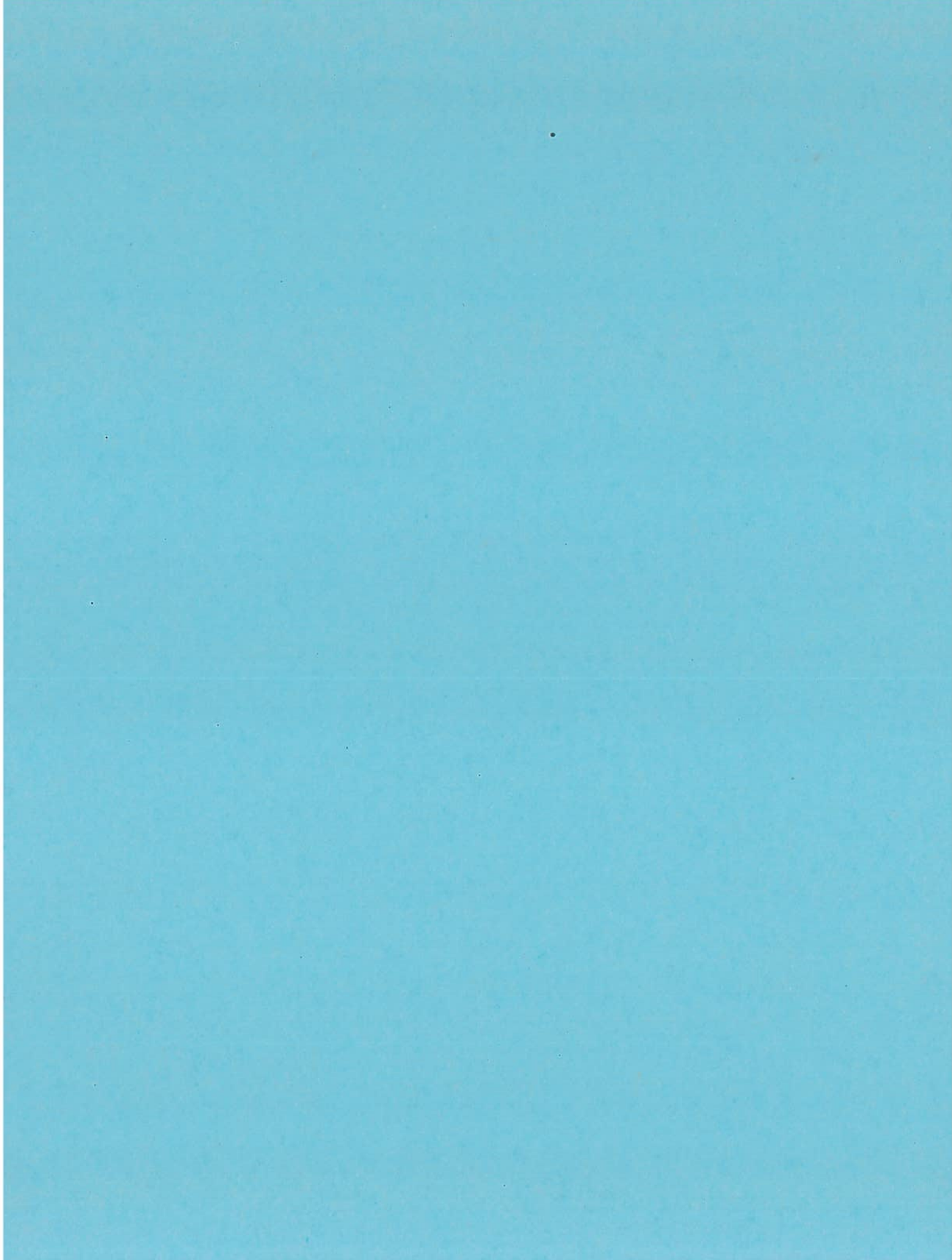


Appendix D
Biological Constraints Survey



April 29, 2005

Ms. Jennifer McDonald
City of Orange
300 East Chapman Avenue
Orange, California 92866

Subject: Biological Constraints Survey for the Grijalva Park Extension Project in the City of Orange, California

Dear Ms. McDonald:

On December 3, 2004, BonTerra Consulting Senior Biologist Sandra Leatherman conducted a field reconnaissance of the Grijalva project site (hereafter referred to as the project site). The Grijalva project site is bound by Santiago Creek to the west, Walnut Street to the north, Grijalva Park and Prospect Avenue to the east, and Spring Street to the south. The property is currently vacant and contains some natural vegetation. An asphalt batch plant and aggregate mining operation previously existed on the site. A portion of the site is located within the Santiago Creek floodplain. The regional location and local vicinity map are depicted on Exhibits 1 and 2, respectively.

The proposed project would involve the grading of the site; closure of a former onsite landfill (including construction of a landfill cap and slope revetment at Santiago Creek); construction of a 30,000 square foot Gymnasium/Sports Center; a 10,800 square foot Community Building; a 47,300 square foot Aquatic Center (two outdoor pools); a 10,000 square foot skatepark; and a passive use area containing a picnic structure, restroom building, tot-lot, outdoor amphitheatre and trails/walkways. Parking areas, internal circulation, and access from Walnut Avenue would also be provided. The proposed site plan is depicted on Exhibit 3.

Construction of the proposed improvements would be phased dependent on funding. Phase I is proposed for completion in 2007 and includes mass grading of the site, closure of the landfill, construction of the gymnasium, and internal circulation and parking improvements. Phase II would include construction of all other amenities and is proposed to be completed in 2010.

SURVEY METHODS

BonTerra Consulting conducted a search of available literature to identify special status plants, wildlife, and habitats known to occur in the vicinity of the project site. The California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS 2004), a compendium of special status species published by the U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Game's (CDFG) Natural Diversity Data Base were reviewed.

A field survey to collect information for a biological constraints analysis was conducted on December 3, 2004 by Ms. Leatherman to describe the vegetation and to evaluate the potential of the project site to support special status plant and wildlife

species. Plant species were identified in the field or collected for future identification. Plants were identified using keys in Hickman (1993), Munz (1974), and Abrams (1923-1951, 1960). Taxonomy follows Hickman (1993) for scientific and common names.

SURVEY RESULTS

Vegetation

Vegetation on the project site consists of disturbed willow scrub, disturbed mule fat scrub, planted riparian vegetation, oak tree, ruderal, disturbed, and ornamental. Developed areas also occur on the project site. Vegetation type impact acreages are presented on Table 1 and the distribution of these vegetation types and other areas is presented on Exhibit 4.

Disturbed willow scrub consists of 0.03-acre in the southwestern corner of the project site and is dominated by black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), and mule fat (*Baccharis salicifolia*). This area also has a large number of non-native species distributed amongst the mule fat and willows.

Disturbed mule fat scrub consists of 2.23-acres in the central and northeastern portions of the project site and is dominated by mule fat on the upper bench above the disturbed willow scrub. This area is heavily disturbed and also contains the invasive castor bean (*Ricinus communis*) occurring at a lower density.

Planted riparian vegetation consists of 1.28-acres in the northern portion of the project site at the western edge of Walnut Avenue. This area has apparently been replanted with numerous native species including western sycamore (*Platanus racemosa*), Fremont's cottonwood (*Populus fremontii*), toyon (*Heteromeles arbutifolia*), wild rose (*Rosa californica*), black sage, and California sagebrush (*Artemisia californica*).

Oak tree consists of 0.07-acre in the east-central portion of the project site and consist of coast live oak (*Quercus agrifolia*) and ornamental oaks (*Quercus* sp.).

Vegetation types that contain or are dominated by non-native plant species include ruderal, disturbed, and ornamental. Ruderal vegetation occurs in the northern portion of the project site and consists of 1.94-acres of non-native perennial species such as castor bean and tree tobacco (*Nicotiana glauca*). Disturbed areas occur throughout the project site and consist of 9.44-acres of dirt roads and cleared areas with minimal annual non-native species such as black mustard (*Brassica nigra*). Ornamental vegetation consists of 0.86-acre in the central portion of the project site and consists of gum trees (*Eucalyptus* sp.) and pepper trees (*Schinus* sp.).

TABLE 1
VEGETATION TYPE ACREAGES

Vegetation Type	Acreage
Disturbed willow scrub	0.03
Disturbed mule fat scrub	2.23
Planted riparian	1.28
Oak tree	0.07
Ruderal	1.94
Disturbed	9.44
Ornamental	0.86
Total	16.72

Wildlife Habitat

The project site provides moderate to low quality habitat for wildlife species. Water was present within the creek at the time of the survey. Due to the disturbed nature of the creek channel and upstream obstacles to movement, native fish species are not expected to occur when water is present. Non-native fish species may occur, including western mosquito fish (*Gambusia affinis*).

Common reptiles expected to occur on the project site include western fence lizard (*Sceloporus occidentalis*), side blotched lizard (*Uta stansburiana*), southern alligator lizard (*Elgaria multicarinata*), and gopher snake (*Pituophis catenifer*). Common amphibian species expected to occur on the site include the western toad (*Bufo boreas*) and Pacific treefrog (*Hyla regilla*).

Common bird species expected to occur on the project site include mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), western scrub-jay (*Aphelocoma californica*), black phoebe (*Sayornis nigricans*), Cassin's kingbird (*Tyrannus vociferans*), bushtit (*Psaltriparus minimus*), northern mockingbird (*Mimus polyglottos*), American crow (*Corvus brachyrhynchos*), house sparrow (*Passer domesticus*), and house finch (*Carpodacus mexicanus*). Raptors expected to occur on the project site included the Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and American kestrel (*Falco sparverius*).

Mammal species expected to occur on the project site include coyote (*Canis latrans*), cottontail (*Sylvilagus audubonii*), Virginia opossum (*Didelphis virginianus*), California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), house mouse (*Mus musculus*), deer mouse (*Peromyscus maniculatus*), common raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and bobcat (*Lynx rufus*).

Wildlife Movement

Wildlife has adapted to the urban areas in the vicinity of the project site. The creek is most likely used as a travel route to access foraging areas in different neighborhoods. Wildlife movement would occur primarily at night for larger mammals. Given that construction activities will occur during the day, the expansion of the park is not expected to curtail this movement even temporarily.

Special Status Plant and Wildlife Species

The following discussion addresses special status biological resources that are known to occur in the project region (i.e., the Santiago Creek watershed). These resources include plant and wildlife species that have been afforded special status and/or recognition by federal and state resource agencies, as well as private conservation organizations.

Special Status Vegetation Types/Jurisdictional Areas

Special status vegetation types are vegetation types that support concentrations of special status plant or wildlife species, are of relatively limited distribution, are of particular value to wildlife, or are considered to be rare. This designation may be established by local, state, or federal agencies. Special status vegetation types that occur within the project site include disturbed willow scrub, planted riparian vegetation, disturbed alluvial scrub, and open wash. These areas are likely subject to permitting from U.S. Army Corps of Engineers (ACOE), CDFG, and the Regional Water Quality Control Board (RWQCB). Drainages, which may include wetlands and "Waters of the United States," are protected under Section 404 of the Clean Water Act and are under the jurisdiction of ACOE. In addition, if drainages onsite meet the criteria established by Section 1600 of the

California Fish and Game Code, a Streambed Alteration Agreement would be required by CDFG prior to any modification of the bed, bank, or channel of streambeds on the project site.

Special Status Plants

Threatened and endangered plant species, or CNPS List 1B species that are known to occur in the project region or historically occurred in the region, are listed below in Table 2. None of the species are expected to occur on the project site due to the high degree of disturbance on the site and lack of suitable habitat.

**TABLE 2
 SPECIAL STATUS PLANT SPECIES
 KNOWN TO OCCUR IN THE PROJECT REGION**

Species	USFWS	CDFG	CNPS	Likelihood for Occurrence
<i>Abronia villosa</i> var. <i>aurita</i> chaparral sand verbena	–	–	1B	No suitable habitat/not expected to occur; historically occurred in region
<i>Calochortus weedii</i> var. <i>intermedius</i> intermediate mariposa lily	–	–	1B	No suitable habitat/not expected to occur
<i>Centromadia parryi</i> ssp. <i>australis</i> southern tarplant	–	–	1B	No suitable habitat/not expected to occur
<i>Chorizanthe parryi</i> var. <i>fernandina</i> San Fernando Valley spineflower	–	E	1B	No suitable habitat/not expected to occur
<i>Dudleya multicaulis</i> many-stemmed dudleya	–	–	1B	No suitable habitat/not expected to occur
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i> Santa Ana River woolly star	E	E	1B	No suitable habitat/not expected to occur; historically occurred in region
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i> Coulter's goldfields	–	–	1B	No suitable habitat/not expected to occur

LEGEND	
Federal (USFWS)	State (CDFG)
E Endangered	E Endangered
T Threatened	T Threatened
PE Proposed Endangered	PE Proposed Endangered
PT Proposed Threatened	PT Proposed Threatened
C Candidate Species	SSC Special Species of Concern
SOC Species of Concern	
California Native Plant Society (CNPS)	
1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened, or Endangered in California and Elsewhere
2	Plants Rare, Threatened, or Endangered in California But More Common Elsewhere
3	Plants About Which We Need More – A Review List
4	Plants of Limited Distribution – A Watch List

Special Status Wildlife

Special status wildlife species known to occur within the project region are listed in Table 3. None of the species listed in Table 3 were observed on the project site. Two species, southwestern willow flycatcher (*Empidonax traillii extimus*) and least Bell's vireo (*Vireo bellii pusillus*), have a limited potential to occur on the project site. These species are known to occur approximately three miles upstream.

**TABLE 3
 SPECIAL STATUS WILDLIFE SPECIES
 KNOWN TO OCCUR IN THE PROJECT REGION**

Species	Status ¹		Likelihood for Occurrence
	USFWS	CDFG	
Fish			
<i>Catostomus santaanae</i> Santa Ana sucker	FT	SSC	No suitable habitat/not expected to occur
Amphibians			
<i>Spea hammondi</i> western spadefoot toad	-	SSC	No suitable habitat/not expected to occur
Reptiles			
<i>Aspidoscelis hyperythrus</i> orange-throated whiptail	-	SSC	No suitable habitat/not expected to occur
<i>Crotalus ruber ruber</i> red diamond rattlesnake	-	SSC	No suitable habitat/not expected to occur
<i>Emys marmorata pallida</i> southwestern pond turtle	-	SSC	No suitable habitat/not expected to occur
<i>Phrynosoma coronatum blainvilleii</i> San Diego horned lizard	-	SSC	No suitable habitat/not expected to occur
<i>Salvadora hexalepis virgultea</i> coast patch-nosed snake	-	SSC	No suitable habitat/not expected to occur
Birds			
<i>Accipiter cooperii</i> Cooper's hawk	-	SSC	Moderate potential for foraging; no breeding habitat
<i>Accipiter striatus</i> sharp-shinned hawk	-	SSC	Moderate potential for foraging; no breeding habitat
<i>Asio otus</i> long-eared owl	-	SSC	No suitable habitat/not expected to occur
<i>Campylorhynchus brunneicapillus sandiegensis</i> San Diego cactus wren	-	SSC	No suitable habitat/not expected to occur
<i>Empidonax traillii extimus</i> Southwestern willow flycatcher	FE	SE	Limited potential; surveys required
<i>Polioptila californica californica</i> coastal California gnatcatcher	FT	SSC	No suitable habitat/not expected to occur
<i>Athene cunicularia</i> burrowing owl	-	SSC	No suitable habitat/not expected to occur
<i>Vireo bellii pusillus</i> least Bell's vireo	FE	SE	Limited potential; surveys required
LEGEND			
Federal (USFWS)			
FE	Species designated as endangered under the Federal Endangered Species Act. Endangered = "any species in danger of extinction throughout all or a significant portion of its range."		
FT	Species designated as threatened under the Federal Endangered Species Act. Threatened = "species likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."		
FPE	Proposed for federal listing as Endangered.		
FPT	Proposed for federal listing as Threatened.		
C	Candidate for federal listing as Threatened or Endangered.		
State (CDFG)			
SR	Rare = "a species is rare when, although not presently threatened with extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens."		
ST	Threatened = "a species that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this Act (California Endangered Species Act)."		
SE	Endangered = "a species is endangered when its prospects of survival and reproduction are in immediate jeopardy from one or more causes."		
SSC	Species of Special Concern.		
California Fully Protected			
Fully Protected (FP)/Protected (P): These designations were adopted by the state prior to the creation of the State Endangered Species Act. These status designations protect any species considered rare or threatened from harassment or harm.			

Southwestern Willow Flycatcher

The southwestern willow flycatcher is federally- and state-listed as Endangered. The disturbed willow scrub has limited potential to support this species. A focused southwestern willow flycatcher survey, conducted by a federally permitted biologist, is recommended to determine the presence or absence of this species prior to development of this site. Because this species is a migrant, these surveys can only be conducted during the breeding season (May 15 to July 17 according to the USFWS protocol). The presence of this species on or adjacent to the project site would require consultation with USFWS and CDFG.

On July 22, 1997, USFWS published the final critical habitat designation for this species. Approximately 99.8 river miles in Kern, Riverside, San Bernardino, and San Diego counties were designated for the southwestern willow flycatcher. The project site is not located within the designated critical habitat area for this species.

Least Bell's Vireo

The least Bell's vireo is federally- and state-listed as Endangered. The disturbed willow scrub on the project site has potential to support this species. A focused least Bell's vireo survey, conducted by a qualified biologist, is recommended to determine the presence or absence of this species prior to development of the project site. Because this species is a migrant, these surveys can only be conducted during the breeding season (April 10 to July 31 according to the USFWS protocol). The presence of this species on or adjacent to the project site would require consultation with USFWS and CDFG.

On February 2, 1994, USFWS published the final critical habitat designation for the least Bell's vireo, designating approximately 37,560 acres of land in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego counties, California. The project site is not located within the designated critical habitat area for this species.

Nesting Raptors

The disturbed willow scrub and ornamental vegetation types on and adjacent to the project site have potential to be used for nesting by raptors. CDFG regulations prohibit activities having the potential to disturb active raptor nests. This protection generally ceases once nesting activity is completed. A survey for active raptor nests would be required within two weeks of habitat disturbance, including geotechnical testing, within 500 feet of trees on or adjacent to the project site.

Central-Coastal Subregional Natural Community Conservation Plan

In 1996, the Orange County Board of Supervisors approved the Central-Coastal Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP) designed as a long-term regional planning effort to conserve contiguous open space, recreational, and wildlife habitat areas. The City of Orange is a participating jurisdiction within the Central-Coastal NCCP/HCP area. The NCCP/HCP established a 37,000-acre reserve system to offset the anticipated impacts of development within the central coastal subregion and provides complete coverage for impacts to 29 native plant and wildlife species and conditional coverage for an additional nine native wildlife and one native plant species. The southwestern willow flycatcher and least Bell's vireo are conditionally covered species under the NCCP/HCP and, as such, would not be subject to a Section 10 or 2081 permit process if impacted by the proposed project. However, in accordance with the Implementation Agreement for the NCCP/HCP, the City would be required to develop a mitigation plan in coordination with the USFWS, CDFG, and the NCCP Non-Profit Corporation, and

approved by the USFWS.

RECOMMENDATIONS

Special Status Vegetation Types and Jurisdictional Areas

A wetlands delineation was conducted by RBF Consulting in March 2005 in accordance with the provisions of the U.S. Army Corps of Engineers (ACOE) 1987 Wetlands Manual and the California Department of Fish and Game (CDFG) jurisdictional policies and guidelines to update previously established ACOE and CDFG jurisdiction. The following action should be carried out prior to project grading and/or construction.

Regulatory Compliance

Prior to the initiation of any construction-related activity that involves disturbance to soils and/or vegetation, the City shall obtain all permits and/or authorizations from CDFG pursuant to Section 1601-1603 of the Fish and Game Code, the ACOE pursuant to Section 404 of the Clean Water Act and Regional Water Quality Control Board (RWQCB) Water Quality Certification pursuant to Section 401 of the Clean Water Act for jurisdictional areas identified by this assessment that could be impacted by project implementation. The City of Orange will restore or replace impacted jurisdictional areas at a ratio of one to one or as determined appropriate by the CDFG and USFWS during the permitting process.

Special Status Plants

Surveys for special status plant species would not be recommended at this time due to lack of suitable habitat.

Special Status Wildlife

Southwestern Willow Flycatcher and Least Bell's Vireo

Disturbed willow scrub on the project site has limited potential to support the southwestern willow flycatcher and least Bell's vireo, which are known to occur upstream of the project site in the Santiago Creek watershed. Focused surveys following the guidelines established by the USFWS would be necessary to determine the presence of these species on the project site or within 500 feet of the proposed grading limits to evaluate potential direct and indirect impacts on these species. If one or both of these species are found to occur on or within 500 feet of the project grading limits, a mitigation program must be developed in consultation with the USFWS and CDFG.

The following mitigation measures are recommended to avoid potential impacts to these species:

Mitigation Measure 1

Prior to vegetation removal or other site disturbance, focused surveys for least Bell's vireo and southwestern willow flycatcher will be conducted in accordance with protocols established by the U.S. Fish and Wildlife Service (USFWS) to determine the presence or absence of these species on or within a 500 foot radius of the project impact area. If neither least Bell's vireo or southwestern willow flycatcher are determined to be present on the project site, copies of the survey reports will be provided to the California Department of Fish and Game (CDFG) and USFWS and no further action would be required. If the southwestern willow flycatcher and/or least Bell's vireo are determined to occur within a 500 foot radius of the project impact area, in accordance with the Central Coastal NCCP/HCP Implementation Agreement, a mitigation plan for impacts to southwestern willow

flycatcher and/or least Bell's vireo shall be developed that:

- 1) addresses design modifications and other on-site measures that are consistent with the project's purposes, minimizes impacts, and provides appropriate feasible protections including, but not limited to, project scheduling to avoid the breeding season, erection of sound walls to avoid disturbance of nesting pairs, and construction monitoring by a qualified biologist,
- 2) provides for compensatory habitat restoration/enhancement activities at an appropriate location, including but not limited to, planting of riparian trees and shrubs at a ratio of 1 to 1 or as otherwise determined appropriate by the CDFG and USFWS, and
- 3) provides for monitoring and Adaptive Management of habitat on the project site and within the Reserve System including cowbird trapping, consistent with Chapter 5 of the NCCP/HCP" (NCCP Implementation Agreement 1996).

This mitigation plan must be developed in coordination with the USFWS, CDFG, and the NCCP Non-Profit Corporation, and approved by the USFWS.

Nesting Raptors

A survey for active raptor nests is recommended prior to commencement of any construction activities during the raptor nesting season, February 1 to June 30. Restrictions on construction activities would be required in a buffer zone surrounding the nest until the nest is no longer active. Once the nest is no longer active, construction can proceed within the buffer zone. The following mitigation measure is recommended to avoid impacts to nesting raptors.

Mitigation Measure 2

If vegetation removal or other site disturbance is scheduled to proceed between February 1 and June 30, no more than seven days prior to the onset of construction activities (e.g., vegetation clearing or grading), a qualified biologist will conduct a pre-construction nesting raptor survey within the limits of project disturbance and adjacent areas for the presence of any active raptor nests.

If a raptor nest is found, the following restrictions on construction will be required between February 1 and June 30 (or until nests are no longer active as determined by a qualified biologist): 1) a 500 foot radius will be established in any direction from any occupied raptor nest exhibiting nesting activity within which vegetation disturbance will be prohibited unless otherwise authorized by a qualified biologist; and 2) access and surveying will not be allowed within 100 feet of any raptor nest exhibiting nesting activity, unless otherwise authorized by a qualified biologist.

Ms. Jennifer McDonald
April 29, 2005
Page 9

Please call Sam Stewart at (714) 444-9199 if you have any questions or comments.

Sincerely,

BONTERRA CONSULTING

Sandra J. Leatherman
Senior Biologist/Project Manager

Sam C. Stewart, IV
Assistant Project Manager

Enclosures: Exhibits 1, 2, 3, and 4

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Ms. Jennifer McDonald
April 29, 2005
Page 10

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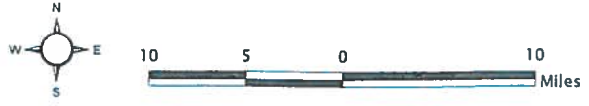
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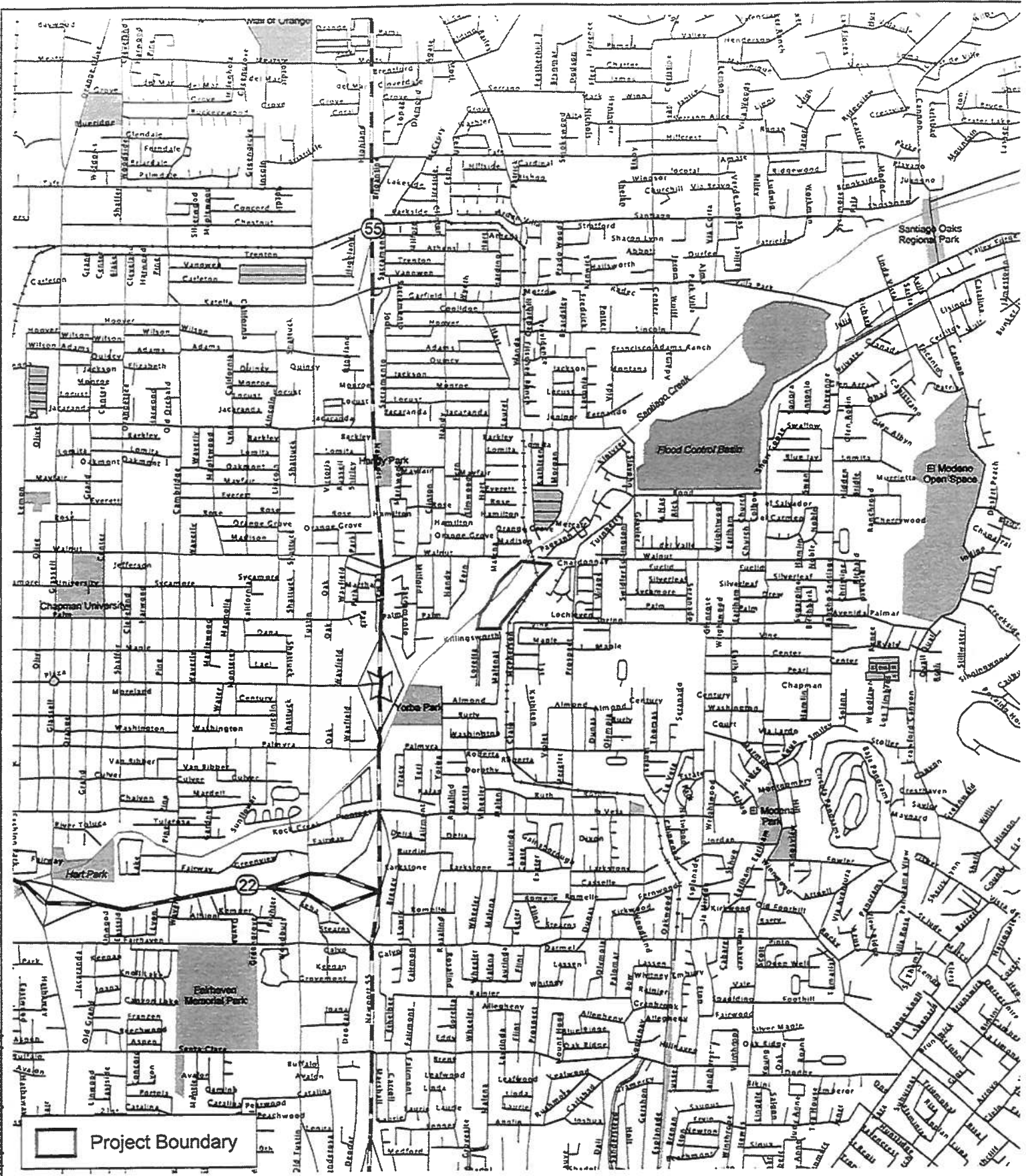


Regional Location

Exhibit

Grijalva Park Project



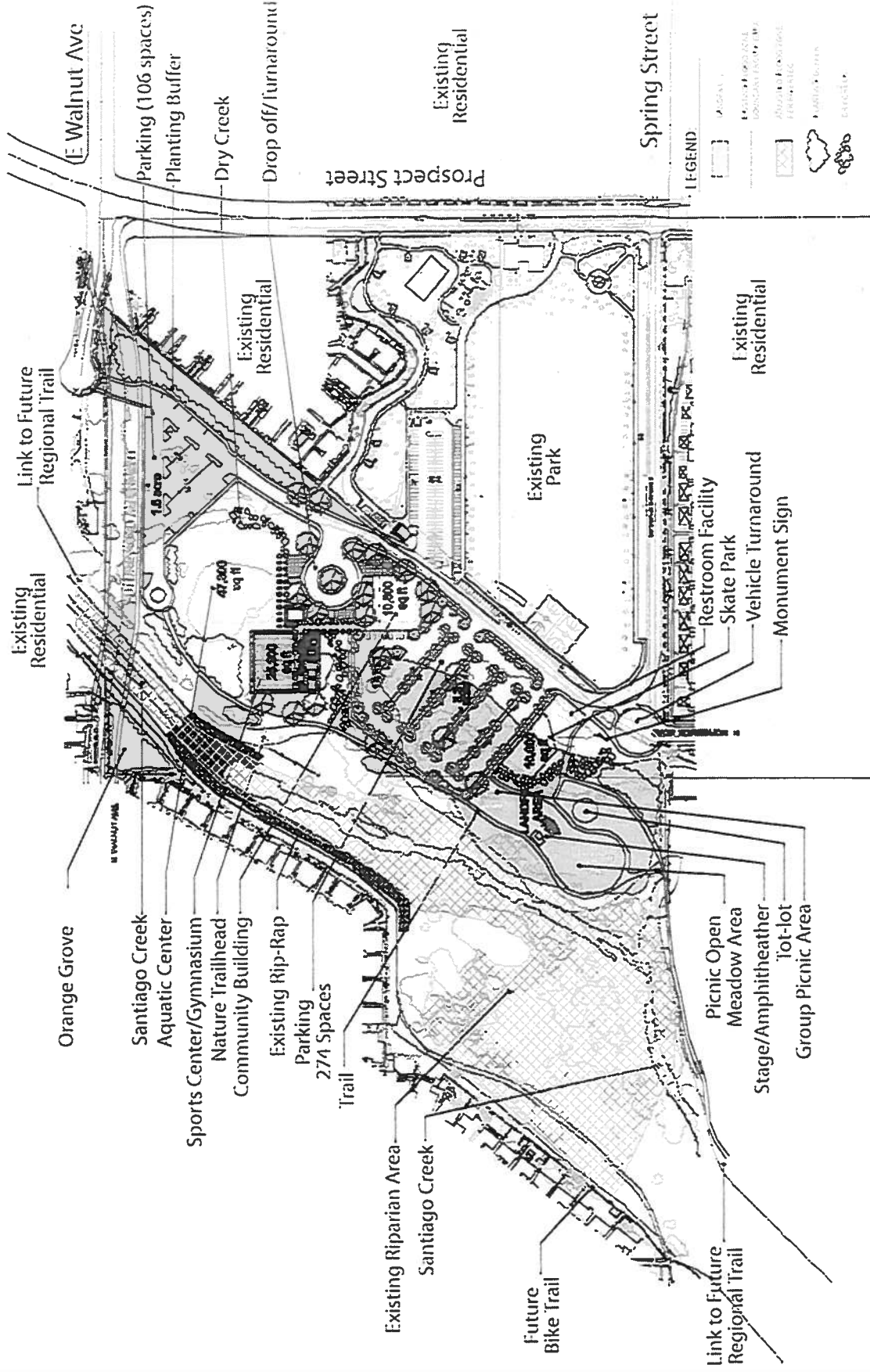


Local Vicinity
Grijalva Park Project



Exhibit 2

Bonterra
 CONSULTING

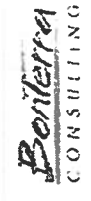


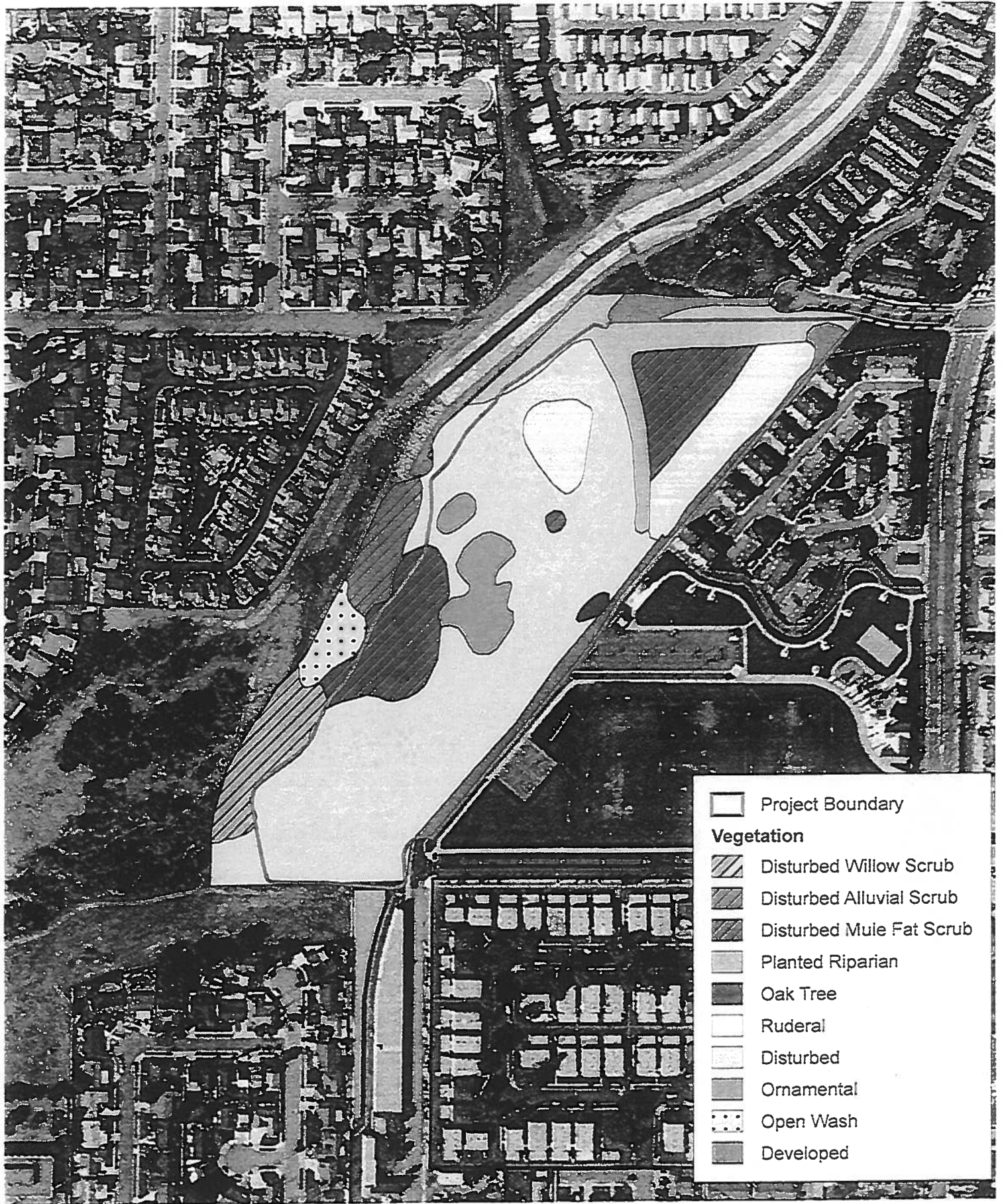
Proposed Grijalva Park Site Plan












Grijalva Park Project

Not to Scale

Exhibit 3





-  Project Boundary
- Vegetation**
-  Disturbed Willow Scrub
-  Disturbed Alluvial Scrub
-  Disturbed Mule Fat Scrub
-  Planted Riparian
-  Oak Tree
-  Ruderal
-  Disturbed
-  Ornamental
-  Open Wash
-  Developed

Existing Vegetation

Grijalva Park Project

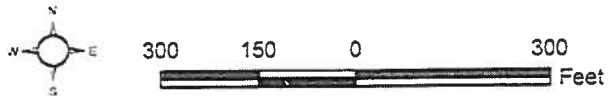


Exhibit 4

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