LONG-TERM HABITAT MANAGEMENT PLAN FOR RED TAIL GOLF AND EQUESTRIAN

Received From
Dwight Stewart
March 2008
ONLY COPY

Prepared for:

California Department of Fish and Game
330 Golden Shore, Suite 52
Long Beach, CA 90802

Prepared by:

Sapphos Environmental, Inc.
133 Martin Alley
Pasadena, CA 91105

Contact: Marie Campbell
Phone: (626)683-3547

December 30, 1998
(Revised June 8, 1999)
Approved November 1, 1999

TABLE OF CONTENTS

SECTION			PAGE
1.	INTRODUCTION		1-1
	1.1	Overview of Design Conservation Efforts	1-2
	1.2	Mitigation Requirements	1-6
	1.3	Schedule	1-7
2.	PROJECT DESCRIPTION		2-1
	2.1	Location	2-1
	2.2	Development Project	2-1
	2.3	Statement of Objectives	2-1
	2.4	Project Construction Schedule	2-2
	2.5	Routine Operations and Maintenance	2-2
3.	EXISTING CONDITIONS		3-1
	3.1	Climate	3-1
	3.2	Soils	3-1
	3.3	Topography	3-2
	3.4	Hydrology	3-3
	3.5	Land Use	3-6
		3.5.1 Zoning	3-6
		3.5.2 District Plan	3-6
	3.6	Biological Resources	3-7
		3.6.1 Plant Communities	3-8
		3.6.2 Animal Life	3-13
		3.6.3 Sensitive Habitats	3-18
		3.6.4 Sensitive Species	3-20
		3.6.5 Jurisdictional Areas	3-47
		3.6.6 Wildlife Dispersal/Migration Corridors	3-47
4.	IMPACTS OF THE PROJECT ON BIOLOGICAL RESOURCES		4-1
	4.1	Permanent Impacts	4-3
		4.1.1 Plant Communities, Wildlife Resources, and Sensitive Species	4-3
		4.1.2 Wildlife Migration/Dispersal Corridors	4-6
		4.1.3 Jurisdictional Areas	4-7
	4.2	Construction Impacts	4-7

4.2.1 Plant Communities, Wildlife Resources, and Sensitive Species 4-8
4.2.2 Wildlife Migration/Dispersal Corridors 4-10
4.2.3 Jurisdictional Areas 4-10
4.3 Beneficial Effects 4-22
4.4 Cumulative Impacts 4-22

5. MANAGEMENT MEASURES

5.1 Regulatory Objectives and Criteria 5-1
5.2 Conservation Measures 5-3
5.2.1 Onsite Avoidance and Preservation in the Project Design 5-3
5.2.2 Preconstruction Surveys/Remediation 5-6
5.2.2.1 Slender-horned Spineflower 5-6
5.2.2.2 Southwestern Pond Turtle 5-6
5.2.2.3 San Diego Horned Lizard 5-7
5.2.2.4 Cactus Wren 5-7
5.2.2.5 Coastal California Gnatcatcher 5-8
5.2.2.6 Los Angeles Pocket Mouse 5-8
5.2.3 Construction Avoidance Measures 5-8
5.2.3.1 Avoidance Measures 5-9
5.2.3.2 Construction Monitoring 5-11
5.2.4 Revegetation 5-12
5.2.4.1 Riversidian Alluvial Fan Sage Scrub 5-12
5.2.4.2 Riparian 5-20
5.2.5 Preserve Management Organization 5-22
5.2.5.1 Performance Standards 5-23
5.2.5.2 Monitoring of Plant Communities 5-24
5.2.5.3 Slender-horned Spineflower 5-28
5.2.5.4 Monitoring of Sensitive Wildlife 5-28
5.2.6 Long-term Maintenance 5-28
5.2.6.1 Weed Eradication 5-29
5.2.6.2 Trash Removal 5-31
5.2.6.3 Security/Trespassing Avoidance Measures 5-32
5.2.6.4 Exotic Fish Control 5-32
5.2.6.5 Brown-Headed Cowbird Trapping Program 5-32
5.2.7 Signs 5-33
5.2.7.1 Warning Signs 5-33
5.2.7.2 Security Signs 5-34
5.2.7.3 Golf Signs 5-34
5.2.7.4 Interpretive Signs 5-34
5.2.8 Scientific Involvement and Education 5-34
5.2.9 Water Quality Monitoring Program 5-35
5.2.10 Integrated Pest Management 5-35

6. IMPLEMENTATION OF THE MANAGEMENT PROGRAM 6-1

6.1 Management Authorization 6-1
6.1.1 Department Notification and Approval 6-1
6.1.2 Project Representatives 6-1
6.1.3 Notification Regarding Dead, Injured or Entrapped Wildlife 6-2
6.1.3.1 Animals 6-2
6.1.3.2 Plants 6-2
6.1.4 Access, Compliance Inspections and Reporting Requirements 6-3
6.2 Bonding 6-3

7. REFERENCES 7-1

APPENDICES

A. City of Los Angeles, Planning Commision
Conditional Use/Site Plan Review Conditions of Approval A-1
B. 100-Year Storm (Q=45,000 cfs) With Existing Habitat (Oversize Map) B-1

FIGURES

		Follows Page
1.1-1	Acreage of Alluvial Scrub Habitat at Known Locations	On Page 1-3
2.1-1	Regional Location Map	2-1
2.1-2	Vicinity Map	2-1
2.2-1	Concept Plan	2-1
2.4-1	Red Tail Golf and Equestrian Development Schedule	2-2
3.2-1	Soils Map	3-2
3.4-1	Existing Condition for 20-year Storm	3-5
3.4-2	Existing Condition for Capital Storm Event	3-5
3.5.2-1	Community Plan	3-6
3.6.1-1	Plant Communities	3-9
3.6.4-1	Slender-horned Spineflower	3-37
3.6.4-2	Cactus Wren	3-44
3.6.5-1	California Department of Fish and Game Jurisdiction	3-47
3.6.5-2	U.S. Army Corps of Engineers Jurisdictional Delineation	3-47
3.6.6-1	Wildlife Movement Corridors	3-48
5.2.3.1-1	Construction Avoidance Measures/Revegetation Areas	5-9

TABLES

1-1	Acreage of Alluvial Scrub Habitat at Known Locations	1-3
1-2	Areas of Impact Requiring Mitigation Pursuant to Section 1600 of the State Fish and Game Code	1-5
1-3	Method for Accomplishing Alluvial Scrub Mitigation Requirements	1-6
3-1	Acreage of Alluvial Scrub Habitat at Eleven Known Locations	3-19
3-2	Sensitive Species Potentially Occurring in Red Tail Golf and Equestrian Sunland/Tujunga Proposed Project Area	3-21
4-1	Summary of Impacts on Plant Communities/Habitats Within California Department of Fish and Game Jurisdiction	4-2
4-2	Impacts on Federal and State Sensitive, Threatened, and Endangered Species Occurring or Potentially Occurring Within California Department of Fish and Game Jurisdiction at Red Tail Golf and Equestrian: Sunland/Tujunga Project Area	4-11
4-3	Other Projects in Close Proximity to Slender-Horn Spineflower Populations	4-23
5-1	Comparison of Prior Project and 1998 Approved Project	5-5
5-2	Alluvial Scrub Planting Data	5-15
5-3	Riparian Habitat Planting Data	5-21
5-4	Performance Criteria for Alluvial Scrub Revegetation	5-25
5-5	Riparian Habitat Performance Criteria (Height at 3 Years)	5-27
5-6	Riparian Habitat Performance Criteria (Height at 5 Years)	5-27

5-7 Implementation Schedules for Red Tail Golf and Equestrian Greens and Trees (High Maintenance) 5-37

5-8 Implementation Schedules for Red Tail Golf and Equestrian: Fairways and Roughs (Medium to Low Maintenance) 5-40

SECTION 1.0
INTRODUCTION

SECTION 1.0
INTRODUCTION

This *Long-Term Habitat Management Plan* has been prepared to support an application for a Streambed Alteration Agreement for the Red Tail Golf and Equestrian Project approved by the City of Los Angeles (City). The *Long-Term Habitat Management Plan* identifies conservation measures that implement conditions related to biological resources stipulated in the City's Conditions of Approval. It is expected that the California Department of Fish and Game (Department) will require implementation of the conservation measures stipulated in this plan as a Condition of the Streambed Alteration Agreement.

The City certified the *Final Environmental Impact Report (EIR)* as modified by *Addendum No. 1 to the Final EIR* on April 28, 1998. *Addendum No. 1 to the Final EIR* incorporates modifications to the project that resulted from arbitration meetings between the City and the Applicant to address six appeals filed in response to the Planning Commission's certification of the *Final EIR*. The City Planning Commission certified the *Final EIR* prepared in support of the Red Tail Golf and Equestrian project proposed by the Foothill Development Golf Group on November 21, 1996. During the 15-day appeal period that followed the certification of the EIR as mandated by the City Municipal Code, six appeals were filed by the following groups:

- Small Wilderness Area Presentation
- California Department of Fish and Game
- Santa Monica Mountains Conservancy
- Sierra Club
- Audubon Society of the San Fernando Valley
- Lake View Terrace Improvement Association

An additional appeal was filed by the Spirit of the Sage Council after the close of the appeal period. The City and the project applicant worked cooperatively to identify opportunities to resolve issues raised by the appeals. The project was refined to more fully address comments raised in the appeals, particularly those identified by the Department. As a result of the projected modifications the golf course rating, two key objectives were achieved: (1) buffer area around spineflower population location No.1 was increased from 25 feet to 225 feet; and (2) developed areas of the golf course including clubhouse were reduced from 115 acres to 104 acres. Addendum No.1 to the *Final EIR* was provided to address refinements that resulted from the arbitration meetings between the City and the Project Applicant. The Los Angeles City Council certified the *Final EIR* as modified by *Addendum No.1 to the Final EIR*, and approved the project on April 28, 1998. The City Council approvals take into consideration those comments provided in the Hearing Examiner's Report. The project approval incorporates numerous conditions recommended by The Planning Commission (Appendix B). Kajima Engineering and Construction, Inc. served as the applicant for the Environmental Impact Report. Foothill Golf Development Group, LLC, acting on behalf of the property owner (Cosmo World Corporation) is the applicant for the Streambed Alteration Agreement. Foothill Golf Development Group will construct, operate, and maintain the project.

The approved Red Tail Golf and Equestrian project includes construction of an 18-hole golf course open to the public, an 8,100 square-foot two-story clubhouse, and a maintenance building on an approximately 352 acre site. The golf course would encompass approximately 160 acres of the site,

with approximately 102 acres devoted to fairways, roughs, greens, tees, and lakes; 7 acres would be developed with the clubhouse, parking lot, and maintenance facility. Forty-six acres of the site would be graded for golf course development but would be revegetated with native vegetation. Of the 160 acres designated for the golf course, approximately 10 acres lie within the jurisdiction of the U.S. Army Corps of Engineers and would not be developed. The remaining 192 acres of the site, not required for golf course development, would not be developed. Particular emphasis will be placed on management for two sensitive species that occur on the property: (1) the slender-horned spineflower (*Dodecahema leptoceras*) and (2) the cactus wren (*Campylorhynchus brunneicapillus*), a state species of special concern. The project is located at 9401 Foothill Boulevard in the Sunland-Tujunga-Lake View Terrace-Shadow Hills District Plan area of the City of Los Angeles, California. The site is owned by Cosmo World Corporation who has designated Foothill Golf and Development Group, LLC to act as their agent with respect to management of the property.

Portions of the property lie within the jurisdiction of the Department pursuant to Section 1600 of the State Fish and Game Code. The 60-acre area subject to the jurisdiction of the Department was mapped using a bank to bank delineation of jurisdictional area based on the Department's Unimproved Channels Definitions provided in the Standard Routine Maintenance Memorandum of Understanding for Unimproved Channels. Of the 60-acre area subject to the jurisdiction of the Department, there will be impacts on approximately 11 acres that are subject to a Streambed Alteration Agreement with the Department. The jurisdictional delineation of "waters of the United States" was updated following the floods that occurred during the 1997-1998 storm season. It was determined that 22 acres lie within the jurisdiction if the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act. The entire area is also subject to the jurisdiction of the Department. The project has been designed to avoid impacts on "waters of the United States."

This *Long-Term Habitat Management Plan* is intended to ensure compliance with biota issues identified pursuant to the *Conditional Use/Site Plan Review Conditions of Approval* for City Plan Case 96-0243 CUP and City Plan Case 96-0241 CUB as approved by the Los Angeles City Council at its meeting of April 28, 1998. The Conditions of Approval include the biota input to the Environmental Mitigation Measures and Monitoring Program attached to the subject case file. The *Long-Term Habitat Management Plan* describes all measures proposed by the applicant in support of a Streambed Alteration Agreement.

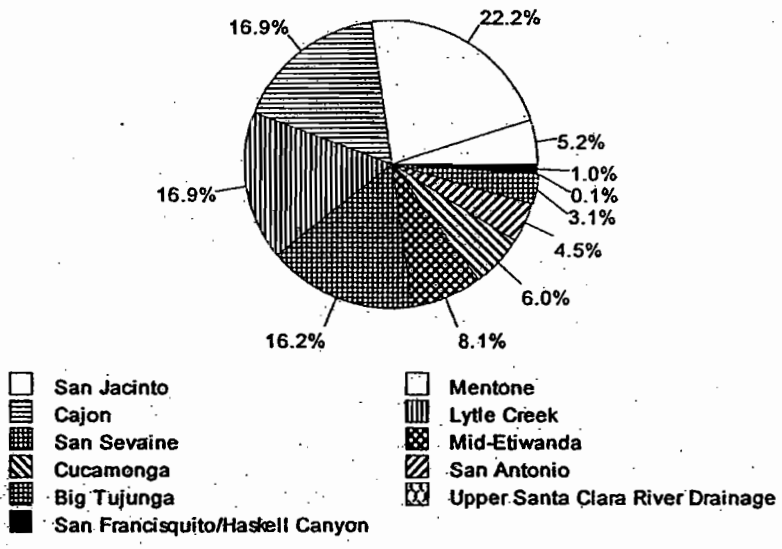
1.1 OVERVIEW OF DESIGN CONSERVATION EFFORTS

The California Natural Diversity Database (CNDDB) has assigned Riversidian alluvial fan sage scrub a ranking of S1.1. The S1.1 ranking reflects the overall condition of an element throughout the state, in this case defined as fewer than six element occurrences and fewer than 2,000 acres, and considered to be "very threatened." The CNDDB ranking was assigned prior to identification of additional locations and acreage of alluvial scrub. As indicated in Table 1.1-1, *Acreage of Alluvial Scrub Habitat at Known Locations*, there are at least 11 known locations of alluvial scrub containing more than 59,000 acres (BioDiversity Associates et al. 1993; Hanes et al. 1989; Prigge et al. 1993; City of Santa Clarita 1994; Safford and Quinn 1998). As demonstrated in Figure 1-1, *Percentage of Total Alluvial Scrub Habitat at Known Locations*, alluvial scrub in the Big Tujunga Watershed between Hansen Control Basin and Morris Dam accounts for 16.2 percent of the known distribution of this habitat.

TABLE 1.1-1
ACREAGE OF ALLUVIAL SCRUB HABITAT AT KNOWN LOCATIONS

LOCATION	NUMBER OF ACRES
San Jacinto	2,677
Mentone	11,400
Cajon	8,673
Lytle Creek	8,673
San Sevaine	8,354
Mid-Etiwanda	4,177
Cucamonga	3,091
San Antonio	2,318
Big Tujunga	1,587
San Francisquito/Haskell Canyon	425
Upper Santa Clara River Drainage	49
Source: Hanes et al. 1989; Prigge et al. 1993; City of Santa Clarita 1994; Safford and Quinn 1998	

FIGURE 1-1
PERCENTAGE OF TOTAL ALLUVIAL SCRUB HABITAT AT KNOWN LOCATIONS



The project ultimately approved by the City Planning Commission reflects extensive effort on the part of the applicant to revise the project objectives and project design in a manner that allows for a viable project while reducing impacts on state-designated sensitive plant communities and avoiding impacts on extant populations of a state and federally listed endangered plant species. In an effort to resolve concerns related to earlier versions of the project, the applicant changed the basic purpose of the project from a PGA tournament-level private golf club to a public golf course. The project was redesigned to eliminate flood control elements contained in earlier versions of the project that necessitated work in "waters of the United States." The U.S. Army Corps of Engineers (Corps) has concurred with the applicant's determination that the reconfigured project can be constructed outside

the jurisdiction of the Corps pursuant to Section 404 of the Clean Water Act. Total volumes of cut and fill were reduced. Deletion of PGA Tour tournaments allowed a reduction in the grading footprint through the elimination of gallery mounds. The applicant's commitment to implementation of a *Long-Term Habitat Management Plan* provides an opportunity for conservation and management of a large reserve for Riversidian alluvial fan sage scrub and long-term protection for four extant populations of the slender-horned spineflower.

As approved, the project will result in conservation of more than half the native plant communities onsite. The golf course utilizes 160 acres for golf course uses, 46 acres of which will be graded during construction and revegetated with native habitat, and 10 acres of which lie within Corps jurisdiction and will be left undisturbed. As indicated in Table 1-2, *Areas of Impact Requiring Mitigation Pursuant to Section 1600 of the State Fish and Game Code*, construction and operation of the golf course will result in impacts to approximately 58 acres that lie within the jurisdiction of the Department. Areas consist primarily of three state-designated sensitive plant communities: Riversidian alluvial fan sage scrub, coastal sage scrub, and southern sycamore-alder riparian woodland. The approved project conserves 192 acres (56 percent) of the 352-acre site. An additional 45 acres (13 percent) will be revegetated to reestablish Riversidian alluvial fan sage scrub habitat, and 1 acre will be revegetated to reestablish southern sycamore alder riparian woodland. The approved project conserves 136 acres (48 percent) of the 268 acres of Riversidian alluvial fan sage scrub that are present within the study area.

TABLE 1-2
AREAS OF IMPACT REQUIRING MITIGATION PURSUANT TO SECTION 1600 OF THE STATE FISH AND GAME CODE

CATEGORY	TOTAL	JURISDICTIONAL[1]	NON-JURISDICTIONAL
Red Tail Golf and Equestrian Property	**352**	**60**	**292**
Conservation Area	192	39	153
Project Site	160	21	139
Vegetated Project Site			
Riversidian Alluvial Fan Sage Scrub:			
Pioneer Alluvial Scrub	50	8	42
Intermediate Alluvial Scrub	67	3	64
Mature Alluvial Scrub	21	1	20
Coastal Sage Scrub	2	0	2
Southern Sycamore Alder Riparian Woodland	1	0	1
Dead Riparian Woodland	0	0	0
Grassland	1	0	1
Barren Wash in Project Site	16	9	7
Project Impacts on Vegetated Areas			
Riversidian Alluvial Fan Sage Scrub:			
Pioneer Alluvial Scrub	45	3	42
Intermediate Alluvial Scrub	66	2	64
Mature Alluvial Scrub	21	2	19
Coastal Sage Scrub	2	<1	2
Southern Sycamore Alder Riparian Woodland	1	0	1
Dead Riparian Woodland	0	0	0
Grassland	<1	0	<1
Project Impacts on Barren Wash	14	3	2
Non-Impacted Area in Project Site	10	10	0

1. The area subject to the jurisdiction of the California Department of Fish and Game was delineated using a bank-to-bank definition of a jurisdictional area based on the Department's Unimproved Channels Definitions provided in the Standard Routine Maintenance Memorandum of Understanding for Unimproved Channels.
2. Jurisdictional impacts do not sum due to rounding of impact acreages.

This *Long-Term Habitat Management Plan* for the approved Red Tail Golf and Equestrian Project defines a plan for implementing the conditions established by the Department, in support of a Streambed Alteration Agreement and the Conditions of Approval related to biota adopted by the City Council on April 28, 1998 (Appendix A). The key elements of the *Long-Term Habitat Management Plan* are

- Onsite Avoidance and Conservation
- Conservation of Occupied Habitat for Sensitive Species
- Avoidance Measure to Minimize Impacts on Conservation Area during Construction

- Compensation for Impacts on Native Habitats through Revegetation
- Preserve Management to Ensure Long-Term Conservation
- Long-Term Maintenance of Conservation Area
- Signs for Security and Interpretation of Resources
- Procedures for Scientific Involvement and Education
- Water Quality Monitoring to Protect Aquatic Species
- Integrated Pest Management to Minimize Impacts on Native Species

All measures undertaken to comply with conditions of approval related to biota established by the City (Appendix A) or conditions of the Streambed Alteration Agreement will be undertaken by the applicant or its designee.

1.2 MITIGATION REQUIREMENTS

Mitigation for impacts within the jurisdiction of the Department is to occur at a 1.5:1 ratio. Mitigation is required for approximately 8 acres of impact to vegetated habitat within Department jurisdiction. The balance of impacts within the Department's jurisdiction occur in unvegetated, barren wash. No mitigation is proposed for impacts to unvegetated, barren wash. Mitigation credit will be awarded at a 1:1 ratio for onsite preservation, 0.5:1 ratio for onsite preservation of non-target habitat, and 0.5:1 for onsite revegetation of construction impacts with alluvial fan sage scrub habitat.

The conceptual mitigation requirements are described in Table 1-3, *Method for Accomplishing Alluvial Scrub Mitigation Requirements.*

TABLE 1-3
METHOD FOR ACCOMPLISHING ALLUVIAL SCRUB MITIGATION REQUIREMENTS

	Impacts to Alluvial Scrub in Department Jurisdiction	Mitigation Components		
		Onsite Conserved Alluvial Scrub (1:1)	Onsite Conserved Non-Target Habitat (0.5:1) 54 Acres	Onsite Alluvial Scrub Revegetation (0.5:1) 45 Acres
	8 acres	136 acres	27 acres	22 acres
Total Mitigation Requirements	1.5:1 (12 acres)	185 acres		

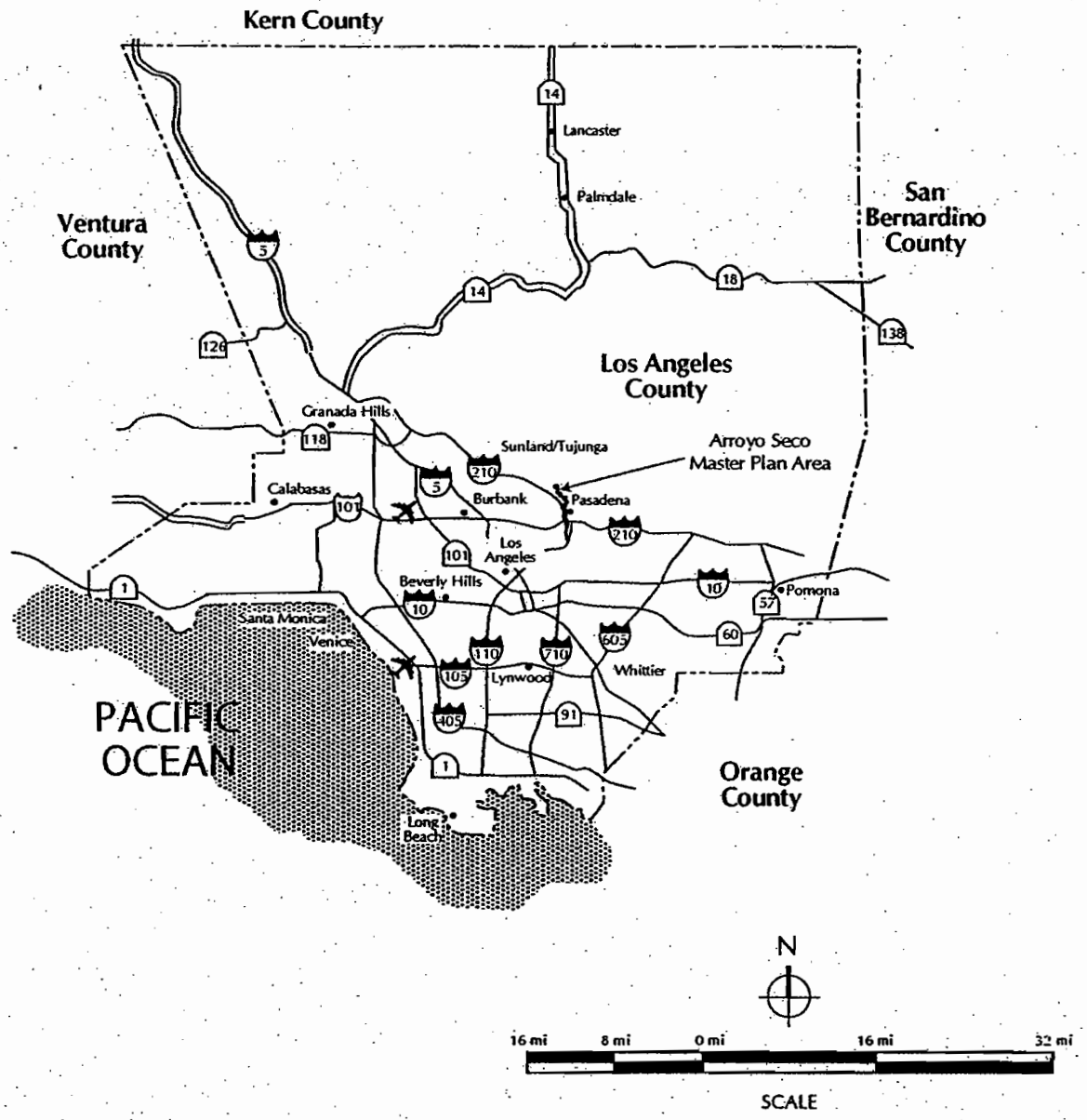
Mitigation for impacts to 8 acres of alluvial scrub within Department jurisdiction results in required mitigation of 12 acres. The 136 acres of alluvial scrub that is conserved on site as part of the project is sufficient to satisfy mitigation requirements for impacts to vegetated areas in Department jurisdiction. However, in addition to conservation of on-site alluvial scrub habitat, the project will result in conservation of 54 acres of coastal sage scrub, southern sycamore-alder riparian woodland, dead riparian woodland, and revegetation of 45 acres of alluvial scrub.

1.3 SCHEDULE

The *Final EIR* and *Addendum No. 1 to the Final EIR* for the project were certified by the City Council of the City of Los Angeles and the project was approved subject to conditions on April 28, 1998. The Applicant expects to initiate construction of the approved project in Fall 1999. The following major milestones have been defined for the project:

- Winter 1998-1999 Complete Streambed Alteration Agreement
- Spring 1998, HEC-6 Analysis
- Summer 1999, Complete Final Plans and Specifications
- Fall 1999, Grubbing
- Spring 2000, Initiate Construction
- Spring 2001, Operate Golf Course

SECTION 2.0
PROJECT DESCRIPTION



LEGEND

★ Project Location

FIGURE 2.1-1
Regional Map

Development of Red Tail Golf and Equestrian would consist of an 18-hole public golf course, an 8,100-square-foot, two-story clubhouse, and a 5,000-square-foot maintenance building approximately 200 parking spaces, and an equestrian facility consisting of three oversized parking spaces intended for horse trailers, hitching posts, and watering troughs. The course would be approximately 6,857 yards in total length. The golf course has been designed to comply with minimum user safety guidelines while converting the smallest possible portion of the site to the golf area. Of the approximately 160 acres of the site that would be encompassed by the golf course, 150 acres would be developed including 104 acres currently planned for fairways, roughs, greens, tees and lakes; and maintenance facility. Although the final grassing plans have not been developed for the golf course, the course is anticipated to include 7 acres for a clubhouse and associated maintenance and parking; 5.66 acres of tees and greens; 42.34 acres of fairways; 51.24 acres of turfed rough and sand bankers; 3.14 acres of lake; and 40.11 acres of revegetated graded land. The remaining 10.23 acres are "waters of the United States" that will remain underdeveloped within the limits of the golf course. All of the 10.23 acres of "waters of the United States" lie within the jurisdiction of the California Department of Fish and Game. The remaining 192 acres of the site would be left undisturbed.

2.1 LOCATION

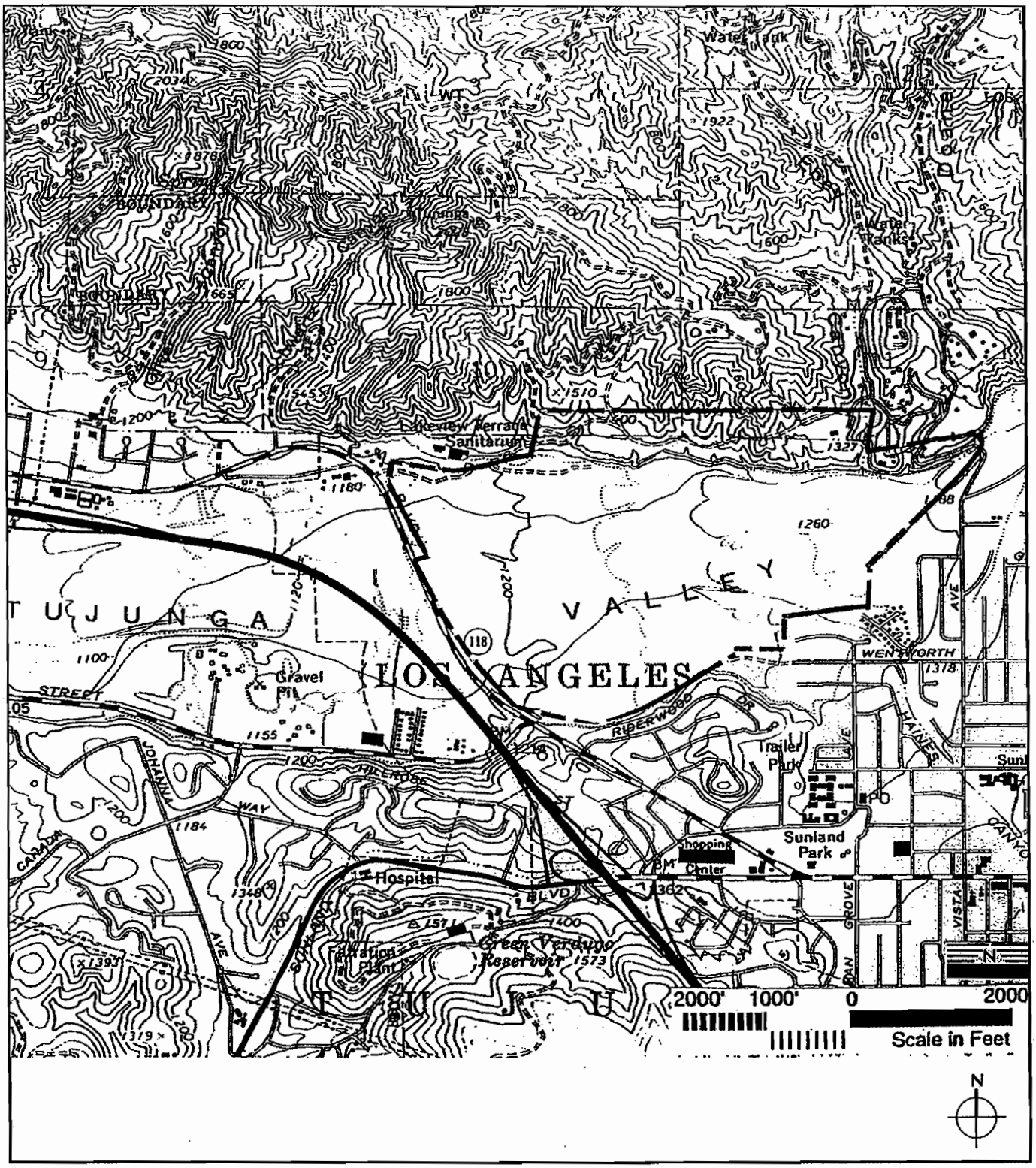
The Red Tail Golf and Equestrian project is located on United States Geological Survey (USGS) topographic map, Sunland quadrangle (Township 2 North, Range 14 West, in the Tujunga Land Grant). The project site is located at 9401 Foothill Boulevard in the Sunland-Tujunga-Lake View Terrace-Shadow Hills District in the City of Los Angeles. The property is bounded by undeveloped land and rural residential housing to the north (the Angeles National Forest boundary is 0.25 mile north of the property), the Big Tujunga Wash and single-family residences to the east (the Angeles National Forest boundary is 1.5 miles to the east of the property), singe-family residences to the south, and Foothill Boulevard to the west. The project location is shown on *Figure 2.1-1, Regional Location Map* and *Figure 2.1-2, Vicinity Map.*

2.2 DEVELOPMENT PROJECT

This Long-Term Habitat Management Plan has been prepared to support a Streambed Alteration Agreement for the Red Tail Golf Course and Equestrian Project approved by the City Council of the City of Los Angeles on April 28, 1998. The proposed configuration of the golf course is shown on *Figure 2.2-1, Concept Plan.*

2.3 STATEMENT OF LONG-TERM HABITAT MANAGEMENT PLAN GOALS AND OBJECTIVES

The goal of this *Long-Term Habitat Management Plan* is to define the measures that will be used to ensure compliance with the Conditions of Approval related to biota adopted by the City Council of the City of Los Angeles on April 28, 1998 and the anticipated conditions of the requested Streambed Alteration Agreement.



LEGEND

Project Site

FIGURE 2.1-2
Vicinity Map

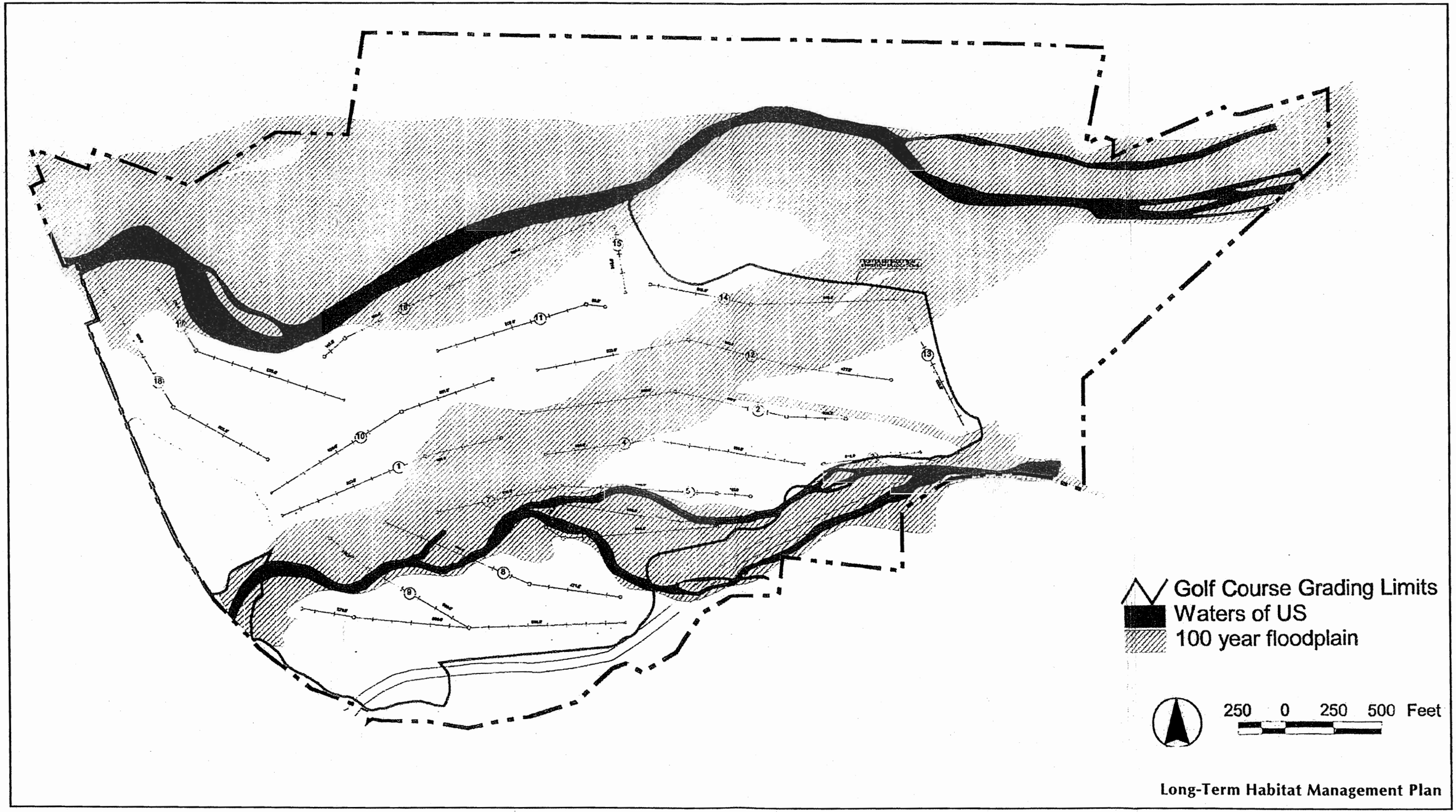


FIGURE 2.2-1
Concept Plan

The overriding goal of this *Long-Term Habitat Management Plan* is to avoid and minimize impacts on the natural flow of water within the jurisdiction of the California Department of Fish and Game and to protect and conserve plants, fish and wildlife and the habitats on which they depend.

The *Long-Term Habitat Management Plan* defines conservation measures to achieve the following objectives that support the plan goals:

- Incorporate on-site avoidance into the project design
- Implement preconstruction surveys
- Undertake construction avoidance measures
- Revegetate native habitats
- Acquire, restore, conserve, and maintain suitable off-site habitat
- Establish a Preserve Management Organization
- Maintain conserved habitats throughout the life of the project
- Utilize signs for warnings, security, recreation, and resource interpretation
- Encourage scientific involvement and education
- Conduct regular water quality monitoring
- Utilize Integrated Pest Management

2.4 PROJECT CONSTRUCTION SCHEDULE

The projected design and construction schedules for Red Tail Golf and Equestrian Project are described in *Figure 2.4-1, Red Tail Golf and Equestrian Development Schedule.*

2.5 ROUTINE OPERATIONS AND MAINTENANCE

The following routine operation and maintenance activities for the greens, tees, fairways, and roughs of the course have been identified in the *Draft Integrated Golf Course Management Plan for the Red Tail Golf Course, Los Angeles, California* (October 1996):

- Golf Course Growth and Use Period
- Irrigation Period
- Fertilizer
- Soil Amendments
- Pesticides (Herbicides, Insecticides, and Fungicides)
- Core Verification
- Spiking/Hydro Injection
- Vertical Mowing/Grooming

RED TAIL GOLF AND EQUESTRIAN DEVELOPMENT SCHEDULE

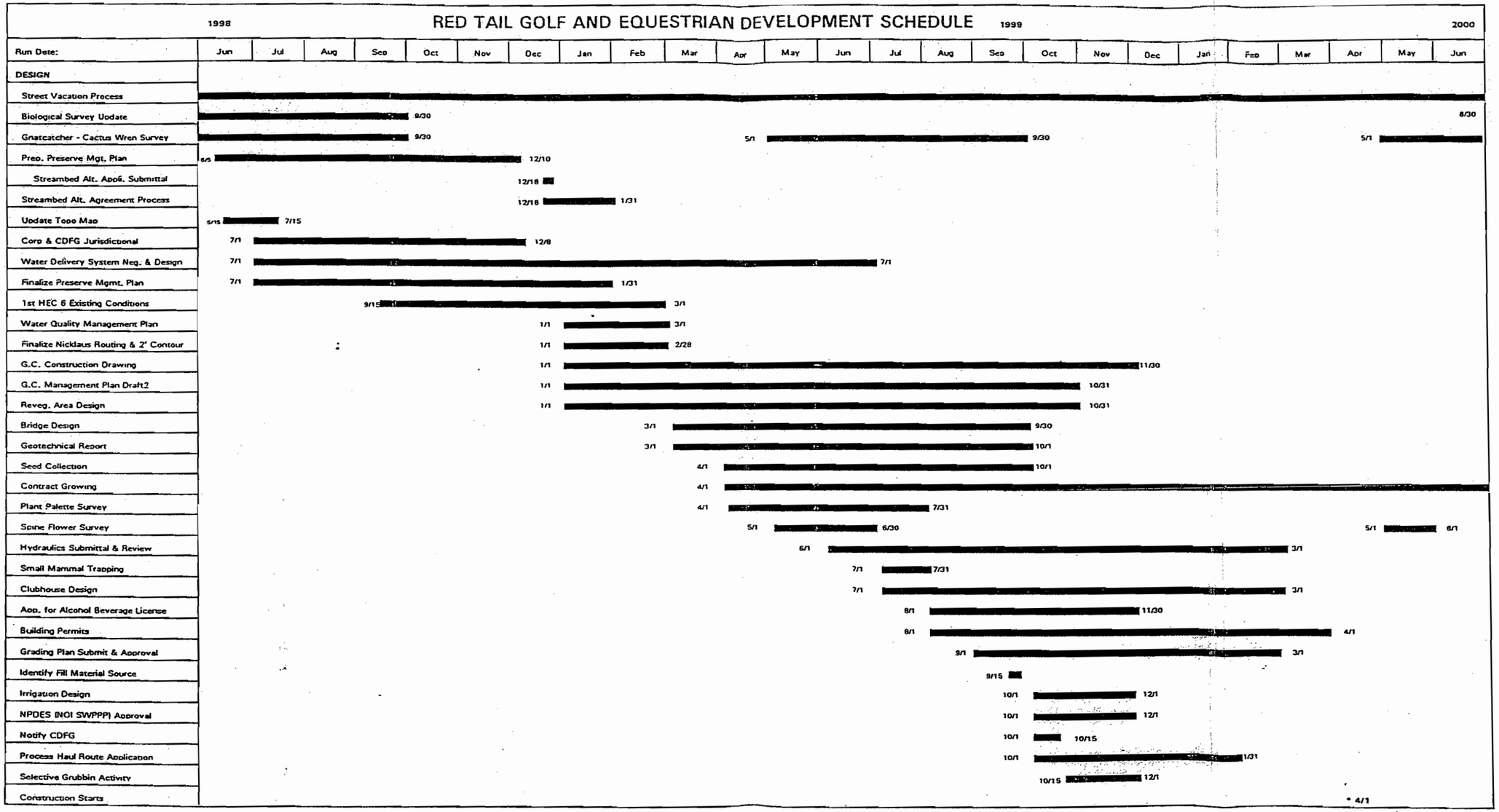


FIGURE 2.4-1
RED TAIL GOLF AND EQUESTRIAN DEVELOPMENT SCHEDULE

SECTION 3.0
EXISTING CONDITIONS

SECTION 3.0
EXISTING CONDITIONS

The proposed project site is located in an area known generally as the Tujunga Valley, which is dominated by the Riversidian alluvial fan sage scrub plant community described in Holland's (1986) *Preliminary Descriptions of the Terrestrial Natural Communities of California.* Riversidian alluvial fan sage scrub is classified by the California Natural Diversity Data Base as a state-designated sensitive habitat. The project site supports all three known phases of the Riversidian alluvial fan sage scrub community: pioneer, intermediate, and mature. According to the California Department of Fish and Game's *Significant Natural Areas of California Annual Summary*, the project site occurs within the Significant Natural Area LAX-018. Prior to being incorporated into the City of Los Angeles, the property was in the unincorporated portion of Los Angeles County and was designated as a Significant Ecological Area. Upon incorporation into the City of Los Angeles, the site was designated as an Ecologically Important Area for animals and plants pursuant to the Sunland-Tujunga-Lake View Terrace-Shadow Hills District Plan.

This section describes the existing conditions of the project site as they pertain to climate, soils, topography, hydrology, land use, and biological resources. This includes the well-documented occurrence of the slender-horned spineflower (*Dodecahema leptoceras*) on the site, a state and federally listed endangered species.

3.1 CLIMATE

The Tujunga Wash is influenced by the Mediterranean climate characteristic of the Pacific slope of southern California. The moderating influences of the ocean on the climate, however, do not completely reach the project area, being partially blocked by the bulk of the coastal Santa Monica range. The resulting climate is characterized by hot, dry summers and mild winters.

Storm activity and the associated flood flows normally occur during the period from November through March. Precipitation normally occurs in the form of localized cloudbursts and heavy rains. Flood flows are characterized by high peaks and short durations. High rainfall rates, combined with steep slopes in the upper reaches of Big Tujunga Wash and its tributaries, can result in turbulent, debris-laden flows entering the site. Once mountain soils are saturated, runoff is very rapid from the steep mountain slopes, creating a very fast rise in upstream drainages. As the peak flows issue from the Tujunga Valley into the broad alluvial plain of the Tujunga Wash, stream velocity is reduced and sediment deposition occurs.

3.2 SOILS

Two soil associations occur in the general vicinity of the site: the Hanford Association (2 to 5 percent slopes) and the Tujunga-Soboba Association (0 to 2 percent slopes). Hanford soils make up approximately 85 percent of the Hanford Association, and are deep (more than 60 inches), well drained, coarse sandy loams with moderately rapid subsurface permeability. Within the Los Angeles basin, soils of the Hanford Association are used mainly for residential and industrial development. The Land Capability Unit for the Hanford Association is IIe-1, which indicates a slight to moderate

limitation due to erosion hazard. Tujunga and Soboba soils, which comprise 90 percent of the Tujunga-Soboba association, are deep, somewhat excessively to excessively drained sands, loamy sands, and cobbly loams. Gravel and cobbles make up more than 35 percent of the Soboba soil profile. The Tujunga-Soboba soils are used extensively for residential development, and for incidental grazing, wildlife habitat, and recreational purposes. The Land Capability Unit for these soils is IIIe-4, which indicates a slight to moderate limitation due to water erosion hazard, and a moderate to high limitation due to wind erosion hazard (City of Los Angeles 1996).

As described in the Draft EIR for the project, the near-surface earth materials on the site include alluvium and artificial fill, as shown in Figure 3.2-1, *Soils Map*. The alluvium materials consist of non-marine recent alluvium, which are gravelly, cobbly sand with minor amounts of silt and clay-sized particles. The sediments are derived from erosion of upstream metamorphic and igneous rock, as well as sedimentary rocks and terrace deposits from the north valley wall. Alluvial depth is estimated to be greater than 100 feet (City of Los Angeles 1996).

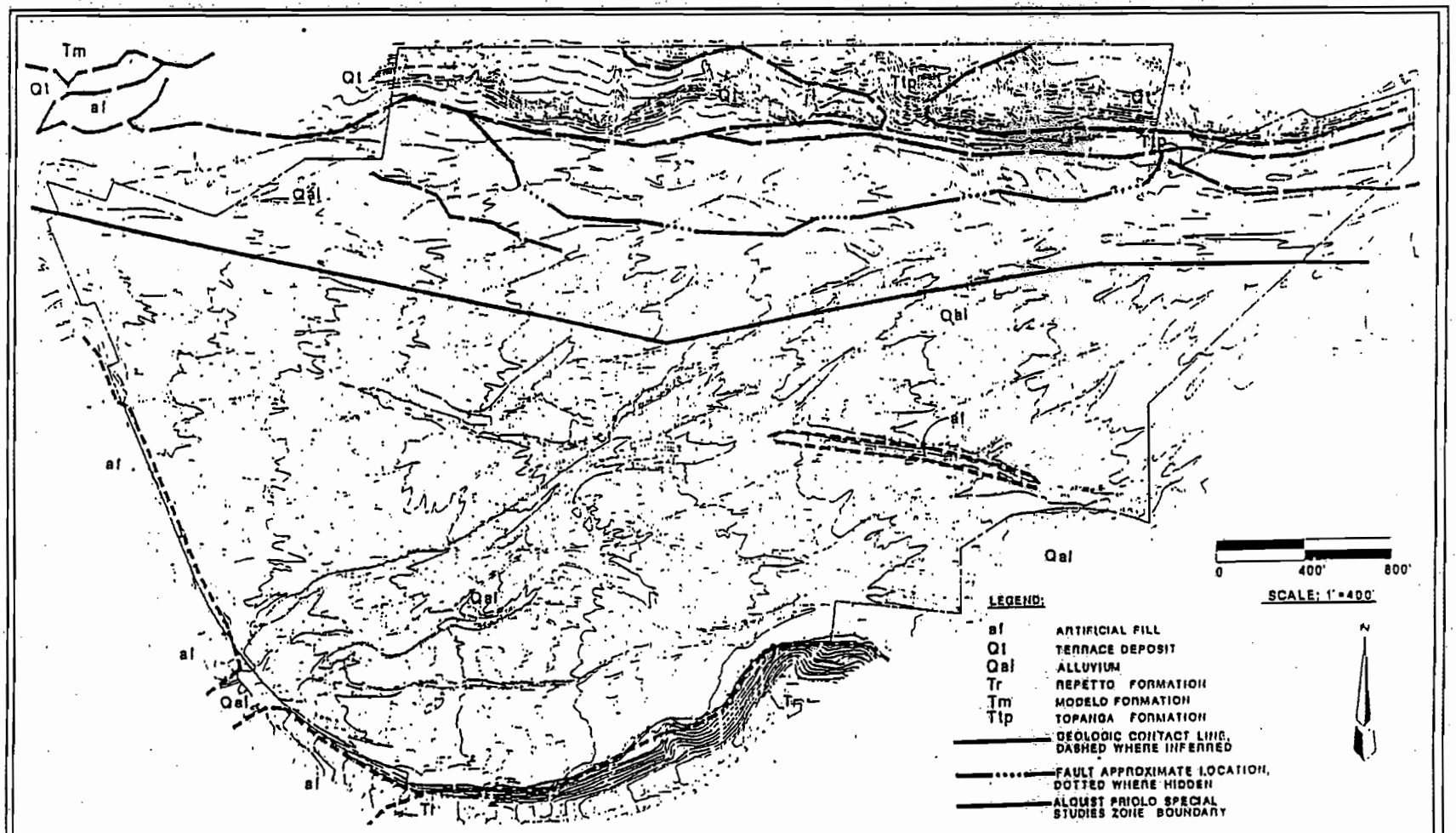
Under natural conditions, these soils are subject to frequent flooding or overflow during winter rainstorms. Normally, the frequency at which overflow waters reach any particular strip or terrace along the river is a function of the distance from the terrace to the nearest main channel and of its elevation relative to the central stream bottom. Within the project boundaries, however, two levees now protect many of these terraces from frequent flooding. During periods of overbank flooding, water spreads from the main channel over adjacent floodplain terraces where it deposits additional sand and silt, resulting not only in the deposition of layers of silt and sand, but also in an infusion into the soil of dissolved mineral substances. As a result, such floodplain soils replenish their nutrient base, retain high fertility, replace minerals that are normally washed away, and develop clay lenses that provide storage of moisture throughout drier seasons of the year.

Large, complex alluvial beds, present on the project site, are formed partly during episodes of mudflow and, thus, develop interleaved mud lenses or layers interbedded with sand and gravel layers. These serve to restrict vertical water movements and to provide a source of water in or below the root zone of the vegetation on the site.

3.3 TOPOGRAPHY

The project site lies at the base of the foothills of the San Gabriel Mountains near the mouth of Tujunga Canyon. The Big Tujunga Creek watercourse originates in the rugged mountainous terrain at elevations above 7,000 feet and flows through the Sunland-Tujunga Valley and the San Fernando Valley to its confluence with the Los Angeles River. Due to the potential for downslope flooding, two major flood control dams have been constructed along this watercourse–the Big Tujunga Dam (9 miles upstream of the project site) at elevation 2,290 feet mean sea level (msl) and Hansen Dam (1.7 miles downstream of the project site) at approximately 950 feet msl.

The project site is located in the alluvial outwash fan of Big Tujunga Canyon at the base of the San Gabriel Mountains between the two dams. The main channel passes through the northern portion of the site along a steep bluff. Channel elevations for the main stream of Big Tujunga Wash range from 1,280 feet msl at the eastern portion of the site to approximately 1,175 feet msl at the Foothill bridge on the west end of the site. Elevations of alluvial terraces range up to 1,290 feet msl. The



Source: PAI 1996

FIGURE 3.2-1
SOILS MAP

PAI PLANNING ASSOCIATES, INC.

SAPPHOS ENVIRONMENTAL
environmental compliance
resource planning

Long-Term Habitat Management Plan
Sapphos Environmental

bluffs at the northern side of the project site range up to more than 1,400 feet elevation msl. The elevations of the bluffs at the south end of the project site range up to more than 1,300 feet elevation msl. There is a net decrease of approximately 100 feet in elevation from the east end of the site to the west end of the site.

3.4 HYDROLOGY

Within the Sunland-Tujunga site, peak streamflows generally occur during the traditional rainy season. Annual rainfall in the area increases from 15 inches per year for the San Fernando Valley floor to 30 inches per year in the upper mountain regions of the Big Tujunga watershed. Because of the high mountain rainfall characteristics of this watershed, there is normally a year-round baseflow coming out of the Tujunga Canyon and observable flow through the alluvial wash may persist at flow levels in excess of on site percolation into the alluvium.

A drainage area of 82.3 square miles upstream of Big Tujunga Dam contributes to this reservoir that had an original 6,022-acre-foot capacity in 1931 has been diminished somewhat by the debris accumulations from prior extreme runoff events (i.e., the Corps estimated capacity at 5,720 acre-feet in 1979). Inflows from a number of mountain tributaries are passed through the Big Tujunga reservoir during normal operating regimes and constitute the base streamflow observed in Big Tujunga Wash channels that cross the project site on the way downstream to the Hansen flood-control basin. At the headwaters of the wash in the vicinity of Oro Vista Avenue, the tributary runoff area is approximately 121 square miles. At Hansen Dam, water is diverted to spreading grounds operated by the Los Angeles County Department of Public Works for groundwater recharge or into channelized segments of the Tujunga Flood Control Channel, which ultimately contribute to the Los Angeles River near Ventura Boulevard. The contributing watershed has increased to 153 square miles at Hansen Dam; this reservoir maintains a 29,700-acre-foot storage capacity to capture excess runoff flows and conserve them for groundwater recharge.

The City of Los Angeles Conservation Plan, adopted on December 20, 1973, indicates that the Big Tujunga Wash project site is located in an inundation area. This alluvial fan floodplain varies in width from approximately 300 feet at the Big Tujunga Creek inflow to approximately 2,700 feet at the Foothill Boulevard crossing. The approximate flow line elevations of the wash range from 1,080 feet at Wheatland Avenue to 1,280 feet at Oro Vista Avenue. The grade through the alluvial wash above Foothill Boulevard is approximately 2 percent.

A channelized Haines Canyon watercourse discharges into Big Tujunga Wash from the east at 1,260 feet elevation. The Haines Canyon flood control channel enters the south side of the wash near Sherman Grove Avenue. This significant tributary stream drains portions of the Sunland and Tujunga urban areas and has a peak discharge rate during a capital storm event of 12,000 cubic feet per second. At the Haines Canyon outlet, a small ditch and adjacent berm extend northerly into the wash. These features help direct the overflow from Haines Canyon until they coalesce with flows from Big Tujunga Wash.

Within the Sunland-Tujunga Valley site, Big Tujunga Creek and the Haines Canyon drainage enter the alluvial wash in distinct north and south channels. The Ellenbogen storm drain, which previously emptied into the site, was recently rerouted to enter the north channel near the upstream property

line and flows contribute to that pathway rather than spreading out across the wash. During storm flows, the division of the observed watercourses begins at the end of the existing flood protection levee west of Oro Vista Avenue, which was constructed to ensure that Big Tujunga Creek continues its westerly path within the north channel. Some of the historical flows during larger storms have moved south across the wash through a series of braided channels and this pattern becomes more pronounced in the vicinity of Haines Canyon flood control channel outflow. The split is the result of changes in channel morphology and flow characteristics, debris movement, and bedload deposition from a confined channel to an open alluvial fan. These observed characteristics have been accentuated by existing flood control channel routing, such as Haines Canyon Channel, which discharges into the south branch and the diversion of the Big Tujunga Creek Channel by the flood control levee.

The north branch follows the topography at the base of adjacent slopes and crosses under Foothill Boulevard at Caltrans Bridge No. 53-17 and I-210 at Bridge No. 53-2249. The south branch progresses westerly from the Haines Canyon outflow area and crosses under Foothill Boulevard at Caltrans Bridge No. 53-18 and the I-210 Freeway at Bridge No. 53-2562.

The bottom of the watercourses on the project site is natural and consists of typical alluvial material, ranging in size from coarse sand to cobbles and boulders from 3 inches to several feet in diameter. This bedload debris is actively transported downgrade through the site, which possesses an average slope of 2 percent. A total of approximately 20,000,000 cubic yards of such material has been deposited behind Hansen Dam since it was built in 1940.

Three major floods have occurred in the Tujunga Valley in the past 50 years: in 1938, 1943, and 1969. During the 1938 flood, the peak rate of flow from the mouth of the canyon was in excess of 50,000 cubic feet per second (cfs). The USGS estimated that the March 2, 1938, maximum discharge through the area reached 54,000 cfs (the highest extreme flood either within or outside their period of record was used because actual flow gages were not in place). Because of a lack of local flood protection levees, homes east of the project site on Wescott Avenue, Grove Street, Quail Avenue, Le Berthon Street, and Bengal Street were lost to the high water. The USGS estimated that peak flow for the 1943 event was 23,000 cfs and would have been contained within the area of the 1938 storm.

During the flood of 1969, the rate of flow through the wash was estimated at 25,000 cubic feet per second, and homes were again lost. In this flood, most of the damage occurred east of Haines Canyon Channel due to high water ponding near its confluence with the southerly wash channel. The flood protection levee at Oro Vista Avenue has since been completed to protect that area affected by the 1969 event. Prior to construction of this levee, Big Tujunga Creek overflow movement toward the south fork bridge was much more prevalent. Now, the only water to effectively reach the south branch during low and moderate discharges comes from the Haines Canyon drainage area.

According to previous hydrology studies describing the effects of the 1969 flood, the south fork bridges at Foothill Boulevard and Foothill Place were lost in the 1969 flood event due to quarrying operations downstream that caused accelerated upstream streambed erosion that undermined the piers of both bridges, rather than failure due to excessive bulked flow volumes.

Previous hydraulic studies indicate a high water surface elevation of 1,191.8 feet at the south bridge (No. 53-18) on Foothill Boulevard, which corresponds to a flow of 20,000 cfs through this structure. The corresponding high water surface (HWS) elevation at the entrance of south bridge (No. 53-2562) along I-210 is calculated to be 1,183.5 feet. The as-built plans for this bridge indicate the estimated HWS elevation to be 1,184 feet. These data show that the bridges on the south branch are designed to safely pass flows of approximately 20,000 cfs. This discharge volume amounts to about one third of the total capital flood flow expected in the Tujunga Valley watercourse, which is 72,000 cfs based on Los Angeles County Flood Control District hydrologic calculations.

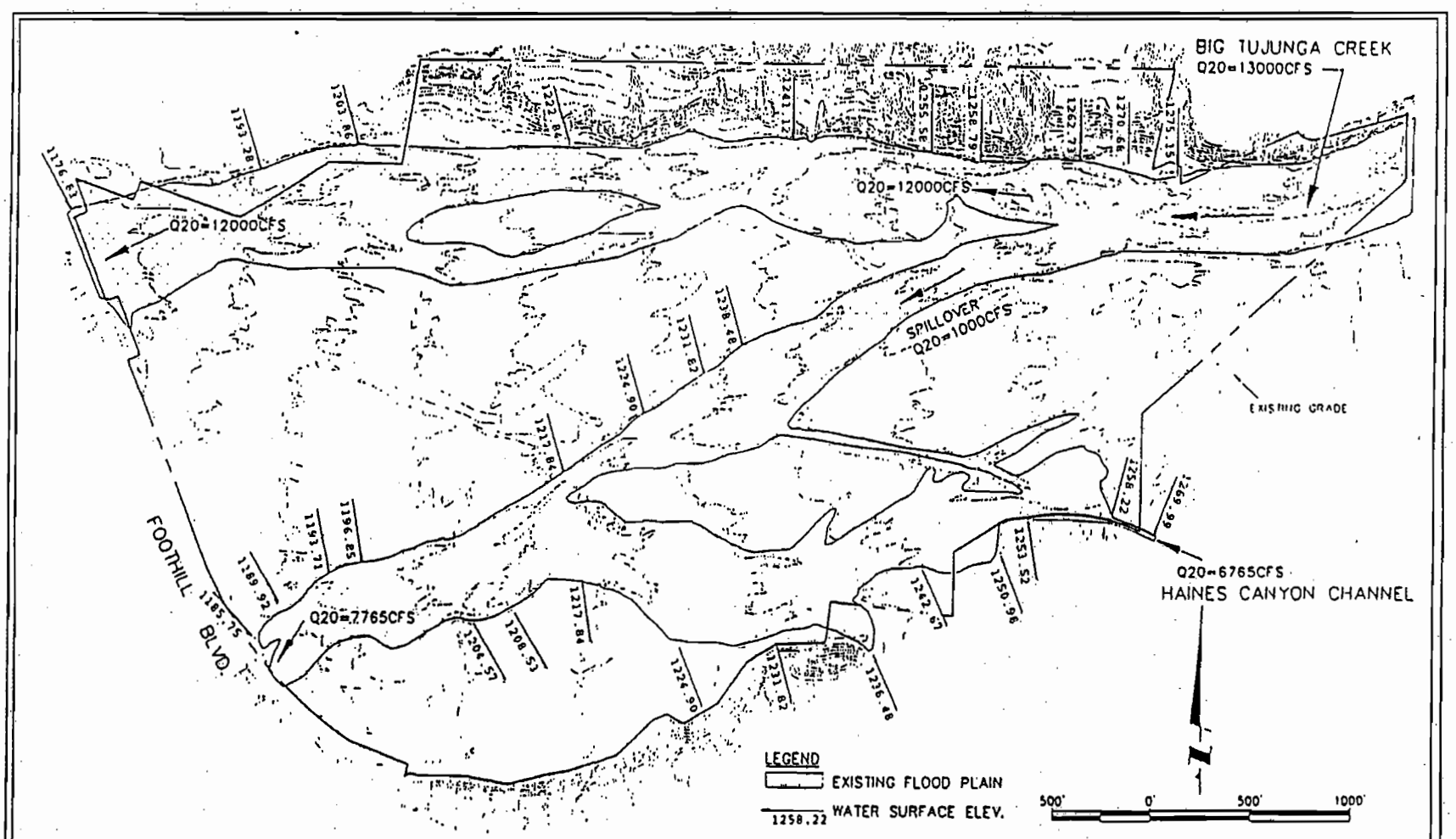
Similar engineering calculations show that the maximum flow possible under the north fork bridges, before water surface elevations reach the bridge soffit, is approximately 90,000 cfs. In the event that instream flows were to exceed 20,000 cfs, backwaters would flow southwesterly over the 1,195 elevation contour to the south branch bridge openings. Overflow water from the north Tujunga Channel would combine with water already flowing in the south fork, which originates in the Haines Canyon drainage areas.

Within the period of recent USGS flow records at Hansen Dam downstream of the project site, peak discharge levels were reached on February 10, 1978 and March 2, 1983 and reported as the maximum extremes of a hydrologic record dating back to August 1940. Actual flow rates upstream at the project site are unknown, but are estimated to constitute additional significant flood events there.

Other than the partial levee along the north branch of the watercourse, the project site currently has no storm drainage facilities. On site storm water runoff flows in a generally westerly direction from the higher river terrace elevations to either the north or south branches of the Tujunga Valley watercourse.

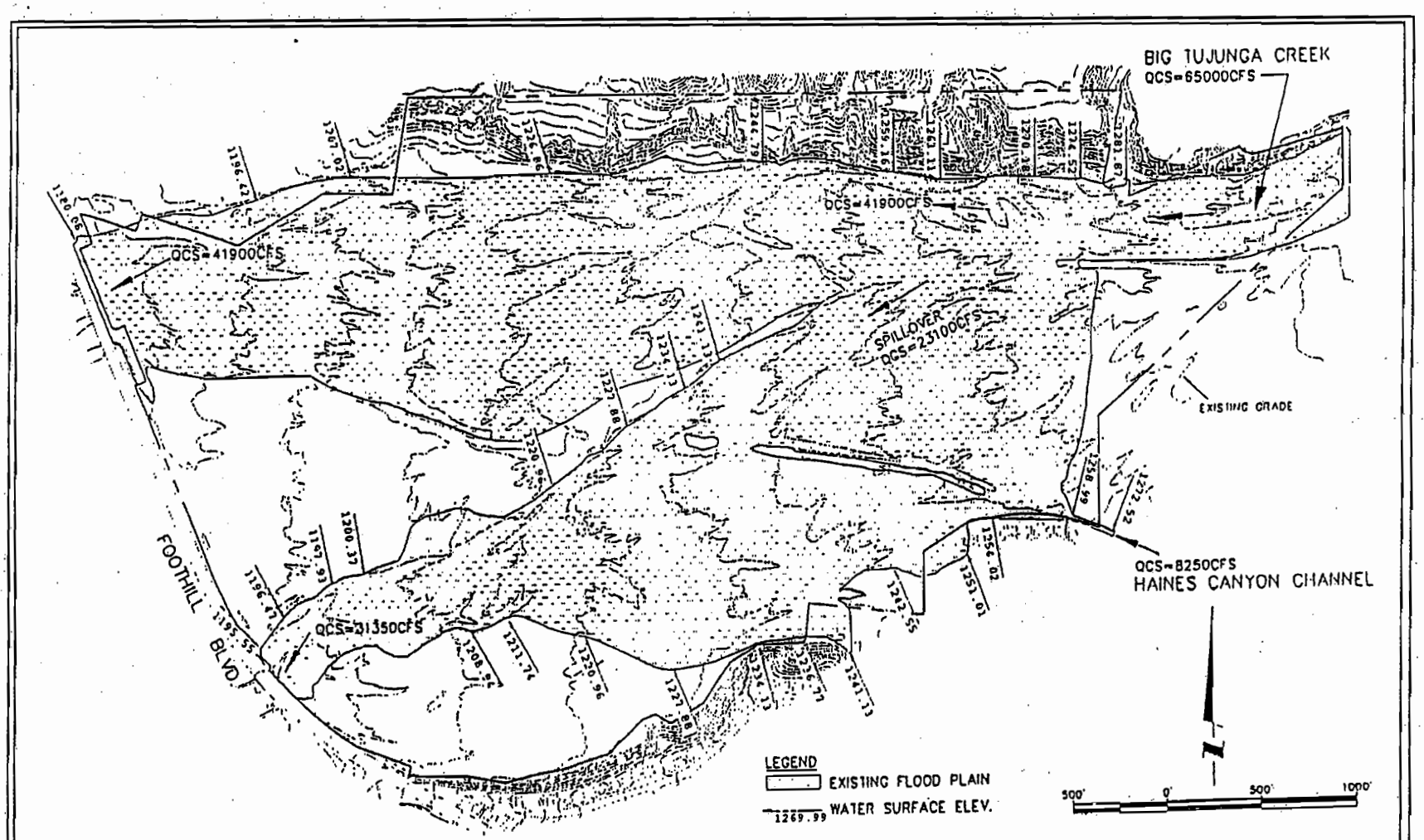
The extent of existing surface flow across the Big Tujunga Wash during storm events of various sizes within its watershed are illustrated in Figure 3.4-1, *Existing Conditions for 20-Year Storm* and Figure 3.4-2, *Existing Conditions for Capital Storm Events*. Under present conditions, a flow of 13,000 cfs out of the Big Tujunga Canyon is equivalent to a flood frequency event of 17 years. Under this discharge level, surface flows entering the project site from upstream are confined to the northern channel (Big Tujunga Wash) and the existing southern channel receives Haines Canyon Channel drainage inflows. At discharge regimes in excess of 13,000 cfs, the surface flow would exceed the northern channel capacity and excess flow begins to use the southern channel where it exits the site through the southern set of bridges. When instream flows reach 65,000 cfs (equivalent to runoff from the capital storm event), the debris-laden waters have overflowed both the northern and southern channels and inundated much of the wash.

No water quality records for streams within the wash itself are available from the USGS or Los Angeles County Flood Control District. Considering that Big Tujunga Creek is the primary pathway for Big Tujunga Dam waters, the quality should reflect the excellent quality of impounded waters in Big Tujunga Reservoir within the San Gabriel Mountains. No problems with total dissolved solids should exist due to the low evaporation rates in the mountains. Mineral and organic constituents may vary depending on the condition of the watershed (i.e., burned or not).



Source: PAI 1996

FIGURE 3.4-1
EXISTING CONDITIONS FOR 20-YEAR STORM



Source: PAI 1996

FIGURE 3.4-2
EXISTING CONDITIONS FOR CAPITAL STORM EVENTS

PAI PLANNING ASSOCIATES, INC.
SAPPHOS ENVIRONMENTAL environmental compliance resource planning

Long-Term Habitat Management Plan
Sapphos Environmental

3.5 LAND USE

Land use in the vicinity of the proposed project site was determined from recent aerial photos, a literature search, and field surveys. The project area is bounded on the west by Foothill Boulevard and the I-210 Freeway. There is a residential community south and southeast of the project area. Adjacent and to the northeast of the proposed project area, land is zoned A2-1 and there are several existing residences. There are currently undeveloped lands due north of the project site zoned A2-1-K. The proposed project is bounded by Conover Street to the northwest. That parcel is zoned RA-1-K and is occupied by a sanitarium.

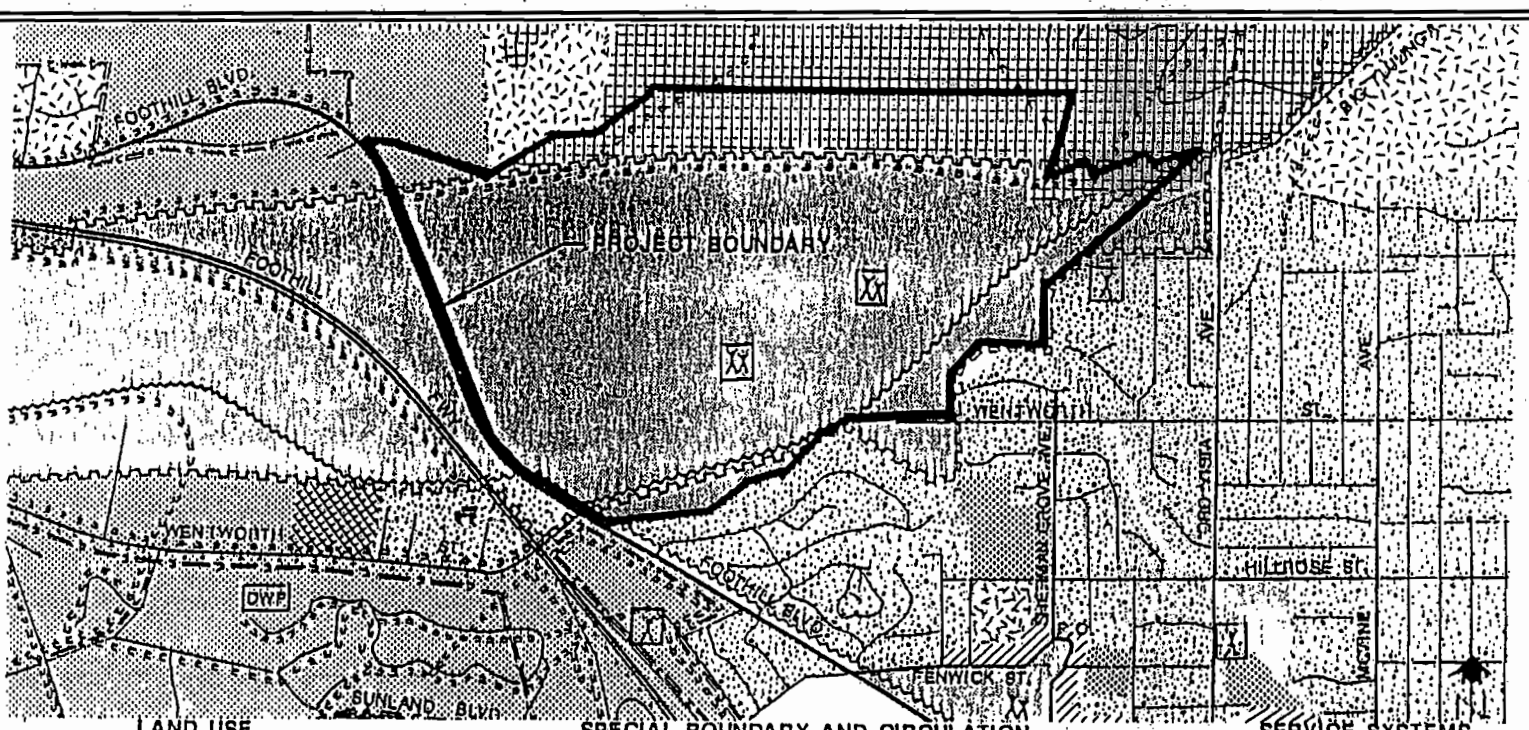
Based on a review of historic aerial photographs and interviews with local residents, the site is known to have been used historically as a citrus orchard (until at least the 1930s). The site was subjected to major flooding as recently as 1969. Following the 1969 floods, the Oro Vista levee was constructed. The proposed project site is currently vacant and characterized by natural open space. Since 1988, there have been numerous incidences on the site requiring police activity, including vagrancy; narcotics trafficking; car theft; car stripping and abandonment; and trespassing.

3.5.1 Zoning

The zoning on the site is A2-1 and A1-1XL. Approximately three quarters of the property is within the A1-1XL zoning, with two small portions of the property, near the northwest corner and the southeast corner of the property, falling within the A2-1 zoning. A zone change is not required by the City of Los Angeles.

3.5.2 District Plan

The project site is located within the Sunland-Tujunga-Lake View Terrace-Shadow Hills District Plan (part of the General Plan) area of the City of Los Angeles. Prior to being incorporated into the City of Los Angeles, the property was designated as a Significant Ecological Area in the County General Plan. Upon incorporation into the City of Los Angeles, the site was designated as an Ecologically Important Area for animals and plants pursuant to the Sunland-Tujunga-Lake View Terrace-Shadow Hills District Plan. The District Plan designates the majority of the site as privately owned open space. The District Plan carries a footnote for the privately owned open space designation indicating that "minimum density residential uses are permissible on privately owned open space." The overall development potential of the site into the District Plan, if developed residentially, would be 188 to 355 dwelling units. The District Plan for the area is depicted in Figure 3.5.2-1, *Community Plan*.



Map not to scale
Source: PAI 1996

FIGURE 3.5.2-1
COMMUNITY PLAN

3.6 BIOLOGICAL RESOURCES

The biological setting of the project is described below in terms of the plant communities and associated plant and wildlife species found in each habitat type present in the project area. In spite of a long history of land disturbance, Tujunga Valley retains large areas of intact plant communities dominated by native plant species characteristic of the communities that historically occurred on the property. Sensitive habitats, sensitive species, and wildlife corridors in the area are also described. More than 160 plant species have been recorded on the property, and more than 200 wildlife species have been observed or are expected to be potentially present onsite.

Three sensitive plant species and 36 sensitive wildlife species were identified as potentially being present on-site due to suitability of the habitat and known range of those species (CDFG 1997). One federally- and state-listed endangered species, the slender-horned spineflower, has been observed on- site. No federally or state-listed wildlife species have been observed on-site as a result of directed surveys.

The property supports known occupied habitat for one federally and state-listed endangered plant species, the slender-horned spineflower. Two other state-designated sensitive plant species, San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) and Nevin's barberry (*Berberis nevinii*), identified as potentially occurring on-site due to habitat and known range of those species (CDFG 1997), have been determined not to be present onsite.

Two sensitive fish species, the Santa Ana sucker (*Catostomus santannae*) and arroyo chub (*Gilia orcuttii*), may sometimes be present in association with ephemeral water flows associated with Big Tujunga Creek and Haines Channel outflow. The proposed project does not affect ephemeral water flows associated with Big Tujunga Creek and Haines Channel outflow.

Directed surveys were undertaken for 10 sensitive amphibian and reptile species (Bio Diversity Associates et al. 1993). Three species, California red-legged frog (*Rana aurora draytonii*), arroyo toad (*Bufo microscaphus californicus*), and southwestern pond turtle (*Clemmys marmorata pallida*) were not observed on-site and are not expected to be present on-site. Although western spadefoot toad (*Scaphiopus hammondi*) was not observed on-site, ephemeral aquatic habitat on-site may provide suitable habitat for this species. Riversidian alluvial fan sage scrub provides suitable habitat for six additional sensitive species: San Diego horned lizard (*Phrynosoma coronatum blainvillei*), coastal western whiptail (*Cnemidophorus tigris, mult scutatus*), silvery legless lizard (*Anniella pulchra pulchra*), coastal rosy boa (*Lichanura trivirgata roseofusca*), San Bernardino ringneck snake (*Diadophis punctatus modestus*), and coast patch-nosed lizard (*Salvadora hexalepis virgultea*). San Diego horned lizard and coastal western whiptail have been observed on-site.

Seventeen sensitive bird species were evaluated for their potential to occur in the project area (Bio Diversity Associates et al. 1993). White-tailed kite (*Elanus leucurus*), sharp-shinned hawk (*Accipiter striatus*), prairie falcon (*Falco mexicanus*), and northern harrier (*Circus cyaneus*) were determined not to be present on-site as a result of directed surveys. Cooper's hawks (*Accipiter cooperi*) were observed to be nesting in a tall eucalyptus (*Eucalyptus* sp.) downstream from the Haines Channel outlet, near the southern property boundary. Although no nesting burrows were identified on-site, the property provides suitable foraging habitat for burrowing owl (*Athene cunicularia*). Five species

from the California Natural Diversity Data Base (CDFG 1997), California Native Plant Society's *Inventory of Rare and Endangered Vascular Plants of California* (Skinner and Pavlik 1994), and supplemented with information found in the 1989 and 1992 Annual Reports on the Status of California's State Listed Threatened and Endangered Plants and Animals (CDFG 1990, 1992).

Coastal Sage Scrub (Element Code: 32300 and 32700)

The coastal sage scrub vegetation on the project site totals 44 acres and is largely restricted to the slopes of the foothills along the northern and southern boundaries where it is interspersed with patches of non-native annual grassland. The largest patch of coastal sage scrub habitat on the property is on the steep face of the northern bluff of the property. Remnant patches of sage scrub (< 3 acres) occur adjacent to the Foothill bridges. A degraded patch (< 2 acres) of sage scrub is located in the southeast portion of the study area.

The project site lies within the transition zone between the Riversidian and Venturan associations of the coastal sage scrub community (Westman 1983). Species present on site are characteristic of both associations. Riversidian sage scrub (Element Code 32700) is the most xeric expression of coastal sage scrub south of Point Conception. Typical stands are fairly open and dominated by California sagebrush *(Artemisia californica)*, California buckwheat *(Eriogonum fasciculatum)*, and foxtail chess (*Bromus madritensis* ssp. *rubens*). This plant community typically occurs on xeric sites such as steep slopes and intergrades at slightly higher elevations with several southern California chaparral plant communities (Holland 1986). Venturan coastal sage scrub (Element Code 32300) is characterized by low, soft-woody vegetation and bare ground underneath and between shrubs. Site characteristics include dry and rocky slopes (Holland 1986).

Among the characteristic coastal sage scrub species occurring in the project area are California buckwheat, white sage (*Salvia apiana*), black sage (*Salvia mellifera*), laurel sumac *(Malosma laurina)*, sugar bush (*Rhus ovata*), lemonadeberry *(Rhus integrifolia)*, and California sagebrush. Other plants accompanying the dominant species include Spanish bayonet *(Yucca whipplei)*, Mexican elderberry (*Sambucus mexicana*), deerweed (*Lotus scoparius*), and yerba santa *(Eriodictyon crassifolium)*.

Associated with the coastal sage scrub communities on the site are four coast live oak trees (*Quercus agrifolia*) and two California sycamore trees *(Platanus racemosa)* that are located in the northernmost gully on the site just west of residential housing, and on the south-facing slope below the residential housing.

Riversidian Alluvial Fan Sage Scrub (Element Code: 32720)

The Tujunga Valley contains one of the few remaining stands of mature Riversidian alluvial fan sage scrub (alluvial scrub) habitat. Holland (1986) considers alluvial scrub vegetation as a subtype of Riversidian sage scrub. However, more recent descriptions have addressed the community as a distinct type (Hanes et al. 1989). As described by Hanes et al. (1989), alluvial sage scrub is found only on gravelly alluvial outwash plains, terraces, and fans along the coastward margins of the San Gabriel, San Bernardino, and San Jacinto mountains. Alluvial scrub was once widely distributed along the southern out-washes of these mountains where bajadas formed a nearly continuous skirt along the base of these ranges. The alluvial scrub community has become restricted to remnant

patches along unaltered streams and outwashes. Industrial, agricultural, residential developments, and flood control projects have eliminated it from the majority of its former range. The majority of existing alluvial scrub communities are believed to date from approximately 50 years ago, as a result of widespread catastrophic flooding that occurred in 1938.

Episodic floods, such as occurred in 1938, can eliminate existing stands of alluvial scrub and initiate new pioneer stands. In places, a lack of sufficient soil moisture apparently may prevent an intermediate phase stand from progressing to the mature phase. Such intermediate stands may be old in years, but not fully mature in species composition and stature. The most recent major floods in the project area (1938 and 1969) produced floodplain terraces upon which the three recognizable phases of alluvial fan sage scrub – pioneer, intermediate, and mature – have developed. The intermediate phase generally blends with the pioneer and mature phases. However, several patches of the intermediate phase within the project boundaries are less complex than expected because of fires, mining activities, flood-control activities, and other human disturbances. Some of these disturbed areas are currently dominated by California buckwheat, a typical coastal sage scrub species that readily colonizes areas following disturbance.

The alluvial scrub community now covers areas on the project site that once were planted in citrus orchards. The wash is covered with vegetation, except where it is subject to more frequent scouring and flooding, and in areas subject to recreational use. Alluvial scrub consists of an assortment of drought-deciduous subshrubs and large evergreen woody shrubs that are adapted to porous, nutrient-poor substrates, and to surviving intense, periodic floods and erosion (Hanes et al. 1989). Step-like, shrub-covered terraces above the main washes possess three distinctive phases of vegetation, the age and maturity of which are directly related to the distance from the main channels and the amount of time that has elapsed since the most recent flood at each level (Hanes et al. 1989). These phases are labeled as pioneer, intermediate, and mature alluvial fan sage scrub.

The pioneer phase of alluvial scrub is found on approximately 114 acres of the project site. This phase is characterized by sparse vegetation and low species diversity and stature (Hanes et al. 1989). It is found within active stream channels or recently scoured streambeds. Species found in the pioneer phase of alluvial scrub include predominantly scale-broom (*Lepidospartum squamatum*), California buckwheat (*Eriogonum fasciculatum*), and mulefat (*Baccharis salicifolia*). As expected, this community is found in currently active channels on the site, and in channels that have been recently abandoned or that support relatively frequent storm flows.

The intermediate phase of alluvial scrub covers approximately 125 acres of the site. This phase is characterized by dense vegetation composed mainly of subshrubs. Representative species comprising the intermediate phase of alluvial scrub include scale-broom, California buckwheat, California sagebrush (*Artemisia californica*), laurel sumac (*Malosma laurina*), thick-leaved yerba santa (*Eriodictyon crassifolium*), and Spanish bayonet (*Yucca whipplei*). As a result of sixteen 50-meter line-intercept transects established in areas supporting intermediate alluvial fan sage scrub, dominant native cover was shown to consist of California buckwheat (18 percent), scalebroom (8 percent), Spanish bayonet (5 percent), and thick-leaved yerba santa (5 percent). Transect locations are shown in Figure 3.6.1-1, *Plant Communities*. Also typically found in this plant community are large, widely dispersed California sycamore trees (*Platanus racemosa*). This community is widely distributed around the project area, but the largest contiguous area of intermediate phase alluvial

scrub is in the central, eastern portion of the property. All known locations of the slender-horned spineflower on the property are located in this large area of intermediate alluvial scrub.

The mature phase of alluvial scrub is present on approximately 29 acres of the site. This phase is typically characterized by vegetation consisting of fully developed subshrubs and woody shrubs. Representative species for the mature phase of alluvial scrub include scale-broom, California buckwheat, California sagebrush, chamise (*Adenostoma fasciculatum*), lemonadeberry (*Rhus integrifolia*), and laurel sumac. On the project site, this phase is restricted to the southernmost portion of the property and is dominated by California buckwheat (34 percent), California sagebrush (20 percent), and chamise (15 percent), as shown in results of three 50-meter line-intercept transects established in this community.

Southern Sycamore - Alder Riparian Woodland (Element Code: 62400), Southern Willow Scrub (Element Code: 63320)

There are a total of 10 acres of riparian woodland on the 352-acre site. Two patches of riparian habitat located along the northern channel of Big Tujunga Wash consist of 3.5 acres and 1.8 acres respectively; the remainder is located downstream of the outlet of Haines Channel, in the southern parts of the study area. An additional 3 acres mapped as dead riparian on the south eastern portion of the site are the result of natural shifts in hydrology. Riparian woodlands on the property are composed of both southern sycamore-alder riparian woodland and southern willow scrub.

The southern sycamore-alder riparian woodland community is characterized by streamside woodland dominated by California sycamore and white alder (*Alnus rhombifolia*). On the project area, these stands seldom form closed canopy forests, and at times appear as trees scattered in a shrubby thicket of sclerophyllous and deciduous species. Understory scrubs include blackberry (*Rubus ursinus*) and poison oak (*Toxicodendron diversilobum*). Site factors include very rocky streambeds subject to seasonally high intensity flooding. White alder increases in abundance on perennial streams while California sycamore favors intermittent streams.

The southern willow scrub community present on the project site is a dense, broadleafed, winter-deciduous riparian thicket dominated by several willow species, with scattered emergent Fremont cottonwood (*Populus fremontii*) and California sycamore. Most stands are too dense to allow of a substantial understory due to the effects of shading.

Riparian woodland communities have developed in areas within the main channel of the Tujunga Valley where perennial, or semi-perennial, surface or near-surface water flows are present. These areas lie along the north channel, below the raised slopes of the northeastern section of the project site (fed by releases from the Big Tujunga Dam and normal, seasonal runoff), and along the southeastern boundary of the site (fed by the Haines Channel). These riparian areas are directly linked to surface and subsurface water flows. The specific course through the wash taken by these flows changes as a result of major flood events.

The upstream portion of the riparian woodland associated with the northern channel banks and stream courses consists predominantly of a stand of white alders, ranging in height from 15 to 30 feet, mixed with arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), mulefat, and occasional Fremont cottonwood and California sycamore. Farther downstream, white alders become less

common and of smaller stature, eventually disappearing from the community. The woodland becomes dominated by arroyo and black willows forming a rather scrubby, dense thicket of mostly sapling-size trees ranging from 10 to 20 feet in height, accompanied by mulefat and non-native giant reed (*Arundo donax*). Several large laurel sumacs up to 15 feet high and 30 feet wide grow along the slopes of the hillside to the north of the woodland.

An understory is generally lacking, although in some open stretches constituents of the alluvial scrub community are found in association with the riparian growth. In a few locations within this belt of willows, especially on the downstream portions of the site, bodies of standing water support stands of cattails (*Typha* spp.), rushes (*Juncus* spp.), and sedges (*Cyperus alternifolius* spp.), forming small (less than 0.5 acre) freshwater marsh areas.

Along the southeastern boundary of the project site, a separate 3.6-acre stretch of riparian woodland runs parallel to the southeastern border of the site. This area is supported by drainage flows from the Haines flood control channel, and is characterized by a dense willow woodland composed of mature arroyo and black willows, with occasional coast live oak (*Quercus agrifolia*), California black walnut (*Juglans californica*), and gum trees (*Eucalyptus* sp). The larger constituents are accompanied by dense areas of mulefat, and by patches of mature and intermediate alluvial fan sage scrub vegetation. Dense stands of giant reed are found throughout the southeastern riparian area. The area mapped as dead riparian received some renewed water input as a result of storm flows during the winter of 1997-98. As a result, some regeneration of vegetation in this area has occurred. In addition, it is anticipated that removal of the dense cover of giant reed, currently dominating this area, will restore surface water to this area and therefore enhance the native riparian vegetation.

Ephemeral Aquatic Habitat

Areas mapped as riparian habitat and barren wash periodically are subject to freshwater storm flows that provide ephemeral aquatic habitat. In general, the areas subject to periodic inundation lie within the southeastern portion of the project site and are areas mapped as riparian habitat or barren wash. There are approximately 22 acres on the property that are regularly flooded; however, this ephemeral habitat can occupy as much as 38 acres.

The water supply for this southeastern area of the project site is dependent on seasonal storm flows from the flood control channel, as well as on substrate drainage and landscape watering and pavement runoff from adjacent residential developments. The streambed is characterized by a mix of the naturally occurring sandy, cobbly alluvium with pockets of silt deposition. Trees growing in the streambed break up the water flow, creating pools of slow-moving water, some of which support growths of green algae. The southernmost riparian area appears to have a perennial water flow. Water in this stream comes from the Haines Channel, which empties onto the project site. Most of the time, this flood-control channel carries run-off water from the neighboring residential development. During storm events, much heavier flows traverse this flood-control channel and carry debris from upstream into the riparian area, which damages some of the native vegetation. Surface water in this riparian area sometimes percolates into the sandy alluvium while within the boundaries of the project site.

During storm events, water flows freely through the riparian area into the south branch of the Big Tujunga watercourse, crossing the site boundaries below the southernmost set of bridges at Foothill Boulevard and the I-210 Freeway.

Non-Native Grassland (Element Code: 42200)

There is less than one acre of non-native grassland that occurs on the project site. Non-native grassland, composed primarily of annual grass species such as wild oat (*Avena* sp.), red brome (*Bromus rubens*), and other Mediterranean grasses. Non-native grasses cover small patches of relatively level ground within the alluvial scrub and coastal sage scrub communities. These grasses and herbs also form an understory matrix within much of the coastal sage scrub. Small areas of pure grassland are confined to patches on the south-facing slopes of the foothills in the northern portion of the project site and to areas of silty soils on a few terraces in the main wash. Although it is a distinct community, the grassland has not been mapped separately because the patches are too small to be represented on maps prepared for this report.

Barren Wash

There are 26 acres of the project site mapped as barren wash. These areas consist of scour channel routinely affected by storm flows where there is an absence of vegetation. These areas have limited habitat value due to the lack of vegetative or water resources.

3.6.2 Animal Life

Descriptions of wildlife resources associated with plant communities are described based on previous environmental studies of the proposed project (Bio Diversity Associates et al. 1993; City of Los Angeles 1989; Corps 1988, 1990b; Sapphos Environmental, Inc. 1995, 1994). In addition, the California Wildlife Habitat Relationship System documentation for Amphibians and Reptiles (Zeiner et al. 1988), birds (Zeiner et al. 1990a), and mammals (Zeiner et al. 1990b) was reviewed to assess the likelihood for wildlife species that were not observed to occur within the study area. Vertebrates identified in the field by sight, call, track, scat, or other signs are cited according to the nomenclature of Jennings (1983) for amphibians and reptiles, the American Ornithologists Union (1983, Supplement 1997) for birds, and Jameson and Peters (1988) for mammals.

Most of the mammals occurring on the site are largely or entirely nocturnal in habit, and are therefore not easily observed. However, many have been detected by the presence of their burrows, dens, scats (fecal droppings), footprints, dust bowls, or other diagnostic signs. Bat species present on the site are difficult mammals to detect and identify, but the regionally common species are assumed to be present on the site.

The proposed project site is known to support many species of amphibians (3 species), reptiles (8 species), birds (53 species), and mammals (7 species), including many that typically immigrate to wash environments from the southern California coastal foothills. Additional species not observed but expected to occur include 4 species of fish, 3 species of amphibians, 15 species of reptiles, 34 species of birds, and 43 mammals. A complete list of species known or expected to occur on site is provided in the faunal compendium provided in the *Final EIR* for the project. Riparian areas on the site, as expected, are generally the highest in wildlife diversity, particularly in bird species. However,

wildlife habitat over the project area, and much of the vicinity, has been modified from its original character by human activities. Consequently, the value of these habitats to native wildlife has been reduced in some areas. Present diversity and abundance of native taxa is probably less than in the past. Moderate numbers of native faunal components remain well represented, and those that are most commonly found in the project area are discussed below. The site has been repeatedly surveyed in daylight hours (1948, 1949, 1979, 1983, 1988, 1989, 1990, 1991, 1992, 1995, 1996, 1997, and 1998).

Coastal Sage Scrub

Wildlife occurring in the coastal sage scrub plant community includes many species also found in the alluvial scrub community. Mature phases of both communities are generally similar in physical structure (physiognomy). Insects include chalcedon checker-spot (*Euphydryas ellipticus*), California mantis (*Stagmomantis californica*) and yucca moth (*Tegeticula maculata*).

A general lack of moisture contributes to a lack of active amphibians most of the year; however, this community is expected to support the western toad (*Bufo boreas*) and Pacific slender salamander (*Batrachoseps pacificus*). The ensatina salamander (*Ensatina eschscholtzi*) may occur in gullies on the site, especially in the vicinity of the oaks.

Reptiles observed in the coastal sage scrub are the side-blotched lizard (*Uta stansburiana*) and western rattlesnake (*Crotalus viridis*). Others expected include the coastal western whiptail, western skink (*Eumeces skiltonianus*), southern alligator lizard (*Gerrhonotus multicarinatus*), common kingsnake (*Lampropeltis getulus*), gopher snake (*Pituophis melanoleucus*), and ringneck snake.

Several bird species common to the alluvial scrub have been observed in the coastal sage scrub, including the spotted towhee (*Pipilo erythrophthalmus*), California towhee (*Pipilo crissalis*), western scrub jay (*Aphelocoma coerulescens*), common bushtit (*Psaltriparus minimus*), Anna's hummingbird (*Calypte anna*), and Bewick's wren (*Thryomanes bewickii*). Others observed here include the Cassin's kingbird (*Tyrannus vociferans*), lesser goldfinch (*Carduelis psaltria*), and northern mockingbird (*Mimus polyglottis*). Raptors observed in or above this community include the red-tailed hawk, American kestrel (*Falco sparverius*), and turkey vulture (*Cathartes aura*).

Several mammal species occur in the coastal sage scrub habitat. Brush rabbit (*Sylvilagus bachmani*) has been observed on site. Diagnostic sign for several other native species was detected, including sign for coyote (*Canis latrans*), Botta's pocket gopher (*Thomomys bottae*), and California ground squirrel (*Spermophilus beecheyii*). Several other small mammals are expected to occur including the deer mouse (*Peromyscus maniculatis*), California mouse (*Peromyscus californicus*), California pocket mouse (*Perognathus californicus*), dusky-footed woodrat (*Neotoma fuscipes*), and desert woodrat (*Neotoma lepida*). Larger species expected include the striped skunk (*Mephitis mephitis*), bobcat (*Lynx rufus*), coyote, and muledeer. Domestic cats (*Felis catus*) from the nearby residential area may also hunt for small mammals and birds here. A pair of apparently feral, mixed-breed dogs (*Canis familiaris*) were observed during 1989 surveys. This habitat may also provide suitable foraging habitat for some bat species.

Riversidian Alluvial Fan Sage Scrub

The presence of all three phases in combination – pioneer, intermediate, and mature – increases the biodiversity of the vegetative and wildlife habitats. Alluvial scrub vegetation on the site supports a wide diversity of wildlife. Community productivity is relatively high and large numbers of individuals of resident species are present. Insects characteristic of this habitat type are velvet-ant (*Dasymutilla*), harvester ant (*Pogonomyrmex*) and Mormon metalmark butterfly (*Apodemia mormo*).

Amphibians are seasonally uncommon due to the lack of surface water over most of the area much of the year. On the site, a Pacific slender salamander and a western toad have been observed in the alluvial scrub. Reptiles observed during prior surveys include the San Diego horned lizard, western fence lizard (*Sceloporus occidentalis*), side-blotched lizard, coastal western whiptail, coachwhip (*Masticophis flagellum*), common kingsnake, gopher snake, and western rattlesnake. The striped racer (*Masticophis lateralis*) is expected to be common in this habitat.

Native bird species frequently nest in alluvial scrub or forage there. These species include the spotted towhee, California towhee, western scrub jay, Anna's hummingbird, western kingbird (*Tyrannus verticalis*), loggerhead shrike (*Lanius ludovicianus*), Bewick's wren, greater roadrunner (*Geococcyx californianus*), lesser nighthawk (*Chordeiles acutipennis*), California thrasher (*Toxostoma redivivum*), and California quail (*Callipepla californica*).

Some of the alluvial scrub present on the project site is similar in physical structure to the chamise chaparral plant community. In both of these communities, the red-tailed hawk (*Buteo jamaicensis*) raptor is most frequently observed. However, where the edges of the alluvial scrub community are integrated with riparian areas, and along the boundary of the northern bluffs, several species of raptors use portions of the alluvial scrub, especially where it is sparse (early phase/pioneer phase). Activities here include collecting nesting material, as well as hunting and defending territory. Raptors observed over the alluvial scrub during surveys between 1983 and 1998 include the red-tailed hawk, red-shouldered hawk (*Buteo lineatus*), Cooper's hawk, barn owl (*Tyto alba*), and turkey vulture. A great-horned owl has been observed perched on a shrub in the coastal sage scrub on the perimeter of the alluvial scrub.

Small mammals observed or expected in this habitat include the following: ornate shrew (*sorex ornatus*) deer mouse, cactus mouse (*Peromyscus eremicus*), agile kangaroo rat (*Dipodomys agilis*), California pocket mouse, dusky-footed woodrat, desert woodrat, house mouse (*Mus musculus*), and California vole (*Microtus californicus*). Medium-sized mammals include the California ground squirrel, long-tailed weasel (*Mustela frenata*), brush rabbit, and desert cottontail (*Sylvilagus audubonii*) and black-tailed jackrabbit. Larger mammals include the striped skunk, coyote, bobcat, and muledeer. In addition, the site may provide potentially suitable foraging habitat for bats.

Southern Sycamore - Alder Riparian Woodland

Riparian habitat typically supports a high diversity of animal life. The riparian habitat on the site does not, however, possess the vegetational diversity of many southern California's riparian woodlands. Two reasons for this phenomenon is that the riparian areas lack a significant tree canopy and a well-developed understory. Many species found in adjacent communities will, however, utilize this riparian habitat.

Observations of reptile species include the western fence lizard, southern alligator lizard, and western skink, common garter snake (*Thamnophis sirtalis*), western aquatic garter snake (*T. couchi*), common kingsnake, and western rattlesnake. The fine sandy alluvium that is present beneath mulefat (*Baccharis salicifolia*) in the western part of the northern riparian area provides potential habitat for the silvery legless lizard.

Hummingbirds, flycatchers, vireos, warblers, and finches forage and nest in the riparian vegetation. Many migrating birds use this habitat for cover and as a feeding area as they move through the region in the fall and spring. Hawks, falcons, kites, and doves specifically require the larger trees of the riparian habitat as perching and nesting sites, though few nests were present on the property during the 1988 through 1995 surveys. A few large Fremont cottonwoods, California sycamores, and oak trees scattered throughout the alluvial scrub on the site provide perching and nesting sites for raptors.

Ephemeral Aquatic Habitat

Small areas of aquatic habitat occur on the approved project site year-round. Insects common to aquatic areas are backswimmers (*Notonecta*), California dobsonfly (*Neohermes californicus*) and giant crane fly (*Holorusia hespera*).

Pacific treefrogs have been observed in the aquatic areas within the site. Suitable habitat for the Pacific treefrog (*Hyla regilla*) and Pacific slender salamander exists under leaf litter along stream banks adjacent to Haines Canyon. The California treefrog (*Hyla cadaverina*) and the California newt (*Taricha torosa*) are normally found in riparian woodlands with larger perennial pools of water, greater tree size, and more extensive habitat development than those occurring in the wash; however, the presence of suitable habitat upstream of the wash makes it possible for these species to occasionally occur on the site.

Small fishes such as the mosquito fish (*Gambusia affinis*) may be present. Seining would be required to classify aquatic wildlife. The Santa Ana sucker and arroyo chub have been reported from the Big Tujunga Wash south of the site near Hansen Dam. These three fish comprise the sensitive south coastal minnow/sucker stream community, which has been drastically reduced in the region. The Big Tujunga Canyon Wash has been identified as potentially supporting the last known occurrence of an intact example of this community (J. Ellison, CNDDB; C. Swift, LACM, 1988 personal communication). It has been listed by the CDFG (CNDDB 1989) as extremely rare, endangered, and unprotected (see Threatened or Endangered Wildlife Species below). Repeated surveys between 1988 and 1992 indicate that the Big Tujunga Wash, where it passes through the proposed project site, is an intermittent stream channel that can be completely dry during the summer. The study area does not have year-round suitable habitat to support a resident south coastal/minnow sucker stream community. Seasonal winter and spring stream flows, however, do allow movement and dispersal between known downstream populations and potential perennial water sources upstream.

A green heron (*Butoridas striaths*) has been observed near a standing pool of water; other observed species include belted kingfisher (*Ceryle alcyon*), mallard (*Anas platyrhynchos*), great blue heron (*Arden herodias*), and great egret (*Casmerodius albus*).

Non-Native Grassland

Non-native grasslands, where they occur, support many species of animals also found in adjacent communities. Insects that may be common in addition to those in the surrounding areas are California trapdoor spider (*Bothriocyrtum californicum*) and red-winged grass cicada (*Tibicinoides cupreosparsus*).

Amphibian fauna are expected to be similar to the adjacent coastal sage scrub, but with fewer species occurring here. The most common reptile found in the non-native grassland is the side-blotched lizard. Other species expected to be common include the coastal western whiptail, southern alligator lizard, common kingsnake, gopher snake, and western rattlesnake.

Bird species observed or expected in the non-native grassland include the lesser goldfinch, house finch (*Carpodacus mexicanus*), lark sparrow (*Chondestes grammacus*), California quail, and western kingbird. Raptors observed foraging above this community include the red-tailed hawk, American kestrel, and turkey vulture.

Because of the small quantity of grassland present and its proximity to the surrounding coastal sage scrub, the mammals occurring in the non-native grassland are similar to those found in the coastal sage scrub. Brush rabbits and San Diego black-tailed jackrabbits have been observed in this plant community. Diagnostic signs indicate the presence of coyote, Botta's pocket gopher, and California ground squirrel. Other species expected to occur here include several species of bats, deer mouse, California mouse, California pocket mouse, and western harvest mouse (*Reithrodontomys megalotis*). Larger species expected include the striped skunk, domestic cat, and bobcat.

Barren Wash

Barren wash consists of scour channel routinely affected by storm flows where there is an absence of vegetation. These areas have minimum habitat value due to the lack of vegetative or water resources.

3.6.3 Sensitive Habitats

Riversidian alluvial fan sage scrub is a state-designated sensitive habitat. The CNDDB has assigned Riversidian alluvial fan sage scrub a ranking of S1.1. The S1.1 ranking reflects the overall condition of an element throughout the State, in this case defined as less than six element occurrences and less than 2,000 acres, and considered to be "very threatened." The CNDDB ranking was assigned prior to identification of additional locations and acreage of alluvial scrub.

A regional survey of alluvial scrub habitat was completed in 1988 and serves as the basis for the following discussion. There are approximately 59,000 acres of alluvial scrub habitat known to remain in at least 11 locations in southern California (BioDiversity Associates, et al. 1993; Hanes, et al. 1989; Prigge, Chadwick and Conel 1993; City of Santa Clarita 1994; Safford and Quinn 1998). These locations are San Jacinto, Mentone, Cajon, Lytle Creek, San Sevaine, Mid-Etiwanda, Cucamonga, San Antonio, Big Tujunga, San Francisquito/Haskell Canyons, and the Upper Santa Clara River Drainage. Acreages for these areas are contained in Table 3-1, *Acreage of Alluvial Scrub Habitat at 11 Known Locations*. The entire Big Tujunga Wash, 1,587 acres of alluvial scrub habitat, constitutes 3 percent

of the total remaining area of this habitat type. The 267 acres of alluvial scrub habitat at the project site account for 0.5 percent of that remaining in southern California.

TABLE 3-1
ACREAGE OF ALLUVIAL SCRUB HABITAT AT 11 KNOWN LOCATIONS

LOCATION	NUMBER OF ACRES
San Jacinto	2,677
Mentone	11,400
Cajon	8,673
Lytle Creek	8,673
San Sevaine	8,354
Mid-Etiwanda	4,177
Cucamonga	3,091
San Antonio	2,318
Big Tujunga	1,587
San Francisquito/Haskell Canyon	425
Upper Santa Clara River Drainage	49
Source: Bio Diversity Associates, et al. 1993; Hanes, et al. 1989; Prigge, Chadwick, and Conel 1993; City of Santa Clarita 1994; Safford and Quinn 1998	

Southern sycamore-alder riparian woodland is a state-designated sensitive habitat. Riparian habitats are estimated to have been reduced by as much as 95 percent to 97 percent (Faber et al. 1989) in southern California. The remnant habitat that occurs on site, although somewhat degraded by human activity and urban runoff (particularly near the Haines Channel outlet) supports plant species that are characteristic of this habitat type.

The Big Tujunga Creek is a South Coastal Minnow/Sucker Stream as classified by Ellison (1984).The historical range of the South Coast Minnow/Sucker Stream (SCM/SS) includes the San Diego River drainage, the Los Angeles Basin (including the Los Angeles and Santa Ana Rivers), the Santa Maria/Santa Ynez River drainage, several small isolated coastal streams south of Monterey Bay, and the drainages of the Channel Islands. Streams within the more northern portion of this range may permit occasional use by steelhead trout (sea-run *Salmo gairdneri*) along with the resident minnows and suckers.

The SCM/SS community is considered a sensitive habitat within southern California by the California Department of Fish and Game. Within the agency's CNDDB, the SCM/SS aquatic community was previously listed as an A1.1 element, which is the highest priority rank for preservation. However, a change in the aquatic classification system has been made such that former occurrences were

removed for updating and have not yet been replaced. As such, the SCM/SS community (including its ranking) is not currently found in the CNDDB. The CNDDB status was assigned because of the scarcity of suitable aquatic habitat to support the sucker/dace/chub minnow community within its limited geographical range. Primary reasons for the current lack of SCM/SS habitat include (1) reductions in natural base stream flow due to flood control improvements within southern California (such as dams, channel alterations, and channel lining); (2) disturbances of historical water quantity and quality patterns due to rapid urban development; and (3) direct competition between this native fish community and introduced exotic warm-water fish and amphibian species for limited available habitat. Although this community is now rare in southern California, the precise status and current range for this fish community is still a largely unresolved issue.

3.6.4 Sensitive Species

This section describes the sensitive plant and animal species present or potentially occurring at the proposed project site that have been afforded special recognition by federal, state, and local resource conservation agencies due to declining or limited population sizes. The CNDDB was consulted for information related to locality, habitat, and status for sensitive species. It provides records of federally and state-listed plant and animal species in California from a variety of sources including herbaria, university staff, scientific publications, members of organizations such as the California Native Plant Society and the Audubon Society, agency biologists, and environmental consultants. Data were compiled for the topographic quadrangle in which the project site is located (Sunland quad) as well as the surrounding adjacent quads (Acton, Aqua Dulce, Burbank, Condor Peak, Mint Canyon, Pasadena, San Fernando, Van Nuys). The list of wildlife species that potentially occur in the project area generated by the CNDDB was then reviewed and screened for those species potentially associated with the geographic area and habitats likely to be present in the study area. A list of sensitive species potentially occurring in the study area was compiled in Table 3-2, *Sensitive Species Potentially Occurring in Red Tail Golf and Equestrian: Sunland-Tujunga Project Area.*

The U.S. Fish and Wildlife Service revised its system for classifying plant and wildlife species formerly designated as "candidates" for listing as threatened or endangered on February 28, 1996 [Federal Register 61(40): 7596-7613]. As a result, the designation "Category 2 candidates," i.e., species for which insufficient data exist to support their listing, has been discontinued. Category 1 candidates, species for which sufficient information does exist, are now referred to as "candidates."

TABLE 3-2
SENSITIVE SPECIES POTENTIALLY OCCURRING IN RED TAIL GOLF AND EQUESTRIAN: SUNLAND-TUJUNGA PROJECT AREA

Species/Status[1]	Habitat/Distribution	Existing Conditions
PLANTS		
Slender-horned spineflower (*Dodecahema leptoceras*)		
FE, SE	Primarily associated with the intermediate phase of Riversidian alluvial fan sage scrub. The known distribution of this plant is limited to nine southern California locations: Vail Lake (85 percent), Soledad Canyon (4 percent), Big Tujunga Wash (4 percent), Devore (4 percent), East Highlands (2 percent), East Church Street (1 percent), Temescal Canyon(<1 percent), San Jacinto River (<1 percent), Bautista Creek (<1 percent).	There are 125 acres of the intermediate phase of Riversidian alluvial fan sage scrub at the proposed project site (Big Tujunga Wash). Directed surveys for the slender-horned spineflower at Big Tujunga Wash have been recorded in 1948, 1949, 1979, 1988, 1989, 1990, 1992, 1994, 1995, 1996, 1997, and 1998. A total of 1.4 acres of occupied habitat for the slender-horned spineflower have been recorded as a result of directed surveys. Slender-horned spineflower has been recorded in four distinct locations at the Big Tujunga Wash. These sites are recorded as Location 1, Location 2, Location 3, and Location 4 (actually consists of three distinct clusters of plants). A total of 1,577 plants were counted in 1998 during directed surveys. This is the highest number of plants recorded for the 12 directed surveys (including 1998).
San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*)		
[C2*], CNPS 1A	Historically, this species was described as occurring in association with coastal sage scrub. There are two records for this species in the CNDDB: (1) Little Tujunga Canyon along Little Tujunga Road in 1920 and (2) Chatsworth Park in 1901.	There are 50 acres of coastal sage scrub on site that represent potentially suitable habitat for this species. This species was not observed on site as a result of multiple directed surveys undertaken between 1979 and 1996. This species is presumed extinct by the CNDDB.
Nevin's barberry (Berberis nevinii)		

Species/Status[1]	Habitat/Distribution	Existing Conditions
FPE, SE	This species occurs in association with chaparral and coastal sage scrub. The nearest known location for this species is a 1988 record (CDFG 1994) downstream of the project site.	There are 50 acres of coastal sage scrub on site that represent potentially suitable habitat for this species. There is no chaparral habitat on site. This species was not observed on site as a result of multiple directed surveys undertaken between 1979 and 1996. This species is not expected to occur on site.

Species/Status[1]	Habitat/Distribution	Existing Conditions
FISH		
Santa Ana sucker (*Catostomus santaanae*)		
[C2], CSC	This species occurs in association with small, shallow streams with swift to sluggish currents and with cool water (<22°C). This species was recorded approximately 1 mile upstream of the project site in Big Tujunga Creek, in 1992. The next closest recorded location for this species in on the Santa Clara River, approximately 11 miles northeast of the project area (1978).	Perennial streamflows are present on site during years with high levels of storm activity as occurred during the season of 1993-1994 and 1994-1995. When present, this ephemeral aquatic habitat accounts for as many as 38 acres. The low flow channel located along the northern portion of the property is intermittent in most years and is mapped as such on the USGS quadrangle. When present, the ephemeral aquatic habitat may serve as an important dispersal corridor for this species between perennial ponds located upstream of the project site (on Big Tujunga Creek) and downstream of the project site (at the Tujunga Ponds and at Hansen Dam flood control basin). The study area is not expected to provide suitable spawning habitat due to the lack of ponds between early April and early July.
Arroyo chub *(Gila orcutti)*		
CSC	This species is found in association with slow moving sections of freshwater streams with sandy or muddy bottoms. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	There is no suitable habitat in the low flow channel that crosses the northern portion of the site, which is characterized by a substrate consisting of gravel and larger materials. There is limited sandy- and muddy-bottom habitat located near the Haines Channel outlet. However, the Haines Channel outlet is maintained annually by the Los Angeles County Department of Public Works and is not expected to provide suitable habitat for this species.
AMPHIBIANS AND REPTILES		
California red-legged frog (*Rana aurora draytonii*)		
FT, CSC	This species is found near dense riparian shrubby vegetation with deep still or slow moving water (Jennings, Germano, and Morafka 1994)	Perrennial water is limited to a small pool of urban runoff located at the Haines Channel outlet. Although this site supports riparian vegetation, the perennial pool of water is usually shallow (less than 12 inches). Water form the Haines Channel outlet is not expected to provide suitable habitat for this species. Annual maintenance of the Haines Channel outlet removes all submergent vegetation that would be important for this species. This species was not observed as a result of directed surveys and is not expected to occur on site.

Species/Status[1]	Habitat/Distribution	Existing Conditions
Arroyo toad (*Bufo microscaphus californicus*)		
FE, CSC	The adult and juvenile phases of this species use sandy terraces found in association with stable shorelines and stream bars where an overstory including scattered shrubs or trees is present (Jennings, Germano, and Morafka 1994). Breeding pools must occur in close proximity to habitat used in other phases of the life cycle. Breeding occurs in overflow pools adjacent to the inflow channel of third or greater order streams (Jennings, Germano, and Morafka 1994).	The streamcourse located in the northern portion of the study area is characterized by coarse alluvium (gravel, cobbles, and boulders). There are no overflow channels found in association with the northern streamcourse. The Haines Channel outlet channel has a sandy substrate. There are no overflow channels found in association with the Haines Channel outlet. The terraces that are located on site consist of course alluvium and are not expected to provide suitable habitat for this species. No individuals, tadpoles, or eggs of this species were observed as a result of directed surveys conducted in May 1996. This species is not expected to occur on site.
Western spadefoot toad (*Scaphiopus hammondi*)		
CSC	This species spends most of its life cycle in terrestrial upland habitats. This species deposits eggs in seasonal pools (that can consist of temporary rain pools or several pools in ephemeral streams) during the breeding season. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	The pioneer and intermediate phases of Riversidian alluvial fan sage scrub where it occurs near ephemeral aquatic areas may provide potentially suitable habitat for the adult phases of this species. Ephemeral aquatic areas that occur along the northern and southern streamcourses on site may provide suitable breeding habitat. This species was not observed as a result of directed surveys.
Southwestern pond turtle (*Clemmys marmorata pallida*)		
[C2], CSC	This species is found in association with ponds, marshes, rivers, and streams with rocky or muddy bottoms. Forage on aquatic vegetation, fishes, and insects. The CNDDB (CDFG 1998) indicates that this species was observed in 1975 and 1987 within the Sunland 7.5-minute series quadrangle (exact location not specified). Other site records are provided including Aqua Dulce quadrangle (1990), Burbank and Van Nuys (year not specified) quadrangle, and Pasadena quadrangle (1987).	The 10 acres of riparian plant community and ephemeral aquatic areas that occur in conjunction with the northern and southern streamcourses provide potentially suitable habitat for this species. This species has not been observed as a result of directed surveys and is not expected to occur on site. A pre-construction survey will be performed for this species. Any individuals captured will be relocated to a protected area.

Species/Status[1]	Habitat/Distribution	Existing Conditions
San Diego horned lizard (*Phrynosoma coronatum blainvillei*)		
[C2], CSC	This species is normally found in association with coastal sage scrub and chaparral communities. It prefers friable, rocky, or sandy shallow soils and feeds primarily on harvester ants. There are numerous records for this species in the vicinity of the project site and the surrounding Verdugo Hills.	The intermediate and mature phases of Riversidian alluvial fan sage scrub provide 154 acres of potentially suitable habitat for this species. Directed surveys for this species were undertaken in 1988 and 1992. Three juveniles were observed in 1988. One adult and one juvenile were observed in 1992. Harvester ants, the preferred food source for this species, occur in abundance throughout the intermediate and mature phases of Riversidian alluvial fan sage scrub. A preconstruction survey will be preformed for this species. Any individuals found will be relocated to appropriate habitat in preserved areas.
Coastal whiptail (*Cnemidophorus tigris multiscutatus*)		
C2	This species normally occurs in association with terrestrial upland plant communities. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1994).	The coastal sage scrub, and pioneer and intermediate phases of Riversidian alluvial fan sage scrub provide 287 acres of potentially suitable habitat for this species. This species was observed in Riversidian alluvial fan sage scrub and along existing dirt roads during directed surveys of the project site undertaken in 1992.
Silvery legless lizard (*Anniella pulchra pulchra*)		
CSC	This species occurs in a variety of terrestrial upland and riparian plant communities. It is frequently found in association with sandy washes. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	The riparian plant community, coastal sage scrub, and pioneer and intermediate phases of Riversidian alluvial fan sage scrub provide 297 acres of potentially suitable habitat for this species. This species was not observed as a result of directed surveys undertaken in 1988 and 1992.
Coastal rosy boa (*Lichanura trivirgata rosafusca*)		
[C2]	This species normally occurs in association with rocky habitats; particularly in association with chaparral, coastal sage scrub, and Riversidian alluvial fan sage scrub plant communities. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	The coastal sage scrub, and pioneer and intermediate phases of Riversidian alluvial fan sage scrub provide 287 acres of potentially suitable habitat for this species. This species was not observed as a result of directed surveys undertaken in 1988 and 1992.

Species/Status[1]	Habitat/Distribution	Existing Conditions
San Bernardino ringneck snake (*Diadophis punctatus modestus*)		
[C2]	This species normally occurs in association with moist habitats. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	Moist soils found in association with the riparian and grassland plant communities provide 10 to 11 acres of potentially suitable habitat for this species. This species was not observed as a result of directed surveys undertaken in 1988 and 1992.
Coast patch-nosed snake (*Salvadora hexalepis virgultea*)		
[CSC, C2]	This species occurs in a variety of terrestrial upland habitats where washes, sandy flats, and rocky areas are present. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	The coastal sage scrub and Riversidian alluvial fan sage scrub habitats that are found within the study area represent 317 acres of potentially suitable habitat for this species. This species was not observed as a result of directed surveys undertaken in 1988 and 1992.
BIRDS		
White-tailed kite (*Elanus leucurus*)		
CFP	This species is resident of southern California. It forages over open grasslands; nests in deciduous trees adjacent to foraging areas. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	There is less than one acre of grassland on site that would not provide a sufficiently large area to support foraging activity. The Riversidian alluvial fan sage scrub may provide marginal foraging habitat for this species. This species has not been recorded on site as a result of directed surveys and is not expected to occur.
Sharp-shinned hawk (*Accipiter striatus*)		
CSC	This species normally utilizes open deciduous woodlands. Nesting in southern California is limited and normally occurs in dense woodland and in conifers near water. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	This species may occasionally forage in the study area during migration and during the winter months. This species has not been observed on site during directed surveys.

Species/Status[1]	Habitat/Distribution	Existing Conditions
Cooper's hawk (*Accipiter cooperii*)		
CSC	This species hunts in open woodlands, wood edges, or along habitat edges. This species breeds in dense stands of live oak, riparian woodlands, or other dense woodlands near water. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	This species was observed nesting in the wash southeast of the project site and foraging on site in 1998.
Prairie falcon (*Falco mexicanus*)		
CSC	This species uses dry grasslands and savannahs. It requires sheltered cliff ledges for cover. It builds its nest on cliff ledges. It is an uncommon resident in California and is not normally found near the coastline (Zeiner et al. 1990b). There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	This species could potentially forage in the grassland and Riversidian alluvial fan sage scrub plant communities during the winter. The project site is not located within the known summer breeding range for this species. Suitable nesting habitat does not occur on the project site. This species has not been observed on site as a result of directed surveys.
Northern harrier (*Circus cyaneus*)		
CSC	This species occurs in annual grasslands, meadows, and rangelands. This species normally nests on the ground near water, but may nest in grasslands or grain fields several miles from water.	The grassland, coastal sage scrub, pioneer intermediate phases of Riversidian alluvial fan sage scrub provide 283 acres of potentially suitable foraging habitat that may be used by this species during the winter and during migration. No suitable nesting habitat occurs on the project site. This species has not been observed on site as a result of repeated directed surveys.
Burrowing owl (*Athene cunicularia*)		
CSC	This species forages and nests in open, dry, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. This species is dependent for nesting on burrows created by burrowing mammals, most notably the California ground squirrel. There were no records for this species on the Sunland 7.5-minute series quadrangle or surrounding quadrangles (CDFG 1998).	Ground squirrel burrows in the pioneer and intermediate phases of Riversidian alluvial fan sage scrub on the project site may provide 239 acres of potentially suitable wintering habitat. This species has not been observed as a result of multiple directed surveys.

Species/Status[1]	Habitat/Distribution	Existing Conditions
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)		
SE	Forages and nests in tall riparian woodlands along broad, lower flood-bottoms of larger river systems with under-growth. This species typically nests in sites with at least some willow, dense low level understory foliage, high humidity, and wooded foraging spaces in excess of 300 feet in width and 25 acres in area (Zeiner et al. 1990). This species is an uncommon to rare summer resident in southern California riparian habitats. There are two CNDDB records for this species in adjacent quadrangles (CDFG 1998): San Fernando quadrangle (no location given) in 1893, and on the El Monte quadrangle on the San Gabriel River(1977).	The project site supports approximately 10 acres of riparian habitat, which is considerably less than the 25 acres typically required for breeding habitat for this species. This species may occasionally occur as a rare migrant during the spring or fall. This species has not been observed on site as a result of multiple directed surveys.
Southwestern willow flycatcher (*Empidonax traillii extimus*)		
FE, SE	This species is normally found in association with dense willow thickets, near meadows or backwaters. At higher elevations, it is normally found in association with broad open river valleys. This species is expected as a spring and fall migrant in riparian habitats. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	The potential occurrence of this species on the project site is limited to riparian thickets during spring and fall migration. There is no suitable breeding habitat for this species on the project site. This species has not been observed on site as a result of multiple directed surveys.
California horned lark (*Eremophila alpestris actia*)		
[C2], CSC	Nests and forages in grasslands and other open sparse habitats. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	Grasslands and the pioneer phase of Riversidian alluvial fan sage scrub provide approximately 115 acres of potentially suitable habitat for this species. This species has not been observed as a result of directed surveys.
Cactus wren (*Campylorhynchus brunneicapillus*)		

Species/Status[1]	Habitat/Distribution	Existing Conditions
[C3b], CSC	This resident species normally builds its nest in cholla or other large branching cactus, in yucca, or in stiff-twigged, thorny shrubs or small trees.	Directed surveys were undertaken for this species within the project area in 1993, 1995, 1996, 1997, and 1998. Several of the nesting locations mapped in 1993 were not relocated during 1995 and appeared to have been impacted as a result of off-road vehicle use. The 1995 survey resulted in the mapping of eight breeding territories all located in the intermediate phase of Riversidian alluvial fan sage scrub. The 1996 survey resulted in sightings of 17 individuals, including at least two pairs in nine locations. The 1997 surveys resulted in the observation of nine cactus wrens, eight active nests and two old nests. In 1998, a series of nine surveys resulted in the observation of nineteen cactus wrens (possibly multiple sightings of the same individuals on different dates), 21 active nests and 16 old nests. All nests have been located in the intermediate phases of alluvial fan sage scrub in either cholla, yucca, and prickly pear.
Coastal California gnatcatcher (*Polioptila californica californica*)		
FT, CSC	This species normally occurs in association with *Artemisia*-dominated coastal sage scrub. This species is recorded on the CNDDB (CDFG 1998) as observed downstream of the project site at Hansen Dam in 1991.	There are 44 acres of coastal sage scrub that may provide marginally suitable habitat for the coastal California gnatcatcher. Five directed surveys have been undertaken for this species in 1988, 1993, 1995, 1996, 1997, and 1998. This species has not been recorded on site as a result of multiple directed surveys.
Loggerhead shrike (*Lanius ludovicianus*)		
[C2], CSC	This resident species occurs in open habitats with shrubs, trees, posts, or fences for perching. It builds nests in densely foliaged shrubs or trees (Zeiner et al. 1990b). There are no CNDDB records for this species in the vicinity of the project area (CDFG 1994).	The grassland and pioneer and intermediate phases of Riversidian alluvial fan sage scrub provide 238 acres of potentially suitable habitat for this species pair was observed with recently fledged young in 1998 in the intermediate phase of Riv. Affs. In the project site. This species was observed foraging in the intermediate phase of Riversidian alluvial fan sage scrub in the eastern portion of the study area. No active nests have been observed as a result of directed surveys.

Species/Status[1]	Habitat/Distribution	Existing Conditions
Least Bell's vireo (Vireo bellii pusillus)		
FE, SE	This species is a summer resident in southern California. This species normally inhabits low dense riparian growth along water or along dry parts of intermittent streams, particularly in association with willow, cottonwood, baccharis, wild blackberry, or mesquite (Zeiner et al. 1990b). This species normally establishes breeding territories of 1 to 3 acres (Brown 1993).	The dispersed 10 acres of riparian habitat provide potentially suitable migratory stop-over habitat for this species. The lack of a well-developed understory is expected to act as a limiting factor in the suitability of this habitat to support breeding pairs of least Bell's vireo. This species has not been observed on site as a result of multiple directed surveys.
Yellow warbler (*Dendroica petechia brewsteri*)		
CSC	This neotropical migrant is normally found in association with cottonwoods, willows, alders, and other small trees and shrubs during the summer months. Breeding territories have been recorded at less than 1 acre (Zeiner et al. 1990b). There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	The dispersed 10 acres of riparian habitat provide potentially suitable habitat for this species. The lack of a well-developed understory is expected to act as a limiting factor in the suitability of this habitat to support breeding pairs of yellow warbler. This species has not been observed on site as a result of multiple directed surveys.
Yellow-breasted chat (*Icteria virens*)		
CSC	This neotropical migrant is an uncommon summer resident found in association dense brushy thickets near water with dense understory. This species establishes breeding territories of approximately 1.5 acres in size (Zeiner et al. 1990b). There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	The dispersed 10 acres of riparian habitat provide potentially suitable habitat for this species. The lack of a well-developed understory is expected to act as a limiting factor in the suitability of this habitat to support breeding pairs of yellow-breasted chat. This species would potentially be present as a migrant in spring and fall. This species has not been observed on site as a result of multiple directed surveys.

Species/Status[1]	Habitat/Distribution	Existing Conditions
Bell's sage sparrow (*Amphispiza belli belli*)		
[C2], CSC	This species winters and breeds in fairly dense chaparral with marked preference for chamise. It occurs in cactus patches and mixed brush in arid washes (Grinnell and Miller 1944). There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	The 125 acres of intermediate phase of Riversidian alluvial fan sage scrub may provide potentially suitable habitat for this species. This species has not been observed on site as a result of multiple directed surveys. The study area occurs outside the known breeding range as mapped by Zeiner et al. (1990).
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)		
[C2], CSC	This resident southern California species occurs in association with sparse mixed chaparral and on grassy hills or slopes (Grinell and Miller 1944). This species typically nests on the ground. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1994).	The 44 acres of coastal sage scrub on site provides suitable habitat for this species. This species has been observed on site along the northern slope during surveys in 1998.
MAMMALS		
Spotted bat (*Euderma maculatum*)		
[C2], CSC	This species normally occurs in foothills and mountains of desert regions; roosts in rock crevices, eaves, or buildings. This species forages over water and along washes (Zeiner 1990c). There are no CNDDB records for this species in the vicinity of the project area (CDFG 1994).	The 38 acres of ephemeral aquatic habitat (when present) provide potential foraging habitat for this species. There are no known roosting areas on site.
Townsend's big-eared bat (*Plecotus townsendii townsendii*)		
[C2], CSC	This species normally occurs in mesic areas and uses caves, tunnels, and buildings for roosts. Moths are its principal food; it will also glean foliage and soft-bodied insects (Zeiner et al. 1990c). There are no CNDDB records for this species in the vicinity of the project area (CDFG 1994).	Most of the site would provide potential foraging habitat for this species. There are no known roost sites for this species on site.
Pallid bat (*Antrozous pallidus*)		

Species/Status[1]	Habitat/Distribution	Existing Conditions
CSC	This species normally occurs in a wide variety of habitats including grasslands, shrublands, and woodlands. This species uses caves, tunnels, rock crevices, and hollow trees for roosts (Zeiner et al. 1990c). There are no CNDDB records for this species in the vicinity of the project area (CDFG 1994).	Most of the site would provide potential foraging habitat for this species. There are several large sycamore trees that may provide suitable roost habitat for this species. There are no known roost sites for this species on site.

Species/Status[1]	Habitat/Distribution	Existing Conditions
California mastiff bat (*Eumops perotis californicus*)		
[C2], CSC	This species is an uncommon resident in southern California that will utilize a variety of arid and semiarid habitats including coastal scrub and grasslands and urban areas. This species needs crevices, cliff faces, tall buildings, trees, or tunnels for roost sites. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1994).	The coastal sage scrub, Riversidian alluvial fan sage scrub, and grassland plant communities would provide 312 acres of potentially suitable foraging habitat for this species. Tall sycamore trees that occur on site provide potential roost sites for this species. There are no known roost sites for this species.
San Diego black-tailed jackrabbit (*Lepus californicus bennetti*)		
[C2], CSC	This species occurs in association with intermediate canopy stages of shrub habitats and open shrub/herbaceous habitats (Zeiner et al. 1990c).	The pioneer and intermediate phases of Riversidian alluvial fan sage scrub provide 239 acres of suitable habitat for this species. This species has been recorded on site in the intermediate phase of Riversidian alluvial fan sage scrub.
Los Angeles pocket mouse (*Perognathus longimembris brevinasus*)		
[C2], CSC	This subspecies is found in the Los Angeles Basin. Preferred habitats include desert riparian, desert scrub, desert washes, and sage brush. It is declining due to loss of suitable habitat (Zeiner et al. 1990c). It prefers sandy soil for burrowing. Also commonly found in association with gravelly washes and stony soils. There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	The pioneer and intermediate phases of Riversidian alluvial fan sage scrub, coastal sage scrub, and riparian plant communities provide 293 acres of potentially suitable habitat for this species. This species has not been recorded on site. A pre-construction trapping survey will be conducted for this species, and any individuals that are trapped will be relocated to preserved areas.
American badger (*Taxidea taxus*)		
*	This uncommon resident species occurs throughout most of the state. This species occurs in the open stages of most habitats where loose, friable soils are present (Zeiner et al. 1990c). There are no CNDDB records for this species in the vicinity of the project area (CDFG 1998).	The pioneer and intermediate phases of Riversidian alluvial fan sage scrub, coastal sage scrub, and grasslands provide 283 acres of potentially suitable habitat for this species. No sign or burrows for this species have been observed on the site.

[1] Status Codes:

FE Listed as Endangered under by the federal Endangered Species Act.
FT Listed as Threatened under the federal Endangered Species Act.

FPE Proposed for federal listing as endangered.
SE Listed as endangered by the State of California.
CFP California Fully Protected.
C1 Formerly a federal Category 1 candidate species, removed from the candidate list because of insufficient information on vulnerability and threat.
C2 Formerly a federal Category 2 candidate species. Organisms formerly classified as Category 2 were species for which information in the possession of the Service indicated that proposing to list them as endangered or threatened was possibly appropriate, but for which insufficient data on biological vulnerability were currently available.
C3b Formerly a federal Category 3b species. Organisms formerly classified as Category 3 were species that were once considered for listing but had been removed from consideration. Category 3b taxa were those that current taxonomic understanding indicated that those organisms did not represent distinct taxa meeting the Endangered Species Act's definition of species.
CSC Designated as a "Species of Special Concern" by CDFG.
* Considered by California Department of Fish and Game as one or more of the following: biologically rare restricted in distribution, declining throughout range, or closely associated with a habitat that is declining in California.
CNPS 1A Plant presumed extinct in California by the California Native Plant Society.

NOTE: On February 28, 1996 (Federal Register 61[40]:7596-7613) the U.S. Fish and Wildlife Service revised its system of classifying candidate species for listing under the federal Endangered Species Act. Species formerly considered as Category 1 species are now known simply as "Candidate" species. The Category 2 and Category 3 classifications were discontinued.

Sensitive Plants

The **slender-horned spineflower** (*Dodecahema leptoceras*), a small annual member of the buckwheat family (Polygonaceae), is a federally and state-listed endangered species and is found on the approved project site in four locations.

Slender-horned spineflower and alluvial scrub habitat have been the subject of a number of surveys and studies over the past decade. Much of that information exists only in the gray literature of reports prepared for particular projects. The following list identifies relevant reports that provide background information reviewed in the preparation of this section. Previous projects proposed for the site have also resulted in two Biological Opinions written by the U.S. Fish and Wildlife Service. Those opinions are also referenced below.

- Biological Opinion for Cosmo World Golf Club Project in Big Tujunga Wash, Los Angeles, Los Angeles County, California (1-6-89-F-39R2), U.S. Fish and Wildlife Service, March 15, 1994.

- Bee Canyon Slender-horned Spineflower Map. Fax Transmittal of Map and cover from James Henrickson, Ph.D. to Marie Campbell. September 8, 1993.

- Appendix D. Description of Slender-horned Spineflower Populations. In Draft Multispecies Conservation Plan for the Los Angeles International Golf Club, Big Tujunga Wash, Los Angeles County, California. Revised May 13, 1993.

- Letter to Mr. Wayne White and Ms. Edna Rey, U.S. Fish and Wildlife Service, from Dr. Richard Friesen, BioDiversity Associates, September 16, 1993, responding to questions raised by Ms. Rey in a meeting on September 14, 1996 and offering certain revisions to the February 1, 1993 letter.

- Letter to Mr. John Gill and Mr. Jeffrey Opdycke from Dr. Richard D. Friesen, BioDiversity Associates. February 1, 1993, outlining a chronology of technical reports and environmental compliance documents for the conservation of the slender-horned spineflower.

- Alluvial Scrub Vegetation in Coastal Southern California. Paper by Hanes, Friesen, and Keane. 1989. USDA Forest Service Gen. Tech. Rep. PSW-110. An Interagency Presentation on the Section 7 Consultation for the U.S. Army Corps of Engineers regulatory Permit Under Section 404 of the Clean Water Act. August 1992.

- Eastside Reservoir Project, Riverside County, California. Sensitive and Endangered Plant Studies Draft Report. Prepared for Metropolitan Water District of Southern California by ERCE. March 1991.

- Biological Survey Report, Soledad Canyon Road Over Bee Canyon Wash, by Karlin G. Marsh and Stephen J. Myers. Prepared for the Los Angeles County Department of Public Works, Alhambra, California. November 27, 1990, Revised February 1, 1991.

- Biological Opinion for (1-6-89-F-039) , U.S. Fish and Wildlife Service, June 19, 1990.

- Appendix F. Endangered Plants Survey. Timothy Krantz of Bio-Tech/Environmental Planning Consultants, Big Bear, California, May 1988. In Draft Environmental Impact Statement for U.S. Army Corps of Engineers Regulatory Permit Under Section 404 of Clean Water Act. February, 1990.

- Appendix B. A Survey for *Centrostegia leptoceras* on the Proposed Los Angeles International Golf Course Site. In Draft Environmental Impact Report, Technical Appendices. January 1989.

- Appendix A. Known Historical and Extant Populations of the Slender-Horned Spineflower, as Compiled Through an International Search of Herbaria by Dr. James L. Reveal. In Preliminary Draft Biological Assessment of Threatened and Endangered Species. Prepared for the U.S. Army Corps of Engineers. December 1988.

- Property Ownership for Spineflower and Alluvial Scrub Sites, San Jacinto River Site, Indian Wash Site, and Bautista Creek Site. In Consensus Planning Team Notebook. August 1988 and Fax Transmission (9/11/1988).

According to the Federal Register 1987, "Final Rule for Endangered Status for *Eriastrum densifolium* spp. *sanctorum* (Santa Ana River woolly-star) and *Centrostegia leptoceras* (slender-horned spineflower)," the slender-horned spineflower exists almost exclusively in small isolated areas without any recent disturbances. At the time of listing, the plant was believed to occur only in San Bernardino and Riverside Counties associated with alluvial scrub vegetation on flood terraces and fans that receive infrequent natural disturbances.

The spineflower was formerly more widespread, and occurred on old sandy benches or floodplain terraces containing alluvial scrub vegetation in Los Angeles, San Bernardino, and Riverside Counties. These benches are thought to receive sheet flow during flooding once every 100 to 200 years (USFWS 1986). The development of orchards and vineyards, expansion of cities and towns, subsequent flood-control work, and industrial development have all played a role in the reduction of slender-horned spineflower populations. The slender-horned spineflower continues to be threatened by proposed or ongoing activities, including sand and gravel operations, agricultural developments, trash dumping, flood control, off-road vehicle activity, urbanization, and indirectly by flood-control projects through relaxation of zoning restrictions that apply to floodplain management in San Bernardino County (USFWS 1987).

The slender-horned spineflower typically occurs in areas with very stable soil surfaces and very low primary productivity in association with a sparse cover of *Chorizanthe coriacea, Filago californica, Stylocline gnaphaloides, Crassula erecta,* and other dwarf annuals, as well as mosses, liverworts, and lichens. This spineflower does not appear to colonize barren sand, recently washed-over areas, or mechanically disturbed sites (Sanders 1987).

The slender-horned spineflower was once known from more than a dozen locations on outwash alluvial fans and terraces from the San Fernando Valley east along the San Gabriel Mountains frontage to the San Bernardino Valley and to Riverside County (Munz 1974). At the time of listing, the

spineflower was known from only five localities, totaling less than 4 hectares (10 acres) in extent, in San Bernardino and Riverside Counties (Krantz 1984). The two largest known populations of the slender-horned spineflower were discovered in 1990 and 1991, and are located at the extreme northern and southern reaches of the plant's range. A large population was discovered in Bee Canyon County. The Vail Lake population, consisting of an estimated 20,000 plants, is now the largest known population.

The following list summarizes the known records for the slender-horned spineflower within the study area and the results of recent surveys:

1948 First reported; Kamb collection

1949 Levine collection

1979 Not seen; Krantz survey

1988 Two clusters of plants recorded by Krantz
Location 1–May 3; northwest edge of the large, central terrace; two small openings between *Yucca whipplei* and *Eriogonum fasciculatum* shrubs, totaling less than 200 square feet.; approximately 125 to 150 plants; associated with California spineflower and spiny-herb
Location 2–May 9; ca. 350 feet north of the eastern terminus of the southern riparian stand; extended from edge of the older alluvial bench and descended down the embankment; area ca. 50 feet wide and 100 feet long (ca. 5,000 sq. ft.); densities as high as 15 plants per square foot, number of individuals estimated at between 500 and 1,000; California spineflower absent

1989 June 11 and July 2 directed surveys by J. Nishida and R. Allen. No slender-horned spineflower present

1990 A new location for the plant described by J. Nishida
Location 3–July 20. Described as new subpopulation in what would be Section 11 if mapped. 40 plants recorded.

1992 Directed surveys undertaken by Michael Brandman Associates
Location 1–276 plants recorded
Location 2–220 plants recorded
Location 32–30 plants recorded
Location 4–348 plants recorded

1994 Directed survey undertaken by Sapphos Environmental, Inc.
Location 1–No slender-horned spineflower observed
Location 2–Approximately 100 plants recorded
Location 3–No slender-horned spineflower observed
Location 4–Approximately 260 plants recorded

1995 Directed survey undertaken by Sapphos Environmental, Inc.
Location 1–Approximately 333 plants recorded
Location 2–Approximately 345 plants recorded
Location 3–Approximately 11 plants recorded
Location 4–Approximately 213 plants recorded

1996 Directed survey undertaken by Sapphos Environmental, Inc.
Location 1–Approximately 204 plants observed
Location 2–Approximately 92 plants observed
Location 3–1 plant observed

Location 4–Approximately 93 plants observed

1997 Directed survey undertaken by Sapphos Environmental, Inc.
Location 1–Approximately 48 plants observed
Location 2–Approximately 10 plants observed
Location 3–1 plant observed
Location 4–Approximately 12 plants observed

1998 Directed survey undertaken by Sapphos Environmental, Inc.
Location 1– Approximately 579 plants observed
Location 2– Approximately 122 plants observed
Location 3– Approximately 26 plants observed
Location 4– Approximately 850 plants observed

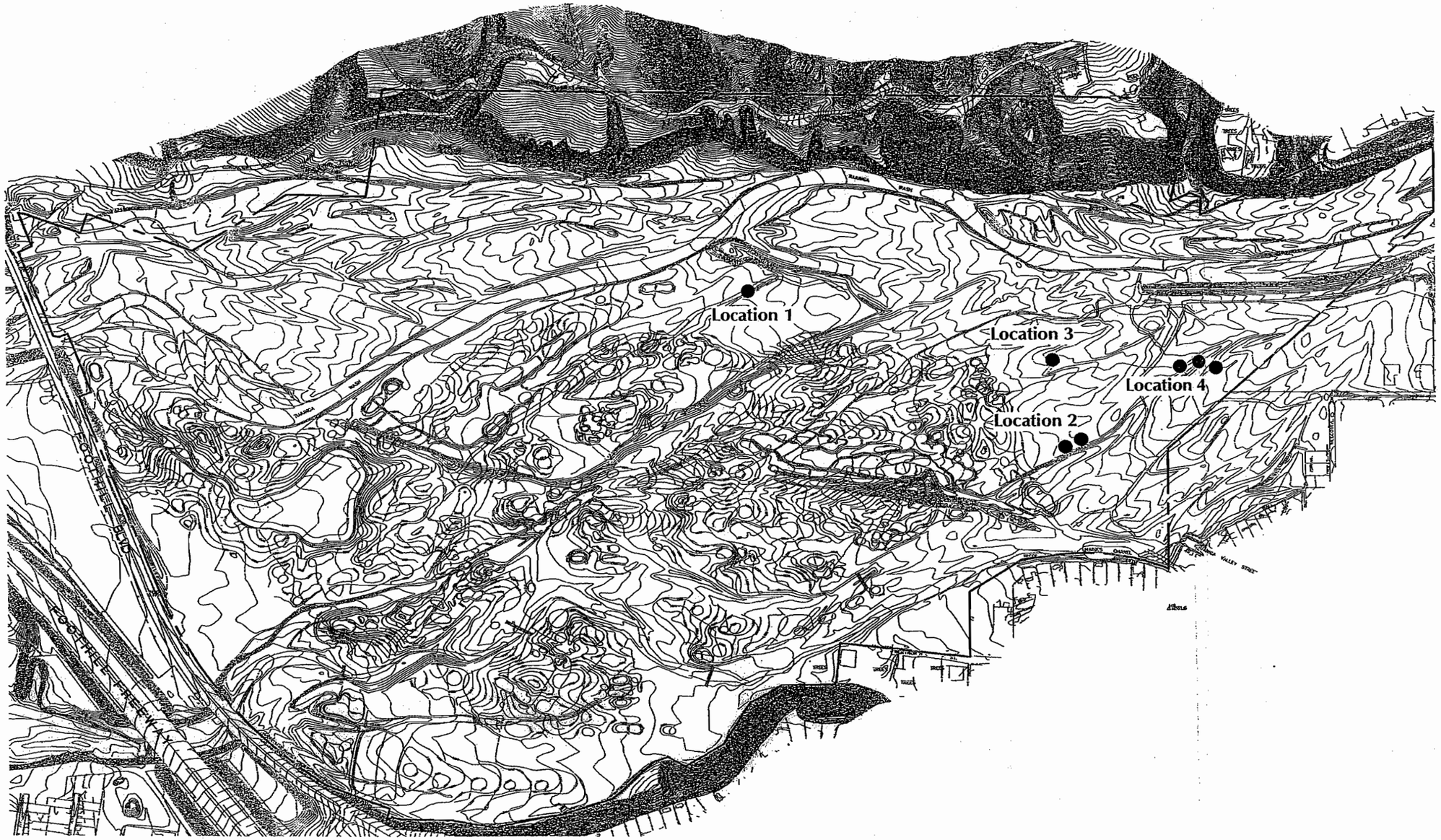
Slender-horned spineflower plants were observed in all previously known locations at the Big Tujunga site as a result of directed surveys conducted in spring of 1998. Spineflower locations are shown in Figure 3.6.4-1, *Slender-horned Spineflower*. Spineflower numbers were observed to be drastically higher in 1998 than in any of the past six years, most likely as a result of the amount of rain received during the 1997-1998 season. However, though the total number of spineflowers for all locations combined was drastically higher than any other year recorded, two of the four sites had a reduction in total number of individual plants. In 1995, 345 individual plants were observed at Location 2. Only 122 plants were observed here during the 1998 survey. In 1992, 30 individual plants were observed at Location 3, and only 26 individuals were observed in 1998. The numbers recorded in each location have increased drastically from the numbers observed during the 1997 survey.

The majority of individual plants were observed around the perimeter of bare areas, often within the dripline of surrounding shrubs. In smaller bare areas, the spineflowers were observed to encroach further into the bare patches. Many red harvester ants were observed within the vicinity of the spineflower locations, but were not observed to be affecting the plants in any way.

Ongoing problems with trespass, including off-road vehicles, dumping, and homeless encampments, as described in previous reports (Sapphos 1996, 1997), remain a threat to extant spineflower populations. At the time of the 1998 survey, homeless encampments were present within 125 feet to the south of Location 1 and within 50 feet to the north of Location 4.

The **San Fernando Valley spineflower** (*Chorizanthe parryi* var *fernandina*) is a small prostrate annual herb with basal leaves, awned bracts, and minute white flowers. It occurs in sandy places, generally in coastal or desert scrub at an altitude between 200 and 350 meters. It has not been recorded in the wild since 1940. It was a federal category C2* candidate species under the former federal category candidate classification system, a designation that was given when data were insufficient to support federal listing but the species was presumed to be extinct. This plant is also listed 1A (presumed extinct) by the California Native Plant Society.

Nevin's barberry (*Berberis nevinii*) is a blue-green evergreen shrub in the barberry family (Berberidiceae). Its compound leaves have leaflets with spiny margins. The flowers are yellow and subsequent berries are round and yellow-red. This species occurs in coastal sage scrub and chaparral



SOURCE: Base map prepared by PSOMAS.

FIGURE 3.6.4-1
2001 Slender-Horned Spineflower Locations

communities in the margins of dry washes in foothills of the Transverse and Peninsular ranges. The plants are found growing on either steep north-facing slopes or on low grade sandy washes.

This perennial shrub is state-listed as an endangered species and is a federal Proposed Endangered species for listing. The California Native Plant Society (Skinner and Pavlik 1994) places this species on List 1B with a Rarity-Endangerment-Distribution Code of 3-3-3, indicating that it is limited to a few highly restricted populations, endangered throughout its range, and endemic to California. Although once more widespread, the extant range of Nevin's barberry is thought to include about a half-dozen disjunct populations in portions of Los Angeles, Riverside, San Bernardino, and San Diego Counties, but many of these areas have become urbanized in recent years (Skinner and Pavlik 1994). Nevin's barberry has not been found on the site, but was found in Big Tujunga Wash west of the site between McBroom Street and Wentworth Street at the base of the cliff (A. Burlingame, 1988, personal communication in Bio Diversity Associates 1993). The proposed project would not adversely affect the species.

Sensitive Wildlife

Invertebrates

No sensitive invertebrate species are known to occur on the project site.

Fish

The status of Big Tujunga Wash as a South Coastal Minnow/Sucker Stream (SCM/SS) is related to the presence of three dominant fish species: the Santa Ana sucker (*Catostomus santaanae*), arroyo chub (*Gila orcutti*), and Santa Ana speckled dace (*Rhinichthys oscolus ssp.*). The last viable populations of the Santa Ana sucker and arroyo chub comprising this SCM/SS community may lie along the 12.1-mile segment of Big Tujunga Canyon Wash between Big Tujunga Dam and the Hansen Flood Control Basin (Ellison, personal communication 1988; Swift, personal communication 1988 in BioDiversity Associates 1993). Along this segment, stream-channel alteration has been minimal and, although natural streamflow patterns have been greatly altered since the completion of Big Tujunga Dam in 1931, regular reservoir releases have established an artificial flowing stream situation along portions of Big Tujunga Wash favorable to the SCM/SS community. Detailed studies to document actual presence and distribution along this canyon have not been done.

The proposed project site is located in the most downstream third of this stream segment, and the two flowing stream channels along the northern and southern edges of Big Tujunga Wash within the site may permit periodic use of this segment by the three dominant fish species comprising the SCM/SS community. Releases of impounded water from the Big Tujunga Dam, as part of its routine operations as a flood control reservoir, provide an intermittent flow through the northern channel of the wash. Water released through the dam is intended for groundwater spreading and recharge at Hansen Lake or beyond, so instream losses, not perennial flow, is the primary intention behind releases. Where Big Tujunga Wash flows through the site, a movement corridor may be provided to connecting populations of these fish south of the site to those north of the site when water flows are appropriate.

The Santa Ana sucker is a CDFG Species of Special Concern and was a federal Category 2 candidate species for listing as threatened or endangered under the former category candidate classification system. Santa Ana sucker prefer to inhabit small, shallow streams with swift to sluggish currents and is most abundant where waters are cool (less than 22 °C) and unpolluted. They are also associated with bottom materials of boulders, rubble, and sand with growths of filamentous algae. They feed on algae and detritus that they scrape from rock surfaces, and rarely take aquatic insect larvae. Spawning runs from early April to early July, peaking in late May and early June. It may disperse along the seasonal streams on site when flood flows are present, though no seining study was performed. Ponding does not occur along the north channels except intermittently. The Haines Channel transmits urban runoff and is likely too polluted to support this species.

The arroyo chub is a CDFG Species of Special Concern. It is native to the streams of the Los Angeles Plain and the upper Santa Clara River system. Its decline is attributable to disturbance by humans and predation by introduced fishes such as the green sunfish (*Lepomis cyanellus*) and largemouth bass (*Micropterus salmoides*). The arroyo chub may disperse along the seasonal streams on site when flood flows are present. The Haines Channel transmits urban runoff and likely is too polluted to permanently support this species.

The Santa Ana sucker is an element of the south coastal minnow/sucker stream aquatic community and is generally found in association with the arroyo chub and speckled dace.

Reptiles and Amphibians

The California red-legged frog (*Rana aurora draytonii*) is a federally listed threatened species and a CDFG Species of Special Concern. It has become extremely rare in southern California, with only a few extant populations in the region. Habitat for this species is characterized by streams, rivers, ponds, and lakes where clean water forms deep pools (at least 2 feet deep) with willows and other riparian vegetation hanging low over the water. The principal causes for the decline of the red-legged frog appear to be: (1) the introduction of exotic predatory crayfishes, fishes, and amphibians to the region and (2) extensive reduction and pollution of habitat. This species is not expected to occur on the project site due to the lack of suitable habitat.

The arroyo toad (*Bufo microscaphus californicus*), a subspecies of the southwestern toad, is a federally listed endangered subspecies and a CDFG Species of Special Concern. The arroyo toad occurs sporadically in the region inhabiting gently sloping washes, streams, and arroyos, especially those with sandy banks supporting willows, cottonwoods, or sycamores (Stebbins 1985). The adult and juvenile phases of this species use sandy terraces found in association with stable shorelines and stream bars where an overstory including scattered shrubs or trees is present (Jennings, Germano and Morafka 1994). Breeding pools must occur in close proximity to habitat used in other phases of the life cycle. Breeding occurs in overflow pools adjacent to the inflow channel of third and greater order streams (Jennings, Germano, and Morafka 1994). Habitat loss has probably been the greatest factor contributing to the extensive reduction of arroyo toad populations in the region. Other factors may include water pollution and the introduction of the bullfrog (*Rana catesbeiana*) and non-native game fishes (Jennings 1983). Marginal habitat for this species occurs on the project site along Haines Channel; however, no arroyo toads have been observed.

Directed surveys for the arroyo toad were conducted by Sapphos Environmental, Inc. (Mr. Peter Bloom) on May 25, 26, and 27, 1996, from 1900 hours to 2400 hours. Surveys were conducted according to the standard U.S. Fish and Wildlife Protocol for the arroyo toad. All streams and tributaries (both wet and dry) were surveyed. No arroyo toads, or arroyo toad tadpoles or eggs were observed during surveys. Based on observations of the arroyo toad in Orange and San Diego Counties by Sapphos Environmental, Inc. biologist Mr. Peter Bloom, it is believed that the habitat located within the Big Tujunga Wash may not be suitable for the arroyo toad based on the lack of large trees, the presence of rocks that are larger than locations where the species has been observed elsewhere, and a stream flow that may be too rapid.

The large concrete channel located on the south side of the property (Haines Channel) appeared to be the least likely to support the arroyo toad based on the thick vegetation, dense growth of algae, the silty (rather than sandy) bottom, and the poor quality of the water due to garbage and apparent non-point source run-off into the channel.

The western spadefoot toad (*Scaphiopus hammondi*), a CDFG Species of Special Concern, historically bred in vernal pools throughout lowland southern California. Currently, in southern California more than 80 percent of habitat once known to be occupied by this species has been developed or converted to agricultural, residential, or commercial developments (CDFG 1994; and based on records review at the LACM, 1990). A few populations are known to persist in isolated, widely scattered areas of southern California. Other populations of this species occur in the relatively undeveloped northern half of California. Potentially suitable breeding habitat for this species may be present in areas where water ponds for a minimum of 40 days or where pioneer and intermediate phases of Riversidian alluvial fan sage scrub occur in close proximity to ephemeral aquatic habitat. Suitable potential habitat may occur along the northern boundary of the project site and throughout the central areas of the site where sandbars and higher ground permit burrowing by small mammals and the formation of seasonal ponds.

The southwestern pond turtle (*Clemmys marmorata pallida*) is a CDFG Species of Special Concern and was a federal Category2 Candidate under the former category candidate classification system. This aquatic turtle occurs in streams, ponds, freshwater marshes, and lakes. Its range in southern California is generally west of the crests of the Sierra, Transverse, and Peninsular Ranges, though it occasionally occurs in the Mojave River (Stebbins 1985). This species has declined in southern California as a result of loss of regional aquatic and riparian habitat from urban and agricultural development; degradation of habitat, reduction of surface water levels, and stream channel alterations for agriculture and flood control. Southwestern pond turtles were not observed on the project site during prior surveys (Bio Diversity Associates et al. 1993). However, this species has been observed historically in the Tujunga Wash (CDFG 1998). The riparian and aquatic habitats in the Big Tujunga Wash on the site have the potential to support a small number of southwestern pond turtles; however, the historic population at Big Tujunga Wash is now considered extinct (CDFG 1998) .

The San Diego horned lizard (*Phrynosoma coronatum blainvillei*) occurs on the site. This subspecies is a CDFG Species of Special Concern and was a federal Category 2 candidate under the former category candidate classification system. Its range is southern California west of the deserts, from the general vicinity of the proposed project site, south to central Baja California. This subspecies has been declining steadily in the Los Angeles area and throughout its range since the early part of this century primarily due to losses of habitat to urban and agricultural developments and to

overcollecting by collectors. It is now considered to be rare in the northern part of its range (Los Angeles County) by many herpetologists (McGurty 1980). The Big Tujunga Canyon Wash supports prime habitat for this species.

Directed surveys for the San Diego horned lizard were conducted in September 1988. Three juvenile horned lizards were found in the mature Riversidian alluvial fan sage scrub in the southwestern portion of the project site. During the 1992 surveys, three adult San Diego horned lizards were found in the intermediate Riversidian alluvial fan sage scrub in the southeastern portion of the project site. Horned lizard scat was found sporadically throughout the site in alluvial scrub and in the sparsely vegetated, braided washes. The preferred food source of the horned lizard is harvester ants (*Pogonomyrmex* spp.). Harvester ants are widespread and abundant on the site. The intermediate and mature phases of Riversidian alluvial fan sage scrub provide 154 acres of potentially suitable habitat for this species. It is expected that the site supports a moderate population of the San Diego horned lizard.

The coastal western whiptail (*Cnemidophorus tigris multiscutatus*) was a federal Category 2 candidate species for listing as threatened or endangered under the former category candidate classification system. This species currently holds no state or federal status. This lizard inhabits a variety of habitats. The coastal sage scrub, and pioneer and intermediate phases of Riversidian alluvial fan sage scrub provide 283 acres of potentially suitable habitat for this species. Many coastal whiptails were found throughout the project site during the surveys. These sightings and the high quality of existing habitat indicate that the project site is likely to support a large population of the coastal western whiptail. Project implementation would result in the loss of a moderately dense population of coastal western whiptails.

The silvery legless lizard (*Anniella pulchra pulchra*) is a CDFG Species of Special Concern. It is a small, secretive, snake-like lizard that lives and forages in leaf litter, under debris, or within sandy soil (Stebbins 1985). It occurs in a variety of habitats, including sandy washes, coastal scrub habitats, and woodlands. The riparian plant community, coastal sage scrub, and pioneer and intermediate phases of Riversidian alluvial fan sage scrub provide 293 acres of potentially suitable habitat for this species. The silvery legless lizard preys on insect larvae, small adult insects, and spiders (CWHRS 1988). This species was not observed as a result of directed surveys undertaken in 1988 and 1992. There are no records for this species occurring on the Sunland 7.5-minute series topographic quadrangle on surrounding quadrangles on the CNDDB (CDFG 1998).

The coastal rosy boa (*Lichanura trivirgata roseofusca*) is a subspecies of the coastal rosy boa that was designated a Category 2 federal candidate subspecies for listing as threatened or endangered under the former category candidate classification system. This subspecies currently holds no state or federal status. This medium-sized, secretive snake prefers rocky habitats. It has been found in coastal sage scrub and chaparral but is rarely active during the day. The rosy boa ranges from Los Angeles County south into Northern Baja (Stebbins 1985) from sea level to around 4,500 feet in elevation. The coastal sage scrub, and pioneer and intermediate phases of Riversidian alluvial fan sage scrub provide 287 acres of potentially suitable habitat for this species. This species was not observed as a result of directed surveys undertaken in 1988 and 1992. There are no records for this species occurring on the Sunland 7.5-minute series topographic quadrangle or surrounding quadrangles on the CNDDB (CDFG 1998).

The San Bernardino ringneck snake (*Diadophis punctatus modestus*) was a federal Category 2 candidate species for listing as threatened or endangered under the former category candidate classification system. This subspecies currently holds no state or federal status. It is found in open, relatively rocky areas, mixed chaparral, and non-native grassland habitats. This secretive snake is often found under cover of boards, flat rocks, or rotting logs. It feeds on slender salamanders (*Batrachoceps* spp.), treefrogs, and small lizards (Zeiner et al. 1988). Moist soils found in association with the riparian and grassland plant communities provide 10 to 11 acres of potentially suitable habitat for this species. There are no records for this species occurring on the Sunland 7.5-minute series topographic quadrangle or surrounding quadrangles on the CNDDB (CDFG 1998).

The coast patch-nosed snake (*Salvadora hexalepis virgultea*) was a federal Category 2 candidate species for listing as threatened or endangered under the former category candidate classification system. This subspecies currently holds no state or federal status. This snake utilizes a variety of upland habitats where washes, sandy flats, and rocky areas are present. It is an opportunistic feeder, preferring lizards and small mammals. The coastal sage scrub and Riversidian alluvial fan sage scrub habitats that are found within the study area represent 312 acres of potentially suitable habitat for this species. This species was not observed as a result of directed surveys undertaken in 1988 and 1992. There are no records for this species occurring on the Sunland 7.5-minute series topographic quadrangle or surrounding quadrangles on the CNDDB (CDFG 1998).

Birds

There are four sensitive raptor species that may utilize the study area for foraging activities: white-tailed kite (*Elanus leucurus*) a California Fully Protected Bird Species; sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*A. cooperii*). and the prairie falcon (*Falco mexicanus*), CDFG Species of Special Concern. Only the Cooper's hawk has been observed on site, nesting in eucalyptus trees near the south eastern property boundary in 1998. It has not been determined with certainty that the trees are within the property boundary. It is believed that sufficient suitable nesting habitat for the other three hawk species does not exist within the site boundaries, although they may forage in the Riversidian alluvial fan sage scrub plant community.

The northern harrier (*Circus cyaneus*) is a CDFG Species of Special Concern. This bird formerly nested throughout the state in marsh and grassland habitats. Grazing of grasslands, drainage of marshes, and subsequent conversion of nesting habitats to urbanization and agriculture has caused a steep decline of this species as a breeding bird in southern California. The grassland, coastal sage scrub, and pioneer and intermediate phases of Riversidian alluvial fan sage scrub provide 283 acres of potentially suitable foraging habitat that may be used by this species during the winter and during migration. No suitable nesting habitat occurs on the project site. This species has not been observed on site as a result of repeated directed surveys. The project site is located outside the known summer breeding range for this species.

The burrowing owl (*Athene cunicularia*) is a CDFG Species of Special Concern. Populations of burrowing owls throughout the United States, particularly in California, have been in serious decline for the past several decades (California Burrowing Owl Consortium 1983), CDFG, 1995; Collins and Landry, 1977. The decline has been especially precipitous during the past 5 to 10 years in California due to habitat loss caused by urban expansion and development in outlying areas. Additionally, rodent control through poisoning has eliminated large numbers of ground squirrels, and with them

the primary source of suitable burrows that burrowing owls rely on (Institute for Bird Population, 1982). Once common in Los Angeles County and along the coast, burrowing owls are only numerous in the Imperial Valley of southeastern California (Garrett 1981). The burrowing owl is unique because it nests in the abandoned burrows of ground squirrels. It is one of the few diurnal owls, often visible in the daylight perched on fenceposts or at the entrance to burrows. Burrowing owls from more northern areas occasionally migrate into southern and coastal regions of southern California during the winter (Garrett, 1981). No burrowing owls have been observed on the project site; however, ground squirrel burrows in Riversidian alluvial fan sage scrub may provide suitable nesting habitat for wintering burrowing owls. Nesting may be limited on the project site by the lack of suitable dirt embankments with appropriate ground squirrel activity. This species was not observed as a result of directed surveys undertaken in 1988, 1992, 1994, or 1995. There are no records for this species occurring on the Sunland 7.5-minute series topographic quadrangle or surrounding quadrangles on the CNDDB (CDFG 1998).

The western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is a state-listed endangered species. The cuckoo was formerly widespread, and locally common in broad riparian areas of southern California from the coast to the drainages of the San Gabriel Mountains, the desert oases, and the Colorado River. It is now restricted to a few isolated riparian areas in the Central Valley, the Colorado River, and scattered locations elsewhere. Its decline is due to loss of suitable habitat. The cuckoo is found in dense riparian woodlands with an understory of willows or mesquite, and some cottonwoods and sycamores as canopy species. It feeds almost exclusively on caterpillars, particularly the tent caterpillar. This bird is shy and difficult to detect but is usually first observed by its loud, distinctive call. The western yellow-billed cuckoo is not expected to nest on the project site due to the limited extent of the riparian woodlands there. None found on the site during directed surveys.

The willow flycatcher (*Empidonax traillii*) is a state-listed endangered species. The southwestern willow flycatcher subspecies (*Empidonax traillii extimus*) is federally listed as endangered. The southernwestern flycatcher was once common throughout California, but has undergone a sharp decline in population in recent years due in large part to the loss of riparian habitat. There is also evidence that nest parasitism by brown-headed cowbirds is also a major factor in its decline. The southwestern willow flycatcher requires dense riparian vegetation near surface water or saturated soil for nesting (Sogge et al. 1997). The breeding range of the southwestern willow flycatcher includes southern California (from the Santa Ynez River south), Arizona, New Mexico, southwestern Colorado, extreme southern portions of Nevada and Utah, and western Texas (Sogge et al. 1997). The potential occurrence of this species on the project site is limited to riparian thickets during spring and fall migration. This species has not been observed on site as a result of multiple directed surveys.

The California horned lark (*Eremophila alpestris actia*) is a CDFG Species of Special Concern and was a federal Category 2 candidate species for listing as threatened or endangered under the former category candidate classification system. This is the resident subspecies of the wide-ranging horned lark. California horned larks are found in sparse grasslands, some agricultural areas, and open brush with extensive bare ground. This species may occasionally use grassland and the pioneer phase of Riversidian alluvial fan sage scrub on the project site. This species has not been observed on site as a result of multiple directed surveys.

The cactus wren (*Campylorhynchus brunneicapillus*) is a CDFG Species of Special Concern. Several cactus wrens and cactus wren nests have been observed in the intermediate phase of Riversidian alluvial fan sage scrub onsite directed surveys conducted in 1995, 1996, 1997, and 1998. Directed surveys for this species conducted by Sapphos Environmental, Inc. in May 1995 resulted in identification of nine areas that contained nests that had been recently active. Surveys conducted on June 1, 1996, resulted in sightings of 17 cactus wrens, including at least two pairs, made in nine different locations in the intermediate phase of alluvial fan sage scrub. Three nests that were currently active, or had been active earlier in the 1996 breeding season, were observed. Surveys conducted by Sapphos Environmental, Inc. in 1997 resulted in the observation of nine cactus wrens, eight active nests and two old nests.

In 1998, a series of nine directed surveys for coastal California gnatcatcher and cactus wren were conducted by Sapphos Environmental, Inc. Nineteen cactus wrens were observed during the nine surveys. Some sightings may represent multiple sightings of the same individual on different dates. Also observed, flagged, and mapped were 21 active nests from the 1998 breeding season and 16 old nests that were active prior to the 1998 breeding season. Locations of cactus wren sightings on the property are shown in Figure 3.6.4-2, *Cactus Wren*. All observations were made in the intermediate phase of alluvial fan sage scrub. Eighteen (85.7 percent) of the new nests were located in cholla *(Opuntia parryi)*, two (9.5 percent) were located in yuccas *(Yucca whipplei)* and one (4.8 percent) was located in a coastal prickly pear *(Opuntia littoralis)*. All nests were situated in the cactus or yuccas at least 3 feet above the ground. The nest distribution of the species limited to areas that include most of the yuccas and cholla cactus on site.

No cactus wren nests were observed in coastal sage scrub, or the pioneer or mature phases of the Riversidian alluvial sage scrub. Cactus wrens use the site year-round and can be expected in low numbers throughout the intermediate phase of Riversidian alluvial fan sage scrub vegetation on the project site.

The coastal California gnatcatcher (*Polioptila californica californica*) is a federally listed threatened species and a CDFG Species of Special Concern. It is declining throughout its range north of Mexico (Atwood 1980). It is a resident of arid coastal scrublands and is thought to be declining as a result of loss of habitat and cowbird parasitism. The range of this species extends well into Baja California, Mexico, but the Alta California populations are in jeopardy as a result of loss of habitat due to rapid urban expansion along the coastal plain. The project site contains 44 acres of suitable habitat for this species in the coastal sage scrub on the bluffs above the wash on the northern portion of the site and an additional 268 acres of marginally suitable habitat in the Riversidian alluvial fan sage scrub. An estimated 5 to 10 pairs of California gnatcatchers were recorded in the vicinity of the site in habitat dominated by sage scrub some time between 1960 and 1980 (Atwood 1980). No sightings of coastal California gnatcatchers for the site have been documented; however, Jon Atwood stated (Pettis et al. 1993) "very small numbers may persist, undetected near Azusa, Tujunga, or Claremont, "because recent (1960-1984) observations were obtained at all these historic sites." John Pepin and Mickey Long observed two female-plumaged individuals in 1991 just west of the mitigation site for this project, and Dustin Alcala observed a gnatcatcher in the area of Hansen Dam in March 1992. Directed surveys for coastal California gnatcatcher undertaken at the project site in late spring of 1988 resulted in no sightings, nor did a survey completed by P&D Technologies in 1993. Directed surveys were undertaken by Sapphos Environmental, Inc. (May 15, 22, 29, and June 6, 1995; June 1, 8, 15, 1996) in support of preparation of the environmental impact report. Additional directed surveys for

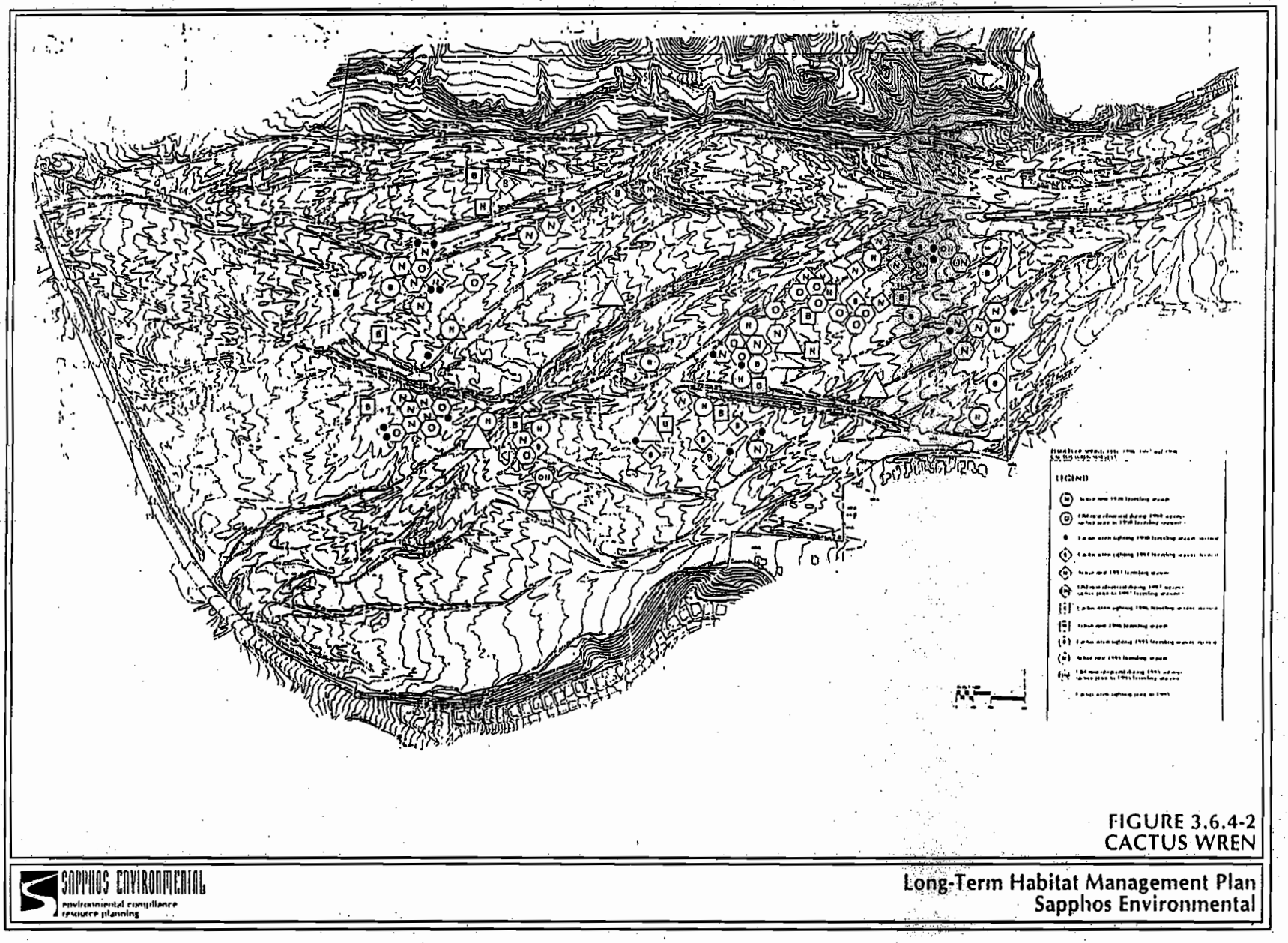


FIGURE 3.6.4-2
CACTUS WREN

SAPPHOS ENVIRONMENTAL
environmental compliance
resource planning

Long-Term Habitat Management Plan
Sapphos Environmental

coastal California gnatcatcher were conducted by Sapphos Environmental, Inc. in 1997 (Sapphos 1997) and 1998 (Sapphos 1998). No coastal California gnatcatchers were observed on the property as a result of directed surveys.

The loggerhead shrike (*Lanius ludovicianus*) is a CDFG Species of Special Concern and was a federal Category 2 candidate species for listing as threatened or endangered under the former category candidate classification system. This bird prefers open habitats with scattered shrubs, trees, posts, fences, or other perches. It nests in densely foliaged trees or shrubs adjacent to open areas and preys on large insects such as grasshoppers, and will also prey on small mammals, birds, and reptiles. The grassland and pioneer and intermediate phases of Riversidian alluvial fan sage scrub provide 240 acres of potentially suitable habitat for this species. This species has been observed repeatedly foraging in the intermediate phase of Riversidian alluvial fan sage scrub in the eastern portion of the study area. This species was observed to be breeding in the intermediate phase of Riversidian alluvial fan sage scrub on the property during 1998 surveys.

The state- and federally listed endangered least Bell's vireo (*Vireo bellii pusillus*) is a summer resident songbird that breeds in riparian woodlands of southern California and northern Baja California (USFWS 1986). Its populations are considered endangered due to habitat loss and degradation, and to brood parasitism by the brown-headed cowbird (*Molothrus ater*). Least Bell's vireo nest in dense riparian woodland with a dense understory component (Franzreb 1989). Breeding territories range in size from 1 to 3 acres. Three singing males of the least Bell's vireo were observed near Hansen Dam in 1986, and nesting is presumed to have occurred (P. Fromer, pers. comm. 1988 in Bio Diversity Associates 1993). In the same vicinity, a migrant least Bell's vireo was observed in 1987 and in 1988 two males were observed but nesting behavior was not documented (J. Hanlon, personal communication, 1988 in Bio Diversity Associates 1993). The least Bell's vireo was not observed within the study area during directed surveys conducted by Sapphos Environmental, Inc. in 1997. Riparian habitat on the proposed project site is considered unsuitable breeding for the least Bell's vireo due to the lack of a well-developed understory. On the southern portion of the site, west of Tujunga Valley Street, there are a few small willow thickets that provide potentially suitable habitat for migratory least Bell's vireos. The proposed project would result in the loss of 1 acre of riparian woodland area.

The yellow warbler (*Dendroica brewster*) is a CDFG Species of Special Concern. It was once a common to locally abundant summer resident throughout much of California. Current populations are reduced due to habitat destruction and cowbird nest parasitism. It still nests in the foothills of the Transverse Ranges, but most birds are spring transients. The yellow warbler nests in willow, cottonwood and alder riparian areas, and gleans insects from the foliage. Breeding territories have been recorded as small as less than 1 acre (Zeiner et al. 1990). This species has the potential to occur as a migrant in riparian habitat on the project site. The lack of a well-developed understory is expected to act as a limiting factor in the suitability of this habitat to support breeding pairs of yellow warblers. This species has not been observed on site as a result of multiple directed surveys.

The yellow-breasted chat (*Icteria virens*) is a CDFG Species of Special Concern. It was formerly a common nester in much of the riparian habitat throughout California, but its numbers have declined as a result of habitat destruction and cowbird nest parasitism, especially in southern California. It is now a rare and local breeder, absent from much of its former range. It nests in dense riparian thickets and brushy areas in the vicinity of lowland watercourses where it feeds on insects. This species is

rather inconspicuous except when it is vocalizing. Marginal riparian habitat occurs on the project site. Previous surveys have resulted in no sightings of this species.

The Bell's sage sparrow (*Amphispiza belli belli*) is a CDFG Species of Special Concern and was a federal Category 2 candidate species under the former category candidate classification system. The Bell's sage sparrow is the resident subspecies of the widespread sage sparrow in the coast ranges west of the Sierra Nevada. The 125 acres of intermediate phase of Riversidian alluvial fan sage scrub may provide potentially suitable habitat for this species. This species has not been observed in multiple directed surveys. The study area occurs outside the known breeding range as mapped by Zeiner et al. (1990).

The Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) is a CDFG Species of Special Concern and was a federal Category 2 candidate species for listing as either threatened or endangered under the former category candidate classification system. This sparrow is the subspecies of a wider ranging species. This species has been observed on site in coastal sage scrub on the north side of the project area in 1998. The 44 acres of coastal sage scrub on site provides suitable habitat for this species.

Mammals

A number of bat species that are CDFG Species of Special Concern potentially occur within the project site based on their known distribution in the State. They are the spotted bat (*Euderma maculatum*), Townsend's big-eared bat (*Plecotus townsendii townsendii*), pallid bat (*Antrozous pallidus*), and California mastiff bat (*Eumops perotis californicus*). Three of these species, the spotted bat, Townsend's big-eared bat, and California mastiff bat were Category 2 federal candidates species for listing as threatened or endangered under the former category candidate classification system. Very little is known about these bat species, and it has not been determined if they occur on the site. Bats, in general, have been extirpated or reduced in numbers throughout the urbanized area of the Los Angeles Basin. However, the relatively undisturbed nature of the Riversidian alluvial fan sage scrub habitat on the site, the availability of flying insects (associated with riparian habitat and seasonal aquatic habitat), and the site's close proximity to the extensive natural open space of the San Gabriel Mountains does make the site potentially valuable for these bats. No occupied roosting site preferred by these bats was located on the site, although the species may occasionally use large trees on the site.

The San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) is a California Species of Special Concern and formerly a federal Category 2 candidate subspecies for listing as threatened or endangered under the former category candidate classification system. Its range includes arid coastal regions of California from Ventura County to northern Baja California. This species occurs in association with intermediate canopy stages of shrub habitats and open shrub/herbaceous habitats (Zeiner et al. 1990b). The black-tailed jackrabbit is most active at dawn and dusk and feeds on green vegetation. This species was observed on the project site in the intermediate phases of Riversidian alluvial fan sage scrub.

The Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) is a CDFG Species of Special Concern and a former federal Category 2 candidate species for listing as threatened or endangered under the former category candidate classification system. The Los Angeles pocket mouse occurs

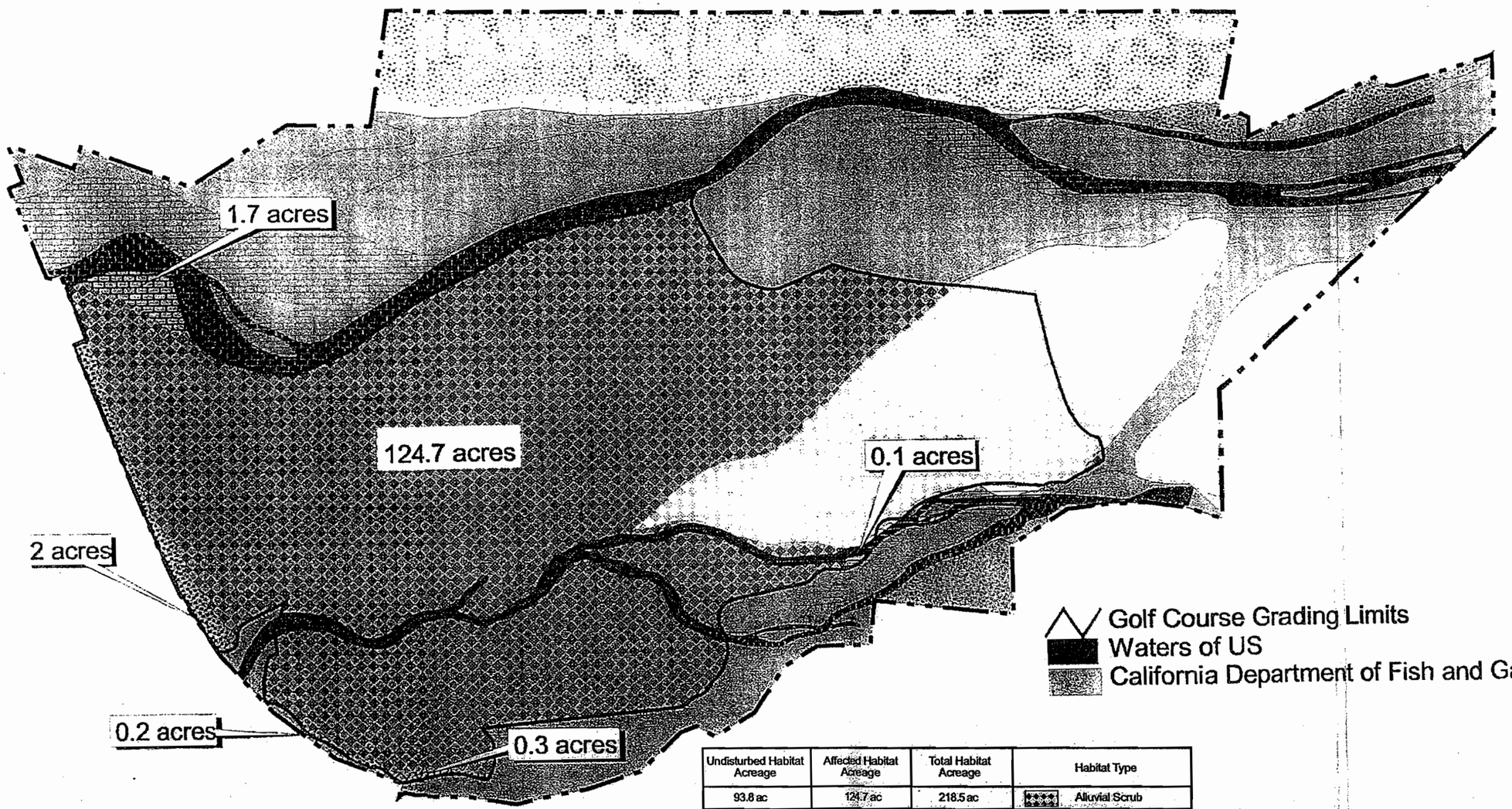
in arid lowlands of Los Angeles, San Bernardino, and Riverside Counties. It prefers fine sandy soils in grasslands and coastal sage scrub habitats. Like other pocket mice, it is nocturnal. This subspecies is found in the Los Angeles Basin. Preferred habitats include desert riparian, desert scrub, desert washes, and sage brush. This subspecies of the pocket mouse may also utilize gravelly washes and stony soils, but prefers sandy soil for burrowing. It is declining due to loss of suitable habitat (Zeiner et al. 1990b). The pioneer and intermediate phases of Riversidian alluvial fan sage scrub, coastal sage scrub, and riparian plant communities provide 293 acres of potentially suitable habitat for this species. This species has not been recorded on site. Directed surveys for the LA pocket mouse will be conducted prior to grubbing of the project site in 1999.

The American badger (*Taxidea taxus*) is a species considered by CDFG as one or more of the following: biologically rare, restricted in distribution, declining through its range, or closely associated with a habitat that is declining in California. Its decline is attributed to loss of habitat due to urbanization and agriculture, hunting, and general persecution (CDFG 1980; Williams 1986). The badger inhabits open areas and feeds on small, ground-dwelling mammals, especially ground squirrels, pocket gophers, and kangaroo rats (Williams 1986; Jamison and Patters). The pioneer and intermediate phases of Riversidian alluvial fan sage scrub, coastal sage scrub, and grasslands provide 284 acres of potentially suitable habitat for this species. No sign or burrows for this species have been observed on the site.

3.6.5 Jurisdictional Areas

Section 1603 of the California Fish and Game Code stipulates that activities affecting the "bed, channel, or bank of any river, stream, or lake" are subject to a Streambed Alteration Agreement. Based on the Unimproved Channel Definitions provided in the *Standard Routine Maintenance Memorandum of Understanding for Unimproved Channels*, a bank to bank delineation of areas subject to CDFG jurisdiction was prepared. The bank to bank delineation is shown in Figure 3.6.5-1, *California Department of Fish and Game Jurisdiction*. Approximately 60 acres of the property are subject to CDFG jurisdiction. Subsequently, the proposed limits of grading and plant communities maps were overlaid on the map of CDFG jurisdictional areas. The approximately 60 acres of the site that are subject to CDFG jurisdiction that include 29 acres of pioneer alluvial fan sage scrub, 5 acres of intermediate alluvial fan sage scrub, 3 acres of mature alluvial fan sage scrub, 1 acre of coastal scrub, 7 acres of riparian woodland, 2 acres of dead riparian woodland, and 13 acres of barren wash.

A delineation assessing the area subject to the jurisdiction of the Corps pursuant to Section 404 of the Clean Water Act was completed in 1990 and amended in 1992 (Corps 1990a and 1992a). In 1997, the jurisdictional "waters of the United States" on the site were again delineated. Winter storms of 1997-1998 resulted in storm flows of sufficient magnitude to alter the channel morphology on the project site, and the Corps required an updated delineation of jurisdictional "waters of the United States" on the site (Corps 1998). An updated jurisdictional delineation was prepared and submitted on August 31, 1998. The Corps provided comments on the delineation on October 16, 1998 which were incorporated and resubmitted on November 24, 1998. The final determination, Figure 3.6.5-2, *U.S. Army Corps of Engineers Jurisdictional Delineation*, shows approximately 22.2 acres of jurisdictional "waters of the United States" present in the project area.



Undisturbed Habitat Acreage	Affected Habitat Acreage	Total Habitat Acreage	Habitat Type
93.8 ac	124.7 ac	218.5 ac	Alluvial Scrub
6.0 ac	2.2 ac	8.2 ac	Coastal Sage Scrub
25.5 ac	1.7 ac	27.2 ac	Barren Wash
2.5 ac	0.1 ac	2.6 ac	Ex-Riparian
8.8 ac	0.3 ac	9.1 ac	Riparian Woodland
136.6 ac	129 ac	265.6 ac	Note: Unaffected habitat is faded.

250 0 250 500 Feet

Long-Term Habitat Management Plan

FIGURE 3.6.5-1
California Department of Fish and Game Asserted Jurisdiction

3.6.6 Wildlife Dispersal/Migration Corridors

The Big Tujunga Valley, including the project site, can be considered a marginal wildlife dispersal and migration corridor due largely to its comparatively degraded condition as compared to adjacent northern areas. The seasonal presence of water, the regional scarcity of undeveloped land in the same elevational range, and proximity to the Angeles National Forest to the north contribute to its functioning as a place where wildlife can move through to access adjacent natural areas. It may act as a "sink" and a "source" for wildlife populations as well. The site is used as a stop-over by migrating bird species, including those that make a seasonal altitudinal migration. When present, ephemeral aquatic habitat may serve as a dispersal corridor for the Santa Ana sucker. Water, when present in the stream course, could create connections between perennial ponds located upstream of the project site in Big Tujunga Creek and downstream of the project site at the Tujunga Ponds and Hansen Dam Flood Control Basin.

Substantial impediments to movement of wildlife on foot between the Angeles National Forest to the north of the project site, and the Verdugo Mountains located to the south of the project site are created by residential development, freeways (Interstate 210) and heavily-traveled roads (Sunland Boulevard, Wentworth Street) that exist between the Tujunga Wash and the Verdugo Mountains to its south. The primary potential for non-avian wildlife to move in the direction of the Verdugo Mountains from the project site is to follow the washes through the western portions of the project site under bridges of Foothill Boulevard and Interstate 210, as shown in Figure 3.6.6-1, *Wildlife Movement Corridors*. If wildlife were to move through these underpasses and then head south, they would be forced to cross Wentworth Street and Sunland Boulevard and move up steep hillsides and pass through residential development before reaching the Verdugo Mountains. A secondary movement corridor has the potential to exist via the concrete-lined Haines Channel to the south of the project site; the potential for movement along this channel is considered to be even less likely than that via Interstae 210 Freeway since this corridor is even more developed. The only non-avian wildlife capable of such extended movements that might occur through either of these passages is large mammals such as deer, coyote, fox, and mountain lions. While such movements cannot be considered impossible, if they do occur, they would occur on a highly irregular basis. The project would not interfere with such movements of wildlife because the washes though which they could move through underpasses lie within areas delineated by the Army Corps of Engineers as waters of the United States under Section 404 of the Clean Water Act and will not be impacted by the project.

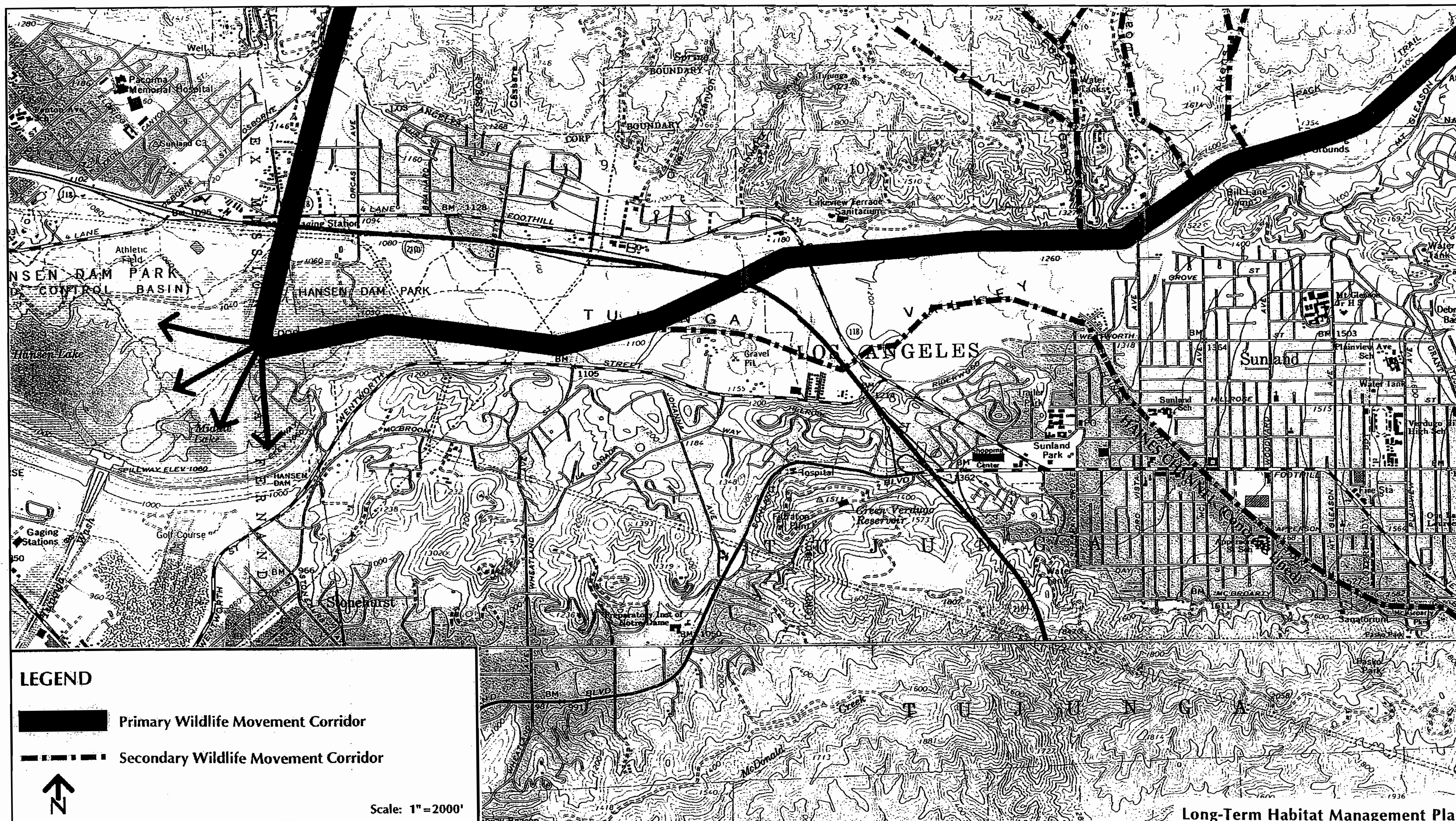


FIGURE 3.6.6-1
Wildlife Movement Corridors

Wildlife movement that would be more likely to occur between the Angeles National Forest and the Verdugo Mountains via the Tujunga Wash is that of migratory passerines or dispersing large birds, such as raptors. The proposed project would not restrict the movement of migrating passerines or large birds between the Angeles National Forest and the Verdugo Mountains because such birds can move over roads, freeways, and residential communities.

SECTION 4.0
IMPACTS OF THE PROJECT ON BIOLOGICAL RESOURCES

SECTION 4.0
IMPACTS OF THE PROJECT ON BIOLOGICAL RESOURCES

This section describes the impacts to biological resources that will result from construction of the golf course and associated buildings. The description of impacts is focused on areas within the jurisdiction of the California Department of Fish and Game (CDFG). Impacts are described separately for those that will result from the permanent conversion of habitats to project-associated facilities (Section 4.1, Permanent Impacts) versus those that will result in the alteration of habitats during construction and for which revegetation or creation of habitat will be undertaken (Section 4.2, Construction Impacts). For the purposes of this plan, all impacts within CDFG jurisdiction are assumed to be permanent.

A delineation was prepared for areas on the properties are subject to CDFG jurisdiction pursuant to Section 1600 of the State Fish and Game Code. CDFG jurisdiction was determined to extend to the top of the banks of the stream channels on the property. Stream beds, channels, and banks on the property were defined using the *Unimproved Channel Definitions* provided in the *Department of Fish and Game's Standard Routine Maintenance Memorandum of Understanding for Unimproved Channels*. Subsequent to mapping of the CDFG jurisdictional areas, the plant community map and proposed limits of grading were overlaid on the map to determine potential impacts within CDFG jurisdiction.

Of the six sensitive species known to occur on the project site, the project avoids impacts on all occupied habitat for the federally endangered plant species, the slender-horned spineflower (*Dodecahema leptoceras*). However, it results in a decrease in occupied habitat for two sensitive reptiles that occur on site, coastal western whiptail (*Cnemidophorus tigris multiscutatus*) and San Diego horned lizard (*Phrynosoma coronatum blainvillei*), the loss of three to four occupied nesting territories for the cactus wren (*Campylorhynchus brunneicapillus*) as well as occupied breeding territory for the loggerhead shrike (*Lanius ludovicianus*). Although not observed on site, the study area supports potentially suitable habitat for 26 additional sensitive species (two plants, six herpetofauna, birds, and six mammals). A summary of both permanent and construction impacts to each habitat type is provided in Table 4-1, *Summary of Impacts on Plant Communities/Habitats within California Department of Fish and Game Jurisdiction.*

Impacts to plant communities within the areas subject to CDFG jurisdiction require mitigation at a ratio of 1.5:1 for acres of impact. It has been determined that mitigation credit will be awarded at 1:1 for on site preservation and offsite acquisition, 0.5:1 for onsite revegetation, and 0.5:1 for on site preservation of non-target, coastal sage scrub and southern sycamore-alder riparian woodland habitat.

TABLE 4-1
SUMMARY OF IMPACTS ON PLANT COMMUNITIES/HABITATS WITHIN CALIFORNIA DEPARTMENT OF FISH AND GAME JURISDICTION

Plant Community	CDFG Jurisdiction			Total Project			
	Total Acres	Avoided/ Preserved	Project Impacts	Total Acres	Avoided/ Preserved	Permanent Impacts	Construction Impacts
Riversidian Alluvial Fan Sage Scrub:							
Pioneer	29	26	3	114	69	29	16
Intermediate	5	3	2	125	59	45	21
Mature	3	1	2	29	8	18	3
Coastal Sage Scrub	1	<1	<1	44	42	1	1
Southern Sycamore-Alder Riparian Woodland	7	7	0	10	9	1	0
Dead Riparian Woodland	2	2	0	3	3	0	0
Barren Wash	13	10	3	26	12	9	5
Grassland	0	0	0	<1	—	<1	—
Ephemeral Aquatic Habitat	(22)[1]	22[1]	0	(22)[1]	22[1]	—	—
TOTAL	60	49	11	352	202	104	46

1. Perennial streamflows are present on site during years with high levels of storm activity as have occurred during recent storm seasons. The 1998 delineation of "waters of the United States" showed that approximately 22 acres of the site are subject to regular flooding. However, this ephemeral aquatic habitat can account for as many as 38 acres. The low flow channel located along the northern portion of the property is intermittent in most years and is mapped as such on the USGS quadrangle. For the purposes of mapping, this habitat type has not been considered separately from southern sycamore riparian woodland, but it has been described separately because it potentially supports plant and wildlife species not associated with the riparian woodland on site in years of low rainfall.

4.1 PERMANENT IMPACTS

Permanent conversion of 94 acres of existing natural habitats and 9 acres of barren wash into the following will result from construction of the golf course: club house, parking lot, maintenance area, 18-hole golf course, and one lake (irrigation reservoirs). A total of 11 acres of permanent impact is within CDFG jurisdiction. The following describes permanent impacts to plant communities and the plant and wildlife species associated with them, including sensitive species. Also described are the effects of the project on wildlife corridors and jurisdictional areas.

4.1.1 Plant Communities, Wildlife Resources, and Sensitive Species

Riversidian alluvial fan sage scrub

Implementation of the project will result in the permanent loss of approximately 7 acres of Riversidian alluvial fan sage scrub (alluvial scrub) within areas subject to Department jurisdiction. The impacts to alluvial scrub affect all three phases that are present, as follows: approximately 3 acres of pioneer alluvial scrub, 2 acres of intermediate alluvial scrub, and 2 acres of mature alluvial scrub.

Total project impacts will include permanent impacts to 92 acres of alluvial scrub habitat including 29 acres of pioneer phase, 45 acres of intermediate phase, and 18 acres of mature phase.

Permanent impacts to the alluvial scrub community in Tujunga Valley will result in loss of habitat for the plant and wildlife species associated with this community. Although many of these species are common throughout California, this loss of habitat will contribute to the cumulative loss of habitat for native plant and wildlife resources in the region.

The project has been designed to avoid direct impacts to known locations of the slender-horned spineflower. Permanent impacts on the alluvial scrub plant community will result in loss of known occupied habitat for three sensitive wildlife species. Affected sensitive species include two reptile species, coastal western whiptail and San Diego horned lizard, and two avian species, the cactus wren and loggerhead shrike (*Lanius ludovicianus*). Although the San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) is also known to utilize this habitat, type conversion of natural habitats to grasses for the golf course is not expected to permanently displace this species.

Permanent impacts on the alluvial scrub plant community will result in the reduction of suitable habitat for several other sensitive wildlife species that were not observed but may occur on the project site. Potentially impacted sensitive reptile species include silvery legless lizard (*Anniella pulchra pulchra*), coastal rosy boa (*Lichanura trivirgata roseofusca*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), and western spadefoot toad (*Scaphiopus hammondi*). Three sensitive avian species are potentially impacted including prairie falcon (*Falco mexicanus*), Bell's sage sparrow (*Amphispiza belli belli*), and California horned lark (*Eremophila alpestris actia*). Three potentially affected sensitive mammal species include California mastiff bat (*Eumops perotis californicus*), Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), and American badger (*Taxidea taxus*).

Coastal sage scrub

Implementation of the project will result in impacts to less than 1 acre of coastal sage scrub within Department jurisdiction. However, the project will result in the permanent loss of 1 acre of the coastal sage scrub plant community as a result of total project impacts. The loss of 1 acre of the coastal sage scrub that occurs in dispersed locations along the western portion of the site is not expected to result in a change in the species diversity or abundance found in association with this habitat type and therefore is not expected to result in a significant adverse impact on the plant or wildlife resources within the study area.

No sensitive plant resources have been observed in association with coastal sage scrub. One sensitive reptile species, coastal western whiptail, was observed in association with this plant community. The loss of 1 acre of the coastal sage scrub plant community would not constitute a significant reduction in occupied habitat for the coastal western whiptail. One sensitive species, southern California rufous-crowned sparrow (*Aimophila ruficeps caescens*), was observed in coastal sage scrub along the northern property boundary. This area is outside of the project impact area so there will be no reduction in known occupied habitat for this species. Similarly, the reduction of suitable habitat for other sensitive plant and wildlife resources that were not observed but that are found in association with this habitat type in southern California would not be significant. These species include two plant species, Nevin's barberry (*Berberis nevinii*) and San Fernando Valley spineflower (*Chorizanthe parryi* var *fernandina*); three reptile species, silvery legless lizard, coastal rosy boa, and coast patch-nosed snake; three bird species, white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), coastal California gnatcatcher (*Polioptila californica californica*); and five mammal species, Townsend's big-eared bat (*Plecotus townsendii townsendii*), pallid bat (*Antrozous pallidus*), western mastiff bat, Los Angeles pocket mouse, and American badger.

Southern sycamore-alder riparian woodland

Based on the delineation of areas subject to CDFG jurisdiction, there are no impacts to southern sycamore-alder riparian woodland subject to CDFG jurisdiction. There will be 1 acre of permanent impact to southern sycamore-alder riparian woodland from implementation of the project. This portion of the riparian woodland is an isolated patch located in the southwestern portion of the site. It is separated from the streamcourse and other areas of riparian habitat by a large area of mature alluvial sage scrub, suggesting that it is dependent on urban runoff from the adjacent slope. The loss of this riparian habitat constitutes an adverse impact due to the relative scarcity of this habitat in the region. However, the loss of approximately 1 acre of riparian habitat (that is separated from the remaining riparian habitat and streamcourses) is not expected to result in a change in the species diversity or abundance found in association with this habitat type on site or result in a significant adverse impact on the plant or wildlife resources within the study area. The loss of this habitat will be compensated for through revegetation of 1 acre of riparian habitat in the eastern portion of the site. In addition, all riparian areas on the site will be enhanced by the removal of invasive, non-native species such as giant reed (*Arundo donax*) and castor bean (*Ricinis communis*).

There were no sensitive plant or wildlife resources observed in association with this plant community. The three sensitive amphibian species, California red-legged frog (*Rana aurora*

draytonii), arroyo toad (*Bufo microscaphus californicus*), and western spadefoot toad, that occur in the region are not expected to occur onsite due to the marginal suitability of the habitat for these species. The loss of 1 acre of riparian habitat would not substantially reduce suitable habitat for the silvery legless lizard, which has the potential to utilize a number of other habitats that are present on site. The loss of 1 acre of suitable habitat for the San Bernardino ringneck snake (*Diadophis punctatus modestus*) would not diminish the capability of this site to support this species. Therefore, the loss of 1 acre of riparian woodland is not expected to result in significant adverse impacts on sensitive plant or wildlife species.

One sensitive species of bird, Cooper's hawk (*Accipiter cooperi*), has been observed on site. One sensitive bird species, western yellow billed cuckoo (*Coccyzus americanus occidentalis*), which occurs in a limited range within California is not expected to occur on site. Five additional sensitive bird species, sharp-shinned hawk (*Accipiter striatus*), southwestern willow flycatcher (*Empidonax traillii*), least Bell's vireo (*Vireo bellii pusillus*), yellow warbler (*Dendroica brewster*), and yellow breasted chat (*Icteria virens*) may occur during migratory stopovers, but are not expected to occur on site. The loss of 1 acre of riparian habitat would not substantially reduce suitable habitat for these species and therefore the project does not significantly impact sensitive bird species.

Four sensitive mammals, Townsend's big-eared bat, pallid bat, western mastiff bat, and Los Angeles pocket mouse, have not been observed, but have potential to occur on site. These species are not expected to be significantly adversely impact, by the project as the percentage being lost is a small, disjunct piece of habitat, and is not contiguous with the larger area of riparian habitat.

Permanent impacts would displace 1 acre of southern sycamore-alder riparian woodland, a state designated sensitive habitat. Revegetation of 1 acre of riparian habitat will take place in the eastern portion of the site (Section 5.2.4.2), and enhancement of the remaining riparian woodland through removal of invasive, non-native species (Section 5.2.7.1) will be undertaken to mitigate the adverse impact to 1 acre of riparian habitat.

Dead riparian woodland

The project will not result in the loss of dead riparian woodland. There were no sensitive plant or wildlife resources found in association with the dead riparian woodland that occurs on site. This woodland received some restoration of regular water flows during storms of 1997-98, and appears to have signs of renewed growth.

Barren wash

The project will result in impacts to 3 acres of barren wash within CDFG jurisdiction. The conversion of barren wash to golf course will not displace any existing known plant or wildlife resources.

There are no known sensitive plant or wildlife species found in association with the barren wash areas. These areas are not expected to provide suitable habitat for any of the sensitive species that occur in the region. There are no anticipated impacts associated with conversion of 14 acres of

barren wash as a result of implementation of the project. No mitigation is proposed for the loss of unvegetated, barren wash areas.

Non-native grassland

The project will result in the permanent loss of less than 1 acre of non-native grassland. This loss is not expected to result in a change in the species diversity or abundance found in association with this habitat type on site; therefore, the loss is not expected to result in a significant adverse impact on the plant or wildlife resources within the study area, including sensitive species known to occur, or having the potential to occur in this plant community.

Ephemeral aquatic habitat

The project will not displace the seasonally occurring ephemeral aquatic habitat, which provides a potentially suitable migratory corridor for two sensitive fish species, Santa Ana sucker (*Catostomus santaanae*), arroyo chub (*Gila orcutti*), potentially suitable habitat for one sensitive reptile species, western spadefoot toad, and potentially suitable foraging habitat for one mammal species, spotted bat (*Euderma maculatum*).

The project would not affect ephemeral aquatic habitat that serves as a potential migratory corridor for the south coastal minnow/sucker stream community, which is a state-designated sensitive habitat.

4.1.2 Wildlife Migration/Dispersal Corridors

Two potential wildlife corridors were identified within the proposed project area (City of Los Angeles 1996). These two potential corridors correspond to the north and south channels of the ephemeral stream running through Tujunga Valley. As currently conceived, the planned facilities would lie between the two branches of the stream. The club house, parking lot, and maintenance area are located in elevated portions of the site, adjacent to Foothill Boulevard. The construction of these facilities is not expected to obstruct any existing wildlife dispersal or migration corridors. Landscaped portions of the golf course are not expected to create an impediment to any existing terrestrial vertebrate species. The project would not interfere with movements of non-avian wildlife such as large mammals (e.g., deer, coyote, fox, and mountain lions) between the Verdugo Mountains and the San Gabriel Mountains because the washes through which they typically move through the site are outside of the area of impact of the project. The conservation of 192 acres of native plant communities would provide sufficient cover for continued movement of terrestrial vertebrates through the study area. The conservation of 192 acres of the study area and 44 acres of revegetated intermediate phase of alluvial scrub would continue to provide sufficient habitat to support use by resident and migratory birds. The proposed project would not restrict the movement of migrating passerines or large birds between the Angeles National Forest and the Verdugo Mountains because such birds can move over roads, freeways, and residential communities.

There are no anticipated direct or indirect impacts on the ephemeral aquatic habitat that may serve as a migratory corridor for the south coastal minnow/sucker stream community.

The approved *Final EIR* for the project determined that there are no anticipated impacts on wildlife dispersal or migratory corridors.

4.1.3 Jurisdictional Areas

Approximately 60 acres of the project area are within the banks of the on site streams, and are therefore subject to CDFG jurisdiction (Figure 3.6.5-1, *California Department of Fish and Game Jurisdiction*). Projects that affect the bed, channel, or bank of a stream are subject to the jurisdiction of the CDFG pursuant to Section 1600 of the State Fish and Game Code. An oversize map of CDFG jurisdiction on the property is provided in Appendix B. Any project that will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream or lake designated by the Department, or use any material from the streambeds" requires notification and coordination with the Department (CDFG 1992). Projects that will result in alteration of the streamcourse require issuance of a Streambed Alteration Agreement by the Department.

The project will result in permanent impacts to approximately 7 acres of pioneer, intermediate, and mature phases of alluvial scrub that occur within the CDFG's jurisdiction. Impacts to alluvial scrub within the CDFG's jurisdictional areas will be mitigated at a 1.5:1 ratio for acres of impact. Mitigation will be created at 1:1 for on site conservation and offsite acquisition of target habitat, 0.5:1 for onsite revegetation, and 0.5:1 for on site conservation of non-target habitat. Mitigation is to be accomplished through a combination of on site preservation, revegetation, and off site acquisition.

The project proponent met with the U.S. Army Corps of Engineers (Corps) on April 25, 1995 to review the project. The Corps concurred with the determination that the project would not discharge dredged or fill material into "waters of the United States" (Corps 1995). Subsequent delineations of the "waters of the United States" conducted in 1997 and 1998 (Figure 3.6.5-2, *U.S. Army Corps of Engineers Jurisdictional Delineation*), have been approved by the Corps (1998), and the project has been redesigned to avoid these areas. There are no anticipated impacts on areas subject to the jurisdiction of the Corps pursuant to Section 404 of the Clean Water Act.

4.2 CONSTRUCTION IMPACTS

Construction impacts are described as impacts occurring to areas that will eventually be revegetated with native species typical of the surrounding habitat upon completion of grading activities. In addition to impacts from the permanent conversion of the project site to developed areas, construction activities will temporarily affect 40 acres of Riversidian alluvial fan sage scrub, 1 acre of coastal sage scrub, and 5 acres of barren wash (Table 4-1, *Summary of Impacts on Plant Communities/Habitats within California Department of Fish and Game Jurisdiction*). The approximately 45 acres of Riversidian alluvial fan sage scrub, coastal sage scrub, and barren wash affected by construction activities will be revegetated with the intermediate phase of alluvial scrub. The remaining acre of construction impacts will be revegetated with riparian woodland. The following describes construction-related impacts on plant communities and the plant and wildlife species that occur within them, including sensitive species. Also described are the effects of the project on wildlife corridors and jurisdictional areas.

4.2.1 Plant Communities, Wildlife Resources, and Sensitive Species

Riversidian alluvial fan sage scrub

Construction activities will temporarily affect 40 acres of alluvial scrub. The temporary impact to 40 acres of alluvial scrub affects all three phases that are present as follows: pioneer phase, 16 acres; intermediate phase, 21 acres; and mature phase, 3 acres. Impacts on the alluvial scrub plant community will result in temporary loss of habitat for the component plant and wildlife species.

The project has been designed to avoid direct impacts on the slender-horned spineflower. Grading activities have been reconfigured such that a 300-foot buffer is provided from Location 1 of the slender-horned spineflower. Other slender-horned spineflower locations are separated from the proposed construction activities by at least 800 feet. Construction avoidance measures described in Section 5.2.3 are provided to ensure that grading activities do not result in impacts to the slender-horned spineflower. Construction level impacts on the intermediate phase of alluvial scrub would result in the temporary loss of 40 acres that may contain a potential seed bank for the slender-horned spineflower.

Construction impacts on the alluvial scrub plant community would result in temporary loss of known occupied habitat for the following sensitive wildlife species: two reptiles, coastal western whiptail and the San Diego horned lizard; and two birds, cactus wren and loggerhead shrike. Although the San Diego black-tailed jackrabbit is also known to utilize this habitat, type conversion of natural habitats to grasses for the golf course is not expected to permanently displace this species. Construction impacts to this plant community would result in the reduction of suitable habitat for several other sensitive wildlife species that were not observed but may occur on the project site: four reptile species, silvery legless lizard, coastal rosy boa, coast patch-nosed snake, western spadefoot toad; three bird species, prairie falcon, Bell's sage sparrow, and California horned lark; and three mammal species, western mastiff bat, Los Angeles pocket mouse, and American badger.

The project would displace 40 acres of Riversidian alluvial fan sage scrub, a state-designated sensitive habitat, as a result of construction impacts. This conversion constitutes an adverse impact on sensitive habitats. However, revegetation of 44 acres of this plant community will help mitigate these impacts and will serve to replace some of the impacted habitat that will result from project implementation.

Coastal sage scrub

The project will result in construction impacts to less than 1 acre of coastal sage scrub. The loss of the coastal sage scrub that occurs in dispersed locations throughout the western portion of the site is not expected to result in a change in the species diversity or abundance found in association with this habitat type on site and therefore is not expected to result in an adverse impact to the plant or wildlife resources within the study area.

No sensitive plant resources have been observed in association with this plant community. One sensitive reptile species, coastal western whiptail, and one sensitive avian species, southern California rufous-crowned sparrow, were observed in association with this plant community. The loss

of less than 1 acre of the coastal sage scrub plant community from construction impacts would not constitute a significant reduction in occupied habitat for these species. Similarly, the reduction of suitable habitat for other sensitive plant and wildlife resources that were not observed but that are typically found in association with this habitat type in southern California would not be significant. These species include two plant species (Nevin's barberry and San Fernando Valley spineflower [presumed extinct]); three reptile species (silvery legless lizard, coastal rosy boa, and coast patch-nosed snake); three bird species (white-tailed kite, northern harrier, and coastal California gnatcatcher), and five mammal species (Townsend's big-eared bat, pallid bat, western mastiff bat, Los Angeles pocket mouse, and American badger).

Southern sycamore-alder riparian woodland

There are no temporary impacts to southern sycamore-alder riparian woodland as a result of this project. Enhancement of riparian woodlands on the project area by removal of invasive, exotic species, will be conducted as a result of permanent impacts to this community.

Dead riparian woodland

There are no temporary impacts to dead riparian woodland as a result of this project. Enhancement of riparian woodlands on the project area by removal of invasive, exotic species, will be conducted as a result of permanent impacts to this community.

Barren wash

Approximately 5 acres of impacts to barren wash will occur as a result of construction (grading) activities in areas that will eventually be revegetated. These 5 acres will be revegetated to intermediate phase of the alluvial scrub. The conversion of barren wash to revegetated intermediate alluvial scrub would not displace any existing plant or wildlife resources. There are no sensitive plant or wildlife species found in association with the barren wash areas. These areas are not expected to provide suitable habitat for any of the sensitive species that occur in the region. There are no anticipated impacts associated with conversion of 5 acres of barren wash to intermediate phase of alluvial scrub.

Non-native grassland

There will be no construction-related impacts to non-native grassland. For a discussion of impacts due to permanent conversion of non-native grassland, see Section 4.1 (Permanent Impacts).

Ephemeral aquatic habitat

The project will not result in any impacts to seasonally occurring ephemeral aquatic habitat that provides potentially suitable migratory corridor for the Santa Ana sucker and arroyo chub, potentially suitable habitat for the western spadefoot toad, and potentially suitable foraging habitat for the spotted bat.

4.2.2 Wildlife Migration/Dispersal Corridors

Construction activities will not obstruct any existing wildlife dispersal or migration corridors, or directly or indirectly impact the ephemeral aquatic habitat that may serve as a migratory corridor for the south coastal minnow/sucker stream community (see Section 4.1, Permanent Impacts).

There are no anticipated impacts on wildlife dispersal or migratory corridors as a result of construction activities.

4.2.3 Jurisdictional Areas

The project will result in construction impacts to 11 acres of native habitats within the areas subject to the jurisdiction of the CDFG pursuant to Section 1600 of the State Fish and Game Code. However, for the purpose of this plan, all impacts occurring within areas subject to the jurisdiction of the Department are treated as permanent impacts.

The project proponent met with the Corps on April 25, 1995 to review the project. The Corps concurred with the determination that the project would not discharge dredged or fill material into "waters of the United States" (U.S. Army Corps of Engineers 1995). There are no anticipated construction-related impacts on areas subject to the jurisdiction of the Corps pursuant to Section 404 of the Clean Water Act.

TABLE 4-2
IMPACTS ON FEDERAL AND STATE SENSITIVE, THREATENED, AND ENDANGERED SPECIES OCCURRING OR POTENTIALLY OCCURRING WITHIN CALIFORNIA DEPARTMENT OF FISH AND GAME JURISDICTION IN RED TAIL GOLF AND EQUESTRIAN: SUNLAND-TUJUNGA PROJECT AREA

Sensitive Species Occurring or Potentially Occurring	Summary of Impacts
HABITAT TYPE: ***RIVERSIDIAN ALLUVIAL FAN SAGE SCRUB: PIONEER PHASE***	**ACRES IMPACTED:** ***CDFG Jurisdiction–3 acres*** ***Total Project–45 acres***
AMPHIBIANS AND REPTILES	
Coastal western whiptail	This species has been observed on site. The project would directly impact habitat where this species has been observed.
Silvery legless lizard Coastal rosy boa Coast patch-nosed snake	These species have not been observed on site. The project would impact potential habitat for these species.
BIRDS	
White-tailed kite Prairie falcon	These species have not been observed on site. The pioneer phase of this plant community provides only marginally appropriate foraging habitat.
Northern harrier	This species has not been observed on site during repeated surveys in different times of year and is not expected to breed on site. The project would impact this species only as a potential forager during migration.

Sensitive Species Occurring or Potentially Occurring	Summary of Impacts
Burrowing owl	This species has not been observed in the pioneer phase of alluvial scrub on site. The presence of ground squirrel burrows in the pioneer phase may provide suitable nesting habitat.
California horned lark	This species has not been observed on site. The project would impact potential habitat for this species.
Cactus wren	This species has not been observed in the pioneer phase of alluvial scrub and is not expected to occur based on the absence of cactus.
Loggerhead shrike	This species has not been observed foraging in the pioneer phase of alluvial scrub, although it has been observed foraging in the intermediate phase on site. The potential for foraging in the pioneer phase exists, and the project would impact that potential habitat.
MAMMALS	
Townsend's big-eared bat Pallid bat Western mastiff bat	These species have not been observed on site. The project would impact potentially suitable foraging habitat for these species.
Los Angeles pocket mouse American badger	These species have not been observed on site. The project would impact potential habitat for these species.
San Diego black-tailed jack rabbit	This species has been observed on site in the intermediate phase of alluvial scrub but not in the pioneer phase. The project would impact potential habitat for this species.

Sensitive Species Occurring or Potentially Occurring	Summary of Impacts
HABITAT TYPE: ***RIVERSIDIAN ALLUVIAL FAN SAGE SCRUB: INTERMEDIATE PHASE***	**ACRES IMPACTED:** ***CDFG Jurisdiction–2 acres*** ***Total Project–66 acres***
PLANTS	
Slender-horned spineflower	There are no direct impacts on the four known occupied locations of this species. However, the project would result in the removal of 67 acres of habitat that may contain seedbank material for this species. Construction avoidance measures will be required to ensure that grading activities do not impact Location 1.
AMPHIBIANS AND REPTILES	
Western spadefoot toad	This species has not been observed on site and is not expected to occur based on the lack of suitable breeding habitat. The project would impact potential non-breeding habitat for this species.
San Diego horned lizard	This species has been observed on site. The project would impact known occupied habitat of the San Diego horned lizard.
Coastal western whiptail	This species has been observed on site. The project would directly impact habitat where this species has been observed.
Silvery legless lizard Coastal rosy boa Coast patch-nosed snake	These species have not been observed on site. The project would impact potential habitat for these species.
BIRDS	

Sensitive Species Occurring or Potentially Occurring	Summary of Impacts
White-tailed kite Prairie falcon	These species have not been observed on site. The pioneer phase of alluvial scrub provides only marginally appropriate foraging habitat for these species.
Burrowing owl	This species has not been observed in the pioneer phase of alluvial scrub. The presence of ground squirrel burrows in the intermediate phase may provide suitable nesting habitat.
Cactus wren	The proposed project would permanently impact three nesting territories of the cactus wren and would temporarily impact two nesting territories due to grading activities.
Loggerhead shrike	This species has been observed foraging on site in the intermediate phase of alluvial scrub. The project would directly impact habitat where this species has been observed.
Bell's sage sparrow	This species has not been observed on site. The project would impact potential habitat for this species.
MAMMALS	
Townsend's big-eared bat Pallid bat Western mastiff bat	These species have not been observed on site. The project would impact potentially suitable foraging habitat for these species.
San Diego black-tailed jackrabbit	This species has been observed on site in the intermediate phase of alluvial scrub. The project would impact habitat where this species has been observed.
Los Angeles pocket mouse American badger	This species has not been observed on site. The project would impact potential habitat for this species.

Sensitive Species Occurring or Potentially Occurring	Summary of Impacts
HABITAT TYPE: ***RIVERSIDIAN ALLUVIAL FAN SAGE SCRUB: MATURE PHASE***	**ACRES IMPACTED:** ***CDFG Jurisdiction–2 acres*** ***Total Project–21 acres***
AMPHIBIANS AND REPTILES	
San Diego horned lizard	This species has been observed on site. The project would impact known occupied habitat of the San Diego horned lizard.
Coast patch-nosed snake	This species has not been observed on site. The project would impact potential habitat for this species.
BIRDS	
Cactus wren	No cactus wrens have been observed on site in the mature phase of alluvial scrub during directed surveys in 1993 and 1995 and this site is not expected to typically support the species. Impacts to the cactus wren are not associated with the loss of the mature phase of Riversidian alluvial fan sage scrub.
MAMMALS	
Townsend's big-eared bat Pallid bat Western mastiff bat	These species have not been observed on site. The project would impact potentially suitable foraging habitat for these species.

Sensitive Species Occurring or Potentially Occurring	Summary of Impacts
HABITAT TYPE: ***COASTAL SAGE SCRUB***	**ACRES IMPACTED:** ***CDFG Jurisdiction–0 acres*** ***Total Project–2 acres***
PLANTS	
Nevin's barberry	This species has not been observed during multiple directed surveys and is not expected to occur.
San Fernando Valley spineflower	This species has not been observed during multiple directed surveys and is presumed extinct by the CNDDB.
AMPHIBIANS AND REPTILES	
Coastal western whiptail	This species has been observed on site. The project would directly impact habitat where this species has been observed.
Silvery legless lizard Coastal rosy boa Coast patch-nosed snake	This species has not been observed on site. The project would impact potential habitat for this species.
BIRDS	
White-tailed kite	This species has not been observed on site. The pioneer phase of this plant community provides only marginally appropriate foraging habitat.
Northern harrier	This species has not been observed on site during repeated surveys at different times of year and is not expected to breed on site. The project would impact this species only as a potential forager during migration.

Sensitive Species Occurring or Potentially Occurring	Summary of Impacts
Cactus wren	No cactus wrens have been observed on site in the coastal sage scrub plant community during directed surveys for the species in 1993 and 1995 despite the typical association of cactus wrens with coastal sage scrub plant communities. Impacts to the cactus wren are not associated with the loss of coastal sage scrub.
Coastal California gnatcatcher	No coastal California gnatcatchers have been observed during directed surveys in 1988, 1993, and 1995. One acre of marginally suitable habitat would be impacted.
Southern California rufous-crowned sparrow	This species has not been observed on site. The project would impact potential habitat for this species.
MAMMALS	
Townsend's big-eared bat Pallid bat Western mastiff bat	These species have not been observed on site. The project would impact potentially suitable foraging habitat for these species.
Los Angeles pocket mouse American badger	These species have not been observed on site. The project would impact potential habitat for these species.

HABITAT TYPE:	**ACRES IMPACTED:**
SOUTHERN SYCAMORE-ALDER RIPARIAN WOODLAND	***CDFG Jurisdiction--0 acres*** ***Total Project--1 acre***
AMPHIBIANS AND REPTILES	
California red-legged frog Arroyo toad	These species have not been observed during directed surveys and are not expected to occur due to lack of suitable habitat.
Western spadefoot toad	This species has not been observed during directed surveys and is not expected to occur due to lack of suitable breeding habitat.

Sensitive Species Occurring or Potentially Occurring	Summary of Impacts
Silvery legless lizard	This species has not been observed on site. Impacts of the project are associated with temporary (construction) loss of potential habitat.
San Bernardino ringneck snake	This species has not been observed on site. Impacts of the project are associated with temporary (construction) loss of potential habitat.
BIRDS	
Sharp-shinned hawk	This species has not been observed on site but may occur as a migrant. Impacts of the project are associated with temporary (construction) loss of potential habitat.
Cooper's hawk	This species has been observed on site. Impacts of the project are associated with temporary (construction) loss of potential habitat.
Yellow-billed cuckoo	This species has not been observed on site and is not expected to occur based on known limited distribution in California (Zeiner et al. 1990) except as a possible rare migrant. Impacts of the project are associated with temporary (construction) loss of potential habitat.
Southwestern willow flycatcher	This species has not been observed on site and is not expected to breed within the project area. Impacts of the project are associated with temporary (construction) loss of potential habitat.
Least Bell's vireo	This species has not been observed during directed surveys. Impacts of the project are associated with temporary (construction) loss of potential habitat.
Yellow warbler	This species has not been observed during directed surveys. Impacts of the project are associated with temporary (construction) loss of potential habitat.
Yellow-breasted chat	This species has not been observed during directed surveys. Impacts of the project are associated with temporary (construction) loss of potential habitat.

Sensitive Species Occurring or Potentially Occurring	Summary of Impacts
MAMMALS	
Townsend's big-eared bat Pallid bat Western mastiff bat	These species have not been observed on site. The project would impact potentially suitable foraging habitat for these species.
Los Angeles pocket mouse	These species have not been observed on site. The project would impact potential habitat for these species.

HABITAT TYPE: ***DEAD RIPARIAN WOODLAND***	**ACRES IMPACTED:** ***CDFG Jurisdiction--0 acres*** ***Total Project--0 acres***
MAMMALS	
Townsend's big-eared bat Pallid bat Western mastiff bat	These species have not been observed on site. The project would impact potentially suitable foraging habitat for these species.

Sensitive Species Occurring or Potentially Occurring	Summary of Impacts
HABITAT TYPE: ***BARREN WASH***	**ACRES IMPACTED:** ***CDFG Jurisdiction–3 acres*** ***Total Project--14 acres***
No plant or wildlife species have been observed or are expected to occur in this habitat type.	
HABITAT TYPE: ***NON-NATIVE GRASSLAND***	**ACRES IMPACTED:** ***CDFG Jurisdiction--0 acres*** ***Total Project--1 acre***
AMPHIBIANS AND REPTILES	
San Bernardino ringneck snake	This species has not been observed on site. The project would impact potential habitat for this species.
BIRDS	
White-tailed kite Prairie falcon California horned lark	These species have not been observed on site. The project would impact potential habitat for these species.
Northern harrier	This species has not been observed on site during repeated surveys throughout the year and is not expected to breed on site. The project would impact potential foraging habitat during migration.
Loggerhead shrike	This species has been observed on site foraging in the intermediate phase of the Riversidian alluvial fan sage scrub plant community. The project would impact potential habitat for this species.

Sensitive Species Occurring or Potentially Occurring	Summary of Impacts
MAMMALS	
Townsend's big-eared bat Pallid bat Western mastiff bat	This species has not been observed on site. The project would impact potentially suitable foraging habitat for this species.
American badger	This species has not been observed on site. The project would impact potential habitat for this species.

HABITAT TYPE: ***EPHEMERAL AQUATIC HABITAT***	**ACRES IMPACTED:** ***CDFG Jurisdiction--0 acres*** ***Total Project--0 acres***
FISH	
Santa Ana sucker	The project does not directly impact any potential habitat for this species.
Arroyo chub	No suitable habitat exists on site for this species.
AMPHIBIANS AND REPTILES	
Southwestern pond turtle	This species has not been observed on site during directed surveys. There are no impacts on potential habitat for this species.
MAMMALS	
Spotted bat	This species has not been observed on site during directed surveys. There are no impacts on potentially suitable foraging habitat for this species.

4.3 BENEFICIAL EFFECTS

The project will avoid the four known locations of the slender-horned spineflower on the 352-acre site through the creation of a 192-acre Reserve (see Section 5, Management Measures). This *Long-Term Habitat Management Plan* sets forth the methods for permanent protection and long-term management of the Tujunga Valley population of slender-horned spineflower and a variety of other sensitive species where private and public funds are not currently available to accomplish acquisition and management of this parcel. Additionally, the project will avoid three of the five locations where the cactus wren has been observed in recent surveys.

By establishing the 192-acre slender-horned spineflower Reserve, the plan would protect 69 acres of existing pioneer alluvial scrub, 59 acres of intermediate alluvial scrub, 8 acres of mature alluvial scrub, 42 acres of coastal sage scrub, 9 acres of southern sycamore-alder riparian woodland, 3 acres of dead riparian woodland, and 22 acres of ephemeral aquatic habitat on the project site. The plant and wildlife species that occur in each of these communities will benefit from the conservation of these areas. In addition to on site conservation of existing habitat, 45 acres impacted by grading for the project will be revegetated with intermediate alluvial scrub and 1 acre with riparian woodland.

4.4 CUMULATIVE IMPACTS

The cumulative impacts on biological resources for the project were described in the draft environmental impact report (City of Los Angeles 1996) as the displacement of habitat for plants and wildlife in the region as a result of Related Projects. The Related Projects study area was approximately that area bound by the Angeles National Forest to the north, the Kagel Canyon area and the Simi Valley Freeway (CA 118) to the northwest, the Golden State (I-5) Freeway to the west and southwest, La Tuna Canyon to the south, and the City of Glendale and Angeles National Forest to the east.

The Department, in their letter of comment on the draft EIR dated April 16, 1996, expanded the standard interpretation of cumulative impacts to one that included cumulative effects on alluvial fan sage scrub that supports the slender-horned spineflower from projects outside of the study area for Related Projects. The CDFG identified four additional projects that it described as being currently in the CEQA process that could result in adverse impacts to alluvial scrub habitat supporting populations of slender-horned spineflower. As a result, Sapphos Environmental, Inc. undertook coordination with lead agencies for these projects in April and May 1996. The results of this coordination are considered to accurately reflect the status of the four named projects at the time the final EIR was prepared. Follow-up coordination was undertaken in November 1996 regarding the Sunwest Materials and Robertson Ready Mix Projects to review that status of these projects. The results of the coordination are summarized in Table 4-3: *Other Projects in Close Proximity to Slender-Horned Spineflower Populations*. Bee Canyon Mobile Home Park and Villages of Lytle Creek could potentially impact spineflower locations. Spineflower impacts are not associated with the sand and gravel mining projects.

A total of 1,587 acres of alluvial scrub habitat has been mapped in the Tujunga Wash located roughly between Hansen Dam and Tujunga Dam (Hanes et al. 1989). The total acreage (1,587 acres) located in the Big Tujunga Wash accounts for approximately 3-percent, of the total acreage of alluvial scrub habitat which has been mapped and recorded to date. Repeated surveys of the slender-horned

spineflower conducted between 1988 and 1998 indicate a maximum of approximately 1,500 individuals of the slender-horned spineflower within the proposed project area, which accounts for approximately 4-percent of the total known population.

TABLE 4-3
OTHER PROJECTS IN CLOSE PROXIMITY TO SLENDER-HORNED SPINEFLOWER POPULATIONS

LOCATION	LEAD AGENCY	PROJECT	STATUS
Los Angeles County	County of Los Angeles Department of Regional Planning	Bee Canyon Mobile Home Park SCH #93121006	DEIR distributed in February 1996. As of 5/96 case is pending as a result of internal disputes. The project was taken off the Commissioners' list and no decision was made. This project has the potential to impact slender-horned spineflowers.
San Bernardino County	City of Rialto	Villages of Lytle Creek SCH #94062046	Review period of DEIR closed on April 9, 1996. No permits have been granted. Proposes to impact 551 acres of the 927 acres of alluvial fan sage scrub that occur within the project site. This project has the potential to impact slender-horned spineflowers.
San Bernardino County	City of Highland	Sunwest Materials Development Agreement Orange Street Quarry C.U.P. and Reclamation Plan and Alabama Street Reclamation Plan	No spineflowers are present in project area. Approximately 300 acres of impact; 200 acres of alluvial scrub preserved. A permit has been submitted for this project. No other permit applications have been submitted by Sunwest Materials to the City of Highland.
San Bernardino County	City of Redlands	Sunwest Materials Sand and Gravel Mining	Sunwest Materials currently has no projects within the City of Redlands.
San Bernardino County	City of Highland	Robertson Ready-Mix Sand and Gravel Mining	No spineflowers present in project area. Project involves mining of 210 acres of alluvial fan sage scrub that is already highly disturbed and 30 acres that is not highly disturbed.

SECTION 5.0
MANAGEMENT MEASURES

5.1 REGULATORY OBJECTIVES AND CRITERIA

The *Long-Term Habitat Management Plan* (Plan) has been developed in support of issuance of a Streambed Alteration Agreement by the California Department of Fish and Game (Department) pursuant to Section 1600 of the State Fish and Game Code. In addition, the Plan will help ensure compliance with Biota issues identified pursuant to the *Conditional Use/Site Plan Review Conditions of Approval* for City of Los Angeles City Plan Case 96-0243 CU and City Plan Case 96-0241 CUP as approved by the Planning Commission of the City of Los Angeles at its meeting of April 28, 1998. The Conditions of Approval includes the Biota input to the Environmental Mitigation Measures and Monitoring Program attached to the subject case file. The Plan describes all measures proposed by the applicant in support of a Streambed Alteration Agreement.

As a means of preserving the riparian habitat values and functions, the project was designed to avoid all areas within the northern and southern streambeds that cross Big Tujunga Valley, within the jurisdiction of the U.S. Army Corps of Engineers. Similarly, the project was designed to avoid the 60.3 acres within the jurisdiction of the California Department of Fish and Game. In their letter of comment (dated May 23, 1995) on the Notice of Preparation for the EIR, the California Department of Fish and Game provided the following guidance:

> 3.a. Mitigation measures for project impacts to sensitive plants, animals, and habitats should emphasize evaluation and selection of alternatives which avoid or otherwise minimize project impacts. Off-site compensation for unavoidable impacts through acquisition and protection of high quality habitat elsewhere should be addressed.
>
> b. The Department considers Rare Natural Communities as threatened habitats having both regional and local significance. Thus, these communities should be fully avoided and otherwise protected from project-related impacts (Attachment 2).
>
> c. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Department studies have shown that these efforts are experimental in nature and largely unsuccessful.

As a result of the guidance provided by the California Department of Fish and Game, this Plan has been developed to conserve known occupied habitat of the slender-horned spineflower (*Dodecahema leptoceras*) and to manage and restore the remaining Riversidian alluvial fan sage scrub habitat on the property. Thus, specific conservation measures have been developed in accordance with the recovery objectives for the slender-horned spineflower identified by the U.S. Fish and Wildlife Service (Service) in the December 1990 report to Congress, entitled "Endangered

and Threatened Species Recovery Program." The recovery plan for slender-horned spineflower has not yet been completed, but is expected to be released in 1999. Though the implementation of the approved project will result in a loss of potentially suitable habitat for the slender-horned spineflower, several of the recovery objectives defined in the program will be achieved through implementation of the measures outlined in this Plan, including:

- **Eliminate threats from water storage.** The Big Tujunga Dam, upstream from the project site, and Hansen Dam, downstream from the project site, were designed to manage normal and flood flows along Big Tujunga Wash. Other than for flood flows, which may temporarily cover parts or all of the project site, threats from water storage are not a consideration for the project area.

- **Flood Control.** The concrete Oro Vista levee along the north channel and the Haines channel earthen levee were installed on the project site following the 1969 flood to prevent flooding of homes south and west of the site. As a result, the flooding regime of the area occupied by the slender-horned spineflower was altered, so that large areas of the eastern project site are not flooded, except during capital events. The project has been designed to retain the existing flood frequency and inundation patterns to all known occupied areas of the slender-horned spineflower. Since the levees prevent active flood flows, the spineflower areas will continue to experience only backwater flooding, with unknown consequences for the spineflower.

- **Security.** Perimeter fencing and regular security patrols to prevent uncontrolled use of the areas designated for habitat conservation will be provided. Presently, off-road vehicles and horse riders use the project site indiscriminately, essentially placing the slender-horned spineflower at high risk of disturbance. In addition, homeless encampments have been observed in close proximity to the existing slender-horned spineflower populations. The biological reserves would be protected from human incursions, except as provided by the provisions of this Plan.

- **Trash Dumping.** The project site has for decades been used for indiscriminate dumping of trash and debris, due to the easy access to the site from both the west and east. This poses an additional risk to the onsite slender-horned spineflower populations. Implementation of the measures described in this Plan will reduce threats posed by illegal dumping on the site.

- **Trespassing.** The site has suffered from trespassing, recreational abuses, and from itinerant encampment for decades. The slender-horned spineflower has, accordingly, been at risk. Fencing and security measures described in the plan are designed to eliminate the threats posed by trespassing on the site. Access to the spineflower reserves would be strictly controlled with implementation of the Plan.

- **Sand and Gravel Mining.** The Cosmo World Corporation purchased the site from Calmat, which held the land for its mineral resources. Thus, this threat to the spineflower has been generally eliminated. One of the Conditions of Approval for this project requires that there shall be no sand or gravel mining. In the past, however, unauthorized mining of rock and gravel on the site has frequently occurred in the past and will likely continue until the project site is otherwise secured. Implementation of the approved project would prevent this.

- **Protect Existing Stands.** The approved golf course was explicitly designed to protect the existing stands of the slender-horned spineflower found on the project site. Although occupied habitat for the slender-horned spineflower is limited to 1.4 acres, the U.S. Fish and Wildlife Service has made unsupported assumptions that all acres of the intermediate phase of Riversidian alluvial fan sage scrub on the project site potentially contain seeds of the slender-horned spineflower. The approved project protects Fifty-nine of those acres assumed by the U.S. Fish and Wildlife Service to contain potential seed bank material.

5.2 CONSERVATION MEASURES

The applicant's conservation measures include: incorporation of onsite Avoidance and Conservation in the Project's Design; Pre-Construction Surveys/Remediation; Construction Avoidance Measures and Construction Monitoring; Revegetation; Establishment of a Preserve Management Organization; Long-Term Maintenance; Signage; Scientific Involvement and Education; Water Quality Monitoring Program; and Integrated Pest Management. Conservation measures are described in greater detail in the following sections.

5.2.1 Onsite Avoidance and Conservation in the Project Design

The applicant, its golf course designers and construction engineers have specifically taken into account the locations of the known populations of the slender-horned spineflower and designed the project to avoid all direct impacts on these plants. In addition, the project has been substantially and progressively redesigned from the previously considered Los Angeles International Golf Course project. Numerous project redesigns have been undertaken to achieve the current configuration with a 192-acre reserve, which conserves the known populations of the slender-horned spineflower and the areas most likely to contain seed bank material.

The applicant has undertaken substantial efforts to minimize impacts on areas subject to the jurisdiction of the Department during the project planning and approval process during the last ten years. *Table 5-1, Comparison of Prior Project and 1998 Approved Project,* indicates project modifications that were undertaken to respond to comments provided by the Department on the Environmental Impact Report.

The primary mitigation for the permanent loss of approximately 7 of Riversidian alluvial fan sage scrub within areas subject to Department jurisdiction consists of avoidance and conservation of 136 acres of remaining onsite alluvial scrub habitat. An additional 42 acres of coastal sage scrub and 9 acres of southern sycamore-alder riparian woodland will also be conserved as part of the project design, as well as barren wash, dead riparian woodland, and non-native grassland. The natural flood plain and stream bed channels shall also remain intact.

The golf course routing avoids extant slender-horned spineflower populations and is designed to allow for the spineflower habitats to exist in a contiguous area on the eastern and northeastern portions of the site. A minimum 300-foot buffer will be provided between golf course development and the known spineflower populations. The golf course has also been designed so that known cactus wren nest sites would be surrounded by revegetated areas in order to minimize impacts on the nests. Locations of the observed, onsite slender-horned spineflower and cactus wren are depicted in *Figure 3.6.4-1, Slender-horned Spineflower,* and *Figure 3.6.4-2, Cactus Wren.*

The approved project design does not interfere with wildlife dispersal or migration corridors. The north channel of the Tujunga Valley supports vegetation that provides cover for wildlife species traveling along the Valley. The approved project preserves a 200 to 700-foot wide corridor in the north channel, allowing wildlife to travel between the preserved open space of the Angeles National Forest to the east, and preserved habitat at Hansen Dam to the west.

TABLE 5-1
COMPARISON OF PRIOR PROJECT AND 1998 APPROVED PROJECT

Plant Community	Total Acres	Avoided/Preserved		Permanent Impact		Construction Impacts		Revegetated	
		Prior Project	Approved	Prior Project	Approved	Prior Project	Approved	Prior Project	Approved
Riversidian Alluvial Fan Sage Scrub									
Pioneer	114	22	69	59	29	33	16		
	123	67	59	45	45	11	21		
Intermediate	30	10	8	20	18	–	3		
Mature									
	267	99	136	124	92	44	40	60	44
TOTAL									
Coastal Sage Scrub									
	44	41	42	6	1	3	1		1
Southern Sycamore Alder Riparian Woodland									
	10	7	9	–	–	3	1		1
Dead Riparian Woodland									
	3	–	3	3	0	–	0		–
Barren Wash									
	25	–	11	15	9	10	5		
Grassland									
	<1	–	–	<1	<1	–	–		–
Ephemeral Aquatic Habitat									
	(38)[1]	not mapped	–	not mapped	–	not mapped	–	not mapped	–
TOTAL	352[2]	147[2]	202	148[2]	104	60[2]	46		46

[1] Perennial streamflows are present onsite during years with high levels of storm activity as occurred during the season of 1993/1994 and 1994/1995. When present this ephemeral aquatic habitat accounts for as many as 38 acres. The low flow channel located along the northern portion of the property is intermittent in most years and is mapped as such on the USGS quadrangle. For the purposes of mapping, this habitat type has not been considered separately from southern sycamore riparian woodland, but it has been described separately because it potentially supports plant and wildlife species not associated with the riparian woodland onsite in years of low rainfall.

[2] Early planning efforts for the Sunland - Tujunga property describe the property as being 356-acres. Refinements of the property boundary and more accurate mapping have determined the size to be 352-acres.

SOURCES: (1) *Draft Multispecies Conservation Plan Los Angeles International Golf Club, Big Tujunga Wash, Los Angeles, California.* Prepared for Cosmo World, Los Angeles International Gold Club, 8822 Foothill Boulevard, Sunland, CA, 91040 and US Army Corps of Engineers, PO Box 2711, Los Angeles, CA 90053-2325. Prepared by Bio Diversity Associates, Michael Brandman Associates, and Sapphos Environmental. Revised May 13, 1993.

(2) *Los Angeles Golf Club Draft Environmental Impact Report* (SCH# 95051004)

5.2.2 Pre-construction Surveys/Remediation

The following measures have been provided to avoid or reduce impacts that are associated with implementation of the project on sensitive species. Pre-construction surveys will be conducted for the slender-horned spineflower, southwestern pond turtle (*Clemmys marmorata pallida*), San Diego horned lizard (*Phrynosoma coronatum blainvillei*), cactus wren (*Campylorhynchus brunneicapillus*), coastal California gnatcatcher (*Polioptila californica californica*), and Los Angeles pocket mouse (*Perognathus longimembris pallida*). The southwestern pond turtle, coastal California gnatcatcher and Los Angeles pocket mouse have not been documented as occurring within the project site during repeated biological surveys (see Section 2.6, Biological Resources). However, pre-construction surveys will be undertaken for these species to document their continued absence from the project site.

The presence of the slender-horned spineflower, San Diego horned lizard and cactus wren on the project site are well documented. The measures provided for the San Diego horned lizard and cactus wren will reduce the impacts from the loss of occupied habitat for these species. No known locations of the slender-horned spineflower on the project will be impacted through development of the project as designed. The results of the pre-construction survey for this species will be incorporated into the data collected in the long-term monitoring for this species (see Section 5.2.5.3).

5.2.2.1 Slender-horned Spineflower

The locations of the slender-horned spineflower within the project area have been consistently limited to four locations. This has been well documented as a result of surveys conducted in 1992, 1994, 1995, 1996, 1997, and 1998. The project avoids the four known locations of the slender-horned spineflower and provides protection for the species through the long-term monitoring and maintenance of a Reserve (see Sections 5.2.3, 5.2.5, 5.2.6). The pre-construction survey is provided to document the continued presence of the species on the site and conforms with Condition 9 of the Conditional Use/Site Plan Review Conditions of Approval dated May 6, 1998. The results of the survey will be incorporated into the data collected in support of the long-term monitoring for this species (see Section 5.2.5.3).

- A pre-construction survey for this species will be conducted in Spring 1999. The four known populations of the slender-horned spineflower on the project site will be located and counted individually. In addition, other areas of suitable habitat within the project area will be surveyed in the unexpected event that there may be additional locations for the species on the property. A report describing the results of the survey, including the exact extent and locations of the sites where the slender-horned spineflower occurs, will be submitted to the Service and the Department.

5.2.2.2 Southwestern Pond Turtle

The southwestern pond turtle has not been observed on the project site and is not expected to occur (see Section 2.6, Biological Resources). However, southwestern pond turtles have been known from

this site historically (CDFG 1998). Areas of riparian and aquatic habitats within the proposed area of impact may provide suitable habitat for the southwestern pond turtle. Prior to the initiation of ground-clearing and grading activities, a pre-construction survey will be undertaken by a qualified biologist familiar with the biology of the southwestern pond turtle in southern California, in order to determine the suitability of the habitat within the project site, and to make a determination as to the necessity of a live-capture and relocation program for this site.

- Should the pre-construction survey provide evidence of potentially suitable habitat for the southwestern pond turtle on site, then the following shall apply: Thirty days before construction activities are scheduled, a pre-construction survey for the southwestern pond turtle will be conducted in, and immediately adjacent to, the impact areas. The surveys will be conducted by a biologist who possesses the appropriate state permit to live trap the southwestern pond turtle. No additional trapping permits are required. Traplines will be placed throughout appropriate habitat using a standard trapping protocol.

- If the southwestern pond turtle is encountered during the live trapping survey, individuals residing in the direct impact area will be live-trapped and relocated, to the extent feasible, to appropriate habitat in areas scheduled for avoidance and preservation.

5.2.2.3 San Diego Horned Lizard

The San Diego horned lizard has been observed on site during directed surveys. It can be expected to occur in all phases of Riversidian alluvial fan sage scrub, and in sparsely vegetated areas of braided washes within the proposed area of impact. Prior to the initiation of ground-clearing and grading activities, a pre-construction live-trapping survey will be undertaken to document their continued presence on the project site.

- No less than thirty days before construction activities are scheduled, a pre-construction survey for the San Diego horned lizard will be conducted in and immediately adjacent to the impact areas. The surveys will be conducted by a biologist who possesses the appropriate state permit to live capture reptiles. No additional trapping permits are required. Traplines will be placed throughout appropriate habitat using a standard trapping protocol.

- All San Diego horned lizards that are encountered during the trapping survey within the impact area will be relocated, to the extent feasible, to appropriate habitat in areas scheduled for avoidance and preservation on site.

5.2.2.4 *Cactus Wren*

The cactus wren can be expected to occur in intermediate phase of alluvial fan sage scrub, particularly in areas with greater cover of cholla cactus (*Opuntia parryi*) and yucca (*Yucca whipplei*). The locations where cactus wrens have been observed during surveys conducted in 1997 and prior generally agree with the results obtained in the 1998 survey (*Figure 3.6.4-2, Cactus Wren*).

- A pre-construction survey will be undertaken in Spring 1999 to identify locations of birds and active nests. To the maximum extent feasible, this information will be used in final placement of project design features.

- All grubbing, grading, and landscaping activities within 225 feet of known occupied habitat will take place outside of the breeding season (March 1 through August 1) to avoid direct impacts to breeding birds.

- The revegetation plan will include salvage and transplanting of large cholla and yucca to provide immediate habitat for the cactus wren on the project site. Smaller specimens will also be planted in the vicinity of the large transplants to ensure the presence of potential nesting sites in the event the transplants do not survive.

5.2.2.5 *Coastal California Gnatcatcher*

The coastal California gnatcatcher is not expected to occur on the project site based on the lack of observations during directed surveys for the species in 1988, 1993, 1995, 1996, 1997, and 1998 (Section 2.6, Biological Resources). An additional pre-construction survey will be undertaken to document the species' continued absence from the project site.

- In Spring 1999, a pre-construction survey will be performed by a qualified biologist who possesses a federal permit to survey for the coastal California gnatcatcher. The survey will be conducted according to the standard U.S. Fish and Wildlife Service survey protocol (Service 1997).

5.2.2.6 *Los Angeles Pocket Mouse*

The Los Angeles pocket mouse has not been observed on the project site and is not expected to occur (see Section 2.6, Biological Resources). However, the project is within the known historic range of the species (Hall 1981). Areas of the intermediate and mature phases of alluvial scrub within the proposed area of impact may provide suitable habitat for the Los Angeles pocket mouse. Prior to the initiation of ground-clearing and grading activities, a pre-construction trapping survey will be undertaken to document their continued absence from the project site.

- Thirty days before construction activities are scheduled, a pre-construction survey for the Los Angeles pocket mouse will be

conducted in and immediately adjacent to the impact areas. The surveys will be conducted by a mammalogist who possesses the appropriate state permit to trap small mammals. No additional trapping permits are required. Traplines will be placed throughout appropriate habitat using a standard trapping protocol.

- If the Los Angeles pocket mouse is encountered during the trapping survey, individuals residing in the direct impact area will be live-trapped and relocated, to the extent feasible, to appropriate habitat in areas scheduled for avoidance and conservation.

5.2.3 Construction Avoidance Measures and Construction Monitoring

Due to the sensitivity of the biological resources that occur within the project site, construction avoidance measures are described to avoid or reduce impacts during construction. Monitoring during certain periods of the construction shall be undertaken by a qualified biologist with appropriate credentials and experience with the sensitive biological resources that occur on the project site.

5.2.3.1 Avoidance Measures

The following measures are provided to avoid and minimize impacts to sensitive plant and wildlife resources during the construction period. The measures described under "General Measures" apply to work that will be conducted over most of the site, while those outlined as "Habitat Protection Measures" are additional requirements that pertain to working in specific locations within the project site. An environmental monitor will be assigned the responsibility of documenting the adherence to the avoidance measures.

General Measures

Because much of the site lies within a floodplain, the following guidelines for avoidance shall be adhered to during construction, including grubbing, grading and landscaping activities, to prevent the movement of materials from construction areas into water courses:

- All staging of equipment and materials will be accomplished in areas outside the jurisdictional boundaries of the U.S. Army Corps of Engineers (*Figure 3.6.5-2, U.S. Army Corps of Engineers Jurisdictional Delineation*).

- Equipment or vehicles driven and/or operated within native habitats, including riparian habitat, and adjacent to stream channels (including those that are dry), shall be checked and maintained daily by the applicant or their designee, to prevent leaks of materials that if introduced to water courses, could be deleterious to aquatic life.

- The applicant or their designee shall cleanup any spills of oil, fuel, or anti-freeze as soon as they are discovered. Drip pans will be used to capture any potential spillage which might occur during onsite maintenance of equipment.

- Designated equipment wash-out areas shall be used (as needed) to prevent entry of pollutants into habitats and stream channels. The contractor will be responsible for preventing any raw cement/concrete or washing thereof, asphalt, paint or other coating material, oil or other petroleum products, and any other substances resulting from construction related activities, which could be hazardous to plants and wildlife, from contaminating the soil and/or entering the channels of the Big Tujunga Valley. An environmental monitor will be onsite regularly to ensure and document compliance. In addition, the Department and the Regional Water Quality Board will monitor compliance.

- No rubbish shall be deposited within the floodplain of the Tujunga Valley. The construction contractor shall comply with all litter and pollution laws.

- Disturbance or removal of vegetation shall not exceed the approved limits. Limits of grading will be surveyed and clearly marked prior to initiation of grubbing and grading.

Habitat Protection Measures

The following measures will be implemented to ensure that existing alluvial scrub habitat designated for conservation is avoided during construction:

- Identify the Reserve as a sensitive environmental area, with designation as "absolutely no access allowed" on all grading and landscape plans and other documents, as appropriate.

- Include in each construction and maintenance contract a provision for substantial financial liability/penalty should the contractor or its employees cause any destruction/harm to the endangered species within the Reserve.

- Conduct a pre-construction meeting with all construction personnel including the landscape contractor, grading contractor, and all others conducting operations on the site, to explain the sensitivity of the areas outside the limits of grading, the need to avoid them, and the potential consequences of failing to comply with the protocols while working on the site.

- The precise limits of the Reserve will be surveyed and clearly marked with rope and flagging prior to the initiation of grubbing activities. An environmental monitor will be present during grubbing activities to ensure adherence to the defined limits. Subsequent to grubbing, a double fence, (consisting of an orange construction fence on the inner perimeter and 6-foot chain link fencing on the outer perimeter, shown in *Figure 5.2.3.1-1, Construction Avoidance Measures*), will be installed surrounding the construction site to prevent movement of personnel into the Reserve as well as reducing the probability of any wildlife entering the construction site. A single 6-foot chain link fence will be installed along the eastern boundary of the Reserve to prevent trespassing of surrounding residential areas. The northern boundary of the construction site will be flagged along the jurisdictional "waters of the United States" to ensure no construction activities occur within jurisdictional areas. Along the corridor of construction for the water line from Haines Channel, ropes and flagging will be used to define the limits of construction. This will minimize damage to native habitats posed by erecting fences. The fences will be identified as protecting sensitive environmental areas with signage prohibiting unauthorized entry. Fencing will be checked regularly by the environmental monitor.

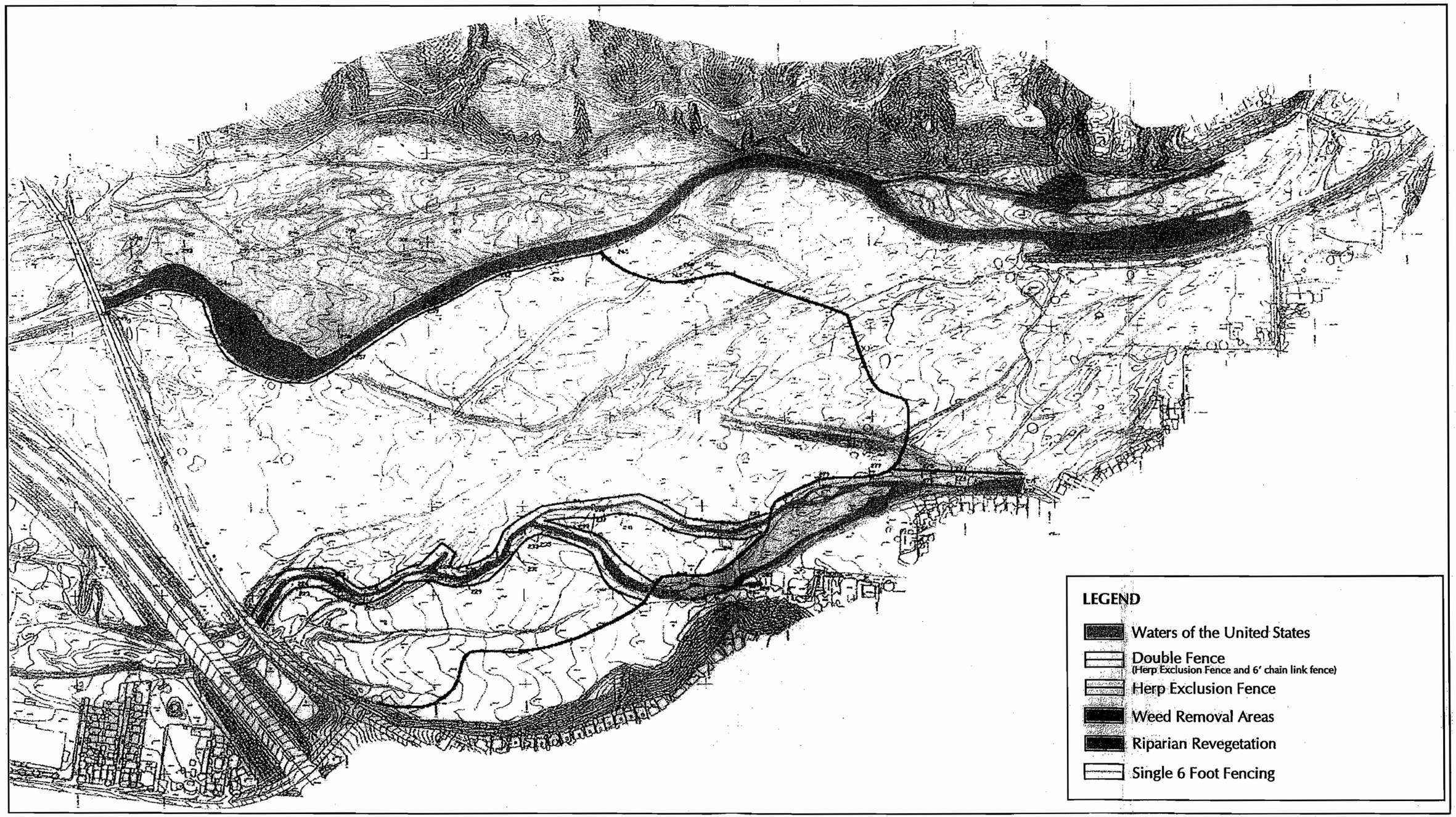
- As described in Section 5.2.2.3, grubbing, grading and landscaping proposed within 225 feet of known occupied habitat of the cactus wren will take place outside of the breeding season (March 1 through August 1) to avoid direct impacts to breeding birds. If grading and landscaping activities are to be conducted during the breeding season within the vicinity of known occupied habitat, an environmental monitor will flag a 225-foot buffer zone between construction areas and known occupied habitat. These grading measures must be incorporated into project plans and specifications.

5.2.3.2 Construction Monitoring

Monitoring of construction activities to ensure adherence to the avoidance measures outlined in the previous section (Section 5.2.3.1 Avoidance Measures) are an important part of the mitigation of impacts to sensitive biological resources that occur on the project site. All monitoring will be conducted by qualified personnel knowledgeable of the avoidance measures outlined in Section 5.2.3.1 and with pertinent regulations. Monitoring results will be documented and summarized in weekly or monthly monitoring reports, as appropriate.

General Monitoring

The environmental monitor will ensure that the following guidelines for avoidance shall be adhered to during construction, including grading and landscaping activities, to prevent the movement of materials from construction areas into water courses:



Long-Term Habitat Management Plan

FIGURE 5.2.3.1-1
Construction Avoidance Measures / Revegetation Areas

- Staging of equipment and materials is accomplished in areas outside the jurisdictional boundaries of the U.S. Army Corps of Engineers.

- Equipment or vehicles driven and/or operated within native habitats, including riparian habitat, and adjacent to stream channels (including those that are dry), are not leaking oils or fuels that if introduced to water courses, could be deleterious to aquatic life.

- The cleanup of oil or fuel spills takes place as soon as they are discovered.

- Designated equipment wash-out areas are used (as needed) to prevent entry of pollutants into habitats and stream channels. Raw cement/concrete or washing thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to plants and wildlife, resulting from project related activities, are prevented from contaminating the soil and/or entering the channels of the Tujunga Valley.

- No rubbish is deposited within the 100-year floodplain of the Tujunga Valley, and the construction contractor is in compliance with all litter and pollution laws.

- Disturbance or removal of vegetation does not exceed the surveyed and flagged limits of grading.

Habitat Reserve Monitoring

The following measures will be undertaken to ensure that the alluvial scrub habitat shall be maintained as a Reserve is avoided during construction:

- The environmental monitor will participate in a pre-construction meeting with the landscape contractor, grading contractor, and all other personnel conducting operations on the site to explain the sensitivity of the areas and the importance of avoiding protected areas.

- An environmental monitor knowledgeable of the local species, site, and work to be performed will supervise the fencing contractor each day while the fencing of the Reserve is conducted. Proper fencing will be certified by the environmental monitor.

- An environmental monitor knowledgeable about the protected habitats and the locations of sensitive species will be present on site during all grading along the boundaries of the habitat Reserve.

- Certification and documentation that the above has been accomplished will be provided to the Corps, Service, and CDFG.

5.2.4 Revegetation

Mitigation for construction-related impacts to Riversidian alluvial fan sage scrub and riparian habitats(see Section 4: Impacts of the Project on Biological Resources) will consist of revegetation of 44 acres of alluvial fan sage scrub, and 1 acre of riparian habitat, respectively. The project also includes 1 acre of coastal sage scrub revegetation, which is not required for mitigation, and is not described in this plan. The following sections contain specific steps that will be taken in the revegetation of alluvial scrub and riparian plant communities.

5.2.4.1 Riversidian Alluvial Fan Sage Scrub

The revegetation of Riversidian alluvial fan sage scrub has been designed to compensate for unavoidable impacts that will occur to alluvial fan sage scrub during the construction of the Red Tail Golf and Equestrian Project. Approximately 44 acres of intermediate phases of Riversidian alluvial fan sage scrub habitat will be created through this plan. The revegetation techniques described in this mitigation plan have been used successfully in the restoration of many habitat types, but have not been attempted in the restoration of alluvial scrub vegetation. Due to the complex nature of Riversidian alluvial fan sage scrub habitat, careful monitoring during both the implementation phase and the establishment phase will be required to ensure the success of this mitigation effort (see Section 5.2.5 Post-Construction Monitoring). The environmental monitor should be a person knowledgeable of native plant species and habitats and familiar with the project and its environmental constraints.

The revegetation plan includes reconstruction of the proper physical habitat characteristics of areas affected by grading but not used for golf course development, planting, irrigation, or monitoring. The Riversidian alluvial fan sage scrub revegetation plan will be implemented in two stages. The first (pre-construction) phase of the plan will take place before any site construction begins, and will be aimed toward the salvage of plant propagules and topsoil as described in Section 5.2.2.1. The second (implementation) phase, described below, will involve actual implementation of the construction/mitigation plan.

To properly implement the mitigation of revegetation, several measures will be implemented prior to construction of the project site. Transects have been established and will continue to collect data on the characteristics of the alluvial fan sage scrub at the site. The results of these surveys will be incorporated into performance criteria for the revegetation. Following the completion of transects, the collection of plant materials for relocation, propagation, clearing of vegetation, and banking of topsoil will be performed. These activities will be performed by restoration specialists over a 6 to 12 month period, and will require a coordinated, long-term planning effort.

1. **Alluvial Scrub Transects.** The target community for restoration is the intermediate phase of Riversidian alluvial fan sage scrub. Performance standards for the intermediate phase of Riversidian alluvial fan sage scrub mitigation will be developed based upon the results of surveys of existing areas that support the intermediate phase of Riversidian alluvial fan sage scrub communities on site conducted prior to start of construction. Transects will determine overall cover of the community and cover by species. Density by

species of the shrub component will be determined either through recording the number of plants encountered along the transect and/or through separate, associated plot counts. Performance standards for the restoration will be based upon an average of measurements for the community returned in the surveys.

2. **Collection of Plant Materials.** Before the implementation of any pre-construction plant salvage activities, the location of a small-scale nursery (onsite, if necessary) will be determined. This nursery would provide plant materials needed for alluvial scrub, as well as for golf course landscaping. Given the size and nature of the proposed revegetation project, an onsite nursery may provide the most feasible means of providing a large quantity of readily available plant material adapted to existing site conditions. An onsite nursery has the additional advantages of providing for changes in scheduling and in the numbers of plants required.

   The alternative to an onsite nursery is to contract an outside nursery to grow required plants. This method eliminates the need for an onsite nursery, but requires detailed planning and scheduling, with one and two years advance notice of the project in order for the grower to prepare the materials and have them available at the time of planting.

   Prior to any clearing or grading operations on the project site, seeds, cuttings, and transplants of alluvial scrub species will be collected during the appropriate seasons, and planted or stored for later installation on the mitigation site. This technique will allow for the development of an alluvial scrub habitat with a more immediate natural diversity. Plant propagules will be collected and produced as follows:

   (a) Cuttings will be taken from an appropriate variety of onsite alluvial scrub species during late winter and early spring, then rooted in flats, liners, tubes, or 1-gallon containers as appropriate.

   (b) Seeds will be collected during late spring or early summer from as many onsite species and as many individuals as feasible before the vegetation is removed. Seeds from individual species will be cleaned and stored separately until planting.

   (c) Larger shrubs, such as California junipers and yuccas, will be excavated with their root balls intact and stored for later transplanting. Many large cholla cactus will be salvaged for planting in the revegetation areas to create potential nesting habitat for onsite cactus wren. Plant salvage shall be performed carefully due to the friable nature of the soil. Small to medium-sized shrub transplants will be stored in 6-inch (or larger) containers deep enough to capture the majority of the root mass of the selected plants. Selective top pruning

of transplanted materials will be performed in order to compensate for loss or damage to the root system during excavation.

(d) Plant materials will be stored and properly cared for until time of planting.

A list of species anticipated for use in alluvial scrub planting, and the means of propagation are provided in *Table 5-2, Alluvial Scrub Planting Data*.

3. **Banking of Topsoil.** The distinct soil stratification of Riversidian alluvial fan sage scrub will be conserved wherever possible or recreated where necessary (to the extent possible) to ensure success of the mitigation action. The 3 to 12-inch layer of fine silts that form the topsoil of existing terraces of mature and intermediate phases of Riversidian alluvial fan sage scrub habitat will be removed and retained. Topsoil will be stockpiled and stored for as brief of a period as possible (two to six months) and then replaced in areas to be revegetated. If deep disturbance of the subsoil is anticipated, as much as 60 inches of subsoil may need to be removed, stored separately, and then replaced.

Soils to be stored will be obtained from the areas of the project site currently supporting the intermediate and mature phases of Riversidian alluvial fan sage scrub that will be affected by the proposed grading activities.

TABLE 5-2
RIVERSIDIAN ALLUVIAL FAN SAGE SCRUB PLANTING DATA

Species	Transplant	Container	Seed	Cutting
Adenostoma faciculatus chamise	X	X	X	
Arctostaphylos spp. manzanita		X	X	X
Artemisia californica California sagebrush			X	X
Berberis nevinii[1] Nevin's barberry		X	X	
Camissonia spp. evening-primrose			X	
Ceanothus crassifolius hoary-leaved ceanothus	X	X	X	X
Ceanothus leucodermis chaparral whitethorn	X	X	X	X
Cercocarpus betuloides birch-leaf mountain mahogany		X	X	

[1]Nevin's barberry was historically present on the site, but is not currently present. The species will be re-introduced to the site if seed can be collected from a nearby, upstream source. Re-introduction of this species will only take place in coordination with the Service and the Department.

TABLE 5-2
RIVERSIDIAN ALLUVIAL FAN SAGE SCRUB PLANTING DATA, *Continued*

Species	Transplant	Container	Seed	Cutting

remedy any adverse changes to soil chemistry. Additionally, temporary seeding of stockpiled topsoils may be required to prevent erosion during the storage period. Coastal sagebrush (*Artemisia californica*) would be a suitable species for erosion control on stockpiled soils. Other native species identified as appropriate by the environmental monitor may also be used.

4. **Grading and Soil Relocation.** Areas proposed for revegetation will be finish-graded to resemble the natural structure of Riversidian alluvial fan sage scrub habitat. Stored subsoil retained from existing intermediate and mature alluvial scrub habitat will be used in the finish-grading of these areas with a thin layer of stored topsoil deposited on the surface. The surface will be lightly compacted and left somewhat roughened to provide microhabitats for plants to become established, but generally will resemble the surface texture of the original Riversidian alluvial fan sage scrub habitat. The layer of topsoil will contain the silt fines believed necessary for the establishment of slender-horned spineflower. If necessary, larger rocks and boulders, as well as gabions, will be used along the edges of revegetation areas to stabilize their location.

5. **Site Preparation.** Site preparation for the Riversidian alluvial fan sage scrub mitigation area will occur immediately following the completion of finish-grading. All grading activities will be monitored by an environmental monitor knowledgeable in native plant revegetation. The construction drawings will include plans and specifications for site preparation of the areas to be revegetated with the intermediate phase of alluvial scrub habitat. These will be reviewed by a qualified landscape architect and biologist prior to approval of the final plans.

6. **Installation of a Temporary Irrigation System.** A temporary irrigation system will be installed and tested prior to the proposed planting. The irrigation system will consist primarily of above-ground components and below-ground lines. The above-ground components can be removed at a later date without disturbing plant life. Below-ground lines will be abandoned in place after the establishment period in order to avoid disturbance of the plantings. Approximately 24 inches of supplemental water per acre will be required each year during the first two years of establishment.

7. **Planting.** All planting on the site will be supervised by an environmental monitor knowledgeable about native plant revegetation. Given the proposed construction schedule, planting will have two phases. All salvaged plants will be replanted as soon as possible. Project construction will proceed in phases. As each area is completed, replanting of salvaged plants will be carried out. Further revegetation planting will be delayed until fall. Optimum conditions exist primarily during the cooler, wetter months between November 15 and April 15. Optimum planting would immediately follow a recent rainfall of at least one-half inch. Planting during this season will greatly facilitate successful establishment of native plants. If seasonal rainfall is low or does not coincide with the desired planting date, both the ground and plant material will be

irrigated prior to planting. Seeds, rooted cuttings, and container plants specified in the plan will be grown in a project nursery or obtained from suppliers and contract growers of native plants. All propagules of contract-grown material will be obtained from plants currently growing on the site. Depending on the availability of the large quantities of seed needed and the maturity of the seed at the time of collection, additional sources for this seed may be necessary.

The Riversidian alluvial fan sage scrub revegetation areas will be planted with a mix of container stock, seed, and hydroseed. Hydroseeding will be conducted as a two step process: the seed mixture will be applied first and the mulch applied over it. The large transplants and the majority of the container plants will be planted above the 20-year inundation level. Following the planting of container stock and transplanted material, all areas of alluvial scrub mitigation will be hydroseeded, providing seed stock for the entire area.

Several areas will be planted with a high density cholla cactus to create potential nesting habitat for onsite cactus wren. These will be created using a combination of salvaged plants as well as container grown plants and cuttings. This will help ensure that any mortality that occurs in salvaged plants will be rapidly compensated by growth of the smaller plants.

8. **Maintenance.** Newly planted and seeded Riversidian alluvial fan sage scrub areas will be maintained for a three-year period beginning with the initiation of planting. Maintenance will consist of temporary irrigation, weed control, and erosion control.

9. **Irrigation.** Temporary irrigation will be provided to the mitigation areas for up to two years following planting to ensure the successful establishment of the plantings. Periodic deep irrigation rather than frequent light irrigation will be used to encourage deep root growth.

10. **Weed Control.** In any newly disturbed area, weedy species easily become established. Some of these will be naturally suppressed as the native vegetation matures. Others, however, if allowed to become established, can suppress the desired vegetation. Of particular concern in this area are tamarisk (*Tamarix* spp.), giant reed (*Arundo donax*), pampas grass (*Cortaderia* spp.), and castor bean (*Ricinis communis*). The mitigation area will be closely monitored for the presence of these species. They will be removed by mechanical methods and, if necessary, with minimum effective amounts of appropriate herbicides, as they appear.

11. **Erosion Control.** Erosion is an element of the natural process of flooding and scouring that occurs in this habitat, and a certain amount of erosion in the mitigation areas is both inevitable and desirable. Excessive erosion, however, will prevent the successful establishment of the plantings, and will need to be controlled. This is particularly important with the constructed terraces and islands. Boulders and rocks, as well as gabions in critical areas, will be used to construct these terraces and hold them in place. The hydroseed mix will contain a tackifier to stabilize the finer topsoils until plants become established. Jute netting may be used to further hold these soils in place if erosion becomes a problem.

    All areas will be carefully monitored for excessive erosion, and, should this occur, immediate efforts will be made to repair and reseed the areas.

5.2.4.2 Riparian

The following tasks will be undertaken for the creation of one (1) acre of riparian woodland in the northern portion of the site.

1. **Acreage.** Create one (1) acre in the northeastern portion of the property. Riparian revegetation will be accomplished with a mixture of overstory species such as arroyo willow, black willow, cottonwood, and sycamore, and understory species that may be maintained, such as mulefat, bulrush, cattail, and sedge.

2. **Site Preparation.** Exotic non-native plant species will be removed from the area prior to implementation of revegetation.

3. **Installation of Temporary Irrigation System.** A temporary irrigation system will be installed and tested prior to the proposed planting. The system will be comprised of below-ground lines and above-ground components. The above-ground components can be removed at a later date without disturbing plant life. The below-ground lines will be abandoned in place once the mitigation riparian woodland is established.

4. **Planting.** All planting will be supervised by a biologist or landscape architect having knowledge and experience in native plant revegetation. All planting will be done during the cooler, wetter months, between November 15 and April 15, immediately following a rain of at least one-half inch. If rainfall does not coincide with the desired planting date, both the ground and plant material will be irrigated prior to planting.

    Deep tillage (with an 18" auger) to the water table is recommended prior to planting woody species. Where large trees are to be planted, deep tillage accomplished by inserting the auger three times to form a triangle is recommended. Deep tillage breaks and mixed soil layers creates a cylinder of loose soil through which roots can rapidly penetrate downward. Anderson (1988) has found a correlation between the depth of tillage and survival and growth rates, with both survival and growth rates

declining sharply when tillage depths fall short of the water table. Planting will be into replaced topsoil; no soil amendments are necessary or desirable. The planting area between trees and shrubs should be lightly raked both prior to and after the broadcast of the species to be seeded to maximize seed contact with the soil and facilitate germination. No substitutions will be made in the planting palette.

Willows will be concentrated in the center of the drainages, while deeper rooted species such as Fremont's cottonwood, white alder, and California sycamore will be planted in areas of slightly higher elevation relative to groundwater and surface flows.

TABLE 5-3
RIPARIAN HABITAT PLANTING DATA

Species	Number/acre	Size	Density
Salix lasiolepis arroyo willow	700	rooted cuttings	8-feet o.c.
Salix goodingii black willow	50	1-gallon	30-feet o.c.
Salix hindsiana sandbar willow	200	1-gallon	8-feet o.c.
Populus fremontii Fremont's cottonwood	15	1-gallon	scattered
Platanus racemosa California sycamore	20	1-gallon	groups of 3-5, planted 20-feet o.c.
Alnus rhombifolia white alder	15	1-gallon	groups of 8-10, planted 10-feet o.c.
Artemesia douglasiana mugwort	1 lb.	seed	scattered
Baccharis salicifolia mulefat	3 lb.	seed	scattered
Sambucus mexicana Mexican elderberry	20	1-gallon	scattered
Quercus agrifolia coast live oak	10	1-gallon	scattered

Methods to be used in the implementation of this plan include planting of the rooted cuttings, nursery-grown container plants, and seeding.

Container plants specified in the mitigation plan will be grown in an onsite nursery or obtained from contract growers of native plants. Advanced notice of six to nine-months will be given to the supplier/grower to ensure that the required species and quantities are ready at the time of the proposed planting.

Following the planting of cuttings and container stock, the specified amounts of seed will be hydroseeded or broadcast over designated areas. Hydroseeding will be conducted as a two step process: the seed mixture will be applied first and the mulch applied over it. The soil surface will be lightly raked prior to seeding.

5. **Maintenance.** High-velocity storm flows may periodically clear the mitigation channels of vegetation and plant debris as they currently do in the existing riparian habitat. The wetland mitigation area will not be fertilized, treated with pesticides, or pruned.

6. **Irrigation.** Temporary irrigation will be provided to the mitigation area for up to 3 years to ensure the successful establishment of riparian habitat. Irrigation will be accomplished using periodic deep irrigation to encourage deep root growth. During the establishment period, the mitigation area will likely require approximately 3 to 5 feet of supplemental water per acre, per year. At the end of the establishment period, irrigation will be gradually curtailed so that tree species can adapt to a condition of not receiving supplemental water.

7. **Weed Control.** In any newly disturbed area, weed species easily become established. Some of these will be naturally suppressed as the canopy of the riparian woodland matures. Others, however, if allowed to become established, can suppress the desired native riparian species. Of particular concern in the mitigation area are giant reed (*Arundo donax*), castor bean (*Ricinus communis*), milk thistle (*Silybum marianum*), salt cedar (*Tamarix* spp.), and mustard (*Brassica* spp.). The mitigation area will be closely monitored for the presence of these species. They will be removed by hand and, if necessary, with minimum effective amounts of appropriate herbicides (approved for use in riparian wetlands) as they appear.

5.2.5 Preserve Management Organization

Successful maintenance of a habitat conservation area as part of a golf course development project is dependent on continuing oversight, management, and coordination by a responsible individual. Funding or labor support by the applicant will be required in support of post-construction maintenance and monitoring of the habitat conservation area and revegetated areas of Riversidian alluvial fan sage scrub and riparian habitat. The *Long-Term Habitat Management Plan* should provide adequate funding to support, at a minimum, a part-time professional to direct routine maintenance activities by qualified technicians and/or volunteer labor and to submit annual reports to the City of Los Angeles Planning Department and the California Department of Fish and Game.

Implementation of this *Long-Term Habitat Management Plan* in accordance with the City of Los Angeles Conditions of Approval requires that an experienced manager be hired, minimally on a part-time basis. Appropriate experience would include a consultant or consulting firm experienced in the identification, propagation, and planting of native plants. The manager should have demonstrated

ability supervising volunteer and professional landscape crews. Although not required, fluency in English and Spanish would be beneficial. The manager must have experience in the preparation and submittal of maintenance and monitoring reports to the Department. The manager would fulfill the tasks outlined below:

- Develop annual program for, and oversee routine maintenance activities.
- Supervise professional and volunteer labor forces to carry out periodic remedial actions (e.g, exotic plant removal, maintenance of small nursery inventory and replacement of plant stock in designated areas).
- The preserve manager will be responsible for carrying out all required mitigation monitoring including revegetation, slender-horned spineflower, and cactus wren surveys. In addition, the Reserve Manager should conduct regular monitoring of Reserve conditions.
- Maintain data records, including all aspects of the biological program.
- Ensure compliance with all Conditions of Approval related to Biota stipulated by the City of Los Angeles Planning Commission.
- Ensure compliance with all Agreement Conditions in the Streambed Alteration Agreement.

5.2.5.1 Performance Standards

Performance standards for the restoration plantings will consist of measures of (1) species richness of native shrub species, and, (2) cover by dominant native perennial shrub species. Mitigation success is typically measured in percent coverage by specified species. Few natural habitats in southern California exhibit 100 percent cover, rather there is often a variable percent of bare ground, and alluvial scrub is no exception. Community values for overall cover and cover by native shrub species for intermediate alluvial fan sage scrub will be determined by surveys conducted on site prior to construction. It is expected that there will be seven to ten dominant shrub species identified, including *Lepidospartum squamatum, Eriogonum fasciculatum, Ericameria linearifolia, Ericameria pinifolia, Yucca whipplei,* and *Opuntia parryi.* Growth rates for these species are unknown or undocumented in this habitat.

The intermediate alluvial fan sage scrub develops on areas that have flood return intervals of 20 to 200 years. The last major flood on the project site was in 1969. Much of the areas that currently support the intermediate phase of Riversidian alluvial fan sage scrub were not inundated as a result of that flood event. Surveys conducted now will reflect the cover that may potentially be attained after 20 to 60 years of growth. Historic aerial photographs taken in 1958 of the project site show that the area which currently supports the mature phase of Riversidian alluvial fan sage scrub was graded and completely denuded of vegetation. Those areas would then indicate the density and diversity of species that can be attained within the mature phase of Riversidian alluvial fan sage scrub within approximately 40 years. The percentage of that cover that may be attained in five years is not known. The variability of the quantity of rainfall received in years preceding survey will also affect the growth rate. The habitat has low water holding capacity and low fertility. Because reasonable estimates of growth rates in this environment are not documented, the first performance criteria will focus upon species richness as compared with extant habitat onsite. Richness of native shrubs will be determined through qualitative surveys of the revegetation areas, and comparison of that data with conserved onsite habitat. Planting rates will aim for attainment of at least 90 percent of species

richness for shrub species as compared to existing habitat. If richness falls below criteria, supplemental planting of additional species will be undertaken. Percent cover for all plants will be sampled annually in the restoration plantings. The performance criteria will be the attainment of at least 80 percent of native species found in transects conducted in adjacent extant habitat. Percent cover values will be evaluated after three years to determine if plantings are on track to achieve an 80 percent value. Recommendations for supplemental planting will be made in the annual reports on the progress of the mitigation sites. Monitoring will continue for five years or until 80 percent of the cover observed in extant habitat is attained in the revegetation areas.

Performance criteria for the riparian revegetation will follow standard Department guidelines discussed below.

5.2.5.2 Monitoring of Plant Communities

Unless otherwise specified, the use of the term *environmental monitor* in the following sections refers to a qualified biologist, ecologist, habitat restoration specialist, or landscape architect. Monitoring will take place for five (5) years, monthly for the first year, and quarterly thereafter until performance standards are met.

Riversidian Alluvial Fan Sage Scrub

Monitoring of restored alluvial fan sage scrub will be accomplished by a qualified biologist with appropriate credentials and experience in native habitat restoration. Monitoring of the alluvial scrub mitigation areas are described below.

1. **Recording of the Initial Planting Effort.** Accurate records will be kept of the species, quantities, and general location of all plantings, as well as the methods used. Any significant problems, such as site conditions unsuitable for planting, will be recorded.

2. **Performance Standards.** Performance standards for the mitigation restoration will consist of measures of (1) richness of native shrub species, and, (2) cover by dominant native perennial shrub species. Standards for alluvial scrub revegetation success are summarized in *Table 5-4, Performance Criteria for Alluvial Scrub Revegetation.* Planting rates will aim for attainment of at least 90 percent of species richness for native shrub species. If species richness falls below that criteria, appropriate species for supplemental planting will be determined from reference transect data, as well as the potential need for reducing cover of any single species in the revegetation area. Percent cover for all plants will be sampled annually in the restoration plantings. The performance criteria will be attainment of at least 80 percent of the sampled average cover of the dominant shrub species after five years. Cover values will be evaluated after three years to determine if plantings are on track to achieve an 80 percent value. If not, potential remedial actions will be evaluated at that time. At a minimum, monitoring will continue for an additional five years or until 80 percent cover is attained.

After the initial planting, the mitigation areas will be visually checked monthly for the first year and quarterly thereafter, and the observations recorded. Once each year (starting one year from the date of planting and continuing for five years), a quantitative analysis of the revegetation areas will be made using line intercept transects in both the revegetation areas and in existing areas that support the intermediate phase of Riversidian alluvial fan sage scrub on the property. During each survey, records will be kept of the cover, number of individuals of each plant species found, and the cause of mortality (if any). Maintenance will be adjusted and supplemental plantings will be made as needed to bring the mitigation area into overall compliance with the minimum success standards.

Loss of the intermediate phase of Riversidian alluvial fan sage scrub will not be replaced if caused by a storm event of such a size that it also causes the loss of pre-existing areas that support the intermediate phase of Riversidian alluvial fan sage scrub at the site. Such a loss would have occurred with or without the project. Loss from a smaller storm event or from other causes within the three-year maintenance period will be repaired to the original planting structure.

TABLE 5-4
PERFORMANCE CRITERIA FOR RIVERSIDIAN ALLUVIAL FAN SAGE SCRUB REVEGETATION

Year	Survival	Species Composition	Percent Native Cover
First	80 percent survival of native shrub plantings	90 percent of native species richness No single species with greater than 50 percent cover	10 percent of reference transects
Second	80 percent survival of native shrub plantings	90 percent of native shrub species richness No single species with greater than 50 percent cover	30 percent of reference transects
Third	–	90 percent of native shrub species richness No single species with greater than 50 percent cover	50 percent of reference transects
Fourth	–	90 percent of native shrub species richness No single species with greater than 50 percent cover	70 percent of reference transects

Fifth	--	90 percent of native shrub species richness No single species with greater than 50 percent cover	80 percent of reference transects

3. **First-Year Monitoring.** One year after planting, a report will be submitted to the California Department of Fish and Game. The report will include all data collected during the previous year, evaluate the success of the mitigation against the standards set forth herein, and recommend steps required to ensure that any deficiencies will be corrected by the next growing season.

4. **Second-Year Monitoring.** Two years after planting, a second similar report will be submitted to the agencies listed above. This report will be the final report to address survival in the mitigation area.

5. **Third-Year Monitoring.** At the end of the third year, a report will be submitted describing the results of quarterly qualitative surveys of the mitigation site, and quantitative analysis of the mitigation sites as compared to the existing onsite habitat.

6. **Fourth-Year Monitoring.** At the end of the fourth year, a similar report will be submitted to the agencies.

7. **Fifth-Year Monitoring.** At the end of the fifth year, a final report will be submitted to California Department of Fish and Game detailing the mitigation progress and fulfillment of performance criteria defined herein. If the mitigation has not achieved the performance criteria, the report will provide recommendations for achieving the goals and a schedule for completion of the mitigation effort.

Southern Sycamore-Alder Riparian Woodland

1. **Recording of the Initial Planting Effort.** Accurate records will be kept of the species, quantities, and location of all vegetation, as well as the methods used. Any significant problems, such as site conditions unsuitable for planting, will be recorded. After the initial planting, the areas will be checked monthly for the first year and quarterly thereafter. During these monthly or quarterly checks, any unsuccessful plantings will be replaced as needed to bring the mitigation area into overall compliance with the minimum success standards. The size of the replacement plants will be selected, as necessary, to meet height requirements at the end of the third and fifth years. Records will be kept of mortality and other problems, such as insect damage.

2. **First-year Monitoring.** One year after planting, a report will be submitted to the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the Department. The report will map the vegetation by type and height class and will recommend

steps required to ensure that roughly 60 percent coverage will be achieved within the mitigation area by the end of the following year. If 80 percent survival rate of the tree species has not been achieved, replanting then may be necessary to achieve this standard.

3. **Second-year Monitoring.** Two years after planting, a second, similar report will be submitted to the agencies listed above; however, this second report will list steps required to ensure that roughly 70 percent coverage will be achieved by the end of the third year.

4. **Third-year Monitoring.** At the end of the third year, the mean heights listed in *Table 5-5, Riparian Habitat Performance Criteria (Height at 3 Years)*, will be attained by the various tree species planted. If these height standards have not been achieved, the permittee shall consult with agencies listed above to determine if any corrective measures will be necessary. These mean heights are based upon current data and field experience. Actual tree heights will vary according to individual growth rates and container sizes, resulting in a structurally diverse habitat.

TABLE 5-5
RIPARIAN HABITAT PERFORMANCE CRITERIA
(Height at 3 Years)

Species	Cuttings	1-gallon	5-gallon	15-gallon
Cottonwood	–	7 ft	9 ft	13 ft
Sycamore	–	5 ft	7 ft	10 ft
Arroyo willow	10 ft	–	–	–
Black willow	12 ft	–	–	–
Sand bar willow	–	4 ft	–	–
White alder	–	6 ft	–	–
Coast live oak	–	3 ft	–	–

Three years after planting, a third similar report will be submitted to the agencies listed above; however, this report will list steps required to ensure that roughly 80 percent coverage will be achieved within the mitigation area by the end of the fourth year.

5. **Fourth-year Monitoring.** Four years after planting, a fourth similar report will be submitted to the agencies listed above; however, this report will list steps required to ensure that roughly 90 percent coverage will be achieved by the end of the fifth year.

6. **Fifth-year Monitoring.** At the end of the fifth year, the mean heights listed in *Table 5-6, Riparian Habitat Performance Criteria (Height at 5 Years)*, will be attained by the various tree species planted. If these height standards have not been achieved, the permittee shall consult with the agencies listed above to determine if any corrective measures will be necessary. As described in the third-year monitoring phase, these mean heights are based upon current data and field experience and will vary according to individual growth rates and container sizes.

TABLE 5-6
RIPARIAN HABITAT PERFORMANCE CRITERIA
(Height at 5 Years)

Species	Cuttings	1-gallon	5-gallon	15-gallon
Cottonwood	–	12 ft	15 ft	20 ft
Sycamore	–	9 ft	13 ft	18 ft
Arroyo willow	15 ft	–	–	–
Black willow	18 ft	–	–	–
Sand bar willow	–	6 ft	–	–
White alder	–	11 ft	–	–
Coast live oak	–	6 ft	–	–

At the end of the fifth year, a similar report will be submitted to the agencies. At this time, if roughly 90 percent coverage is not achieved within the mitigation area, the permittee will consult with the agencies to determine corrective measures. The permittee recognizes that failure of any significant portion of the mitigation plan may result in a requirement to replace that portion of failed mitigation.

5.2.5.3 Monitoring Slender-horned Spineflower

Monitoring of the four known locations of the slender-horned spineflower will be conducted in order to document the long-term success of this species within the onsite Reserve. Surveys for the spineflower will be conducted for three days every spring, according to the following schedule:

1. Every spring until construction is complete.

2. Following completion of construction, each spring for five years, and then again at ten- and fifteen- years post-completion of construction.

The results of the surveys will be submitted to the U.S. Fish and Wildlife Service and the Department.

5.2.5.4 Monitoring of Sensitive Wildlife

Monitoring will be undertaken for the cactus wren whose presence on the project site has been well documented, in order to determine the long-term success of the cactus wren on the project site. Monitoring will involve surveys for the cactus wren, both within and outside of the Reserve, one day each week for six weeks every spring, according to the following schedule:

1. Every spring until construction is complete.

2. Following completion of construction, each spring for five years, and then again at ten- and fifteen- years post-completion of construction.

Surveys will document the locations and numbers of cactus wrens observed and the observations of active nests. The results of the surveys will be submitted to the Department and the City of Los Angeles. If the results of the surveys suggest that the continued presence of the species on the site is threatened, measures may be undertaken to improve the ability of the species to persist on the site. This may include such habitat improvement as planting additional cholla cactus to increase the nesting sites for the species.

5.2.6 Long-term Maintenance

The following measures have been provided to guide the long-term maintenance for areas of the project site designated as conservation areas. These measures intend to coordinate and guide efforts aiming to protect and maintain the environmental quality of the Reserve and adjacent areas, which are essential to ensure their long term success. Long-term maintenance is vital to the operation of the Reserve from an ecological perspective, by accomplishing the removal and eradication of invasive weeds which pose a threat to the Riversidian alluvial fan sage scrub plant community. Other activities that are incorporated in long-term maintenance are associated with trash removal and security, minimizing negative human influences on the Reserve and its environment.

Maintenance will be conducted by landscape maintenance crews appropriately trained in the maintenance of native plants. All maintenance work will be supervised by a qualified habitat

restoration specialist, who shall be present on site during the implementation of maintenance activities. Maintenance will focus on the three activities discussed below: weed eradication and control, trash removal, and the provision of security measures.

5.2.6.1 Weed Eradication

The removal and elimination of giant reed (*Arundo donax*) from the riparian areas designated in *Figure 5.2.3.1-1, Construction Avoidance Measures*, will enhance the quality of the surrounding riparian areas and protect downstream environments from invasion by this species.

Giant reed is an exotic and invasive riparian plant that has become established in the riparian channel on the northern area of the project site. This species is capable of spreading very rapidly through seed transportation and translocation, and by vegetative reproduction upon flooding events. This plant is notorious for its negative effect on the quality of riparian areas in southern California, as it out competes native plant species, and degrades the quality of existing habitat. Similar situations in other areas of southern California (e.g., Santa Ana River) have resulted in rapid replacement of native riparian vegetation by this exotic plant species after disturbance. The coverage areas of this exotic plant on the riparian strip on the north channel of the project site are areas that merit eradication efforts for the threat posed to downstream environments, flooding, and any periodically disturbed character of this site.

As part of the overall long term maintenance efforts, a program to remove and control giant reed and other exotic plants will be initiated and maintained by the Reserve Manager and the landscape maintenance crews. Control of this pest plant and other introduced plants will help prevent them from becoming established in adjacent areas of the golf course and downstream areas that have been disturbed by construction and will undergo revegetation. As part of the maintenance program, any trash in the mitigation area will be removed along with all cuttings of exotic plants.

It is recommended that prior to weed eradication and exotic plant removal, landscape maintenance crews familiarize themselves with the giant reed and other species and their characteristics to ensure removal is properly accomplished. Additionally, briefing on plant removal procedures will be presented by a qualified habitat restoration specialist retained by the Reserve Manager who will be present to supervise and ensure correct procedures are followed during exotic plant removal.

Weed Eradication Protocol

The exotic plant removal and clearing procedures outlined in this section are in accordance with documented protocols (Jackson 1993) and are consistent with methods and procedures reviewed by the Corps (Corps 1996a). Eradication of exotic pest, plant species from riparian areas, which are located immediately upstream from the project site, will be accomplished through hand-clearing and cutting with lopping shears or chain saws, and herbicide application by a licensed applicator, as appropriate. Prior to cutting, flagging of selected plants will be performed by the environmental monitor. All cut plant material will be removed from the site. An herbicide approved for use near open water (e.g., Rodeo®) will be applied directly to the cut surfaces of the stump immediately after cutting (5 minutes maximum elapsed time allowed). Rodeo® will be applied at 100 percent strength with the cut and daub method. A colorant, such as Blazon, should be mixed with the Rodeo to make it easier to determine which stumps have been treated and which have not. Colorant mixing will take place away from the native vegetation or in large plastic trays which will prevent spills from contaminating soils or vegetation. Chemical control protocol for giant reed is described below.

Chemical control is the optimal method for removal of exotic plants that are re-emergent. Roundup® and Rodeo® are efficacious, broad spectrum, post emergence herbicides that have no soil residual activity. Rodeo® is registered for use in aquatic systems, and deemed compatible with the riparian habitat project site. The product can be applied by hand with a cut and daub treatment, which consists of cutting the exotic plant specimens as close to the ground as possible and daubing the area cut with herbicide (Figure A6). In cases where plants are excessive in height, an initial cutting and removal of plant material will precede the cut and daub treatment. The timing of application for optimal control is important. Best results for the cut and daub treatment are late summer through fall when the rate of translocation of the herbicide is the greatest, particularly in the case of giant reed (Jackson 1993). Since access to the site is favorable, removal of the biomass is the best and preferred disposal alternative

Monitoring of Weed Eradication

After the initial cutting and application of the herbicide, re-treatment of newly emergent exotic plants and those that were missed during the first application ("escapes") will likely be necessary. Monitoring and maintenance will take place every six months following initial weed eradication activities. The preferred procedure is for the environmental monitor to visit the site accompanied by the Reserve Manager or person responsible for implementing the on-going long term maintenance. Resprouts and seedlings may be identified at that time. Semi-annual maintenance should follow closely. Due to the presence of exotic pest plants onsite at the present time, and the unavoidable disturbance of the soil associated with the riparian revegetation process, the re-establishment of these pest plants is highly likely, as is the likelihood for competition between plants during the establishment of the native vegetation. It is during this initial period that the control of invasive exotics is most critical. This is due, in part, to the density of the viable root mass and the germination of dormant underground buds. Resprouts are best treated with a foliar spray. In this case, extreme care will be taken to avoid herbicide contact with native vegetation. Small seedlings may be simply pulled. The amount of re-treatment necessary in subsequent years should be drastically reduced, provided there is no re-invasion of these exotic plants.

Monitoring will be conducted by a qualified ecologist or habitat restoration specialist with appropriate experience in native habitat restoration, who will also be in charge of guiding weed eradication efforts. If upon this individual's determination additional cutting and application of herbicide is required, the procedures outlined above in this document should be exercised.

Monitoring of weed eradication will be qualitative in nature, focusing on the overall status of exotic vegetation in the north channel area of the project site. Results of semi-annual monitoring will be reported in a memorandum to the Reserve Manager or alternative designated contact person. These semi-annual reports will be compiled and form the basis for one section of the annual report to be forwarded to the Department. Monitoring and maintenance will continue semi-annually for five years. If monitoring reveals there are no new seedlings or resprouts, then maintenance is not required for that period.

Environmental Protection Measures

As part of the process of weed eradication, care will be given to minimize disruption of environmental conditions present in existing riparian habitat and adjacent habitat. Certain activities associated with exotic plant removal pose environmental dangers, especially in sites adjacent to drainages and surface water. The following measures will be adhered to in activities pertaining to exotic plant removal:

Fueling and maintenance of equipment: All fueling and maintenance of equipment (chain saws, weed-whackers, etc.) will be done in an environmentally conscious manner. Fueling, oiling, and maintenance activities will be performed in or over a plastic tray or bucket in such a way as to prevent any petroleum products from contaminating the soil. Should a spill occur, all contaminated soil will be removed from the site.

Trash and litter: Crews will carry a plastic trash bag with them as they work. Any trash encountered will be collected and placed in the bag for removal at the end of the day. Crews are responsible not to litter the area themselves–all paper cups, cigarette butts, candy bar wrappers, etc. are to be bagged and disposed of properly.

Pesticide safety: All pesticide application will be done under the supervision of a licensed Pest Control Applicator. Crew members should receive pesticide health and safety training prior to pesticide application in accordance with state and federal policies.

Special care will be taken to avoid spills of pesticide. Pesticide spills will be reported immediately to the project manager who should immediately notify the Pest Control Advisor or environmental monitor. Contaminated soil will be removed and disposed of properly.

5.2.6.2 Trash Removal

Historically, the project site has been an area where illegal dumping of trash has taken place, detracting from the project site's environmental and aesthetic character. A component of the long-term maintenance of the project site and the Reserve is trash removal, which will be undertaken in an effort to clean-up and improve the site conditions. Trash removal will be carried out on the project site by landscape maintenance crews. Trash dumping was identified in the December 1990 report to Congress, *Endangered and Threatened Species Recovery Program*, as one of the threats to the slender-horned spineflower.

The following trash removal measures are designed to meet the recommendations of the December 1990 report:

1. **Provision of Covered Trash Receptacles at Trail Heads**—This will provide the opportunity for disposal of trash by trail users, thus preventing the dispersal of trash in areas along trails that bisect the Reserve.

2. **Daily Trash Removal**—The daily activity of trash removal will minimize the accumulation of trash on the project site, and insure that any trash dumping that does

occur is addressed in a timely and systematic manner. Daily trash removal will be a part of routine activities to be carried out on regular basis on the project site.

3. **Restriction of Unauthorized Vehicular Access to Site**—The restriction of unauthorized vehicle access to the site will prevent illegal dumping of large volumes of trash by means of vehicular transportation. With no access to the site, illegal dumping will be greatly reduced, preventing the sheer volume of trash that otherwise may be disposed of on this site, as the current condition indicates.

4. **Apprehension and Prosecution of Trash Dumpers**—The apprehension and prosecution of persons guilty of dumping trash is a measure that will set a strong precedent for discontinuing such activities. Should the landscape maintenance crews identify or witness illegal dumping by individuals, they are responsible for reporting the activity to the Preserve Manager who will be responsible for prosecution of the individuals for their illegal actions.

5.2.6.3 Security / Trespassing Avoidance Measures

In addition to with the site's history as an illegal trash dumping area, the project site has also been recorded as an area where criminal activity and trespassing frequently occur. This is of major concern and long term maintenance measures intended to provide adequate security and prevent the incidence of trespassing are being recommended. They are as follows:

1. Provide limited and controlled access to conservation area
2. Recommend development of docent program for leading tours
3. Secure conservation area from unauthorized vehicular access
4. Provide access to equestrian, bicycle and pedestrian trails access to trails should not allow unauthorized vehicular access
5. Align equestrian, bicycle, and pedestrian trails with existing trail network
6. Close existing unauthorized trails that cross conservation area
7. Secure boundary between golf and conservation areas with berms and native vegetation
8. Prohibit pets in conservation area
9. Implement educational signage regarding high level of sensitivity of conservation area
10. Security patrols of project sites
11. Apprehend and prosecute trespassers

5.2.6.4 Exotic Fish Control

The stocking of ponds created within the landscaped portions of the golf course with non-native mosquitofish (*Gambusia affinis*) will not be permitted. However, the mosquitofish is capable and predisposed to naturally gravitate to areas of open water. Should this species appear within the project site, the potential for ponds to serve as breeding habitat will be addressed by sampling ponds twice yearly. If mosquitofish are determined to be present, measures will be undertaken to eliminate the species from ponds where it is found. These measures shall be site-specific in their effects and shall not involve any method including use of poisons that may adversely affect non-targeted species. The use of electro-shock techniques shall be considered.

5.2.6.5 Brown-Headed Cowbird Trapping Program

The property owner or its designee will be required to fund and ensure implementation of a brown-headed cowbird trapping program in perpetuity or until it is determined to be no longer necessary by the Department. The brown-headed cowbird trapping program will be submitted to the Department as part of the Notification of Streambed Alteration. The brown-headed cowbird trapping program will be submitted to the City of Los Angeles Planning Department for review and approval at least three months prior to grassing the golf course. The brown-headed cowbird trapping program will be initiated concurrently with the implementation of the grassing program.

The brown-headed cowbird is a widespread nest parasite that lays its eggs in the nests of other birds. The spread of agriculture in the west–and more recently–open space, such as parks and golf courses, has contributed to the invasion of brown-headed cowbirds in California. The increase of cowbirds

in California has led to the decline of numerous native birds which have the potential to exist in the Tujunga Valley.

Cowbirds have been observed removing all or a portion of the eggs from the nest of another bird which will be referred to as the "host." The cowbird lays one or two eggs in the host's nest. The host then unknowingly accepts the cowbird's eggs and rear fledglings. Nest parasitism is a successful breeding strategy for the cowbird because the cowbird's eggs are generally larger and hatch before the host's eggs. The cowbird nestling is aggressive, usually larger than the host nestlings, and is therefore capable of out competing the host's offspring and often contributing to their death (Franzreb 1989).
The presence of the golf course could create a condition that is favorable to the brown-headed cowbird. Therefore, a brown-headed cowbird trapping program will be initiated concurrently with the grassing program for the golf course.

Traps used to remove cowbirds will be modified Australian crow traps. These traps allow live capture of birds so that non-target birds can be released unharmed. The traps will be "baited" with live juvenile or female brown-headed cowbirds which will be captured prior to the trapping period with baited traps or mist nets. The juvenile or female cowbirds attract the attention of adult birds and lure them into traps. Once inside the trap, it is difficult for the birds to escape and they can be easily removed. Approximately four bait birds are kept in a separate cage within the trap and are not removed until the trapping season is over. The traps will be placed and maintained so as to provide trapped and bait birds ample shade, food, and water while they are in the traps. The placement of the traps will be the responsibility of the Reserve Manager.

To reduce the amount of nest parasitism, all cowbirds (male, female, and juvenile) that are caught in the traps will be disposed of humanely.

Trapping will begin one week prior to the earliest recorded nesting date for the San Diego cactus wren in Big Tujunga Wash, and will continue until the latest known egg-laying time for that species. Traps will be checked daily during the trapping period to remove both trapped cowbirds and non-target species, which will then be released. Bait birds lost to predation or escape will be replaced during the daily checks.

An annual report documenting the results of the trapping program will be submitted to the Department. Results of the trapping program will be recorded by the Reserve Manager, including date and time of trap checking, observer(s), weather, age of trapped birds (both target and non-target species), the treatment of the birds (whether released, disposed, or retained as bait birds), and other data pertaining to any unusual event, such as predation or loss of bait birds.

5.2.7 Signs

All signs will be constructed of durable material and mounted on concrete footings of not less than 18-inches depth. Sign lettering will be visible and legible for a person of average vision at a distance of 10 feet. The sign surfaces will be finished with a substance which is resistant to graffiti.

5.2.7.1 Warning Signs

The California Department of Fish and Game has identified concerns related to potential hazards to humans (equestrians, pedestrians, cyclists, and golfers) using recreation facilities (golf course and trails) located within Tujunga Valley. The construction contractor will be responsible for installing warning signs at all pedestrian, equestrian, and cycling trail entrances and staging area within the limits of 352 acres addressed in the Final EIR. In addition, the construction contractor will erect warning signs at limits of grading between Hole Numbers 2, 3, 4, 5, 6, 11, 12, 13, 16, and 17, along with the conservation area.

The text will explain that the Tujunga Valley connects open space in the Angeles National Forest with open space in the Hansen Flood Control Basin which is to the west. This open space is sometimes used by large mammals that are native to southern California, including mountain lion, bear, and deer. The text will make clear the potential hazards that these animals pose to humans, particularly children and pets and the need to avoid encounters with these animals.

Signs will be maintained monthly by the Golf Course Operator during the life of the project.

5.2.7.2 Security Signs

All trail entrances will be posted with hours of operation (dawn to dusk). Trails are closed between dusk and dawn and violators will be prosecuted for any trespassing violations.

Unauthorized trails will be closed by distributing leaflitter, providing a stone or plant barrier, and evaluating signs needed to re-establish authorized trails.

Signs will be maintained monthly by the Golf Course Operator during the life of the project.

5.2.7.3 Golf Signs

Golfer Instruction Signs will be posted where areas of play approach the edges of the conservation area, such as Hole Numbers 2, 3, 4, 5, 6, 11, 12,13,16, and 17. The Golfer Instruction Signs will be placed at least ten feet within the limits of grading and clearly indicate the proximity to the conservation area. Golfer Instructions Signs will declare the Conservation Area as "off-limits" for golf play or retrieval of lost balls. Golfers losing balls to the Conservation Area will be instructed to take a free drop where the line of flight of the ball left the limits of play and continue play from that location.

Signs will be maintained weekly by the Golf Course Operator during the life of the project.

5.2.7.4 Interpretative Signs

The construction Contractor will provide at least four signs along the trail providing directional and interpretative information. Trails crossing wildlife habitat will be enhanced through the provision of interpretative signs that identify areas of special interest. These signs may also be useful in informing users of appropriate behavior in natural habitats, sensitive areas and sensitive areas to avoid.

Signs will be maintained monthly by the Golf Course Operator during the life of the project.

5.2.8 Scientific Involvement and Education

The Riversidian alluvial fan sage scrub plant community and associated wildlife are of scientific interest. In the past, graduate and undergraduate students have conducted field courses and research projects on the property. The Reserve Manager will be responsible for reviewing research proposals to determine consistency with the conservation measures identified for the habitat management area. Authorized researchers will be responsible for providing monthly status reports to the manager. Copies of all final reports will be provided to the Reserve Manager, and the California Department of Fish and Game.

The manager will be responsible for training suitable docents to accompany members of scheduled group or organizations, as well as interested members of the public on tours of the habitat management area.

5.2.9 Water Quality Monitoring Program

The Planning Commission of the City of Los Angeles specified one condition of approval related to Surface and Groundwater Quality in their adoption of [Environmental Findings and Statement of Overriding Considerations dated December 5, 1996, as corrected on January 10, 1997:]

- Condition No. 28: Requires that a surface and groundwater quality monitoring program be initiated prior to construction and grading for the golf course. The pre-project water quality will be established, and used as the threshold to be maintained through out the life of the project. Specific measures and requirements will be identified to ensure the maintenance of pre-project water quality. The surface and groundwater quality monitoring program will be prepared to the satisfaction of the Planning Department, the Groundwater Division of the Department of Water and Power and the Regional Water Quality Control Board. Monthly surface and groundwater testing will be reported annually to the Department of Water and Power.

5.2.10 Integrated Pest Management

Integrated Pest Management (IPM) is an agronomic decision making process for pest tolerance, prevention and/or control. IPM does not eliminate the use of pesticides but allows for their use only after established thresholds of acceptable impact are exceeded and when other measures of control have been considered. Flexibility must be provided with the IPM system because of the variable and changing nature of the weather cycles, project use, turfgrass aging and agronomic impact of these changes.

IPM will incorporate preventive control measures and will define specific effective pest management strategies. The system will work towards the suppression of pest populations and provide for the judicious, selective use of pesticides. By managing pest populations and choosing the most

ecologically acceptable method available for control, an IPM program will reduce the potential for pollution to the environment.

The plan mandates minimal fertilizer and herbicide applications. Applications shall be limited to turf areas. As designed, the majority of the turf areas are protected from the capital storm event. The selection of poorly water soluble and lower toxicity pesticides and fertilizers for use within the pesticide/ fertilizer program will lessen transport potential, as will the basic absorption characteristics of the loamy soil/thatch/grass layers that comprise the golf course playing surfaces. As designed, excess irrigation waters and runoff will be collected in lined ponds, further reducing the risk of inadvertent transport into the Reserve area.

The Planning Commission of the City of Los Angeles specified two conditions of approval related to Integrated Pest Management in their adoption of [Environmental Findings and Statement of Overriding Considerations dated December 5, 1996, as corrected on January 10, 1997:]

- *Condition No. 27*: The use of pesticides (fungicides, herbicides, rodenticides and insecticides) as a part of the golf course maintenance and operation shall be employed only as a last resort after all feasible biological, cultural and mechanical methods of pest control have failed, and only for curative, rather than preventative purposes. This condition and the specific measures necessary to comply with it shall be included in the Integrated Pest Management Program portion of the Final Golf Course Management Plan required by Condition No. 49 below.

- *Condition No. 49*: Development and maintenance of the golf course shall be in accordance with a Golf Course Management Plan (GCMP), prepared by the applicant and approved by the Planning Department. The GCMP shall be substantially completed prior to issuance of a Grading Permit. The finalized GCMP shall be maintained at all times on site, and shall be available for public review during normal business hours. The GCMP shall include, but not necessarily be limited to, the following components:

  Component 1: Measures for early identification of site-specific conditions for the golf course design team. Measures could include participation of the golf course architect in flood control design, the golf course superintendent shall be required to have a degree in agronomy (or equivalent) and have training and licensing for the application of pesticides.

  Component 2: Project Integrated Pest Management Plan.

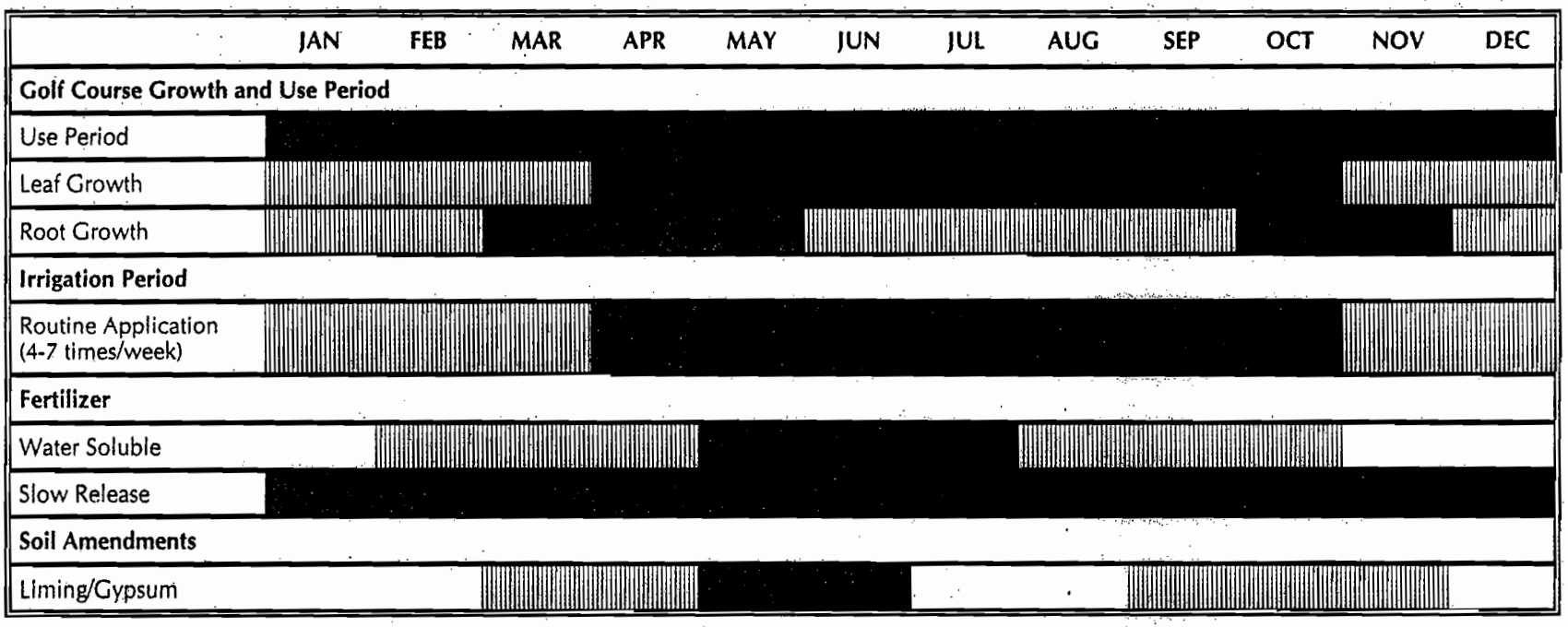
  Component 3: Definition of action thresholds for herbicide and pesticide application based on results of experimental test plots.

  Component 4: The monitoring program for golf course climate conditions, soil conditions, pest populations, and turfgrass quality.

  Component 5: Guidelines for water quality maintenance.

The following tables, *Table 5-7, Implementation Schedules for Red Tail Golf and Equestrian: Greens and Tees (High Maintenance)* and *Table 5-8, Implementation Schedules for Red Tail Golf and Equestrian: Fairways and Roughs (Medium to Low Maintenance),* describe the projected year-round implementation schedules for the aforementioned activities.

TABLE 5-7
IMPLEMENTATION SCHEDULES FOR RED TAIL GOLF AND EQUESTRIAN: GREENS AND TEES (HIGH MAINTENANCE)

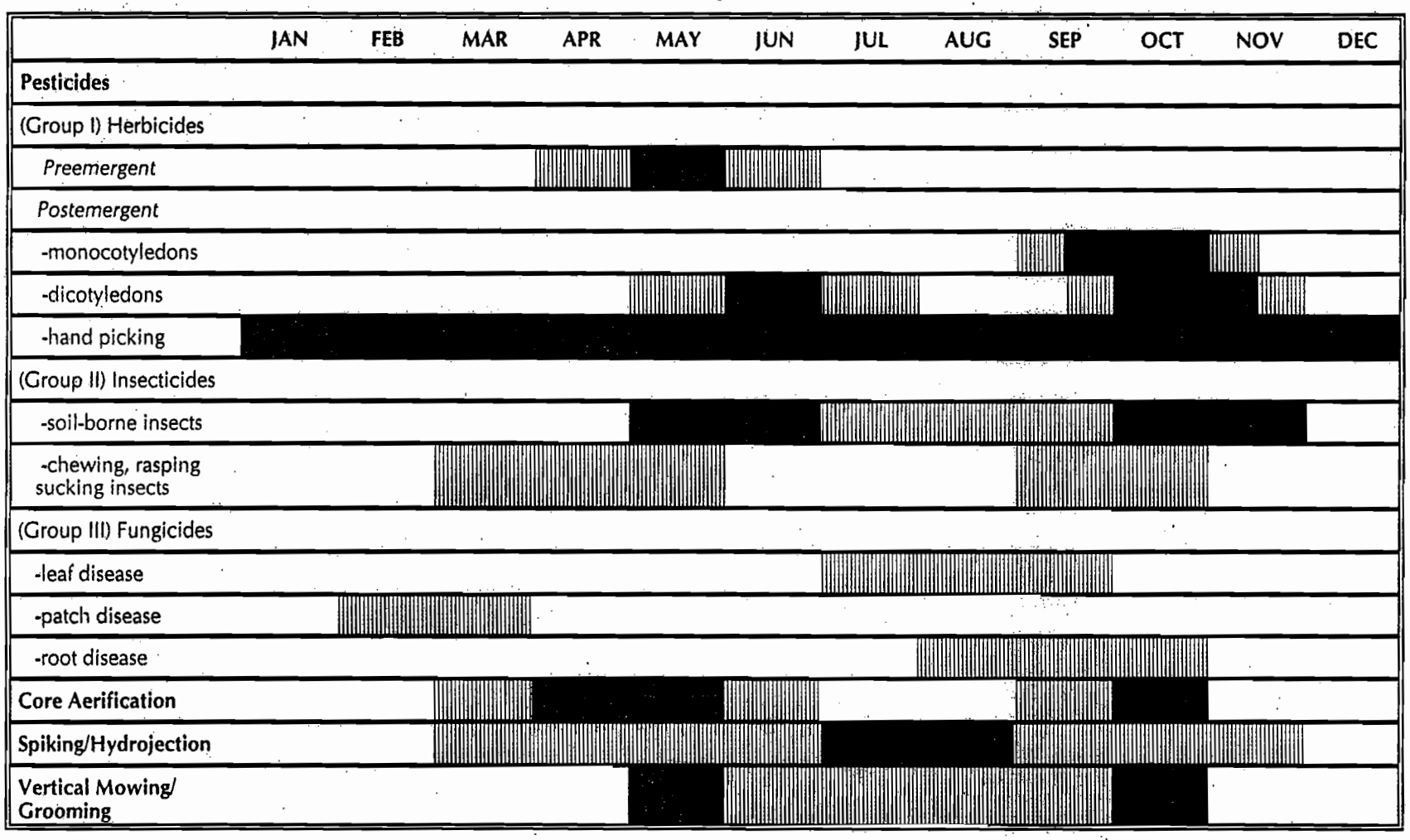


Key:

Most likely time of occurrence:

Possible time of occurrence:

TABLE 5-7
IMPLEMENTATION SCHEDULES FOR RED TAIL GOLF AND EQUESTRIAN: GREENS AND TEES (HIGH MAINTENANCE), *Continued*

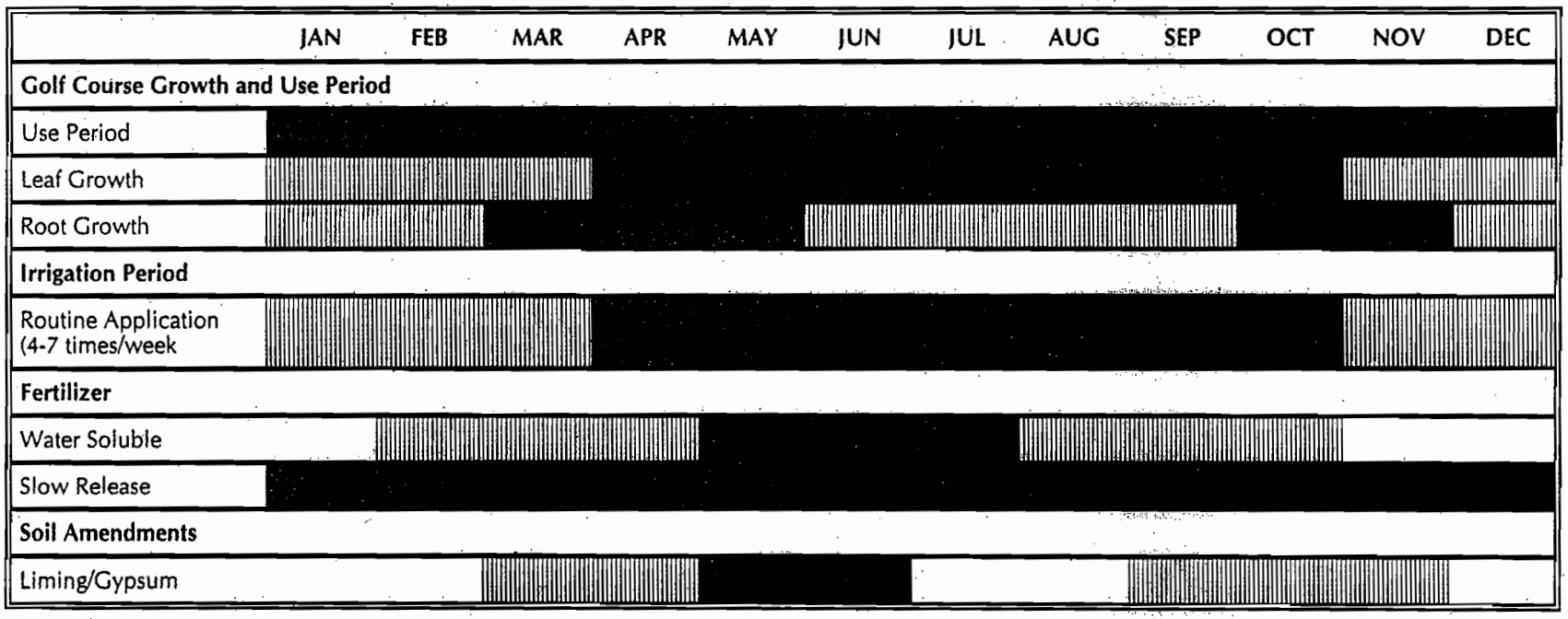


Key:

Most likely time of occurrence:

Possible time of occurrence:

TABLE 5-8
IMPLEMENTATION SCHEDULES FOR RED TAIL GOLF AND EQUESTRIAN: FAIRWAYS AND ROUGHS (MEDIUM TO LOW MAINTENANCE)

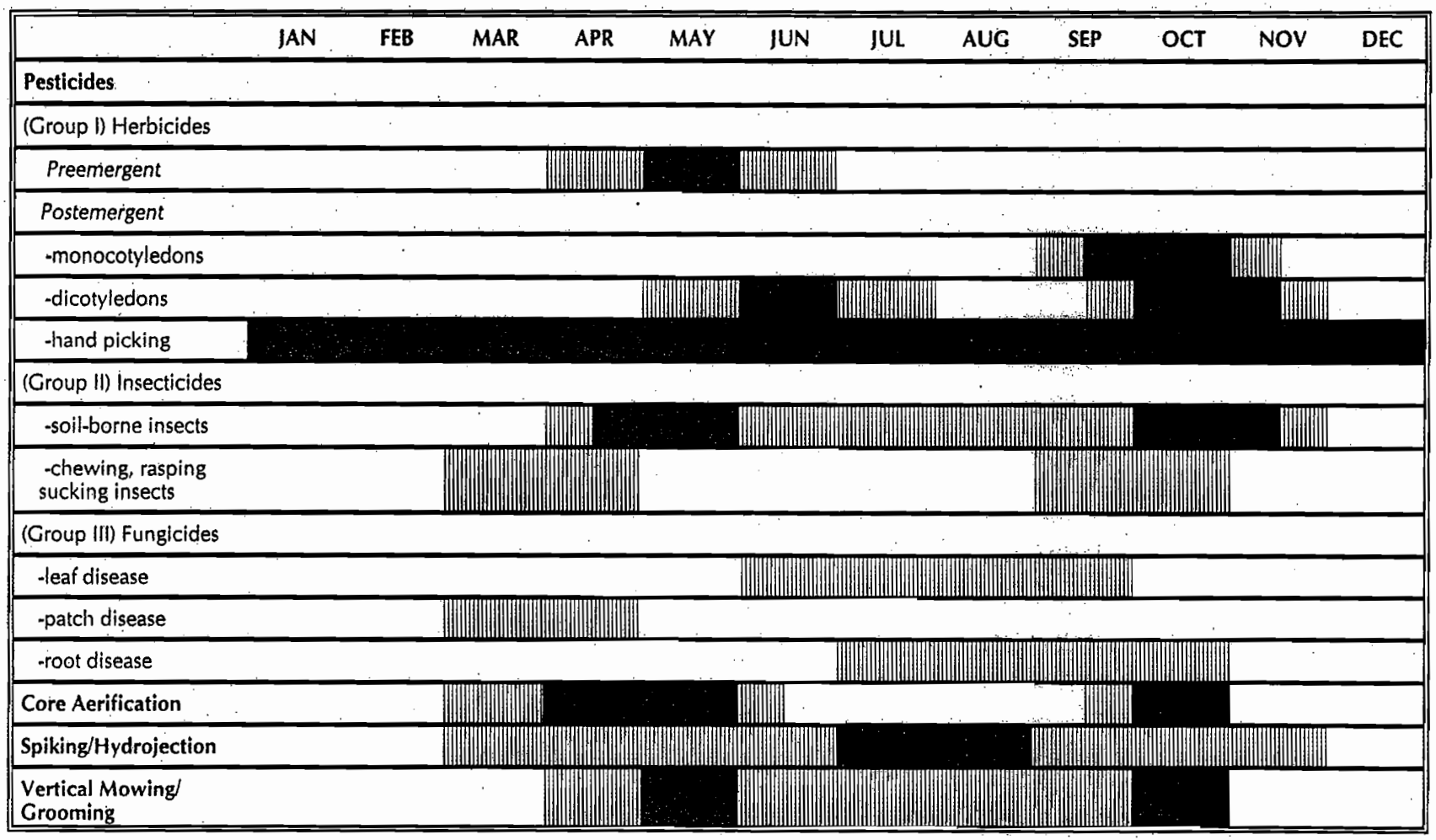


Key:

Most likely time of occurrence:

Possible time of occurrence:

TABLE 5-8
IMPLEMENTATION SCHEDULES FOR RED TAIL GOLF AND EQUESTRIAN: FAIRWAYS AND ROUGHS (MEDIUM TO LOW MAINTENANCE), *Continued*



Key:

Most likely time of occurrence:

Possible time of occurrence:

SECTION 6.0
IMPLEMENTATION AND MONITORING OF THE LONG-TERM HABITAT MANAGEMENT PLAN

SECTION 6.0
IMPLEMENTATION AND MONITORING OF THE LONG-TERM HABITAT MANAGEMENT PLAN

6.1 MANAGEMENT AUTHORIZATION

Implementation of the conditions related to biota identified pursuant to the *Conditional Use/Site Plan Review Conditions of Approval* for City of Los Angeles City Plan Case 96-0243 CU and City Plan Case 96-0241 CUB as approved by the Planning Commission of the City of Los Angeles at its meeting of November 21, 1996, is required for this project. The Conditions of Approval includes the Biota input to the Environmental Mitigation Measures and Monitoring Program attached to the subject case file. Prior to the issuance of any permits relative to this project, an agreement concerning all the information contained in these conditions shall be recorded in the County Recorder's Office in accordance with the *Conditional Use/Site Plan Review Conditions of Approval* for City of Los Angeles City Plan Case 96-0243 CU and City Plan Case 96-0241 CUB. As stated in line 1.b. Covenant., the agreement shall run with the land and shall be binding on any subsequent property owners, heirs or assigns. In addition, the agreement must be submitted to the Planning Department for approval before being recorded. After recordation, a copy bearing the Recorder's number and date shall be provided to the Planning Department.

Foothill Golf Development Group will be solely responsible for all conditions included in the Streambed Alteration Agreement for the project. The *Long-term Habitat Management Plan* is meant to provide guidance and more detailed information related to the purpose of the stipulated measures, performance criteria for assessing attainment of the measures, monitoring protocols for evaluating the attainment of the performance criteria, and long-term maintenance of native habitats within the Red Tail Golf and Equestrian project.

6.1.1 Department Notification and Approval

Foothill Golf Development Group is solely responsible for all notifications of the California Department of Fish and Game required pursuant to the Streambed Alteration Agreement.

Foothill Golf and Development Group will notify the California Department of Fish and Game ten (10) days in advance of initiating any clearing of vegetation in areas mapped as native plant communities in this *Long-term Habitat Management Plan.*

6.1.2 Project Representatives

For the purpose of this *Long-term Habitat Management Plan,* the following persons shall be considered the appropriate representatives of the Parties and the Service:

Mr. David Hueber
Foothill Golf and Development Group
P.O. Box 1996
Ponte Vedra Beach, FL 32082

The Parties shall inform each other, in writing, if there is a change in the designated project representative. Such notification will include the name of the new representative, address, and telephone number.

6.1.3 Notification Regarding Dead, Injured or Entrapped Wildlife

6.1.3.1 Animals

As a result of directed surveys, it has been determined that there are no listed endangered wildlife species present within the project area. Therefore, no permits for the "take" of state or federally listed endangered species have been authorized or requested in support of the project. The following protocol has been stipulated for the unanticipated event of inadvertent "take" of a state or federally listed wildlife species.

If Foothill Golf and Development Group, its employees, contractors or agents kills or injures an individual of a Listed species, or finds any such animals dead, injured, or entrapped, Foothill Golf and Development Group shall immediately notify the Department. All reasonable efforts shall be made to allow any entrapped animals to escape. Any dead or injured animals shall be turned over to the Department and a written report detailing the date, time, location and general description of the circumstances under which it was found must be submitted to the Department no later than three (3) business days following the incident.

6.1.3.2 Plants

As a result of directed surveys, one state and federally listed endangered plant species, slender-horned spineflower, has been identified as occurring onsite. The project has been designed to preserve all known occupied habitat of the slender-horned spineflower. Therefore, no permits for the "take" of state endangered plant species have been authorized or requested in support of the project. The following protocol has been stipulated for the unanticipated event of inadvertent "take" of a state or federally listed plant species.

If Foothill Golf and Development Group, its employees, contractors or agents undertakes an action that results in inadvertent "take" of a state listed plant species, Foothill Golf and Development Group shall immediately notify the Department. The affected plant material shall be turned over to the Department and a written report detailing the date, time, location and general description of the circumstances under which it was found must be submitted to the Department no later than three (3) business days following the incident.

6.1.4 Access, Compliance Inspections and Reporting Requirements

Access and compliance inspections shall be governed by *Conditional Use/Site Plan Review Conditions of Approval* for City of Los Angeles City Plan Case 96-0243 CU and City Plan Case 96-0241 CUB as approved by the Planning Commission of the City of Los Angeles at its meeting of November 21, 1996 and the Streambed Alteration Agreement. Similarly reporting requirements shall be governed by *Conditional Use/Site Plan Review Conditions of Approval* for City of Los Angeles City Plan Case 96-0243 CU and City Plan Case 96-0241 CUB as approved by the Planning Commission of the City of Los Angeles at its meeting of November 21, 1996.

6.2 BONDING

Foothill Golf and Development Group may proceed with the Red Tail Golf and Equestrian project based on compliance with the bonding requirements in *Conditional Use/Site Plan Review Conditions of Approval* for City of Los Angeles City Plan Case 96-0243 CU and City Plan Case 96-0241 CUB as approved by the Planning Commission of the City of Los Angeles at its meeting of November 21, 1996.

SECTION 7.0
REFERENCES

SECTION 7.0
REFERENCES

Alkire, Wm., P. Boise, and A. Harivandi, Ph.D. October 1996. *Draft Integrated Golf Course Management Plan for the Red Tail Golf Course, Los Angeles, California.* Prepared by Golf Ventures International, 5688 E. Los Angeles Avenue, Simi Valley, California 93063. Prepared for the Red Tail Golf Course.

American Ornithologist's Union. 1991. *The Auk* 108:752.[1]

American Ornithologist's Union. 1989. Thirty-seventh Supplement to the American Ornithologist's Union Checklist of North American Birds. *The Auk* 106:532-538.

American Ornithologist's Union. 1957. Checklist of North American Birds. Fifth Edition. American Ornithologists Union, Washington DC.[1]

Anderson, B., 1988. *Deep Tillage Aids Tree Establishment in Riparian Revegetation Projects in Arid Southwest,* Restoration & Management Notes 6:2, pp. 84-87.

Atwood, J.L. 1990. Status review of the California gnatcatcher (*Polioptila californica*). Unpublished technical report, Manomet Bird Observatory, Manomet, Massachusetts. 79 pp.

Atwood, J.L. 1988. *Speciation and geographic variation in black-tailed gnatcatchers.* Ornithol. Monogr. No. 42. American Ornithologists Union.[1]

Atwood, J.L. 1980. The United States distribution of the California black-tailed gnatcatcher. *Western Birds* 11:65-78.[1]

BioDiversity Associates, Michael Brandman Associates, and Sapphos Environmental. 1993 *Draft Multispecies Conservation Plan Los Angeles International Golf Club, Big Tujunga Wash, Los Angeles,* California. Prepared by BioDiversity Associates, 144 Briarwood, Irvine, California 92714, Michael Brandman Associates, 606 S. Olive Street, Suite 600, Los Angeles, California 90014, and Sapphos Environmental, 50 S. DeLacey, Suite 210, Pasadena, California 91105. Prepared for Cosmo World Corporation, 8822 Foothill Boulevard, Sunland, California and the U.S. Army Corps of Engineers, P.O. Box 2711, Los Angeles, California 90053-2325. May 1993.

Brown, Bryan T. 1993. "Bell's Vireo", *The Birds of North America,* No. 35.

[1] Available for review at or through the University of California at Los Angeles, Louise M. Darling Biomedical Library, 12-077 Center for Health Services, 10833 Le Conte Avenue, Los Angeles, CA, 90085; Contact: Reference Dest (310) 825-4904.

California Department of Fish and Game (CDFG). 1997. California Natural Diversity Data Base (CNDDB). *Rarefind 2: A Database Application for the use of the California Department of Fish and Game's Natural Diversity Database.* Sacramento, California. California Department of Fish and Game. Data Base Query for: Element reports for the Sunland, Condor Peak, San Fernando, Agua Dulce, Acton, Mint Canyon, Pasadena, Burbank, and Van Nuys 7.5 USGS Quadrangles. Heritage Section, California Department of Fish and Game. Species/Community Location Reports for the Sunland, California 7.5 USGS Quadrangle. Heritage Section, California Department of Fish and Game.

California Department of Fish and Game (CDFG). 1996. Annual Report on the Status of California's State Listed Threatened and Endangered Plants and Animals.

California Department of Fish and Game (CDFG). 1995. Significant Natural Areas of California Annual Summary.

California Department of Fish and Game (CDFG). 1994. *Special Animals*. Natural Diversity Data Base. Sacramento.

California Department of Fish and Game (CDFG). 1992. *Notification of Removal of Materials and/or Alteration of Lake, River, or Streambed Bottom, or Margin*. Sacramento. Last revised 1987, with directions dated May 14, 1992.

California Department of Fish and Game (CDFG). 1989. Annual Report on the Status of California's State Listed Threatened and Endangered Plants and Animals.

California Department of Fish and Game (CDFG). 1984. Guidelines for assessing effects of proposed developments on rare and endangered plants and plant communities.

California Native Plant Society (CNPS). 1991. Mitigation guidelines: Regarding impacts to rare, threatened and endangered plants. CNPS rare plant scientific advisory committee, Sacramento, California.

California Native Plant Society (CNPS). 1990. *California Native Plant Society's Inventory of Rare Endangered Vascular Plants of California*. M.W. Skinner and B.M. Pavlik (Eds.) Special Publication No. 1. Fifth ed. Sacramento: California Native Plant Society.

City of Los Angeles.[1]

City of Los Angeles. 1997. *Environmental Impact Report No. 95-0286(CUC)(CUB)(VAC), State Clearinghouse No. 95051004, Los Angeles Golf Club Addendum*. (May 9). City of Los Angeles Planning Department, Environmental Review Section, Room 1500, 221 North Figuroa Street, Los Angeles, California 90012-2601. Prepared for City Council, Los Angeles City Hall, Los Angeles, CA 90013.[2]

---

[2] Copies furnished to the California Department of Fish and Game on 10 June 1998.

City of Los Angeles. 1996. *Environmental Impact Report No. 95-0286(CUC)(CUB)(VAC), State Clearinghouse No. 95051004, Los Angeles Golf Club,* California (July 1996). Prepared by the City of Los Angeles Planning Department, Environmental Review Section, Room 1500, 221 North Figuroa Street, Los Angeles, California 90012-2601. Prepared for Kajima Engineering and Construction, Inc., 200 South Los Robles Avenue, Suite 400, Pasadena, California 91101-2431.[2]

City of Los Angeles. 1992. *Final Environmental Impact Report No. 87-8909-CVC-(VAC)(ZV)(SUB)(CUB)(GPA) SCH No. 88021003/Final Environmental Impact Statement for U.S. Army Corps of Engineers Regulatory Permit under Section 404 of the Clean Water Act for Los Angeles International Golf Club,* Sunland-Tujunga, California. Prepared by Michael Brandman Associates, Inc., Carnegie Center, 2530 Red Hill Avenue, Santa Ana, California 92705.[2]

City of Los Angeles. 1989. *Draft Environmental Impact Report No. 87-8909-CVC-(VAC)(ZV)(SUB)(CUB)(GPA) SCH No. 88021003.* Los Angeles International Golf Club, Sunland-Tujunga, California. Prepared by Michael Brandman Associates, Inc., Carnegie Center, 2530 Red Hill Avenue, Santa Ana, California 92705.[2]

City of Los Angeles. 1989. *Sunland-Tujunga Lake View Terrace Shadow Hills District Plan: A Part of the General Plan of the City of Los Angeles.* Los Angeles City Planning Department, Room 561, City Hall.

City of Santa Clarita. 1994. *Final Environmental Impact Report for the Santa Clara River Trail Project Project No. 9261-5011, State Clearinghouse No. 92061010.* Prepared by Fugro-McClelland (West) Inc., 2140 Eastman Avenue, Ventura, CA 93003. Prepared for City of Santa Clarita, Community Development Department and Parks, Recreation, and Community Services Department. (January)

Ehrlich, P.R., D.S. Dobkin, and D. Wheye. 1988. *The Birder's Handbook: A Field Guide to the Natural History of North American Birds.* Simon and Schuster/Fireside Books, New York, New York.[1]

Ellison, J.P. 1984. A revised classification of native aquatic communities in California. State of California Resources Agency, Sacramento, California. No. 84-1.[1]

Emmel, T.C. and Emmel, J.F. 1973. *The Butterflies of Southern California.* The Natural History Museum of Los Angeles County, Science Series 26.[1]

Faber, P.A., E. Keller, A. Sands, and B.M. Massey. 1989. *The Ecology of Riparian Habitats of the Southern California Coastal Region: A Community Profile.* U.S. Fish and Wildlife Service Biol. Rep. 85 (7.27).[1]

Franzreb, K.E. 1989. Ecology and conservation of the endangered least Bell's vireo. U.S. Fish and Wildlife Service, *Biol. Rep.* 89(1). 17 pp.[3]

Garrett, K. and J. Dunn. 1981. *Birds of Southern California: Status and Distribution.* Los Angeles Audubon Society, Los Angeles, California.[1]

Grinnell, J. and A. Miller. 1944. *The Distribution of the Birds of California.* Pacific Coast Avifauna Number 27:1-608.[1]

Hall, E.R. 1981. *The Mammals of North America*, Second Edition. John Wiley & Sons, New York.[1]

Hanes, T.L.; Friesen, R.D.; and K. Keane. 1989. *Alluvial Scrub in Coastal Southern California.* U.S. Department of Agriculture Forest Service General Technical Report, PSW-110.

Hickman, J.C. (ed.). 1993. *The Jepson Manual: Higher Plants of California.* University of California Press, Berkeley.[1]

Hitchcock, A.S. (ed.). 1971. *Manual of the Grasses of the United States.* 2d ed. revised by Agnes Chase. 2 vols. Dover Publications, Inc. New York.[1]

Holland, Robert F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California.* California Department of Fish and Game, Nongame Heritage Program, Sacramento.[1]

Ingles, L.G. 1965. *Mammals of the Pacific States.* Stanford Univ. Press, Stanford, California.[1]

Jackson, N. E., 1993. *Control of Arundo Donax: Techniques and Pilot Project* in *Arundo donax* Workshop Proceedings. Workshop sponsored by Team Around and the California Exotic Pest Plant Council, held in Ontario, CA on November 19, 1993.

Jameson, E.W. Jr., and Peters, H.J. 1988. *California Mammals.* University of California Press. Berkeley, California.[1]

Jennings, M.R. 1983. *An Annotated Check List of the Amphibians and Reptiles of California.* California Fish and Game 69(3):151-171.

Jennings, Mark, D. Germano and D. Morafka. 1994. *Biology and Management of Sensitive Amphibians and Reptiles of Central and Southern California.* Presented by Central Chapter of Wildlife Society.

---

[3] Copies of these references can be obtained from the United States Fish and Wildlife Service. Contact: Endangered Species Division, (916) 979-2725.

Krantz, T. 1984. "A Rewiew of the Endangered Status of the Slender-horned Spineflower (Centrostegia leptoceras), Gray and the Santa Ana River Wooly-star (Eriastrum densifolium ssp. sanctorum) (Mlkn) Mason. BIO-TECH Planning Consultants. Big Bear Lake, California.

McGurty, B.M. 1980. *Preliminary Review of the Status of the San Diego Horned Lizard* (Phrynosoma coronatum blainvillei), *and the Orange-throated Whiptail* (Cnemidophorus hyperythrus beldingi). Status report commissioned by the California Department of Fish and Game.[4]

Michael Brandman Associates. 1990. *Draft Environmental Impact Report for the U.S. Army Corps of Engineers Regulatory Permit Under Section 404 of the Clean Water Act for Los Angeles International Golf Club*, Sunland-Tujunga, California. Prepared by Michael Brandman Associates, Inc., Carnegie Center, 2530 Red Hill Avenue, Santa Ana, California 92705. Prepared for U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch, P.O. Box 2711, Los Angeles, California 90053.[2]

Munz, Philip A. 1974. *A Flora of Southern California*. University of California Press, Berkeley.[1]

Munz, Philip A. 1959. *A California Flora and Supplement.* University of California Press, Berkeley.[1]

Ornduff, Robert. 1974. *An Introduction to California Plant Life.* University of California Press, Berkeley.[1]

P&D Technologies. 1993. Letter Report entitled *Results of Surveys to Document Presence or Absence of the California Gnatcatcher and the Cactus Wren in Big Tujunga Wash for the Proposed Los Angeles International Golf Course.* 110 Town and Country Road, Suite 300, Orange, California, 92668. Prepared for Pettis, Tester, Kruse, and Krinsky, 18881 Von Karman Avenue, 16th Floor, Irvine, California, 92715.

Pettis, Tester, Kruse & Krinsky. 1993. Letter dated August 25, 1995 from Pettis, Tester, Kruse & Krinsky Attorneys at Law, 1881 Von Karman Avenue, 16th Floor, Irvine, California. Prepared for U.S. Fish and Wildlife Service, Portland Eastside Federal Complex, 911 N.E. 11th Avenue, Portland, Oregon.

Prigge, Barry A., Oliver Chadwick, and Cheryl Conel, 1993. *Biological Assessment for Slender-horned Spineflower on the Proposed Gentry Companies Bee Canyon Mobile Home Park.* Environmental Management Services, 5420 Ocean View Boulevard, La Canada, CA 91011. (March 16)

---

[4] Copies of these references can be obtained from the California Department of Fish and Game. Contact: Lilia Martinez, (310) 590-4830.

Remsen, J.V. 1978. *Bird Species of Special Concern in California: An Annotated List of Declining or Vulnerable Bird Species*. Nongame Wildlife Investigations, Wildlife Management Branch, California Department of Fish and Game. Administrative Report No. 78-1.[4]

Remy, Michael H., Tina A. Thomas and James G. Moose. 1995. *Guide to the California Environmental Quality Act (CEQA), 1995 Supplement to 1994 Edition*. Point Arena: Solano Press Books.

Safford, Joan M. and Ronald Quinn. 1998. *Conservation Plan for the Etiwanda-Day Canyon Drainage System Supporting the Rare Natural Community of Alluvial Fan Sage Scrub*. Prepared by California State Polytechnic University, Pomona, 3801 W. Temple Avenue, Pomona, CA 91768. Prepared for Mary Meyer, Department of Fish and Game, Region 5, 330 Golden Shore, Suite 50, Long Beach, CA 90802. (March 1)

Sanders, A.C. 1987. "Sensitive Species of the Upper Santa Ana River: Biotic Resources Scoping for the Santa Ana River Resource Management Plan." Prepared for the County of San Bernardino.

Sapphos Environmental. 1998a. Report entitled *Results of 1998 Directed Surveys for Coastal California Gnatcatcher and Cactus Wren at Big Tujunga Wash*. 133 Martin Alley, Pasadena, California, 91105. Prepared for Foothill Golf and Development Group, 123 Nandina Circle, Ponte Vedra Beach, FL 32082. (December 30)

Sapphos Environmental. 1998b. *Memorandum for the Record 1121-011, Subject: Summary of December 9, 1998 Field Meeting to Review California Department of Fish and Game Area of Jurisdiction at Big Tujunga Valley, Sunland-Tujunga, Los Angeles, CA*. 133 Martin Alley, Pasadena, California 91105. (December 29)

Sapphos Environmental. 1998c. *Red Tail Golf and Equestrian Project Sunland-Tujunga Community City of Los Angeles, California, Jurisdictional Delineation (No. 95-00297-mfs) Pursuant to Section 404 of the Clean Water Act*. 133 Martin Alley, Pasadena, California, 91105. Prepared for U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch, 911 Wilshire Boulevard, 11th Floor, Los Angeles, California 90053. (November 24)

Sapphos Environmental. 1998d. *Memorandum for the Record 1121-010, Subject: Summary of October 23, 1998 Meeting to Review California Department of Fish and Game Jurisdictional Area at Big Tujunga Valley, Sunland-Tujunga, Los Angeles, CA*. 133 Martin Alley, Pasadena, California, 91105. (November 20)

Sapphos Environmental. 1998e. Report entitled *Results of 1998 Directed Surveys for Slender-horned Spineflower (Dodecahema leptoceras)*. 133 Martin Alley, Pasadena, California, 91105. Prepared for Foothill Golf and Development Group, 123 Nandina Circle, Ponte Vedra Beach, FL 32082. (August 26)

Sapphos Environmental. 1997. Report entitled *Results of 1997 Directed Surveys for Slender-horned Spineflower, Coastal California Gnatcatcher, Cactus Wren and Least Bell's Vireo at Big*

Tujunga Wash. 50 South DeLacey Street, Suite 210, Pasadena, California, 91105. Prepared for Kajima Engineering and Construction, 200 South Los Robles Avenue, Suite 400, Pasadena, California, 91101.

Sapphos Environmental. 1996. Report entitled *Report of Directed Surveys for the Slender-horned spineflower* (Dodecahema leptoceras). 50 South DeLacey Street, Suite 210, Pasadena, California, 91105. Prepared for Kajima Engineering and Construction, 200 South Los Robles Avenue, Suite 400, Pasadena, California, 91101.

Sapphos Environmental. 1995. Letter Report entitled *Report of Directed Surveys for the Slender-horned Spineflower (Dodecahema leptoceras), Coastal California Gnatcatcher (Polioptila californica californica) and Cactus Wren (Campylorhynchus brunneicapillus)*. 50 S. Delacey Street, Suite 210, Pasadena, California 91105. Prepared for Kajima Engineering and Construction, 200 South Los Robles Avenue, Suite 400, Pasadena, California 91101.

Sapphos Environmental. 1994. Letter Report entitled *Report of Directed Surveys for the Slender-horned spineflower* (Dodecahema leptoceras). 50 South DeLacey Street, Suite 210, Pasadena, California, 91105. Prepared for Kajima Engineering and Construction, 200 South Los Robles Avenue, Suite 400, Pasadena, California, 91101.

Schoenherr, A.A. 1990. *Endangered Plant Communities of Southern California*. Southern California Botanist: Claremont

Stebbins, R.C. 1985. *A Field Guide to Western Reptiles and Amphibians*. Houghton Mifflin Company, Boston. State of California Resources Agency, Department of Parks and Recreation.[1]

Unitt, P. 1984. The Birds of San Diego County. San Diego Society of Natural History, San Diego, California.[1]
Los Angeles District, Corps of Engineers, 300 North Los Angeles Street, Los Angeles, California. Prepared for Foothills Golf Development Group, Attn: Mr. David Hueber, 123 N. Nandina Circle, Ponte Vedra, FL 32082.

U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch. 1996a. *Control and Management of Giant Reed (Arundo Donax) & Saltcedar (Tamarix spp.) In Waters of the United States and Wetlands*. Prepared by: The Nature Conservancy of California, Southern California Projects Office.

U.S. Army Corps of Engineers. 1995. Letter dated May 22, 1995 from Department of Army, Los Angeles District, Corps of Engineers, 300 North Los Angeles Street, Los Angeles, California. Prepared for Kajima Engineering and Construction, 200 South Los Robles Avenue, Suite 400, Pasadena, California 91101.

U.S. Army Corps of Engineers. 1992a. *Addendum No. 1 to U.S. Army Corps of Engineers Jurisdictional Delineation Pursuant to Section 404 of the Clean Water Act, Los Angelesn International Golf Club, Big Tujunga Wash, Los Angeles, California*. Prepared for U.S. Army

Corps of Engineers, 300 N. Los Angeles Street, Los Angeles, California. Prepared by Michael Brandman Associates. 2530 Red Hill Avenue, Santa Ana, California. Los Angeles Street, Los Angeles, California. Prepared by Michael Brandman Associates. 2530 Red Hill Avenue, Santa Ana, California.

U.S. Army Corps of Engineers. 1992b. *Los Angeles County Drainage Area Review Final Feasibility Report.* 300 N. Los Angeles Street, Los Angeles, California.

U.S. Army Corps of Engineers. 1990a. *U.S. Army Corps of Engineers Jurisdictional Delineation Pursuant to Section 404 of the Clean Water Act, Los Angeles International Golf Club, Big Tujunga Wash, Los Angeles, California.* Prepared for: U.S. Army Corps of Engineers, 300 N. Los Angeles Street, Los Angeles, California. Prepared by Michael Brandman Associates. 2530 Red Hill Avenue, Santa Ana, California.

U.S. Army Corps of Engineers. 1990b. *Draft Environmental Impact Statement/Supplemental Environmental Impact Report* for the U.S. Army Corps of Engineers Regulatory Permit Under Section 404 of the Clean Water Act for Los Angeles International Golf Club, Sunland-Tujunga, California. February. Prepared by Michael Brandman Associates, Inc., Carnegie Center, 2530 Red Hill Avenue, Santa Ana, California 92705.[2]

U.S. Army Corps of Engineers. 1988. Draft Report: *Biological Resources Assessment for Raiders Stadium Project Environmental Impact Statement/Report.* Prepared for Lockman and Associates, 249 East Pomona Boulevard, Monterey Park, California, 91754. Prepared by Michael Brandman Associates, Inc., Carnegie Center, 2530 Red Hill Avenue, Santa Ana, California 92705.[2]

U.S. Army Corps of Engineers. 1984. *A Reconnaissance Survey of Biological Resources in the Los Angeles County Drainage Area.* Prepared for U.S. Army Corps of Engineers, 300 N. Los Angeles Street, Los Angeles, California. Prepared by U.S. Fish and Wildlife Service, 2730 Loker Avenue West, Carlsbad, California.

U.S. Fish and Wildlife Service. 1996. Endangered and Threatened Wildlife and Plants: List of Endangered
and Threatened Plant and Animal Taxa. *Federal Register* 61(40): 7596-7613.

U.S. Fish and Wildlife Service. 1994. "Amphibian and Reptile Species of Special Concern in California." Prepared for the California Department of Fish and Game, Inland Fisheries Division, 1701 Nimbus Road, Rancho Cordova, California. Prepared by Mark R. Jennings, Marc P. Hayes and Research Section, Animal Management Division, Metro Washington Park Zoo.

U.S. Fish and Wildlife Service. 1992. Request for information on six plants and one rodent from Riverside, Orange, Los Angeles and San Bernardino Counties, California.[3]

U.S. Fish and Wildlife Service. 1991a. Endangered and Threatened Wildlife and Plants: Proposed Rule to List the Coastal California Gnatcatcher as Endangered. *Federal Register 56* (180):47053-57060.[1]

U.S. Fish and Wildlife Service. 1991b. Recommended additions to the federal candidate list of plants. USFWS, Southern California Field Station.[3]

U.S. Fish and Wildlife Service. 1990a. Endangered and threatened wildlife and plants; Review of plant taxa for listing as endangered or threatened species. Federal Register 55(35): 6184-6229. (February 21).[1]

U.S. Fish and Wildlife Service. 1990b. Report to Congress: Endangered and Threatened Species Recovery Program. Prepared by the U.S. Department of the Interior, Fish and Wildlife Service, Washington D.C.

U.S. Fish and Wildlife Service. 1989. Endangered and Threatened Wildlife and Plants: List of Endangered and Threatened Plant and Animal Taxa. *Federal Register* 50(17.11 & 17.12):1-33.[1]

U.S. Fish and Wildlife Service. 1988. *Planning Aid Letter on the Los Angeles County Drainage Area Water Control Study*. 2730 Loker Avenue West, Carlsbad, California.

U.S. Fish and Wildlife Service. 1987. Endangered and threatened wildlife and plants: endangered status for *Eriastrum densifolium* ssp. *sanctorum* (Santa Ana woolly star) and *Centrostegia leptoceras* (Slender-horned spineflower). Final Rule. *Federal Register* 52(187): 36265-36270.[1]

U.S. Fish and Wildlife Service. 1986. Endangered and threatened wildlife and plants: proposed endangered status for *Eriastrum densifolium* ssp. *sanctorum* (Santa Ana woolly star) and *Centrostegia leptoceras* (Slender-horned spineflower). Final Rule. *Federal Register* 51(68): 12180-12184.[1]

U.S. Fish and Wildlife Service. 1985. Endangered and Threatened Wildlife and Plants: Review of Vertebrate Wildlife. *Federal Register* 50(181):37958-37967.[1]

U.S. Fish and Wildlife Service. 1982. *Federal Register* 47:58454.[1]

United States Geological Survey. 1988. 7.5 Minute Series Topographic Sunland Quadrangle.

Westman, W.E. 1983. "Xeric Mediterranean - type Shrubland Associations of the Alta and Baja California and the Community Continuum Debate". *Vegetatio* 52:3-19.[1]

Williams, D.F. 1986. *Mammalian Species of Special Concern in California*. Wildlife Management Division Administrative Report 86-1. Department of Fish & Game, Sacramento, California.[1]

Zeiner, D.C., W.F. Laudenslayer, and K.E. Mayer. 1990a. *California's Wildlife: Volume 2, Birds.* California Statewide Wildlife Habitat Relationship System. State of California, The Resources Agency, Department of Fish and Game, Sacramento, California (November).[1]

Zeiner, D.C., W.F. Laudenslayer, and K.E. Mayer. 1990b. *California's Wildlife: Volume III, Mammals.* California Statewide Wildlife Habitat Relationship System. State of California, The Resources Agency, Department of Fish and Game, Sacramento, California (April).

Zeiner, D.C., W.F. Laudenslayer, and K.E. Mayer. 1988. *California Wildlife Volume 1, Amphibians and Reptiles.* California Wildlife Habitat Relationship Systems. State of California, The Resources Agency, Department of Fish and Game, Sacramento, California (May).[1]

The Planning Commission of the City of Los Angeles has certified the Final Environmental Impact Report prepared in support of the Red Tail Golf and Equestrian project proposed by the Foothill Development Golf Group. Kajima Engineering and Construction, Inc. served as the applicant for the Environmental Impact Report. Foothill Golf Development Group, LLC, acting on behalf of the property owner (Cosmo World Corporation), is the Applicant for the conditional use permit. The Red Tail Golf and Equestrian project includes construction of an 18-hole golf course open to the public, a 8,200 square foot two-story clubhouse, and a maintenance building on an approximately 352 acre site. The golf course would encompass approximately 160 acres of the site, with approximately 106 acres devoted to fairways, roughs, greens, tees, and lakes; 3 acres would be developed with the clubhouse, parking lot and maintenance facility, 44 acres of the site would be graded for golf course development but would be allowed to return to natural vegetation. The remaining 192 acres of the site, not required for golf course development (including approximately 38 acres of U.S. Army Corps of Engineers [Corps] "waters of the United States"), would not be developed and would remain habitat for existing plant and animal life, including the slender-horned spineflower and the cactus wren. The project is located at 9401 Foothill Boulevard in the Sunland-Tujunga-Lake View Terrace-Shadow Hills District Plan area of the City of Los Angeles, California. The site is owned by Cosmo World Corporation who has designated Foothill Golf Development Group, LLC, to act as their agent with respect to management of the property.

This *Long-term Habitat Management Plan* is intended to ensure compliance Biota issues identified pursuant to the *Conditional Use/Site Plan Review Conditions of Approval* for City of Los Angeles City Plan Case 96-0243 CU and City Plan Case 96-0241 CUB as approved by the Planning Commission of the City of Los Angeles at its meeting of November 21, 1996. The Conditions of Approval includes the Biota input to the Environmental Mitigation Measures and Monitoring Program attached to the subject case file. The *Long-term Habitat Management Plan* describes all measures proposed by the applicant in support of a Streambed Alteration Agreement.

S.1 ECOLOGICAL SIGNIFICANCE OF THE BIG TUJUNGA WASH

The proposed project site is located in an area known generally as the Tujunga Wash which is dominated by the Riversidean Alluvial Fan Sage Scrub plant community described in Holland (1986) *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Riversidean alluvial fan sage scrub is classified by the California Natural Diversity Data Base as a state-designated sensitive habitat. The project site supports the three known phases , pioneer, intermediate, and mature, of the Riversidian alluvial fan sage scrub community. According to the California Department of Fish and Game's *Significant Natural Areas of California Annual Summary*, the project site occurs within the Significant Natural Area LAX-018. Prior to being incorporated into the City of Los Angeles, the property was in the unincorporated portion of Los Angeles County and was designated as a Significant Ecological Area. Upon incorporation into the City of Los Angeles, the site was designated as an Ecologically Important Area for animals and plants pursuant to the Sunland-Tujunga-Lake View Terrace-Shadow Hills District Plan.

In spite of a long history of land disturbance, Tujunga Wash retains large areas of intact plant communities dominated by native plant species characteristic of the plant communities that

historically occurred on the property. Over 160 plant species have been recorded on the property, and over 200 wildlife species have been observed or are expected to be potentially present onsite. The property supports known occupied habitat for one federally and state listed endangered plant species, the slender-horned spineflower (*Dodecahema leptoceras*). Two other state-designated sensitive plant species, San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) and Nevin's barberry (*Berberis nevinii*), that were identified as potentially occurring onsite due to habitat and known range of those species, have been determined to not be present onsite.

Thirty-six sensitive wildlife species were identified as potentially being present onsite due to suitability of the habitat and known range of those species. No federally or state- designated endangered wildlife species have been observed onsite as a result of directed surveys.

Two sensitive fish species, the Santa Ana sucker (*Castostomus santaanae*) and arroyo chub (*Gila orcutti*), may sometimes be present in association with ephemeral water flows associated with Big Tujunga Creek and Haines Channel outflow. The proposed project does not effect ephemeral water flows associated with Big Tujunga Creek and Haines Channel outlfow.

Directed surveys were undertaken for ten sensitive amphibian and reptile species. Three species, California red-legged frog (*Rana aurora draytonii*), arroyo toad (*Bufo microscaphus californicus*), and southwestern pond turtle (*Clemmys marmorata pallida*) were not observed onsite and are not expected to be present onsite. Although not observed onsite, ephemeral aquatic habitat onsite may provide suitable habitat for western spadefoot toad. Riversidian alluvial fan sage scrub provides suitable habitat for six additional sensitive species, San Diego horned lizard (*Phrynosoma coronatum blainvillei*), coastal whiptail (*Cnemidophorus tigris multiscutatus*), silvery legless lizard (*Anniella pulchra pulchra*), coastal rosy boa (*Lichanura trivirgata rosafusca*), San Bernardino ringneck snake (*Diadophis punctatus modestus*), and coast patch-nosed snake (*Salvadora hexalepis virgultea*).

Seventeen sensitive bird species were evaluated for their potential to occur in the project area. White-tailed kite (*Elanus leucurus*), sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), prairie falcon (*Falco mexicanus*) and northern harrier (*Circus cyaneus*) were determined not to be present onsite as a result of directed surveys. Although no nesting burrows were identified onsite, the property provides suitable foraging habitat for burrowing owl (*Speotyto cunicularia*). Five species typically found in association with riparian habitat, western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*), yellow warbler (*Dendroica petechia*), and yellow-breasted chat (*Icteria virens*) have been determined to not be present onsite as a result of multiple directed surveys. Four bird species typically found in association with scrub habitats, California horned lark (*Eremophila alpestris actia*), California gnatcatcher (*Polioptila californica*), Bell's sage sparrow (*Aphispiza belli belli*), and southern California rufous crowned sparrow (*Aimophila ruficeps canescens*) have been determined to not be present as a result of directed surveys. Although not resident onsite, loggerhead shrike have been observed foraging in the intermediate phase of Riversidean alluvial fan sage scrub on site. The project site supports occupied breeding and foraging habitat for the cactus wren (*Campylorhyncus brunneicapillus*).

Seven sensitive mammal species were considered in the evaluation of biota. Although the property provides no roosting sites for sensitive bat species, suitable foraging habitat is present for spotted bat

(*Euderma maculatum*), Townsend's big-eared bat (*Plecotus townsendii townsendii*), pallid bat (*Antrozous pallidus*), and California mastiff bat (*Eumops perotis*). San Diego black-tailed jackrabbit (*Lepus californicus bennetti*) has been observed onsite in the intermediate phase of Riversidian alluvial fan sage scrub. Two sensitive mammal species, Los Angeles little pocket mouse (*Perognathus longimembris brevinasus*) and American badger (*Taxidea taxus*) have been determined to not be present as a result of directed surveys.

As a result of the project approval and certification of the Final EIR by the Planning Commission of the City of Los Angeles, approximately 192 acres have been designated for long-term management as habitat for plant and wildlife resources. Revegetation of Riversidian alluvial fan sage scrub will be required on cut and fill slopes outside designated areas of the golf course.

S.2 PURPOSE OF THE LONG-TERM HABITAT MANAGEMENT PLAN

The purpose of this *Long-term Habitat Management Plan* is to provide a plan for successful implementation of mitigation measures and conditions required pursuant to the *Conditional Use/Site Plan Review Conditions of Approval* for City of Los Angeles City Plan Case 96-0243 CU and City Plan Case 96-0241 CUB as approved by the Planning Commission of the City of Los Angeles at its meeting of November 21, 1996. The Conditions of Approval includes the Biota input to the Environmental Mitigation Measures and Monitoring Program attached to the subject case file. It is the applicant's intent that the *Long-term Habitat Management Plan* serve as implementation and monitoring plan for all measures proposed by the applicant in support of a Streambed Alteration Agreement.

S.3 PLANNING BACKGROUND

The project approved by the Planning Commission of the City of Los Angeles has resulted from substantial environmental review by regulatory agencies, City staff, and the public. The property is known to have been used for citrus orchard prior to the catastrophic flooding that occurred at the site as a result of infrequent high magnitude storms in 1938. The property was owned by CalMat prior to acquisition by Cosmo World Corporation. CalMat acquired the property because of the high quality, natural resources (sand and gravel) contained within the property. Prior to consideration of the property, for development of a golf course, a draft environmental impact report was prepared analyzing a proposed residential subdivision and commercial development known as the Tujunga Valley Business Park/Homes EIR No. 68-84-SUB(ZC)(PA)(VAC) State Clearinghouse No. 84322803, City of Los Angeles, California.

Several alternatives designs for development of the property as a golf course have been considered by the City of Los Angeles. An environmental assessment was filed in December 1987 with the City of Los Angeles Planning Department for the original project proposal of a Conditional Use and Variance to allow the development of a private golf club. At that time, the Environmental Review Committee of the City of Los Angeles identified the project as having a potential for significant impact on the environment and required preparation of an environmental impact report.

In August 1988, the project description was amended to include single-phase development of the proposed project, a reduced grading footprint, and redesign of the golf course. On October 11, 1988, the applicant requested a permit from the Corps, pursuant to Section 404 of the Clean Water Act, for

the discharge of dredge or fill material into "waters of the United States." Subsequent to circulation of the draft EIR, the Corps prepared a draft environmental impact statement in support of the federal act of consideration of a permit under Section 404 of the Clean Water Act.

On July 19, 1990, the U.S. Fish and Wildlife Service issued a Biological Opinion (1-6-89-F-039) which stated "the proposed Los Angeles International Golf Course project is likely to jeopardize the continued existence of the slender-horned spineflower." On October 3, 1991, the U.S. Army Corps of Engineers responded to the U.S. Fish and Wildlife Service and requested a reevaluation of the jeopardy opinion. On January 15, 1992, the U.S. Fish and Wildlife Service notified the Corps that there was no new information to warrant reevaluation and the biological opinion dated June 19 reflects the Service's position. In March 1994, the Corps concluded that the Los Angeles International Golf Course project as proposed would jeopardize the existence of the slender-horned spineflower. In June of 1994, the Corps denied authorization to discharge dredged or fill material into "waters of the United States."

On March 9, 1995, the applicant filed a request for reconsideration of a newly revised project which completely avoids "waters of the United States." A draft EIR was circulated in February 1996 for public review and comment. The Planning Department of the City of Los Angeles presented the Planning Commission with a final environmental impact report including responses to public and agency comments. The Planning Commission of the City of Los Angeles certified the final environmental impact report as being technically and procedurally adequate pursuant to the California Environmental Quality Act and approved the applicants proposed project which is the subject of this *Long-term Habitat Management Plan* on November 21, 1996.

S.4 REGULATORY FRAMEWORK

This section describes the federal, state, and local statutes and regulations related to biological resources that must be considered prior to construction, during construction, and as part of long-term management of the conservation lands of the Red Tail Golf and Equestrian project.

Federal

The federal statutes and regulations that pertain to this project include the federal Endangered Species Act (ESA) of 1973, Migratory Bird Treaty Act (MBTA), and Section 404 of the Clean Water Act (CWA).

Federal Endangered Species Act. Section 9 of the federal ESA prohibits the "taking" of wildlife species listed by the U.S. Fish and Wildlife Service as threatened or endangered. As defined in the ESA, "taking" means "...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in such conduct." In recognition that "take" cannot always be avoided, Section 10(a) of the ESA includes provisions for takes that are incidental to, but not the purpose of, otherwise lawful activities. As a result of directed surveys, it has been determined that there are no federally listed threatened or endangered wildlife species within the Red Tail Golf and Equestrian project; therefore, further coordination with the U.S. Fish and Wildlife Service pursuant to the Federal Endangered Species Act is not required.

Migratory Bird Treaty Act. The MBTA makes it unlawful to pursue, capture, kill, or possess or attempt to do the same to any migratory bird or part, nest, or egg of such bird listed in wildlife protection treaties between the United States and Great Britain, United Mexican States, Japan, and

the Union of Soviet States. As with the federal ESA, the MBTA also authorizes the Secretary of the Interior to issue permits for take. Compliance with the MBTA, requires that clearing of potentially suitable nesting habitat be completed outside the nesting season of migratory birds known to breed within portions of the property proposed for development. Pre-construction surveys will be required prior to removal of vegetation from development areas to ensure that there is no "take" of migratory bird, nest, or egg of such bird.

Section 404 of the Clean Water Act. Section 404 of the Clean Water Act is administered by the U.S. Army Corps of Engineers (Corps). The Act regulates the discharge of dredge and fill material in the "waters of the United States." The Corps has established a series of Nationwide Permits that authorize certain activities in waters of the United States, provided that the proposed activity can demonstrate compliance with the standard conditions. The Corps has jurisdiction over all projects that result in impacts on waters of the United States in excess of 10 acres, and discretionary jurisdiction over projects of less than 10 acres.

A delineation assessing the area subject to the jurisdiction of the Corps pursuant to Section 404 of the Clean Water Act was completed in 1990 and amended in 1992 (Corps 1992a and 1990a). The study area includes 38 acres that are subject to the jurisdiction of the Corps. Those areas are aligned with the area shown as an intermittent "blue line" drainage in the north channel and the continuation of the Haines Channel outlet in the southern portion of the site. Those jurisdictional areas are comprised of barren wash and include portions of the sycamore-alder riparian woodland.

The project proponent met with the Corps on April 25, 1995 to review the proposed project. The Corps concurred with the determination that the proposed project would not discharge dredge or fill material into "waters of the United States (U.S. Army Corps of Engineers 1995)." The project has been designed to avoid all "waters of United States" subject to the jurisdiction of the Corps pursuant to Section 404 of the Clean Water Act, as delineated in *Addendum U.S. Army Corps of Engineers, Jurisdictional Delineation Pursuant to Section 404 of the Clean Water Act (Corps 1992a).*

State of California

The state statutes and regulations that pertain to this project include the 1996 California Environmental Quality Act, state ESA, Native Plant Protection Act, and Streambed Alteration Agreements.

California Environmental Quality Act. As described in Section 15002 of the 1996 *California Environmental Quality Act Guidelines*, the basic purpose of the Act with respect to this project is to inform the City of Los Angeles and the public about the potential significant environmental effects resulting from construction and operation of the proposed action; identify measures to avoid, reduce, or compensate for anticipated impact of the project; prevent significant, avoidable damage; and to disclose to the public why the City of Los Angeles approved the project in light of the anticipated significant impacts. *City of Los Angeles EIR No. 95-0286(CUC)(CUB)(VAC), State Clearinghouse No. 95051004 for Los Angeles Golf Club [a.k.a. Red Tail Golf and Equestrian Project]* was circulated as a draft for public review in February 1996. A Final EIR for the project providing Clarifications and Revision and response to letters of comment from agencies and the public was completed in July 1996. The City of Los Angeles Planning Department conducted an Examiner's Hearing on October 9, 1996. As a result of the Examiner's Hearing, the staff report recommended approval of the project and stipulated 233 recommended conditions in his report to the Commission on November 21, 1996. At its meeting of November 21, 1996, the City Planning Commission approved the Planning

Department's staff report and the subject requests, with modifications to certain conditions of approval. The Planning Commission certified the Environmental Findings and Statement of Overriding Considerations and adopted the Environmental Findings and Statement of Overriding Considerations.

Endangered Species Act. The state ESA is contained in Sections 2070 through 2097 of the State of California Fish and Game Code. Specifically, Section 2080 prohibits the taking, importation, or sale of state-listed species. Sections 2081 and 2053 authorizes the California Department of Fish and Game (CDFG) to enter into a memorandum of understanding with individuals, public agencies, universities, zoological gardens, and scientific or educational institutions to import, export, take, or possess species for scientific, educational or management purposes. Sections 2090 through 2097 of the state ESA require state lead agencies to consult with the CDFG on projects with potential impacts on state-listed species.

The slender-horned spineflower, which occurs within the proposed conservation area, is a state-listed endangered plant species. Four locations of the slender-horned spineflower (including one that is no longer extant) have been recorded on the property. The project has been designed to avoid impacts on all recorded locations of the slender-horned spineflower. As a result of directed surveys, it has been determined that there are no state listed endangered plant or wildlife species that would be removed as a result of the Red Tail Golf and Equestrian project; therefore, further coordination with the California Department of Fish and Game pursuant to the State Endangered Species Act is not required.

Native Plant Protection Act. The Native Plant Protection Act includes measures to preserve, protect, and enhance rare and endangered native plants. The definitions of rare and endangered differ from those contained in the state ESA; however, the list of native plants afforded protection pursuant to this act includes but is not limited to, those listed as rare and endangered under the state ESA. This act restricts limitations on "take" as follows: "...no person shall import into this state, or take, possess, or sell within this State..." any rare or endangered native plant, except in compliance with provisions of the act. Individual land owners are required to notify the CDFG at least 10 days in advance of changing land uses to allow the CDFG to salvage any rare or endangered native plant material.

To ensure compliance with the Native Plant Protection Act, the applicant will notify the CDFG 10 days in advance of initiating vegetation removal or grading within development areas.

Streambed Alteration Agreements. All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that support fish or wildlife resources is subject to the regulatory authority of the CDFG pursuant to Sections 1600 through 1603 of the State Fish and Game Code. Section 1603 of the Code governs private sector projects. Under the State Fish and Game Code, a stream is defined as a body of water that flows at least periodically, or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having surface or subsurface flows that support or have supported riparian vegetation. The CDFG's jurisdictions within altered or artificial waterways is based on the habitat value of those waterways to fish and wildlife.

S.5 CONSERVATION MEASURES

This *Long-term Habitat Management Plan* has been developed as an attachment to the application for Streambed Alteration Agreement and is intended to describe the project, existing conditions at the project site, anticipated impacts, and mitigation measures identified as conditions of approval by the City of Los Angeles Planning Commission.

This *Long-term Habitat Management Plan for Red Tail Golf and Equestrian Project* eight general types of conservation measures to be employed during construction, operation, and maintenance of the proposed project to ensure compliance with the Conditions of Approval related to Biota stipulated by the City of Los Angeles Planning in their approval of the project:

(1) Onsite Avoidance and Preservation in the Project Design
- Alluvial Scrub Habitat
- Coastal Sage Scrub
- Southern Sycamore-alder Riparian Woodland

(2) Pre-construction Surveys/Remediation
- Los Angeles Pocket Mouse
- California Gnatcatcher
- Cactus Wren
- Least Bell's Vireo
- Slender-horned Spineflower

(3) Construction Avoidance Measures
- Avoidance Measures
- Construction Monitoring

(4) Revegetation
- Riparian Habitat
- Riversidian Alluvial Fan Sage Scrub

(5) Preserve Management Organization
- Monitoring of Native Plant Communities
- Slender-horned spineflower
- Monitoring of Sensitive Wildlife

(6) Long-term Maintenance
- Weed Eradication
- Trash Removal
- Security/Trespassing Avoidance Measures

(7) Signs
- Interpretative
- Safety

(8) Scientific Involvement and Education

APPENDIX A
CITY OF LOS ANGELES, PLANNING COMMISSION CONDITIONAL USE/SITE PLAN REVIEW CONDITIONS OF APPROVAL

CF·97-0469
CPCs 96-0243 CU
96-0241 CUB
CD 2

CONDITIONAL USE/SITE PLAN REVIEW CONDITIONS OF APPROVAL (as revised)

1. Administrative:

   a. Approval verification and submittals. Copies of any approvals, guarantees or verification of consultations, review or approval, plans, studies, etc., as may be required by the subject conditions, shall be provided to the Planning Department for placement in the subject file.

   b. Covenant. Prior to the issuance of any permits relative to this matter, an agreement concerning all the information contained in these conditions shall be recorded in the County Recorder's Office. The agreement shall run with the land and shall be binding on any subsequent property owners, heirs or assigns. The agreement must be submitted to the Planning Department for approval before being recorded. After recordation, a copy bearing the Recorder's number and date shall be provided to the Planning Department.

   c. Definition. Any agencies, public officials or legislation referenced in these conditions shall mean those agencies, public officials, legislation or their successors, designees or amendments to any legislation.

   d. Enforcement. Compliance with these conditions and the intent of these conditions shall be to the satisfaction of the Planning Department and any other designated agency, or the agency's successor, and in accordance with any stated laws or regulations, or any amendments thereto.

2. All other use, height and area regulations of the Municipal Code and all other applicable government/regulatory agencies shall be strictly complied with in the development and use of the property, except as such regulations are herein specifically varied or required.

3. The use and development of the property shall be in substantial conformance with the site plan, plot plan, floor plan and project renderings submitted with the application and attached to the subject case file, except as may be revised as a result of this action or by the subsequent actions of other applicable government/regulatory agencies.

4. The authorized use shall be conducted at all times with due regard for the character of the surrounding district, and the right is reserved to the Planning Commission to impose additional corrective conditions, if, in the Commission's opinion, such conditions are proven necessary for the protection of persons in the neighborhood or occupants of adjacent property.

5. All measures specified in the Environmental Mitigation Measures and Monitoring Program attached to the subject case file are conditions of

this approval and shall be strictly complied with.

6. A maximum of 160 acres of the site is authorized to be devoted to the golf course and golf-related activities.

7. As proposed by the applicant and stated in the application, the golf course shall be open and accessible to the public during business hours, for the life of the project. This condition is not to preclude the requirement of a payment of greens fees prior to allowing the public to play the golf course.

8. Prior to issuance of the Grading Permit, the Applicant shall complete a land survey to document the precise location of all extant slender-horned spineflowers within the subject property. The location of the spineflower populations, the limit of grading, and the proposed golf course will be clearly delineated on a 100-scale topographic map. No golf course feature or activity, either during construction or operation, shall be located or shall occur within 300 feet of every slender-horned spineflower population as shown by the survey.

9. For the purpose of compliance with Condition 8 above, prior to the issuance of any grading permits, the applicant shall conduct a final survey of the slender-horned spineflower populations on-site, in order to more precisely determine their exact extent and locations, to the satisfaction of the California Department of Fish and Game (CDFG).

10. Prior to the issuance of a grading permit, a minimum 192 acres of the eastern portion of the site, and the adjacent eight (8) acre parcel of real property identified as Assessor Parcel No. 2551-020-049, legally described as a portion of Lot 39, Tract 39938, minus the number of acres needed for:

    a. Construction of horse trails and a bicycling/hiking path as required by Condition 25,

    b. Dedication for, and possible future construction of, Big Tujunga Canyon Road,

    c. Necessary utility installation, flood control, and surface and ground water monitoring wells, and

    d. A maximum of 11 acres of the Waters of the United States which traverse the golf course, shall be dedicated to the Santa Monica Mountain Conservancy or other public agency to be maintained as a Wildlife Habitat Preserve. If, prior to the issuance of a grading permit, no public agency is willing to accept such dedication, the Applicant shall either dedicate a conservation easement to CDFG or shall set aside 192 acres of the site, and the additional eight (8) acre parcel as a Wildlife Habitat Preserve. Except for the construction of a horse trail and bike path as required by Condition 24 below, dedication for, and possible future

construction of, Big Tujunga Road, necessary utility installation, flood control and surface and groundwater monitoring wells, and the requirements of the California Department of Fish and Game under a Stream Bed Alteration Agreement, development of any kind, including sand and gravel mining, is prohibited for the life of the project. The Applicant shall prepare a Preserve Management Program which shall be subject to the approval of California Department of Fish and Game, and shall comply with the objectives of the *Endangered and Threatened Species Recovery Program* for the slender-horned spineflower as submitted to Congress in December, 1990. At a minimum, the Preserve Management Program shall address the following: public access/ security/ trespassing; trash/ dumping; and protection of extant populations of slender-horned spineflower.

11. A minimum of 200 off-street parking spaces shall be provided for employees and patrons. At least one 24-inch box shade tree (minimum trunk diameter of two inches and minimum height of eight feet at the time of planting) shall be planted for every four (4) uncovered, unroofed surface parking spaces. The trees shall be dispersed within the parking area so as to shade the surface parking area and shall be protected by minimum six-inch high curbing or other suitable measures. An automatic sprinkler system shall be installed to irrigate the trees.

12. Prior to issuance of a Building Permit, the application shall submit a parking and driveway plan satisfactory to the Department of Transportation and the Fire Department, indicating the number of spaces required, driveways, aisle width, column locations or any other type of obstructions all to be dimensioned.

13. The height of the clubhouse and maintenance building shall not exceed 39 feet, as shown on the project renderings, measured to the highest point of the roof, including screening for the air conditioning units. The clubhouse shall be in an architectural style consistent with that shown on the project renderings, attached to the subject case file.

14. The clubhouse structure shall be set back from Foothill Boulevard a minimum of 300 feet. A minimum 22-foot wide landscape and equestrian buffer shall be provided between Foothill Boulevard and the project parking area.

15. All roof top mechanical equipment, including air conditioning units, shall be fully screened from view from the Foothill Boulevard frontage.

16. The maintenance facility structure shall be set back from Foothill Boulevard a minimum of 100 feet, with a minimum 5-foot high landscaped berm incorporated into a minimum 48-foot wide landscape and equestrian buffer between Foothill Boulevard and the maintenance facility.

17. Architectural features of the Foothill Boulevard frontage of the maintenance facility shall match the clubhouse in a manner consistent with the project renderings attached to the subject case file.

18. Vehicular access to the golf course facility shall be limited to Foothill Boulevard.

19. A maximum of three (3) driveways shall be permitted from Foothill Boulevard. These driveways shall have a minimum separation of 325 feet from each other. The northern most driveway shall be limited to use by employees, deliveries and equestrian users.

20. All concrete driveways, cart paths and sidewalks within the multipurpose trail shall be provided with a stiff broom finish.

21. Prior to the issuance of a Certificate of Occupancy, street vacation proceedings under Council File No. 96-1956 and VAC-E1400565 shall have progressed to at least the adoption of an Ordinance of Intent by the City Council. The necessary street dedications for Big Tujunga Canyon Road and dedications and improvements for Foothill Boulevard and Conover Street, will be addressed under said vacation preceedings. This condition is not intended to preclude the issuance of a Certificate of Occupancy if a request for the issuance of a Revocable Permit to use right-of-way prior to the completion of vacation proceedings has been granted.

22. In order to be in conformance with the General Plan Highways and Freeways Element, the applicant shall provide a complete 86-foot and variable width public street dedication for, but not the improvement of, Big Tujunga Canyon Road, from Oro Vista Avenue to Foothill Boulevard, on an alignment satisfactory to the City Engineer. In the event this portion of Big Tujunga Canyon Road is deleted from the Highways and Freeways Element through an amendment to the General Plan, this condition shall not apply.

23. The applicant shall provide design profiles and other engineering information to substantiate the grade and alignment for future extensions of Big Tujunga Canyon Road to the satisfaction of the City Engineer.

24. Prior to the issuance of a Building Permit, the applicant shall prepare detailed plans of the proposed development identifying the location and alignment of required fire lanes, emergency access to all portions of the golf course, and fire hydrant locations to the satisfaction of the Fire Department.

25. Prior to the issuance of a Certificate of Occupancy, the applicant shall design and construct, to the standards of the Bureau of Engineering, and Department of Recreation and Parks, and to the satisfaction of Council District 2, and the California Department of Fish and Game, two (2) horse trails and a bicycling/hiking path across the site which connect from the western property boundary of the project site (Foothill Boulevard), to the eastern property boundary of the project site (near the intersection of Oro Vista and Big Tujunga Canyon Road), and one equestrian trail on Foothill Boulevard, from the property line on the

north to the property line on the south, across the front of the property on Foothill Boulevard, and leading to the clubhouse. The applicant shall execute a maintenance agreement with the City, and Applicant shall be responsible for maintaining the horse trails and biking/hiking path in good condition for the life of the project. Only one (1) horse trail and one (1) biking/hiking path shall traverse that portion of the Preserve Area located to the east of the golf course. The horse trails shall be constructed with approximately 4-foot high galvanized pipe railing, or other decorative railing approved by the Department of Recreation and Parks and Council District 2. The railing shall be on both sides of the trail with a minimum of a 10 foot wide opening between the rails. No railings shall be placed in waters of the U.S. All trails shall be surfaced with a material that is satisfactory to the Department of Recreation and Parks, Council District 2, and California Department of Fish and Game. Equestrian gates shall be installed on the trail at the east and west property lines to provide controlled access to the Preserve Area. The biking/hiking path shall be constructed to the standards of the City Engineer, and to the satisfaction of Council District 2 and California Department of Fish and Game.

26. An equestrian staging area, including hitching rail and parking for a minimum of 4 horse trailers, shall be provided adjacent to the maintenance facility, consistent with the plot plan attached to the subject case file. A hitching rail and drinking trough for horses shall be provided and maintained within 100 feet of the clubhouse.

27. The use of pesticides (fungicides, herbicides, rodenticides and insecticides) as a part of golf course maintenance and operation shall be employed only as a last resort after all feasible biological, cultural and mechanical methods of pest control have failed, and only for curative, rather than preventative, purposes. This condition and the specific measures necessary to comply with it shall be included in the Integrated Pest Management portion of the Final Golf Course Management Plan required by Condition 49 below.

28. Prior to the issuance of a grading permit for the golf course , the applicant shall prepare and deploy, or suitably guarantee, to the satisfaction of the Planning Department, the Groundwater Division of the Department of Water and Power, the Upper Los Angeles River Watermaster , and the California Regional Water Quality Control Board, a surface and groundwater quality monitoring program. The program, at a minimum, shall: establish the existing, pre-project water quality; include specific requirements necessary to ensure the maintenance of pre-project water quality for the life of the project, including sediment monitoring and implementation of sediment management practices during storm events; and require monthly surface and groundwater testing and annual reporting to the Department of Water and Power and the California Regional Water Quality Control Board. Base line water well monitoring shall be conducted prior to issuance of a grading permit. The California Department of Fish and Game will be consulted about the sites

for such monitoring wells in advance of drilling. Drilling trucks and equipment will be limited to existing roadways. The wells shall not be located in the Spineflower or native habitat areas.

29. Prior to the approval of any agreement with the Department of Water and Power to pump and transport, at the applicant's expense, high nitrate groundwater from the Sunland-Tujunga area for purposes of golf course irrigation, a determination shall be made by theRegional Water Quality Control Board, based in part upon a recommendation from the CDFG, as to whether such an irrigation plan poses any adverse effects to either ground or surface water quality, or to biota. If such an agreement is approved by the Board of Water and Power Commissioners and the City Council, then the groundwater monitoring program required in Condition 28 above shall establish a maximum amount of additional chemical fertilizers which can be applied to the golf course in order to maintain healthy turf conditions.

30. Prior to obtaining any grading permits, a Covenant and Agreement shall be recorded stating that the exporting and/or importing of materials under this approval shall observe the following conditions:

a. All fill material brought to the site shall be clean; the hauling contractor shall certify for no residual toxic materials.

b. Hours of operations shall be from 7:00 a.m. to 5:00 p.m.

c. Days of the week shall be Monday through Saturday.

d. Trucks shall be restricted to 18-wheel dump trucks or smaller.

e. The Specialized Enforcement Unit of the Los Angeles Police Department, (213) 893-8124, and the East Valley District Office of the Department of Transportation, (818) 756-8441, shall be notified prior to the start of hauling.

f. Streets shall be cleaned of spilled materials at the termination of each work day.

g. The final approved haul route map and all the conditions of approval shall be available on the job site at all times.

h. A surety bond shall be posted in an amount satisfactory to the City Engineer for maintenance of haul route streets. The forms for the bond will be issued by the District Engineering Office. Further information regarding the bond may be obtained by calling (213)312-8368.

i. The applicant or contractor shall keep the construction area sufficiently dampened to control dust caused by grading and hauling, and at all times provide reasonable control of dust caused by wind.

j. Hauling and grading equipment shall be kept in good operating condition and muffled as required by law.

k. All loads shall be secured by trimming, watering or other appropriate means to prevent spillage and dust.

l. All trucks are to be watered at the fill site to prevent excessive blowing dirt.

m. All trucks are to be cleaned of loose earth at the job site to prevent spilling. Any material spilled on the public street shall be removed by the contractor.

n. The applicant shall be in conformance with the State of California, Department of Transportation's policy regarding movements of reducible loads.

o. All regulations set forth in the State of California Department of Motor Vehicles pertaining to the hauling or earth shall be complied with.

p. "Truck Crossing" warning signs shall be placed 300 feet in advance of the truck entrance and exit in each direction.

q. One flag person(s) shall be required at the job and fill dump sites to assist the trucks in and out of the project area. Flag person(s) and warning signs shall be in compliance with Part II of the 1985 Edition of "Work Area Traffic Control Handbook".

r. Any desire to change the prescribed routes must be approved by the concerned governmental agencies by contracting the Street Use Inspection Division at 485-3711 before the change takes place.

s. The permittee shall notify the Street Use Inspection Division at least 72 hours prior to the beginning of hauling operations and shall also notify the Division immediately upon completion of hauling operations.

31. Between 10:00 p.m. and 6:00 a.m. the operator shall instruct workers to not cause excessive noise from maintenance activities in the areas along the north and south sides of the site and to be held responsible for any late night noise activity audible at the surrounding residences.

32. There shall be no night lighting for the purpose of playing the golf course. All lighting at the club house parking area and maintenance facility shall be shielded and directed onto the site and no floodlighting shall shine directly onto any adjacent property. All lighting of the golf course shall be directed onto the site, and no floodlighting shall be located as to be seen directly by the adjacent residential areas. This condition shall not preclude a lighted practice green in the vicinity of the clubhouse or the installation of low level

security lighting of the golf course.

33. The use of gas powered golf carts shall be prohibited on the golf course.

34. Any outdoor public address system shall be limited to the clubhouse and immediate area, and shall be designed by a qualified audio sound engineer with the following minimum specifications:

a. Use of low-pressure type speakers only, designed to have a maximum coverage area of approximately 400 square feet each; and

b. Distance between speakers shall not exceed 40 feet.

35. Prior to issuance of a Grading Permit, the applicant should present evidence of approval from the Los Angeles County Flood Control District with respect to adequate flood hazard protection and erosion control devices installation in the Tujunga Canyon and Haines Canyon Channels.

36. Prior to the issuance of any grading permits, suitable studies shall be made of storm drainage. Final design of flood control measures shall be approved by Los Angeles County Flood Control and the Los Angeles City Departments of Public Works and Building and Safety.

37. Prior to issuance of a grading permit, the applicant or the successor in interest shall demonstrate to the satisfaction of the City Planning Department by means of submitting a signed contract, that a staff archaeologist of the Center for Public Archaeology, California State University, Northridge, or a SOPA-qualified archaeologist, shall be employed to monitor all grading operations and shall be subject to the Code of Ethics of the Society for California Archaeology. Said archaeologist shall have knowledge of or be made familiar with the culture of the Gabrielino Tribe who may have frequented the property. Said archeologist shall have the authority to terminate grading operations and mark, collect and evaluate any archaeological materials discovered during construction. Said archeologist shall be provided a reasonable amount of time, but no more than one year, to prepare and implement additional mitigation measures.

38. Prior to the issuance of a grading permit, a Waiver of Damages and Indemnification Documentation shall be processed whereby the owner, lessee and their heirs and assigns acknowledge the flooding risks of the site and hold harmless the City and other governmental agencies from any damage claims that might arise due to flooding of the site. Said document shall include indemnifying the City against any liability to third parties resulting from flooding of offsite properties as a result of the design, development or operation of project improvements on the site, or other injuries or damages resulting from golf course use. In partial satisfaction of this indemnity requirement, the owner and lessee shall name the City as an additional insured on a policy of insurance in a sum no less than $10,000,000 (Ten million Dollars), to be maintained

in perpetuity which policy shall also insure against damage to city owned property as a result of the design, alignment, development or operation of the Project. The document shall stipulate transfer of this Waiver and Hold Harmless provisions to future owners, lessees and their heirs and assigns. The City reserves the right at any time during the term of the conditional use permit, applying generally accepted risk management and inflationary index principals, to change the amount and type of insurance required hereunder upon giving the applicant ninety (90) days prior written notice. The document shall stipulate transfer of the Waiver and hold harmless provisions to future owners, lessees and their heirs and assigns. All current lienholders, at the time the Conditional Use Permit is approved, shall subordinate their liens to this Conditions 38. Such subordination shall be to the satisfaction of the City Attorney.

39. Prior to the issuance of a a Grading Permit, the applicant shall post a bond, in an amount satisfactory to the Department of Building and Safety, to ensure that, in the event grading for and construction of the golf course should commence but not be completed within five (5) years from the issuance of a valid Grading Permit, the property can be restored to the greatest extent feasible to pre-project conditions.

40. Prior to the issuance of a Grading Permit, the applicant shall provide the financial means, through bonding, insurance or other form satisfactory to the City Attorney and Department of Building and Safety, to ensure that should the golf course cease operation within 10 years of the issuance of a Certificate of Occupancy, the property can be restored to the greatest extent feasible to pre-project conditions.

41. All required bonds and insurance shall be obtained from a company qualified to do business in the State of California and with a rating of AAA.

42. All grading and construction activities shall be in compliance with specific requirements provided in a comprehensive geotechnical report prepared specifically for the proposed project, including provisions for excavation and the correction of potential geological hazards, approved by the Department of Building and Safety, City Engineer, and other responsible agencies.

43. Prior to issuance of any grading permits for the clubhouse area, the building and foundation design shall be subject to approval from the Department of Building and Safety for slope correction and stabilization.

44. Prior to commencement of grading, a qualified geotechnical engineer and engineering geologist shall be employed for the purpose of observing earthwork procedures and testing the fills for conformance to the requirements of the City Engineer, approved grading plans, applicable provisions of the Los Angeles Municipal Code, and the geotechnical report approved by the Department of Building and Safety. If, in the

opinion of the engineering geologist, unsatisfactory conditions (i.e., questionable weather, excessive or oversize rock, or deleterious material, etc.) result in a quality of work substandard to that required under specifications of the geotechnical reports and Los Angeles Municipal Code, the engineering geologist shall be empowered to stop construction until conditions are rectified.

45. Prior to the issuance of any permits, the applicant shall obtain flood hazard approval from the City Engineer pursuant to the Flood Hazard Management Specific Plan, Ord. No. 163,913. Minimum requirements include:

a. Use a minimum flow velocity of 13 fps to design all habitable structures, utilities and levees protecting homes and other structures.

b. Elevate all non-residential facilities to at least the base flood depth of three (3) feet (per FIRM) plus one foot freeboard (total four (4) feet) above the highest adjacent grade, or together with attendant utility and sanitary facilities, be completely floodproofed to that level to meet the floodproofing standard specified in 44 CFR Sec. 60.3(c)(3)(ii) and required certification.

c. Prepare a scour and deposition study and plan, utilizing the Army Corps HEC 6 or similiar computer model.

d. Submit a maintenance and inspection plan for all drainage and protective elements prior to the issuance of a building permit.

e. Prepare an emergency prepardness/response/evacuation plan designed to protect life and property in the event of flash floods or other significant storms which might cause damage to the development.

f. The project shall avoid aggravating existing hazards to properties located downstream from the property. If necessary, structural protection will be provided to the Foothill Boulevard bridges and the properties located south of the Foothill Freeway.

46. Prior to issuance of a Grading Permit, the applicant shall provided evidence from the U.S. Army Corps of Engineers (Corps) that grading activities shall not enter or interfere with areas that are under the jurisdiction of the Corps, and that appropriate measures have been established to:

a. Allow Corps personnel to conduct compliance inspections to ensure construction activities do not occur within delineated waters of the U.S. The Corps shall notify the construction project manager or his representative at least 24 hours prior to arrival at the site.

b. Clearly marked and identify all wetlands and waters to all

ALCOHOLIC BEVERAGE SERVICE CONDITIONS OF APPROVAL

51. The sale of alcoholic beverages for consumption off the premises is prohibited.

52. Alcoholic beverage service is approved for on-site consumption only in connection with that portion of the site developed with the golf course, and does not apply to the remaining, undeveloped portion of the site.

53. The maximum number of patrons in the clubhouse/restaurant/ bar/patio shall not exceed 300 at any one time.

54. Hours of operation for the golf course shall be limited to 5:00 a.m. to 11:00 p.m. Alcoholic beverage service at the clubhouse grill, lounge, and patio shall be limited to 10:00 a.m. to 11:00 p.m. Alcoholic beverage service from portable beverage stands on the golf course shall be limited to 10:00 a.m. to 7:00 p.m.

55. Live entertainment is permitted in connection with special events, but shall not be audible beyond the area under control of the licensee.

56. A maximum of three beverage carts may be in operation at any one time on the course.

57. Any exterior signage on the premises or interior signs designed for viewing primarily from the street, which advertise the sale of alcoholic beverages, shall be prohibited.

58. Amplified music is permitted, but shall not be audible beyond the subject premises.

59. As volunteered by the applicant, the sale of distilled spirits by the bottle is prohibited.

60. As volunteered by the applicant, video games are prohibited.

61. The owners, operators, managers and all employees serving alcohol to patrons shall enroll in and complete a certified training program for the responsible service of alcohol, which program is recognized by the State Department of Alcoholic Beverage Control. This training shall be completed by all new employees within four weeks of employment and shall be completed by all employees serving alcoholic beverages every 24 months.

62. A copy of these conditions of approval shall be retained on the premises at all times and shall be produced immediately upon the request of the Planning or Police Departments.

63. Applicant shall consult with California Department of Fish and Game and the Watermaster regarding access routes and location of test wells for groundwater monitoring, it being the intent of this condition to prevent

any damage to endangered species populations or native habitat. The test wells must be located so they can be accessed from trails or roadways. The wells shall not be located in the Spineflower preserve areas or in the native vegetated habitat areas.

64. Applicant shall maintain a 10 foot buffer free of pesticides between golf course turf and waters of the United States as delineated by the U.S. Army Corps of Engineers.

65. The property owner or its designee will be required to fund and ensure implementation of a brown-headed cowbird trapping program in perpetuity or until it is determined to be no longer necessary by the California Department of Fish and Game. The brown-headed cowbird trapping program will be submitted to the California Department of Fish and Game for review and approval at least three months prior to the grassing of the golf course as part of the notification of Streambed Alteration. The brown-headed cowbird trapping program will be initiated concurrent with the implementation of the grassing program.

66. During the life of the project, Applicant shall notify the City Department of Public Works in writing of any significant build-up of materials, silt or debris under or around the Foothill bridges that might cause the flow in the stream bed to back-up and cause damage to Applicant's property and/or project.

Prior to the issuance of a grading permit, Applicant and owner shall process a Waiver of Damages and Indemnification hold harmless the City, and all other governmental agencies, from any claim for damages the Applicant might have against the City, and all other governmental agencies, for damages to Applicant's, or owners', property as the result of the flow in the stream bed backing up because of the City's, or any other governmental agency's, failure to remove significant build-up of materials, silt or debris under or around the Foothill bridges. All current lien holders shall subordinate their liens to the Condition Number 66. Such subordination shall be to the satisfaction of the City Attorney.

This condition is not intended to relieve the City from responsibility, if indeed it is determined that the City is responsible, for clean-up under or around the Foothill bridges.

67. Prior to the issuance of a grading permit, the project shall demonstrate to the satisfaction of the City Engineer, and the Department of Building and Safety, that the design, placement, construction and operation of a golf course will not substantially increase the velocity, direction, quantity, or surface water elevation which passes under the Foothill Boulevard bridges, nor will it cause the water to back up and damage existing properties to the east, north or south of the project.

68. Monitoring of the four known locations of the slender-horned spine flower, as well as the entire project site, will be conducted in order

to document the long-term success of this species within the on-site Preserve. Surveys for the spineflower will be conducted for a minimum of three days each spring during survey years, or of such duration as agreed to by the California Department of Fish and Game. Surveys will be conducted according to the following schedule:

a. Each spring until construction is complete.

b. Following completion of construction, surveys will be conducted each spring for five years, then at five year intervals for the life of the project.

The results of the surveys shall be submitted to the California Department of Fish and Game.

69. If acceptable to the owner of the Tujunga Ponds, prior to the issuance of a grading permit the Applicant shall conduct a water analysis of the Tujunga Ponds to determine pre-project water quality and quantity. Upon completion of grading of the golf course, the Applicant shall conduct a second round of water tests of the Tujunga Ponds to determine if the project grading has affected ground water quality or quantity. One year after the opening of the golf course, the Applicant shall conduct a third round of water quality/quantity tests , and shall conduct water quality/quantity tests every year for the next five years, at the Tujunga Ponds to determine if the water quality or quantity has changed from pre-project conditions. If any of the analyses show that there are detrimental changes in water quality or quantity from pre-project conditions that are caused by run-off from the golf course, then the Applicant shall immediately make modifications to the golf course management practices, shall correct any detrimental impacts to the water quality or quantity caused by the golf course and shall immediately mitigate and/or pay for clean up of any damage to the Tujunga Ponds caused by the golf course. The water analyses shall be submitted to the Watermaster, Department of Water and Power, and the California Regional Water Quality Control Board for review, determination and recommendation.

70. Applicant voluntarily agrees to contribute $250,000.00, to be deposited into a special trust fund, a City dedicated account, within the Treasury of the City of Los Angeles, to be known as the "Foothill Boulevard Multipurpose Trail Fund", which shall be administered by the Bureau of Engineering, for the purpose of designing, acquiring right-of-way for, and constructing a multi-purpose/equestrian trail on Foothill Boulevard. The Trail shall connect to the trail on the northwest corner of the project site on Foothill Boulevard that Applicant is required to construct, and, shall proceed westerly to the intersection of Wheatland Avenue and Foothill Boulevard in Lake View Terrace. Council District 2 shall be the designated lead agency. The $250,000.00 contribution shall be made in annual installments, guaranteed by a performance bond or other suitable instrument satisfactory to the Bureau of Engineering. The first installment shall

be in the amount of $100,000. and shall be paid prior to the issuance of a Certificate of Occupancy for the project. The remaining installments shall be in an amount no less than $50,000 thereafter until paid in full.

71. The unimproved fire road that traverses through the 40 acres on the northern bluff shall be kept free and clear of any obstructions and shall permanently be kept open for emergency access and non-motorized access.

72. Applicant agrees that for a minimum of 7 hours a week residents shall be permitted to play the course at a 25% reduction in green fees (reduced fee) if they show proof that they reside within the following Zip Codes: 91040, 91042, 91342, and 91352. Applicant shall permit local residents to play at a reduced fee at least one day a week for a minimum of four hours, plus three additional hours per week at Applicant's discretion shall be available for local resident reduced fee play, it being understood that these times are not exclusive to local residents, but are on a "first come, first served" basis. The days and times per week may vary at Applicant's discretion and shall be posted at least thirty (30) days prior to the time of play at a location in or near the clubhouse in easy view of players. Once posted, such reduced fee times shall not be changed. This condition shall be subject to reasonable modification by the Director of Planning, or designee, with the approval of Council District 2, at Applicant's request.

#970469

APPENDIX B

100 YEAR STORM (Q = 45,000 CFS) WITH EXISTING HABITAT