A: Biological Resource Studies

May 27, 2008

Ms. Cheryl Kuta
CITY OF LAKE FOREST
25550 Commercentre Drive, Suite 100
Lake Forest, CA 92630

Re: RESULTS OF BIOLOGICAL CONSTRAINTS ANALYSIS CONDUCTED FOR THE 19.7-ACRE PROPOSED CITY HALL AND PARK PROJECT SITE LOCATED IN THE CITY OF LAKE FOREST, ORANGE COUNTY, CALIFORNIA

Dear Cheryl:

This letter presents the findings of a biological constraints analysis conducted by **PCR Services Corporation (PCR)** on the approximately 19.7-acre proposed City Hall and Park Project Site located in the City of Lake Forest, Orange County, California (Figure 1, *Regional Map*, attached) ("Project Site"). The Project Site is located south of Commercentre Drive, east of Bake Parkway, and northwest of Lake Forest Drive. The 19.7-acre Project Site consists of two parts, a 14.7-acre parcel just south of the southern extent of Indian Ocean Drive (consisting of the 6.3-acre proposed City Hall site and an adjacent 8.4-acre site that consists of engineered slopes associated with the City Hall site and habitat beyond these slopes extending to an existing dirt trail to the east), and a 5.0-acre proposed park site approximately 900 feet to the southeast of the 14.7-acre parcel. These two parcels are separated by an open space area used for commercial purposes that includes a paved access road, two flat, circular terraces and adjacent slopes vegetated with native and ornamental species.

The 19.7-acre Project Site is surrounded by open space land including a dirt trail and Serrano Creek (and residential development beyond the open space) to the east and south, residential and commercial development to the west, and commercial development and a partially graded open space area used for commercial purposes to the north. Topography within the Project Site consists generally of rolling hills sloping to flat areas to the east (14.7-acre City Hall/slope site) and is predominantly flat in the 5.0-acre park site. The elevation ranges from approximately 544 feet above mean sea level ("MSL") in the southern portion of the Project Site (park site) to approximately 698 feet above MSL in the northern portion of the Project Site (City Hall site). The Project Site can be found within Section 11, T. 6 S., R. 8 W. of the U.S. Geological Survey (USGS) 7.5-minute El Toro, California quadrangle map (Figure 2, *Vicinity Map*, attached).[1]

[1] *United States Geological Survey. 1968. El Toro, California 7.5-minute Topographical Quadrangle. Photo revised 1982.*

METHODOLOGY

Prior to visiting the Project Site, the California Natural Diversity Database ("CNDDB"),[2] a California Department of Fish and Game ("CDFG") (Natural Heritage Division) species account database, was reviewed for information regarding sensitive species and habitats known to occur in the region. The CNDDB search was conducted for the following 7.5-minute quadrangle maps that include the Project Site and the surrounding area: El Toro, San Juan Capistrano, Canada Gobernadora, Santiago Peak, Laguna Beach, and Tustin. The Project Site is within the Orange County Natural Community Conservation Plan ("NCCP"), Central Subregion; therefore, documentation pertaining to the NCCP was reviewed.[3] In addition, literature reviewed included species data provided by the U.S. Fish and Wildlife Service ("USFWS") and CDFG for each listed species potentially occurring within the Project Site. Additionally, aerial photography and topographic maps were examined.

On May 2, 2008, PCR Senior Biologist Linda Robb performed a general biological investigation of the Project Site. The purpose of the general survey was to identify potential habitat for any threatened, endangered, or otherwise sensitive species that may occur on-site. No focused surveys were performed.

Plant communities located on-site were noted. Plant community designations were determined according to descriptions contained in Gray and Bramlet (1992)[4] and Sawyer and Keeler-Wolf (1995).[5] If a community found on-site did not conform to any of the communities listed in Gray and Bramlett or Sawyer and Keeler-Wolf, it was named for the dominant species comprising it (e.g., Fremont cottonwood) and described accordingly.

PROJECT DESCRIPTION

The City of Lake Forest is examining the possible use of the Project Site for or more public facilities. The potential facilities are an active sports park, community center, and city hall. The exact layout of the facilities and the amount of Project Site that is developed will be influenced by the environmental constraints on the property, including but not limited to streambed areas and wildlife habitat.

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[2] *California Department of Fish and Game. 2008. Natural Heritage Division. Natural Diversity Data Base. Data Base Record Search for Information on Threatened, Endangered, Rare, or Otherwise Sensitive Species and Communities. Sacramento, California; El Toro, San Juan Capistrano, Canada Gobernadora, Santiago Peak, Laguna Beach, and Tustin quads.*

[3] *County of Orange, Environmental Management Agency. 1995a. Central and Coastal Subregion Natural Community Conservation Plan & Habitat Conservation Plan, County of Orange Central and Coastal Subregion. Parts I & II NCCP/HCP; Part III Joint Programmatic EIR/EIS. Prepared by R. J. Meade Consulting, Inc., San Diego. December 7.*

[4] *Gray, J. and D. Bramlet. 1992. Habitat Classification System: Natural Resources Geographic Information System (GIS) Project. Environmental Management Agency. County of Orange, Santa Ana, California.*

[5] *Sawyer, John O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. Sacramento: California Native Plant Society.*

The analysis of biological constrains included two County flood control parcels. The City of Lake Forest does not anticipate using the flood control parcels for the proposed public facilities but examined them to ensure that the design of the public facilities would avoid Aliso Creek.

The assumed program for the public facilities includes 7 acres for a community center and city hall and 38 acres of active sports park. While all of the facilities may be contained within the Project Site, it is anticipated that the total of 45 acres will utilize a portion of the Project Site in combination with one or more adjacent properties. A final layout of the facilities will be developed once all environmental resources are identified.

RESULTS

Plant Communities

A variety of plant communities were observed on the Project Site. Locations of each of the plant communities within the Project Site are shown in Figure 3, *Plant Communities*, attached. Representative photographs of the Project Site are included in Figure 4, *Site Photographs*, attached.

Scrub Communities

Buckwheat scrub is characterized by nearly monotypic stands of California buckwheat (*Eriogonum fasciculatum*). This community occurs throughout the foothills and mountains of Orange County and is most often found on slopes that have been disturbed within the last 10 years. California buckwheat was the dominant plant species observed within this community. Additional species observed in sparse amounts included native white sage (*Salvia apiana*), California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), mule fat (*Baccharis salicifolia*), California bush sunflower (*Encelia californica*), and non-native horehound (*Marrubium vulgare*), and tocalote (*Centaurea melitensis*). This area appears to have been planted and irrigation lines are still present although no evidence of watering was observed. The extent of buckwheat scrub totals 1.4 acres within the northern portion of the Project Site (0.4 acre in the City Hall site and 1.0 acre in the slope area).

Mixed scrub is usually dominated by an even mix of various sage scrub species. Dominant species found within the community on-site include native black sage, California sagebrush, and California buckwheat. Additional species observed included native mule fat, coyote brush (*Baccharis pilularis*), deerweed (*Lotus scoparius*), our Lord's candle (*Yucca whipplei*), California bush sunflower, wishbone bush (*Mirabilis californica*), California sun cup (*Camissonia bistorta*), California croton (*Croton californicus*), purple sage (*Salvia leucophylla*), poison oak (*Toxicodendron diversilobum*), wild cucumber (*Marah macrocarpa*), orange bush monkey-flower (*Mimulus aurantiacus*), chaparral mallow (*Malacothamnus fasciculatus*), and non-native short-podded mustard (*Hirshfeldia incana*), foxtail chess (*Bromus madritensis*), and tree tobacco (*Nicotiana glauca*). Mixed scrub occupies 4.7 acres throughout the Project Site (2.9 acres in the City Hall site, 1.2 acres in the slope area, and 0.6 acre in the park site).

Mixed scrub/mule fat scrub contains a similar vegetation composition to mixed scrub and mule fat scrub combined. Dominant species observed within this community on-site included mule fat, California sagebrush, and California bush sunflower. Additional species observed included short-podded mustard. This community is present within a basin in the northeastern portion of the Project Site and occupies 0.2 acre (all within the City Hall site).

Woodland Communities

Coast live oak woodland is dominated by coast live oak with a poorly developed shrub layer. This plant community typically occurs on north-facing slopes and shaded ravines. Coast live oak (*Quercus agrifolia*) was the dominant plant species observed within this community. Additional species observed included foxtail chess and California sagebrush. This plant community occupies less than 0.1 acre within the eastern portion of the Project Site (all within the slope area).

Fremont cottonwood/mixed scrub is present along slopes in the southern portion and on the southeastern edge of the Project Site (within the park site). This community consists of mixed scrub species interspersed with several Fremont cottonwood trees (*Populus fremontii*), and a few coast live oak trees. Additional species observed included toyon (*Heteromeles arbutifolia*) and lemonadeberry (*Rhus integrifolia*). This community occupies 0.3 acre within the Project Site (all within the park site).

Mexican elderberry woodland is characterized by an open woodland of Mexican elderberry (*Sambucus mexicana*) that dominates the surrounding vegetation, both structurally and by biomass. It is commonly found on stream benches and lower slopes above streams. Mexican elderberry woodland occupies 0.2 acre within the northeastern portion of the Project Site (all within the slope area).

Chaparral Communities

Scrub oak chaparral is typically characterized as a dense, evergreen chaparral dominated by scrub oak (*Quercus berberidifolia*). This community occurs in more mesic areas than many other chaparrals and often occurs at slightly higher elevations. Plant species observed within this community on-site included scrub oak with understory species such as native California sagebrush and non-native short-podded mustard and tocalote. There is approximately 0.2 acre of scrub oak chaparral within the eastern portion of the Project Site (all within the City Hall site).

Riparian Communities

Mule fat scrub consists of dense stands of mule fat with scattered willows commonly present. This community typically occupies intermittent streambeds or disturbed areas within drainages and washes. Mule fat was the dominant species observed within this community on-site. Additional species observed included native Mexican elderberry and non-native tamarisk (*Tamarix*

ramosissima) and short-podded mustard. A total of 0.8 acre of the Project Site is occupied by mule fat scrub (0.6 acre in the City Hall site and 0.2 acre in the slope area). The community occurs within two basins in the central and western portions of the Project Site and on the eastern edge of the drainage in the northeastern portion of the Project Site.

Red willow/arroyo willow riparian forest consists of a closed canopy of red willow (*Salix laevigata*) and arroyo willow (*Salix lasioloepis*) in arborescent form. This community typically occurs on floodplains along major streams and rivers. Shrubs are sparse under the tree canopy. Red willow and arroyo willow were the dominant species observed within this community on-site. Several coast live oak trees were also present within this community. Additional species observed included native mule fat and poison oak, and non-native giant reed (*Arundo donax*). Approximately 2.5 acres of red willow/arroyo willow riparian forest occur within the Project Site (all within the slope area).

Disturbed and Ornamental Communities

Disturbed/Fremont cottonwood occurs along a slope on the southeastern edge of the Project Site (within the park site). This community is characterized by a greater than 20 percent cover of non-native species interspersed with several Fremont cottonwood trees and a few coast live oak trees. Non-native species observed within this community included short-podded mustard, tree tobacco, tocalote, yellow sweetclover (*Melilotus officinalis*), and poison hemlock (*Conium maculatum*). A sparse cover of additional native species present within this community included toyon and western ragweed (*Ambrosia psilostachya*). Disturbed/Fremont cottonwood occupies 0.4 acre within the Project Site (all within the park site).

Disturbed/mixed scrub and **disturbed/mule fat scrub** contain a similar vegetation composition to mixed scrub and mule fat scrub, except non-native species constitute greater than 20 percent of the vegetative cover. Disturbed/mixed scrub occupies 3.9 acres throughout the Project Site (1.0 acre within the City Hall site and 2.9 acre within the slope area). Disturbed/mule fat scrub occupies 0.3 acre at the base of a trail within the eastern portion of the Project Site (all within the City Hall site).

Several areas of **ornamental** vegetation occur within the Project Site. Ornamental species observed included eucalyptus (*Eucalyptus* sp.) and pine (*Pinus* sp.) with an understory of predominantly non-native vegetation including red-stemmed filaree (*Erodium cicutarium*) and short-podded mustard. In addition to the eucalyptus and pine trees, scattered native coast live oak and Fremont cottonwood trees that appear to have been planted are present. Areas of ornamental vegetation occupy 0.6 acre within the eastern and southern portions of the Project Site (less than 0.1 acre within the slope area and 0.6 acre within the park site).

Ruderal areas are dominated by non-native weedy species that readily colonize disturbed ground. Plant species observed within the ruderal areas on-site include short-podded mustard, castor bean (*Ricinus communis*), foxtail chess, tocalote, yellow sweetclover, and poison hemlock. In

addition, a sparse amount of native western ragweed occurs within the ruderal areas on-site. Ruderal areas occupy 3.3 acres throughout the Project Site (0.7 acre in the City Hall site, 0.3 acre in the slope area, and 2.3 acres in the park site).

Tamarisk stand is characterized by nearly monotypic stands of tamarisk, and this community occupies 0.1 acre within the northern portion of the Project Site (all within the slope area). Other species observed within this community on-site included white sage and California sagebrush.

Other Areas

Developed areas within the Project Site consist of paved pathways. Developed areas occupy 0.8 acre within the Project Site (all within the park site).

Wildlife

Wildlife species detected within the Project Site include common buckeye (*Junonia coenia*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), American crow (*Corvus brachyrhynchos*), ash-throated flycatcher (*Myiarchus cinerascens*), California quail (*Callipepla californica*), song sparrow (*Melospiza melodia*), western scrub-jay (*Aphelocoma californica*), bushtit (*Psaltriparus minimus*), black-headed grosbeak (*Pheucticus melanocephalus*), common yellowthroat (*Geothlypis trichas*), California thrasher (*Toxostoma redivivum*), acorn woodpecker (*Melanerpes formicivorus*), American goldfinch (*Carduelis tristis*), lesser goldfinch (*Carduelis psaltria*), Cooper's hawk (*Accipiter cooperii*), white throated swift (*Aeronautes saxatalis*), turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), common raven (*Corvus corax*), Pacific-slope flycatcher (*Empidonax difficilis*), Cassin's kingbird (*Tyrannus vociferans*), wrentit (*Chamaea fasciata*), house finch (*Carpodacus mexicanus*), black phoebe (*Sayornis nigricans*), Nuttall's woodpecker (*Picoides nuttallii*), Anna's hummingbird (*Calypte anna*), side-blotched lizard (*Uta stansburiana*), western skink (*Eumeces skiltonianus*), and coyote (*Canis latrans*).

The Project Site has nesting and foraging habitat for raptors. Nest sites are limited to trees while hunting opportunities favor woodland dwelling species rather than open habitat species due to the absence of grasslands within the Project Site. Woodland breeding species will include red-shouldered hawk (*Buteo lineatus*) and Cooper's hawk. Other species nest in the wooded areas but hunt in the more open hillsides. These include red-tailed hawk, great horned owl (*Bubo virginianus),* western screech owl (*Otus kennicottii*), long-eared owl (*Asio otus*), barn owl (*Tyto alba*), and American kestrel (*Falco sparverius*).

The use of the Project Site by raptors in the winter will include the above species in addition to migrants. The sharp-shinned hawk (*Accipiter striatus*) may over winter on the Project Site, while other species, such as golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis*), northern harrier (*Circus cyaneus*), and American peregrine falcon (*Falco peregrinus anatum*), may visit the Project Site in passing.

Sensitive Habitats/Species

The presence of protected, regulated, or otherwise sensitive plant and wildlife species occurring or potentially occurring on-site is based on an evaluation of the habitat found on the Project Site. Protected sensitive species are classified by either State or Federal resource management agencies, or both, as threatened or endangered, under provisions of the State and federal Endangered Species Acts. The species discussed below have been afforded special recognition by local, State, or federal resource conservation agencies and organizations, principally due to the species' declining or limited population sizes usually resulting from habitat loss. Also discussed are habitats that are unique, of relatively limited distribution, or are of particular value to wildlife.

Fremont cottonwood/mixed scrub and red willow/arroyo willow riparian forest are considered sensitive by the CNDDB (CDFG 2003).[6] These communities were observed within the Project Site. *The proposed project is not expected to directly impact Fremont cottonwood/mixed scrub.*

Sensitive plants include those listed, or candidates for listing by the USFWS, CDFG, and California Native Plant Society (CNPS) (particularly List 1A – Presumed extinct in California; List 1B – Rare, threatened, or endangered throughout its range; and List 2 – Rare or Endangered in California, more common elsewhere). Several sensitive plant species were reported in the CNDDB from the vicinity. Based on the habitat present on the Project Site, the following species may potentially occur on-site:

- *Calochortus weedii* var. *intermedius* (intermediate mariposa lily) – CNPS List 1B.2;
- *Comarostaphylis diversifolia* ssp. *diversifolia* (summer holly) – CNPS List 1B.2;
- *Caulanthus simulans* (Payson's jewel-flower) – CNPS List 4.2;
- *Dudleya multicaulis* (many-stemmed dudleya) – CNPS List 1B.2;
- *Horkelia cuneata* ssp. *puberula* (mesa horkelia) – CNPS List 1B.1;
- *Imperata brevifolia* (California satintail) – CNPS List 2.1;
- *Lepechinia cardiophylla* (heart-leaved pitcher sage) – CNPS List 1B.2;
- *Lepidium virginicum* var. *robinsonii* (Robinson's pepper-grass) – CNPS List 1B;
- *Monardella hypoleuca* ssp. *lanata* (felt-leaved monardella) – CNPS List 1B.2;

[6] *State of California Resources Agency. Department of Fish and Game. September 2003. List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database. Wildlife and Habitat Data Analysis Branch. The Vegetation Classification and Mapping Program. Sacramento.*

- *Monardella macrantha* ssp. *hallii* (Hall's monardella) – CNPS List 1B.3;
- *Nama stenocarpum* (mud nama) – CNPS List 2.2;
- *Nolina cismontana* (chaparral nolina) – CNPS List 1B.2;
- *Pseudognaphalium leucocephalum* (white rabbit-tobacco) – CNPS List 2.2;
- *Quercus dumosa* (Nuttall's scrub oak) – CNPS List 1B.1;
- *Satureja chandleri* (San Miguel savory) – CNPS List 1B;
- *Symphyotrichum defoliatum* (San Bernardino aster) – CNPS List 1B.2.

Although suitable habitat for all of the aforementioned species exists on-site, these species were not observed during the site visit conducted on May 2, 2008. The absence of these species from the Project Site cannot be confirmed until spring season surveys are performed to determine their presence or absence. Sensitive plant species with a CNPS Listing of 1B or 2 present California Environmental Quality Act (CEQA)-related issues.

Several sensitive wildlife species were reported in the CNDDB from the vicinity. Based on the habitat present on the Project Site, the following sensitive species may potentially occur on-site:

- *Antrozous pallidus* (pallid bat) – CDFG Species of Special Concern;
- *Aquila chrysaetos* (golden eagle) – CDFG Species of Special Concern and Fully Protected Species;
- *Asio otus* (long-eared owl) – CDFG Species of Special Concern;
- *Aspidoscelis hyperythra* (orange-throated whiptail) - CDFG Species of Special Concern;
- *Circus cyaneus* (northern harrier) – CDFG Species of Special Concern;
- *Crotalus ruber ruber* (northern red-diamond rattlesnake) – CDFG Species of Special Concern;
- *Elanus leucurus* (white-tailed kite) – CDFG Fully Protected Species;
- *Empidonax traillii extimus* (southwestern willow flycatcher) – State and Federally Endangered;
- *Eumops perotis californicus* (western mastiff bat) – CDFG Species of Special Concern;

- *Falco peregrinus anatum (*American peregrine falcon) – State Endangered, Federally Delisted, and CDFG Fully Protected Species;
- *Icteria virens* (yellow-breasted chat) – CDFG Species of Special Concern;
- *Lasiurus blossevillii* (western red bat) - CDFG Species of Special Concern;
- *Nyctinomops macrotis* (big free-tailed bat) – CDFG Species of Special Concern;
- *Neotoma lepida intermedia* (San Diego desert woodrat) – CDFG Species of Special Concern;
- *Phrynosoma coronatum (blainvillei)* (coast [San Diego] horned lizard) – CDFG Species of Special Concern;
- *Polioptila californica california* (coastal California gnatcatcher) – Federally Threatened, CDFG Species of Special Concern;
- *Salvadora hexalepis* (coast patch-nosed snake) – CDFG Species of Special Concern;
- *Taricha torosa torosa* (Coast Range newt) – CDFG Species of Special Concern;
- *Thamnophis hammondii* (two-striped garter snake) – CDFG Species of Special Concern;
- *Vireo bellii pusillus (least Bell's vireo)* – State and Federally Endangered.

As indicated, these species have been assigned varying degrees of sensitivity by federal and/or State resources agencies depending on their rarity and threats to their habitats and populations. The majority of these species are not protected by State or federal listings as threatened or endangered. Therefore, specific compensatory mitigation may not be required by resource agencies; however, adequate documentation may be required under CEQA.

The coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and the American peregrine falcon are the listed wildlife species with a low to moderate potential to occur within the Project Site. The coastal California gnatcatcher and least Bell's vireo have a moderate potential to occur due to the presence of suitable habitat (sage scrub with California sagebrush as a dominant component for the coastal California gnatcatcher and mature riparian habitat with willows as the dominant component for the least Bell's vireo). The southwestern willow flycatcher has a low potential to occur on-site. This species also occurs in willow thickets, but multi-layered canopies can also be an important habitat component which is present in very limited, isolated areas within the Project Site. The American peregrine falcon would only utilize the Project Site by passing through and would not nest on-site (due to the lack of suitable nesting habitat); therefore, mitigation would not likely be required by resource agencies. Surveys are

recommended for the coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher.

Orange County NCCP

The Project Site is within the Natural Community Conservation Plan (NCCP), Central Subregion, and within an in-lieu fee area. City projects within the in-lieu fee area are required to pay a fee to mitigate for the loss of occupied coastal California gnatcatcher habitat. The loss of any occupied least Bell's vireo or southwestern willow flycatcher habitat that provides long-term conservation value would be mitigated through Section 7. Should intermediate mariposa lily (less than 20 individuals) be observed on-site, this can also be mitigated through the payment of a fee. Impacts to greater than 20 intermediate mariposa lily (20 to 100 individuals) require a Mitigation Plan. Any other sensitive plants present within the Project Site would be mitigated through CEQA.

Regulated Trees

The City of Lake Forest regulates the maintenance of eucalyptus trees more than eight feet tall or with a trunk diameter of two inches or more measured at least three feet above ground level. The maintenance of eucalyptus trees is regulated to control the infestation by a beetle, the eucalyptus longhorn borer. During the period from April 1 through October 31 (the restricted period) of each year, a eucalyptus cutting permit must be obtained from the City to prune, remove, or transport a eucalyptus or its logs, branches, or trunk. During this restricted period, an application for a eucalyptus tree cutting or removal permit must include the number and location of the eucalyptus tree(s) to be cut, pruned, moved, or removed. The application must include the health, safety, or emergency reasons for the pruning, moving, or removal during the restricted period. From November 1 through March 31, no permit is required for the pruning, cutting, removal, or transportation of eucalyptus trees[7].

Preliminary Jurisdictional Determination

The Project Site contains several drainage features which would be considered under the jurisdiction of the U.S. Army Corps of Engineers ("ACOE"), Regional Water Quality Control Board ("RWQCB"), and the CDFG. A formal jurisdictional delineation of wetlands and "waters of the U.S." was also conducted on May 2, 2008 and the results will be provided under separate cover.

CONSTRAINTS AND RECOMMENDATIONS

The potential planning constraints addressed below are based on the biological resources present within the Project Site. The potential constraints are determined by Federal, State, and/or local regulatory requirements under the following policies:

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[7] *City of Lake Forest. 2006. Chapter 6.20, Regulations Pertaining to Conversion, Maintenance, and Removal of Eucalyptus Trees. City of Lake Forests Municipal Code (Sections. 015, 020, 025, and 035).*

- California Environmental Quality Act;
- Clean Water Act;
- Federal Endangered Species Act;
- California Endangered Species Act;
- Orange County NCCP;
- City of Lake Forest Regulations Pertaining to Conversion, Maintenance, and Removal of Eucalyptus Trees;
- Migratory Bird Treaty Act;
- State Fish and Game Code.

Based on the results of the field observations and data collection, PCR biologists identified the following potential constraints to development of the Project Site.

Sensitive Plants

Although no sensitive plants were observed during the reconnaissance site visit, several have the potential to occur. PCR recommends that focused surveys for sensitive plants be conducted during the appropriate blooming periods (April through August) and prior to any direct impacts to the Project Site in anticipation of a detailed environmental review. Spring season focused surveys will be required to determine the numbers and distribution of any sensitive plant species that might occur within the Project Site and identify the significance of any impacts to these species. As stated previously, should intermediate mariposa lily (less than 20 individuals) be observed on-site, this can also be mitigated through the payment of a fee. Impacts to more than 20 intermediate mariposa lily (20 to 100 individuals) will require a Mitigation Plan. Any other sensitive plants present within the Project Site would be mitigated through CEQA.

Sensitive Plant Communities

Fremont cottonwood/mixed scrub and red willow/arroyo willow riparian forest are considered sensitive by the CNDDB.[8] These communities were observed within the Project Site. Any impacts determined to be significant under CEQA would require the implementation of mitigation measures that would lessen the impacts to a less than significant level (*the proposed project is not expected to directly impact Fremont cottonwood/mixed scrub).* In addition, impacts to

[8] *State of California Resources Agency. Department of Fish and Game. September 2003. List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database. Wildlife and Habitat Data Analysis Branch. The Vegetation Classification and Mapping Program. Sacramento.*

riparian plant communities under the jurisdiction of the CDFG may require a streambed alteration agreement.

Nesting Raptors and Songbirds

The Project Site has the potential to support both raptor and songbird nests due to the presence of trees, shrubs, and other ground cover. Nesting activity typically occurs from mid-February to mid-August. Disturbing or destroying active nests is a violation of the federal Migratory Bird Treaty Act. In addition, nests and eggs are protected under Fish and Game Code Section 3503. The removal of vegetation during the breeding season is considered a potentially significant impact of the proposed project.

Mitigation for the potential taking of migratory bird species would be accomplished in one of two ways. First, efforts will be made to schedule all vegetation removal activities outside the nesting season (typically February 15 to August 15) to avoid potential impacts to nesting birds. This would insure that no active nests would be disturbed and that habitat removal could proceed rapidly. Secondly, if initial vegetation removal occurs during the nesting season, all suitable habitat will be thoroughly surveyed for the presence of nesting birds by a qualified biologist before commencement of clearing. If any active nests are detected, a buffer of at least 100 feet (300 feet for raptors) will be delineated, flagged, and avoided until the nesting cycle is complete as determined by the biological monitor to minimize impacts.

Sensitive Wildlife Species

A variety of sensitive wildlife species have the potential to occur within the Project Site. The sensitive species that are not listed as threatened or endangered and have the potential to occur on-site generally represent CEQA-related issues requiring adequate documentation and analysis, and may require mitigation.

The coastal California gnatcatcher, a federally threatened species, has the potential to occur within the Project Site. Focused surveys are recommended for this species. Should the coastal California gnatcatcher be detected within the Project Site during focused surveys, the NCCP allows for the payment of a fee which is determined according to the number of acres of occupied habitat impacted by the Project Site. The resource agencies will likely consider all potential habitat to be occupied if the species is detected.

The Project Site contains 2.5 acres of red willow/arroyo willow riparian forest. This plant community contains the dense riparian willow thickets required for nesting by the least Bell's vireo. The southwestern willow flycatcher has a low potential to occur on-site. This species requires a multi-layered canopy and standing water, which is present within very limited, isolated areas in the red willow/arroyo willow riparian forest. Focused surveys are recommended for the least Bell's vireo and southwestern willow flycatcher. These two species are conditionally covered under the NCCP. If the habitat support migrants and nesting birds and does not provide long-term conservation value, the species (least Bell's vireo and/or southwestern willow flycatcher) are

covered under the NCCP. If the on-site habitat supports migrants or nesting birds and has potentially significant long-term conservation value, the species is not covered under the NCCP (and the loss of any occupied habitat would be mitigated through Section 7).

Regulated Trees

The City of Lake Forest requires a permit to prune, remove, or transport a eucalyptus or its logs, branches, or trunk from April 1 through October 31 of each year (City of Lake Forest Municipal Code Chapter 6.20). Avoidance of these activities during the period from April 1 through October 31 would preclude the need for a permit and application.

Jurisdictional Drainages

PCR conducted a formal jurisdictional delineation of wetlands and "waters of the U.S." according to the ACOE 1987 Manual and State Fish and Game Code to determine the extent of the jurisdictional areas on-site. Areas potentially falling under the jurisdiction of the ACOE, CDFG, and RWQCB do exist within the Project Site. Associated federal and State permits should be anticipated if impacts are proposed within the jurisdictional drainages.

SUMMARY

Based on the results of the literature review and recent field observations conducted by PCR biologists, potential constraints to development were identified. These include the potential for sensitive plant species, sensitive wildlife, nesting raptors and songbirds, as well as the presence of regulated trees, jurisdictional drainages, and sensitive plant communities. The following actions are recommended:

- Focused surveys for sensitive plants identified as having a potential to occur within the Project Site;
- Focused surveys for the coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher;
- Vegetation clearing prior to February 15 or after August 15 to avoid impacting nesting birds;
- Pruning, translocation, or removal of eucalyptus trees from November 1 through February 28; if trees must be removed from April 1 through October 31, a tree survey should be conducted followed by an application for a permit through the City of Lake Forest;

- If impacting any jurisdictional features, obtain necessary permits from the ACOE, RWQCB, and CDFG. Mitigation measures for impacts to jurisdictional features may include on- or off-site creation, restoration, or enhancement of ACOE jurisdictional waters of the U.S. and/or wetlands and CDFG jurisdictional areas. Mitigation may also include the incorporation of design features that will avoid or minimize impacts to on-site drainages.

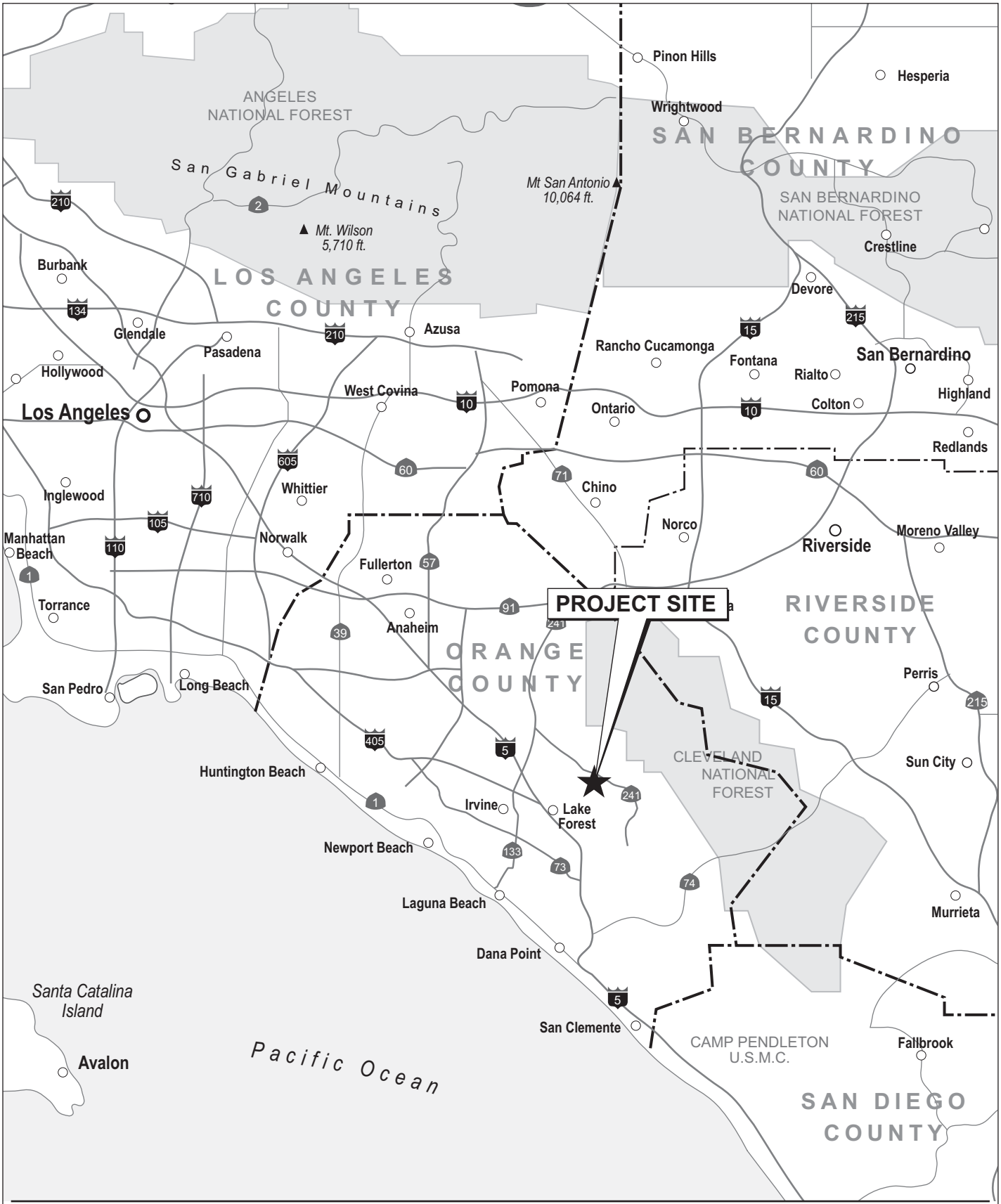
Please feel free to contact me at (949) 753-7001 should you have any questions regarding this analysis.

Sincerely,
PCR SERVICES CORPORATION

Linda Robb

Linda Robb
Senior Biologist

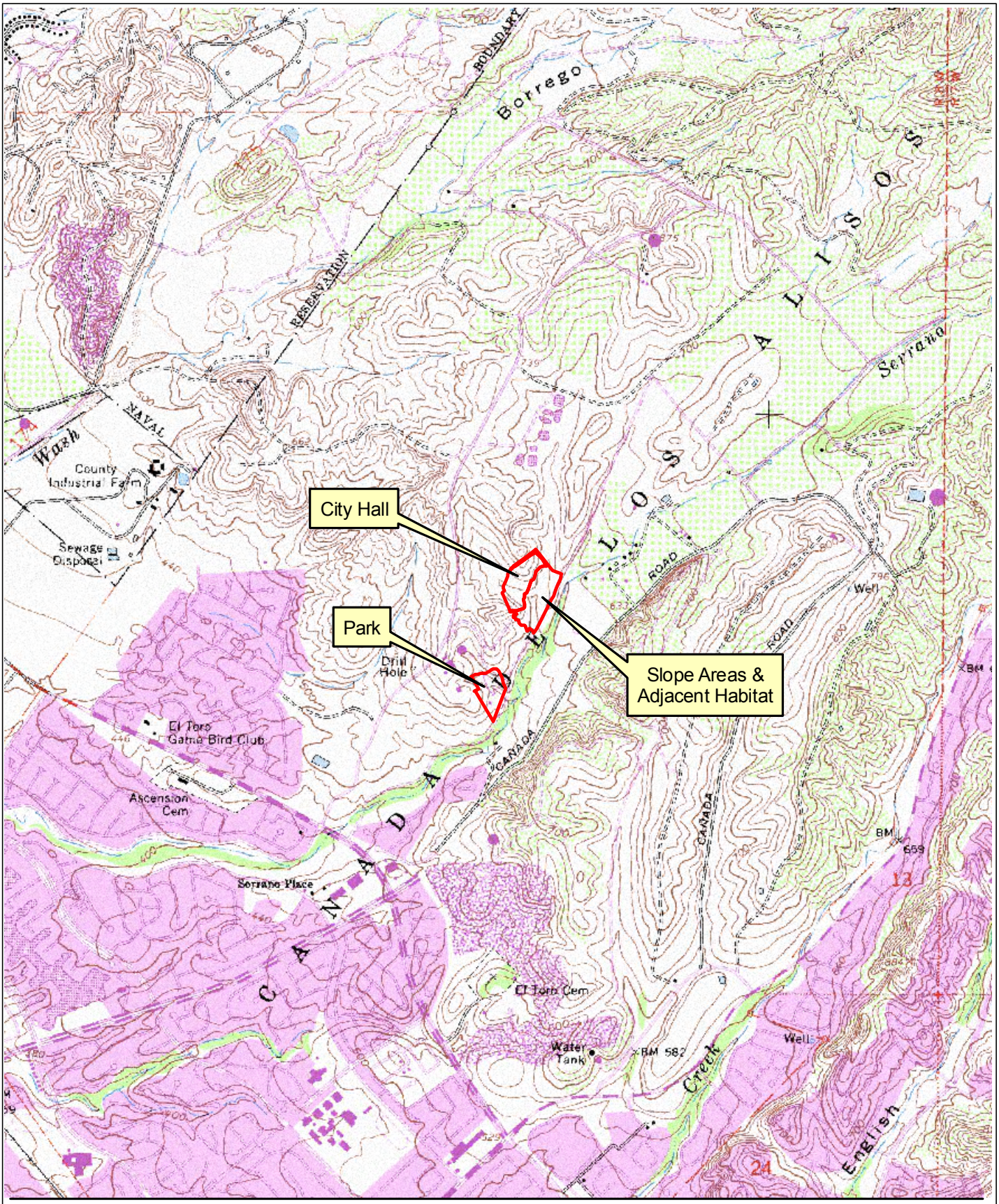
Attachments



PCR

Source: PCR Services Corporation, 2008.

Figure 1
Lake Forest
Proposed City Hall Site
Regional Map



PCR

Source: USGS Topographic Series (El Toro, CA); PCR Services Corporation, 2008.

Figure 2
Lake Forest
Proposed City Hall Site
Vicinity Map

PCR

Source: PCR Services Corporation, 2008.

Figure 3
Lake Forest Proposed City Hall Site
Plant Communities

Photograph 1: View (looking southeast) of buckwheat scrub within the northern portion of the Project Site.

Photograph 2:View (looking south) of mixed scrub within the northern portion of the Project Site. The red willow/arroyo willow forest can be observed in the background.

Photograph 3: View (looking south) of the eastern and central portions of the Project Site. Vegetation communities shown in this photograph include mule fat scrub/mixed scrub in foreground, disturbed/mixed scrub, and mixed scrub and scrub oak chaparral on the slope in the background.

Photograph 4: View (looking northeast) of Fremont cottonwood/mixed scrub on a slope in the southeastern portion of the Project Site.

PCR

Source: PCR Services Corporation, 2008.

Figure 4
Lake Forest
Proposed City Hall Site
Site Photographs

August 26, 2008

Ms. Cheryl Kuta
CITY OF LAKE FOREST
25550 Commercentre Drive
Suite 100
Lake Forest, California 92630

Re: SPRING 2008 SENSITIVE PLANT SURVEYS FOR THE 19.7-ACRE PROPOSED CITY HALL AND PARK PROJECT SITE LOCATED IN THE CITY OF LAKE FOREST, ORANGE COUNTY, CALIFORNIA

Dear Ms. Kuta:

This letter report summarizes the methodology and findings of sensitive plant surveys conducted by **PCR Services Corporation (PCR)** at the 19.7-acre proposed City Hall and Park Project Site located in the City of Lake Forest, Orange County, California ("Project Site"). No sensitive plant species were observed on-site during focused surveys.

STUDY AREA

The Project Site consists of approximately 19.7 acres of primarily undeveloped land located in the City of Lake Forest, Orange County, California (Figure 1, *Regional Map*, attached). The Project Site is located south of Commercentre Drive, east of Bake Parkway, and northwest of Lake Forest Drive. The 19.7-acre Project Site consists of two parts, a 14.7-acre parcel just south of the southern extent of Indian Ocean Drive (comprised of the 6.3-acre proposed City Hall site and an adjacent 8.4-acre site that consists of engineered slopes associated with the City Hall site and habitat beyond these slopes extending to an existing dirt trail to the east), and a 5.0-acre proposed park site approximately 900 feet to the southeast of the 14.7-acre parcel. These two parcels are separated by an open space area used for commercial purposes that includes a paved access road, two flat circular terraces, and adjacent slopes vegetated with native and ornamental species.

The 19.7-acre Project Site is surrounded by open space land including a dirt trail and Serrano Creek (and residential development beyond the open space) to the east and south, residential and commercial development to the west, and commercial development and a partially graded open space area used for commercial purposes to the north. Topography within the Project Site consists generally of rolling hills sloping to flat areas to the east (14.7-acre City Hall/slope site) and is predominantly flat in the 5.0-acre park site. The elevation ranges from approximately 544 feet above mean sea level ("MSL") in the southern portion of the Project Site (park site) to approximately 698 feet above MSL in the northern portion of the Project Site (City Hall site). The

Project Site can be found within Section 11, T. 6 S., R. 8 W. of the U.S. Geological Survey (USGS) 7.5-minute El Toro, California quadrangle map (Figure 2, *Vicinity Map*, attached).[1]

VEGETATION

A variety of plant communities were observed within the Project Site. Plant community names and hierarchical structure follows the CDFG *List of California Terrestrial Natural Communities Recognized by the Natural Diversity Data Base*.[2] Plant community designations were determined according to descriptions contained in Gray and Bramlet (1992)[3] and Sawyer and Keeler-Wolf (1995).[4] If a community found on-site did not conform to any of the communities listed in Gray and Bramlet or Sawyer and Keeler-Wolf, it was named for the dominant species comprising it (e.g., Fremont cottonwood) and described accordingly.

Details of the plant communities mapped within the Project Site are included below. The locations of all plant communities on the Project Site are indicated in Figure 3, *Plant Communities*, attached. A list of the plant communities on-site along with the acreage of each is listed in Table 1, *Plant Communities,* on page 3.

Scrub Communities

Buckwheat scrub is characterized by nearly monotypic stands of California buckwheat (*Eriogonum fasciculatum*). This community occurs throughout the foothills and mountains of Orange County and is most often found on slopes that have been disturbed within the last 10 years. California buckwheat was the dominant plant species observed within this community. Additional species observed in sparse amounts included native white sage (*Salvia apiana*), California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), mule fat (*Baccharis salicifolia*), California bush sunflower (*Encelia californica*), and non-native horehound (*Marrubium vulgare*), and tocalote (*Centaurea melitensis*). This area appears to have been planted and irrigation lines are still present although no evidence of watering was observed. The extent of buckwheat scrub totals 1.4 acres within the northern portion of the Project Site (0.4 acre in the City Hall site and 1.0 acre in the slope area).

Mixed scrub is usually dominated by an even mix of various sage scrub species. Dominant species found within the community on-site include native black sage, California sagebrush, and California buckwheat. Additional species observed included native mule fat, coyote brush

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1 *United States Geological Survey. 1968. El Toro, California 7.5-minute Topographical Quadrangle. Photo revised 1982.*

2 *State of California Resources Agency. Department of Fish and Game. September 2003. List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database. Wildlife and Habitat Data Analysis Branch. The Vegetation Classification and Mapping Program. Sacramento.*

3 *Gray, J. and D. Bramlet. 1992. Habitat Classification System: Natural Resources Geographic Information System (GIS) Project. Environmental Management Agency. County of Orange, Santa Ana, California.*

4 *Sawyer, John O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. Sacramento: California Native Plant Society.*

Table 1

Plant Communities

Plant Community	Acres
Buckwheat Scrub	1.4
Coast Live Oak Woodland	<0.1
Developed	0.8
Disturbed/Fremont Cottonwood	0.4
Disturbed/Mixed Scrub	3.9
Disturbed/Mule Fat Scrub	0.3
Fremont Cottonwood/Mixed Scrub	0.3
Mexican Elderberry Woodland	0.2
Mixed Scrub	4.7
Mixed Scrub/Mule Fat Scrub	0.2
Mule Fat Scrub	0.8
Ornamental	0.6
Red Willow/Arroyo Willow Riparian Forest	2.5
Ruderal	3.3
Scrub Oak Chaparral	0.2
Tamarisk Stand	0.1
Total	**19.7**

Source: PCR Services Corporation, 2008.

(*Baccharis pilularis*), deerweed (*Lotus scoparius*), our Lord's candle (*Yucca whipplei*), California bush sunflower, wishbone bush (*Mirabilis californica*), California sun cup (*Camissonia bistorta*), California croton (*Croton californicus*), purple sage (*Salvia leucophylla*), poison oak (*Toxicodendron diversilobum*), wild cucumber (*Marah macrocarpa*), orange bush monkey-flower (*Mimulus aurantiacus*), chaparral mallow (*Malacothamnus fasciculatus*), and non-native short-podded mustard (*Hirshfeldia incana*), foxtail chess (*Bromus madritensis*), and tree tobacco (*Nicotiana glauca*). Mixed scrub occupies 4.7 acres throughout the Project Site (2.9 acres in the City Hall site, 1.2 acres in the slope area, and 0.6 acre in the park site).

Mixed scrub/mule fat scrub contains a similar vegetation composition to mixed scrub and mule fat scrub combined. Dominant species observed within this community on-site included mule fat, California sagebrush, and California bush sunflower. Additional species observed included short-podded mustard. This community is present within a basin in the northeastern portion of the Project Site and occupies 0.2 acre (all within the City Hall site).

Woodland Communities

Coast live oak woodland is dominated by coast live oak with a poorly developed shrub layer. This plant community typically occurs on north-facing slopes and shaded ravines. Coast live oak (*Quercus agrifolia*) was the dominant plant species observed within this community. Additional species observed included foxtail chess and California sagebrush. This plant community occupies less than 0.1 acre within the eastern portion of the Project Site (all within the slope area).

Fremont cottonwood/mixed scrub is present along slopes in the southern portion and on the southeastern edge of the Project Site (within the park site). This community consists of mixed scrub species interspersed with several Fremont cottonwood trees (*Populus fremontii*), and a few coast live oak trees. Additional species observed included toyon (*Heteromeles arbutifolia*) and lemonadeberry (*Rhus integrifolia*). This community occupies 0.3 acre within the Project Site (all within the park site).

Mexican elderberry woodland is characterized by an open woodland of Mexican elderberry (*Sambucus mexicana*) that dominates the surrounding vegetation, both structurally and by biomass. It is commonly found on stream benches and lower slopes above streams. Mexican elderberry woodland occupies 0.2 acre within the northeastern portion of the Project Site (all within the slope area).

Chaparral Communities

Scrub oak chaparral is typically characterized as a dense, evergreen chaparral dominated by scrub oak (*Quercus berberidifolia*). This community occurs in more mesic areas than many other chaparrals and often occurs at slightly higher elevations. Plant species observed within this community on-site included scrub oak with understory species such as native California sagebrush and non-native short-podded mustard and tocalote. There is approximately 0.2 acre of scrub oak chaparral within the eastern portion of the Project Site (all within the City Hall site).

Riparian Communities

Mule fat scrub consists of dense stands of mule fat with scattered willows commonly present. This community typically occupies intermittent streambeds or disturbed areas within drainages and washes. Mule fat was the dominant species observed within this community on-site. Additional species observed included native Mexican elderberry and non-native tamarisk (*Tamarix ramosissima*) and short-podded mustard. A total of 0.8 acre of the Project Site is occupied by mule fat scrub (0.6 acre in the City Hall site and 0.2 acre in the slope area). The community occurs within two basins in the central and western portions of the Project Site and on the eastern edge of the drainage in the northeastern portion of the Project Site.

Red willow/arroyo willow riparian forest consists of a closed canopy of red willow (*Salix laevigata*) and arroyo willow (*Salix lasioloepis*) in arborescent form. This community typically occurs on floodplains along major streams and rivers. Shrubs are sparse under the tree canopy. Red willow and arroyo willow were the dominant species observed within this community on-site. Several coast live oak trees were also present within this community. Additional species observed included native mule fat and poison oak, and non-native giant reed (*Arundo donax*). Approximately 2.5 acres of red willow/arroyo willow riparian forest occur within the Project Site (all within the slope area).

Disturbed and Ornamental Communities

Disturbed/Fremont cottonwood occurs along a slope on the southeastern edge of the Project Site (within the park site). This community is characterized by a greater than 20 percent cover of non-native species interspersed with several Fremont cottonwood trees and a few coast live oak trees. Non-native species observed within this community included short-podded mustard, tree tobacco, tocalote, yellow sweetclover (*Melilotus officinalis*), and poison hemlock (*Conium maculatum*). A sparse cover of additional native species present within this community included toyon and western ragweed (*Ambrosia psilostachya*). Disturbed/Fremont cottonwood occupies 0.4 acre within the Project Site (all within the park site).

Disturbed/mixed scrub and **disturbed/mule fat scrub** contain a similar vegetation composition to mixed scrub and mule fat scrub, except non-native species constitute greater than 20 percent of the vegetative cover. Disturbed/mixed scrub occupies 3.9 acres throughout the Project Site (1.0 acre within the City Hall site and 2.9 acre within the slope area). Disturbed/mule fat scrub occupies 0.3 acre at the base of a trail within the eastern portion of the Project Site (all within the City Hall site).

Several areas of **ornamental** vegetation occur within the Project Site. Ornamental species observed included eucalyptus (*Eucalyptus* sp.) and pine (*Pinus* sp.) with an understory of predominantly non-native vegetation including red-stemmed filaree (*Erodium cicutarium*) and short-podded mustard. In addition to the eucalyptus and pine trees, scattered native coast live oak and Fremont cottonwood trees that appear to have been planted are present. Areas of ornamental vegetation occupy 0.6 acre within the eastern and southern portions of the Project Site (less than 0.1 acre within the slope area and 0.6 acre within the park site).

Ruderal areas are dominated by non-native weedy species that readily colonize disturbed ground. Plant species observed within the ruderal areas on-site include short-podded mustard, castor bean (*Ricinus communis*), foxtail chess, tocalote, yellow sweetclover, and poison hemlock. In addition, a sparse amount of native western ragweed occurs within the ruderal areas on-site. Ruderal areas occupy 3.3 acres throughout the Project Site (0.7 acre in the City Hall site, 0.3 acre in the slope area, and 2.3 acres in the park site).

Tamarisk stand is characterized by nearly monotypic stands of tamarisk, and this community occupies 0.1 acre within the northern portion of the Project Site (all within the slope area). Other species observed within this community on-site included white sage and California sagebrush.

Developed Areas

Developed areas within the Project Site consist of paved pathways. Developed areas occupy 0.8 acre within the Project Site (all within the park site).

SOILS

The Soil Survey of Orange County and Western Part of Riverside County, California[5] was consulted, and five soil types within three soil series were identified within the Project Site. The soils map and underlying aerial photograph were also analyzed for indicators of streams, as well as mapping of wetlands, seeps, springs, or hydric soils. Descriptions of these soil types are presented below.

- Calleguas Series (Typic Xerorthents): This well drained soil series is formed in material weathered from lime coated shale or lime coated sandstone. It occurs on uplands with elevations ranging from 200 to 2,500 feet. Natural vegetation consists mainly of annual grasses, and forbs, mostly mustard and brush. On-site, one soil of the Calleguas series occurs. **Calleguas clay loam, 50 to 75 percent slopes, eroded (134)**. This soil is found on very steep, generally south-facing slopes. This soil is moderately permeable, with an available water holding capacity of 1.5 to 3.5 inches. Runoff is rapid, and the hazard of erosion is high.

- Capistrano Series (Entic Haploxerolls): This well drained soil series is formed in granitic alluvium. It occurs on alluvial fans and alluvial plains with elevations ranging from 25 to 2,500 feet. Natural vegetation consists mostly of grasses, with a few oaks in some areas. On-site, two soils types of the Capistrano series occur. **Capistrano sandy loam, 2 to 9 percent slopes (135)**. This soil is found on gently to moderately sloping terrain mostly as long, narrow areas in small valleys. This soil is moderately rapidly permeable, with an available water holding capacity of 5.5 to 7.5 inches. Runoff is slow to medium, and the hazard of erosion is moderate. **Capistrano sandy loam, 9 to 15 percent slopes (136)**. This soil is found on strongly sloping terrain that generally occurs on small toe slope fans

[5] *United States Department of Agriculture. Natural Resources Conservation Service. November 1971. Soil Survey of Western Riverside Area, California. Washington, D.C.*

and in small narrow foothill valleys. This soil is moderately rapidly permeable, with an available water holding capacity of 5.5 to 7.5 inches. Runoff is medium, and the hazard of erosion is moderate.

- Cieneba Series (Typic Xerorthents): This somewhat excessively drained soil series is formed in material weathered from granitic rocks of the Santa Ana Mountains and from the sandstone of the coastal foothills. It typically occurs on uplands with elevations ranging from 200 to 4,000 feet. Natural vegetation consists mainly of brush. On-site, one soil of the Cieneba series occurs. **Cieneba sandy loam, 30 to 75 percent slopes, eroded (142)**. This soil is found on steep to very steep terrain, is generally shallow to bedrock and is often cut by gullies and intermittent drainage channels. This soil is moderately rapidly permeable, and an available water holding capacity is 0.75 to 2.5 inches. Runoff is rapid, and the hazard of erosion is high.

- Riverwash: This soil type consists of unconsolidated alluvium, generally stratified and varying widely in texture, recently deposited by intermittent streams, and subject to frequent changes through stream overflow. These are sandy, gravelly, cobbly, and boundary deposits that support little or no vegetation. Runoff is generally rapid, and the erosion hazard is high. Deposition and removal of fresh alluvium are common.

METHODOLOGY

Surveys for sensitive plants were conducted by PCR biologists Linda Robb, Richard Haywood, Chris Jones, and Maile Tanaka on May 30 and August 6, 2008. Collectively, survey dates encompassed the flowering periods of all endangered, threatened, and sensitive plants potentially occurring on-site [except Nuttall's scrub oak (*Quercus dumosa*) which is a conspicuous tree/shrub that can be distinguished from the common scrub oak (*Quercus berberidifolia*) using vegetative characteristics].

PCR reviewed all available relevant data on sensitive habitats and species distribution to determine which sensitive plants have the potential for occurrence on-site. Items reviewed included: the California Natural Diversity Database (CNDDB),[6] the California Department of Fish and Game (CDFG),[7,8] and the California Native Plant Society (CNPS)[9] for endangered, threatened, or sensitive species potentially occurring within the Project Site.

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[6] *California Department of Fish and Game (CDFG). 2008. California Natural Diversity Data Base Inventory for USGS 7.5-minute quadrangles for El Toro, San Juan Capistrano, Canada Gobernadora, Santiago Peak, Laguna Beach, and Tustin. April.*

[7] *CDFG. July 2008. Department of Fish and Game. Natural Heritage Division. State and Federally Listed Endangered, Threatened, and Rare Plants and California. Sacramento. 16 pgs.*

Surveys were conducted in accordance with survey guidelines published in the *Inventory of Rare and Endangered Vascular Plants of California*.[10] Meandering transects were walked across all accessible portions of the Project Site and biological resources, including vegetation and sensitive plants (if observed), were mapped on a 1" = 300' scale aerial photograph. Plant species on-site were recorded and a list of all plant species observed on-site was compiled (Appendix A, *Floral Compendium for the Lake Forest Proposed City Hall and Park Site*, attached). Plant species nomenclature follows that of Hickman.[11]

RESULTS

Sensitive plants include those listed, or candidates for listing by the CDFG, the U.S. Fish & Wildlife Service (USFWS), and the CNPS (Lists 1A, 1B and 2). Sensitive plant species known or potentially occurring in the vicinity of the Project Site are listed in Table 2, *Sensitive Plant Species*, attached, along with their sensitivity statuses and potential for occurrence on-site. No sensitive plant species were observed within the Project Site.

Should you have any questions regarding the methodology or findings in this report, please do not hesitate to contact Linda Robb at (949) 753-7001.

Sincerely,
PCR SERVICES CORPORATION

Linda Robb
Senior Biologist

Richard Haywood
Senior Wetland Ecologist

Attachments

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[8] *CDFG. July 2008. Department of Fish and Game. Natural Diversity Database. Special Vascular Plants, Bryophytes, and Lichens List. Biannual publication. 79 pgs.*

[9] *CNPS. 2008. Inventory of Rare and Endangered Plants for USGS 7.5-minute quadrangles for El Toro, San Juan Capistrano, Cananda Gobernadora, Santiago Peak, Laguna Beach, and Tustin. April.*

[10] *California Native Plant Society (CNPS). 2001. Inventory of Rare and Endangered Plants of California (sixth edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society. Sacramento, California. 388 pgs.*

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

Table 2

Special Status Plant Species

VASCULAR PLANTS								
Scientific Name	**Common Name**	**Flowering Period**	**Federal**	**State**	**CNPS List**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**
GYMNOSPERMS								
Cupressaceae	**Cypress Family**							
Cupressus forbesii	Tecate cypress	N/A	NONE	NONE	1B.1	Closed-cone coniferous forest, chaparral; occurs primarily on north-facing slopes and groves often associated with chaparral.	Orange and San Diego Counties, Baja California.	NE
Comments: This species was not observed within the Project Site is not expected to occur due to a lack of suitable habitat.								
ANGIOSPERMS (DICOTYLEDONS)								
Asteraceae	**Sunflower Family**							
Centromadia parryi ssp. *australis*	southern tarplant	May-Nov.	NONE	NONE	1B.1	Margins of marshes and swamps, valley and foothill grassland; often occurs in disturbed sites near the coast and in alkaline soils with salt grass.	Los Angeles, Orange, Santa Barbara, San Diego, and Ventura Counties, California, Baja California. May also occur on Santa Catalina Island.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to a lack of suitable habitat.								
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	Jan.-Aug.	NONE	NONE	1B.1	Coastal bluff scrub, coastal dunes.	Ventura, Los Angeles, and San Diego counties; Baja California. Extirpated from Orange County.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to a lack of suitable habitat.								

Table 2 (Continued)

Special Status Plant Species

VASCULAR PLANTS								
Scientific Name	**Common Name**	**Flowering Period**	**Federal**	**State**	**CNPS List**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**
Helianthus nuttallii ssp. *parishii*	Los Angeles sunflower	Aug.-Oct.	NONE	NONE	1A	Marshes and swamps (coastal salt and freshwater).	Los Angeles, Orange, and San Bernardino Counties, California	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to a lack of suitable habitat.								
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Feb.-Jun.	NONE	NONE	1B.1	Coastal salt marshes and swamps, playas, vernal pools.	Orange, Riverside, San Diego, Ventura, and Santa Barbara counties; Baja California.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to the lack of suitable habitat.								
Pseudognaphalium leucocephalum	white rabbit-tobacco	Aug.-Nov.	NONE	NONE	2.2	Riparian woodland, cismontane woodland, coastal scrub, and chaparral in sandy, gravelly areas.	Southern and central California, Arizona, New Mexico, Texas, Baja California, and Sonora, Mexico.	NE
Comments: This species is not expected to occur due to the negative results of focused surveys conducted during its blooming period.								
Senecio aphanactis	rayless ragwort	Jan.-Apr.	NONE	NONE	2.2	Cismontane woodland and coastal scrub on drying alkaline flats.	Throughout California and the Channel Islands. Baja California.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to the lack of suitable habitat.								

Table 2 (Continued)

Special Status Plant Species

VASCULAR PLANTS								
Scientific Name	**Common Name**	**Flowering Period**	**Federal**	**State**	**CNPS List**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**
Symphyotrichum defoliatum	San Bernardino aster	Jul.-Nov.	NONE	NONE	1B.2	Meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, and grassland; occurs in vernally mesic grassland or near ditches, streams, and springs in disturbed areas.	Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and San Luis Obispo Counties.	NE
Comments: This species is not expected to occur due to the negative results of focused surveys conducted during its blooming period.								
Verbesina dissita	Crownbeard	Apr.-Jul.	FT	ST	1B.1	Maritime chaparral (mainly) and coastal scrub; occurs on steep, rocky, primarily north-facing slopes within 1.5 miles of the ocean..	Orange County; Baja California.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to the lack of suitable habitat.								
Brassicaceae	**Mustard Family**							
Caulanthus simulans	Payson's jewel-flower	Mar.-Jun.	NONE	NONE	4.2	Chaparral and coastal scrub; frequently occurs in burned areas or in disturbed sites such as stream banks or rocky, steep slopes.	Riverside and San Diego Counties.	NE
Comments: This species is not expected to occur due to the negative results of focused surveys conducted during its blooming period.								

Table 2 (Continued)

Special Status Plant Species

VASCULAR PLANTS								
Scientific Name	**Common Name**	**Flowering Period**	**Federal**	**State**	**CNPS List**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**
Chenopodiaceae	**Goosefoot Family**							
Aphanisma blitoides	Aphanisma	Mar.-Jun.	NONE	NONE	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub.	Santa Barbara, Ventura, Los Angeles, Orange, San Diego Counties; Baja California.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to a lack of suitable habitat.								
Atriplex coulteri	Coulter's saltbush	Mar.-Oct.	NONE	NONE	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland/ alkaline or clay.	Most southern California Counties; Baja California.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to a lack of suitable habitat.								
Atriplex pacifica	South coast saltscale	Mar.-Oct.	NONE	NONE	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, playas.	Los Angeles, Orange, Riverside, San Diego counties; Baja California.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to a lack of suitable habitat.								
Atriplex parishii	Parish's brittlescale	Jun.-Oct.	NONE	NONE	1B.1	Chenopod scrub, playas, vernal pools.	Riverside County, Baja California. Extirpated from many southern California counties.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to the lack of suitable habitat.								
Atriplex serenana var. davidsonii	Davidson's saltscale	Apr.-Oct.	NONE	NONE	1B.2	Coastal bluff scrub, coastal scrub/alkaline.	Orange , Riverside, and San Diego Counties; Baja California.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to the lack of suitable habitat.								

Table 2 (Continued)

Special Status Plant Species

VASCULAR PLANTS								
Scientific Name	**Common Name**	**Flowering Period**	**Federal**	**State**	**CNPS List**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**
Suaeda esteroa	Estuary seablite	May-Oct.	NONE	NONE	1B.2	Coastal salt marshes and swamps.	Los Angeles, Orange, San Diego, and Ventura Counties; Baja California.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to the lack of suitable habitat.								
Convovulaceae	**Morning-glory Family**							
Dichondra occidentalis	Western dichondra	Mar.-Jul.	NONE	NONE	4.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland.	Orange, Santa Barbara, San Diego, and Ventura Counties; Baja California.	NE
Comments: This species This species is not expected to occur due to the negative results of focused surveys conducted during its blooming period.								
Crassulaceae	**Stonecrop Family**							
Dudleya cymosa ssp. ovatifolia	Santa Monica Mountains dudleya	Mar.-Jun.	FT	NONE	1B.2	Chaparral and coastal scrub; occurs in canyons on sedimentary conglomerates, primarily on north facing slopes.	Los Angeles and Orange Counties.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to the lack of suitable habitat.								
Dudleya multicaulis	Many-stemmed dudleya	Apr.-Jun.	NONE	NONE	1B.2	Coastal scrub, chaparral, valley and foothill grassland; heavy clay soils or rock outcrops; below 2,000 feet.	Los Angeles County to San Onofre Mountain in San Diego County.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to the lack of suitable habitat.								

Table 2 (Continued)

Special Status Plant Species

VASCULAR PLANTS								
Scientific Name	**Common Name**	**Flowering Period**	**Federal**	**State**	**CNPS List**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**
Dudleya stolonifera	Laguna Beach dudleya	May-Jul.	FT	ST	1B.1	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/rocky.	Orange County.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to the lack of suitable habitat.								
Dudleya viscida	sticky dudleya	May-Jun.	NONE	NONE	1B.2	Coastal scrub, coastal bluff scrub, and chaparral; occurs on north and south-facing cliffs and banks.	Orange, Riverside, and San Diego Counties.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to the lack of suitable habitat.								
Ericaceae	**Heath Family**							
Comarostaphylis diversifolia ssp. *diversifolia*	Summer holly	Apr.-Jun.	NONE	NONE	1B.2	Chaparral.	Orange, Riverside, and San Diego Counties; Baja California.	NE
Comments: This species is not expected to occur due the negative results of focused surveys conducted during its blooming period.								
Euphorbiaceae	**Spurge Family**							
Euphorbia misera	Cliff spurge	Dec.-Aug.	NONE	NONE	2.2	Coastal bluff scrub, coastal scrub/rocky.	Orange, Riverside, and San Diego Counties; Baja California.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to the lack of suitable habitat.								
Fagaceae	**Oak Family**							
Quercus dumosa	Nuttall's scrub oak	Feb.-Apr.	NONE	NONE	1B.1	Closed-cone coniferous forest, chaparral, coastal scrub/sandy, clay loam.	Orange, Santa Barbara, San Diego; Baja California.	NE
Comments: This species was not observed within the Project Site. Focused surveys were conducted outside its blooming period; however, this is a conspicuous tree/shrub species and every scrub oak on-site was accessible and examined to determined the species.								

Table 2 (Continued)

Special Status Plant Species

VASCULAR PLANTS								
Scientific Name	**Common Name**	**Flowering Period**	**Federal**	**State**	**CNPS List**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**
Hydrophyllaceae	**Waterleaf Family**							
Nama stenocarpum	Mud nama	Jan.-Jul.	NONE	NONE	2.2	Marshes and swamps; occurs on lake shores, river banks, and intermittently wet areas.	Los Angeles, Orange, Riverside, and San Diego Counties; Baja California.	NE
Comments: This species is not expected to occur due the negative results of focused surveys conducted during its blooming period.								
Phacelia suaveolens ssp. *keckii*	Santiago Peak phacelia	May-Jun.	NONE	NONE	1B.3	Closed-cone coniferous forest and chaparral in open areas and sometimes along creeks. Lowest recorded occurrence is 1,799 ft. above msl.	Orange and Riverside Counties.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to the lack of suitable habitat.								
Lamiaceae	**Mint Family**							
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Jan.-Jul.	NONE	NONE	1B.2	Chaparral and coastal scrub; occurs within dry soils in shrubland.	Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, and San Diego Counties. Also in Baja California and Santa Cruz Island.	NE
Comments: This species is not expected to occur due the negative results of focused surveys conducted during its blooming period.								

Table 2 (Continued)

Special Status Plant Species

VASCULAR PLANTS								
Scientific Name	**Common Name**	**Flowering Period**	**Federal**	**State**	**CNPS List**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**
Mondardella hypoleuca ssp. *lanata*	felt-leaved monardella	Jun.-Aug.	NONE	NONE	1B.2	Chaparral and cismontane woodland; occurs in the understory of mixed chaparral, chamise chaparral, and southern oak woodlands; occurs on sandy soil.	Orange and San Diego Counties and Baja California.	NE
Comments: This species is not expected to occur due the negative results of focused surveys conducted during its blooming period.								
Mondardella macrantha ssp. *hallii*	Hall's monardella	Jun.-Aug.	NONE	NONE	1B.3	Broadleaved upland forest, chaparral, lower montane coniferous forest, cismontane woodland, valley and foothill grassland; occurs on dry slopes and ridges in openings within these communities.	Orange, Riverside, San Bernardino, and San Diego Counties.	NE
Comments: This species is not expected to occur due the negative results of focused surveys conducted during its blooming period.								
Satureja chandleri	San Miguel savory	Mar.-Jul.	NONE	NONE	1B.2	Chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland on rocky, gabbroic or metavolcanic substrate.	Orange, Riverside, and San Diego Counties, and Baja California.	NE
Comments: This species is not expected to occur due the negative results of focused surveys conducted during its blooming period.								

Table 2 (Continued)

Special Status Plant Species

VASCULAR PLANTS								
Scientific Name	**Common Name**	**Flowering Period**	**Federal**	**State**	**CNPS List**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**
Malvaceae	**Mallow Family**							
Sidalcea neomexicana	Salt Spring checkerbloom	Mar.-Jun.	NONE	NONE	2.2	Alkali playas, brackish marshes, chaparral, coastal scrub, lower montane coniferous forest, and Mojavean Desert scrub in alkali springs and marshes.	Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, and Ventura Counties. Arizona, Nevada, New Mexico, Utah, Baja California, and Sonora, Mexico	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to a lack of suitable habitat.								
Polygonaceae	**Buckwheat Family**							
Chorizanthe parryi var. *fernandina*	San Fernando Valley spineflower	Apr.-Jun.	FC	SE	1B.1	Coastal scrub on sandy soils.	Los Angeles and Ventura Counties. Was previously known from Orange County but much of the area has been developed and surveys have failed to find evidence of this species in Orange County.	NE
Comments: This species was not observed within the Project Site during focused surveys conducted during its blooming period. In addition, this species is not believed to occur in Orange County at the present time.								

Table 2 (Continued)

Special Status Plant Species

VASCULAR PLANTS								
Scientific Name	**Common Name**	**Flowering Period**	**Federal**	**State**	**CNPS List**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**
Nemacaulis denudata var. *denudata*	coast woolly-heads	Apr.-Sept.	NONE	NONE	1B.2	Coastal dunes.	Los Angeles, Orange, and San Diego Counties. Also occurs in Baja California and Santa Catalina Island.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to a lack of suitable habitat.								
Rosaceae	**Rose Family**							
Horkelia cuneata ssp. *puberula*	Mesa horkelia	Feb.-Sep.	NONE	NONE	1B.1	Chaparral, cismontane woodland, coastal scrub/sandy or gravelly.	Los Angeles, Orange, Santa Barbara, and San Luis Obispo Counties.	NE
Comments: This species is not expected to occur due to the negative results of focused surveys conducted during its blooming period.								
ANGIOSPERMS (MONOCOTYLEDONS)								
Liliaceae	**Lily Family**							
Brodiaea filifolia	Thread-leaved brodiaea	Mar.-Jun.	FT	SE	1B.1	Sage scrub, valley and foothill grassland, cismontane woodland; vernal pools (clay soils).	Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties.	NE
Comments: This species was not observed within the Project Site and is not expected to occur due to a lack of suitable habitat.								
Calochortus catalinae	Catalina mariposa lily	Feb.-May	NONE	NONE	4.2	Openings in chaparral, valley and foothill grassland, cismontane woodland; heavy soils.	All coastal counties south of San Luis Obispo.	NE
Comments: This species is not expected to occur due to the negative results of focused surveys conducted during its blooming period.								

Table 2 (Continued)

Special Status Plant Species

VASCULAR PLANTS								
Scientific Name	**Common Name**	**Flowering Period**	**Federal**	**State**	**CNPS List**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**
Calochortus weedii var. *intermedius*	Foothill mariposa lily	May-Jul.	NONE	NONE	1B.2	Chaparral, coastal scrub, valley and foothill grasslands below 2,000 feet.	Los Angeles, Orange, and Riverside counties.	NE
Comments: This species is not expected to occur due to negative results of focused surveys conducted during its blooming period.								
Nolina cismontana	Chaparral nolina	May-Jul.	NONE	NONE	1B.2	Chaparral, coastal sage scrub, sandstone or gabbro.	Ventura, Orange, and San Diego counties.	NE
Comments: This species is not expected to occur due to negative results of focused surveys conducted during its blooming period.								
Poaceae	**Grass Family**							
Imperata brevifolia	California satintail	Sept.-May	NONE	NONE	2.1	Coastal scrub, chaparral, riparian scrub, Mojavean scrub, and meadows and seeps; occurs in mesic alkali areas.	Throughout California. Also occurs in Arizona, Baja California, New Mexico, Nevada, Texas, and Utah.	NE
Comments: This species is not expected to occur due to the negative results of focused surveys conducted during its blooming period.								

Table 2 (Continued)

Special Status Plant Species

VASCULAR PLANTS								
Scientific Name	**Common Name**	**Flowering Period**	**Federal**	**State**	**CNPS List**	**Preferred Habitat**	**Distribution**	**Occurrence On-site**

Key to Species Listing Status Codes

FE	*Federally Listed as Endangered*	SE	*State Listed as Endangered*	SFP	*State Fully Protected*
FT	*Federally Listed as Threatened*	ST	*State Listed as Threatened*	CSC	*California Special Concern Species*
FPD	*Federal Proposed for Delisting*	SCE	*State Candidate for Endangered*		
FPE	*Federally Proposed as Endangered*	SCT	*State Candidate for Threatened*		
FPT	*Federally Proposed as Threatened*	SR	*State Listed as Rare*		
FC	*Federally Candidate Species*				

California Native Plant Society (CNPS)

List 1A: Presumed extinct in California.
List 1B: Rare, threatened, or endangered in California and elsewhere.
List 2: Rare, threatened, or endangered in California, but more common elsewhere.
List 3: Plant species for which additional information is needed - a review list.
List 4: Species of limited distribution in California – a watch list.
.1: Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2: Fairly endangered in California (20-80% occurrences threatened)
.3: Not very endangered in California (<20% of occurrences threatened or no current threats known)

APPENDIX A: FLORAL COMPENDIUM
FOR THE LAKE FOREST PROPOSED CITY HALL AND PARK SITE

GYMNOSPERMS

SCIENTIFIC NAME	COMMON NAME
Pinaceae	**Pine Family**
Pinus sp.	pine

ANGIOSPERMS (DICOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
Aizoaceae	**Ice Plant Family**
Carpobrotus sp.	ice plant
Anacardiaceae	**Sumac or Cashew Family**
Malosma laurina	laurel sumac
Rhus integrifolia	lemonadeberry
Schinus molle	Peruvian pepper
Toxicodendron diversilobum	poison oak
Apiaceae	**Carrot Family**
* *Conium maculatum*	poison hemlock
Daucus pusillis	rattlesnake weed
* *Foeniculum vulgare*	fennel
Apocynaceae	**Dogbane Family**
* *Nerium oleander*	oldeander
Asteraceae	**Sunflower Family**
Acourtia microcephala	sacapellote
Ambrosia psilostachya	western ragweed (sandbur)
Artemisia californica	California sagebrush
Artemisia douglasiana	mugwort
Artemisia dracunculus	tarragon
Baccharis pilularis	coyote brush
Baccharis salicifolia	mule fat
* *Carduus pycnocephalus*	Italian thistle
* *Centaurea melitensis*	tocalote
* *Conyza canadensis*	horseweed
Encelia californica	California bush sunflower

* *Non-native species*

ANGIOSPERMS (DICOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
Gnaphalium californicum	California everlasting
Gnaphalium canescens	felty everlasting
Gutierrezia californica	California matchweed
Heterotheca grandiflora	telegraph weed
Isocoma menziesii	coastal goldenbush
* *Senecio vulgaris*	common groundsel
* *Silybum marianum*	milk thistle
Stephanomeria virgata	twiggy wreathplant
Xanthium strumarium	cocklebur
Boraginaceae	**Borage Family**
Amsinckia menziesii	common fiddleneckc
Cryptantha sp.	cryptantha
Brassicaceae	**Mustard Family**
* *Brassica nigra*	black mustard
* *Hirshfeldia incana*	short-podded mustard
Rorippa nasturtium-aquatica	water cress
Cactaceae	**Cactus Family**
Opuntia littoralis	coastal prickly pear
Caprifoliaceae	**Honeysuckle Family**
Sambucus mexicana	Mexican elderberry
Chenopodiaceae	**Goosefoot Family**
Atriplex sp.	saltbush
Convolvulaceae	**Morning-Glory Family**
Calystegia macrostegia	western bindweed
Cucurbitaceae	**Gourd Family**
Cucurbita foetidissima	calabazilla
Marah macrocarpus	wild cucumber
Cuscutaceae	**Dooder Family**
Cuscuta californica	California dodder
Euphorbiaceae	**Spurge Family**
Croton californicus	California croton
* *Ricinus communis*	castor bean
Fabaceae	**Legume Family**
Lotus scoparius	deerweed
Lotus strigosus	strigose lotus
* *Melilotus officinalis*	yellow sweetclover

* *Non-native species*

ANGIOSPERMS (DICOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
Fagaceae	**Oak Family**
Quercus agrifolia	coast live oak
Quercus berberidifolia	scrub oak
Geraniaceae	**Geranium Family**
* *Erodium cicutarium*	red-stemmed filaree
Hydrophyllaceae	**Waterleaf Family**
Phacelia distans	fern-leaf phacelia
Phacelia minor	wild canterbury-bell
Phacelia sp.	phacelia
Lamiaceae	**Mint Family**
* *Marrubium vulgare*	horehound
Salvia apiana	white sage
Saliva leucophylla	purple sage
Salvia mellifera	black sage
Malvaceae	**Mallow Family**
Malacothamnus fasciculatus	mesa bushmallow
Moraceae	**Mulberry Family**
* *Ficus* sp.	fig
Myrtaceae	**Myrtle Family**
* *Eucalyptus* sp.	gum tree
Nyctaginaceae	**Four O'Clock Family**
Mirabiliscalifornica	California wishbone bush
Onagraceae	**Evening Primrose Family**
Camissonia bistorta	California sun cup
Camissonia micrantha	camissonia
Platanaceae	**Sycamore Family**
Platanus racemosa	western sycamore
Polygonaceae	**Buckwheat Family**
Eriogonum fasciculatum	California buckwheat
* *Rumex crispus*	curly dock
Primulaceae	**Primrose Family**
* *Anagallis arvensis*	scarlet pimpernel
Ranunculaceae	**Buttercup Family**
Clematis ligusticifolia	virgin's bower
Rosaceae	**Rose Family**
Heteromeles arbutifolia	toyon

* *Non-native species*

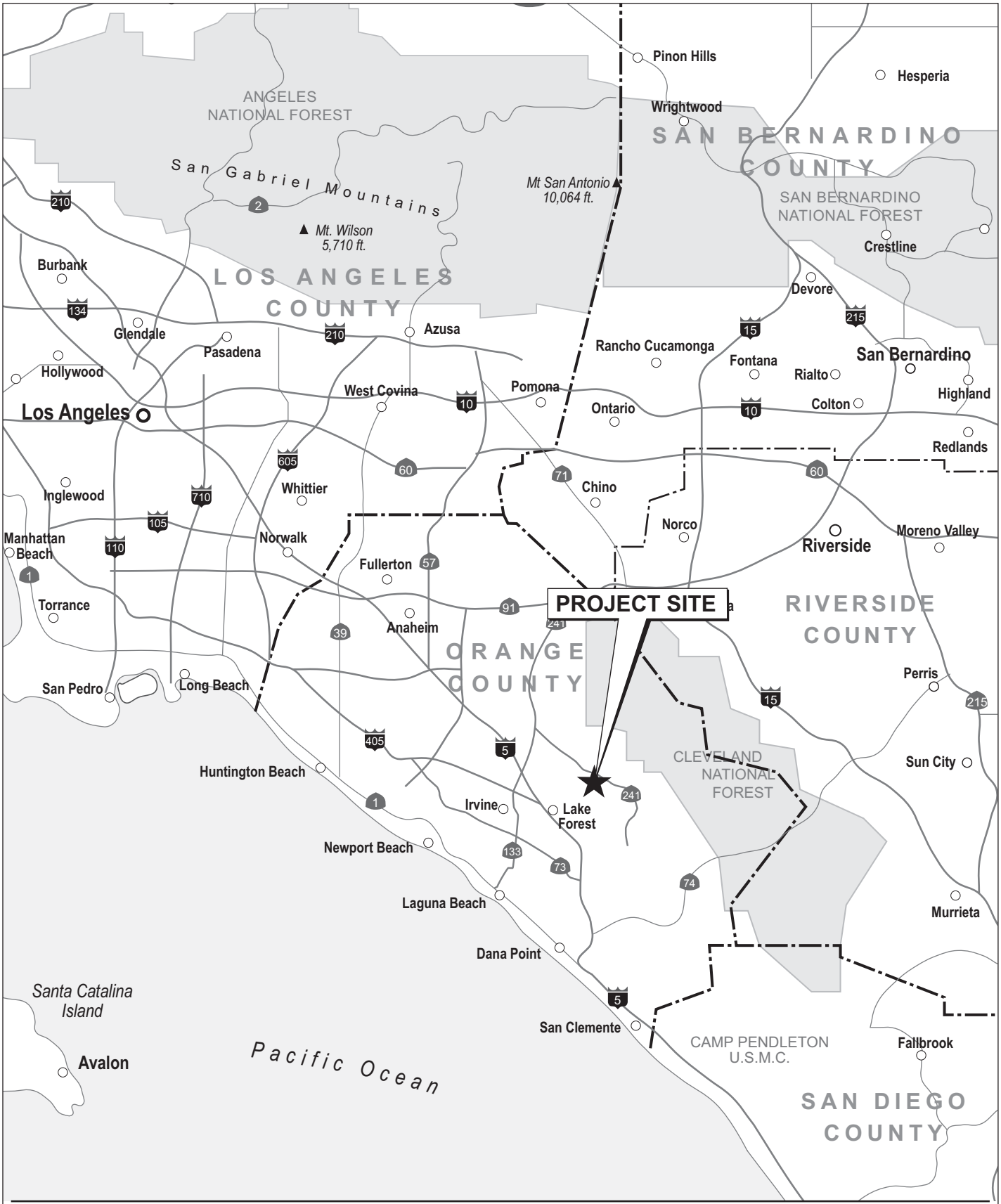
ANGIOSPERMS (DICOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
Salicaceae	**Willow Family**
Populus fremontii	Fremont cottonwood
Salix laevigata	red willow
Salix lasiolepis	arroyo willow
Scrophulariaceae	**Figwort Family**
Keckiella cordifolia	heart-leaved penstemon
Mimulus aurantiacus	orange bush monkey-flower
Verbascum blattaria	moth mullein
Solanaceae	**Nightshade Family**
* *Nicotiana glauca*	tree tobacco
Tamaricaceae	**Tamarisk Family**
* *Tamarix ramosissima*	Mediterranean tamarisk
Vitaceae	**Grape Family**
Vitis girdiana	desert wild grape

ANGIOSPERMS (MONOCOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
Liliaceae	**Lily Family**
Yucca whipplei	Our Lord's candle
Juncaceae	**Rush Family**
Juncus sp.	rush
Poaceae	**Grass Family**
Arundo donax	giant reed
* *Avena fatua*	wild oat
* *Bromus diandrus*	ripgut grass
* *Bromus madritensis*	foxtail chess
* *Cortaderia selloana*	pampas grass
Leymus condensatus	giant wild rye
Melica imperfecta	coast range melic
Triticum aestivum	wheat

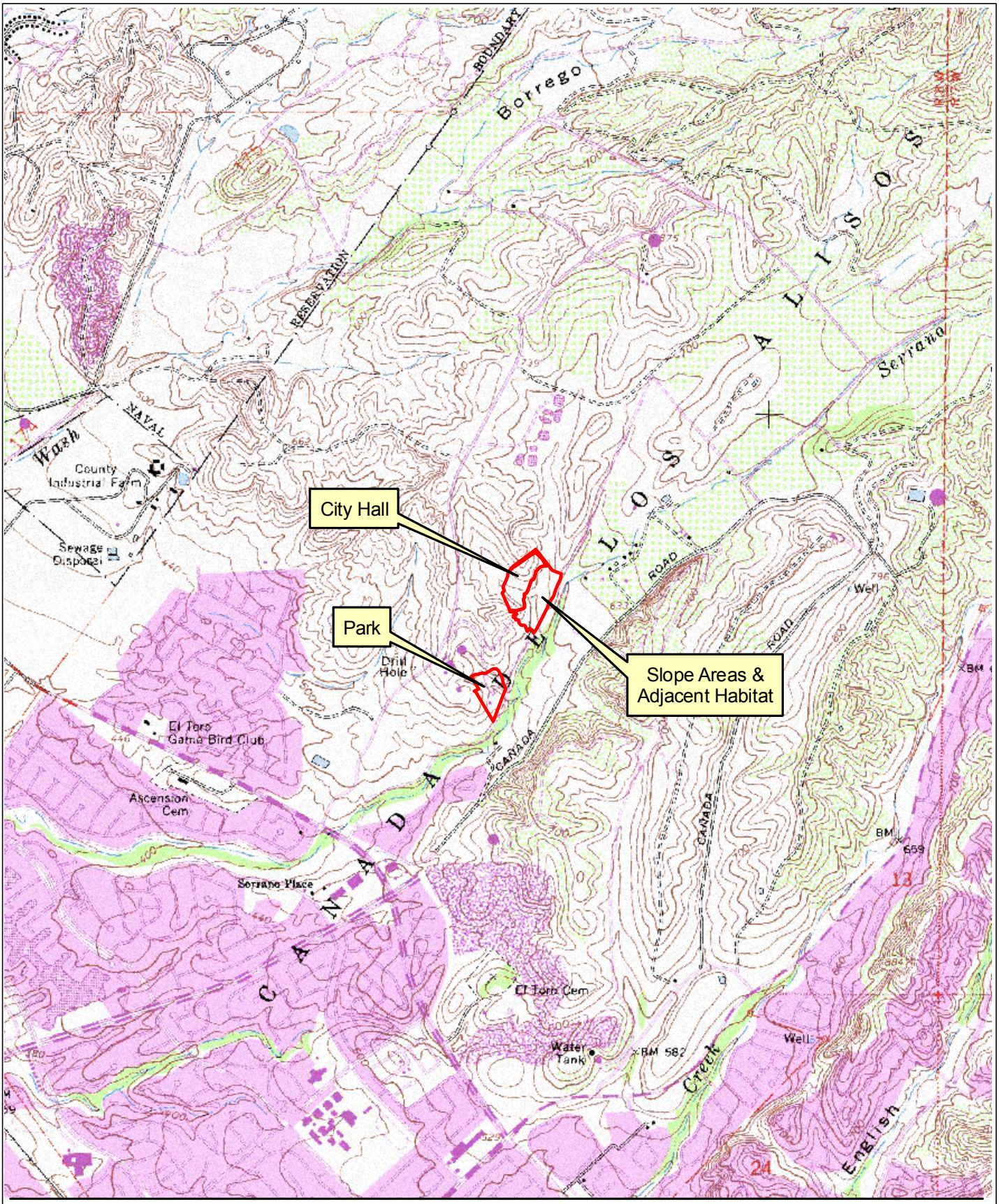
* *Non-native species*



PCR

Source: PCR Services Corporation, 2008.

Figure 1
Lake Forest
Proposed City Hall Site
Regional Map



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2,000 0 2,000 Feet

Source: USGS Topographic Series (El Toro, CA); PCR Services Corporation, 2008.

Figure 2
Lake Forest
Proposed City Hall Site
Vicinity Map

Source: PCR Services Corporation, 2008.

Figure 3
Lake Forest Proposed City Hall Site
Plant Communities

September 2, 2008

Ms. Sandy Marquez
U.S. FISH AND WILDLIFE SERVICE
6010 Hidden Valley Road
Carlsbad, CA 92011

Re: RESULTS OF FOCUSED COASTAL CALIFORNIA GNATCATCHER SURVEYS FOR THE 19.7-ACRE PROPOSED CITY HALL AND PARK PROJECT SITE LOCATED IN THE CITY OF LAKE FOREST, ORANGE COUNTY, CALIFORNIA

Dear Ms. Marquez:

This report is prepared in compliance with the conditions of authorized permit number TE044520-0 issued to **PCR Services Corporation (PCR)** biologist Jenni Snibbe, permit number TE093591-0 issued to Linda Robb, and permit number TE067347-3 issued to Crysta Dickson, for the performance of protocol surveys for the coastal California gnatcatcher (*Polioptila californica californica*). As such, this letter report summarizes the methodology and findings of surveys for this species on the 19.7-acre proposed City Hall and Park Project Site located in the City of Lake Forest, Orange County, California ("Project Site"). The surveys were conducted to determine the presence and location or absence of the coastal California gnatcatcher within the Project Site.

STUDY AREA

The Project Site consists of approximately 19.7 acres of primarily undeveloped land located in the City of Lake Forest, Orange County, California (Figure 1, *Regional Map*, attached). The Project Site is located south of Commercentre Drive, east of Bake Parkway, and northwest of Lake Forest Drive. The 19.7-acre Project Site consists of two parts, a 14.7-acre parcel just south of the southern extent of Indian Ocean Drive (consisting of the 6.3-acre proposed City Hall site and an adjacent 8.4-acre site that consists of engineered slopes associated with the City Hall site and habitat beyond these slopes extending to an existing dirt trail to the east), and a 5.0-acre proposed park site approximately 900 feet to the southeast of the 14.7-acre parcel. These two parcels are separated by an open space area used for commercial purposes that includes a paved access road, two flat, circular terraces and adjacent slopes vegetated with native and ornamental species.

The 19.7-acre Project Site is surrounded by open space land including a dirt trail and Serrano Creek (and residential development beyond the open space) to the east and south, residential and commercial development to the west, and commercial development and a partially graded open space area used for commercial purposes to the north. Topography within the Project Site consists generally of rolling hills sloping to flat areas to the east (14.7-acre City Hall/slope site) and is predominantly flat in the 5.0-acre park site. The elevation ranges from approximately 544 feet above mean sea level ("MSL") in the southern portion of the Project Site (park site) to approximately 698 feet above MSL in the northern portion of the Project Site (City Hall site). The

Project Site can be found within Section 11, T. 6 S., R. 8 W. of the U.S. Geological Survey (USGS) 7.5-minute El Toro, California quadrangle map (Figure 2, *Vicinity Map*, attached).[1]

VEGETATION

A variety of plant communities were observed within the Project Site. Plant community names and hierarchical structure follows the CDFG *List of California Terrestrial Natural Communities Recognized by the Natural Diversity Data Base*.[2] Plant community designations were determined according to descriptions contained in Gray and Bramlet (1992)[3] and Sawyer and Keeler-Wolf (1995).[4] If a community found on-site did not conform to any of the communities listed in Gray and Bramlet or Sawyer and Keeler-Wolf, it was named for the dominant species comprising it (e.g., Fremont cottonwood) and described accordingly.

Surveys were conducted in those areas of the study area that contained appropriate habitat to support the coastal California gnatcatcher (scrub communities), totaling 6.3 acres. The study area supports three native scrub plant communities, as well as woodland, chaparral, riparian, ornamental, and disturbed plant communities. Details of the plant communities mapped within the study area are included below. The locations of all plant communities on the project site are indicated in Figure 3, *Plant Communities*, attached.

Scrub Communities

Buckwheat scrub is characterized by nearly monotypic stands of California buckwheat (*Eriogonum fasciculatum*). This community occurs throughout the foothills and mountains of Orange County and is most often found on slopes that have been disturbed within the last 10 years. California buckwheat was the dominant plant species observed within this community. Additional species observed in sparse amounts included native white sage (*Salvia apiana*), California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), mule fat (*Baccharis salicifolia*), California bush sunflower (*Encelia californica*), and non-native horehound (*Marrubium vulgare*), and tocalote (*Centaurea melitensis*). This area appears to have been planted and irrigation lines are still present although no evidence of watering was observed. The extent of buckwheat scrub totals 1.4 acres within the northern portion of the Project Site (0.4 acre in the City Hall site and 1.0 acre in the slope area).

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1 *United States Geological Survey. 1968. El Toro, California 7.5-minute Topographical Quadrangle. Photo revised 1982.*

2 *State of California Resources Agency. Department of Fish and Game. September 2003. List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database. Wildlife and Habitat Data Analysis Branch. The Vegetation Classification and Mapping Program. Sacramento.*

3 *Gray, J. and D. Bramlet. 1992. Habitat Classification System: Natural Resources Geographic Information System (GIS) Project. Environmental Management Agency. County of Orange, Santa Ana, California.*

4 *Sawyer, John O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. Sacramento: California Native Plant Society.*

Mixed scrub is usually dominated by an even mix of various sage scrub species. Dominant species found within the community on-site include native black sage, California sagebrush, and California buckwheat. Additional species observed included native mule fat, coyote brush (*Baccharis pilularis*), deerweed (*Lotus scoparius*), our Lord's candle (*Yucca whipplei*), California bush sunflower, wishbone bush (*Mirabilis californica*), California sun cup (*Camissonia bistorta*), California croton (*Croton californicus*), purple sage (*Salvia leucophylla*), poison oak (*Toxicodendron diversilobum*), wild cucumber (*Marah macrocarpa*), orange bush monkey-flower (*Mimulus aurantiacus*), chaparral mallow (*Malacothamnus fasciculatus*), and non-native short-podded mustard (*Hirshfeldia incana*), foxtail chess (*Bromus madritensis*), and tree tobacco (*Nicotiana glauca*). Mixed scrub occupies 4.7 acres throughout the Project Site (2.9 acres in the City Hall site, 1.2 acres in the slope area, and 0.6 acre in the park site).

Mixed scrub/mule fat scrub contains a similar vegetation composition to mixed scrub and mule fat scrub combined. Dominant species observed within this community on-site included mule fat, California sagebrush, and California bush sunflower. Additional species observed included short-podded mustard. This community is present within a basin in the northeastern portion of the Project Site and occupies 0.2 acre (all within the City Hall site).

Woodland Communities

Coast live oak woodland is dominated by coast live oak with a poorly developed shrub layer. This plant community typically occurs on north-facing slopes and shaded ravines. Coast live oak (*Quercus agrifolia*) was the dominant plant species observed within this community. Additional species observed included foxtail chess and California sagebrush. This plant community occupies less than 0.1 acre within the eastern portion of the Project Site (all within the slope area).

Fremont cottonwood/mixed scrub is present along slopes in the southern portion and on the southeastern edge of the Project Site (within the park site). This community consists of mixed scrub species interspersed with several Fremont cottonwood trees (*Populus fremontii*), and a few coast live oak trees. Additional species observed included toyon (*Heteromeles arbutifolia*) and lemonadeberry (*Rhus integrifolia*). This community occupies 0.3 acre within the Project Site (all within the park site).

Mexican elderberry woodland is characterized by an open woodland of Mexican elderberry (*Sambucus mexicana*) that dominates the surrounding vegetation, both structurally and by biomass. It is commonly found on stream benches and lower slopes above streams. Mexican elderberry woodland occupies 0.2 acre within the northeastern portion of the Project Site (all within the slope area).

Chaparral Communities

Scrub oak chaparral is typically characterized as a dense, evergreen chaparral dominated by scrub oak (*Quercus berberidifolia*). This community occurs in more mesic areas than many other chaparrals and often occurs at slightly higher elevations. Plant species observed within this community on-site included scrub oak with understory species such as native California sagebrush and non-native short-podded mustard and tocalote. There is approximately 0.2 acre of scrub oak chaparral within the eastern portion of the Project Site (all within the City Hall site).

Riparian Communities

Mule fat scrub consists of dense stands of mule fat with scattered willows commonly present. This community typically occupies intermittent streambeds or disturbed areas within drainages and washes. Mule fat was the dominant species observed within this community on-site. Additional species observed included native Mexican elderberry and non-native tamarisk (*Tamarix ramosissima*) and short-podded mustard. A total of 0.8 acre of the Project Site is occupied by mule fat scrub (0.6 acre in the City Hall site and 0.2 acre in the slope area). The community occurs within two basins in the central and western portions of the Project Site and on the eastern edge of the drainage in the northeastern portion of the Project Site.

Red willow/arroyo willow riparian forest consists of a closed canopy of red willow (*Salix laevigata*) and arroyo willow (*Salix lasioloepis*) in arborescent form. This community typically occurs on floodplains along major streams and rivers. Shrubs are sparse under the tree canopy. Red willow and arroyo willow were the dominant species observed within this community on-site. Several coast live oak trees were also present within this community. Additional species observed included native mule fat and poison oak, and non-native giant reed (*Arundo donax*). Approximately 2.5 acres of red willow/arroyo willow riparian forest occur within the Project Site (all within the slope area).

Disturbed and Ornamental Communities

Disturbed/Fremont cottonwood occurs along a slope on the southeastern edge of the Project Site (within the park site). This community is characterized by a greater than 20 percent cover of non-native species interspersed with several Fremont cottonwood trees and a few coast live oak trees. Non-native species observed within this community included short-podded mustard, tree tobacco, tocalote, yellow sweetclover (*Melilotus officinalis*), and poison hemlock (*Conium maculatum*). A sparse cover of additional native species present within this community included toyon and western ragweed (*Ambrosia psilostachya*). Disturbed/Fremont cottonwood occupies 0.4 acre within the Project Site (all within the park site).

Disturbed/mixed scrub and **disturbed/mule fat scrub** contain a similar vegetation composition to mixed scrub and mule fat scrub, except non-native species constitute greater than 20

percent of the vegetative cover. Disturbed/mixed scrub occupies 3.9 acres throughout the Project Site (1.0 acre within the City Hall site and 2.9 acre within the slope area). Disturbed/mule fat scrub occupies 0.3 acre at the base of a trail within the eastern portion of the Project Site (all within the City Hall site).

Several areas of **ornamental** vegetation occur within the Project Site. Ornamental species observed included eucalyptus (*Eucalyptus* sp.) and pine (*Pinus* sp.) with an understory of predominantly non-native vegetation including red-stemmed filaree (*Erodium cicutarium*) and short-podded mustard. In addition to the eucalyptus and pine trees, scattered native coast live oak and Fremont cottonwood trees that appear to have been planted are present. Areas of ornamental vegetation occupy 0.6 acre within the eastern and southern portions of the Project Site (less than 0.1 acre within the slope area and 0.6 acre within the park site).

Ruderal areas are dominated by non-native weedy species that readily colonize disturbed ground. Plant species observed within the ruderal areas on-site include short-podded mustard, castor bean (*Ricinus communis*), foxtail chess, tocalote, yellow sweetclover, and poison hemlock. In addition, a sparse amount of native western ragweed occurs within the ruderal areas on-site. Ruderal areas occupy 3.3 acres throughout the Project Site (0.7 acre in the City Hall site, 0.3 acre in the slope area, and 2.3 acres in the park site).

Tamarisk stand is characterized by nearly monotypic stands of tamarisk, and this community occupies 0.1 acre within the northern portion of the Project Site (all within the slope area). Other species observed within this community on-site included white sage and California sagebrush.

Developed Areas

Developed areas within the Project Site consist of paved pathways. Developed areas occupy 0.8 acre within the Project Site (all within the park site).

METHODOLOGY

Surveys for the coastal California gnatcatcher were conducted by PCR biologists Jenni Snibbe (Permit No. TE044520-0), Linda Robb (Permit No. TE093591-0), and Crysta Dickson (Permit No. TE067347-3) in accordance with the *USFWS Coastal California Gnatcatcher Presence/Absence Survey Guidelines*, issued July 28, 1997[5]. Accordingly, six surveys were performed at least one week apart, between 6:00 A.M. and 12:00 P.M., within all portions of the study area containing suitable habitat (6.3 acres). Temperatures during surveys ranged between 60

[5] *U.S. Fish and Wildlife Service. Department of the Interior. Coastal California Gnatcatcher (Polioptila californica californica): Presence/Absence Survey Guidelines. Unpublished paper. Sacramento, California.*

degrees Fahrenheit and 92 degrees Fahrenheit. Weather conditions were suitable for surveys, with skies ranging from 0 to 100 percent overcast, and winds ranging from 0 to 7 miles per hour.

The field investigator slowly walked through all potentially suitable habitat, stopping at approximately 200-foot intervals, uttering pishing sounds and playing a tape of recorded California gnatcatcher vocalizations. The tape was played for several seconds at each interval, followed by a brief pause to listen for a response. Surveys were conducted on May 20, May 28, June 4, June 11, June 18, and June 25, 2008. Survey details are listed in Table 1, *Survey Data*, below.

Table 1

Survey Data

Date	Time	Wind (mph)	Temperature (F)	Weather	Results	Surveyors
05/20/08	0900-1115	2-4/4-6	62°-62°	100% Clouds-100% Clouds	None found	Robb
05/28/08	0900-1100	0/0-2	64°-75°	50% Clouds-30% Clouds	None found	Dickson
06/04/08	0945-1200	2-4/2-4	60°-60°	100% Clouds-100% Clouds	CAGN heard calling	Robb
06/11/08	0850-1205	1-3/4-7	66°-82°	90% Clouds-99% Clouds	One pair observed	Snibbe
06/18/08	0850-1115	0/2-4	80°-92°	Clear-Clear	One pair observed	Robb
06/25/08	0930-1125	0-2/0-2	76°-80°	20% Clouds – Clear	One pair observed	Robb

Source: PCR Services Corporation 2008.

RESULTS

One pair of coastal California gnatcatchers was observed on-site during the focused surveys conducted. This pair occurred primarily within the central portion of the Project Site but was also observed within the eastern and northern portions of the Project Site. The pair was first detected on June 4, 2008 and was observed on all of the following surveys. The pair was observed utilizing

mixed scrub, mixed scrub/mule fat scrub, mule fat scrub, and buckwheat scrub habitats. A map of the locations of the observations is shown in Figure 4, *Coastal California Gnatcatcher Locations*, attached. This map depicts a polygon that includes the locations of all observations of coastal California gnatcatchers within the Project Site.

No brown-headed cowbirds (*Molothrus ater*) were observed during the surveys. A list of all avian species observed within the study area during surveys is included in the *Avian Compendium*, attached.

Additional sensitive species[6] observed included yellow warbler (*Dendroica petechia*) and yellow-breasted chat (*Icteria virens*), both California Species of Special Concern.

Should you have any questions regarding the methodology or findings in this report, please do not hesitate to contact Linda Robb at (949) 753-7001.

We certify that the information in this survey report and attached exhibits fully and accurately represent our work.

Sincerely,
PCR SERVICES CORPORATION

Linda Robb
Senior Biologist
Permit No. TE093591-0

Crysta Dickson
Senior Wildlife Biologist
Permit No. TE067347-3

Jenni Snibbe
Biologist/ Ecologist
Permit No. TE044520-0

Attachments

[6] *California Department of Fish and Game. February 2008. Special Animals. State of California. The Resources Agency. Department of Fish and Game. Wildlife and Habitat Data Analysis Branch. California Natural Diversity Data Base.*

ATTACHMENT A: AVIAN COMPENDIUM

BIRDS

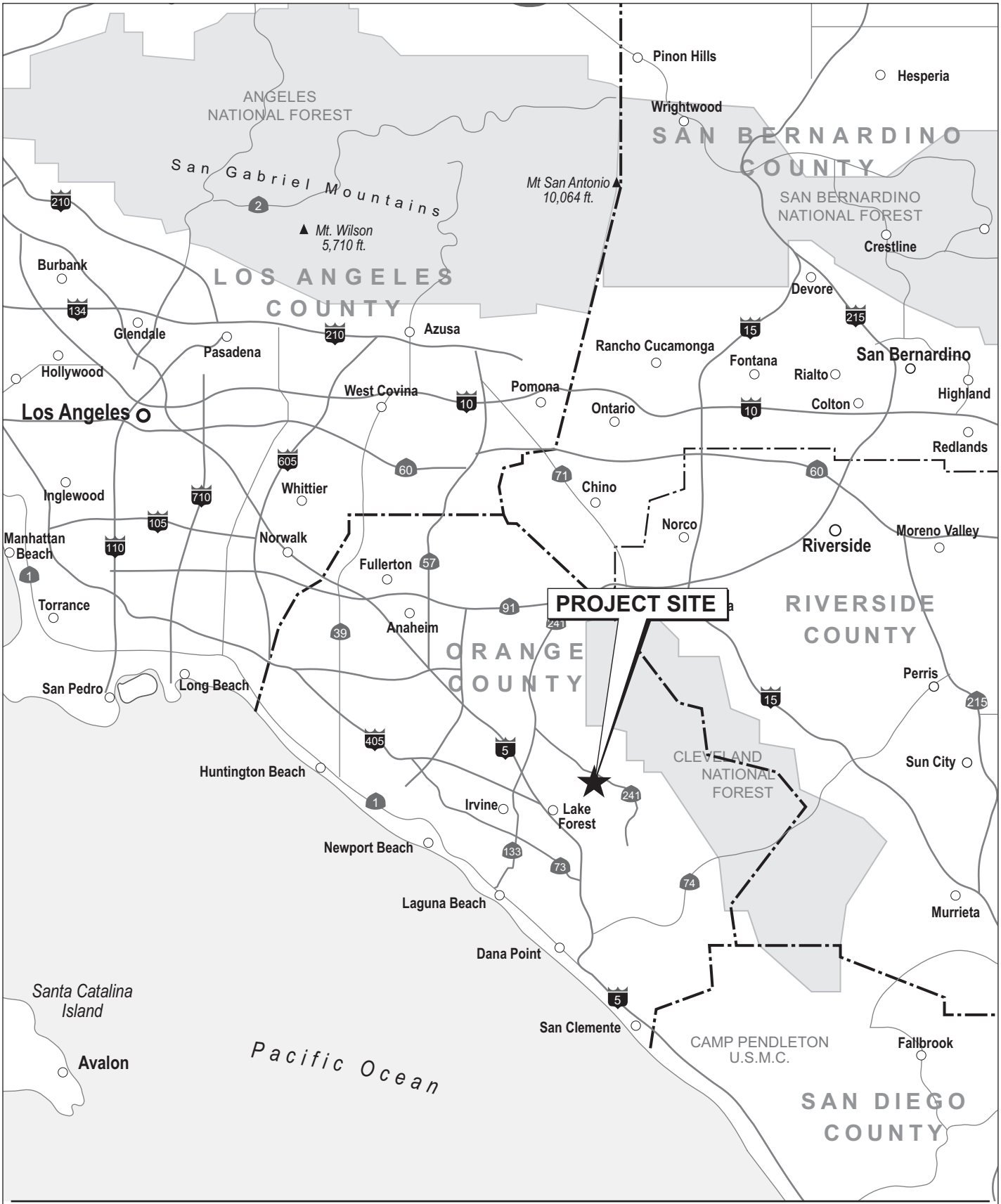
SCIENTIFIC NAME	COMMON NAME
Cathartidae	**New World Vultures**
Cathartes aura	turkey vulture
Accipitridae	**Hawks**
Accipiter cooperii	Cooper's hawk
Buteo jamaicensis	red-tailed hawk
Buteo lineatus	red-shouldered hawk
Odotophoridae	**Quails**
Callipepla californica	California quail
Charadriidae	**Plovers**
Charadrius vociferus	killdeer
Columbidae	**Pigeons and Doves**
* *Columba livia*	rock dove
Zenaida macroura	mourning dove
Trochilidae	**Hummingbirds**
Calypte costae	Costa's hummingbird
Calypte anna	Anna's hummingbird
Selasphorus sasin	Allen's hummingbird
Picidae	**Woodpeckers**
Colaptes auratus	northern flicker
Melanerpes formicivorus	acorn woodpecker
Picoides nuttallii	Nuttall's woodpecker
Tyrannidae	**Tyrant Flycatchers**
Empidonax difficilis	Pacific-slope flycatcher
Sayornis nigricans	black phoebe
Myiarchus cinerascens	ash-throated flycatcher
Tyrannus verticalis	western kingbird
Tyrannus vociferans	Cassin's kingbird
Corvidae	**Jays and Crows**
Aphelocoma californica	western scrub-jay
Corvus brachyrhynchos	American crow
Corvus corax	common raven

* =Non-native Species

BIRDS

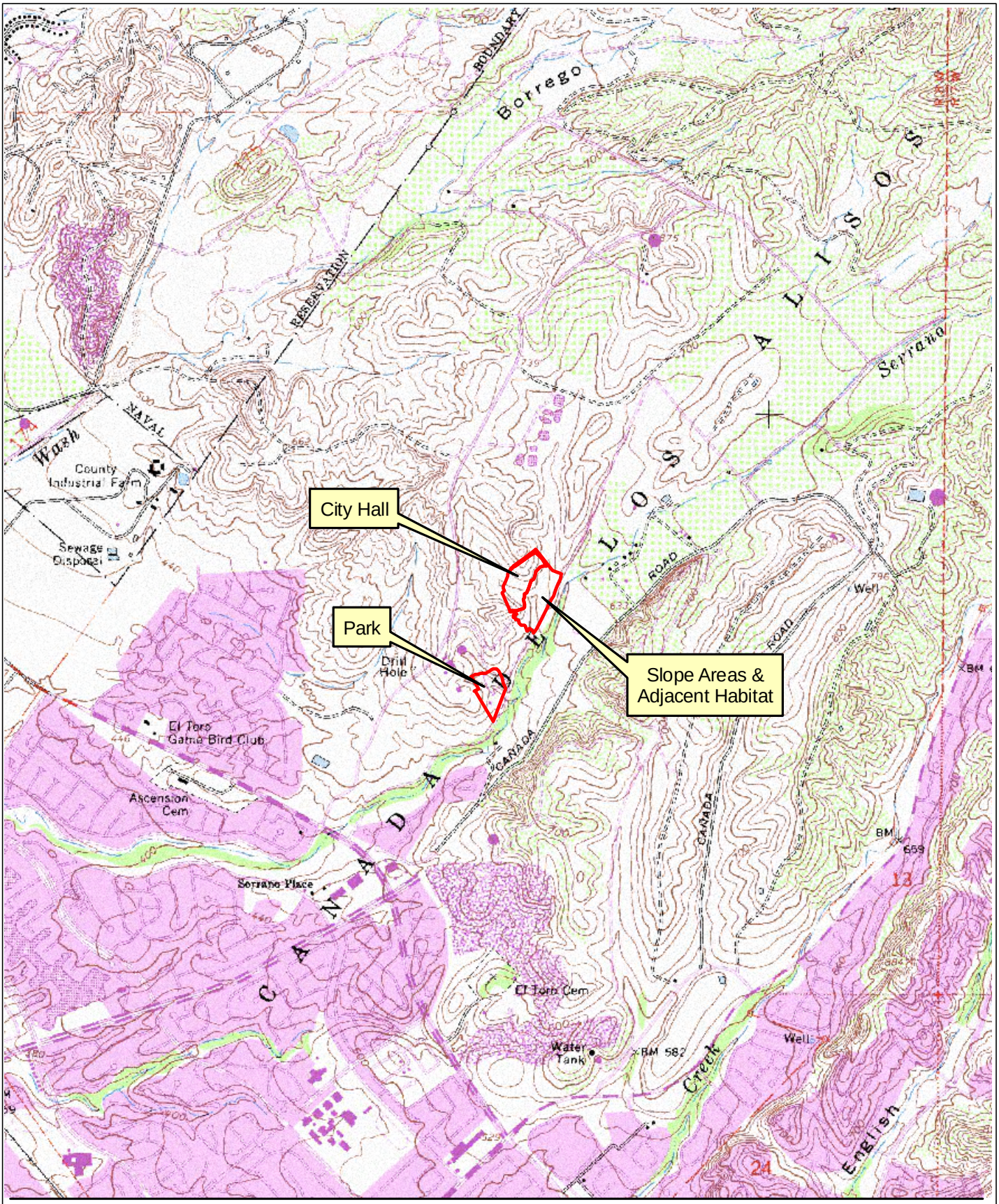
SCIENTIFIC NAME	COMMON NAME
Hirundinidae	**Swallows**
Hirundo rustica	barn swallow
Petrochelidon pyrrhonota	cliff swallow
Stelgidopteryx serripennis	northern rough-winged swallow
Muscicapidae	**Wrentits**
Chamaea fasciata	wrentit
Aegithalidae	**Bushtits**
Psaltriparus minimus	bushtit
Troglodytidae	**Wrens**
Thryomanes bewickii	Bewick's wren
Troglodytes aedon	house wren
Sylviidae	**Old World Warblers, Gnatcatchers**
Polioptila californica californica	coastal California gnatcatcher
Turdidae	**Thrushes**
Catharus ustulatus	Swainson's thrush
Mimidae	**Thrashers**
Mimus polyglottos	northern mockingbird
Toxostoma redivivum	California thrasher
Sturnidae	**Starlings**
* *Sturnus vulgaris*	European starling
Parulidae	**Wood Warblers**
Dendroica petechia	yellow warbler
Geothlypis trichas	common yellowthroat
Icteria virens	yellow-breasted chat
Emberizidae	**Emberizids**
Pipilo crissalis	California towhee
Pipilo maculatus	spotted towhee
Melospiza melodia	song sparrow
Cardinalidae	**Cardinals**
Pheucticus melanocephalus	black-headed grosbeak
Fringillidae	**Finches**
Carpodacus mexicanus	house finch
Carduelis psaltria	lesser goldfinch
Carduelis tristis	American goldfinch

* =Non-native Species



Source: PCR Services Corporation, 2008.

Figure 1
Lake Forest
Proposed City Hall Site
Regional Map



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2,000 0 2,000 Feet

Source: USGS Topographic Series (El Toro, CA); PCR Services Corporation, 2008.

Figure 2
Lake Forest
Proposed City Hall Site
Vicinity Map

PCR

Source: PCR Services Corporation, 2008.

Figure 3
Lake Forest Proposed City Hall Site
Plant Communities

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200 0 200 Feet

Source: PCR Services Corporation, 2008.

Figure 4
Lake Forest Proposed City Hall Site
Costal California Gnatcatcher Locations

August 26, 2008

Ms. Sandy Marquez
U.S. FISH AND WILDLIFE SERVICE
6010 Hidden Valley Road
Carlsbad, CA 92011

Re: RESULTS OF FOCUSED LEAST BELL'S VIREO SURVEYS FOR THE 19.7-ACRE PROPOSED CITY HALL AND PARK PROJECT SITE LOCATED IN THE CITY OF LAKE FOREST, ORANGE COUNTY, CALIFORNIA

Dear Ms. Marquez:

This letter report summarizes the methodology and findings of surveys for the least Bell's vireo (*Vireo bellii pusillus*) (LBV) conducted by **PCR Services Corporation (PCR)** at the 19.7-acre proposed City Hall and Park Project Site located in the City of Lake Forest, Orange County, California ("Project Site") (Figure 1, *Regional Map*, attached). The surveys were conducted to determine the presence and location or absence of LBV within the 19.7-acre Project Site. No LBV's were observed on-site during focused surveys.

STUDY AREA

The Project Site consists of approximately 19.7 acres of primarily undeveloped land located in the City of Lake Forest, Orange County, California (Figure 1, *Regional Map*, attached). The Project Site is located south of Commercentre Drive, east of Bake Parkway, and northwest of Lake Forest Drive. The 19.7-acre Project Site consists of two parts, a 14.7-acre parcel just south of the southern extent of Indian Ocean Drive (consisting of the 6.3-acre proposed City Hall site and an adjacent 8.4-acre site that consists of engineered slopes associated with the City Hall site and habitat beyond these slopes extending to an existing dirt trail to the east), and a 5.0-acre proposed park site approximately 900 feet to the southeast of the 14.7-acre parcel. These two parcels are separated by an open space area used for commercial purposes that includes a paved access road, two flat, circular terraces and adjacent slopes vegetated with native and ornamental species.

The 19.7-acre Project Site is surrounded by open space land including a dirt trail and Serrano Creek (and residential development beyond the open space) to the east and south, residential and commercial development to the west, and commercial development and a partially graded open space area used for commercial purposes to the north. Topography within the Project Site consists generally of rolling hills sloping to flat areas to the east (14.7-acre City Hall/slope site) and is predominantly flat in the 5.0-acre park site. The elevation ranges from approximately 544 feet above mean sea level ("MSL") in the southern portion of the Project Site (park site) to approximately 698 feet above MSL in the northern portion of the Project Site (City Hall site). The

Project Site can be found within Section 11, T. 6 S., R. 8 W. of the U.S. Geological Survey (USGS) 7.5-minute El Toro, California quadrangle map (Figure 2, *Vicinity Map*, attached).[1]

VEGETATION

A variety of plant communities were observed within the Project Site. Plant community names and hierarchical structure follows the CDFG *List of California Terrestrial Natural Communities Recognized by the Natural Diversity Data Base*.[2] Plant community designations were determined according to descriptions contained in Gray and Bramlet (1992)[3] and Sawyer and Keeler-Wolf (1995).[4] If a community found on-site did not conform to any of the communities listed in Gray and Bramlet or Sawyer and Keeler-Wolf, it was named for the dominant species comprising it (e.g., Fremont cottonwood) and described accordingly.

Surveys were conducted in those areas of the study area that contained appropriate habitat to support the least Bell's vireo (red willow/arroyo willow riparian forest), totaling 2.5 acres. The study area supports two native riparian plant communities, as well as woodland, chaparral, scrub, ornamental, and disturbed plant communities. Details of the plant communities mapped within the study area are included below. The locations of all plant communities on the project site are indicated in Figure 3, *Plant Communities*, attached. A list of the plant communities along with the acreage of each is listed in Table 1, *Plant Communities*, on page 3.

Scrub Communities

Buckwheat scrub is characterized by nearly monotypic stands of California buckwheat (*Eriogonum fasciculatum*). This community occurs throughout the foothills and mountains of Orange County and is most often found on slopes that have been disturbed within the last 10 years. California buckwheat was the dominant plant species observed within this community. Additional species observed in sparse amounts included native white sage (*Salvia apiana*), California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), mule fat (*Baccharis salicifolia*), California bush sunflower (*Encelia californica*), and non-native horehound (*Marrubium vulgare*), and tocalote (*Centaurea melitensis*). This area appears to have been planted and irrigation lines are still present although no evidence of watering was observed. The extent of buckwheat scrub totals 1.4 acres within the northern portion of the Project Site (0.4 acre in the City Hall site and 1.0 acre in the slope area).

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1 *United States Geological Survey. 1968. El Toro, California 7.5-minute Topographical Quadrangle. Photo revised 1982.*

2 *State of California Resources Agency. Department of Fish and Game. September 2003. List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database. Wildlife and Habitat Data Analysis Branch. The Vegetation Classification and Mapping Program. Sacramento.*

3 *Gray, J. and D. Bramlet. 1992. Habitat Classification System: Natural Resources Geographic Information System (GIS) Project. Environmental Management Agency. County of Orange, Santa Ana, California.*

4 *Sawyer, John O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. Sacramento: California Native Plant Society.*

Table 1

Plant Communities

Plant Community	Acres
Buckwheat Scrub	1.4
Coast Live Oak Woodland	<0.1
Developed	0.8
Disturbed/Fremont Cottonwood	0.4
Disturbed/Mixed Scrub	3.9
Disturbed/Mule Fat Scrub	0.3
Fremont Cottonwood/Mixed Scrub	0.3
Mexican Elderberry Woodland	0.2
Mixed Scrub	4.7
Mixed Scrub/Mule Fat Scrub	0.2
Mule Fat Scrub	0.8
Ornamental	0.6
Red Willow/Arroyo Willow Riparian Forest	2.5
Ruderal	3.3
Scrub Oak Chaparral	0.2
Tamarisk Stand	0.1
Total	**19.7**

Source: PCR Services Corporation, 2008.

Mixed scrub is usually dominated by an even mix of various sage scrub species. Dominant species found within the community on-site include native black sage, California sagebrush, and California buckwheat. Additional species observed included native mule fat, coyote brush (*Baccharis pilularis*), deerweed (*Lotus scoparius*), our Lord's candle (*Yucca whipplei*), California bush sunflower, wishbone bush (*Mirabilis californica*), California sun cup (*Camissonia bistorta*), California croton (*Croton californicus*), purple sage (*Salvia leucophylla*), poison oak (*Toxicodendron diversilobum*), wild cucumber (*Marah macrocarpa*), orange bush monkey-flower (*Mimulus aurantiacus*), chaparral mallow (*Malacothamnus fasciculatus*), and non-native short-podded mustard (*Hirshfeldia incana*), foxtail chess (*Bromus madritensis*), and tree tobacco (*Nicotiana glauca*). Mixed scrub occupies 4.7 acres throughout the Project Site (2.9 acres in the City Hall site, 1.2 acres in the slope area, and 0.6 acre in the park site).

Mixed scrub/mule fat scrub contains a similar vegetation composition to mixed scrub and mule fat scrub combined. Dominant species observed within this community on-site included mule fat, California sagebrush, and California bush sunflower. Additional species observed included short-podded mustard. This community is present within a basin in the northeastern portion of the Project Site and occupies 0.2 acre (all within the City Hall site).

Woodland Communities

Coast live oak woodland is dominated by coast live oak with a poorly developed shrub layer. This plant community typically occurs on north-facing slopes and shaded ravines. Coast live oak (*Quercus agrifolia*) was the dominant plant species observed within this community. Additional species observed included foxtail chess and California sagebrush. This plant community occupies less than 0.1 acre within the eastern portion of the Project Site (all within the slope area).

Fremont cottonwood/mixed scrub is present along slopes in the southern portion and on the southeastern edge of the Project Site (within the park site). This community consists of mixed scrub species interspersed with several Fremont cottonwood trees (*Populus fremontii*), and a few coast live oak trees. Additional species observed included toyon (*Heteromeles arbutifolia*) and lemonadeberry (*Rhus integrifolia*). This community occupies 0.3 acre within the Project Site (all within the park site).

Mexican elderberry woodland is characterized by an open woodland of Mexican elderberry (*Sambucus mexicana*) that dominates the surrounding vegetation, both structurally and by biomass. It is commonly found on stream benches and lower slopes above streams. Mexican elderberry woodland occupies 0.2 acre within the northeastern portion of the Project Site (all within the slope area).

Chaparral Communities

Scrub oak chaparral is typically characterized as a dense, evergreen chaparral dominated by scrub oak (*Quercus berberidifolia*). This community occurs in more mesic areas than many other chaparrals and often occurs at slightly higher elevations. Plant species observed within this community on-site included scrub oak with understory species such as native California sagebrush and non-native short-podded mustard and tocalote. There is approximately 0.2 acre of scrub oak chaparral within the eastern portion of the Project Site (all within the City Hall site).

Riparian Communities

Mule fat scrub consists of dense stands of mule fat with scattered willows commonly present. This community typically occupies intermittent streambeds or disturbed areas within drainages and washes. Mule fat was the dominant species observed within this community on-site. Additional species observed included native Mexican elderberry and non-native tamarisk (*Tamarix ramosissima*) and short-podded mustard. A total of 0.8 acre of the Project Site is occupied by mule fat scrub (0.6 acre in the City Hall site and 0.2 acre in the slope area). The community occurs within two basins in the central and western portions of the Project Site and on the eastern edge of the drainage in the northeastern portion of the Project Site.

Red willow/arroyo willow riparian forest consists of a closed canopy of red willow (*Salix laevigata*) and arroyo willow (*Salix lasioloepis*) in arborescent form. This community typically occurs on floodplains along major streams and rivers. Shrubs are sparse under the tree canopy. Red willow and arroyo willow were the dominant species observed within this community on-site. Several coast live oak trees were also present within this community. Additional species observed included native mule fat and poison oak, and non-native giant reed (*Arundo donax*). Approximately 2.5 acres of red willow/arroyo willow riparian forest occur within the Project Site (all within the slope area).

Disturbed and Ornamental Communities

Disturbed/Fremont cottonwood occurs along a slope on the southeastern edge of the Project Site (within the park site). This community is characterized by a greater than 20 percent cover of non-native species interspersed with several Fremont cottonwood trees and a few coast live oak trees. Non-native species observed within this community included short-podded mustard, tree tobacco, tocalote, yellow sweetclover (*Melilotus officinalis*), and poison hemlock (*Conium maculatum*). A sparse cover of additional native species present within this community included toyon and western ragweed (*Ambrosia psilostachya*). Disturbed/Fremont cottonwood occupies 0.4 acre within the Project Site (all within the park site).

Disturbed/mixed scrub and **disturbed/mule fat scrub** contain a similar vegetation composition to mixed scrub and mule fat scrub, except non-native species constitute greater than 20 percent of the vegetative cover. Disturbed/mixed scrub occupies 3.9 acres throughout the Project Site (1.0 acre within the City Hall site and 2.9 acre within the slope area). Disturbed/mule fat scrub occupies 0.3 acre at the base of a trail within the eastern portion of the Project Site (all within the City Hall site).

Several areas of **ornamental** vegetation occur within the Project Site. Ornamental species observed included eucalyptus (*Eucalyptus* sp.) and pine (*Pinus* sp.) with an understory of predominantly non-native vegetation including red-stemmed filaree (*Erodium cicutarium*) and short-podded mustard. In addition to the eucalyptus and pine trees, scattered native coast live oak and Fremont cottonwood trees that appear to have been planted are present. Areas of ornamental vegetation occupy 0.6 acre within the eastern and southern portions of the Project Site (less than 0.1 acre within the slope area and 0.6 acre within the park site).

Ruderal areas are dominated by non-native weedy species that readily colonize disturbed ground. Plant species observed within the ruderal areas on-site include short-podded mustard, castor bean (*Ricinus communis*), foxtail chess, tocalote, yellow sweetclover, and poison hemlock. In addition, a sparse amount of native western ragweed occurs within the ruderal areas on-site. Ruderal areas occupy 3.3 acres throughout the Project Site (0.7 acre in the City Hall site, 0.3 acre in the slope area, and 2.3 acres in the park site).

Tamarisk stand is characterized by nearly monotypic stands of tamarisk, and this community occupies 0.1 acre within the northern portion of the Project Site (all within the slope area). Other species observed within this community on-site included white sage and California sagebrush.

Developed Areas

Developed areas within the Project Site consist of paved pathways. Developed areas occupy 0.8 acre within the Project Site (all within the park site).

METHODOLOGY

Surveys for the LBV were conducted by PCR biologists Linda Robb, Susan Anon, and Chris Jones, with assistance from Maile Tanaka. Methods employed were in conformance with U.S. Fish and Wildlife Service *Least Bell's Vireo Survey Guidelines* issued January 19, 2001. Accordingly, eight (8) surveys were performed between April 10 and July 31, 2008. Surveys were conducted no less than ten (10) days apart, between dawn and 11:00 A.M., within all portions of the study area containing suitable riparian habitat and adjacent habitat potentially used for foraging. Weather conditions were suitable for surveys, with skies ranging from clear to overcast and winds at or below Beaufort scale 1. Temperatures during surveys ranged between 66 and 82 degrees Fahrenheit.

The field investigators slowly walked along or within the riparian habitat, stopping at approximately 150- to 200-foot intervals, looking and listening for LBV. Surveys were conducted on May 14, 27, June 6, 16, 24, July 7, 17, and 28, 2008. Survey details are listed in Table 2, *Survey Data,* on page 7.

RESULTS

No LBVs were observed within the Project Site. Sensitive species[5] observed included yellow warbler (*Dendroica petechia*) and yellow-breasted chat (*Icteria virens*), both California Species of Special Concern (SSC), willow flycatcher (*Empidonax traillii*) (State endangered),[6] and coastal California gnatcatcher (*Polioptila californica californica*), federally threatened and SSC.

No brown-headed cowbirds (*Molothrus ater)* were observed within the Project Site during surveys. A list of all bird species observed is included in Attachment A, *Avian Compendium,* attached.

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[5] *California Department of Fish and Game. February 2008. Special Animals. State of California. The Resources Agency. Department of Fish and Game. Wildlife and Habitat Data Analysis Branch. California Natural Diversity Data Base.*

[6] *The full species of the willow flycatcher (Empidonax traillii) is state listed as endangered and the federally endangered subspecies, southwestern willow flycatcher, does not occur within the study area.*

Table 2

Survey Data

Date	Time	Wind (Beaufort)/ Temperature (F)	Weather	Results	Surveyors
05/14/08	0825-1050	2-0 / 66°-76°	2% Clouds-2% Clouds	No LBV observed	Robb
05/27/08	0740-0920	2-2 / 70°-72°	5% Clouds-15% Clouds	No LBV observed	Robb
06/06/08	0816-0909	1-1 / 75°-82°	clear-clear	No LBV observed	Jones
06/16/08	0830-1000	1-2 / 70°-80°	30% Clouds-30% Clouds	No LBV observed	Anon
06/24/08	0800-0945	1-1 / 70°-70°	100% Clouds-100% Clouds	No LBV observed	Anon
07/07/08	0925-1100	1-1 / 78°-82°	clear-clear	No LBV observed	Robb
07/17/08	0825-0943	2-2 / 66°-82°	70% Clouds-20% Clouds	No LBV observed	Robb, Jones
07/28//08	0915-1100	2-2 / 70°-79°	100% Clouds-80% Clouds	No LBV observed	Robb, Tanaka

Source: PCR Services Corporation, 2008.

Should you have any questions regarding the methodology or findings in this report, please do not hesitate to contact Linda Robb at (949) 753-7001.

Sincerely,
PCR SERVICES CORPORATION

Linda Robb
Senior Biologist

Chris Jones
Associate Wildlife Biologist

Susan Anon
Senior Wildlife Biologist

Attachments

ATTACHMENT A:
AVIAN COMPENDIUM

BIRDS

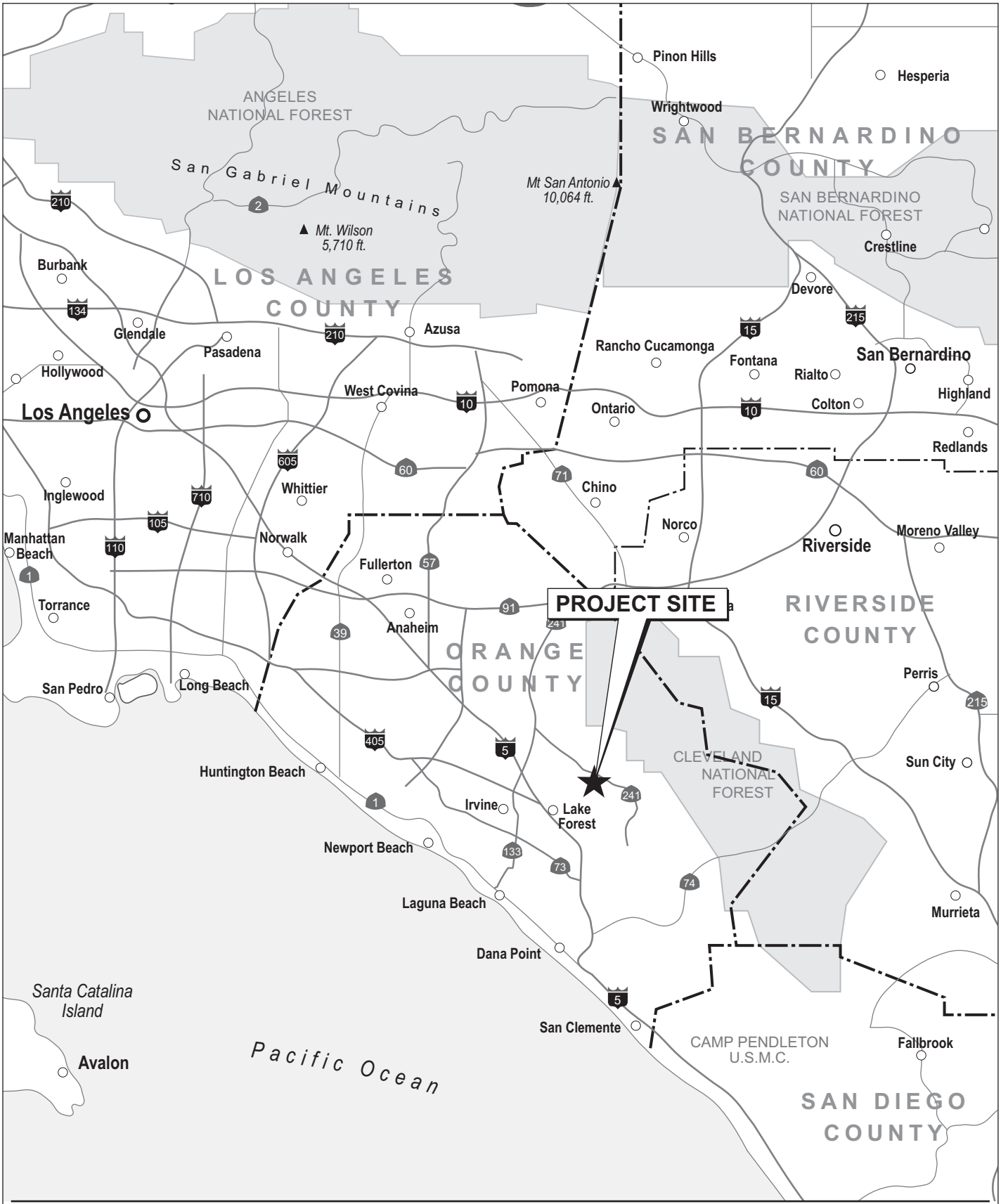
SCIENTIFIC NAME	COMMON NAME
Cathartidae	**New World Vultures**
Cathartes aura	turkey vulture
Accipitridae	**Hawks**
Accipiter cooperii	Cooper's hawk
Buteo lineatus	red-shouldered hawk
Buteo jamaicensis	red-tailed hawk
Falconidae	**Falcons**
Falco sparverius	American kestrel
Odotophoridae	**Quails**
Callipepla californica	California quail
Columbidae	**Pigeons and Doves**
* *Columba livia*	rock dove
Zenaida macroura	mourning dove
Apodidae	**Swifts**
Aeronautes saxatalis	white-throated swift
Trochilidae	**Hummingbirds**
Calypte anna	Anna's hummingbird
Picidae	**Woodpeckers**
Colaptes auratus	northern flicker
Melanerpes formicivorus	acorn woodpecker
Picoides nuttallii	Nuttall's woodpecker
Picoides pubescens	downy woodpecker
Tyrannidae	**Tyrant Flycatchers**
Empidonax difficilis	Pacific-slope flycatcher
Empidonax traillii	willow flycatcher
Sayornis nigricans	black phoebe
Myiarchus cinerascens	ash-throated flycatcher
Tyrannus verticalis	western kingbird
Tyrannus vociferans	Cassin’s kingbird
Vireonidae	**Vireos**
Vireo huttoni	Hutton's vireo
Vireo gilvus	warbling vireo

BIRDS

SCIENTIFIC NAME	COMMON NAME
Corvidae	**Jays and Crows**
Aphelocoma californica	western scrub-jay
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Hirundinidae	**Swallows**
Hirundo rustica	barn swallow
Petrochelidon pyrrhonota	cliff swallow
Tachycineta thalassina	violet-green swallow
Paridae	**Titmice and Relatives**
Baeolophus inornatus	oak titmouse
Turdidae	**Thrushes**
Catharus ustulatus	Swainson's thrush
Muscicapidae	**Wrentits**
Chamaea fasciata	wrentit
Aegithalidae	**Bushtits**
Psaltriparus minimus	bushtit
Troglodytidae	**Wrens**
Troglodytes aedon	house wren
Thryomanes bewickii	Bewick's wren
Sylviidae	**Old World Warblers, Gnatcatchers**
Polioptila californica californica	coastal California gnatcatcher
Mimidae	**Thrashers**
Mimus polyglottos	northern mockingbird
Toxostoma redivivum	California thrasher
Ptilogonatidae	**Silky Flycatchers**
Phainopepla nitens	phainopepla
Sturnidae	**Starlings**
* *Sturnus vulgaris*	European starling
Parulidae	**Wood Warblers**
Dendroica petechia	yellow warbler
Geothlypis trichas	common yellowthroat
Icteria virens	yellow-breasted chat
Vermivora celata	orange-crowned warbler
Emberizidae	**Emberizids**
Melospiza melodia	song sparrow
Pipilo crissalis	California towhee

BIRDS

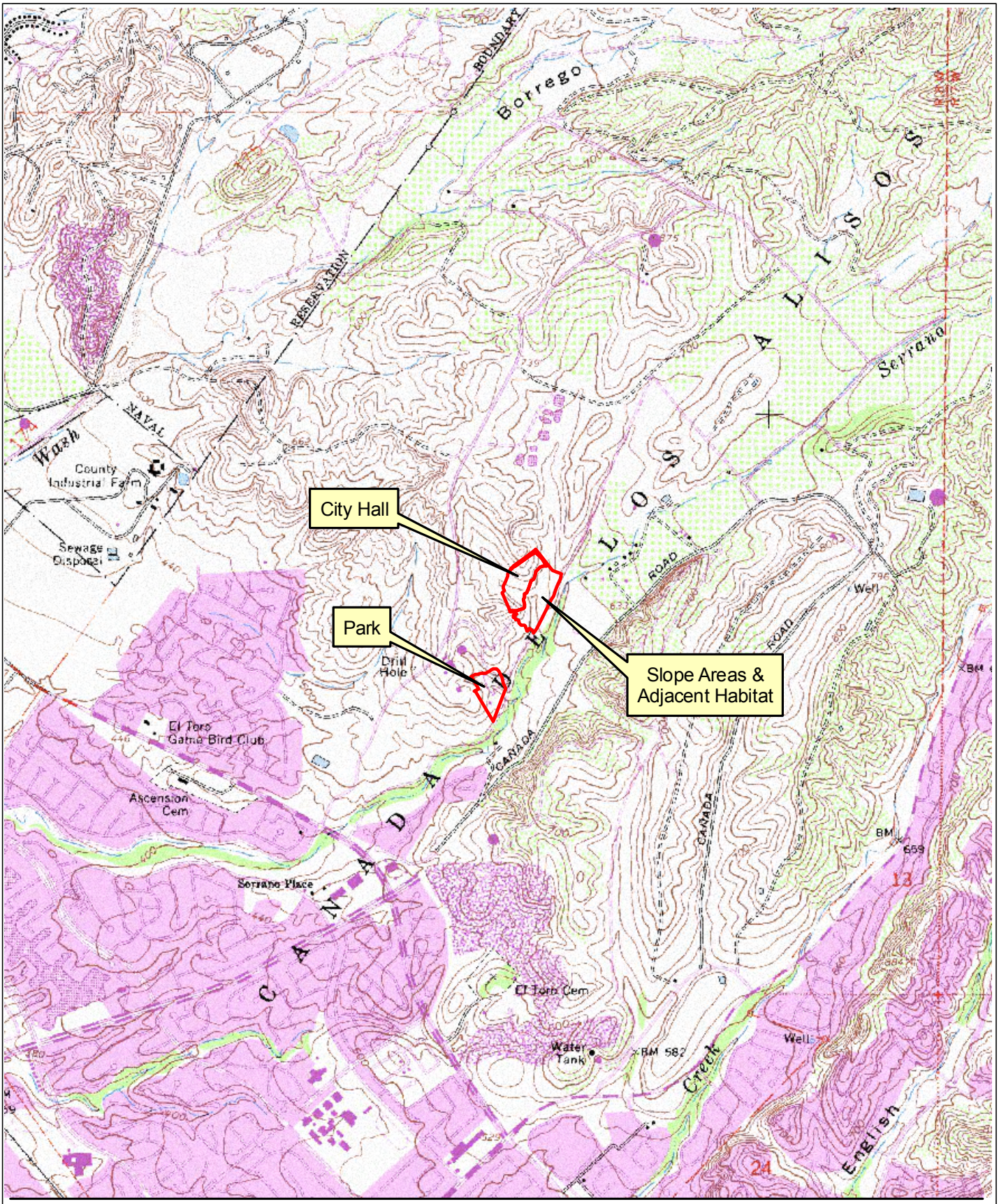
SCIENTIFIC NAME	COMMON NAME
Pipilo maculatus	spotted towhee
Cardinalidae	**Cardinals**
Pheucticus melanocephalus	black-headed grosbeak
Fringillidae	**Finches**
Carpodacus mexicanus	house finch
Carduelis psaltria	lesser goldfinch



PCR

Source: PCR Services Corporation, 2008.

Figure 1
Lake Forest
Proposed City Hall Site
Regional Map



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2,000 0 2,000 Feet

Source: USGS Topographic Series (El Toro, CA); PCR Services Corporation, 2008.

Figure 2
Lake Forest
Proposed City Hall Site
Vicinity Map

Source: PCR Services Corporation, 2008.

Figure 3
Lake Forest Proposed City Hall Site
Plant Communities

September 9, 2008

Ms. Cheryl Kuta
CITY OF LAKE FOREST
25550 Commercentre Drive, Suite 100
Lake Forest, California 92630

Re: RESULTS OF FOCUSED SOUTHWESTERN WILLOW FLYCATCHER SURVEYS FOR THE 19.7-ACRE PROPOSED CITY HALL AND PARK PROJECT SITE LOCATED IN THE CITY OF LAKE FOREST, ORANGE COUNTY, CALIFORNIA

Dear Cheryl:

This letter report summarizes the methodology and findings of surveys for the southwestern willow flycatcher (*Empidonax traillii extimus*) (SWWF) conducted by **PCR Services Corporation (PCR)** at the 19.7-acre proposed City Hall and Park Project Site located in the City of Lake Forest, Orange County, California ("Project Site") (Figure 1, *Regional Map*, attached). The surveys were conducted to determine the presence and location or absence of SWWF within the 19.7-acre Project Site. One SWWF was observed on-site during focused surveys.

STUDY AREA

The Project Site consists of approximately 19.7 acres of primarily undeveloped land located in the City of Lake Forest, Orange County, California (Figure 1, *Regional Map*, attached). The Project Site is located south of Commercentre Drive, east of Bake Parkway, and northwest of Lake Forest Drive. The 19.7-acre Project Site consists of two parts, a 14.7-acre parcel just south of the southern extent of Indian Ocean Drive (consisting of the 6.3-acre proposed City Hall site and an adjacent 8.4-acre site that consists of engineered slopes associated with the City Hall site and habitat beyond these slopes extending to an existing dirt trail to the east), and a 5.0-acre proposed park site approximately 900 feet to the southeast of the 14.7-acre parcel. These two parcels are separated by an open space area used for commercial purposes that includes a paved access road, two flat, circular terraces and adjacent slopes vegetated with native and ornamental species.

The 19.7-acre Project Site is surrounded by open space land including a dirt trail and Serrano Creek (and residential development beyond the open space) to the east and south, residential and commercial development to the west, and commercial development and a partially graded open space area used for commercial purposes to the north. Topography within the Project Site consists generally of rolling hills sloping to flat areas to the east (14.7-acre City Hall/slope site) and is predominantly flat in the 5.0-acre park site. The elevation ranges from approximately 544 feet above mean sea level ("MSL") in the southern portion of the Project Site (park site) to approximately 698 feet above MSL in the northern portion of the Project Site (City Hall site). The

Project Site can be found within Section 11, T. 6 S., R. 8 W. of the U.S. Geological Survey (USGS) 7.5-minute El Toro, California quadrangle map (Figure 2, *Vicinity Map*, attached).[1]

METHODOLOGY

Surveys for the SWWF were conducted by PCR Principal Ecologist Joseph Platt, Ph.D. (Permit No. TE-122620-0). Methods employed were in conformance with the U.S. Fish and Wildlife Service *Southwestern Willow Flycatcher Presence/Absence Survey Guidelines*, issued July 11, 2000. Accordingly, five surveys of all suitable habitat on-site were conducted within three survey periods. All surveys were conducted at least five days apart within all portions of the study area containing suitable habitat. The surveys began between 6:05 A.M. and 8:10 A.M. and were completed between 7:30 A.M. and 9:50 A.M. One permitted field investigator slowly walked over the site, stopping at appropriate intervals, and playing a recording of SWWF vocalizations. The tape was played for several seconds at each interval, followed by a brief pause to listen for a response. Surveys were conducted on May 21, June 3, 20, and 25, and July 1, 2008.

RESULTS

No SWWFs were observed within the Project Site; however, a male willow flycatcher (*Empidonax traillii*), which is listed as State endangered,[2] was observed during the survey conducted on May 21, 2008. Because it was not heard during subsequent surveys, it is considered to be a migrant.

Should you have any questions regarding the methodology or findings in this report, please do not hesitate to contact Joseph Platt, Ph.D. or Linda Robb at (949) 753-7001.

Sincerely,
PCR SERVICES CORPORATION

Joseph B. Platt, Ph.D.
Principal Ecologist

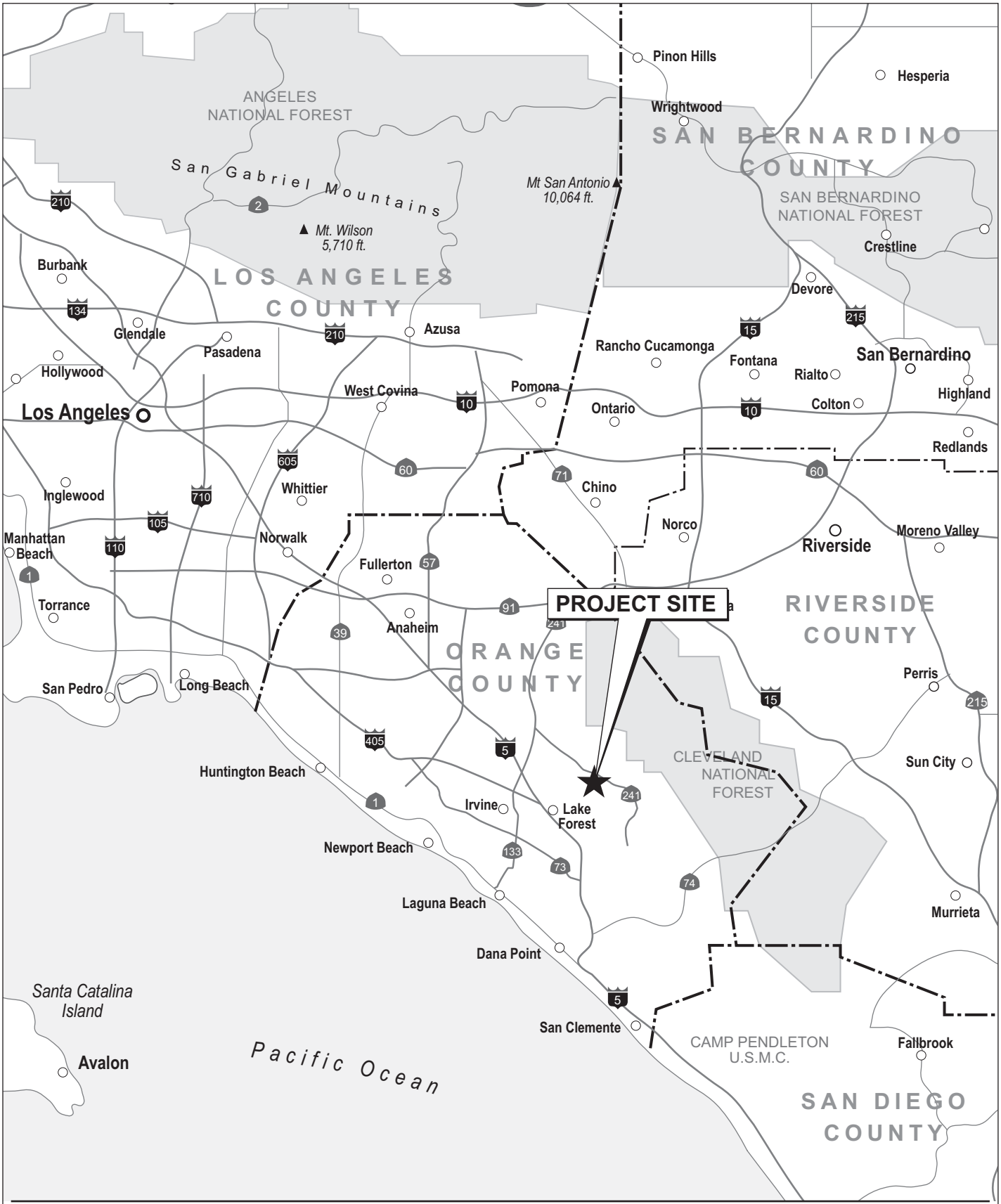
Linda M. Robb
Senior Biologist

Attachments

---

[1] *United States Geological Survey. 1968. El Toro, California 7.5-minute Topographical Quadrangle. Photo revised 1982.*

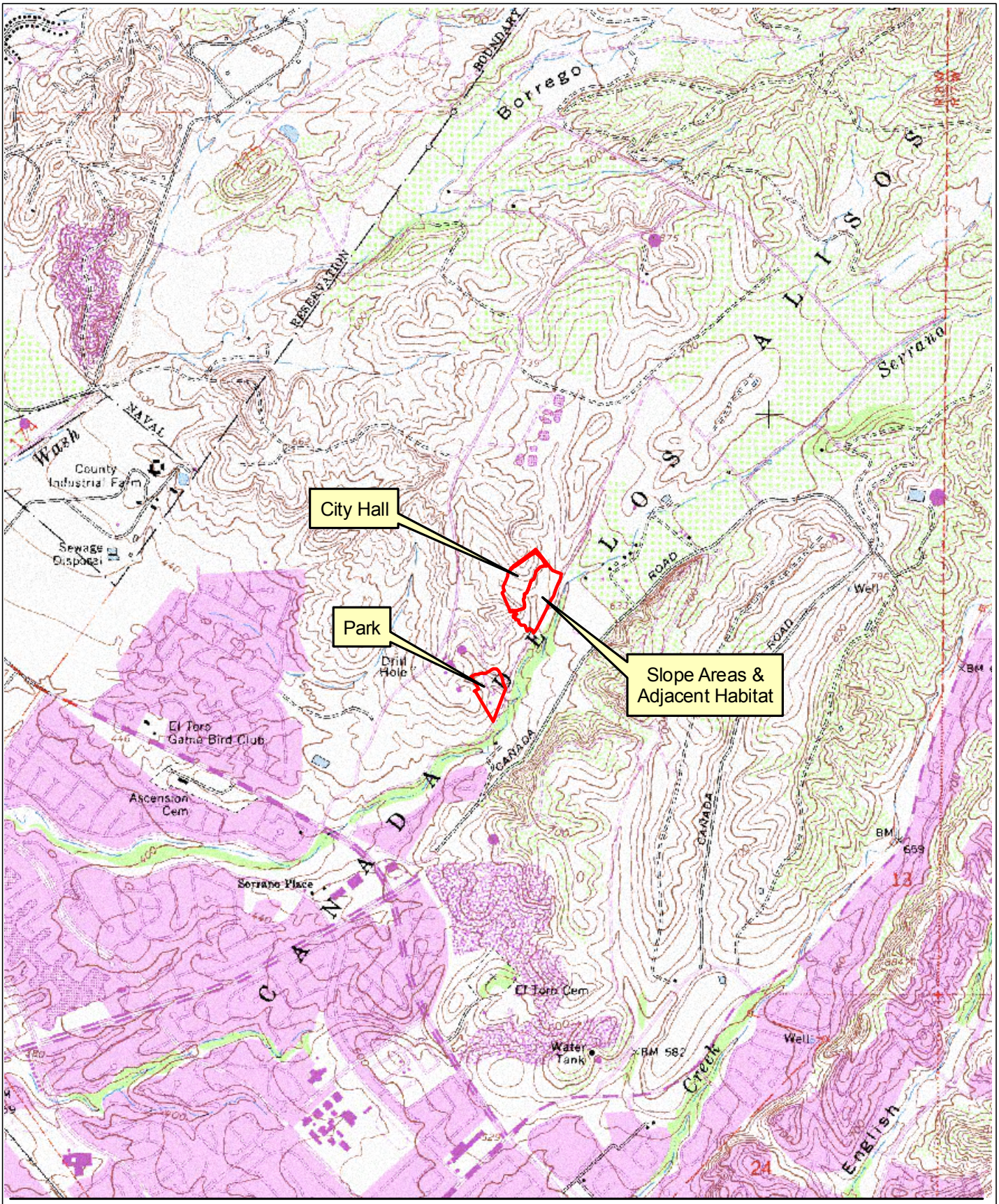
[2] *The full species of the willow flycatcher (Empidonax traillii) is state listed as endangered and the federally endangered subspecies, southwestern willow flycatcher, does not occur within the study area.*



PCR

Source: PCR Services Corporation, 2008.

Figure 1
Lake Forest
Proposed City Hall Site
Regional Map



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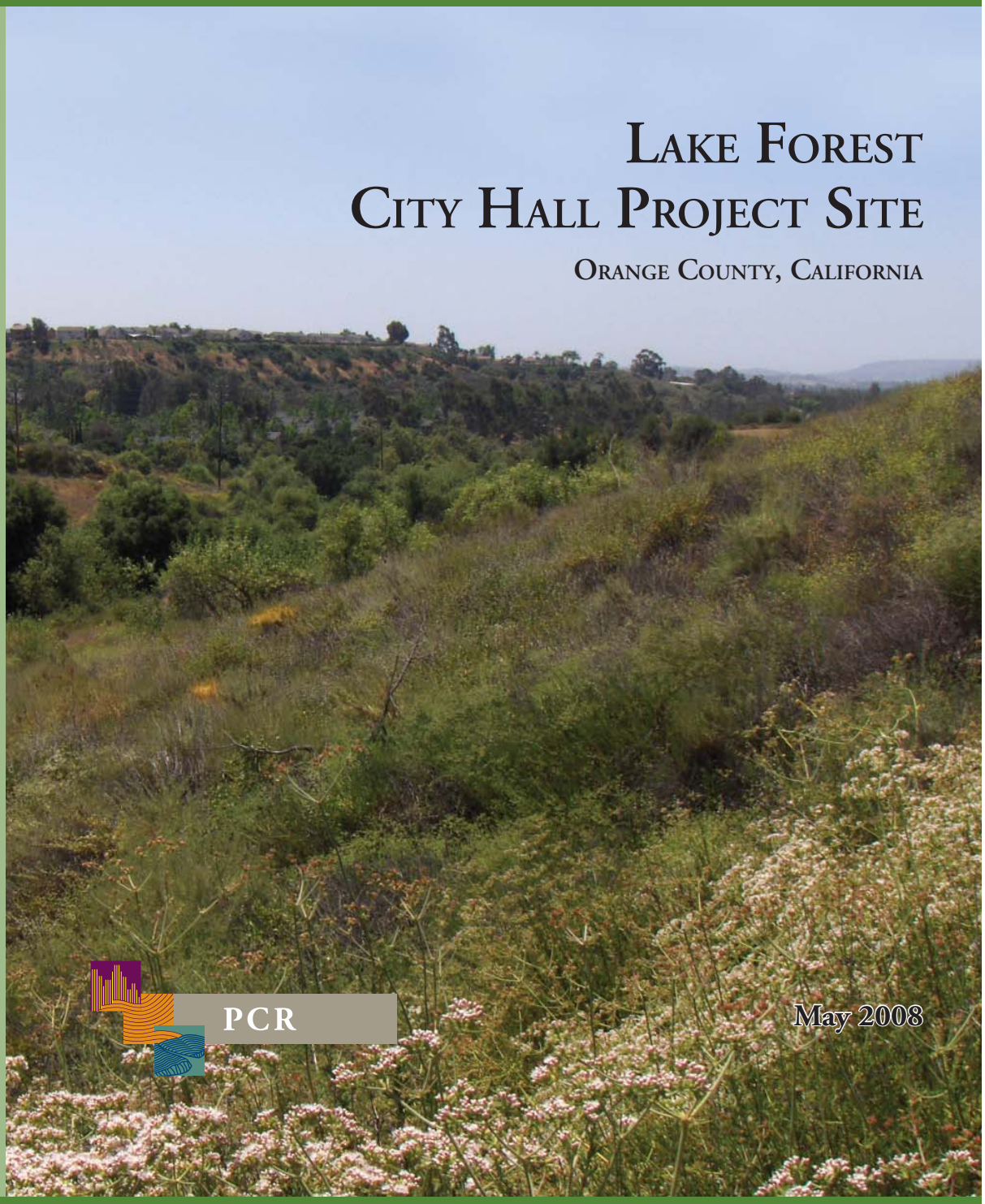
Source: USGS Topographic Series (El Toro, CA); PCR Services Corporation, 2008.

Figure 2
Lake Forest
Proposed City Hall Site
Vicinity Map

Investigation of Jurisdictional Wetlands and Waters of the U.S.

Lake Forest City Hall Project Site

Orange County, California



PCR

May 2008

Investigation of Jurisdictional Wetlands and Waters of the U.S.

Lake Forest City Hall Project Site

Orange County, California

Prepared For:

City of Lake Forest
25550 Commercentre Drive, #100
Lake Forest, California 92630
Contact: Ms. Cheryl Kuta

Prepared By:

PCR Services Corporation
One Venture, Suite 150
Irvine, California 92618
Contact: Richard Haywood, Senior Wetland Ecologist

May 2008

Investigation of Jurisdictional Wetlands and Waters of the U.S.

Lake Forest
City Hall Project Site
Orange County, California

Prepared For:
City of Lake Forest
25550 Commercentre Drive, #100
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(949) 461-3400

Contact:
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Prepared By:

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Irvine, California 92618

Contact:

Richard Haywood, Senior Wetland Ecologist

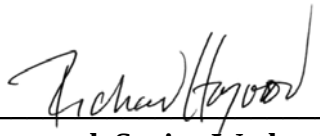
May 29, 2008

Investigation of Jurisdictional Wetlands And Waters of the U.S.

Lake Forest
City Hall Project Site
Orange County, California

The undersigned certify that this report is a complete and accurate account of the findings and conclusions of a jurisdictional determination for the above-referenced project.

PCR Services Corporation



Richard Haywood, Senior Wetland Ecologist

May 29, 2008

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INVESTIGATION OF JURISDICTIONAL WETLANDS AND WATERS OF THE U.S. ON THE LAKE FOREST CITY HALL PROJECT SITE

1.0 INTRODUCTION

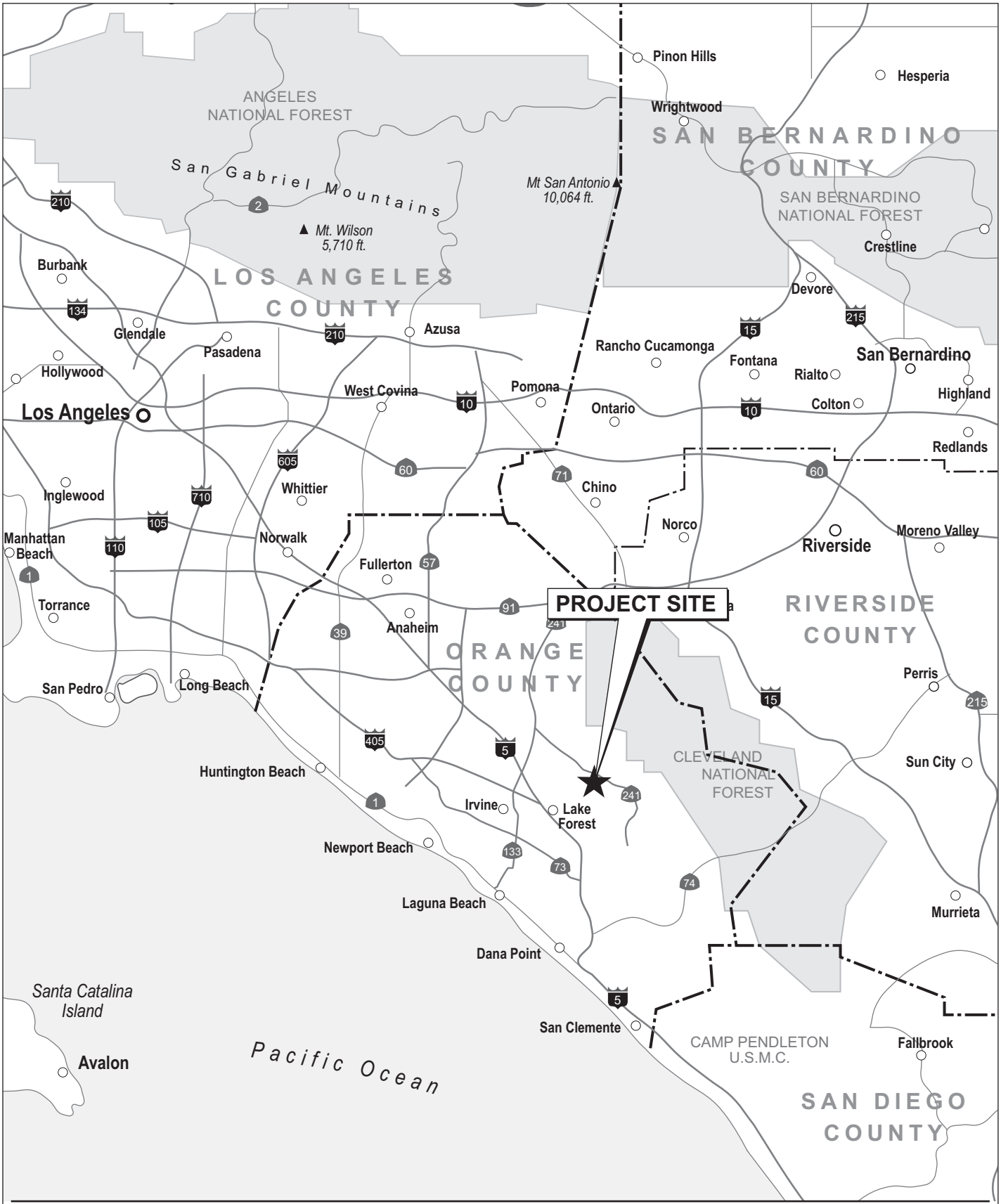
This report presents the findings of an investigation conducted by **PCR Services Corporation (PCR)** of jurisdictional wetlands, "waters of the U.S.", and "waters of the State" on the City of Lake Forest City Hall project site (the study area).

The study area totals approximately 19.7 acres, which consists of two parts, a 14.7-acre parcel just south of the southern extent of Indian Ocean Drive (consisting of the 6.3-acre proposed City Hall site and an adjacent 8.4-acre site that consists of engineered slopes associated with the City Hall site and habitat beyond these slopes extending to an existing dirt trail to the east), and a 5.0-acre proposed park site approximately 900 feet to the southeast of the 14.7-acre parcel. These two parcels are separated by an open space area used for commercial purposes that includes a paved access road, two flat, circular terraces and adjacent slopes vegetated with native and ornamental species. Please note that all jurisdictional resources occur only within the 14.7-acre parcel, and therefore only this parcel will be discussed in this report.

The study area is located in the City of Lake Forest, Orange County, California (Figure 1, *Regional Map*, on page 2). The study area is located south of Commercentre Drive, east of Bake Parkway, and northwest of Lake Forest Drive. The study area is located within Section 11, T. 6 S., R. 8 W., of the U.S. Geological Survey (USGS) 7.5-minute El Toro, California topographic quadrangle as shown in Figure 2, *Vicinity Map*, on page 3. Surrounding land use includes a dirt trail and Serrano Creek (with residential development beyond this) to the east and south, and commercial development and graded open space to the west and north. The longitude and latitude of the approximate center of the study area is 33.65980 North and 117.67907 West.

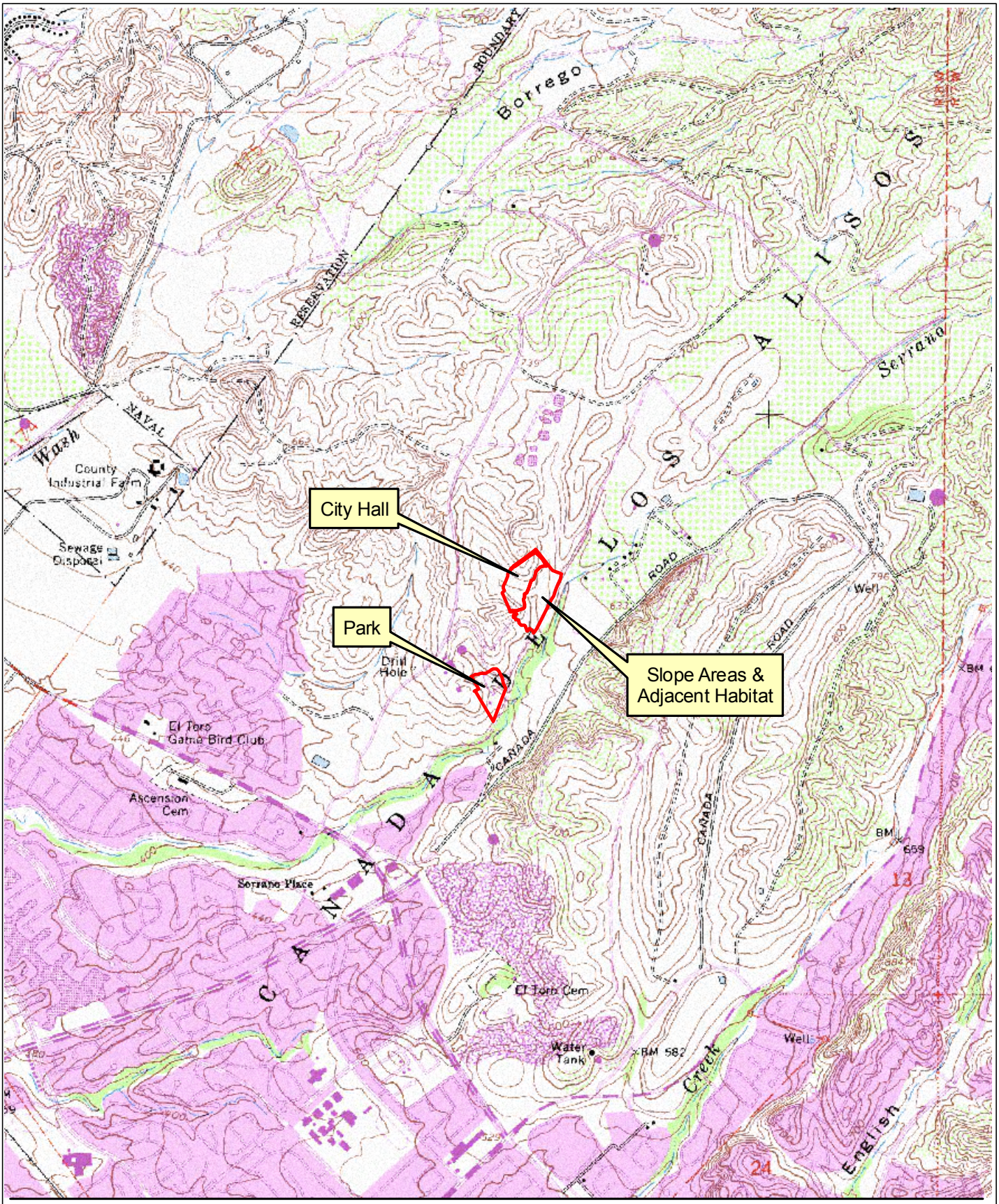
An assessment of jurisdictional wetlands and "waters of the U.S." on the study area was conducted by PCR Senior Wetland Ecologist Richard Haywood on May 2, 2008. The assessment was conducted to determine whether or not the on-site drainage feature is subject to the jurisdiction of the U.S. Army Corps of Engineers (ACOE), the Regional Water Quality Control Board (RWQCB) and/or the California Department of Fish and Game (CDFG) and to determine and map the extent of all jurisdictional resources on the study area.

It should be noted that the opinions presented in this report are a reflection of the best professional judgment of PCR staff. However, all conclusions are tentative until verified by Agency (i.e. ACOE, RWQCB and CDFG) personnel.



Source: PCR Services Corporation, 2008.

Figure 1
Lake Forest
Proposed City Hall Site
Regional Map



PCR

Source: USGS Topographic Series (El Toro, CA); PCR Services Corporation, 2008.

Figure 2
Lake Forest
Proposed City Hall Site
Vicinity Map

2.0 EXISTING SITE CONDITIONS

The study area consists of mostly undeveloped lands within the Canada De Los Alisos, in the foothills of the Santa Ana Mountains. Local topography within the study area consists of gently sloping hills that form a small valley that is generally aligned north to south. The one jurisdictional drainage within the study area, herein referred to as Drainage A, is located within a small riparian corridor along the bottom of this valley. The 14.7-acre parcel portion of the study area drains to the south, and elevations range between approximately 590 feet above mean sea level (msl) in the southern (downstream) portion of the study area to approximately 698 feet above msl on the hilltops in the northwestern portion of the parcel.

Disturbance within the study area includes a few dirt trails, and some areas of trash dumping. In addition, past earthwork, presumably associated with the surrounding commercial developments and graded open space, occurs throughout most of the study area north and west of the drainage corridor. Also presumably associated with this past earthwork is an extensive array of irrigation lines installed on the northern and western slopes of the valley, and concrete interceptor v-ditches installed on the northern slope. Lastly, a large concrete v-ditch collecting runoff from both the irrigated northern and western slopes, as well as from Indian Ocean Drive and surrounding paved parking areas is located in the northern part of the study area. This v-ditch, aligned roughly east to west, originates at the hilltop near the terminus of Indian Ocean Drive and carries flows downhill, discharging them approximately 25 feet above the start of Drainage A.

While past earthwork is apparent throughout the study area, the property is generally well vegetated with a number of native scrub and woodland plant communities, as well as some disturbed and non-native plant communities. The non-native plant communities are more prevalent in the proximity of the disturbed areas, particularly alongside the dirt trails in the study area. Native vegetation throughout the study area includes a mixture of buckwheat and mixed scrub, coast live oak woodland, Mexican elderberry woodland, Fremont cottonwood woodland, scrub oak chaparral, mule fat scrub, and willow forest communities (See Figure 3, *Vegetation Map*, on page 5).

3.0 SUMMARY OF REGULATIONS

Three key agencies regulate activities within inland streams, wetlands, and riparian areas in California. The ACOE Regulatory Program regulates activities pursuant to Section 404 of the federal Clean Water Act (CWA), the CDFG regulates activities under the Fish and Game Code Sections 1600-1616, and the RWQCB regulates activities under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act.

PCR

Source: PCR Services Corporation, 2008.

Figure 3
Lake Forest Proposed City Hall Site
Plant Communities

3.1 Regulatory Agencies

3.1.1 U.S. Army Corps of Engineers

The ACOE regulates the "discharge of dredged or fill material" into "waters of the U.S.," which includes all waters currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce; waters subject to the ebb and flow of the tide; all interstate waters; all other waters, including intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce; or any other waters that are part of a tributary system to interstate waters or to navigable "waters of the U.S.," (33 C.F.R. 328.3(a.)), pursuant to provisions of Section 404 of the CWA.

The ACOE generally takes jurisdiction within rivers and streams to the "ordinary high water mark" (OHWM) determined by erosion, the deposition of sediments or debris, and changes in vegetation. The ACOE defines wetlands as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 C.F.R. 328.3(b.)). In accordance with the ACOE's *Wetland Delineation Manual* (Environmental Laboratory 1987) and subsequent guidance provided in the *Arid West Interim Regional Supplement* (Environmental Laboratory 2006) *the ("2006 Supplement"),* a wetland ecosystem must possess wetland hydrology and support hydrophytic vegetation and hydric soils.

Over the years, the ACOE has modified their regulations, typically due to evolving policy or judicial decisions, through the issuance of Regulatory Guidance Letters, memorandum, or more expansive instruction guidebooks. These guidance documents help to update and define how jurisdiction is claimed, and how these "waters of the U.S" will be regulated. The most recent modification occurred on June 5, 2007, when the ACOE and the U.S. Environmental Protection Agency (EPA) issued a series of guidance documents outlining the requirements and procedures, effective immediately, to establish jurisdiction under Section 404 of the CWA and the Section 10 of the Rivers and Harbors Act 1899 (ACOE and EPA 2006). These documents are intended to be used for all jurisdictional delineations but also provide specific guidance for the jurisdictional determination of potentially jurisdictional features affected by the United States Supreme Court rulings on *Rapanos v. the United States* and *Carabell v. the United States* 126 U.S. Ct. 2208 (2006) (jointly referred to as "Rapanos").

The Rapanos case outlines the conditions and criteria utilized by the ACOE to assess and claim jurisdiction over non-navigable, ephemeral tributaries. Under a plurality ruling, the Court noted that certain "not relatively permanent" (i.e. ephemeral), non-navigable tributaries must have a "significant nexus" to downstream traditional navigable waters (TNW) to be

jurisdictional. An ephemeral tributary has a significant nexus to a downstream navigable water when it has "more then a speculative or an insubstantial effect on the chemical, physical, and/or biological integrity of a TNW." A significant nexus is established through the consideration of a variety of hydrologic, geologic and ecological factors specific to the particular drainage feature in question.

In addition, on January 15, 2003 the ACOE and EPA issued a Joint Memorandum to provide clarifying guidance regarding the United States Supreme Court ruling in the *Solid Waste Agency of Northern Cook County v United States Army Corps of Engineers*, No. 99-1178 (January 9, 2001) ("the SWANCC case"), (Federal Register: Vol. 68, No. 10.) This ruling held that the CWA does not give the federal government regulatory authority over non-navigable, isolated, intrastate waters. As a result of this decision, some previously regulated depressional areas such as mudflats, sandflats, wetlands, prairie potholes, wet meadows, playa lakes, natural ponds, and vernal pools, which are not hydrologically connected to other intra- or inter-state "waters of the U.S.," are no longer regulated by the ACOE.

However, these "not relatively permanent" or isolated features may still be regulated by CDFG under Fish and Game Code Section 1600 or the RWQCB under the Porter-Cologne Water Quality Act. A detailed discussion of Section 404 of the CWA, is included in Section 7.0.

3.1.2 California Department of Fish and Game

In accordance with Section 1600 *et seq*., of the California Fish and Game Code (FGC) ("Streambed Alteration"), CDFG regulates activities which "will substantially divert, obstruct, or substantially change the natural flow or bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit." The CDFG takes jurisdiction to the top of bank of the stream, or the limit of the adjacent riparian vegetation when present.

3.1.3 Regional Water Quality Control Board

The RWQCB regulates "discharging waste, or proposing to discharge waste, within any region that could affect "waters of the State" (Water Code § 13260 (a)), pursuant to provisions of the Porter-Cologne Water Quality Control Act. "Waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the State" (Water Code § 13050 (e)). Before the ACOE will issue a CWA Section 404 permit, applicants must receive a CWA Section 401 Water Quality Certification from the RWQCB. If a CWA Section 404 permit is not required for the project, the RWQCB may still require a permit (i.e., Waste Discharge Requirement) under the Porter-Cologne Water Quality Control Act.

3.2 Activities Requiring Permitting

Any development proposal that involves impacting jurisdictional drainages, streams, and/or wetlands through filling, stockpiling, conversion to a storm drain, channelization, bank stabilization, road or utility line crossings, or any other modifications, will require permits from the ACOE, RWQCB, and the CDFG before any development can commence within the study area. Both permanent and temporary impacts are regulated and would trigger the need for these permits. Before the ACOE will issue a CWA Section 404 permit, applicants must receive a CWA Section 401 Water Quality Certification from the RWQCB. If a CWA Section 404 permit is not required for the project, the RWQCB may still require a permit (i.e., Waste Discharge Requirement) under the Porter-Cologne Water Quality Control Act. Processing of the Section 401 and 1602 permits can occur concurrently with the ACOE permit process and can utilize the same information and analysis. Applications to the CDFG and RWQCB must include a complete, certified California Environmental Quality Act (CEQA) document. A detailed discussion of the regulatory permitting process is included in Section 7.0 of this report.

4.0 METHODS

4.1 Initial Data Collection and Assessment

Prior to visiting the study area, potential and/or historic drainages and aquatic features were located based on a review of the following: USGS El Toro, California topographic quadrangle map (USGS 1968, photorevised in 1982), aerial photographs, and the Natural Resources Conservation Service (NRCS) soil survey maps (Knecht 1971). The information provided by these various sources is used to identify the likely drainage features on the study area, the best access routes to those drainage features and through the study area as a whole, and to help assess the hydrologic connectivity of on-site drainage features to downstream (off-site) "waters".

4.2 Field Delineation and Mapping: "Waters of the U.S."

Following the initial data collection, the entire study area was evaluated and all areas that were identified as being potentially subject to the jurisdiction of the ACOE, RWQCB, and/or the CDFG were field verified and mapped. Drainage features were mapped to obtain characteristic parameters and detailed descriptions using a combination of standard measurement tools and Global Positioning System (GPS) equipment. The precise location of transects, upstream and downstream extents of each feature, and sample points were collected in the field using a GPS hand-held unit. The Trimble GeoXT system is an advanced geographic data collection tool that integrates satellite differential and wide area augmentation system capabilities to provide

submeter (50 cm RMS) positional accuracy on a real-time basis. Following data collection, the digital information was uploaded and incorporated within PCR's project-specific Geographic Information System (GIS) database to calculate jurisdictional acreages.

The potential for "waters of the U.S." and "waters of the State" were investigated based on the absence or presence of an OHWM, or if not clearly visible, as determined by erosion, the deposition of debris, and changes in vegetation. If any of these criteria were met, a series of transects were run to determine the extent of jurisdictional non-wetland "waters of the U.S." Identified non-wetland "waters of the U.S." were traversed within or along the channel, and the OHWM was measured. Where channels diverged to form low, intermediate areas between the channels, the entire area between the outermost edge of each channel was considered within the OHWM. Where the intermediate area was equal to or above the height of the uppermost bank of either channel, the OHWM was recorded individually for each channel. The CDFG jurisdiction was defined to the bank of the stream/channels or to the limit of the adjacent riparian vegetation.

4.3 Field Delineation and Mapping: Wetlands

ACOE jurisdictional wetlands were delineated using a routine determination according to the methods outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Environmental Laboratory 2006) based on hydrologic and edaphic features of the study area and on the vegetation community composition of each area being investigated. In areas where jurisdictional wetlands were suspected, data on vegetation, hydrology, and soils was collected along transects as described below.

4.3.1 Vegetation

Aerial cover of vegetation was estimated along each transect by estimating coverage in two randomly placed circular plots. Tree cover was estimated using 30-foot radius circular plots; sapling, shrub, and forb cover was estimated using 10-foot radius plots. Plant species in each stratum were ranked according to their dominance. Species that contributed to a cumulative total of 50 percent of the total dominant coverage plus any species that comprised at least 20 percent of the total dominant coverage were recorded on the wetland Data sheets. The wetland indicator status was assigned to each species using the Region 0 List of Plant Species that Occur in Wetlands, as shown in Table 1, *Summary of Wetland Indicator Status*, on page 10. If greater than 50 percent of the dominant species from all strata were Obligate, Facultative-wetland, or Facultative species, the criteria for wetland vegetation was considered to have been met.

Table 1

Summary of Wetland Indicator Status

Category		Probability
Obligate Wetland	(OBL)	Almost always occur in wetlands (estimated probability of >99%)
Facultative Wetland	(FACW)	Usually occur in wetlands (estimated probability of 67 to 99%)
Facultative	(FAC)	Equally likely to occur in wetlands/non-wetlands (estimated probability of 34 to 66%)
Facultative Upland	(FACU)	Usually occur in non-wetlands (estimated probability 67 to 99%)
Obligate Upland	(UPL)	Almost always occur in non-wetlands (estimated probability >99%)
Non-Indicator	(NI)	No indicator status has been assigned

Source: Reed, 1988.

4.3.2 Hydrology

The presence of wetland hydrology was evaluated at each transect by recording the extent of observed surface flows, depth of inundation, depth to saturated soils, and depth to free water in the soil pits. In addition, indicators of wetland or riverine hydrology were recorded, including water marks, drift lines, rack, debris, and sediment deposits. The lateral extent of the hydrology indicators was used as a guide for locating soil pits for evaluation of hydric soils. In portions of the stream where the flow was divided between multiple channels with intermediate sand bars, the entire area between the outermost edges of each channel was considered within the OHWM and the wetland hydrology indicator was considered met for the entire area, assuming surface water was present.

4.3.3 Soils

If the criteria for wetland vegetation and hydrology were met, an excavation of the soils was conducted to determine if the soils were hydric. Soil pits were dug to a depth of 20 inches. In areas of recent deposition of sand or other overburden material, the soil pit was dug to a depth of 20 inches below the depth of the overburden material. At each soil pit the soil texture and color were recorded by comparison with standard plates within a Munsell soil color chart. Any hydric soils, as defined in the Field Indicators of Hydric Soils in the United State (NRCS 2006) or indicators of hydric soils were also recorded. The limits of wetland hydrology indicators were used as a guide for locating soil pits.

4.4 Significant Nexus Determination

Upon completion of the initial data collection and analysis and the field delineation and mapping, the on-site drainage features are evaluated to determine if a significant nexus is likely to exist between each individual drainage feature delineated on the study area and a TNW

located downstream and off-site from the study area. The downstream TNW for the drainage feature delineated on the study area is Railroad Canyon Reservoir. Information collected for the significant nexus determination is used to help complete the Approved Jurisdictional Determination Form found in Appendix A and is provided to assist the ACOE in making the final jurisdictional determination.

5.0 RESULTS

The entire 19.7-acre study area was investigated to determine the presence or absence of ACOE, RWQCB, and/or CDFG jurisdiction. One drainage feature (Drainage A) was identified on the 14.7-acre parcel portion of the study area, with one associated tributary (Tributary A1). No drainage features were identified on the 5-acre parcel portion of the study area.

Drainage A is considered a jurisdictional "waters of the U.S." under Section 404 and 401 of the CWA, as well as State regulations, and is therefore regulated by all three agencies. In addition to being a jurisdictional "waters of the U.S."/"waters of the State," the hydrology that supports Drainage A is sufficient to have allowed a hydrophytic plant community and hydric soils to develop within the riparian corridor, and therefore the drainage supports an associated wetland system.

The jurisdictional resources delineated within Drainage A and its tributary on the study area total approximately 1,015 linear feet of streambed. The total (combined) jurisdictional area delineated includes 0.082 acre of ACOE/RWQCB jurisdictional "waters of the U.S."/"waters of the State", which is included within 0.206 acre of wetlands, and 1.909 acres of CDFG jurisdictional streambed and associated riparian habitat.

The various jurisdictional acreages often overlap, i.e., ACOE acreage is typically included within CDFG and RWQCB acreages, and the two are not additive. For clarification, please see Table 2, *Jurisdictional Drainage Systems and Associated Wetlands*, on page 12, and Figure 4, *Jurisdictional Waters and Wetlands*, on page 13, for the locations of jurisdictional drainages. Appendix B: Wetland Data Sheets contains the wetland data sheets completed during the on-site assessment.

5.1 Soil Survey Review

The Soil Survey of Orange County and Western Part of Riverside County, California was consulted, and five soil types within three soil series were identified on 14.7-acre portion of the study area (See Figure 5, Soil Survey, on page 14). The soils map and underlying aerial