1955) was the product of the partnership of Samuel Hayden and S. Charles Lee. The two men purchased and subdivided a 95-acre parcel and Lee, a nationally famous architect, designed demonstration factories, customizing facades of standardized buildings to suit the image of individual tenants. Unlike the majority of industrial improvements in the airport area, these buildings exhibited an awareness of post-war design trends. Another complex, which was distinguished by its architectural qualities, was constructed for cosmetic manufacturer Merle Norman north of the airport (1950-1951).

The concentration of jobs at the airport during wartime had another consequence: it attracted "community builders," interested in developing master-planned communities for defense workers who were eligible for Federal Housing Administration (FHA) assistance. Westchester was a product of this period. A business district was integral to the concept of Westchester as a comprehensively planned community. Created in 1946 to serve the suburb of Westchester and its expected population of around 50,000 persons of moderate income, the Westchester Business District was located on both sides of Sepulveda Boulevard between Manchester and 96th Street.

The town of Inglewood was founded in 1887, just east of what is now LAX. Its early years were spent as a suburban and farming community, but early on, Inglewood realized its potential as an industrial center. It was helped in these aspirations by its location on the Santa Fe Railroad and by the availability and relatively low cost of its real estate. By the time the airport was established in 1928, Inglewood was able to exploit these assets and, as a consequence, attracted numerous industrial firms, both aircraft and non-aviation related, to settle within its borders.

Like Inglewood, El Segundo's destiny has been greatly influenced by the presence of the airport immediately north of the city limits. However, El Segundo's origins were linked with another industry that has greatly shaped Southern California: oil. El Segundo was founded in 1911 by the Standard Oil Company, who chose the site for its second refinery, hence the city's name. However, as early as 1917 other industries were showing an interest in locating in El Segundo, including the aviation industry.

Archaeological/Cultural Resources - Survey Results

Archaeological/Cultural Sites Previously Recorded

Within a radius of approximately three kilometers (1.9 miles) from the center of LAX proper, thirty-two archaeological sites have been previously recorded. Of these sites, four are located on LAX property. As further discussed in Appendix I, *Section 106 Report* and Appendix S-G, *Supplemental Section 106 Report*, all four of the sites were visited during the current study for the LAX Master Plan project to collect data for evaluation of conditions. All of these previously recorded sites are prehistoric in nature (see **Table F4.9.1-1**, Previously Recorded Archaeological/Cultural Resources Sites Within Existing Airport Property). Due to the lack of important prehistoric or historic associations and/or sufficient integrity, the FAA has determined that all four are ineligible for federal, state, and/or local designation. Further, the FAA has concluded that the four sites are not considered unique archaeological resources because they

do not meet the criteria outlined in Section 21083.2(g) of the Public Resources Code. Under the Section 106 consultation process, SHPO concurrence is assumed by the FAA for these determinations as no comments have been received from SHPO and the 30 day review period, as specified in 36 CFR 800.3(c)(4), has long since passed. The precise location of these sites and the supplemental Site Recording Forms are not subject to public disclosure pursuant to Title III Section 304 of the NHPA, as amended, to prevent harm and unauthorized disturbance of the sites.

Table F4.9.1-1

Previously Recorded Archaeological/Cultural Resources Sites Within Existing Airport Property

Site Number	Date Recorded	Recorded By	Type Site	Appears Significant
CA-LAN-202	5 June 53	Eberhart	No information given in recordation	No
CA-LAN-214	5 June 53	Eberhart	Projectile points (small site)	No
CA-LAN-691	27 June 74	Farrell	Shell scatter	No
CA-LAN-1118	Sep. 81	Stickel & Appier	Shell midden w/ lithic debitage	No

Source: PCR Services Corporation, 2000.

CA-LAN-202

This site was recorded in 1953. The site was described as approximately 61 meters (200 feet) in diameter, but no other details regarding the site's characteristics were given. In 1968, Tom King attempted to relocate this site; however, he reported that at the time the houses in the site were still occupied and that yard vegetation was quite dense. A recent detailed examination of the site produced no archaeological evidence of any kind. Because archaeological evidence was not found during the present study and the area has been extensively disturbed, this site appears not to be significant. Thus, this site is ineligible for federal, state, and local designation.

CA-LAN-214

This site, CA-LAN-214, was also recorded in 1953. The site was indicated as "small" and the artifact content is listed as "points." No other details regarding site characteristics were given. This site is currently concealed by asphalt. It is quite likely that street grading in the area has destroyed the archaeological site's integrity. Due to lack of integrity, archaeological site CA-LAN-214 appears not to be significant. Thus, this site is ineligible for federal, state, and local designation.

CA-LAN-691

This site was recorded in 1974. The site was described as a shell scatter. The size was estimated as approximately 91 meters by 12 meters (300 by 40 feet) and the depth was estimated as at least 0.3 meters (one foot). No artifacts were seen in the site area. The site area is currently buried under about 15 meters (49 feet) of fill. As further discussed in Appendix I, *Section 106 Report* and Appendix S-G, *Supplemental Section 106 Report*, during the current survey process a reasonably good-faith effort was made to relocate archaeological site CA-LAN-691; however, no trace of it was found. Site CA-LAN-691 has been determined ineligible for federal, state, and local designation due to the lack of archaeological evidence found at the site and the extensive disturbances to the area.

CA-LAN-1118

This site was recorded in 1981 by G. Stickel and S. Appier. It was described as a shell midden with lithic debitage. The site was large, covering an area of 250 by 100 meters (820 feet by 328 feet). The site has been extensively disturbed since being recorded by Stickel and Appier. Westchester Parkway was constructed in the late 1980s directly through the center of the site. Further, the remaining site has been extensively graded. Due to the lack of integrity, archaeological site CA-LAN-1118 has been determined ineligible for federal, state, and local designation.

Archaeological/Cultural Resources Recorded During Current Study

As further described in Appendix I, *Section 106 Report* and Appendix S-G, *Supplemental Section 106 Report*, two prehistoric archaeological isolates, a prehistoric archaeological site, and one historical archaeological deposit were identified, documented, and recorded during the current project study (see **Table F4.9.1-2**, Previously Unrecorded Archaeological/Cultural Resources Sites Within Existing Airport Property and Acquisition Areas). All four sites were found on LAX property. One of these resources, CA-LAN-2345, appears eligible for the National Register and the California Register. The other three resources are ineligible for the National Register, California Register, and for local designation. The precise location of these sensitive sites and the supplemental Site Recording Forms are not subject to public disclosure. The following describes each of the previously unrecorded sites.

Table F4.9.1-2

Previously Unrecorded Archaeological/Cultural Resources Sites within Existing Airport Property and Acquisition Areas

Site Number	Date Recorded	Recorded By	Type Site	Appears Significant
Isolate 1	12 Jan. 96	Ron Bissell, RMW	Large felsite porphyry flake tool	No
Isolate 2	12 Jan. 96	Ron Bissell, RMW	Large quartzite tool	No
CA-LAN-*1H, 2000	12 Jan. 96	Ron Bissell, RMW	Concrete, asphalt, glass, brick fragments, plaster, linoleum fragments, countertop tiles, and metal fragments	No
CA-LAN-2345	12 Jan. 96	Ron Bissell, RMW	Stone tools, bones, shell fragments	Yes

Source: PCR Services Corporation, 2000.

Isolate 1

This prehistoric tool is a large flake made of a very dark, almost black, felsite porphyry, a type of igneous rock. The tool was recorded, but not collected. This isolate has been determined ineligible for the National Register, California Register, or local listing because it is not considered important and does not contribute further to our understanding of human history or prehistory.

Isolate 2

Isolate 2 is a large flake of reddish quartzite. The tool was recorded, but not collected. Because Isolate 2 does not contribute further to our understanding of human history or prehistory and it does not yield information considered important, it has been determined ineligible for the National Register, California Register, or local listing.

Archaeological Site CA-LAN-*1H

This site consists of a wide scatter of historic debris, including concrete, asphalt, glass (windowpane, bottle, and decorative), brick fragments, plaster, linoleum fragments, two kinds of countertop tiles, and metal fragments. An examination of the USGS map, airport maps of the area, and photographs of the area show that this area was the site of the Nike Missile testing site, which was constructed in 1954. This facility was demolished for the construction of Westchester Parkway, which was completed in 1993. It appears that this site material is debris left from the testing site facility and/or imported as part of the airport fill, since no homes were known to have been built in this area. Site CA-LAN-*1H does not qualify as a historic archaeological site because it consists of redeposited material (secondary deposits) less than 50 years of age. Therefore, this resource is ineligible for the National Register, California Register, or local listing.

Archaeological Site CA-LAN-2345

This large, prehistoric site contains hundreds of stone tools, bones, shell fragments, and thermally affected stones. There is also an intact feature partially exposed at one edge of a blowout. This feature appears to be a roughly circular construction of stones, some of which are tools. It may well be a fire hearth. The feature is important because it is resting directly on or immediately above Older Dune

(Pleistocene) deposits and is partially buried by Younger Dune (Holocene) material. This site may have the potential to yield important information in local prehistory. The location of the site indicates that it is extremely old, perhaps dating to the earliest of Milling Stone time. Some support for this age assessment is found in the lack of trade material (steatite, obsidian, fused shale) in the deposit. Some shell collected from CA-LAN-2345 was submitted to Beta Analytic, Coral Gables, Florida, for radiocarbon age assessment. Radiocarbon data range established for the sample (Beta 84842) is 1860 to 2020 B.C.E. (Before Common Era). This date clearly establishes that the site is a manifestation of the Milling Stone cultural period. Site CA-LAN-2345 appears potentially eligible for federal (National Register), state (California Register), and local listing as a prehistoric site.

Historic/Architectural Resources - Survey Results

No comprehensive historic resources survey of the entire APE had been completed prior to the initiation of the EIS/EIR process for the LAX Master Plan. Survey work conducted in 1995 identified Hangar One as the only property at LAX currently listed in the National Register and the Theme Building as the only other property that met the criteria for listing in the National Register. The report also noted the existence of several other structures on LAX property that required further study.

The additional surveys conducted by PCR in 1998 and 2000, which extended beyond the LAX property, identified approximately 6,000 historic and/or architecturally notable properties within the APE. Ten properties were initially identified as either currently designated or potentially eligible for federal, state, and/or local designation. As discussed above, one property, Hangar One, is currently listed in the National Register under Criterion A. The Theme Building was previously evaluated and was found eligible for the National Register under Criterion C. Three additional properties: the World War II Munitions Storage Bunker, the Merle Norman Complex, and the Academy Theatre, also appear to satisfy the criteria for National Register eligibility. Four other properties were identified as potentially significant, but further evaluation revealed that they lacked sufficient integrity to be eligible for the National Register.[437] However, three of the four properties, the Intermediate Terminal Complex, the International Airport Industrial District, and the Morningside Park Neighborhood, appear to meet the criteria for state and local designation. A tenth property, the 1961 Airport Traffic Control Tower, was also evaluated but is considered ineligible for federal, state, or local designation because of extensive alterations and loss of sufficient integrity. A Supplemental Section 106 Survey conducted for the LAX Expressway alternatives by PCR in 2000, identified two additional historic properties, the Centinela Adobe and Randy's Donuts. These properties are located within the expanded APE for the LAX Expressway as further described in Appendix K, *Supplemental Environmental Evaluation for LAX Expressway and State Route 1 Improvements.* (See **Table F4.9.1-3**, Potentially Significant Historic/Architectural Resources within the APE.)

[437] Integrity refers to the present condition of a property in comparison to its historic condition. In order to be eligible for listing in the National Register, a property must not only be significant but must also retain those aspects of its original condition (location, design, setting, materials, workmanship, feeling, and association) that are essential to conveying its significance. A resource eligible for listing in the California Register must retain enough of its historic character or appearance to be recognized as a historic resource and able to convey the reasons for its significance. For the California Register, integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. It is possible that a historic resource may not retain sufficient integrity to meet criteria for listing in the National Register, but it may still be eligible for listing in the California Register. The City of Los Angeles Cultural Heritage Ordinance does not stipulate an integrity threshold.

Table F4.9.1-3

Potentially Significant Historic/Architectural Resources within the APE

Property	Location	Year Built	NR	CR/LAHCM/ OTHER
Hangar One	LAX	1929	Listed	Listed
Theme Building	LAX	1961-62	Eligible	Listed
1961 Airport Traffic Control Tower	LAX	1961	Ineligible	Ineligible
World War II Munitions Storage Bunker	LAX	1942	Eligible	Eligible
Intermediate Terminal Complex	LAX	1946	Ineligible	Eligible
International Airport Industrial District	Acquisition Area/LA	1950-55	Ineligible	Eligible
Merle Norman Headquarters Complex	Acquisition Area/LA	1950-51	Eligible	Eligible
Academy Theatre	Inglewood	1939	Eligible	Eligible
Morningside Park Neighborhood	Inglewood	1930s	Ineligible	Eligible
Centinela Adobe[1]	Inglewood	c. 1844	Listed	Listed
Randy's Donuts[1]	Inglewood	1953	Eligible	Eligible

NR= National Register of Historic Places.
CR = California Register of Historical Resources.
LAHCM = Los Angeles Historic-Cultural Monument.
OTHER = Local Landmark Potential (City of Inglewood: Although the city has no mechanism for designation).

[1] These resources are located within the expanded APE for the LAX Expressway as addressed in Appendix K, *Supplemental Environmental Evaluation for LAX Expressway and State Route 1 Improvements.*

Source: PCR Services Corporation, 2000.

None of the remaining properties surveyed, including the two fuel farm sites, were found eligible for listing in the National Register, California Register, or local jurisdiction registers based on either insufficient age, compromised integrity, and/or lack of sufficient important historical associations and/or architectural significance necessary under federal, state, and local criteria.

The following describes the properties identified in **Table F4.9.1-3**.

Hangar One

Hangar One was listed in the National Register of Historic Places in 1992. The oldest building at LAX, Hangar One was completed in 1929. It was listed in the National Register under Criterion A for its significance as the first structure built at LAX and for its association with a major California industry (aviation). As a National Register listed property, Hangar One is automatically listed in the California Register of Historical Resources. Hangar One was also designated Los Angeles Historic-Cultural Monument #44 in 1966. Hangar One was reevaluated as part of the Section 106 compliance process for the LAX Master Plan. Although not listed in the National Register for its architectural qualities, the building, based on current evaluation, also appears eligible under Criterion C, as a rare example of the Spanish Colonial Revival style in an aviation type industrial building, and for its significance in the work of the locally prominent architectural firm of Gable and Wyant.

Theme Building

The Theme Building was previously evaluated for listing in the National Register of Historic Places and was found eligible for individual listing. For its unique architecture, which has become symbolic not only of the airport but of the whole city, the Theme Building satisfies National Register Criteria Consideration G for exceptional significance in a building less than 50 years old. The Theme Building is also eligible for listing in the California Register for architectural merit under Criterion 3. Constructed in 1961-62, the Theme Building was the centerpiece of the large expansion of LAX which converted it into a "jet-age airport." The arresting design of parabolic arches with a flying saucer restaurant suspended between them was conceived by joint venture architects William L. Pereira, Charles Luckman, Welton Becket, and Paul R. Williams. The Theme Building was designated City of Los Angeles Historic-Cultural Monument #570 in 1992.

1961 Airport Traffic Control Tower

Due to its lack of integrity this property is ineligible for listing in the National Register, the California Register, and for local designation. Recently, the exterior of the 1961 Airport Traffic Control Tower was extensively modified. The most significant modification made at this time was the removal of the character defining spans of fenestration with blue enamel window panels and the bands of vertical metal window louvers around the tower. Though associated with the new Los Angeles "Jet Age" International Airport of the early 1960s, the building has been modified to a degree where it lacks overall integrity and does not reflect the exceptional importance necessary to satisfy Criterion Consideration G (properties less than 50 years of age) of the National Register criteria.

World War II (WWII) Munitions Storage Bunker

After the attack on Pearl Harbor in 1941, the seacoast defense construction program went into high gear in 1942, with priority for the sites along the Pacific Coast. The Harbor Defenses of Los Angeles program consisted of five units that covered the coastline of southern California from Huntington Beach in Orange County north to Santa Barbara. These five units were responsible for approximately 15 batteries of varying size, including the El Segundo Battery at LAX. Upon completing a current assessment of the area, the now exposed Munitions Storage Bunker (originally placed underground) appears to be the only extant remnant of the El Segundo Battery. Because of its contribution to a unified entity (the Harbor Defenses of Los Angeles program), the Munitions Storage Bunker appears to be eligible for the National Register under Criteria A and C as a contributor to a thematic district that has not been fully documented. The potential district, which includes this bunker and several other World War II Harbor Defenses of Los Angeles batteries with extant structures, exhibits distinctive characteristics of a particular property type (military). The district and its contributors also exemplify, symbolize, and manifest tangible elements of the military history in southern California and our conceptions of military preparedness during World War II. In addition, the bunker also appears eligible for the California Register and for local designation as a contributor to a potential thematic grouping of coastal defense properties located along the southern California coastline. The Munitions Storage Bunker, however, is ineligible for the National Register as an individual resource because it lacks individual distinction and integrity.

Intermediate Terminal Complex

This complex, consisting of two contributors and one non-contributor, is ineligible for listing in the National Register due to alterations and loss of some structures. Intended to be temporary in nature, the Intermediate Terminal Complex originally included the two office buildings and double-arched hangar that are still extant, plus five additional buildings that were used as passenger terminals and hangars. Demolition of the passenger terminals and alterations to the double-arched hangar prevents the complex from meeting National Register requirements for integrity. However, as a representative milepost in the evolution of the Los Angeles Airport, the complex is historically significant under the City of Los Angeles Historic-Cultural Monument criteria and, thus, appears eligible for designation as a Historic-Cultural Monument. It also appears to meet the criteria for the California Register for the same reasons as previously noted.

International Airport Industrial District

Located within the City of Los Angeles, this district is bounded by 102nd Street and Century Boulevard on the north, 104th Street on the south, La Cienega Boulevard on the east and Aviation Boulevard on the west. Developed by architect S. Charles Lee, this district originally encompassed approximately 80 industrial buildings (1950-1955). It now contains approximately 48 buildings, 28 of which have undergone modifications to their exteriors. These structures within the district all share certain characteristics such as massing, height, setback, materials, fenestration, adequate parking arrangements, and post-war Modern entries. However, because of its compromised integrity this district is ineligible for the National Register. The district does retain sufficient integrity necessary for California Register and City of Los Angeles designations. Additionally, it appears to satisfy the criteria for the California Register and designation as a City of Los Angeles Historic Preservation Overlay Zone (HPOZ) because the district is associated with S. Charles Lee, a nationally prominent architect, whose design skills and entrepreneurial instincts led to an innovative approach to early industrial development.

Merle Norman Headquarters Complex

The Merle Norman Headquarters Complex is eligible for the National Register under Criterion C for its distinctive architectural style and design utilized in an industrial building. The property also appears eligible for the California Register and for listing as a City of Los Angeles Historic-Cultural Monument. This group of two buildings on Bellanca Avenue in an industrial area near LAX is notable for its architectural qualities. These buildings were built in 1950-1951 and reflect, in their attention to design, the economic success of this cosmetic manufacturing company and an awareness of the expectations of their clientele.

Academy Theatre

Located in the City of Inglewood within the neighborhood of Morningside Park, the 1939 Academy Theatre, designed by architect S. Charles Lee, was originally intended to house the Academy Awards ceremony. However, the theatre was never used for that purpose. It was, however, utilized as a neighborhood theatre house until it closed in 1973. The building re-opened in 1976 as the Academy Church and remains a place of worship. Its architecture illustrates sophisticated Streamline Moderne styling. Machine-made industrial materials such as glass block (covered with flagstone), polished aluminum, and chrome tubing accent the novelty and luxury of the building. Its undulating walls in the foyer, fluted 103-foot high tower (originally highlighted by a spiral fin), semi-circular marquee, terrazzo sidewalk, and stucco-sheathed cylinders are all characteristics of the Streamline Moderne style at its finest. Despite its modifications, which are reversible, and the removal of the island ticket box, this property still exhibits one of the best examples of Streamline Moderne styling in a theatre found in the Los Angeles area. Therefore, the property appears eligible for the National Register under Criterion A for its association with the Academy Awards and Criterion C for its distinctive architectural styling and associated architect, S. Charles Lee. The property also appears eligible for the California Register and for local designation due to its unique architectural design and association with S. Charles Lee.

Morningside Park Neighborhood

Located within the City of Inglewood, this residential neighborhood is bounded by Manchester Boulevard on the south, Van Ness Avenue on the east, 79th Street on the north, and 8th Street on the west. This district is primarily comprised of single-family residences. Most of the properties within the neighborhood were constructed in the mid-1930s in the Spanish Colonial Revival style with some Period Revival style infill. These structures share certain characteristics such as style, massing, height, setback, materials, and ornate fenestration. Because of the overall lack of integrity necessary for federal level designation this district is ineligible for the National Register. However, it does retain sufficient historical and architectural significance and integrity to adequately satisfy the integrity threshold of the California Register. Therefore, because of its association with early housing development in the City of Inglewood and southern California the Morningside Park Neighborhood appears eligible for State and local jurisdiction designation.

Randy's Donuts

This small, unique building situated on the northwest corner of Manchester Boulevard and La Cienega Boulevard was designed by Robert Graham in 1953. A giant doughnut sits atop a tiny, canted-glass, early 1950s Modern fast-food building. In a Modern fashion, the vertical steel supports for the doughnut plunge right through the one-story building below. Randy's Donuts is a classic example of mid-20th century Programmatic architecture, where the sign (the three-dimensional doughnut) is the design and the building below is merely a base. It was a folk art expression of new lifestyles and of architectural freedom typically found in Los Angeles. This property is an excellent representative of a particular property type and architectural style (Programmatic/Mimetic Architecture) and, therefore, appears eligible for listing in the National Register of Historic Places at the local level of significance. Randy's Donuts also qualifies for California Register and City of Los Angeles designation because of its architecture.

Centinela Ranch House (Ygnacio Machado Adobe)

Rancho Aguaje de la Centinela was granted to Ygnacio Machado by Governor Manuel Micheltorens in 1844. Today, the area that was once Rancho Aguaje de la Centinela includes portions of Inglewood (west half) as well as the east half of Westchester. It is believed that the Centinela Adobe was built shortly after the receivership of the land grant by Ygnacio Machado (c. 1844). The building is single-floor

adobe with a wood shingle roof, fireplaces, and deep window reveals. As is generally the case with adobes, the house was added to from time to time, especially in the early 1860s. The Centinela Adobe was placed on the National Register of Historic Places in 1974 (NR No. 19740502). Because of its National Register listing, the Centinela Ranch House is automatically eligible for the California Register. It is also a designated Los Angeles County Historical Site.

4.9.1.4 Thresholds of Significance

4.9.1.4.1 CEQA Thresholds of Significance

A significant impact upon historic/architectural and archaeological/cultural resources would occur if the direct and/or indirect changes in the environment that may be caused by the particular build alternative would potentially result in one or more of the following future conditions listed below.

- Physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historic resource would be materially impaired. The significance of a historic resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of a historic resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the National Register, California Register, and/or local register.
- Any action, such as clearing, scraping, soil removal, mechanical excavation, or digging that would disturb, damage, or degrade a unique archaeological resource.[438]

These thresholds are utilized because they address specific concerns to prehistoric and historic resources associated with the proposed Master Plan alternatives, namely, loss, destruction, alteration, or damage of a resource. These thresholds reflect state regulations, which define adverse impact levels and analysis. It is important to note that, under CEQA, project compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties mitigates impacts on historic resources to a less than significant level.[439]

4.9.1.4.2 Federal Standards

The Section 106 regulations establish the criteria of adverse effects to historic properties within the APE. According to these criteria, an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion in the National Register in a manner that would diminish the property's location, design, setting, materials, workmanship, feeling, or association.[440] Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later, be farther removed in distance, or be cumulative.[441] Examples of adverse effects on historic properties include, but are not limited to:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties[442] and applicable guidelines;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;

438 City of Los Angeles, Draft L.A. CEQA Thresholds Guide, May 14 1998.
439 State CEQA Guidelines, Section 15064.5(b)(3).
440 36 CFR 800.5(a)(1).
441 36 CFR 800.5(a)(1).
442 36 CFR 68.

- Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

A finding of no adverse effect may be found when the undertaking's effects do not meet the criteria of adverse effect or the undertaking is modified or conditions are imposed, such as the subsequent review of plans for conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR 68) and applicable guidelines, to avoid adverse effects.[443]

If an adverse effect is found, the Federal agency official should consult further with SHPO and interested parties to resolve the adverse effect pursuant to 36 CFR 800.6. The ACHP may participate in consultation. Consultation usually results in a Memorandum of Agreement (MOA), which outlines agreed-upon measures that the Federal agency will take to avoid, minimize, or mitigate the adverse effects. A binding commitment to such proposed measures may also be incorporated in the environmental document's record of decision (ROD) instead of drafted in an MOA. The agency's responsibilities under Section 106 are considered satisfied when either a ROD or MOA is executed.

4.9.1.5 Master Plan Commitments

As indicated in subsection 4.9.1.6, *Environmental Consequences*, implementation of noise mitigation under the Master Plan build alternatives and other ongoing airport activities would have the potential to impact historic resources. In recognition of the potential impacts, LAWA has made the following commitment, coded "HR" for "Historic Resources."

- **HR-1. Preservation of Historic Resources (Alternatives A, B, C, and D).**

  In implementing the LAX Master Plan and conducting ongoing activities associated with the operation of the airport, LAWA will support the preservation of identified significant historic/architectural resources through careful review of design and development adjacent to those resources and by undertaking any modifications to those resources in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties.[444] Additionally, where sound insulation is proposed for identified significant historic/architectural resources under the Aircraft Noise Mitigation Program, LAWA will ensure that methods are developed with the approval of a qualified architectural historian or historic architect, who meets the Secretary of the Interior's Professional Qualifications Standards, in compliance with the Secretary of the Interior's Standards for Rehabilitation.[445]

4.9.1.6 Environmental Consequences

As described in the Analytical Framework discussion in the introduction to Chapter 4, the basis for determining impacts under CEQA is different from that of NEPA. Under CEQA, the impacts of a proposed project and alternatives are measured against the "environmental baseline," which is normally the physical conditions that existed at the time the Notice of Preparation was published (i.e., June 1997, or 1996 when a full year of data is appropriate, for the LAX Master Plan Draft EIS/EIR). As such, the CEQA analysis in this Final EIS/EIR uses the environmental baseline, or in some cases an "adjusted environmental baseline," as the basis by which to measure and evaluate the impacts of each alternative. Under NEPA, the impacts of each action alternative (i.e., build alternative) are measured against the conditions that would otherwise occur in the future if no action were to occur (i.e., the "No Action" alternative). As such, the NEPA analysis in this Final EIS/EIR uses the No Action/No Project Alternative as the basis by which to measure and evaluate the impacts of each build alternative (i.e., Alternatives A, B, C, and D) in the future (i.e., at buildout in 2015 or, for construction-related impacts, selected future

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443 36 CFR 800.5(b).

444 Weeks and Grimmer, The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, U.S. Department of the Interior, National Park Service, 1995.

445 This applies to sound insulation proposed under Mitigation Measure MM-LU-1, Implement Revised Aircraft Noise Mitigation Program (Alternatives A, B, C, and D) and Mitigation Measure MM-LU-2, Incorporate Residential Dwelling Units Exposed to Single Event Awakenings Threshold into Aircraft Noise Mitigation Program (Alternatives A, B, C, and D).

interim year). Based on this fundamental difference in the approach to evaluating impacts, the nature and significance of impacts determined under CEQA are not necessarily representative of, or applicable to, impacts determined under NEPA. The following presentation of environmental consequences should, therefore, be reviewed and considered accordingly.

Each of the four build alternatives and the No Action/No Project Alternative was examined to determine the potential effects on historic/architectural and archaeological/cultural resources within the APE. As part of this assessment, the FAA consulted with the California SHPO and the City of Los Angeles on the effects of each of the alternatives. No comments have been received from SHPO on the effects of each of the Master Plan alternatives and FAA's determination findings regarding historic/architectural and archaeological/cultural resources. Further, the 30 day review period allotted for SHPO review and comment, as specified in 36 CFR 800.3(c)(4), has long since passed. Therefore, SHPO concurrence is assumed by the FAA.[446] FAA's findings are presented in **Table F4.9.1-4,** Significant Properties Within the APE Affected (Directly or Indirectly) by the Master Plan Alternatives, and discussed below.

Table F4.9.1-4

Significant Properties Within the APE Affected (Directly or Indirectly) by the Master Plan Alternatives

	NR[1]	CR[2]/LAHCM[3]/OTHER[4,5]	No Action/ No Project	Alt A	Alt B	Alt C	Alt D
Hangar One	Listed	Listed	No	No	Yes	No	No
Theme Building	Eligible	Listed	No	No	No	No	No
Merle Norman Headquarters Complex	Eligible	Eligible	No	No	Yes	No	No
Academy Theatre	Eligible	Eligible	No	Yes	Yes	Yes	No
CA-LAN-2345 (archaeological)	Eligible	Eligible	No	No	No	No	No
World War II Munitions Storage Bunker	Eligible	Eligible	No	No	No	No	No
Intermediate Terminal Complex	Ineligible	Eligible	No[7]	Yes	Yes	Yes	No
International Airport Industrial District	Ineligible	Eligible	No	Yes	Yes	Yes	Yes
Morningside Park Neighborhood	Ineligible	Eligible	No	Yes	Yes	Yes	Yes
Centinela Adobe[6]	Listed	Listed	No	Yes	No	Yes	No
Randy's Donuts[6]	Eligible	Eligible	No	Yes	No	Yes	No

1 NR = National Register of Historic Places.
2 CR = California Register of Historical Resources.
3 LAHCM = Los Angeles Historic-Cultural Monument.
4 OTHER = Local Landmark Potential (City of Inglewood).
5 Other unique archaeological resource, as defined by CEQA Guidelines - Section 15064.5(c) and PRC Section 21083.2(g).
6 The property would only be affected if the preferred LAX Expressway alternative is not selected.
7 Although the double arched hangar located within the Intermediate Terminal Complex would be demolished, it is not a contributor to the complex. Therefore, no adverse impact would occur.

Source: FAA and PCR Services Corporation, 2003.

4.9.1.6.1 No Action/No Project Alternative

The No Action/No Project Alternative (described in Chapter 3, *Alternatives)* contains features that may directly or indirectly impact historic/architectural resources and archaeological/cultural resources. Some of these features are the addition of new and replacement cargo facilities within the Century Cargo Complex, the development of the LAX Northside and Continental City projects, and the acquisition of the Manchester Square and Belford Avenue residential neighborhoods by LAWA.

The discussions that follow under the headings of Historic/Architectural Resources and Archaeological/ Cultural Resources identify the components of the No Action/No Project Alternative that would result in direct or indirect impacts on historic and prehistoric properties, including the properties shown in **Table F4.9.1-4.**

446 The FAA Western-Pacific Region office communicated directly with SHPO to confirm they would not be commenting and that concurrence with FAA findings would be assumed.

Historical/Architectural Resources

As discussed in Appendix I, *Section 106 Report* and Appendix S-G, *Supplemental Section 106 Report*, this alternative would include approved and current demolition of existing older and functionally obsolete air freight facilities and the construction of replacement facilities. Under the No Action/No Project Alternative, the double arched hangar, a non-contributor to the locally significant Intermediate Terminal Complex, would be demolished to allow for construction of a new cargo facility as part of the Century Cargo Complex. The remaining two buildings, contributors to the Intermediate Terminal Complex, would retain sufficient integrity for local eligibility.

It is assumed that the Belford Avenue and Manchester Square residential areas would be acquired and all buildings cleared. Based on a recent historic architectural survey conducted for the Manchester Square/Belford Area Voluntary Acquisition Project, both the Belford and Manchester Square areas have been determined ineligible for the National Register, California Register, and local designation. Therefore, demolition of the properties within these two areas would not adversely impact historic resources.

Archaeological/Cultural Resources

Excavation and grading activities associated with this alternative could disturb one known archaeological resource (CA-LAN-1118) which consists of a shell midden with lithic debitage. However, because this resource is considered ineligible for the National Register, California Register, and local designation, disturbance of CA-LAN-1118 would not result in an adverse impact.

Previous grading and excavation activities in the vicinity of LAX Northside and Continental City have extensively disturbed these areas. Previous record searches suggest that the presence of archaeological resources within these two areas is unlikely. Nonetheless, there may be potential to encounter unanticipated archaeological resources during grading and excavation activities. Therefore, project conditions for LAX Northside require archaeological monitoring, which would reduce the potential for impacts.

Taxiway EE in the North Airfield would affect one archaeological site (CA-LAN-*1H), consisting of a wide scatter of historic debris, and one isolate (Isolate 1), a prehistoric tool made of felsite porphyry; however, both resources have been determined ineligible for federal, state, or local designation.

4.9.1.6.2 Alternative A - Added Runway North

A complete description of the facilities associated with Alternative A is provided in Chapter 3, *Alternatives*. Under Alternative A, new development would include the addition of a northern runway, the extension of existing runways and taxiways, the addition of a new terminal, new cargo and parking facilities, and improvements to circulation and public transportation systems. Approximately 273 acres of land to the north and east of the airport would be acquired for airport use. In addition, the vacant LAX Northside and Continental City sites would be developed.

The discussions that follow under the headings of Historic/Architectural Resources and Archaeological/Cultural Resources identify the components of Alternative A that would result in direct or indirect impacts on historic and prehistoric properties, including the properties shown in **Table F4.9.1-4**.

Historic/Architectural Resources

As discussed in Appendix I, *Section 106 Report* and Appendix S-G, *Supplemental Section 106 Report*, Alternative A would maintain most of the existing cargo facilities in the Imperial Complex, redevelop portions of the Century Cargo Complex, and build new cargo facilities in the southeast quadrant of the airport between Aviation, Century, and La Cienega boulevards and Imperial Highway areas. By 2015, the Intermediate Terminal Complex, a state and locally eligible historic resource, would be demolished to allow for construction of a new, expanded cargo facility south of Century Boulevard and just east of Sepulveda. Demolition of the Intermediate Terminal Complex would be considered a significant impact at the state and local levels. However, Hangar One, the Theme Building, the WWII Munitions Storage Bunker, and the Merle Norman Headquarters Complex would not be affected by this development activity.

Under Alternative A, 84 housing units in the southeastern portion of Westchester and the Westchester Branch Library would be acquired. These properties have been determined ineligible for the National

Register, California Register, and for local designation. Therefore, acquisition and demolition of these properties would not be considered a significant impact. However, the International Airport Industrial District, a state and locally eligible historic resource, would be acquired and demolished to allow for the development of the La Cienega Cargo Complex. Demolition of the International Airport Industrial District would be a significant impact at the state and local levels.

Construction of new Runway 6L/24R and extensions and/or relocations of the four existing runways would change the areas exposed to significant noise levels from LAX. The National Register-eligible Academy Theatre and portions of the Morningside Park neighborhood, a state and locally-eligible historic district, would be impacted by noise levels above 65 CNEL and would qualify for noise mitigation. If sound insulation of the theater and those properties within the district was undertaken, it could result in the loss or alteration of significant character-defining elements such as windows and doors. Adoption of Master Plan Commitment HR-1, Preservation of Historic Resources (Alternatives A, B, C, and D), commits LAWA to undertake noise attenuation for historic resources only under the supervision of a qualified architectural historian or historical architect. Historic resources would be sound-insulated using materials in keeping with recommended approaches to rehabilitation set forth in the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. With implementation of this Master Plan commitment, no significant impacts on these properties would occur.

As further described in Appendix K, *Supplemental Environmental Evaluation for LAX Expressway and State Route 1 Improvements*, construction of LAX Expressway improvements along the west side of I-405 under the Split Viaduct alternative would have significant impacts on two historic properties. The Centinela Adobe, which is currently listed in the National Register, would be directly and indirectly impacted by the encroachment of the roadway onto the property. Randy's Donuts, which appears eligible for the National Register at the local level of significance, would be indirectly impacted by elevated portions of the LAX Expressway, due to visual and possible vibration impacts on the resource. If the Single Viaduct alternative is selected, impacts on these properties would be avoided. The Single Viaduct calls for improvements along the east side of I-405.

Compared to the No Action/No Project Alternative, which would have no impact to historic/architectural resources, Alternative A would have impacts associated with the demolition of the Intermediate Terminal Complex and the International Airport Industrial District. Both are eligible for state and local designation. Additionally, if under Alternative A the construction of the preferred LAX Expressway alternative is not implemented, improvements along the west side of I-405 would have impacts associated with the Centinela Adobe and Randy's Donuts.

Archaeological/Cultural Resources

With the implementation of Alternative A, three documented archaeological sites (CA-LAN-1118, CA-LAN-691, and CA-LAN-*1H) and one isolate (Isolate 1) would be directly affected by the development of transportation facilities and associated construction-related excavation and grading activities. However, archaeological sites CA-LAN-1118, which consists of a shell midden with lithic debitage, and CA-LAN-691, which consists of a shell scatter, have been recorded and were determined ineligible for federal, state, and local designations. In addition, archaeological site CA-LAN-*1H, consisting of a wide scatter of historic debris, and Isolate 1, a prehistoric tool made of felsite porphyry, would be affected by development of Taxiway EE in the North Airfield. Both resources have been determined ineligible for federal, state, or local designation. Therefore, impacts on these resources would be less than significant. Archaeological site CA-LAN-2345, which consists of a large prehistoric site containing stone tools, bones, shell fragments, and possibly a stone fire hearth, would not be affected by this development activity.

Given the number of sites previously recorded within the study area, there is a relatively high likelihood of discovering archaeological/cultural resources within or near the APE. This suggests that discoveries may occur from construction-related activities such as grading and excavation. The disturbance or destruction of potentially significant undiscovered archaeological/cultural resources by these activities would be considered a significant impact.

Potential impacts on archaeological/cultural resources under Alternative A would be similar to the No Action/No Project Alternative with no direct or indirect impacts on known federal, state, or locally eligible archaeological/cultural resources. The only difference between the two alternatives would be a greater potential for encountering unanticipated archaeological/cultural resources under Alternative A due to more extensive construction-related activities.

4.9.1.6.3 Alternative B - Added Runway South

A complete description of the facilities associated with Alternative B is provided in Chapter 3, *Alternatives*. The effects on historic and archaeological resources under Alternative B would be similar to those described for Alternative A, with limited exceptions.

The discussions that follow under the headings Historic/Architectural Resources and Archaeological/ Cultural Resources identify the components of Alternative B that would result in direct or indirect impacts on historic and prehistoric properties, including the properties shown in **Table F4.9.1-4**.

Historic/Architectural Resources

Similar to Alternative A, the Intermediate Terminal Complex would be demolished, resulting in a significant impact at the state and local levels. In addition, if Alternative B was adopted, redevelopment of the Imperial Cargo Complex for additional cargo space, taxiways, and aprons would involve the relocation of Hangar One. Hangar One is currently listed on the National Register and the California Register, and is also designated a City of Los Angeles Historic-Cultural Monument. Prior to physical relocation of Hangar One, a relocation document would be developed by LAWA in accordance with guidelines recommended by the National Park Service that are outlined in the booklet *Moving Historic Buildings* by John Obed Curtis and the procedures outlined under 36 CFR 60.14(b). The relocation process would be overseen by the SHPO after approval of the Relocation Plan by the National Park Service and the Keeper of the National Register.

As required in 36 CFR 60.14(b), the new setting for Hangar One would be similar to its current and historic setting. Under Alternative B, the property would be moved approximately 1,100 feet to the southwest within the original 640 acres established as Mines Field, but within proximity to the southernmost runway, taxiways, aircraft tarmac, and hangar apron. As proposed, the property's original orientation in an east-west direction would be retained. In addition, six of the seven aspects of integrity (setting, association, design, materials, workmanship, and feeling) would be retained, enough to still convey the property's significance. When relocated, all efforts would be made to recreate (in accordance with the "Standards") the appropriate setting in and around the structure. With the relocation of Hangar One, conducted in a manner stipulated in the relocation document, it is assumed that the property would retain its National Register listing and eligibility. Nonetheless, relocation of Hangar One from its original site is considered a significant adverse impact at the state and local levels.

Impacts on historic resources due to land acquisition under Alternative B would be similar to those discussed under Alternative A. As indicated above, demolition of the International Airport Industrial District would be considered a significant impact at the state and local levels. Indirect effects of noise would also be similar to those discussed under Alternative A. Implementation of Master Plan Commitment HR-1, Preservation of Historic Resources (Alternatives A, B, C, and D), would prevent sound insulation measures for noise mitigation from having a significant impact on the architectural character of the Academy Theatre and on contributing properties within the Morningside Park neighborhood historic district.

Alternative B also calls for the reconfiguration, extension, and addition of highway and transit networks around the airport, including a ring road. The Merle Norman Headquarters Complex, a National Register, California Register, and local listings eligible historic resource, would be acquired by LAWA and demolished for construction of the ring road. Demolition of the Merle Norman Headquarters Complex would be considered a significant impact at the federal, state, and local levels.

The Theme Building and the WWII Munitions Storage Bunker would not be affected by this development activity.

Unlike the No Action/No Project Alternative, which would have no impact to historic/architectural resources, Alternative B would have impacts associated with the relocation of Hangar One, a National Register listed property, and the demolition of the three resources: Merle Norman Headquarters Complex, a National Register eligible property; the International Airport Industrial District, a state and locally eligible property; and the Intermediate Terminal Complex, also eligible for state and local designation.

Archaeological/Cultural Resources

As further described in Appendix I, *Section 106 Report* and Appendix S-G, *Supplemental Section 106 Report*, impacts on archaeological/cultural resources associated with Alternative B would be the same as those described for Alternative A. Implementation of Alternative B would result in direct impacts on site CA-LAN-691, which consists of a shell scatter. However, because this resource is considered ineligible for the National Register, California Register, and local designation, disturbance of CA-LAN-691 would not result in a significant impact. Archaeological site CA-LAN-2345, which is described in detail in Appendix I, *Section 106 Report* and Appendix S-G, *Supplemental Section 106 Report*, would not be affected by this development activity. Archaeological site CA-LAN-2345 consists of a large, prehistoric site, and has been formally determined eligible for National Register designation.

As with Alternative A, unknown archaeological resources could be affected during construction and excavation activities. The disturbance or destruction of potentially significant undiscovered archaeological resources that might be encountered would be considered a significant impact.

Potential impacts on archaeological/cultural resources under Alternative B would be similar to the No Action/No Project Alternative with no direct or indirect impacts on known federal, state, or locally eligible archaeological/cultural resources. The only difference between the two alternatives would be a greater potential for encountering unanticipated archaeological/cultural resources under Alternative B due to more extensive construction-related activities.

4.9.1.6.4 Alternative C - No Additional Runway

A complete description of the facilities associated with Alternative C is provided in Chapter 3, *Alternatives*. The discussions that follow under the headings Historic/Architectural Resources and Archaeological/ Cultural Resources identify the components of Alternative C that would result in direct or indirect impacts on historic and prehistoric properties, including the properties shown in **Table F4.9.1-4**.

Historic/Architectural Resources

Alternative C would retain most of the existing cargo space and develop new facilities, such as the Westchester Cargo Complex and Manchester Square Cargo Complex, on newly acquired property at the east end of the airport. The South Cargo Complex, which includes the National Register listed Hangar One property, would also be retained and preserved. Under Alternative C, Hangar One would not be relocated; therefore, no direct or indirect impacts on the resource would occur. In addition, Alternative C would have no direct or indirect effect on the Theme Building or the WWII Munitions Storage Bunker.

Under Alternative C, approximately 84 housing units in the southeastern portion of Westchester and the Westchester Branch Library would be acquired. These properties have been determined ineligible for the National Register, California Register, and for local designation. Therefore, acquisition and demolition of these properties would not result in a significant impact. Approximately one-half of the International Airport Industrial District would be acquired and demolished to make way for 1,400 on-airport employee parking spaces. Demolition of buildings within the state and locally eligible district would be considered a significant impact at the state and local levels. Although this impact is significant, the partial demolition under Alternative C would contrast with the complete demolition of the district under Alternative A and B.

Impacts on historic resources related to indirect effects of noise would be similar to those for Alternatives A and B. Implementation of Master Plan Commitment HR-1, Preservation of Historic Resources (Alternatives A, B, C, and D), would prevent sound insulation for noise mitigation from having a significant impact on the architectural character of the Academy Theatre and on contributing properties within the Morningside Park neighborhood historic district.

Under Alternative C, the alignment of the ring road is further south than in Alternative B. Therefore, the proposed ring road alignment in Alternative C would not affect the Merle Norman Headquarters Complex.

By 2015, the Intermediate Terminal Complex, a state and locally eligible historic resource, would be demolished for flight kitchens and maintenance hangars. As described previously for Alternatives A and B, demolition of this resource would be a significant impact.

As discussed for Alternative A and as further described in Appendix K, *Supplemental Environmental Evaluation for LAX Expressway and State Route 1 Improvements*, construction of LAX Expressway improvements along the west side of I-405 under the Split Viaduct alternative would have significant

impacts on two historic properties: the Centinela Adobe, which is currently listed in the National Register, and Randy's Donuts, which appears eligible for the National Register at the local level of significance.

Compared to the No Action/No Project Alternative, which would have no impact to historic/architectural resources, Alternative C would have impacts associated with the demolition of the Intermediate Terminal Complex and the partial demolition of the International Airport Industrial District. Both are eligible for state and local designation. Additionally, if under Alternative C the construction of the preferred LAX Expressway alternative is not implemented, improvements along the west side of I-405 would have impacts associated with the Centinela Adobe, a National Register listed property, and Randy's Donuts, a National Register eligible property.

Archaeological/Cultural Resources

Impacts on archaeological/cultural resources associated with Alternative C would be the same as those described for Alternatives A and B. Implementation of Alternative C would result in direct impacts on site CA-LAN-691, which consists of a shell scatter. However, because this resource is considered ineligible for the National Register, California Register, and local designation, disturbance of CA-LAN-691 would not result in a significant impact. The National Register eligible archaeological site CA-LAN-2345, which consists of a large prehistoric site containing stone tools, bones, shell fragments, and possibly a stone fire hearth, would not be affected by this development activity.

Given the number of sites previously recorded within the study area, there is a relatively high likelihood of discovering archaeological/cultural resources within or near the APE. This suggests that discoveries may occur from construction-related activities such as grading and excavation. The disturbance or destruction of potentially significant undiscovered archaeological/cultural resources by these activities would be considered a significant impact.

Potential impacts on archaeological/cultural resources under Alternative C would be similar to the No Action/No Project Alternative with no direct or indirect impacts on known federal, state, or locally eligible archaeological/cultural resources. However, there is a greater potential for encountering unanticipated archaeological/cultural resources under Alternative C due to more extensive construction-related activities.

4.9.1.6.5 Alternative D - Enhanced Safety and Security Plan

A complete description of the facilities associated with Alternative D is provided in Chapter 3, *Alternatives*. The features of Alternative D that are relevant to the analysis of historic/architectural and archaeological/cultural resources are summarized below.

Historic/Architectural Resources

Alternative D was examined to determine the potential impacts on historic/architectural and archaeological/cultural resources within the APE. The results of FAA's findings for Alternative D are presented in **Table F4.9.1-4** and are discussed below. Alternative D would have no direct or indirect impacts on the National Register listed Hangar One property or the following National Register eligible properties: the Theme Building, the WWII Munitions Storage Bunker, the Merle Norman Complex, and the Academy Theatre. Furthermore, there would be no direct or indirect impacts on the state and locally eligible Intermediate Terminal Complex. With implementation of Master Plan Commitment HR-1, Preservation of Historic Resources (Alternatives A, B, C, and D), impacts to the Morningside Park Neighborhood would be less than significant.

However, under Alternative D, the International Airport Industrial District, a state and locally eligible historic resource, would be partially demolished to allow for construction of a dual roadway system and a small airport open space buffer zone. The roadway system proposed under Alternative D would connect the ITC with the GTC; an open space area would act as a buffer between the proposed roadway system and the historic district. The International Airport Industrial District contains 48 buildings, 28 of which have undergone modifications sufficient enough to affect the district's eligibility for National Register listing. None of the properties within the district are individually eligible for federal, state, and local designation.

Approximately eleven contributing buildings would be demolished under Alternative D. This action would compromise the overall integrity and configuration of the district resulting in a significant impact at the state and local levels.

Compared to the No Action/No Project Alternative, which would have no impact to historic/architectural resources, Alternative D would have one impact associated with partial demolition of the International Airport Industrial District, a historic resource eligible for state designation and as a City of Los Angeles Historic-Cultural Monument.

Archaeological/Cultural Resources

Alternative D would have no direct or indirect impact on National Register eligible archaeological site CA-LAN-2345, which consists of a large prehistoric site containing stone tools, bones, shell fragments, and possibly a stone fire hearth. However, the alternative does involve the use of heavy machinery and equipment associated with construction-related activities such as demolition, excavation and grading. As further described in Appendix I, *Section 106 Report* and Appendix S-G, *Supplemental Section 106 Report*, the records search and other relevant literature reviewed as part of the initial Section 106 Survey and the Supplemental Section 106 Survey process indicated that the likelihood of encountering archaeological/cultural resources within or near the APE is relatively high, particularly given the records search of sites recorded in the vicinity of the airport. This conclusion suggests unanticipated discoveries may occur from construction-related activities. The disturbance or destruction of potentially significant undiscovered archaeological/cultural resources by these activities would be considered a significant impact.

Potential impacts on archaeological/cultural resources under Alternative D would be similar to the No Action/No Project Alternative, with no direct or indirect impacts on known National Register eligible archaeological/cultural resources. However, there would be a greater potential for encountering unanticipated archaeological/cultural resources under Alternative D, due to more extensive construction-related activities.

4.9.1.7 Cumulative Impacts

This subsection addresses the cumulative impacts to historic/architectural and archaeological/cultural resources associated with the No Action/No Project Alternative and Alternatives A, B, C, and D, in combination with past, present, and probable future projects.

4.9.1.7.1 Historic/Architectural Resources

There are a large number of historic resources throughout the region that are listed or considered eligible for listing at the federal, state, and/or local level. There is also the potential for numerous other historic resources of significance to be present in the region; however, the exact location and characteristics of such resources have yet to be determined (i.e., potentially significant historic properties that have not yet been documented or evaluated, etc.). The most appropriate basis for discussing the Master Plan alternatives' cumulative impacts is one that is focused on specific and unique property types (industrial and airport/aviation) potentially affected by the project.

No Action/No Project Alternative

Under the No Action/No Project Alternative, the double arched hangar, a non-contributor to the locally significant Intermediate Terminal Complex, would be demolished to allow for construction of a new cargo facility. Though demolition would occur, the remaining two buildings, contributors to the Intermediate Terminal Complex, would still retain sufficient integrity for local eligibility. Additionally, under the No Action/No Project Alternative, both the Belford and Manchester Square areas would be acquired and cleared. Both of these areas have been determined ineligible for National Register, California Register, and local designation. Demolition of the properties within these two areas would not adversely impact historic resources. Thus, under the No Action/No Project Alternative there would be no adverse impacts on historic/architectural resources. Therefore, the alternative would not contribute to any cumulative impacts.

Alternative A - Added Runway North

As previously discussed under subsection 4.9.1.6, *Environmental Consequences*, Alternative A would result in demolition of the Intermediate Terminal Complex and the International Airport Industrial District. Depending on which LAX Expressway alignment is selected, there could also be impacts on the Centinela Adobe and Randy's Donuts. These effects are considered significant and unavoidable impacts under CEQA. These impacts, in combination with impacts that are expected to occur with other past, present, and probable future projects, are expected to result in the progressive loss of historic resources in the region. Over time, these cumulative impacts would be considered significant.

The loss of the Intermediate Terminal Complex would not contribute to a cumulative impact. This complex is significant as a representative milepost in the development and evolution of LAX. Although demolition of this resource would be significant under CEQA at the project level, the other resources on the airport that clearly reflect this evolutionary process, Hangar One and the Theme Building, are not proposed for demolition; therefore, the loss the Intermediate Terminal Complex would not be considered cumulatively significant. However, loss of the International Airport Industrial District would contribute to a significant cumulative impact. The district is a physical record of notable architect S. Charles Lee's pivotal change in professional direction from grand movie palace architecture to real estate development (industrial). Although research indicates that it is the single largest known "planned" industrial development of this type by Lee, it appears that there may be other examples of this industrial property type by Lee elsewhere that may be subject to impacts from independent projects in the region. The loss of other historically significant industrial property types in the region in combination with the loss of the district would be considered cumulatively significant. The potential loss of the Centinela Adobe and Randy's Donuts would also be considered cumulatively significant due to the increasing scarcity of these property types.

Alternative B - Added Runway South

Implementation of Alternative B would result in the demolition of the Intermediate Terminal Complex, the International Industrial District, and the Merle Norman Headquarters Complex. In addition, this alternative also calls for the relocation of Hangar One. These impacts, in combination with impacts that are expected to occur with other past, present, and probable future projects, are expected to result in the progressive loss of historic resources in the region. Over time, cumulative impacts would be considered significant.

Hangar One's significance is in part tied to it being the first structure at LAX. Although relocation would be a significant impact, the building is expected to retain its National Register listing. Limited cumulative impacts on this particular property type could, however, occur elsewhere in the Southland, including those similar properties found at the Long Beach Airport (Long Beach Airport Terminal building) and what was once the Glendale Airport in Glendale (Grand Central Air Terminal building). These two locations have excellent extant architectural examples of pre-World War II aviation/terminal type properties. If Master Plan development results in alteration of these properties, a cumulative impact would occur.

The Merle Norman Complex is one of two known historic buildings associated with the company. The other is a 1930s building located in Santa Monica. These buildings are considered eligible for the National Register. Although the building in Santa Monica has similar historic associations, no known projects are threatening demolition or alteration of this building. Therefore, cumulative impacts to properties associated directly with the historical significance of Merle Norman are considered less than significant. However, the loss of the Merle Norman Complex combined with the loss of other unique and historically significant industrial buildings in the area, such as the International Airport Industrial District, would contribute to a significant cumulative impact.

Alternative C - No Additional Runway

Cumulative impacts would be the same as under Alternative A, which includes demolition of the Intermediate Terminal Complex and the International Airport Industrial District (although under Alternative C only approximately one-half of the International Airport District would be demolished), as well as direct and indirect impacts on the Centinela Adobe and Randy's Donuts. These cumulative impacts would be considered significant.

Alternative D - Enhanced Safety and Security Plan

As previously discussed, Alternative D would result in the partial demolition of the International Airport Industrial District. This impact is considered significant under CEQA. This impact, in combination with impacts that are expected to occur with other past, present, and probable future projects, are expected to result in the progressive loss of historic resources in the region such that cumulative impacts over time would be considered significant. As further described in Appendix I, *Section 106 Report* and Appendix S-G, *Supplemental Section 106 Report*, the partial loss of the International Airport Industrial District, designed by notable architect S. Charles Lee, would contribute to a significant cumulative impact as it appears that there may be other examples of this industrial building property type by Lee elsewhere in the Los Angeles area that may be subject to impacts from independent projects in the region. The loss of other historically significant industrial property types in the region, in combination with the loss of the district, would be cumulatively significant.

4.9.1.7.2 Archaeological/Cultural Resources

Throughout the region, there are numerous archaeological and cultural resources, both known and as yet undiscovered (i.e., subsurface resources that may be encountered during grading and excavation activities for a project), that have the potential to be impacted as a result of other past, present, and probable future projects. These resources serve as the basis for evaluating the projects' potential cumulative impacts.

No Action/No Project Alternative

No known archaeological/cultural resources that are unique or eligible for federal, state or local designation would be impacted by the No Action/No Project Alternative. However, the number of sites previously recorded in the area suggests that there is a relatively high likelihood of discovering archaeological resources during construction. This same potential for encountering undiscovered resources exists for other projects in the vicinity, such as Playa Vista. The No Action/No Project Alternative (which involves new and replacement cargo facilities as well as other development described in Chapter 3, *Alternatives*), in combination with independent projects, would contribute to the progressive cumulative loss of archaeological resources due to the disturbance or destruction of resources, even accepting that many projects would have mitigation in place for construction monitoring and recovery of resources. Although the No Action/No Project Alternative's contribution to such an effect would be very limited due to mitigation required as project conditions, cumulative impacts on archaeological resources would be considered adverse.

Alternatives A, B and C

The cumulative impacts of Alternatives A, B, and C would be similar to those described above for the No Action/No Project Alternative, although a greater area of the project would be subject to development, contributing to a slightly greater cumulative effect. As with the No Action/No Project Alternative, the impacts of Alternatives A, B, and C would be associated with undiscovered resources, and the limited loss of such resources that could occur even with project mitigation in place for construction monitoring and resource recovery. These potential impacts, which would be less than significant at the project level, would be considered cumulatively significant when viewed in combination with the progressive cumulative loss of archaeological resources associated with other past, present, and probable future projects. Even with the expectation that regulatory controls and project-level mitigation measures would reduce these effects, this cumulative impact is considered significant.

Alternative D

As further described in Appendix I, *Section 106 Report* and Appendix S-G, *Supplemental Section 106 Report*, the cumulative impacts of Alternative D related to archaeological/cultural resources would be similar to those described for the other build alternatives; although, the area subject to development under Alternative D would be less than the other build alternatives. Potential impacts would be associated with undiscovered resources, and the limited loss of such resources that could occur even with project mitigation in place for construction monitoring and resource recovery. These potential impacts, which would be less than significant at the project level, would be considered cumulatively significant when viewed in combination with the progressive cumulative loss of archaeological resources associated with other past, present, and probable future projects. Even with the expectation that

regulatory controls and project-level mitigation measures would reduce these impacts, this cumulative impact is considered significant.

4.9.1.8 Mitigation Measures

The following mitigation measures comply with the appropriate standards and guidelines established for historic preservation activities by the Secretary of the Interior and other federal, state, and local regulations, as appropriate.

Historic/Architectural Resources

- **MM-HA-1. Historic American Buildings Survey (HABS) Document (Alternatives A, B, C, and D).**

  For historic properties eligible at the federal, state, or local levels that are proposed for demolition or partial demolition (i.e., the Intermediate Terminal Complex under Alternatives A, B, and C; the International Airport Industrial District under Alternatives A, B, C, and D; and the Merle Norman Headquarters Complex under Alternative B), a Historic American Buildings Survey (HABS) document shall be prepared by LAWA in accordance with the Secretary of the Interior's Guidelines for Architectural and Engineering Documentation Standards. The level of documentation (I, II, or III) shall be determined by the National Park Service (NPS). Documentation shall adequately explicate and illustrate what is significant or valuable about each of the historic resources. Documentation data shall be collected prior to commencement of demolition of the buildings. Archival copies of the recordation document shall be submitted to the National Park Service, Library of Congress, and the California Office of Historic Preservation. Non-archival copies of the document shall be distributed to the City of Los Angeles Planning Department, City of Los Angeles Cultural Affairs Department, Los Angeles Public Library (main branch), Los Angeles Conservancy, and LAWA's Public Relations Division.

- **MM-HA-2. Historic Educational Materials (Alternatives A, B, C, and D).**

  For the significant historic resource proposed for demolition or partial demolition, educational materials suitable for the general public, secondary school use, and/or aviation historians and enthusiasts shall be designed with the assistance of a qualified historic preservation professional and implemented by LAWA. The purpose of these materials shall be to present in two- or three-dimensional format, the history of the airport and surrounding area. Such materials shall include, but not be limited to, a video/film documentary, curriculum program and teacher's guide, architectural models, and a historical brochure or pamphlet. These materials shall be made available via LAWA's public relations department to the general public, local community school history programs, and related interest groups.

- **MM-HA-3. Hangar One Relocation (Alternative B).**

  The relocation of Hangar One shall avoid demolition of the structure. Upon SHPO approval, the hangar shall be relocated to an appropriate site within the original Mines Field boundary. Maintaining the building's National Register listing and the majority of its aspects of integrity after relocation is the primary objective of the FAA, LAWA, SHPO, and the ACHP. Therefore, the relocation site selected shall have a similar setting, location, feeling, and association. The building's design, materials, and workmanship shall be retained. Prior to the relocation of the building, a relocation document shall be prepared by LAWA in accordance with the guidelines outlined in the Department of the Interior's Regulations 36 CFR 60.14(b): National Register of Historic Places, Relocating Properties Listed in the National Register. The physical relocation process of this building shall follow state and federal relocation recommendations and standards approved and utilized by SHPO and NPS. Because of its construction, this two-story, rectangular shaped brick and concrete structure is a good candidate for relocation. Rehabilitation of this building after relocation shall conform to the Secretary of the Interior's Standards and Guidelines for Rehabilitation of Historic Structures.

  Prior to relocation, a HABS document shall be prepared by LAWA in accordance with the Secretary of the Interior's Guidelines for Architectural and Engineering Documentation Standards. The level of documentation (I, II, or III) shall be determined by the National Park Service. Documentation shall adequately explicate and illustrate what is significant or valuable about the historic resource being documented.

Mitigation measures addressing potential impacts on Randy's Donuts and the Centinela Adobe, which would only be required under Alternatives A and C if the preferred LAX Expressway alternative is not selected, are described in Appendix K, *Supplemental Environmental Evaluation for LAX Expressway and State Route 1 Improvements.*

Archaeological/Cultural Resources

- **MM-HA-4. Discovery (Alternatives A, B, C, and D).**

  The FAA shall prepare an archaeological treatment plan (ATP), in consultation with SHPO, that ensures the long-term protection and proper treatment of those unexpected archaeological discoveries of federal, state, and/or local significance found within the APE of the selected alternative. The ATP shall include a monitoring plan, research design, and data recovery plan. The ATP shall be consistent with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation;[447] California Office of Historic Preservation's (OHP) *Archaeological Resources Management Report*, Recommended Contents and Format (1989), and the *Guidelines for Archaeological Research Design* (1991); and shall also take into account the ACHP's publication *Treatment of Archaeological Properties: A Handbook*. The ATP shall also be consistent with the Department of the Interior's Guidelines for Federal Agency Responsibility under Section 110 of the NHPA. In addition, those steps outlined in Section 21083.2(i) of CEQA and Section 15064.5(f) of the CEQA Guidelines shall be implemented, as necessary.

- **MM-HA-5. Monitoring (Alternatives A, B, C, and D).**

  Any grading and excavation activities within LAX proper or the acquisition areas that have not been identified as containing redeposited fill material or as having been previously disturbed shall be monitored by a qualified archaeologist. The archaeologist shall be retained by LAWA and shall meet the Secretary of the Interior's Professional Qualifications Standards.[448] The project archaeologist shall be empowered to halt construction activities in the immediate area if potentially significant resources are identified. Test excavations may be necessary to reveal whether such findings are significant or insignificant. In the event of notification by the project archaeologist that a potentially significant or unique archaeological/cultural find has been unearthed, LAWA shall be notified and grading operations shall cease immediately in the affected area until the geographic extent and scientific value of the resource can be reasonably verified. Upon discovery of an archaeological resource or Native American remains, LAWA shall retain a Native American monitor from a list of suitable candidates obtained from the Native American Heritage Commission.

- **MM-HA-6. Excavation and Recovery (Alternatives A, B, C, and D).**

  Any excavation and recovery of identified resources (features) shall be performed using standard archaeological techniques and the requirements stipulated in the ATP. Any excavations, testing, and/or recovery of resources shall be conducted by a qualified[449] archaeologist selected by LAWA.

- **MM-HA-7. Administration (Alternatives A, B, C, and D).**

  Where known resources are present, all grading and construction plans shall be clearly imprinted with all of the archaeological/cultural mitigation measures. All site workers shall be informed in writing by the on-site archaeologist of the restrictions regarding disturbance and removal as well as procedures to follow should a resource deposit be detected.

- **MM-HA-8. Archaeological/Cultural Monitor Report (Alternatives A, B, C, and D).**

  Upon completion of grading and excavation activities in the vicinity of known archaeological resources, the Archaeological/Cultural monitor shall prepare a written report. The report shall include the results of the fieldwork and all appropriate laboratory and analytical studies that were performed in conjunction with the excavation. The report shall be submitted in draft form to the FAA, LAWA and City of Los Angeles-Cultural Affairs Department. City representatives shall have 30 days to comment

447 48 FR 44634-37.

448 48 FR 22716, September 1983.

449 The Secretary of the Interior's Professional Qualifications Standards (48 FR 22716, September 1983).

on the report. All comments and concerns shall be addressed in a final report issued within 30 days of receipt of city comments.

- **MM-HA-9. Artifact Curation (Alternatives A, B, C, and D).**

  All artifacts, notes, photographs, and other project-related materials recovered during the monitoring program shall be curated at a facility meeting federal and state standards.

- **MM-HA-10. Archaeological Notification (Alternatives A, B, C, and D).**

  If human remains are found, all grading and excavation activities in the vicinity shall cease immediately and the appropriate LAWA authority shall be notified; compliance with those procedures outlined in Section 7050.5(b) and (c) of the State Health and Safety Code, Section 5097.94(k) and (i) and Section 5097.98(a) and (b) of the Public Resources Code shall be required. In addition, those steps outlined in Section 15064.5(e) of the CEQA Guidelines shall be implemented.

4.9.1.9 Level of Significance After Mitigation

4.9.1.9.1 Alternative A - Added Runway North

Historic/Architectural Resources

Federal Level

With the implementation of Master Plan Commitment HR-1, Preservation of Historic Resources (Alternatives A, B, C, and D), and Mitigation Measures MM-HA-1 and MM-HA-2 (described in subsection 4.9.1.8 above), and selection of the preferred LAX Expressway alternative, potential impacts on historic resources at the federal level would not occur under Alternative A.

However, as further described in Appendix K, *Supplemental Environmental Evaluation for LAX Expressway and State Route 1 Improvements*, if the preferred LAX Expressway alternative is not implemented, improvements along the west side of I-405 would have significant impacts on two historic properties, the Centinela Adobe, currently listed in the National Register, and Randy's Donuts, eligible for the National Register. According to the NPS publication *Implementing the Section 106 Process,* demolition of a historic resource at the federal level is considered a significant adverse impact that can be mitigated. Mitigation measures outlined in Appendix K, *Supplemental Environmental Evaluation for LAX Expressway and State Route 1 Improvements*, which address potential impacts on the Centinela Adobe and Randy's Donuts would reduce the significant impacts of Alternative A on the identified historic/architectural resources to an insignificant level.

State Level

Under CEQA, Master Plan Commitment HR-1 and Mitigation Measures MM-HA-1 and MM-HA-2 outlined above, and the mitigation measures in Appendix K, *Supplemental Environmental Evaluation for LAX Expressway and State Route 1 Improvements,* addressing potential impacts on the Centinela Adobe and Randy's Donuts, would reduce, but not eliminate, the significant impacts of Alternative A on the identified historic/architectural resources. These impacts would be significant and unavoidable. The partial demolition of the International Airport Industrial District, the demolition of the Intermediate Terminal Complex, and potential encroachment or demolition of the Centinela Adobe property would result in a significant adverse change to each of the historic/architectural resources. The demolition of an historic/architectural resource is considered a significant impact at the state level[450] that cannot be mitigated to a less than significant level without abandoning the project. Additionally, the potential indirect impacts on Randy's Donuts would be considered a significant impact at the state level. A Statement of Overriding Considerations would be necessary to address unavoidable impacts on the International Airport Industrial District and the Intermediate Terminal Complex. If the preferred alignment for the LAX Expressway were not selected, a Statement of Overriding Considerations would also be needed for unavoidable impacts on the Centinela Adobe and Randy's Donuts.

Because impacts associated with demolition of historic/architectural resources cannot be reduced to a less than significant level under CEQA, project impacts on historic/architectural resources, combined with

[450] Public Resources Code, Section 5020.1(q).

potential demolition of historic/architectural resources from related projects, would represent a potential cumulatively significant and unavoidable impact.

Archaeological/Cultural Resources

With implementation of Mitigation Measures MM-HA-4 through MM-HA-10, potential impacts on archaeological/ cultural resources would be sufficiently mitigated in accordance with the federal standards described in Section 4.9.1.4.2 above. At the state level, however, although impacts at the project level would be less than significant after mitigation, some loss of archaeological/cultural resources would likely occur. This potential loss of resources, in combination with the progressive cumulative loss of archaeological/cultural resources associated with other past, present, and probable future projects, would be cumulatively significant at the state level.

4.9.1.9.2 Alternative B - Added Runway South

Historic/Architectural Resources

Federal Level

Under Alternative B, Hangar One, a historic/architectural resource currently listed on the National Register, would be relocated. Because of the uncertainty of Hangar One's National Register designation status after relocation, potential impacts on Hangar One at the federal level are considered significant. According to the NSP publication *Implementing the Section 106 Process*, the process of relocation and/or demolition of a National Register listed or eligible historic/architectural resource at the federal level is considered a significant adverse effect that can be mitigated. While there is potential that relocation of Hangar One could jeopardize its National Register status, this determination can only be made by the Keeper of the National Register after the building is relocated and the relocation process is complete. However, based on the conditions surrounding this project and what is known about the proposed approach to relocation, it is expected that National Register designation status would be retained and that Mitigation Measure MM-HA-3, Hangar One Relocation (Alternative B), outlined previously, would be sufficiently mitigated in accordance with the federal standards described in Section 4.9.1.4.2 above.

Additionally, the Centinela Adobe and Randy's Donuts would not be directly or indirectly impacted under Alternative B.

State Level

Under CEQA, Master Plan Commitment HR-1 and Mitigation Measures MM-HA-1, MM-HA-2, and MM-HA-3 outlined above would reduce, but not eliminate, the significant impacts of Alternative B on the identified historic/architectural resources. The demolition of the International Airport Industrial District, the Intermediate Terminal Complex, and the Merle Norman Headquarters Complex would result in a significant and unavoidable adverse change to each of the historic/architectural resources. In addition, while the process and procedures stipulated for Hangar One are important and would assure the preservation of the building and help support the retention of its National Register listing, this impact would be considered significant and unavoidable at the state and local levels. The demolition and/or relocation of a historic/architectural resource are considered a significant impact at the state level[451] that cannot be mitigated to a less than significant level without abandoning the project. Therefore, a Statement of Overriding Considerations would be necessary to address unavoidable impacts on Hangar One, the Merle Norman Headquarters Complex, the International Airport Industrial District, and the Intermediate Terminal Complex.

Because impacts associated with demolition of historic/architectural resources cannot be reduced to a less than significant level under CEQA, project impacts on historic/architectural resources, combined with potential demolition of historic/architectural resources from related projects, would represent a potential cumulatively significant and unavoidable impact.

Archaeological/Cultural Resources

With implementation of Mitigation Measures MM-HA-4 through MM-HA-10, potential impacts on archaeological/cultural resources would, at a federal level, be sufficiently mitigated in accordance with the

[451] Public Resources Code, Section 5020.1(q).

federal standards described in Section 4.9.1.4.2 above. However, although impacts at the project level would be less than significant after mitigation, some loss of archaeological/cultural resources would likely occur. This potential loss of resources in combination with the progressive cumulative loss of archaeological/cultural resources associated with other past, present, and probable future projects would be cumulatively significant at the state level.

4.9.1.9.3 Alternative C - No Additional Runway

Historic/Architectural Resources

Federal Level

If the preferred LAX Expressway alternative is selected, impacts on historic/architectural resources at the federal level would be avoided completely and mitigation measures would not be required. Additionally, with the implementation of Master Plan Commitment HR-1, Preservation of Historic Resources (Alternatives A, B, C, and D), potential impacts to the Academy Theatre, a National Register eligible property, would not occur. However, if the preferred LAX Expressway alternative is not selected, the Centinela Adobe, listed in the National Register, and Randy's Donuts, eligible for the National Register, would be demolished for implementation of the Split Viaduct alternative. Mitigation measures outlined in Appendix K, *Supplemental Environmental Evaluation for LAX Expressway and State Route 1 Improvements*, addressing potential impacts on the Centinela Adobe and Randy's Donuts would reduce the significant impacts of Alternative C on the identified historic/architectural resources in accordance with the federal standards described in Section 4.9.1.4.2 above.

State Level

Under CEQA, Master Plan Commitment HR-1, and Mitigation Measures MM-HA-1 and MM-HA-2 outlined above, and the mitigation measures in Appendix K, *Supplemental Environmental Evaluation for LAX Expressway and State Route 1 Improvements*, addressing potential impacts on the International Airport Industrial District and Intermediate Terminal Complex, would reduce, but not eliminate, the significant impacts of Alternative C on the identified historic/architectural resources. The partial demolition of the International Airport Industrial District and the demolition of the Intermediate Terminal Complex would result in a significant adverse change to each of the historic/architectural resources. The demolition of a historic/architectural resource is considered a significant impact at the state level[452] that cannot be mitigated to a less than significant level without abandoning the project. Therefore, a Statement of Overriding Considerations would be necessary to address unavoidable impacts on the International Airport Industrial District and the Intermediate Terminal Complex. Additionally, if the preferred LAX Expressway alternative is not selected, the Split Viaduct alignment for the LAX Expressway would have significant and unavoidable impacts on the Centinela Adobe and Randy's Donuts, and a Statement of Overriding Considerations would be required.

Because impacts associated with demolition of historic/architectural resources cannot be reduced to a less than significant level under CEQA, project impacts on historic/architectural resources, combined with likely demolition of historic/architectural resources from related projects, would represent a potential cumulatively significant and unavoidable impact.

Archaeological/Cultural Resources

With implementation of Mitigation Measures MM-HA-4 through MM-HA-10, potential impacts on archaeological/ cultural resources would, at a federal level, be sufficiently mitigated in accordance with the federal standards described in Section 4.9.1.4.2 above. However, although impacts at the project level would be less than significant after mitigation, some loss of archaeological/cultural resources would likely occur. This potential loss of resources in combination with the progressive cumulative loss of archaeological/cultural resources associated with other past, present, and probable future projects would be cumulatively significant at the state level.

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[452] Public Resources Code, Sections 21098.1 and 5020.1 (q).

4.9.1.9.4 Alternative D - Enhanced Safety and Security Plan

Historic/Architectural Resources

Federal Level

Impacts on historic/architectural resources at the federal level would not occur under Alternative D, and mitigation measures would not be required.

State Level

Under CEQA, Master Plan Commitment HR-1 and Mitigation Measures MM-HA-1 and MM-HA-2 outlined above would reduce, but not eliminate, the significant impact of Alternative D on the International Airport Industrial District. This impact would be significant and unavoidable. The partial demolition of the International Airport Industrial District would result in a significant adverse change to the historic/architectural resource. The demolition of a historic/architectural resource is considered a significant impact at the state and local level[453] that cannot be mitigated to a less than significant level without abandoning the project. A Statement of Overriding Considerations would be necessary to address unavoidable impacts on the International Airport Industrial District.

Because impacts associated with demolition of historic/architectural resources cannot be reduced to a less than significant level under CEQA, project impacts on historic/architectural resources, combined with potential demolition of historic/architectural resources from related projects, would represent a potential cumulatively significant and unavoidable impact.

Archaeological/Cultural Resources

With implementation of Mitigation Measures MM-HA-4 through MM-HA-10, potential impacts on archaeological/cultural resources would, at a federal level, be sufficiently mitigated in accordance with the federal standards described in Section 4.9.1.4.2 above. However, although impacts at the project level would be less than significant after mitigation, some loss of archaeological/cultural resources would likely occur. This potential loss of resources, in combination with the progressive cumulative loss of archaeological/cultural resources associated with other past, present, and probable future projects, would be cumulatively significant at the state level.

[453] Public Resources Code, Section 5020.1(q).

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1000-3

STATE OF CALIFORNIA – THE RESOURCES AGENCY
ARNOLD SCHWARZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

January 14, 2008

Reply In Reference To: FAA081023A

Victor Globa
Federal Aviation Administration, Western Pacific Region
Los Angeles Airports District Office
P.O. Box 92007
Los Angeles, CA 90009

Re: Section 106 Consultation for Three-Hole Expansion and Two-Hole Course Modification, Westchester Golf Course and Los Angeles International Airport, Los Angeles, CA

Dear Mr. Globa:

Thank you for initiating consultation with me pursuant to 36 CFR Part 800, the regulation that implements Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f), as amended. On behalf of the Federal Aviation Administration (FAA), you are requesting that I concur with a determination of "No Historic Properties Affected" for the above-mentioned undertaking.

As I understand it, the project consists of the expansion of the Westchester Golf Course, a public recreational facility neighboring Los Angeles International Airport (LAX). Approximately 22.5 acres of vacant land located within LAX will be used for the three-hole expansion. The addition of the new holes will restore the course to its original size. The project also calls for the modification of two existing holes. In addition to your letter, you have submitted to me for review and comment, maps outlining the Area of Projected Effect (APE) and an excerpt from the LAX Master Plan Final EIS/EIR.

Upon reviewing the submitted documentation, I cannot presently concur that the undertaking will not affect historic properties. While the LAX Master Plan excerpt states that the airport has been surveyed on three occasions for built environment and archaeological resources, no information specific to the project area is included. The California Historical Resources Information System (CHRIS) may have site-specific information on file. The Information Center that maintains the records for the Los Angeles area is located at the following address:

South Central Coastal Information Center
California State University, Fullerton
Department of Anthropology
800 North State College Boulevard
P.O. Box 6846
Fullerton, CA 92834-6846

JAN 2 0 2009

FAA081023A

Thank you for considering historic resources during project planning. If you have any questions or comments, please direct them to Tristan Tozer of my staff at (916) 653-8920 or by email at ttozer@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
California State Historic Preservation Officer

South Central Coastal Information Center
California State University, Fullerton
Department of Anthropology MH-426
800 North State College Boulevard
Fullerton, CA 92834-6846
714.278.5395 / FAX 714.278.5542
anthro.fullerton.edu/sccic.html - sccic@fullerton.edu
California Historical Resources Information System
Orange, Los Angeles, and Ventura Counties

March 9, 2009 SCCIC #9310.6273

Mr. Herb Glasgow
City of Los Angeles, Los Angeles World Airports
Facilities Management Division
1 World Way, Suite 218
Los Angeles, CA 90045
424.646.5180

RE: Records Search for 6990 West Manchester Ave, Los Angeles, CA 90045

Dear Mr. Glasgow,

As per your request received on March 4, 2009, an expedited records search was conducted for the above referenced project. The search includes a review of all recorded archaeological sites within a ½-mile radius of the project site as well as a review of cultural resource reports on file. In addition, the California Points of Historical Interest (PHI), the California Historical Landmarks (CHL), the California Register of Historical Resources (CR), the National Register of Historic Places (NR), the California State Historic Resources Inventory (HRI), and the City of Los Angeles Historic-Cultural Monuments (LAHCM) listings were reviewed for the above referenced project site. The following is a discussion of the findings.

Due to the sensitive nature of cultural resources, archaeological site locations are not released.

Venice, CA. USGS 7.5' Quadrangle

ARCHAEOLOGICAL RESOURCES:

According to our records, portions of the project radius have not been previously studied. No archaeological sites or isolates have been identified within a ½-mile radius of the project site. No sites or isolates are located within the project site. This does not preclude the potential for archaeological sites to be identified during project activities.

HISTORIC RESOURCES:

Two additional cultural resources (19-150442 and 19-150445) have been identified within a ½-mile radius of the project site. No cultural resources are located within the project site.

A review of the historic maps - Redondo (1896 and 1944) 15' USGS - indicated that in 1896, there were two improved roads present and three structures. In 1944, there was a marked development of the area. There was a network of improved roads present as well as many structures. Place names in the area included Sausal Redondo, Manchester Ave., and Lincoln Ave.

The California Point of Historical Interest (2009) of the Office of Historic Preservation, Department of Parks and Recreation, lists no properties within a ½-mile radius of the project site.

The California Historical Landmarks (2009) of the Office of Historic Preservation, Department of Parks and Recreation, lists no properties within a ½-mile radius of the project site.

The California Register of Historical Resources lists no properties within a ½-mile radius of the project site. These are properties determined to have a National Register of Historic Places Status of 1 or 2, a California Historical Landmark numbering 770 and higher, or a Point of Historical Interest listed after 1/1/1998.

The National Register of Historic Places lists no properties within a ½-mile radius of the project site.

The City of Los Angeles Historic-Cultural Monuments lists no properties within a ½-mile radius of the project site.

The California Historic Resources Inventory lists no properties that have been evaluated for historical significance within a ½-mile radius of the project site.

PREVIOUS CULTURAL RESOURCES INVESTIGATIONS:

Nine studies (LA309, LA1975, LA3673, LA4867, LA4910*, LA5564, LA5760, LA6248, and LA7939) have been conducted within a ½-mile radius of the project site. Of these, one is located within the project site. There are 14 additional investigations located on the Venice, CA. 7.5' USGS Quadrangle that are potentially within a ½-mile radius of the project site. The reports are not mapped due to insufficient locational information.
(= Located within the project site)*

RECOMMENDATIONS

According to our records, one previous study (LA4910) has been conducted for the project site. The report is titled, *Paleontological and Archaeological Resources Reconnaissance of the Los Angeles International Airport (LAX) Property, Los Angeles County, California (1995, Raschke, R. and Carol Stadum(Paleontology) and Ronald M. Bissell (Archaeology).* The survey map from that report showed that a "cursory" survey of project site was conducted in 1995. While no sites were identified within the current project site boundaries at that time, four prehistoric archaeological sites were identified within the LAX property; 23 prehistoric sites were found identified within 3 kilometers of LAX; and 5 historic sites were also identified within 3 kilometers of LAX. As part of the study, the archaeological consultant (Bissell) recommended that "a condition of approval be placed on every project that will disturb existing soils (1995: p21)". As this previous

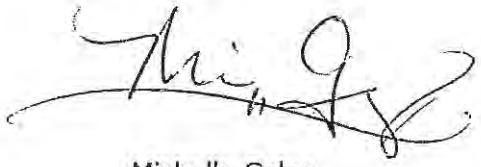
study is approximately 14 years old, a qualified archaeologist should be retained to conduct an updated Phase I survey for the project site and make new recommendations for the project site prior to the approval of project plans and any ground disturbing activities. This same report also expressed concern for the treatment of paleontological resources and recommended that a condition of approval be placed on every project that will disturb existing soil to depths greater than six feet (1995: p21). For more information about Paleontological resources, contact the Natural History Museum of Los Angeles County. Finally, it is also recommended that the Native American Heritage Commission should be consulted to identify if any additional traditional cultural properties or other sacred sites are known to be in the area.

The professional consultant you retain may request the records search map, archaeological site records, and bibliography from the Information Center referencing the SCCIC number listed above for a fee (per the fee schedule). Any resulting reports by the qualified consultant should be submitted to the South Central Coastal Information Center as soon as possible.

If you have any questions regarding the results presented herein, please contact the office at 714.278.5395 Monday through Thursday 9:00 am to 3:30 pm.

Should you require any additional information for the above referenced project, reference the SCCIC number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Sincerely,
SCCIC



Michelle Galaz
Staff Researcher

Enclosures:

(X) Invoice #9310.6273

Sent via email

Victor Globa/AWP/FAA
AWP-LAX-ADO, Los Angeles, CA
04/08/2009 11:23 AM
To: Tristan Tozer
Cc:
Subject: LAX-Westchester Golf Course #FAA081023A

Tristan - As a follow-up to your January 14, 2009, letter regarding the LAX Westchester Golf Course I am providing additional information to supplement my original consultation letter.
Attached for your review are:

1) A copy of your January 14, 2009, response letter (NOTE: Included elsewhere in this appendix)

2) A copy of the South Central Coastal Information Center Records Search Results (NOTE: Included elsewhere in this appendix)

3) A Phase I archaeological assessment report of the project site (NOTE: Included in Appendix D of this Draft Environmental Assessment)

4) Native American consultation letters. (NOTE: Included elsewhere in this appendix)

Please let me know if you need anything else.

Regards,

Victor

Victor Globa
Environmental Protection Specialist
Federal Aviation Administration
15000 Aviation Boulevard
Lawndale, CA 90261
Telephone: 310-725-3637
Fax: 310-725-6849

Additional Information

California Native Americans
Cultural Resources
Strategic Plan
Commissioners
Federal Laws and Codes
State Laws and Codes
Local Ordinances and Codes
Additional Information
Return to CNAHC Home Page

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, RM 364
Sacramento, CA 95814
(916) 653-4082
(916) 657-5390 Fax
nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Project:_____Westchester Golf Course 3-Hole Expansion_____

County_____Los Angeles_____

USGS Quadrangle

Name____Venice CA_____

Township _T2S____ Range ____R15W___ Section(s) _____

Company/Firm/Agency:
_____CDM_____

Contact Person: _____Katie Owston_____

Street Address: _____111 Academy_____

City: ___Irvine_____Zip:_____92841_____

Phone: _____949-752-5452_____

Fax: _____949-725-3790_____

Email: _____owstonkm@cdm.com_____

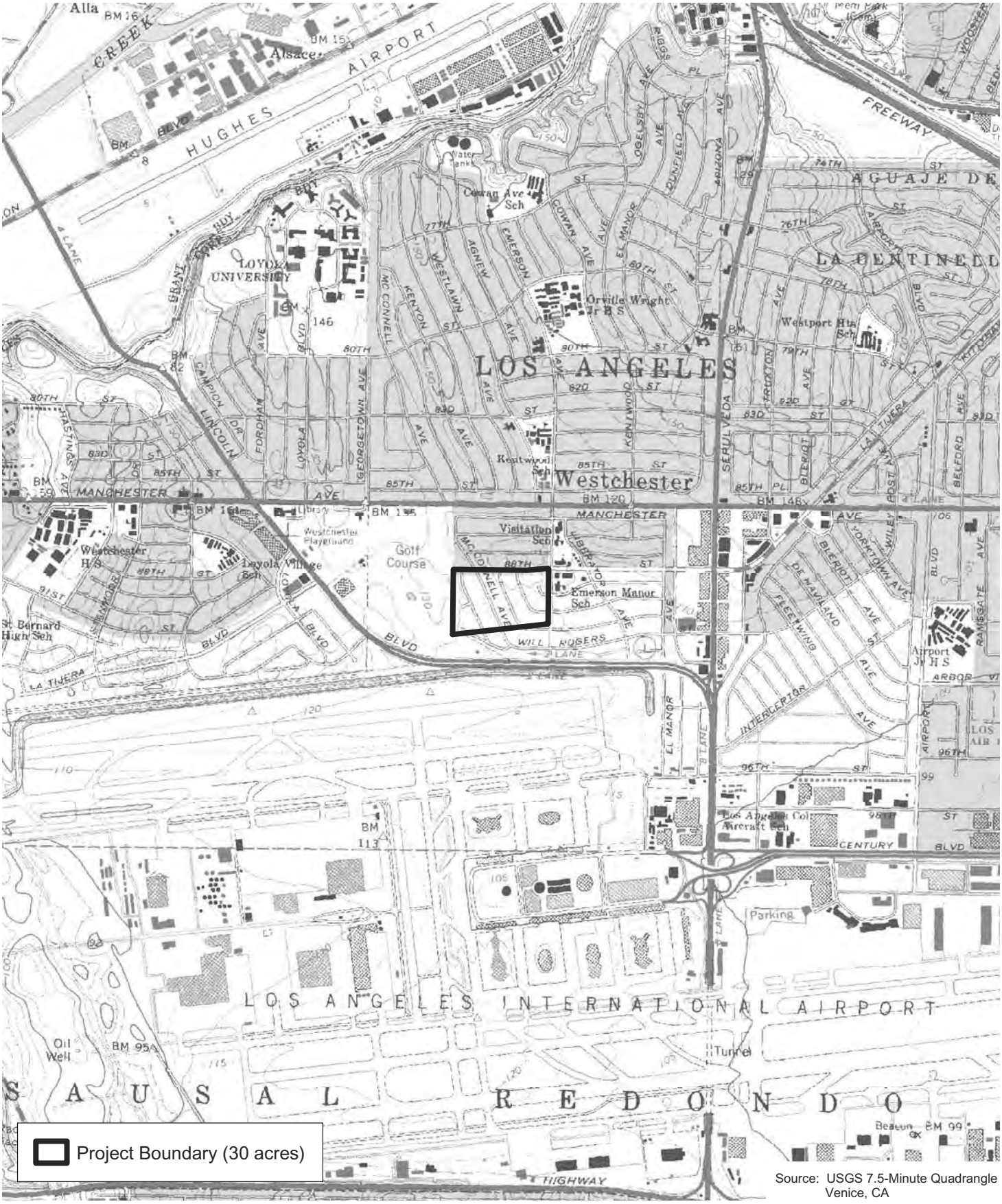
Project Description:

See Attached.

Westchester Golf Course 3-Hole Expansion, Los Angeles County

Project Description:

The proposed project involves preparation of an Environmental Assessment (EA) on behalf of the Federal Aviation Administration (FAA) for the addition of three new holes and the modification of two existing holes at the Westchester Golf Course (see attached map). Westchester Golf Course, located within the northern boundaries of the Los Angeles International Airport, is an executive golf course open to the public. It was constructed in the mid-1960s with 18 holes; however, the three southernmost holes were eliminated with the subsequent construction of Westchester Parkway in the early 1990s. The proposed project involves the replacement of the three holes on approximately 22.5 acres of vacant land immediately east of the southern half of the golf course and the modification of two existing holes. The vacant land was previously developed with residential uses. The structures were removed in the 1970s and the land has lain fallow. The proposed action would restore the golf course to an 18-hole golf course serving the recreational needs of the community.



Source: USGS 7.5-Minute Quadrangle
Venice, CA

D:\Projects\CampDre\J026\Ex_LV_quad_070808.mxd

Local Vicinity

Exhibit 2

Approximately 21 Acres of LAX Property

N W E S

2,000 1,000 0 2,000 Feet

BonTerra CONSULTING

PAS R:/Projects/CampDre/J026/Graphics/Ex2_LV_quad_070808.pdf

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

March 11, 2009

Ms. Katie Owston, RPA
CDM
111 Academy, Suite 150
Irvine, CA 92617

Sent by FAX to: 949-752-3790
No. of Pages: 2

Re: Request for a Sacred Lands File records search and Native American Contacts list for the **Westchester Golf Course 3-Hole Expansion Project**, located within the boundaries of the Los Angeles International Airport; Los Angeles County, California

Dear Ms. Owston:

The Native American Heritage Commission (NAHC) was able to perform a record search of its Sacred Lands File (SLF) for the affected project area (APE). The SLF search did not indicate the presence of Native American cultural resources in the project area (APE or 'area of potential effect). There are however, numerous Native American cultural resources in close proximity to the APE.

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the names of the nearest tribes that may have knowledge of cultural resources in the project area. We recommend that you contact persons on the attached list of Native American contacts. A Native American tribe or individual may be the only source of information about a cultural resource. They may have specific knowledge as to whether or not the known cultural resources identified may be at-risk by the proposed project

Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Attachment: Native American Contact List

Native American Contacts
Los Angeles County
March 10, 2009

Ti'At Society
Cindi Alvitre
6515 E. Seaside Walk, #C Gabrielino
Long Beach , CA 90803
calvitre@yahoo.com
(714) 504-2468 Cell

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Tribal Chair/Cultural Resources
P.O. Box 490 Gabrielino Tongva
Bellflower , CA 90707
gtongva@verizon.net
562-761-6417 - voice
562-925-7989 - fax

Tongva Ancestral Territorial Tribal Nation
John Tommy Rosas, Tribal Admin.
, Gabrielino Tongva
tattnlaw@gmail.com
310-570-6567

Gabrieleno/Tongva San Gabriel Band of Mission
Anthony Morales, Chairperson
PO Box 693 Gabrielino Tongva
San Gabriel , CA 91778
(828) 286-1262 -FAX
(626) 286-1632
(626) 286-1758 - Home
(626) 286-1262 Fax

Gabrielino Tongva Nation
Sam Dunlap, Tribal Secretary
P.O. Box 86908 Gabrielino Tongva
Los Angeles , CA 90086
samdunlap@earthlink.net

(909) 262-9351 - cell

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Westchester Golf Course Expansion located with the Los Angeles International Airport (LAX) boundaries in southwest Los Angeles County, California for which a Sacred Lands File search and Native American contacts list were requested.

U.S Department
of Transportation

**Federal Aviation
Administration**

Western-Pacific Region
Los Angeles Airports District Office

Federal Aviation Administration
P.O. Box 92007
Los Angeles, CA 90009

March 16, 2009

Mr. Sam Dunlap, Tribal Secretary
Gabrieleno Tongva Nation
P.O. Box 86908
Los Angeles, CA 90086

Dear Mr. Dunlap:

Los Angeles International Airport
Proposed Westchester Golf Course Three-Hole Expansion Project
Environmental Assessment
Los Angeles, California
Consultation Initiation

The Federal Aviation Administration (FAA) and Los Angeles World Airports (LAWA) are in the process of preparing environmental documentation for the unconditional approval of an amendment to the Airport Layout Plan at Los Angeles International Airport (LAX). LAX is owned and operated by LAWA as a public use airport in the City of Los Angeles, Los Angeles County, California. The proposed undertaking will allow for a three-hole expansion of the Westchester Golf Course, and modification to two holes located on property owned by LAX. This amendment will designate the project site for golf uses in accordance with 49 United States Code (USC) §47107(a)(16).

Consultation Initiation

In order to fulfill our requirement with Code of Federal Regulation (CFR) 36 Part 800, we are contacting you as part of the environmental review process. With this letter, the FAA is seeking input on concerns that uniquely or significantly affect your Tribe related to planned and proposed airport improvements. Early identification of Tribal concerns will allow the FAA and LAWA to consider ways to avoid and minimize potential impacts to Tribal resources and practices as project planning and alternatives are developed and refined. We would be pleased to discuss details of the proposed project with you.

Project Information

The proposed project consists of the design, construction, and installation of three holes using vacant land owned by LAX located immediately east of the southern half of the golf course. The three southernmost holes were eliminated with the subsequent construction of Westchester Parkway in the early 1990s. In addition, LAWA proposes to modify two existing holes on the golf course. The proposed action would restore the golf course to an 18-hole golf course serving the recreational needs of the community. The proposed project site is a vacant 22.5-acre parcel abutting Westchester Golf Course to the west and West 88th Street to the north. The FAA has determined that the Area of Proposed Effect (APE) is identified as the areas outlined in blue on Figure 3, Aerial View of the Project Site.

The project site has been extensively disturbed from previous grading activities associated with the construction and subsequent demolition of residential structures and related infrastructure. The presence of significant archaeological/cultural resources onsite is unlikely and no impacts to these resources are anticipated.

The California Native American Heritage Commission (NAHC) was contacted by the sponsor to conduct a search of their files for any recorded Traditional Cultural Properties or Native American Heritage sites within the immediate project area. The NAHC search found no Traditional Cultural Properties or Native American heritage sites within the project area, however, did indicate that there were cultural resources in close proximity to the Area of Proposed Effect. The NAHC did provide a list of Native American tribal representatives to solicit further information regarding the project.

Confidentiality

We understand that you may have concerns regarding the confidentiality of information on areas or resources of religious, traditional and cultural importance to the Tribe. We would be pleased to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

Airport Owner and Operator Contact Information

In addition, you may wish to include the Airport owner and operator (Los Angeles World Airports) in your response so that they may be aware of your comments. The Airport owner and operator's point of contact for this project is:

Mr. Herb Glasgow, Senior Planner
Los Angeles World Airports
One World Way
Los Angeles, CA 90045
424-646-5180

Project Consultation

Your timely response will greatly assist us in incorporating your concerns into the project planning. For that purpose, we respectfully request that you provide comments to the FAA within thirty (30) days of your receipt of this correspondence.

FAA Contact Information

If you wish to provide comments related to this proposed project, please contact Victor Globa, Environmental Protection Specialist, at the address above, at 310-725-3637, or by e-mail at victor.globa@faa.gov; or please feel free to contact me directly.

Sincerely,

Mark A. McClardy
Manager, Airports Division

Enclosures:

Figure 2, Project Location
Figure 3, Aerial View of Project Site

Tribal Consultation Options

Gabrieleno Tongva Nation
P.O. Box 86908
Los Angeles, CA 90086

Project Name: Los Angeles International Airport Westchester Golf Course Three-Hole Expansion Project Draft EA

Please check the appropriate response:

____ The Gabrieleno Tongva Nation will continue coordination for this proposed project directly with Owner / Operator of the airport. Please note that if the Tribe initially chooses to consult / coordinate with the airport owner/operator, the Tribe may later decide to consult directly with the FAA.

____ The Gabrieleno Tongva Nation has no interest associated with this proposed project and further consultation is not required.

Use the back of this form or additional sheets if you would like to make additional comments.

_____ _____
Tribal Leader (Please print) Telephone

_____ _____
Tribal Leader (Signature) Date

Address:

Phone:
Fax:
E-mail:
Other: (please describe)

If you have chosen to proceed with consultation, please identify a Tribal Representative for the consultation.

_____ _____
Name of Formal Tribal Representative (Please print) Telephone

_____ _____
Name of Formal Tribal Representative (Signature) Date

Please mail to:
Federal Aviation Administration
Los Angeles Airports District Office
P.O. Box 92007
Los Angeles, CA 90009-2007

Or, fax to: (310) 725-6849

north

Not to Scale

Prepared by: CDM, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Project Location**	Figure 2

north
Not to Scale

Prepared by: CDM, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	Aerial View of Project Site	Figure 3

U.S Department
of Transportation
Federal Aviation
Administration

Western-Pacific Region
Los Angeles Airports District Office

Federal Aviation Administration
P.O. Box 92007
Los Angeles, CA 90009

March 16, 2009

Mr. Robert Dorame, Tribal Chair/Cultural Resources
Gabrieleno Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA 90707

Dear Mr. Dorame:

Los Angeles International Airport
Proposed Westchester Golf Course Three-Hole Expansion Project
Environmental Assessment
Los Angeles, California
Consultation Initiation

The Federal Aviation Administration (FAA) and Los Angeles World Airports (LAWA) are in the process of preparing environmental documentation for the unconditional approval of an amendment to the Airport Layout Plan at Los Angeles International Airport (LAX). LAX is owned and operated by LAWA as a public use airport in the City of Los Angeles, Los Angeles County, California. The proposed undertaking will allow for a three-hole expansion of the Westchester Golf Course, and modification to two holes located on property owned by LAX. This amendment will designate the project site for golf uses in accordance with 49 United States Code (USC) §47107(a)(16).

Consultation Initiation

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In addition, you may wish to include the Airport owner and operator (Los Angeles World Airports) in your response so that they may be aware of your comments. The Airport owner and operator's point of contact for this project is:

Mr. Herb Glasgow, Senior Planner
Los Angeles World Airports
One World Way
Los Angeles, CA 90045
424-646-5180

Project Consultation

Your timely response will greatly assist us in incorporating your concerns into the project planning. For that purpose, we respectfully request that you provide comments to the FAA within thirty (30) days of your receipt of this correspondence.

FAA Contact Information

If you wish to provide comments related to this proposed project, please contact Victor Globa, Environmental Protection Specialist, at the address above, at 310-725-3637, or by e-mail at victor.globa@faa.gov; or please feel free to contact me directly.

Sincerely,

Mark A. McClardy
Manager, Airports Division

Enclosures:

Figure 2, Project Location
Figure 3, Aerial View of Project Site

Tribal Consultation Options

Gabrieleno Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA 90707

Project Name: Los Angeles International Airport Westchester Golf Course Three-Hole Expansion Project Draft EA

Please check the appropriate response:

____ The Gabrieleno Tongva Indians of California Tribal Council will continue coordination for this proposed project directly with Owner / Operator of the airport. Please note that if the Tribe initially chooses to consult / coordinate with the airport owner/operator, the Tribe may later decide to consult directly with the FAA.

____ The Gabrieleno Tongva Indians of California Tribal Council has no interest associated with this proposed project and further consultation is not required.

Use the back of this form or additional sheets if you would like to make additional comments.

_____ _____
Tribal Leader (Please print) Telephone

_____ _____
Tribal Leader (Signature) Date

Address:

Phone:
Fax:
E-mail:
Other: (please describe)

If you have chosen to proceed with consultation, please identify a Tribal Representative for the consultation.

_____ _____
Name of Formal Tribal Representative (Please print) Telephone

_____ _____
Name of Formal Tribal Representative (Signature) Date

Please mail to:
Federal Aviation Administration
Los Angeles Airports District Office
P.O. Box 92007
Los Angeles, CA 90009-2007

Or, fax to: (310) 725-6849

north

Not to Scale

Prepared by: CDM, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Project Location**	Figure 2

north
Not to Scale

Prepared by: CDM, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	Aerial View of Project Site	Figure 3

Gabrielino Tongva Indians of California
Cultural Consulting

Robert F. Dorame
POB 490
Bellflower, CA 90707
562-761-6417
gtongva@verizon.net

April 9, 2009

Herb Glasgow
Senior Planner
Los Angeles World Airports
One World Way
Los Angeles, CA 90045

Dear Mr. Glasgow:

Thank you for contacting me regarding the expansion of the Westchester Golf Course. I used to live in Westchester and played the course so please know that I think this plan is excellent for the community.

I agree with most of what Mr. McClardy's letter states. I would imagine you are fully aware of the close proximity of one of the largest native trading sites (West Bluff/LMU) and occupation site (Playa Vista) due north of your project. These sites are approximately one mile or less away, requiring native monitoring during soil disturbances.

I would like to walk the perimeter of the golf course and the area of planned expansion if that is possible. There may be visible midden which would indicate earlier occupation of native people. While I understand fully that grading for housing, demolition of housing and other work has disturbed the soils, many times the original soil was turned over so if there is any chance of previous occupation, it might be visible. My purpose is to document, not to cause you unnecessary concern. We have lost so much history in Los Angeles and it would be a shame not to check.

Please let me know if a walk around the site might be arranged. In addition, the letter did not state the depth that would be excavated. That would be helpful to know.

Again, thank you for requesting comments. I look forward to hearing from you or your project staff.

Sincerely,

Robert Dorame
Cultural Consultant
Gabrielino Tongva
Indians of CA

CC: Mr. Victor Globa, Environmental Protection Specialist, LAWA – via email
Dave Singleton, CA Native American Heritage Commission – via email

U.S Department
of Transportation

**Federal Aviation
Administration**

Western-Pacific Region
Los Angeles Airports District Office

Federal Aviation Administration
P.O. Box 92007
Los Angeles, CA 90009

March 16, 2009

Ms. Cindi Alvitre
Ti'At Society
6515 East Seaside Walk, #C
Long Beach, CA 90803

Dear Ms. Alvitre:

Los Angeles International Airport
Proposed Westchester Golf Course Three-Hole Expansion Project
Environmental Assessment
Los Angeles, California
Consultation Initiation

The Federal Aviation Administration (FAA) and Los Angeles World Airports (LAWA) are in the process of preparing environmental documentation for the unconditional approval of an amendment to the Airport Layout Plan at Los Angeles International Airport (LAX). LAX is owned and operated by LAWA as a public use airport in the City of Los Angeles, Los Angeles County, California. The proposed undertaking will allow for a three-hole expansion of the Westchester Golf Course, and modification to two holes located on property owned by LAX. This amendment will designate the project site for golf uses in accordance with 49 United States Code (USC) §47107(a)(16).

Consultation Initiation

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Confidentiality

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Airport Owner and Operator Contact Information

In addition, you may wish to include the Airport owner and operator (Los Angeles World Airports) in your response so that they may be aware of your comments. The Airport owner and operator's point of contact for this project is:

Mr. Herb Glasgow, Senior Planner
Los Angeles World Airports
One World Way
Los Angeles, CA 90045
424-646-5180

Project Consultation

Your timely response will greatly assist us in incorporating your concerns into the project planning. For that purpose, we respectfully request that you provide comments to the FAA within thirty (30) days of your receipt of this correspondence.

FAA Contact Information

If you wish to provide comments related to this proposed project, please contact Victor Globa, Environmental Protection Specialist, at the address above, at 310-725-3637, or by e-mail at victor.globa@faa.gov; or please feel free to contact me directly.

Sincerely,

Mark A. McClardy
Manager, Airports Division

Enclosures:

Figure 2, Project Location
Figure 3, Aerial View of Project Site

Tribal Consultation Options

Ti'At Society
6515 East Seaside Walk, #C
Long Beach, CA 90803

Project Name: Los Angeles International Airport Westchester Golf Course Three-Hole Expansion Project Draft EA

Please check the appropriate response:

____ The Ti'At Society will continue coordination for this proposed project directly with Owner / Operator of the airport. Please note that if the Tribe initially chooses to consult / coordinate with the airport owner/operator, the Tribe may later decide to consult directly with the FAA.

____ The Ti'At Society has no interest associated with this proposed project and further consultation is not required.

Use the back of this form or additional sheets if you would like to make additional comments.

_____ _____
Tribal Leader (Please print) Telephone

_____ _____
Tribal Leader (Signature) Date

Address:

Phone:
Fax:
E-mail:
Other: (please describe)

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Name of Formal Tribal Representative (Please print) Telephone

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Name of Formal Tribal Representative (Signature) Date

Please mail to:
Federal Aviation Administration
Los Angeles Airports District Office
P.O. Box 92007
Los Angeles, CA 90009-2007

Or, fax to: (310) 725-6849

north

Not to Scale

Prepared by: CDM, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Project Location**	Figure 2

north
Not to Scale

Prepared by: CDM, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Aerial View of Project Site**	Figure 3

U.S Department
of Transportation

**Federal Aviation
Administration**

Western-Pacific Region
Los Angeles Airports District Office

Federal Aviation Administration
P.O. Box 92007
Los Angeles, CA 90009

March 16, 2009

Mr. Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, CA 91778

Dear Mr. Morales:

Los Angeles International Airport
Proposed Westchester Golf Course Three-Hole Expansion Project
Environmental Assessment
Los Angeles, California
Consultation Initiation

The Federal Aviation Administration (FAA) and Los Angeles World Airports (LAWA) are in the process of preparing environmental documentation for the unconditional approval of an amendment to the Airport Layout Plan at Los Angeles International Airport (LAX). LAX is owned and operated by LAWA as a public use airport in the City of Los Angeles, Los Angeles County, California. The proposed undertaking will allow for a three-hole expansion of the Westchester Golf Course, and modification to two holes located on property owned by LAX. This amendment will designate the project site for golf uses in accordance with 49 United States Code (USC) §47107(a)(16).

Consultation Initiation

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Confidentiality

We understand that you may have concerns regarding the confidentiality of information on areas or resources of religious, traditional and cultural importance to the Tribe. We would be pleased to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

Airport Owner and Operator Contact Information

In addition, you may wish to include the Airport owner and operator (Los Angeles World Airports) in your response so that they may be aware of your comments. The Airport owner and operator's point of contact for this project is:

Mr. Herb Glasgow, Senior Planner
Los Angeles World Airports
One World Way
Los Angeles, CA 90045
424-646-5180

Project Consultation

Your timely response will greatly assist us in incorporating your concerns into the project planning. For that purpose, we respectfully request that you provide comments to the FAA within thirty (30) days of your receipt of this correspondence.

FAA Contact Information

If you wish to provide comments related to this proposed project, please contact Victor Globa, Environmental Protection Specialist, at the address above, at 310-725-3637, or by e-mail at victor.globa@faa.gov; or please feel free to contact me directly.

Sincerely,

Mark A. McClardy
Manager, Airports Division

Enclosures:

Figure 2, Project Location
Figure 3, Aerial View of Project Site

Tribal Consultation Options

Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, CA 91778

Project Name: Los Angeles International Airport Westchester Golf Course Three-Hole Expansion Project Draft EA

Please check the appropriate response:

____ The Gabrieleno/Tongva San Gabriel Band of Mission Indians will continue coordination for this proposed project directly with Owner / Operator of the airport. Please note that if the Tribe initially chooses to consult / coordinate with the airport owner/operator, the Tribe may later decide to consult directly with the FAA.

____ The Gabrieleno/Tongva San Gabriel Band of Mission Indians has no interest associated with this proposed project and further consultation is not required.

Use the back of this form or additional sheets if you would like to make additional comments.

_____ _____
Tribal Leader (Please print) Telephone

_____ _____
Tribal Leader (Signature) Date

Address:

Phone:
Fax:
E-mail:
Other: (please describe)

If you have chosen to proceed with consultation, please identify a Tribal Representative for the consultation.

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Name of Formal Tribal Representative (Please print) Telephone

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P.O. Box 92007
Los Angeles, CA 90009-2007

Or, fax to: (310) 725-6849

north

Not to Scale

Prepared by: CDM, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Project Location**	Figure 2

north
Not to Scale

Prepared by: CDM, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	Aerial View of Project Site	Figure 3

U.S Department
of Transportation
**Federal Aviation
Administration**

Western-Pacific Region
Los Angeles Airports District Office

Federal Aviation Administration
P.O. Box 92007
Los Angeles, CA 90009

March 16, 2009

Mr. John Tommy Rosas, Tribal Administrator
Tongva Ancestral Territorial Tribal Nation
Via E-mail: tattnlaw@gmail.com

Dear Mr. Rosas:

Los Angeles International Airport
Proposed Westchester Golf Course Three-Hole Expansion Project
Environmental Assessment
Los Angeles, California
Consultation Initiation

The Federal Aviation Administration (FAA) and Los Angeles World Airports (LAWA) are in the process of preparing environmental documentation for the unconditional approval of an amendment to the Airport Layout Plan at Los Angeles International Airport (LAX). LAX is owned and operated by LAWA as a public use airport in the City of Los Angeles, Los Angeles County, California. The proposed undertaking will allow for a three-hole expansion of the Westchester Golf Course, and modification to two holes located on property owned by LAX. This amendment will designate the project site for golf uses in accordance with 49 United States Code (USC) §47107(a)(16).

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Los Angeles World Airports
One World Way
Los Angeles, CA 90045
424-646-5180

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Sincerely,

Mark A. McClardy
Manager, Airports Division

Enclosures:

Figure 2, Project Location
Figure 3, Aerial View of Project Site

Tribal Consultation Options

Tongva Ancestral Territorial Tribal Nation

Project Name: Los Angeles International Airport Westchester Golf Course Three-Hole Expansion Project Draft EA

Please check the appropriate response:

____ The Tongva Ancestral Territorial Tribal Nation will continue coordination for this proposed project directly with Owner / Operator of the airport. Please note that if the Tribe initially chooses to consult / coordinate with the airport owner/operator, the Tribe may later decide to consult directly with the FAA.

____ The Tongva Ancestral Territorial Tribal Nation has no interest associated with this proposed project and further consultation is not required.

Use the back of this form or additional sheets if you would like to make additional comments.

_____ _____

Tribal Leader (Please print) Telephone

_____ _____

Tribal Leader (Signature) Date

Address:

Phone:
Fax:
E-mail:
Other: (please describe)

If you have chosen to proceed with consultation, please identify a Tribal Representative for the consultation.

_____ _____

Name of Formal Tribal Representative (Please print) Telephone

_____ _____

Name of Formal Tribal Representative (Signature) Date

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Los Angeles Airports District Office
P.O. Box 92007
Los Angeles, CA 90009-2007

Or, fax to: (310) 725-6849

north

Not to Scale

Prepared by: CDM, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	**Project Location**	Figure 2

north
Not to Scale

Prepared by: CDM, 2008.

Westchester Golf Course Three-Hole Expansion Project Environmental Assessment	Aerial View of Project Site	Figure 3

Johntommy Rosastattnlaw@gmail.com
03/26/2009 03:05 PM
To: Victor Globa/AWP/FAA@FAA
Cc:
Subject: Re: LAX Westchester Golf Course Three-Hole Expansion Project Environmental Assessment Consultation Initiation

HI I CONFIRM RECEIPT OF YOUR DOCUMENT[S] THANK YOU-

WE WILL BE RESPONDING SOON AND WITH AN EXPANDED VERSION OF OUR CONCERNS WITH THE PROPOSED PROJECT .
PLEASE BE AND TAKE NOTICE -TATTN IS OBJECTING AND OPPOSING THE PROPOSED PROJECT-

I WILL RESPOND TO YOU/FAA AND WITH OUR OBJECTIONS AND OPPOSITION LISTED AND COMPLIANT WITHIN NEPA ,NHPA AND OTHER APPLICABLE AUTHORITIES.

/S/ JOHNTOMMY ROSAS

Appendix C

Air Quality Data

Construction Emissions Summary

LAX Golf Course Expansion

Construction - Emissions Summary (Maximum Daily, Maximium Quarterly, Annual, and Project Total)

Maximum Daily Emissions, Uncontrolled (lb/day)

Pollutant	2008 Q4	2009 Q1	2009 Q2	Project Max	SCAQMD Signficance Threshold	Emissions Exceed Threshold?
Carbon monoxide, CO	51.51	9.69	2.42	51.51	550	No
Reactive organic Gas, ROG	13.77	0.99	0.25	13.77	75	No
Nitrogen oxides, NOx	88.11	1.01	0.25	88.11	100	No
Sulfur dioxide, SO2	0.09	0.01	0.00	0.09	150	No
Inhalable particulates, PM10	78.42	73.10	18.28	78.42	150	No
Fine particulates, PM2.5	20.69	16.15	0.05	20.69	55	No

Source: ESC 2008, CDM 2008, and SCAQMD 2007.

Prepared by: CDM 2008.

Maximum Daily Emissions, Controlled (lb/day)[a]

Pollutant	2008 Q4	2009 Q1	2009 Q2	Project Max	SCAQMD Signficance Threshold	Emissions Exceed Threshold?
Carbon monoxide, CO	51.51	9.69	2.42	51.51	550	No
Reactive organic Gas, ROG	13.77	0.99	0.25	13.77	75	No
Nitrogen oxides, NOx	88.11	1.01	0.25	88.11	100	No
Sulfur dioxide, SO2	0.09	0.01	0.00	0.09	150	No
Inhalable particulates, PM10	30.15	25.63	6.41	30.15	150	No
Fine particulates, PM2.5	9.22	5.22	1.30	9.22	55	No

Source: ESC 2008, CDM 2008, and SCAQMD 2007.

Prepared by: CDM 2008.

a. "Controlled" includes emission reduction measures required by regulation (e.g., SCAQMD Rule 403), or the LAX Master Plan Community Benefits Agreement (construction equipment diesel particulate filters). These reduction are part of the project design.

Maximum Quarterly Emissions, Controlled (tons/quarter)

Pollutant	2008 Q4	2009 Q1	2009 Q2	Project Max	SCAQMD Signficance Threshold	Emissions Exceed Threshold?
CO	1.455	0.490	0.094	1.455	24.75	No
ROG	0.379	0.083	0.012	0.379	2.50	No
NOx	2.401	0.321	0.032	2.401	2.50	No
SOx	0.003	0.001	0.000	0.003	6.75	No
PM10	1.119	1.012	0.250	1.119	6.75	No
PM2.5	0.312	0.218	0.052	0.312	6.75	No

Source: ESC 2008, CDM 2008, and SCAQMD 2007.

Prepared by: CDM 2008.

SCAQMD Signficance Threshold = South Coast Air Quality Management District Air Qualty Significance Threshold for construction emissions, December 2007, http://www.aqmd.gov/CEQA/handbook/signthres.pdf

Total Emissions (tons)

Pollutant	2008 Total	2009 Total	Project Total
CO	1.45	0.58	2.04
ROG	0.38	0.10	0.48
NOx	2.40	0.35	2.75
SOx	0.003	0.001	0.003
PM10	1.12	1.26	2.38
PM2.5	0.31	0.27	0.58

Maximum Daily Emissions, Controlled, by Equipment Category (lb/day)[a]

Equipment Type	CO	ROG	NOx	SOx	PM10	PM2.5
Offroad, On-Site Equipment	40.80	12.51	83.75	0.08	4.30	3.85
On-Road, On-Site Trucks	1.03	0.26	3.35	0.00	0.22	0.15
On-Road, Offsite Deliveries	-	-	-	-	-	-
On-Road, Offsite Workers	9.69	0.99	1.01	0.01	0.90	0.19
Fugitive Dust					24.73	5.03
Paving/Painting ROG						
Total (lbs/day)	51.51	13.77	88.11	0.09	30.15	9.22

Equipment Emission Factors

Construction - Equipment Emission Factors and Hourly Emissions							
		1	2	3	4	5	6
No.	Equipment Category	Equipment Model	Fuel	Onroad / Offroad	Rating (hp)	Load Factor[a.]	Usage Factor[b.]
1	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	10CY Ready Mix Truck	Diesel	Onroad	350	0.59	0.85
2	Air Compressors	Air Compressor	Diesel	Offroad	85	0.53	0.85
3	Welders	Arc Welder	Diesel	Offroad	30	0.58	0.85
4	Pavers	Barber-Greene BG260C Paver	Diesel	Offroad	174	0.53	0.85
5	Graders	CAT 14H Motor Grader	Diesel	Offroad	220	0.58	0.85
6	Excavators	CAT 330C Excavator	Diesel	Offroad	247	0.58	0.85
7	Tractors/Loaders/Backhoes	CAT 428 Backhoe	Diesel	Offroad	83	0.575	0.85
8	Rubber Tired Loaders	CAT 966 Loader	Diesel	Offroad	235	0.465	0.85
9	Rubber Tired Loaders	CAT 988 Loader	Diesel	Offroad	475	0.465	0.85
10	Rollers	CAT CB 634D Roller	Diesel	Offroad	145	0.575	0.85
11	Plate Compactors	CAT CS 531D Compactor	Diesel	Offroad	145	0.575	0.85
12	Plate Compactors	CAT CS 583E Compactor	Diesel	Offroad	150	0.575	0.85
13	Rubber Tired Loaders	CAT IT 14G Loader	Diesel	Offroad	90	0.465	0.85
14	Rubber Tired Loaders	CAT PS 300 B Rubber Tire	Diesel	Offroad	99	0.465	0.85
15	Surfacing Equipment	CAT RM350B Reclaimer	Diesel	Offroad	500	0.78	0.85
43	Crawler Tractors	CAT D9T Dozer	Diesel	Offroad	410	0.59	0.85
44	Crawler Tractors	CAT D5K Dozer	Diesel	Offroad	96	0.59	0.85
16	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Concrete Pump Truck	Diesel	Onroad	350	0.59	0.85
17	Crushing/Proc. Equipment	Crusher	Diesel	Offroad	450	0.66	0.85
18	Trenchers	Ditch Witch RT55 Trencher	Diesel	Offroad	60	0.575	0.85
19	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Flat Bed Truck	Diesel	Onroad	200	0.59	0.85
20	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Fuel Truck	Diesel	Onroad	170	0.59	0.85
21	Pavers	Gomaco GP-4000 Paver	Diesel	Offroad	450	0.53	0.85
22	Pavers	Gomaco RTP-500 Belt Paver	Diesel	Offroad	200	0.53	0.85
23	Paving Equipment	Gomaco TC-400 Cure/Texture Rig	Diesel	Offroad	70	0.575	0.85
24	Cranes	Grove Mobile Crane	Diesel	Offroad	160	0.43	0.85
25	Other General Industrial Equipment	Light Plant	Diesel	Offroad	15	0.9	0.85
26	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Mechanics Truck w/ Crane	Diesel	Onroad	200	0.59	0.85
27	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Paint Truck	Diesel	Onroad	175	0.59	0.85
28	Rollers	Sheepfoot Roller	Diesel	Offroad	232	0.575	0.85
29	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Tri-Axle Dump Truck	Diesel	Onroad	350	0.59	0.85
30	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Truck w/ Silicon Pump	Diesel	Onroad	200	0.59	0.85
31	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Truck/Tractor Low Boy	Diesel	Onroad	400	0.59	0.85
32	Sweepers/Scrubbers	Vacuum Sweeper	Diesel	Offroad	170	0.58	0.85
33	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Water Truck	Diesel	Onroad	230	0.59	0.85
34	Delivery Vehicle, Gas (>8500 lb)	1-Ton Truck w/ Lift	Gas	Onroad	230	0.3	0.85
35	Delivery Vehicle, Gas (>8500 lb)	1-Ton Flatbed	Gas	Onroad	200	0.3	0.85
36	Passenger Vehicle, Gas (<8500 lb)	Crew Van	Gas	Onroad	180	0.2	0.85
37	Paving Equipment	Parking Lot Paint Machine	Gas	Offroad	50	0.575	0.85
38	Passenger Vehicle, Gas (<8500 lb)	Pickup, small	Gas	Onroad	175	0.2	0.85
39	Passenger Vehicle, Gas (<8500 lb)	Pickup, large	Gas	Onroad	230	0.2	0.85
40	Passenger Vehicle, Gas (<8500 lb)	SUV	Gas	Onroad	240	0.2	0.85
41	Concrete/Industrial Saws	Walk Behind Saw	Gas	Offroad	10	0.9	0.85
42	Passenger Vehicle, Gas (<8500 lb)	Commute Vehicle	Gas	Onroad	125	0.2	0.85

a. Load factors from CEQA Air Quality Handbook, SCAQMD, Diamond Bar, CA, 1993. Table A9-8-D.

b. Usage factor estimated by assuming 10 hour shift includes 1.5 hours down time for meal and breaks.

Equipment Emission Factors

Construction - Equipment Emission Factors and Hourly Emissions									
		1	8	9	10	11	12	13	14
No.	Equipment Category	Equipment Model	2008 CO (lb/hr)	2008 ROG (lb/hr)	2008 NOx (lb/hr)	2008 SOx (lb/hr)	2008 PM10 (lb/hr)	2008 PM2.5 (lb/hr)	2008 CO2 (lb/hr)
1	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	10CY Ready Mix Truck	0.1024	0.0264	0.3354	0.0003	0.0224	0.0153	31.67
2	Air Compressors	Air Compressor	0.2279	0.0775	0.4512	0.0005	0.0268	0.0247	38.59
3	Welders	Arc Welder	0.0945	0.0331	0.1663	0.0002	0.0112	0.0103	14.49
4	Pavers	Barber-Greene BG260C Paver	0.5640	0.1974	1.0132	0.0009	0.0675	0.0621	81.33
5	Graders	CAT 14H Motor Grader	0.7230	0.2444	1.3615	0.0013	0.0864	0.0795	115.65
6	Excavators	CAT 330C Excavator	0.6780	0.2239	1.2723	0.0014	0.0811	0.0746	120.92
7	Tractors/Loaders/Backhoes	CAT 428 Backhoe	0.2816	0.0939	0.5460	0.0006	0.0326	0.0299	53.82
8	Rubber Tired Loaders	CAT 966 Loader	0.5865	0.1950	1.1399	0.0011	0.0667	0.0613	101.26
9	Rubber Tired Loaders	CAT 988 Loader	1.1854	0.3942	2.3041	0.0023	0.1348	0.1240	204.68
10	Rollers	CAT CB 634D Roller	0.3973	0.1285	0.6996	0.0008	0.0449	0.0413	64.00
11	Plate Compactors	CAT CS 531D Compactor	0.2894	0.0567	0.3609	0.0007	0.0228	0.0210	47.40
12	Plate Compactors	CAT CS 583E Compactor	0.2994	0.0586	0.3734	0.0008	0.0236	0.0217	49.03
13	Rubber Tired Loaders	CAT IT 14G Loader	0.2246	0.0747	0.4366	0.0004	0.0255	0.0235	38.78
14	Rubber Tired Loaders	CAT PS 300 B Rubber Tire	0.2471	0.0822	0.4802	0.0005	0.0281	0.0258	42.66
15	Surfacing Equipment	CAT RM350B Reclaimer	1.7035	0.5181	3.5642	0.0034	0.1964	0.1807	309.89
43	Crawler Tractors	CAT D9T Dozer	1.4330	0.4546	2.7288	0.0023	0.1588	0.1461	209.06
44	Crawler Tractors	CAT D5K Dozer	0.3355	0.1064	0.6389	0.0005	0.0372	0.0342	48.95
16	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Concrete Pump Truck	0.1024	0.0264	0.3354	0.0003	0.0224	0.0153	31.67
17	Crushing/Proc. Equipment	Crusher	1.4205	0.4965	2.7683	0.0027	0.1675	0.1541	239.05
18	Trenchers	Ditch Witch RT55 Trencher	0.2083	0.0639	0.3731	0.0004	0.0223	0.0205	32.70
19	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Flat Bed Truck	0.1707	0.0441	0.5589	0.0005	0.0373	0.0255	52.79
20	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Fuel Truck	0.1024	0.0264	0.3354	0.0003	0.0224	0.0153	31.67
21	Pavers	Gomaco GP-4000 Paver	1.4585	0.5105	2.6204	0.0025	0.1745	0.1605	210.35
22	Pavers	Gomaco RTP-500 Belt Paver	0.6482	0.2269	1.1646	0.0011	0.0776	0.0713	93.49
23	Paving Equipment	Gomaco TC-400 Cure/Texture Rig	0.2328	0.0849	0.4005	0.0004	0.0285	0.0262	32.33
24	Cranes	Grove Mobile Crane	0.3503	0.1221	0.6345	0.0006	0.0411	0.0378	51.50
25	Other General Industrial Equipment	Light Plant	0.0557	0.0181	0.1110	0.0001	0.0064	0.0059	9.78
26	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Mechanics Truck w/ Crane	0.1024	0.0264	0.3354	0.0003	0.0224	0.0153	31.67
27	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Paint Truck	0.1024	0.0264	0.3354	0.0003	0.0224	0.0153	31.67
28	Rollers	Sheepfoot Roller	0.6357	0.2056	1.1194	0.0012	0.0718	0.0660	102.40
29	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Tri-Axle Dump Truck	0.1707	0.0441	0.5589	0.0005	0.0373	0.0255	52.79
30	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Truck w/ Silicon Pump	0.1024	0.0264	0.3354	0.0003	0.0224	0.0153	31.67
31	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Truck/Tractor Low Boy	0.1024	0.0264	0.3354	0.0003	0.0224	0.0153	31.67
32	Sweepers/Scrubbers	Vacuum Sweeper	0.5632	0.1801	0.9040	0.0011	0.0635	0.0584	87.90
33	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Water Truck	0.1024	0.0264	0.3354	0.0003	0.0224	0.0153	31.67
34	Delivery Vehicle, Gas (>8500 lb)	1-Ton Truck w/ Lift	0.0840	0.0114	0.0907	0.0001	0.0040	0.0033	10.40
35	Delivery Vehicle, Gas (>8500 lb)	1-Ton Flatbed	0.0840	0.0114	0.0907	0.0001	0.0040	0.0033	10.40
36	Passenger Vehicle, Gas (<8500 lb)	Crew Van	0.0269	0.0028	0.0028	0.0000	0.0007	0.0005	2.80
37	Paving Equipment	Parking Lot Paint Machine	0.1663	0.0606	0.2861	0.0003	0.0204	0.0187	23.09
38	Passenger Vehicle, Gas (<8500 lb)	Pickup, small	0.0269	0.0028	0.0028	0.0000	0.0007	0.0005	2.80
39	Passenger Vehicle, Gas (<8500 lb)	Pickup, large	0.0269	0.0028	0.0028	0.0000	0.0007	0.0005	2.80
40	Passenger Vehicle, Gas (<8500 lb)	SUV	0.0269	0.0028	0.0028	0.0000	0.0007	0.0005	2.80
41	Concrete/Industrial Saws	Walk Behind Saw	0.0494	0.0162	0.0796	0.0001	0.0057	0.0053	7.33
42	Passenger Vehicle, Gas (<8500 lb)	Commute Vehicle	0.0448	0.0046	0.0047	0.0000	0.0011	0.0008	4.67
a. Load factors from CEQA Air Quality Handbook, SCAQMD, Diamond Bar, CA, 1993. Table A9-8-D.									
b. Usage factor estimated by assuming 10 hour shift includes 1.5 hours down time for meal and breaks.									

C-2

Equipment Emission Factors

Construction - Equipment Emission Factors and Hourly Emissions									
		1	15	16	17	18	19	20	21
No.	Equipment Category	Equipment Model	2009 CO (lb/hr)	2009 ROG (lb/hr)	2009 NOx (lb/hr)	2009 SOx (lb/hr)	2009 PM10 (lb/hr)	2009 PM2.5 (lb/hr)	2009 CO2 (lb/hr)
1	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	10CY Ready Mix Truck	0.0965	0.0248	0.3148	0.0003	0.0211	0.0142	31.68
2	Air Compressors	Air Compressor	0.2211	0.0743	0.4363	0.0005	0.0258	0.0237	38.59
3	Welders	Arc Welder	0.0925	0.0317	0.1608	0.0002	0.0107	0.0099	14.49
4	Pavers	Barber-Greene BG260C Paver	0.5449	0.1862	0.9715	0.0009	0.0640	0.0589	81.33
5	Graders	CAT 14H Motor Grader	0.6988	0.2293	1.2905	0.0013	0.0818	0.0752	115.65
6	Excavators	CAT 330C Excavator	0.6593	0.2086	1.2017	0.0014	0.0751	0.0691	120.92
7	Tractors/Loaders/Backhoes	CAT 428 Backhoe	0.2725	0.0868	0.5148	0.0006	0.0303	0.0279	53.82
8	Rubber Tired Loaders	CAT 966 Loader	0.5662	0.1835	1.0858	0.0011	0.0627	0.0577	101.26
9	Rubber Tired Loaders	CAT 988 Loader	1.1445	0.3710	2.1946	0.0023	0.1268	0.1166	204.68
10	Rollers	CAT CB 634D Roller	0.3878	0.1217	0.6696	0.0008	0.0420	0.0386	64.00
11	Plate Compactors	CAT CS 531D Compactor	0.2894	0.0559	0.3531	0.0007	0.0195	0.0179	47.40
12	Plate Compactors	CAT CS 583E Compactor	0.2994	0.0578	0.3653	0.0008	0.0202	0.0186	49.03
13	Rubber Tired Loaders	CAT IT 14G Loader	0.2169	0.0703	0.4158	0.0004	0.0240	0.0221	38.78
14	Rubber Tired Loaders	CAT PS 300 B Rubber Tire	0.2385	0.0773	0.4574	0.0005	0.0264	0.0243	42.66
15	Surfacing Equipment	CAT RM350B Reclaimer	1.6444	0.4866	3.3861	0.0034	0.1869	0.1719	309.89
43	Crawler Tractors	CAT D9T Dozer	1.3728	0.4308	2.6070	0.0023	0.1513	0.1392	209.06
44	Crawler Tractors	CAT D5K Dozer	0.3214	0.1009	0.6104	0.0005	0.0354	0.0326	48.95
16	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Concrete Pump Truck	0.0965	0.0248	0.3148	0.0003	0.0211	0.0142	31.68
17	Crushing/Proc. Equipment	Crusher	1.3806	0.4732	2.6566	0.0027	0.1610	0.1481	239.05
18	Trenchers	Ditch Witch RT55 Trencher	0.2023	0.0613	0.3587	0.0004	0.0208	0.0192	32.70
19	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Flat Bed Truck	0.1608	0.0413	0.5246	0.0005	0.0352	0.0237	52.79
20	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Fuel Truck	0.0965	0.0248	0.3148	0.0003	0.0211	0.0142	31.68
21	Pavers	Gomaco GP-4000 Paver	1.4094	0.4814	2.5124	0.0025	0.1656	0.1524	210.35
22	Pavers	Gomaco RTP-500 Belt Paver	0.6264	0.2140	1.1166	0.0011	0.0736	0.0677	93.49
23	Paving Equipment	Gomaco TC-400 Cure/Texture Rig	0.2281	0.0809	0.3847	0.0004	0.0272	0.0250	32.33
24	Cranes	Grove Mobile Crane	0.3382	0.1151	0.6046	0.0006	0.0390	0.0359	51.50
25	Other General Industrial Equipment	Light Plant	0.0541	0.0174	0.1073	0.0001	0.0060	0.0055	9.78
26	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Mechanics Truck w/ Crane	0.0965	0.0248	0.3148	0.0003	0.0211	0.0142	31.68
27	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Paint Truck	0.0965	0.0248	0.3148	0.0003	0.0211	0.0142	31.68
28	Rollers	Sheepfoot Roller	0.6206	0.1946	1.0714	0.0012	0.0672	0.0618	102.40
29	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Tri-Axle Dump Truck	0.1608	0.0413	0.5246	0.0005	0.0352	0.0237	52.79
30	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Truck w/ Silicon Pump	0.0965	0.0248	0.3148	0.0003	0.0211	0.0142	31.68
31	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Truck/Tractor Low Boy	0.0965	0.0248	0.3148	0.0003	0.0211	0.0142	31.68
32	Sweepers/Scrubbers	Vacuum Sweeper	0.5521	0.1683	0.8611	0.0011	0.0579	0.0533	87.90
33	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Water Truck	0.0965	0.0248	0.3148	0.0003	0.0211	0.0142	31.68
34	Delivery Vehicle, Gas (>8500 lb)	1-Ton Truck w/ Lift	0.0771	0.0107	0.0856	0.0001	0.0062	0.0032	10.42
35	Delivery Vehicle, Gas (>8500 lb)	1-Ton Flatbed	0.0771	0.0107	0.0856	0.0001	0.0062	0.0032	10.42
36	Passenger Vehicle, Gas (<8500 lb)	Crew Van	0.0247	0.0025	0.0026	0.0000	0.0023	0.0005	2.80
37	Paving Equipment	Parking Lot Paint Machine	0.1629	0.0578	0.2748	0.0003	0.0194	0.0179	23.09
38	Passenger Vehicle, Gas (<8500 lb)	Pickup, small	0.0247	0.0025	0.0026	0.0000	0.0023	0.0005	2.80
39	Passenger Vehicle, Gas (<8500 lb)	Pickup, large	0.0247	0.0025	0.0026	0.0000	0.0023	0.0005	2.80
40	Passenger Vehicle, Gas (<8500 lb)	SUV	0.0247	0.0025	0.0026	0.0000	0.0023	0.0005	2.80
41	Concrete/Industrial Saws	Walk Behind Saw	0.0486	0.0153	0.0760	0.0001	0.0054	0.0050	7.33
42	Passenger Vehicle, Gas (<8500 lb)	Commute Vehicle	0.0412	0.0042	0.0043	0.0000	0.0038	0.0008	4.66

a. Load factors from CEQA Air Quality Handbook, SCAQMD, Diamond Bar, CA, 1993. Table A9-8-D.

b. Usage factor estimated by assuming 10 hour shift includes 1.5 hours down time for meal and breaks.

C-2

Equipment Emission Factors

Construction - Equipment Emission Factors and Hourly Emissions									
		1	22	23	24	25	26	27	28
No.	Equipment Category	Equipment Model	2010 CO (lb/hr)	2010 ROG (lb/hr)	2010 NOx (lb/hr)	2010 SOx (lb/hr)	2010 PM10 (lb/hr)	2010 PM2.5 (lb/hr)	2010 CO2 (lb/hr)
1	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	10CY Ready Mix Truck	0.0899	0.0229	0.2875	0.0003	0.0199	0.0131	31.68
2	Air Compressors	Air Compressor	0.2139	0.0706	0.4200	0.0005	0.0246	0.0227	38.59
3	Welders	Arc Welder	0.0904	0.0302	0.1549	0.0002	0.0103	0.0095	14.49
4	Pavers	Barber-Greene BG260C Paver	0.5297	0.1768	0.9328	0.0009	0.0610	0.0561	81.33
5	Graders	CAT 14H Motor Grader	0.6774	0.2149	1.2237	0.0013	0.0773	0.0711	115.65
6	Excavators	CAT 330C Excavator	0.6426	0.1943	1.1374	0.0014	0.0696	0.0640	120.92
7	Tractors/Loaders/Backhoes	CAT 428 Backhoe	0.2644	0.0803	0.4862	0.0006	0.0283	0.0260	53.82
8	Rubber Tired Loaders	CAT 966 Loader	0.5482	0.1728	1.0369	0.0011	0.0589	0.0542	101.26
9	Rubber Tired Loaders	CAT 988 Loader	1.1081	0.3493	2.0959	0.0023	0.1191	0.1096	204.68
10	Rollers	CAT CB 634D Roller	0.3794	0.1152	0.6420	0.0008	0.0393	0.0362	64.00
11	Plate Compactors	CAT CS 531D Compactor	0.2894	0.0555	0.3485	0.0007	0.0166	0.0153	47.40
12	Plate Compactors	CAT CS 583E Compactor	0.2994	0.0574	0.3605	0.0008	0.0172	0.0158	49.03
13	Rubber Tired Loaders	CAT IT 14G Loader	0.2100	0.0662	0.3971	0.0004	0.0226	0.0208	38.78
14	Rubber Tired Loaders	CAT PS 300 B Rubber Tire	0.2309	0.0728	0.4368	0.0005	0.0248	0.0228	42.66
15	Surfacing Equipment	CAT RM350B Reclaimer	1.5922	0.4568	3.2192	0.0034	0.1778	0.1635	309.89
43	Crawler Tractors	CAT D9T Dozer	1.3171	0.4080	2.4903	0.0023	0.1440	0.1325	209.06
44	Crawler Tractors	CAT D5K Dozer	0.3084	0.0955	0.5831	0.0005	0.0337	0.0310	48.95
16	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Concrete Pump Truck	0.0899	0.0229	0.2875	0.0003	0.0199	0.0131	31.68
17	Crushing/Proc. Equipment	Crusher	1.3387	0.4473	2.5390	0.0027	0.1538	0.1415	239.05
18	Trenchers	Ditch Witch RT55 Trencher	0.1968	0.0589	0.3462	0.0004	0.0197	0.0181	32.70
19	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Flat Bed Truck	0.1499	0.0381	0.4792	0.0005	0.0332	0.0218	52.80
20	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Fuel Truck	0.0899	0.0229	0.2875	0.0003	0.0199	0.0131	31.68
21	Pavers	Gomaco GP-4000 Paver	1.3698	0.4572	2.4124	0.0025	0.1578	0.1452	210.35
22	Pavers	Gomaco RTP-500 Belt Paver	0.6088	0.2032	1.0722	0.0011	0.0701	0.0645	93.49
23	Paving Equipment	Gomaco TC-400 Cure/Texture Rig	0.2238	0.0771	0.3698	0.0004	0.0259	0.0238	32.33
24	Cranes	Grove Mobile Crane	0.3269	0.1082	0.5760	0.0006	0.0370	0.0340	51.50
25	Other General Industrial Equipment	Light Plant	0.0525	0.0166	0.1033	0.0001	0.0057	0.0052	9.78
26	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Mechanics Truck w/ Crane	0.0899	0.0229	0.2875	0.0003	0.0199	0.0131	31.68
27	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Paint Truck	0.0899	0.0229	0.2875	0.0003	0.0199	0.0131	31.68
28	Rollers	Sheepfoot Roller	0.6071	0.1844	1.0273	0.0012	0.0630	0.0579	102.40
29	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Tri-Axle Dump Truck	0.1499	0.0381	0.4792	0.0005	0.0332	0.0218	52.80
30	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Truck w/ Silicon Pump	0.0899	0.0229	0.2875	0.0003	0.0199	0.0131	31.68
31	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Truck/Tractor Low Boy	0.0899	0.0229	0.2875	0.0003	0.0199	0.0131	31.68
32	Sweepers/Scrubbers	Vacuum Sweeper	0.5418	0.1568	0.8236	0.0011	0.0537	0.0494	87.90
33	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Water Truck	0.0899	0.0229	0.2875	0.0003	0.0199	0.0131	31.68
34	Delivery Vehicle, Gas (>8500 lb)	1-Ton Truck w/ Lift	0.0705	0.0099	0.0789	0.0001	0.0060	0.0030	10.45
35	Delivery Vehicle, Gas (>8500 lb)	1-Ton Flatbed	0.0705	0.0099	0.0789	0.0001	0.0060	0.0030	10.45
36	Passenger Vehicle, Gas (<8500 lb)	Crew Van	0.0211	0.0023	0.0023	0.0000	0.0023	0.0005	2.80
37	Paving Equipment	Parking Lot Paint Machine	0.1598	0.0551	0.2642	0.0003	0.0185	0.0170	23.09
38	Passenger Vehicle, Gas (<8500 lb)	Pickup, small	0.0211	0.0023	0.0023	0.0000	0.0023	0.0005	2.80
39	Passenger Vehicle, Gas (<8500 lb)	Pickup, large	0.0211	0.0023	0.0023	0.0000	0.0023	0.0005	2.80
40	Passenger Vehicle, Gas (<8500 lb)	SUV	0.0211	0.0023	0.0023	0.0000	0.0023	0.0005	2.80
41	Concrete/Industrial Saws	Walk Behind Saw	0.0479	0.0144	0.0729	0.0001	0.0051	0.0047	7.33
42	Passenger Vehicle, Gas (<8500 lb)	Commute Vehicle	0.0351	0.0039	0.0039	0.0000	0.0038	0.0008	4.66

a. Load factors from CEQA Air Quality Handbook, SCAQMD, Diamond Bar, CA, 1993. Table A9-8-D.

b. Usage factor estimated by assuming 10 hour shift includes 1.5 hours down time for meal and breaks.

Equipment Emission Factors

Construction - Equipment Emission Factors and Hourly Emissions									
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No.	Equipment Category	Equipment Model	2008 CO EF (lb/mi) or (lb/hp-hr)	2008 ROG EF (lb/mi) or (lb/hp-hr)	2008 NOx EF (lb/mi) or (lb/hp-hr)	2008 SOx EF (lb/mi) or (lb/hp-hr)	2008 PM10 EF (lb/mi) or (lb/hp-hr)	2008 PM2.5 EF (lb/mi) or (lb/hp-hr)	2008 CO2 EF (lb/mi) or (lb/hp-hr)
1	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	10CY Ready Mix Truck	0.0136	0.0035	0.0446	0.000041	0.00297	0.00204	4.21
2	Air Compressors	Air Compressor	0.0060	0.0020	0.0118	0.000012	0.00070	0.00064	1.01
3	Welders	Arc Welder	0.0064	0.0022	0.0112	0.000012	0.00075	0.00069	0.98
4	Pavers	Barber-Greene BG260C Paver	0.0072	0.0025	0.0129	0.000012	0.00086	0.00079	1.04
5	Graders	CAT 14H Motor Grader	0.0067	0.0023	0.0126	0.000012	0.00080	0.00073	1.07
6	Excavators	CAT 330C Excavator	0.0056	0.0018	0.0104	0.000011	0.00067	0.00061	0.99
7	Tractors/Loaders/Backhoes	CAT 428 Backhoe	0.0069	0.0023	0.0135	0.000016	0.00080	0.00074	1.33
8	Rubber Tired Loaders	CAT 966 Loader	0.0063	0.0021	0.0123	0.000012	0.00072	0.00066	1.09
9	Rubber Tired Loaders	CAT 988 Loader	0.0063	0.0021	0.0123	0.000012	0.00072	0.00066	1.09
10	Rollers	CAT CB 634D Roller	0.0056	0.0018	0.0099	0.000011	0.00063	0.00058	0.90
11	Plate Compactors	CAT CS 531D Compactor	0.0041	0.0008	0.0051	0.000010	0.00032	0.00030	0.67
12	Plate Compactors	CAT CS 583E Compactor	0.0041	0.0008	0.0051	0.000010	0.00032	0.00030	0.67
13	Rubber Tired Loaders	CAT IT 14G Loader	0.0063	0.0021	0.0123	0.000012	0.00072	0.00066	1.09
14	Rubber Tired Loaders	CAT PS 300 B Rubber Tire	0.0063	0.0021	0.0123	0.000012	0.00072	0.00066	1.09
15	Surfacing Equipment	CAT RM350B Reclaimer	0.0051	0.0016	0.0108	0.000010	0.00059	0.00055	0.93
43	Crawler Tractors	CAT D9T Dozer	0.0070	0.0022	0.0133	0.000011	0.00077	0.00071	1.02
44	Crawler Tractors	CAT D5K Dozer	0.0070	0.0022	0.0133	0.000011	0.00077	0.00071	1.02
16	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Concrete Pump Truck	0.0136	0.0035	0.0446	0.000041	0.00297	0.00204	4.21
17	Crushing/Proc. Equipment	Crusher	0.0056	0.0020	0.0110	0.000011	0.00066	0.00061	0.95
18	Trenchers	Ditch Witch RT55 Trencher	0.0071	0.0022	0.0127	0.000013	0.00076	0.00070	1.11
19	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Flat Bed Truck	0.0136	0.0035	0.0446	0.000041	0.00297	0.00204	4.21
20	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Fuel Truck	0.0136	0.0035	0.0446	0.000041	0.00297	0.00204	4.21
21	Pavers	Gomaco GP-4000 Paver	0.0072	0.0025	0.0129	0.000012	0.00086	0.00079	1.04
22	Pavers	Gomaco RTP-500 Belt Paver	0.0072	0.0025	0.0129	0.000012	0.00086	0.00079	1.04
23	Paving Equipment	Gomaco TC-400 Cure/Texture Rig	0.0068	0.0025	0.0117	0.000011	0.00083	0.00077	0.94
24	Cranes	Grove Mobile Crane	0.0060	0.0021	0.0108	0.000010	0.00070	0.00065	0.88
25	Other General Industrial Equipment	Light Plant	0.0049	0.0016	0.0097	0.000010	0.00056	0.00051	0.85
26	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Mechanics Truck w/ Crane	0.0136	0.0035	0.0446	0.000041	0.00297	0.00204	4.21
27	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Paint Truck	0.0136	0.0035	0.0446	0.000041	0.00297	0.00204	4.21
28	Rollers	Sheepfoot Roller	0.0056	0.0018	0.0099	0.000011	0.00063	0.00058	0.90
29	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Tri-Axle Dump Truck	0.0136	0.0035	0.0446	0.000041	0.00297	0.00204	4.21
30	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Truck w/ Silicon Pump	0.0136	0.0035	0.0446	0.000041	0.00297	0.00204	4.21
31	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Truck/Tractor Low Boy	0.0136	0.0035	0.0446	0.000041	0.00297	0.00204	4.21
32	Sweepers/Scrubbers	Vacuum Sweeper	0.0067	0.0021	0.0108	0.000013	0.00076	0.00070	1.05
33	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Water Truck	0.0136	0.0035	0.0446	0.000041	0.00297	0.00204	4.21
34	Delivery Vehicle, Gas (>8500 lb)	1-Ton Truck w/ Lift	0.0219	0.0030	0.0237	0.000026	0.00104	0.00086	2.72
35	Delivery Vehicle, Gas (>8500 lb)	1-Ton Flatbed	0.0219	0.0030	0.0237	0.000026	0.00104	0.00086	2.72
36	Passenger Vehicle, Gas (<8500 lb)	Crew Van	0.0105	0.0011	0.0011	0.000011	0.00026	0.00018	1.10
37	Paving Equipment	Parking Lot Paint Machine	0.0068	0.0025	0.0117	0.000011	0.00083	0.00077	0.94
38	Passenger Vehicle, Gas (<8500 lb)	Pickup, small	0.0105	0.0011	0.0011	0.000011	0.00026	0.00018	1.10
39	Passenger Vehicle, Gas (<8500 lb)	Pickup, large	0.0105	0.0011	0.0011	0.000011	0.00026	0.00018	1.10
40	Passenger Vehicle, Gas (<8500 lb)	SUV	0.0105	0.0011	0.0011	0.000011	0.00026	0.00018	1.10
41	Concrete/Industrial Saws	Walk Behind Saw	0.0065	0.0021	0.0104	0.000012	0.00075	0.00069	0.96
42	Passenger Vehicle, Gas (<8500 lb)	Commute Vehicle	0.0105	0.0011	0.0011	0.000011	0.00026	0.00018	1.10
a. Load factors from CEQA Air Quality Handbook, SCAQMD, Diamond Bar, CA, 1993. Table A9-8-D.									
b. Usage factor estimated by assuming 10 hour shift includes 1.5 hours down time for meal and breaks.									

Equipment Emission Factors

Construction - Equipment Emission Factors and Hourly Emissions									
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No.	Equipment Category	Equipment Model	2009 CO EF (lb/mi) or (lb/hp-hr)	2009 ROG EF (lb/mi) or (lb/hp-hr)	2009 NOx EF (lb/mi) or (lb/hp-hr)	2009 SOx EF (lb/mi) or (lb/hp-hr)	2009 PM10 EF (lb/mi) or (lb/hp-hr)	2009 PM2.5 EF (lb/mi) or (lb/hp-hr)	2009 CO2 EF (lb/mi) or (lb/hp-hr)
1	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	10CY Ready Mix Truck	0.0128	0.0033	0.0418	0.000040	0.00281	0.00189	4.21
2	Air Compressors	Air Compressor	0.0058	0.0019	0.0114	0.000012	0.00067	0.00062	1.01
3	Welders	Arc Welder	0.0063	0.0021	0.0109	0.000012	0.00073	0.00067	0.98
4	Pavers	Barber-Greene BG260C Paver	0.0070	0.0024	0.0124	0.000012	0.00082	0.00075	1.04
5	Graders	CAT 14H Motor Grader	0.0064	0.0021	0.0119	0.000012	0.00075	0.00069	1.07
6	Excavators	CAT 330C Excavator	0.0054	0.0017	0.0099	0.000011	0.00062	0.00057	0.99
7	Tractors/Loaders/Backhoes	CAT 428 Backhoe	0.0067	0.0021	0.0127	0.000016	0.00075	0.00069	1.33
8	Rubber Tired Loaders	CAT 966 Loader	0.0061	0.0020	0.0117	0.000012	0.00068	0.00062	1.09
9	Rubber Tired Loaders	CAT 988 Loader	0.0061	0.0020	0.0117	0.000012	0.00068	0.00062	1.09
10	Rollers	CAT CB 634D Roller	0.0055	0.0017	0.0094	0.000011	0.00059	0.00055	0.90
11	Plate Compactors	CAT CS 531D Compactor	0.0041	0.0008	0.0050	0.000010	0.00028	0.00025	0.67
12	Plate Compactors	CAT CS 583E Compactor	0.0041	0.0008	0.0050	0.000010	0.00028	0.00025	0.67
13	Rubber Tired Loaders	CAT IT 14G Loader	0.0061	0.0020	0.0117	0.000012	0.00068	0.00062	1.09
14	Rubber Tired Loaders	CAT PS 300 B Rubber Tire	0.0061	0.0020	0.0117	0.000012	0.00068	0.00062	1.09
15	Surfacing Equipment	CAT RM350B Reclaimer	0.0050	0.0015	0.0102	0.000010	0.00056	0.00052	0.93
43	Crawler Tractors	CAT D9T Dozer	0.0067	0.0021	0.0127	0.000011	0.00074	0.00068	1.02
44	Crawler Tractors	CAT D5K Dozer	0.0067	0.0021	0.0127	0.000011	0.00074	0.00068	1.02
16	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Concrete Pump Truck	0.0128	0.0033	0.0418	0.000040	0.00281	0.00189	4.21
17	Crushing/Proc. Equipment	Crusher	0.0055	0.0019	0.0105	0.000011	0.00064	0.00059	0.95
18	Trenchers	Ditch Witch RT55 Trencher	0.0069	0.0021	0.0122	0.000013	0.00071	0.00065	1.11
19	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Flat Bed Truck	0.0128	0.0033	0.0418	0.000040	0.00281	0.00189	4.21
20	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Fuel Truck	0.0128	0.0033	0.0418	0.000040	0.00281	0.00189	4.21
21	Pavers	Gomaco GP-4000 Paver	0.0070	0.0024	0.0124	0.000012	0.00082	0.00075	1.04
22	Pavers	Gomaco RTP-500 Belt Paver	0.0070	0.0024	0.0124	0.000012	0.00082	0.00075	1.04
23	Paving Equipment	Gomaco TC-400 Cure/Texture Rig	0.0067	0.0024	0.0112	0.000011	0.00079	0.00073	0.95
24	Cranes	Grove Mobile Crane	0.0058	0.0020	0.0103	0.000010	0.00067	0.00061	0.88
25	Other General Industrial Equipment	Light Plant	0.0047	0.0015	0.0094	0.000010	0.00052	0.00048	0.85
26	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Mechanics Truck w/ Crane	0.0128	0.0033	0.0418	0.000040	0.00281	0.00189	4.21
27	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Paint Truck	0.0128	0.0033	0.0418	0.000040	0.00281	0.00189	4.21
28	Rollers	Sheepfoot Roller	0.0055	0.0017	0.0094	0.000011	0.00059	0.00055	0.90
29	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Tri-Axle Dump Truck	0.0128	0.0033	0.0418	0.000040	0.00281	0.00189	4.21
30	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Truck w/ Silicon Pump	0.0128	0.0033	0.0418	0.000040	0.00281	0.00189	4.21
31	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Truck/Tractor Low Boy	0.0128	0.0033	0.0418	0.000040	0.00281	0.00189	4.21
32	Sweepers/Scrubbers	Vacuum Sweeper	0.0066	0.0020	0.0103	0.000013	0.00069	0.00064	1.05
33	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Water Truck	0.0128	0.0033	0.0418	0.000040	0.00281	0.00189	4.21
34	Delivery Vehicle, Gas (>8500 lb)	1-Ton Truck w/ Lift	0.0202	0.0028	0.0224	0.000027	0.00162	0.00083	2.72
35	Delivery Vehicle, Gas (>8500 lb)	1-Ton Flatbed	0.0202	0.0028	0.0224	0.000027	0.00162	0.00083	2.72
36	Passenger Vehicle, Gas (<8500 lb)	Crew Van	0.0097	0.0010	0.0010	0.000011	0.00090	0.00019	1.10
37	Paving Equipment	Parking Lot Paint Machine	0.0067	0.0024	0.0112	0.000011	0.00079	0.00073	0.95
38	Passenger Vehicle, Gas (<8500 lb)	Pickup, small	0.0097	0.0010	0.0010	0.000011	0.00090	0.00019	1.10
39	Passenger Vehicle, Gas (<8500 lb)	Pickup, large	0.0097	0.0010	0.0010	0.000011	0.00090	0.00019	1.10
40	Passenger Vehicle, Gas (<8500 lb)	SUV	0.0097	0.0010	0.0010	0.000011	0.00090	0.00019	1.10
41	Concrete/Industrial Saws	Walk Behind Saw	0.0064	0.0020	0.0099	0.000012	0.00071	0.00065	0.96
42	Passenger Vehicle, Gas (<8500 lb)	Commute Vehicle	0.0097	0.0010	0.0010	0.000011	0.00090	0.00019	1.10
a. Load factors from CEQA Air Quality Handbook, SCAQMD, Diamond Bar, CA, 1993. Table A9-8-D.									
b. Usage factor estimated by assuming 10 hour shift includes 1.5 hours down time for meal and breaks.									

Equipment Emission Factors

Construction - Equipment Emission Factors and Hourly Emissions												
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No.	Equipment Category	Equipment Model	2010 CO EF (lb/mi) or (lb/hp-hr)	2010 ROG EF (lb/mi) or (lb/hp-hr)	2010 NOx EF (lb/mi) or (lb/hp-hr)	2010 SOx EF (lb/mi) or (lb/hp-hr)	2010 PM10 EF (lb/mi) or (lb/hp-hr)	2010 PM2.5 EF (lb/mi) or (lb/hp-hr)	2010 CO2 EF (lb/mi) or (lb/hp-hr)	Fuel Usage (gal/hr)	Avg speed (mi/hr)
1	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	10CY Ready Mix Truck	0.0120	0.0030	0.0382	0.000041	0.00265	0.00174	4.21	10.3	15
2	Air Compressors	Air Compressor	0.0056	0.0018	0.0110	0.000012	0.00064	0.00059	1.01	2.3	-
3	Welders	Arc Welder	0.0061	0.0020	0.0105	0.000012	0.00069	0.00064	0.98	0.9	-
4	Pavers	Barber-Greene BG260C Paver	0.0068	0.0023	0.0119	0.000012	0.00078	0.00072	1.04	4.6	-
5	Graders	CAT 14H Motor Grader	0.0062	0.0020	0.0113	0.000012	0.00071	0.00066	1.07	6.4	-
6	Excavators	CAT 330C Excavator	0.0053	0.0016	0.0093	0.000011	0.00057	0.00053	0.99	7.2	-
7	Tractors/Loaders/Backhoes	CAT 428 Backhoe	0.0065	0.0020	0.0120	0.000016	0.00070	0.00064	1.33	2.4	-
8	Rubber Tired Loaders	CAT 966 Loader	0.0059	0.0019	0.0112	0.000012	0.00063	0.00058	1.09	5.5	-
9	Rubber Tired Loaders	CAT 988 Loader	0.0059	0.0019	0.0112	0.000012	0.00063	0.00058	1.09	11.0	-
10	Rollers	CAT CB 634D Roller	0.0054	0.0016	0.0091	0.000011	0.00056	0.00051	0.90	4.2	-
11	Plate Compactors	CAT CS 531D Compactor	0.0041	0.0008	0.0049	0.000010	0.00023	0.00022	0.67	4.2	-
12	Plate Compactors	CAT CS 583E Compactor	0.0041	0.0008	0.0049	0.000010	0.00023	0.00022	0.67	4.3	-
13	Rubber Tired Loaders	CAT IT 14G Loader	0.0059	0.0019	0.0112	0.000012	0.00063	0.00058	1.09	2.1	-
14	Rubber Tired Loaders	CAT PS 300 B Rubber Tire	0.0059	0.0019	0.0112	0.000012	0.00063	0.00058	1.09	2.8	-
15	Surfacing Equipment	CAT RM350B Reclaimer	0.0048	0.0014	0.0097	0.000010	0.00054	0.00049	0.93	19.5	-
43	Crawler Tractors	CAT D9T Dozer	0.0064	0.0020	0.0121	0.000011	0.00070	0.00064	1.02		-
44	Crawler Tractors	CAT D5K Dozer	0.0064	0.0020	0.0121	0.000011	0.00070	0.00064	1.02		
16	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Concrete Pump Truck	0.0120	0.0030	0.0382	0.000041	0.00265	0.00174	4.21	10.3	15
17	Crushing/Proc. Equipment	Crusher	0.0053	0.0018	0.0101	0.000011	0.00061	0.00056	0.95	14.9	-
18	Trenchers	Ditch Witch RT55 Trencher	0.0067	0.0020	0.0118	0.000013	0.00067	0.00062	1.11	1.7	-
19	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Flat Bed Truck	0.0120	0.0030	0.0382	0.000041	0.00265	0.00174	4.21	5.9	25
20	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Fuel Truck	0.0120	0.0030	0.0382	0.000041	0.00265	0.00174	4.21	5.0	15
21	Pavers	Gomaco GP-4000 Paver	0.0068	0.0023	0.0119	0.000012	0.00078	0.00072	1.04	11.9	-
22	Pavers	Gomaco RTP-500 Belt Paver	0.0068	0.0023	0.0119	0.000012	0.00078	0.00072	1.04	5.3	-
23	Paving Equipment	Gomaco TC-400 Cure/Texture Rig	0.0065	0.0023	0.0108	0.000011	0.00076	0.00070	0.94	2.0	-
24	Cranes	Grove Mobile Crane	0.0056	0.0019	0.0098	0.000010	0.00063	0.00058	0.88	3.4	-
25	Other General Industrial Equipment	Light Plant	0.0046	0.0014	0.0090	0.000010	0.00050	0.00046	0.85	0.7	-
26	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Mechanics Truck w/ Crane	0.0120	0.0030	0.0382	0.000041	0.00265	0.00174	4.21	4.3	15
27	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Paint Truck	0.0120	0.0030	0.0382	0.000041	0.00265	0.00174	4.21	3.8	15
28	Rollers	Sheepfoot Roller	0.0054	0.0016	0.0091	0.000011	0.00056	0.00051	0.90	6.7	-
29	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Tri-Axle Dump Truck	0.0120	0.0030	0.0382	0.000041	0.00265	0.00174	4.21	10.3	25
30	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Truck w/ Silicon Pump	0.0120	0.0030	0.0382	0.000041	0.00265	0.00174	4.21	5.9	15
31	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Truck/Tractor Low Boy	0.0120	0.0030	0.0382	0.000041	0.00265	0.00174	4.21	11.8	15
32	Sweepers/Scrubbers	Vacuum Sweeper	0.0065	0.0019	0.0098	0.000013	0.00064	0.00059	1.05	4.9	-
33	HHDD Vehicle, Diesel (33,001 to 60,000 lb)	Water Truck	0.0120	0.0030	0.0382	0.000041	0.00265	0.00174	4.21	5.8	15
34	Delivery Vehicle, Gas (>8500 lb)	1-Ton Truck w/ Lift	0.0184	0.0026	0.0206	0.000027	0.00157	0.00078	2.73	11.0	15
35	Delivery Vehicle, Gas (>8500 lb)	1-Ton Flatbed	0.0184	0.0026	0.0206	0.000027	0.00157	0.00078	2.73	9.6	15
36	Passenger Vehicle, Gas (<8500 lb)	Crew Van	0.0083	0.0009	0.0009	0.000011	0.00090	0.00019	1.10	6.5	15
37	Paving Equipment	Parking Lot Paint Machine	0.0065	0.0023	0.0108	0.000011	0.00076	0.00070	0.94	4.2	-
38	Passenger Vehicle, Gas (<8500 lb)	Pickup, small	0.0083	0.0009	0.0009	0.000011	0.00090	0.00019	1.10	6.3	15
39	Passenger Vehicle, Gas (<8500 lb)	Pickup, large	0.0083	0.0009	0.0009	0.000011	0.00090	0.00019	1.10	8.3	15
40	Passenger Vehicle, Gas (<8500 lb)	SUV	0.0083	0.0009	0.0009	0.000011	0.00090	0.00019	1.10	8.6	15
41	Concrete/Industrial Saws	Walk Behind Saw	0.0063	0.0019	0.0095	0.000012	0.00067	0.00061	0.96	1.1	-
42	Passenger Vehicle, Gas (<8500 lb)	Commute Vehicle	0.0083	0.0009	0.0009	0.000011	0.00090	0.00019	1.10	3.8	25
a. Load factors from CEQA Air Quality Handbook, SCAQMD, Diamond Bar, CA, 1993. Table A9-8-D.											
b. Usage factor estimated by assuming 10 hour shift includes 1.5 hours down time for meal and breaks.											

C-3
Equipment Operating Hours

No. of Units	Equipment	Fuel Type	HP each	Oct-08 Monthly Vehicle Hours	Nov-08 Monthly Vehicle Hours	Dec-08 Monthly Vehicle Hours	Jan-09 Monthly Vehicle Hours	Feb-09 Monthly Vehicle Hours	Mar-09 Monthly Vehicle Hours	Apr-09 Monthly Vehicle Hours	May-09 Monthly Vehicle Hours	Jun-09 Monthly Vehicle Hours	Total Vehicle Hours
1	Air Compressor	Diesel	85	150	200	200	200	200	200	50	-	-	1,200
1	CAT 428 Backhoe	Diesel	83	150	200	200	200	200	200	50	-	-	1,200
1	CAT CB 634D Roller	Diesel	145	150	200	100	-	-	-	-	-	-	450
1	CAT IT 14G Loader	Diesel	90	250	200	100	-	-	-	-	-	-	550
1	CAT D9T Dozer	Diesel	410	250	200	100	-	-	-	-	-	-	550
2	CAT D5K Dozer	Diesel	96	500	400	200	-	-	-	-	-	-	1,100
1	Concrete Pump Truck	Diesel	350	-	-	100	-	-	-	-	-	-	100
1	Ditch Witch RT55 Trencher	Diesel	60	150	200	100	-	-	-	-	-	-	450
1	Flat Bed Truck	Diesel	200	200	150	100	-	-	-	-	-	-	450
1	Fuel Truck	Diesel	170	250	200	100	-	-	-	-	-	-	550
1	Mechanics Truck w/ Crane	Diesel	200	-	-	100	-	-	-	-	-	-	100
1	Tri-Axle Dump Truck	Diesel	350	250	200	100	-	-	-	-	-	-	550
1	Water Truck	Diesel	230	250	200	100	-	-	-	-	-	-	550
2	Pickup, small	Gas	175	500	400	400	400	400	400	100	-	-	2,600
1	Pickup, large	Gas	230	250	200	200	200	200	200	50	-	-	1,300
17													11,700
		Note: The "concrete pump truck" is used as a surrogate for a hydroseeding pump truck.											

C-4
Carbon Monoxide Emissions

Equipment	Oct-08 lbs/mo	Nov-08 lbs/mo	Dec-08 lbs/mo	Jan-09 lbs/mo	Feb-09 lbs/mo	Mar-09 lbs/mo	Apr-09 lbs/mo	May-09 lbs/mo	Jun-09 lbs/mo	Total Project CO (lbs)	Total Project CO (tons)
Air Compressor	34.19	45.59	45.59	44.22	44.22	44.22	11.05	-	-	269.08	0.13
CAT 428 Backhoe	42.24	56.32	56.32	54.50	54.50	54.50	13.62	-	-	332.00	0.17
CAT CB 634D Roller	59.59	79.46	39.73	-	-	-	-	-	-	178.78	0.09
CAT IT 14G Loader	56.15	44.92	22.46	-	-	-	-	-	-	123.53	0.06
CAT D9T Dozer	358.26	286.61	143.30	-	-	-	-	-	-	788.17	0.39
CAT D5K Dozer	167.77	134.22	67.11	-	-	-	-	-	-	369.09	0.18
Concrete Pump Truck	-	-	10.24	-	-	-	-	-	-	10.24	0.01
Ditch Witch RT55 Trencher	31.25	41.67	20.83	-	-	-	-	-	-	93.76	0.05
Flat Bed Truck	34.14	25.60	17.07	-	-	-	-	-	-	42.67	0.02
Fuel Truck	25.60	20.48	10.24	-	-	-	-	-	-	56.32	0.03
Mechanics Truck w/ Crane	-	-	10.24	-	-	-	-	-	-	10.24	0.01
Tri-Axle Dump Truck	42.67	34.14	17.07	-	-	-	-	-	-	93.87	0.05
Water Truck	25.60	20.48	10.24	-	-	-	-	-	-	56.32	0.03
Pickup, small	13.45	10.76	10.76	9.88	9.88	9.88	2.47	-	-	67.08	0.03
Pickup, large	6.72	5.38	5.38	4.94	4.94	4.94	1.23	-	-	33.54	0.02
lbs/month -->	897.64	805.62	486.59	113.53	113.53	113.53	28.38	-	-	2,558.83	1.26
lbs/day -->	40.80	36.62	22.12	5.16	5.16	5.16	1.29	-	-		
Peak Daily CO	**40.80**	**lbs/day**									
Assumes 22 working days per month											

C-5
Volatile Organic Compound Emissions

	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09		
Equipment	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	Total Project ROG (lbs)	Total Project ROG (tons)
Air Compressor	11.63	15.51	15.51	14.86	14.86	14.86	3.71	-	-	90.94	0.05
CAT 428 Backhoe	14.08	18.78	18.78	17.36	17.36	17.36	4.34	-	-	108.06	0.05
CAT CB 634D Roller	19.28	25.70	12.85	-	-	-	-	-	-	57.83	0.03
CAT IT 14G Loader	18.67	14.94	7.47	-	-	-	-	-	-	41.08	0.02
CAT D9T Dozer	113.64	90.91	45.46	-	-	-	-	-	-	250.00	0.13
CAT D5K Dozer	53.22	42.57	21.29	-	-	-	-	-	-	117.07	0.06
Concrete Pump Truck	-	-	2.64	-	-	-	-	-	-	2.64	0.00
Ditch Witch RT55 Trencher	9.59	12.79	6.39	-	-	-	-	-	-	28.77	0.01
Flat Bed Truck	8.82	6.61	4.41	-	-	-	-	-	-	11.02	0.01
Fuel Truck	6.61	5.29	2.64	-	-	-	-	-	-	14.55	0.01
Mechanics Truck w/ Crane	-	-	2.64	-	-	-	-	-	-	2.64	0.00
Tri-Axle Dump Truck	11.02	8.82	4.41	-	-	-	-	-	-	24.24	0.01
Water Truck	6.61	5.29	2.64	-	-	-	-	-	-	14.55	0.01
Pickup, small	1.38	1.10	1.10	1.01	1.01	1.01	0.25	-	-	6.87	0.00
Pickup, large	0.69	0.55	0.55	0.51	0.51	0.51	0.13	-	-	3.43	0.00
lbs/month -->	275.23	248.86	148.79	33.74	33.74	33.74	8.43	-	-	782.53	0.39
lbs/day -->	12.51	11.31	6.76	1.53	1.53	1.53	0.38	-	-		
Peak Daily ROG	**12.51**	**lbs/day**									
Assumes 22 working days per month											

C-6
Oxides of Nitrogen Emissions

	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09		
Equipment	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	Total Project NOx (lbs)	Total Project NOx (tons)
Air Compressor	67.68	90.24	90.24	87.25	87.25	87.25	21.81	-	-	531.74	0.27
CAT 428 Backhoe	81.89	109.19	109.19	102.95	102.95	102.95	25.74	-	-	634.88	0.32
CAT CB 634D Roller	104.94	139.92	69.96	-	-	-	-	-	-	314.83	0.16
CAT IT 14G Loader	109.14	87.31	43.66	-	-	-	-	-	-	240.11	0.12
CAT D9T Dozer	682.20	545.76	272.88	-	-	-	-	-	-	1,500.83	0.75
CAT D5K Dozer	319.47	255.57	127.79	-	-	-	-	-	-	702.83	0.35
Concrete Pump Truck	-	-	33.54	-	-	-	-	-	-	33.54	0.02
Ditch Witch RT55 Trencher	55.96	74.62	37.31	-	-	-	-	-	-	167.89	0.08
Flat Bed Truck	111.78	83.84	55.89	-	-	-	-	-	-	251.52	0.13
Fuel Truck	83.84	67.07	33.54	-	-	-	-	-	-	184.44	0.09
Mechanics Truck w/ Crane	-	-	33.54	-	-	-	-	-	-	33.54	0.02
Tri-Axle Dump Truck	139.73	111.78	55.89	-	-	-	-	-	-	307.41	0.15
Water Truck	83.84	67.07	33.54	-	-	-	-	-	-	184.44	0.09
Pickup, small	1.41	1.12	1.12	1.03	1.03	1.03	0.26	-	-	6.99	0.00
Pickup, large	0.70	0.56	0.56	0.51	0.51	0.51	0.13	-	-	3.49	0.00
lbs/month -->	1,842.59	1,634.08	998.64	191.74	191.74	191.74	47.94	-	-	5,098.48	2.55
lbs/day -->	83.75	74.28	45.39	8.72	8.72	8.72	2.18	-	-		
Peak Daily NOx	**83.75**	**lbs/day**									
Assumes 22 working days per month											

Sulfur Dioxide Emissions

	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09		
Equipment	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	lbs/mo	Total Project SOx (lbs)	Total Project SOx (tons)
Air Compressor	0.07	0.09	0.09	0.09	0.09	0.09	0.02	-	-	0.54	0.0003
CAT 428 Backhoe	0.09	0.13	0.13	0.13	0.13	0.13	0.03	-	-	0.76	0.0004
CAT CB 634D Roller	0.12	0.15	0.08	-	-	-	-	-	-	0.35	0.0002
CAT IT 14G Loader	0.11	0.09	0.04	-	-	-	-	-	-	0.24	0.0001
CAT D9T Dozer	0.57	0.46	0.23	-	-	-	-	-	-	1.26	0.0006
CAT D5K Dozer	0.27	0.21	0.11	-	-	-	-	-	-	0.59	0.0003
Concrete Pump Truck	-	-	0.03	-	-	-	-	-	-	0.03	0.0000
Ditch Witch RT55 Trencher	0.06	0.08	0.04	-	-	-	-	-	-	0.17	0.0001
Flat Bed Truck	0.10	0.08	0.05	-	-	-	-	-	-	0.13	0.0001
Fuel Truck	0.08	0.06	0.03	-	-	-	-	-	-	0.17	0.0001
Mechanics Truck w/ Crane	-	-	0.03	-	-	-	-	-	-	0.03	0.0000
Tri-Axle Dump Truck	0.13	0.10	0.05	-	-	-	-	-	-	0.29	0.0001
Water Truck	0.08	0.06	0.03	-	-	-	-	-	-	0.17	0.0001
Pickup, small	0.01	0.01	0.01	0.01	0.01	0.01	0.00	-	-	0.07	0.0000
Pickup, large	0.01	0.01	0.01	0.01	0.01	0.01	0.00	-	-	0.04	0.0000
lbs/month -->	1.70	1.53	0.96	0.23	0.23	0.23	0.06	-	-	4.95	0.0024
lbs/day -->	0.08	0.07	0.04	0.01	0.01	0.01	0.00	-	-		
Peak Daily SOx	**0.08**	**lbs/day**									
Assumes 22 working days per month											

C-8
Respirable Particulate Matter (PM10) Emissions

	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09		
Equipment	lbs/mo, uncontrolled	lbs/mo, uncontrolled	lbs/mo, uncontrolled	lbs/mo, uncontrolled	lbs/mo, uncontrolled	lbs/mo, uncontrolled	lbs/mo, uncontrolled	lbs/mo, uncontrolled	lbs/mo, uncontrolled	Uncontrolled Total Project PM10 (lbs)	Uncontrolled Total Project PM10 (tons)
Air Compressor	4.02	5.37	5.37	5.16	5.16	5.16	1.29	-	-	31.53	0.0158
CAT 428 Backhoe	4.88	6.51	6.51	6.07	6.07	6.07	1.52	-	-	37.62	0.0188
CAT CB 634D Roller	6.73	8.97	4.49	-	-	-	-	-	-	20.19	0.0101
CAT IT 14G Loader	6.38	5.11	2.55	-	-	-	-	-	-	14.04	0.0070
CAT D9T Dozer	39.71	31.77	15.88	-	-	-	-	-	-	87.36	0.0437
CAT D5K Dozer	18.60	14.88	7.44	-	-	-	-	-	-	40.91	0.0205
Concrete Pump Truck	-	-	2.24	-	-	-	-	-	-	2.24	0.0011
Ditch Witch RT55 Trencher	3.34	4.45	2.23	-	-	-	-	-	-	10.02	0.0050
Flat Bed Truck	7.45	5.59	3.73	-	-	-	-	-	-	9.32	0.0047
Fuel Truck	5.59	4.47	2.24	-	-	-	-	-	-	12.30	0.0061
Mechanics Truck w/ Crane	-	-	2.24	-	-	-	-	-	-	2.24	0.0011
Tri-Axle Dump Truck	9.32	7.45	3.73	-	-	-	-	-	-	20.49	0.0102
Water Truck	5.59	4.47	2.24	-	-	-	-	-	-	12.30	0.0061
Pickup, small	0.34	0.27	0.27	0.92	0.92	0.92	0.23	-	-	3.87	0.0019
Pickup, large	0.17	0.13	0.13	0.46	0.46	0.46	0.11	-	-	1.93	0.0010
lbs/month -->	112.12	99.44	61.27	12.61	12.61	12.61	3.15	-	-	313.81	0.16
lbs/day -->	5.10	4.52	2.78	0.57	0.57	0.57	0.14	-	-		
Peak Daily PM10	**5.10**	**lbs/day, uncontrolled**									

Assumes 22 working days per month

Respirable Particulate Matter (PM10) Emissions

Equipment	PM Trap Compatible ?	PM10 Emission Reductions Achieved*	Oct-08 lbs/mo with DPF	Nov-08 lbs/mo with DPF	Dec-08 lbs/mo with DPF	Jan-09 lbs/mo with DPF	Feb-09 lbs/mo with DPF	Mar-09 lbs/mo with DPF	Apr-09 lbs/mo with DPF	May-09 lbs/mo with DPF	Jun-09 lbs/mo with DPF	Controlled Total Project PM10 (lbs)	Controlled Total Project PM10 (tons)
Air Compressor	0	0.0%	4.02	5.37	5.37	5.16	5.16	5.16	1.29	-	-	16.77	0.0084
CAT 428 Backhoe	Low	8.5%	4.47	5.96	5.96	5.55	5.55	5.55	1.39	-	-	18.04	0.0090
CAT CB 634D Roller	0	0.0%	6.73	8.97	4.49	-	-	-	-	-	-	-	-
CAT IT 14G Loader	0	0.0%	6.38	5.11	2.55	-	-	-	-	-	-	-	-
CAT D9T Dozer	0	0.0%	39.71	31.77	15.88	-	-	-	-	-	-	-	-
CAT D5K Dozer	0	0.0%	18.60	14.88	7.44	-	-	-	-	-	-	-	-
Concrete Pump Truck	0	0.0%	-	-	2.24	-	-	-	-	-	-	-	-
Ditch Witch RT55 Trencher	0	0.0%	3.34	4.45	2.23	-	-	-	-	-	-	-	-
Flat Bed Truck	High	76.5%	1.75	1.31	0.88	-	-	-	-	-	-	-	-
Fuel Truck	High	76.5%	1.31	1.05	0.53	-	-	-	-	-	-	-	-
Mechanics Truck w/ Crane	High	76.5%	-	-	0.53	-	-	-	-	-	-	-	-
Tri-Axle Dump Truck	High	76.5%	2.19	1.75	0.88	-	-	-	-	-	-	-	-
Water Truck	0	0.0%	5.59	4.47	2.24	-	-	-	-	-	-	-	-
Pickup, small	0	0.0%	0.34	0.27	0.27	0.92	0.92	0.92	0.23	-	-	2.99	0.0015
Pickup, large	Low	8.5%	0.15	0.12	0.12	0.42	0.42	0.42	0.11	-	-	1.37	0.0007
lbs/month -->		**lbs/month -->**	94.59	85.48	51.58	12.05	12.05	12.05	3.01	-	-	39.17	0.02
lbs/day -->		**lbs/day -->**	4.30	3.89	2.34	0.55	0.55	0.55	0.14	-	-		
Peak Daily PM10	**Peak Daily PM10**		**4.30**	**lbs/day, w/DPF**									

Assumes 22 working days per month

Low = 10% probability that VDEC filter will be installed.

Medium = 50% probability that VDEC filter will be installed.

High = 90% probability that VDEC filter will be installed.

VDEC filter assumed to provide 85% reduction of PM10 emissions.

C-9
Fine Particulate Matter (PM2.5) Emissions

	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09		
Equipment	lbs/mo, uncontrolled	lbs/mo, uncontrolled	lbs/mo, uncontrolled	lbs/mo, uncontrolled	lbs/mo, uncontrolled	lbs/mo, uncontrolled	lbs/mo, uncontrolled	lbs/mo, uncontrolled	lbs/mo, uncontrolled	Total Project PM2.5 (lbs)	Total Project PM2.5 (tons)
Air Compressor	3.70	4.94	4.94	4.75	4.75	4.75	1.19	-	-	29.01	0.0145
CAT 428 Backhoe	4.49	5.99	5.99	5.58	5.58	5.58	1.40	-	-	34.61	0.0173
CAT CB 634D Roller	6.19	8.25	4.13	-	-	-	-	-	-	18.57	0.0093
CAT IT 14G Loader	5.87	4.70	2.35	-	-	-	-	-	-	12.92	0.0065
CAT D9T Dozer	36.53	29.23	14.61	-	-	-	-	-	-	80.37	0.0402
CAT D5K Dozer	17.11	13.69	6.84	-	-	-	-	-	-	37.64	0.0188
Concrete Pump Truck	-	-	1.53	-	-	-	-	-	-	1.53	0.0008
Ditch Witch RT55 Trencher	3.07	4.10	2.05	-	-	-	-	-	-	9.22	0.0046
Flat Bed Truck	5.11	3.83	2.55	-	-	-	-	-	-	6.39	0.0032
Fuel Truck	3.83	3.07	1.53	-	-	-	-	-	-	8.43	0.0042
Mechanics Truck w/ Crane	-	-	1.53	-	-	-	-	-	-	1.53	0.0008
Tri-Axle Dump Truck	6.39	5.11	2.55	-	-	-	-	-	-	14.05	0.0070
Water Truck	3.83	3.07	1.53	-	-	-	-	-	-	8.43	0.0042
Pickup, small	0.23	0.18	0.18	0.20	0.20	0.20	0.05	-	-	1.22	0.0006
Pickup, large	0.11	0.09	0.09	0.10	0.10	0.10	0.02	-	-	0.61	0.0003
lbs/month -->	96.47	86.23	52.42	10.62	10.62	10.62	2.66	-	-	269.65	0.13
lbs/day -->	4.39	3.92	2.38	0.48	0.48	0.48	0.12	-	-		
Peak Daily PM2.5	**4.39**	**lbs/day, uncontrolled**									
Assumes 22 working days per month											

C-9
Fine Particulate Matter (PM2.5) Emissions

Equipment	PM Trap Compatible ?	PM2.5 Emission Reductions Achieved*	Oct-08 lbs/mo with DPF	Nov-08 lbs/mo with DPF	Dec-08 lbs/mo with DPF	Jan-09 lbs/mo with DPF	Feb-09 lbs/mo with DPF	Mar-09 lbs/mo with DPF	Apr-09 lbs/mo with DPF	May-09 lbs/mo with DPF	Jun-09 lbs/mo with DPF	Controlled Total Project PM10 (lbs)	Controlled Total Project PM10 (tons)
Air Compressor	0	0.0%	3.70	4.94	4.94	4.75	4.75	4.75	1.19	-	-	15.43	0.0077
CAT 428 Backhoe	Low	8.3%	4.12	5.49	5.49	5.12	5.12	5.12	1.28	-	-	16.64	0.0083
CAT CB 634D Roller	0	0.0%	6.19	8.25	4.13	-	-	-	-	-	-	-	-
CAT IT 14G Loader	0	0.0%	5.87	4.70	2.35	-	-	-	-	-	-	-	-
CAT D9T Dozer	0	0.0%	36.53	29.23	14.61	-	-	-	-	-	-	-	-
CAT D5K Dozer	0	0.0%	17.11	13.69	6.84	-	-	-	-	-	-	-	-
Concrete Pump Truck	0	0.0%	-	-	1.53	-	-	-	-	-	-	-	-
Ditch Witch RT55 Trencher	0	0.0%	3.07	4.10	2.05	-	-	-	-	-	-	-	-
Flat Bed Truck	High	74.7%	1.29	0.97	0.65	-	-	-	-	-	-	-	-
Fuel Truck	High	74.7%	0.97	0.78	0.39	-	-	-	-	-	-	-	-
Mechanics Truck w/ Crane	High	74.7%	-	-	0.39	-	-	-	-	-	-	-	-
Tri-Axle Dump Truck	High	74.7%	1.62	1.29	0.65	-	-	-	-	-	-	-	-
Water Truck	0	0.0%	3.83	3.07	1.53	-	-	-	-	-	-	-	-
Pickup, small	0	0.0%	0.23	0.18	0.18	0.20	0.20	0.20	0.05	-	-	0.64	0.0003
Pickup, large	Low	8.5%	0.10	0.08	0.08	0.09	0.09	0.09	0.02	-	-	0.29	0.0001
lbs/month -->			84.65	76.76	45.81	10.15	10.15	10.15	2.54	-	-	32.99	0.02
lbs/day -->			3.85	3.49	2.08	0.46	0.46	0.46	0.12	-	-		
Peak Daily PM2.5	**Peak Daily PM2.5**		**3.85**	**lbs/day w/DPF**									
Assumes 22 working days per month													

LAX Golf Course Expansion
FUGITIVE DUST

Fugitive Dust

	Emissions (lb/day) - Uncontrolled						*Emissions (lb/day) - After SCAQMD Rule Control* [a.]					
Equipment/Activity	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*
Demolition Activities[b.]	-	-	-	-	-	-	-	-	-	-	-	-
Excavation Activities[c.]	-	-	-	-	60.00	12.47	-	-	-	-	23.40	4.86
Crushing/Screening[d.]	-	-	-	-	12.20	3.49	-	-	-	-	1.33	0.16
Storage Piles[e.]	-	-	-	-	-	-	-	-	-	-	-	-
Batch Plant[g]					-	-					-	-
Total Daily Fug Dust (lb/day)	-	-	-	-	72.20	15.96	-	-	-	-	24.73	5.03
	Emissions (tons/quarter) - Uncontrolled						*Emissions (tons/quarter) - After SCAQMD Rule Control* [a.]					
Demolition Activities	-	-	-	-	-	-	-	-	-	-	-	-
Excavation Activities	-	-	-	-	1.98	0.49	-	-	-	-	0.91	0.19
Crushing/Screening	-	-	-	-	0.48	0.14	-	-	-	-	0.05	0.01
Storage Piles	-	-	-	-	-	-	-	-	-	-	-	-
Batch Plant					-	-					-	-
Total Fug Dust (tons/qrtr)[f.]	-	-	-	-	2.46	0.62	-	-	-	-	0.96	0.20

Notes:

[a.] Controls assumed to be part of the project design to comply with SCAQMD Rules 1157 and 403; Fugitive mitigation assumes 61% reduction (watering 3 times per day) for construction activity.

[b.] 1993 SCAQMD CEQA Handbook, Table A9-9 PM10 from demolition; 0.00042 lb/PM10/ft^3 of building volume; 0 ft^3/day assumed to be maximum daily demolition rate.

[c.] Construction activity assume 3 acres disturbed per day and PM10 emission factor of 20 lb/acre-day (per URBEMIS 2007 v9.2.4 [fugitive dust emissions for site grading])

[d.] USEPA AP42 Emission Factor 11.19.2-2 - Crushed Stone Processing and Pulverized Mineral Processing; 0 tons/day assumed to be maximum daily crushing/screening rate.

[e.] EPA's Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures (September 1992) Appendix F, Construction and Operational Emission Calculation Methodologies, Equation F-4 and Table F-4; and SCAQMD CEQA Handbook, Table A9-9-E.

[f.] Assumes 66 construction days per quarter (~5 days per week).

[g] Batch plant emission not applicable

LAX Taxiway C13 and D Extension
PM10 from On-site Rock Crusher

Fugitive PM10

	PM10	*PM2.5*		*PM10*	*PM2.5*
Equipment/Activity	*Uncontrolled (lbs/day)*			*Controlled (lbs/day)*	
Screening Rock	*8.70*	*2.54*		*0.74*	*0.05*
Tertiary Rock Crushing	*2.40*	*0.72*		*0.54*	*0.10*
Conveyor Point (assumes 1)	*1.10*	*0.23*		*0.05*	*0.01*
Max Daily Total	12.20	3.49	-	1.33	0.16
	Uncontrolled (tons/qrtr)			*Controlled (tons/qrtr)*	
Rock Crushing - Quarterly	0.48	0.14		0.05	0.01

USEPA AP42 Emission Factor 11.19.2-2 - Crushed Stone Processing and Pulverized Mineral Processing
Controlled factors Assumed
Quarter assumed to be 78 days
1000 tpd crushing rate assumed. 1000 tons/day

LAX Golf Course Expansion
Transfer Truck Emissions

2009 EMFAC Emission Factors (lb/mi)

	Winter						Summer
Category	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
HHDD Vehicle, Diesel (33,001 to 60,000 lb)	0.012822	0.003293	0.041846	0.000040	0.002811	0.001890	4.210808

Source: http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html

Transfer Truck Emissions (max pounds per day) [a]	Annual						
	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Transfer Truck Emissions (10 loops/day x 8 mi/loop)	1.0	0.3	3.3	0.0	0.2	0.2	336.9

Transfer Truck Emissions (tons per quarter) [b]	Annual						
	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Transfer Truck Emissions (78 days/qtr)	0.04	0.01	0.13	0.000	0.01	0.01	13.14

Notes:

[a] Roundtrip Distance from Golf Course Site to LAX Rock Crushing Plant is roughly 8 miles, as measured on Google Earth Pro.
Number of truck trips estimated by CDM to be slightly over 1 trip per hour.
EMFAC 2009 factors for HHDD diesel vehicles used

Source: http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html

Highest (Most Conservative) EMFAC2007 (version 2.3)
Emission Factors for On-Road Passenger Vehicles & Delivery Trucks
Derived from Peak Emissions Inventory (Winter, Annual, Summer)
Emission factors were compiled by running the California Air Resources Board's EMFAC2007
(version 2.3) Burden Model, taking the weighted average of vehicle types and simplifying into two categories:
Passenger Vehicles & Delivery Trucks.

These emission factors can be used to calculate on-road mobile source emissions for the vehicle categories
listed in the tables below, by use of the following equation:
Emissions (pounds per day) = N x TL x EF
where N = number of trips, TL = trip length (miles/day), and EF = emission factor (pounds per mile)

This methodology replaces the old EMFAC emission factors in Tables A-9-5-J-1 through A-9-5-L in
Appendix A9 of the current SCAQMD CEQA Handbook. All the emission factors account for the emissions
from start, running and idling exhaust. In addition, the ROG emission factors include diurnal, hot soak, running
and resting emissions, and the PM10 & PM2.5 emission factors include tire and brake wear.

Emission Factors for On-Road Heavy-Heavy-Duty Diesel Trucks
Projects in the SCAQMD
Derived from Peak Emissions Inventory (Winter, Annual, Summer)
Vehicle Class: Heavy-Heavy-Duty Diesel Trucks (33,001 to 60,000 pounds)
The following emission factors were compiled by running the California Air Resources Board's EMFAC2007
(version 2.3) Burden Model and extracting the Heavy-Heavy-Duty Diesel Truck (HHDT) Emission Factors.

These emission factors can be used to calculate on-road mobile source emissions for the vehicle/emission
categories listed in the tables below, by use of the following equation:
Emissions (pounds per day) = N x TL x EF
where N = number of trips, TL = trip length (miles/day), and EF = emission factor (pounds per mile)

The HHDT-DSL vehicle/emission category accounts for all emissions from heavy-heavy-duty diesel trucks,
including start, running and idling exhaust. In addition, ROG emission factors account for diurnal, hot soak,
running and resting emissions, and the PM10 & PM2.5 emission factors account for tire and brake wear.

The HHDT-DSL, Exh vehicle/emission category includes only the exhaust portion of PM10 & PM2.5 emissions
from heavy-heavy-duty diesel trucks.

Scenario Year: 2009
All model years in the range 1965 to 2009

HHDT-DSL		
CO	0.01282236	(Winter)
NOx	0.04184591	(Winter)
ROG	0.00329320	(Winter)
SOx	0.00004013	(Winter)
PM10	0.00199572	(Winter)
PM2.5	0.00175227	(Winter)
CO2	4.21080792	(Summer)

HHDT-DSL, Exh		
PM10	0.00185393	(Winter)
PM2.5	0.00170680	(Winter)

Scenario Year: 2010
All model years in the range 1966 to 2010

HHDT-DSL		
CO	0.01195456	(Winter)
NOx	0.03822102	(Winter)
ROG	0.00304157	(Winter)
SOx	0.00004131	(Winter)
PM10	0.00183062	(Winter)
PM2.5	0.00160083	(Winter)
CO2	4.21120578	(Summer)

HHDT-DSL, Exh		
PM10	0.00168861	(Winter)
PM2.5	0.00155435	(Winter)

Paved Road Fugitive Dust from "Improvement of Specific Emission Factors (BACM Project No. 1) Final Report," MRI, 1996.
Used High ADT, average conditions:

Paved Road Dust, lb/mi		
PM10	0.00081571	(Winter)
PM2.5	0.00013774	(Winter)

C-12
Construction Worker Emissions

2009 EMFAC Emission Factors (lb/mi)

Category	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Passenger Vehicle, Gas (<8500 lb)	0.009686	0.000992	0.001005	0.000011	0.000902	0.000192	1.097554
Delivery Vehicle, Gas (>8500 lb)	0.020161	0.002789	0.022366	0.000027	0.001621	0.000830	2.723305
HHDD Vehicle, Diesel (33,001 to 60,000 lb)	0.012822	0.003293	0.041846	0.000040	0.002811	0.001890	4.210808

Source: http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html

Peak Day Construction Worker and Delivery Trucks (lbs/day)[a.]

Category	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Passenger Vehicles (20/day x 50 miles round trip)[b.]	9.7	1.0	1.0	0.0	0.9	0.2	1097.6
Shuttle Bus - Parking to Staging (0/day x 0 mi / rnd trip)[c.]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delivery Trucks (0/day x 0 mi/rnd trip)[d.]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total On-Road Off-site Emissions (lbs/day)	9.7	1.0	1.0	0.0	0.9	0.2	1097.6

Construction Worker and Delivery Trucks (tons per quarter)[e.]

Category	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Passenger Vehicles	0.32	0.03	0.03	0.00	0.03	0.01	36.2
Shuttle Bus - Parking to Staging	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Delivery Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Total On-Road Off-site Emissions (tons/quarter)	0.32	0.03	0.03	0.00	0.03	0.01	36.2

Notes:

[a.] Assumed to include construction personnel and LAWA/CM/Inspectors.

[b.] Passenger vehicles include construction personnel and LAWA/CM/Inspector trips.

[c.] Shuttle bus emissions assumed to be not applicable.

[d.] Delivery Trucks assumed to be covered in construction equipment (flat bed trucks).

[e.] Assumes 66 working days per quarter, and peak daily emissions per quarter.

Appendix D

Phase I Archaeological Resources Assessment

April 1, 2009

Robin E. Ijams, Associate
CDM
111 Academy, Suite 150
Irvine, California 92617

Re: RESULTS OF THE PHASE I ARCHAEOLOGICAL RESOURCES ASSESSMENT OF THE APPROXIMATELY 22.5-ACRE EXPANSION OF THE WESTCHESTER GOLF COURSE, LOS ANGELES COUNTY, CALIFORNIA

Dear Ms. Ijams:

This letter presents the results of the archaeological resource assessment for the above-referenced project conducted by **PCR Services Corporation (PCR)**.

PROJECT UNDERTAKING AND SCOPE OF STUDY

Los Angeles World Airports (LAWA) is planning to expand the existing Westchester Golf Course by altering two (2) existing holes and adding an additional three (3) holes to the course on an approximately 22.5-acre parcel (undertaking). The proposed undertaking is located within a larger 30-acre parcel that extends south to Westchester Parkway. For the purposes of this assessment, the entire 30-acre parcel (including the 22.5-acre proposed improvement area) will be referred to as the Area of Potential Effect (APE). The APE is located within the boundaries of Los Angeles International Airport (LAX) in western Los Angeles County, California. PCR conducted a Phase I archaeological resources assessment of the APE in March 2009 to determine the potential adverse affects to historic properties and archaeological resources associated with the proposed undertaking in compliance with the National Environmental Policy Act (NEPA), Section 106 of National Historic Preservation Act (NHPA) and relevant Federal Aviation Administration (FAA) guidance. The scope of work for this assessment[1] included a review of the cultural resources records search results and technical reports pertaining to the undertaking, and a pedestrian survey of the APE. PCR's methods, results, and recommendations from the assessment are presented below.

PROJECT LOCATION AND DESCRIPTION

The APE is located adjacent to the existing Westchester Golf Course and immediately north of LAX in western Los Angeles County, California (Figure 1, *Regional Map,* attached). Specifically, the APE is bounded by West 88th Street to the north, Westchester Parkway to the south, Emerson Avenue to the east, and the Westchester Golf Course to the west. It includes the undeveloped eastern portion of Assessor Parcel Number 4122-022-930. The APE is illustrated in an unsectioned area of the United States Geological Survey (USGS) 1966 (photo-revised 1972)

[1] *The FAA is currently conducting Tribal Consultation pursuant to federal regulations therefore this task was not included in PCR's assessment.*

Venice, CA, 7.5-minute topographic quadrangle map (Figure 2, *Vicinity Map,* attached). Current aerial photographs and the USGS topographic map indicate the APE is generally undeveloped except for several paved and dirt access roads that traverse across the APE (Figure 3, *APE Map,* attached). The APE is characterized by a relatively flat topography and is situated at an elevation ranging from approximately 102 to 111 feet above mean sea level.

REGULATORY FRAMEWORK

LAWA is requesting an unconditional approval from FAA of an amendment to the Airport Layout Plan to designate the APE for golf course uses. As a result of this federal action, the undertaking is subject to compliance with NEPA, Section 106 of National NHPA, and relevant FAA guidance. Compliance with these federal regulations requires a sequence of steps. The steps include: (1) identification of the area (the APE) that will be affected by the undertaking; (2) identification of historic or archaeological properties; (3) evaluation of the eligibility of the properties for listing on the National Register of Historic Places; (4) determination of the level of adverse effect of the undertaking on eligible properties; and (5) consultation with concerned parties and agreement in the form of a Memoranda of Agreement on avoidance, minimization, or mitigation of adverse effects on eligible properties.

As defined in the Section 106 regulations,[2] an APE "is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. The boundary of the area of potential effect is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking." Federal agencies define the cultural resources APE in consultation with the State Historic Preservation Officer.

METHODS

Records Search and Report Review

PCR reviewed the cultural resources records search results commissioned by LAWA through the California Historical Resources Information System-South Central Coastal Information Center (CHRIS-SCCIC) in March 2009. PCR also reviewed the cultural resource documentation prepared for the LAX Master Plan. This documentation included records search results from 1995 and 2000 that reviewed all recorded historical resources and archaeological sites within a two-mile radius of LAX and within the LAX property[3] as well as a review of cultural resource reports and historic topographic maps on file. In addition, the California Points of Historical Interest (CPHI), the California Historical Landmarks (CHL), the California Register of Historical Resources (CRHR), the National Register of Historic Places (NRHP), the California State Historic Resources Inventory

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[2] *36 CFR § 800.16(d).*

[3] *RMW Paleo Associates 1995, PCR Services Corporation 2000, 2003*

(HRI), and the City of Los Angeles Historic-Cultural Monuments (LAHCM) listings were also reviewed for the record searches.

Pedestrian Survey

On March 19, 2009, PCR archaeologist Matthew Gonzalez, conducted a pedestrian field survey of the APE. This included a systematic walk-over of the entire APE using transects at 10 to 15-meter intervals to identify any visible surface remnants of historic properties or archaeological resources. The results of the survey will also support the evaluation of the study area with respect to its potential to contain buried resources. Mr. Gonzalez mapped the APE with a Garmin™ Global Positioning System unit and took digital photographs of the APE.

RESULTS

Records Search and Report Review

According to records examined at the CHRIS-SCCIC from March 2009 that were specific to the current undertaking, no prehistoric or historic-period resources were identified within the APE. Two resources (P-19-150442 and P-19-150445) are located within a half-mile of the APE. No information as to the specific location and nature of these resources was obtained from the CHRIS-SCCIC. However, it is likely that these resources are located far enough away from the APE and will not be adversely affected by the undertaking. No properties listed in the NRHP, the CPHI, the CHL, the CRHR, or the LAHCM were identified within the APE or half-mile radius.

According to records examined at the CHRIS-SCCIC in 1995 for the LAX Master Plan, 53 previous cultural resource studies have been conducted within a two-mile radius of LAX. Four of these studies have covered the LAX property. As a result of these investigations, 27 prehistoric resources and five historic-period resources were identified within the two-mile radius. Four of these prehistoric resources were identified within the LAX property. The results of this records search also revealed that numerous properties listed in the HRI are within a two-mile radius of LAX, however, due to the vast number, their documentation would be "available upon request." In addition, seven properties listed in the NRHP are located within a two-mile radius of LAX. No properties listed on the CPHI, the CHL, the CRHR, or the LAHCM were identified within a two-mile radius of LAX.[4]

According to a records search conducted by the CHRIS-SCCIC in 1997, three prehistoric resource sites were reported within a two-mile radius of LAX, two of which are located within LAX. Two isolates and two historic-period resources were also reported within LAX. According to a records search conducted by the CHRIS-SCCIC in 2000, one prehistoric resource and one historic-period resource were reported within LAX.

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[4] *RMW Paleo Associates 1995*

In summary, 32 prehistoric sites have been recorded within a two mile radius of LAX, eight of which are located within LAX. The nearest prehistoric resource (CA-LAN-214) was identified approximately 0.75 miles southeast of the APE. CA-LAN-214 was recorded as a lithic scatter consisting of flake debitage and projectile points. Since it was originally recorded, the resource has been completely disturbed or destroyed by the construction of LAX and has been determined to be ineligible for federal, state, or local listing. The other prehistoric sites that have been recorded within the LAX property are mostly concentrated in the western and southwestern-most areas of the property. Only one has been determined to be potentially eligible for the National Register and California Register. The types of resources include shell middens, lithic scatters, lithic tool scatters, and fire-affected rock concentrations. These resources are located far enough away from the APE and will not be adversely affected by the proposed undertaking.

Pedestrian Survey

No historic properties or archaeological resources were identified during the pedestrian field survey of the APE. PCR surveyed 100 percent of the APE; however, ground surface visibility was poor and varied from zero to 10 percent in most areas of the APE as displayed in Figure 4, *Ground Visibility Map,* attached. The eastern half of the APE consisted of clearings in the dense vegetation that exhibited 100 percent visibility (Figure 5, *APE Photographs*, attached). However these areas were heavily disturbed by recent disking activities. The APE is characterized by an open field that exhibits a relatively flat topography. It is generally undeveloped except for some cement and dirt access roads that traverse across the APE (see Figure 5). The majority of the APE was covered by dense vegetation consisting of a variety of wild flowers, grasses, shrubs, and ornamental trees (see Figure 5). The APE was also heavily disturbed by bioturbation (i.e., rodent burrowing) throughout. PCR examined several spoils piles from the bioturbation for unearthed subsurface artifacts. No resources were identified in these spoils piles.

SUMMARY AND RECOMMENDATIONS

The results of the cultural resource records searches revealed that no previously recorded historic properties or archaeological resources are located within the APE. Three resources were identified within a one-mile radius of the APE. However, they are located far enough away from the APE and will not be adversely affected by the proposed undertaking. No historic properties or archaeological resources were identified during the pedestrian survey. This may have been a result of the dense vegetation that covered the majority of the APE.

The proposed undertaking includes an average excavation depth of two feet with a maximum of seven feet in some areas. The APE was developed with housing units that were removed in the 1970s and has remained undeveloped since. Several paved streets still exist within the APE that were associated with this development. The rough grading for the housing units has most likely disturbed the uppermost layers of soil that underlie the APE. Given the heavily disturbed context of the APE and the nature of the proposed undertaking, it is unlikely that implementation of the

undertaking will adversely affect buried or previously unknown historic properties or archaeological resources. Any resources that may have existed prior to the disturbances are likely to have been displaced. As a result, the overall sensitivity of the APE with respect to buried resources appears to be low. PCR does not recommend monitoring during ground-disturbing activities associated with implementation of the proposed undertaking.

If resources are accidentally encountered during implementation of the undertaking, ground-disturbing activities should temporarily be redirected from the vicinity of the find. LAWA should immediately notify a qualified archaeologist of the find. The archaeologist should coordinate with the LAWA as to the immediate treatment of the find until a proper site visit and evaluation is made by the archaeologist. The archaeologist shall be allowed to temporarily divert or redirect grading or excavation activities in the vicinity in order to make an evaluation of the find and determine appropriate treatment. Treatment will include the goals of preservation where practicable and public interpretation of historic and archaeological resources. The FAA shall designate repositories in the event that significant resources are recovered. The archaeologist shall also determine the need for archaeological monitoring for any ground-disturbing activities thereafter.

Please contact us if you have any questions about the results and recommendations presented in this report.

Sincerely,
PCR SERVICES CORPORATION

Kyle Garcia
Archaeologist

Matthew Gonzalez
Archaeological/Paleontological Technician

Attachments

REFERENCES CITED

Raschke, Rod, Carol Stadum, and Ronald M. Bissell
1995 Paleontological and Archaeological Resources Reconnaissance of the Los Angeles International Airport (LAX) Property, Los Angeles County, California. Report on file at the South Central Coastal Information Center, California State University, Fullerton. 800 North State College Blvd., P.O. Box 6846, Fullerton, CA 92834.

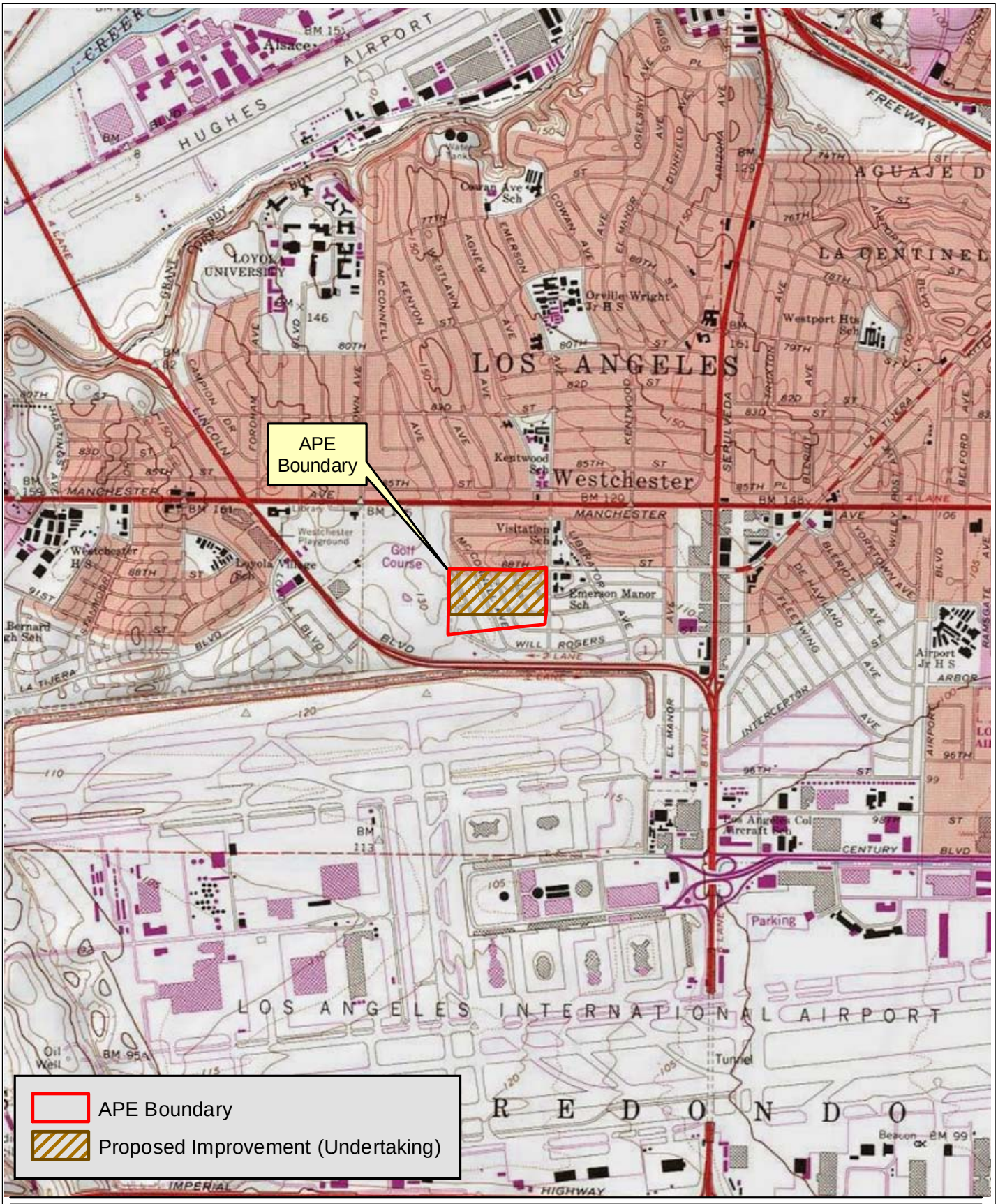
PCR Services Corporation
2000 Los Angeles International Airport LAX Master Plan EIS/EIR Section 106. Report on file at PCR Services Corporation, 1 Venture, Suite 150, Irvine, CA 92618.

2003 LAX Master Plan Supplement to the Draft EIS/EIR. Appendix S-G. Supplemental Section 106 Report. Report on file at PCR Services Corporation, 1 Venture, Suite 150, Irvine, CA 92618.

PCR

Source: PCR Services Corporation, 2009.

Figure 1
Westchester Golf Course
Regional Map



PCR

N

2,000 0 2,000 Feet

Source: USGS Topographic Series (Venice, CA); PCR Services Corporation, 2009.

Figure 2

Westchester Golf Course Vicinity Map

Source: PCR Services Corporation, 2009.

Figure 3
Westchester Golf Course
APE Map

PCR

N

300 0 300 Feet

Source: PCR Services Corporation, 2009.

Figure 4

Westchester Golf Course
Ground Visibility Map

Photograph 1: Overview of dense vegetation within APE, view northeast.

Photograph 2: Overview of disturbances within APE, view northwest."

Photograph 3: Overview of APE, view west.

Photograph 4: Overview of APE, view west.

PCR

Source: PCR Services Corporation, 2009.

Figure 5
Westchester Golf Course
APE Photographs

Appendix E

Biological Constraints Survey

BonTerra CONSULTING

COSTA MESA PASADENA TEMECULA

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September 10, 2008

Ms. Robin E. Ijams
Camp Dresser & McKee
111 Academy, Suite 150
Irvine, California 92617-3030

VIA EMAIL AND MAIL
IjamsRE@cdm.com

Subject: Biological Constraints Survey for the Westchester Golf Course Expansion

Dear Ms. Ijams:

This Letter Report summarizes the biological constraints survey findings for the proposed expansion of the Westchester Golf Course onto 21 acres of Los Angeles International Airport Property (hereafter referred to as the project site), located in the City of Los Angeles, California. The purpose of the survey was to map the existing vegetation and evaluate any potential biological constraints associated with expansion of the Westchester Golf Course on the project site.

PROJECT LOCATION AND DESCRIPTION

The project site is located in the southwest portion of the City of Los Angeles, within Los Angeles County, California (Exhibit 1). The project site is bordered to the north by 88th Street, to the south by Westchester Parkway, to the west by the Westchester Golf Course and to the east by Emerson Avenue (Exhibit 2). Land uses in the vicinity of the proposed project are commercial to the south and east, residential to the north and a golf course to the west.

The proposed project would expand the current Westchester Golf Course onto the project site.

SURVEY METHODS

A literature review was conducted prior to the initiation of the field survey in order to determine the potential special status plant and wildlife species known to occur in the project vicinity that may occur on the project site. The California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California (CNPS 2008), the California Department of Fish and Game's (CDFG) and the United States Fish and Wildlife Service's (USFWS) species lists, and the California Natural Diversity Database (CNDDB) (CDFG 2008) were reviewed during the literature review.

The biological constraints survey was conducted on June 25, 2008, by BonTerra Consulting Biologist Jeff Crain and Ecologist Allison Rudalevige, to describe the vegetation and evaluate the potential of habitats to support special status plant and wildlife species on the project site. All plant species observed were recorded in field notes. Plant species were identified in the field or collected for future identification. Plants were identified using keys in Hickman (1993), Munz (1974), and Abrams (1923–1960). Taxonomy follows Hickman (1993) and current scientific data (e.g., scientific journals) for scientific and common names. The

Sunset Western Garden Book (Brenzel 1995) was used for ornamental species that were not included in the references listed above.

All wildlife species detected during the course of the survey were documented in field notes. Active searches for reptiles and amphibians included lifting, overturning, and carefully replacing rocks and debris. Birds were identified by visual and auditory recognition. Surveys for mammals were conducted during the day and included searching for and identifying diagnostic sign, including scat, footprints, scratch-outs, dust bowls, burrows, and trails. Taxonomy and nomenclature for wildlife generally follows Fisher and Case (1997) for amphibians and reptiles, American Ornithologists' Union (2006) for birds, and Baker et al. (2003) for mammals.

SURVEY RESULTS

Vegetation

No native vegetation types are present on the project site. The project site is primarily surrounded by development that would be categorized as commercial. Vegetation on the project site consists of ornamental trees, landscaping species planted as ground cover adjacent to roads and freeway on- and off-ramps, and ruderal species (Exhibit 3).

Ornamental vegetation present includes various gum trees (*Eucalyptus* spp.), pine trees (*Pinus* spp.), and palm trees (*Washingtonia robusta*). In addition, two western sycamore trees (*Platanus racemosa*) were observed. This species is often included as part of ornamental landscaping. Within the ruderal area, species observed included wild radish (*Raphanus sativus*), brome grasses (*Bromus* spp.), and crown daisy (*Chrysanthemum coronarium*).

A small patch of riparian vegetation was found around a street drain (gutter) at the northern end of the project. Species present in this small area included narrow-leaved willow (*Salix exigua*), cattail (*Typha latifolia*), and tall umbrella-sedge (*Cyperus eragrostis*). This area does not contain the features that would render the area under the jurisdiction of the United States Army Corps of Engineers nor the CDFG.

Wildlife

Vegetation on the project site provides very little habitat for native wildlife species. Wildlife species observed or expected to occur on the project site include species associated with urban habitats. Common reptile species observed or expected to occur on the project site include western fence lizard (*Sceloporus occidentalis*). Common bird species observed or expected to occur include rock pigeon (*Columba livia*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), house finch (*Carpodacus mexicanus*), and European starling (*Sturnus vulgaris*). Mammal species observed or expected to occur on the project site include Virginia opossum (*Didelphis virginiana*), California ground squirrel (*Spermophilus beecheyi*), and house mouse (*Mus musculus*). Several ground squirrel burrows were observed during the site visit.

Regional Species and Habitats of Concern

Certain vegetation types are considered to have special status because of limited distribution in southern California and also because of the potential to support special status plant and wildlife species. There are no special status vegetation types on the project site.

Special status species have been given recognition by federal and/or state agencies, as well as private conservation organizations, because of perceived or documented decline in the population size or geographic range of the species. Although several special status plant and wildlife species are known to occur in the project region, only one plant species (southern tarplant [*Centromadia parryi* ssp. *australis*]) may have potential to occur on the project site; however, the species was not observed during the site visit. The remaining species would not be expected to occur on the project site due to the lack of suitable habitat.

CONCLUSIONS/RECOMMENDATIONS

Implementation of the proposed project would impact existing developed and disturbed areas and ornamental plantings and is of low biological value to plant and wildlife species. Therefore, no impacts on special status plants or wildlife species are expected to occur. However, large gum, palm, and other ornamental trees on the project site have a limited potential to support nesting raptors. Activities having the potential to disturb active raptor nests are prohibited by CDFG regulations. This protection generally ceases once nesting activity is completed, typically by July. However, impacts to this species can typically be avoided through implementation of standard construction practices.

Pre-Construction Nesting Raptor Survey

Raptor nests are protected by Fish and Game Code Section 3503.5, which prohibits the disturbance of nests during the breeding season of raptors. Therefore, if the ornamental trees will be impacted within the breeding season (February 1 through August 31), a survey for active nests would be required seven days prior to commencement of construction during the breeding season between February 1 and August 31. Any occupied nests found during survey efforts will be mapped on the construction plans. Some restrictions on construction activities may be required in the vicinity of the nest until the nest is no longer active as determined by a qualified biologist.

Please contact Ann Johnston at (714) 444-9199 if you have any questions or comments.

Sincerely,

BONTERRA CONSULTING

for Ann M. Johnston
Principal, Biological Services

Jeffrey S. Crain
Botanist/Restoration Ecologist

Enclosures: Exhibits 1, 2, and 3

cc: Magda Pavlak-Chiaradia, via email
Julie Gaa, via email

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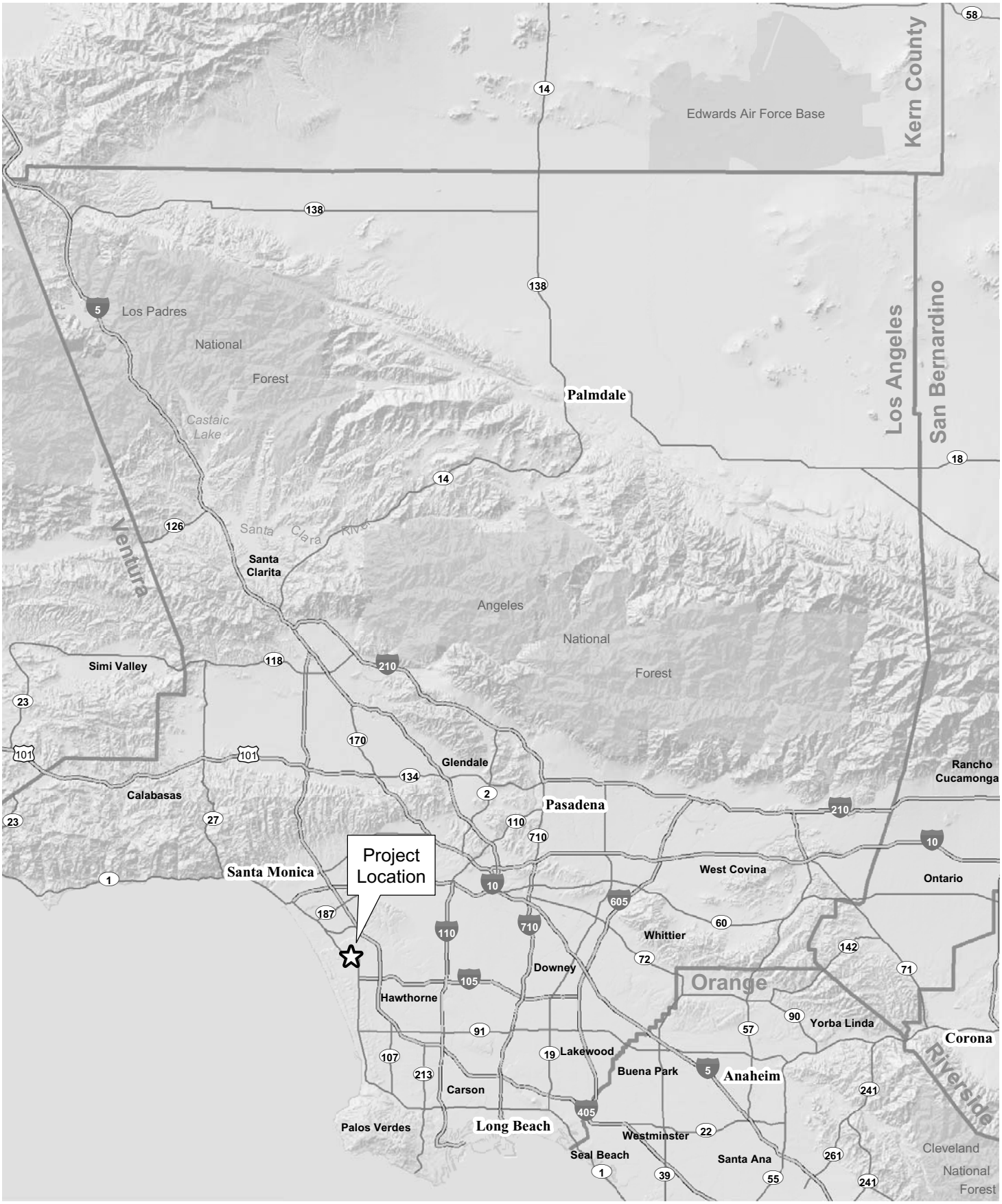

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Regional Location

Exhibit 1

Approximately 21 Acres of LAX Property

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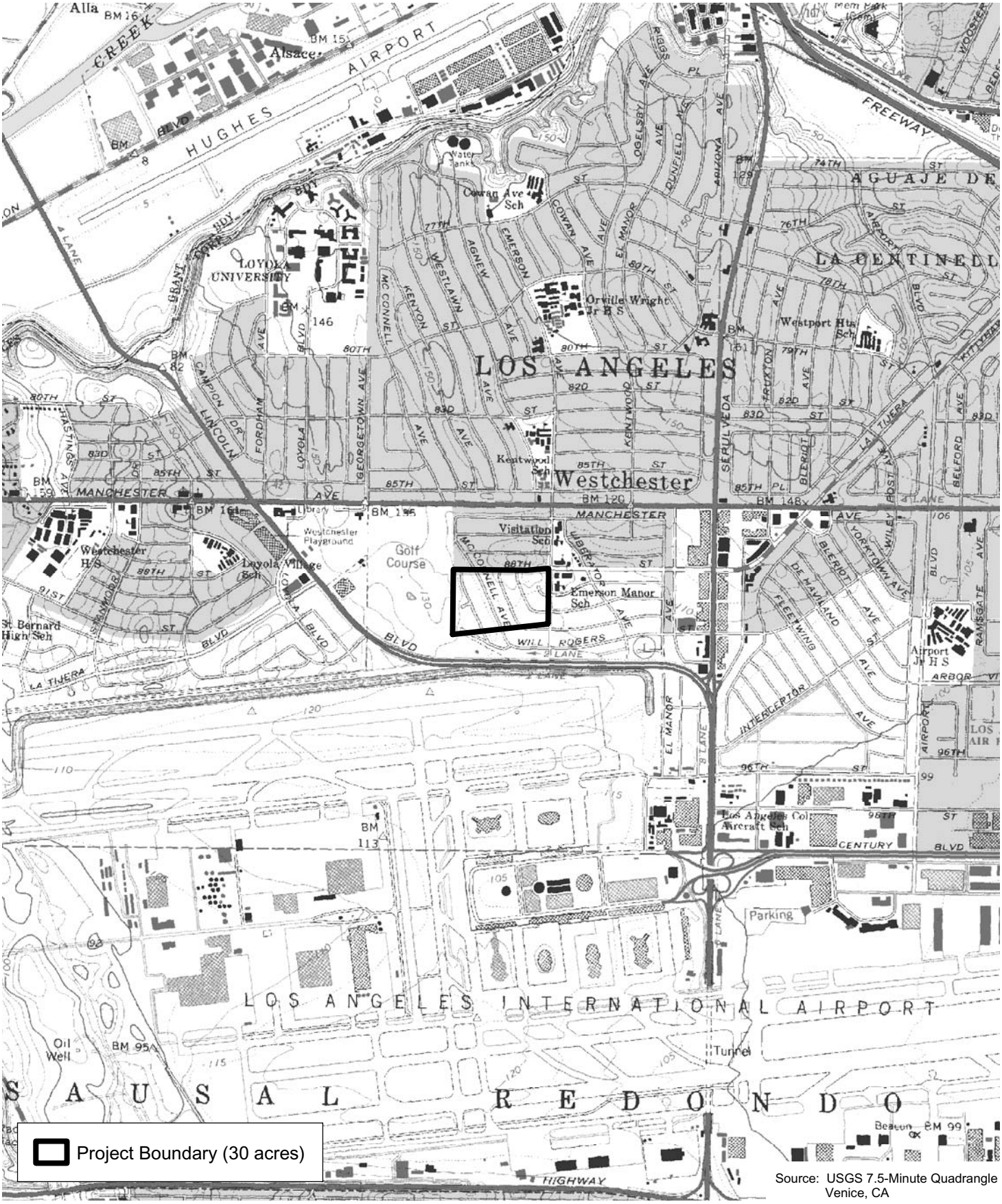

Source: USGS 7.5-Minute Quadrangle
Venice, CA

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Local Vicinity

Exhibit 2

Approximately 21 Acres of LAX Property

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2,000 1,000 0 2,000 Feet

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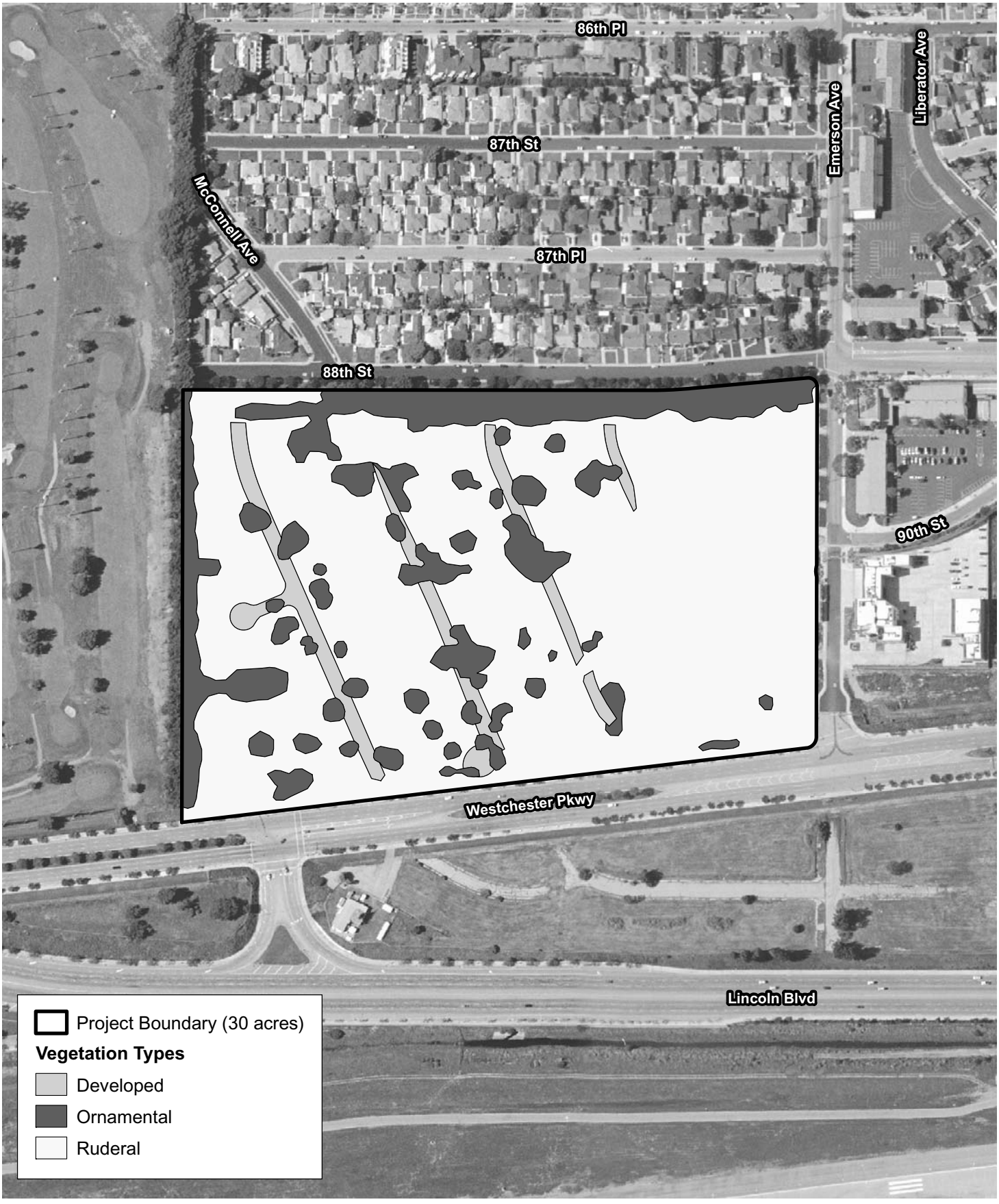

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Vegetation Types

Exhibit 3

Approximately 21 Acres of LAX Property

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Feet

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