NORTH COUNTY HABITAT BANK

BIOLOGICAL TECHNICAL REPORT

July 2, 2004

Prepared for :

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North County Habitat Bank
Biological Technical Report

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1.0 INTRODUCTION

This report describes existing biological conditions and wetland restoration potential of the proposed North County Habitat Bank (Bank). The information herein is provided for the City of Carlsbad (City), U.S. Army Corps of Engineers (ACOE), U.S. Fish and Wildlife Service (USFWS), and California Department of Fish and Game (CDFG) to evaluate the use of the site as a mitigation bank in meeting mitigation obligations under the Federal Clean Water Act, California Fish and Game Code and the Draft North County Multiple Habitat Conservation Program (MHCP).

1.1 PROJECT DESCRIPTION

Approximately 15.7 acres of the 18.7-acre site is proposed to be used for mitigation banking purposes. Portions of the site are heavily infested with pampas grass (*Cortaderia selloana*), and are proposed to be restored as riparian habitat. Portions of the site support existing riparian or upland vegetation and will be managed for open space purposes. The Bank will include both conservation and creation credits.

1.2 SITE CHARACTERISTICS

The approximately 18.7-acre site is located in the City of Carlsbad in northwestern San Diego County, California south of Palomar Airport Road and Hidden Valley Road (Figures 1 and 2). Commercial development occurs to the west, Palomar Airport Road forms the northern boundary, and undeveloped/open space occurs to the southwest, south, and immediately east. Encinas Creek bisects the property, with the southeastern corner of the site sloping up from the creek.

The property was formerly used for ranching and farming. Disturbances on site are limited to pedestrian use and periodic homeless encampments, and periodic maintenance of sewer easements.

Soil types present on site include clays of the Salinas and Altamont series and various sandy loams of the Las Flores, Corralitos, Huerhuero, San Miguel, and Gaviota series (Bowman 1973).

2.0 METHODS

A formal wetland delineation and vegetation mapping of the site was conducted by HELIX Environmental Planning, Inc (HELIX). The fieldwork was conducted by W. Larry Sward and Keli Balo of HELIX on December 8, 2003. The entire site was traversed on foot. Vegetation was mapped on an aerial photograph at 1"=150' scale. Delineations were conducted in areas suspected to be under jurisdiction of the ACOE pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344) and habitats under the jurisdiction of the California Department of Fish and Game (CDFG; Section 1600).

Prior to beginning HELIX's portion of the fieldwork, aerial photographs (1"=150' scale), and the Soil Survey of the San Diego Area (Bowman 1973) were reviewed to determine the location of potential jurisdictional areas on site.

All areas with depressions or drainage channels were evaluated for the presence of jurisdictional areas. Each area was inspected according to ACOE wetland delineation guidelines. The ACOE wetland boundaries were determined using three criteria (vegetation, hydrology, and soils) established for wetland delineations as described within the Wetlands Delineation Manual (Environmental Laboratory 1987). Other references used included Clarification and Interpretation of the 1987 Manual (Williams 1992) and Questions and Answers on the 1987 Manual (Studt 1991). The CDFG jurisdictional boundaries were determined based on the presence of either riparian vegetation or stream hydrology. Riparian habitat is not defined in Title 14 but refers to vegetation and habitat associated with a stream, where this habitat may extend beyond the banks of a stream.

Suspected jurisdictional areas were traversed within or along the drainage, and the width of the ordinary high water mark (OHWM) and/or wetland and riparian habitat was measured periodically. Suspected jurisdictional areas which, after closer inspection were found to be non-jurisdictional, were also noted.

Dominant and non-dominant vegetation elements were noted in accordance with the delineation manual guidelines. Plants were identified according to Hickman, ed. (1993), although because of the timing of the surveys, some of the vegetation present was dormant or senescent. Indicator status was assigned to each dominant species using the USFWS Branch of Habitat Assessment's National List of Plant Species that Occur in Wetlands (1996). Wetland hydrology was evaluated by the presence of surface water, general drainage patterns, watermarks, drift lines, debris, and sediment deposits. Wetland soils were noted by low chromas (Kollmorgen 1994).

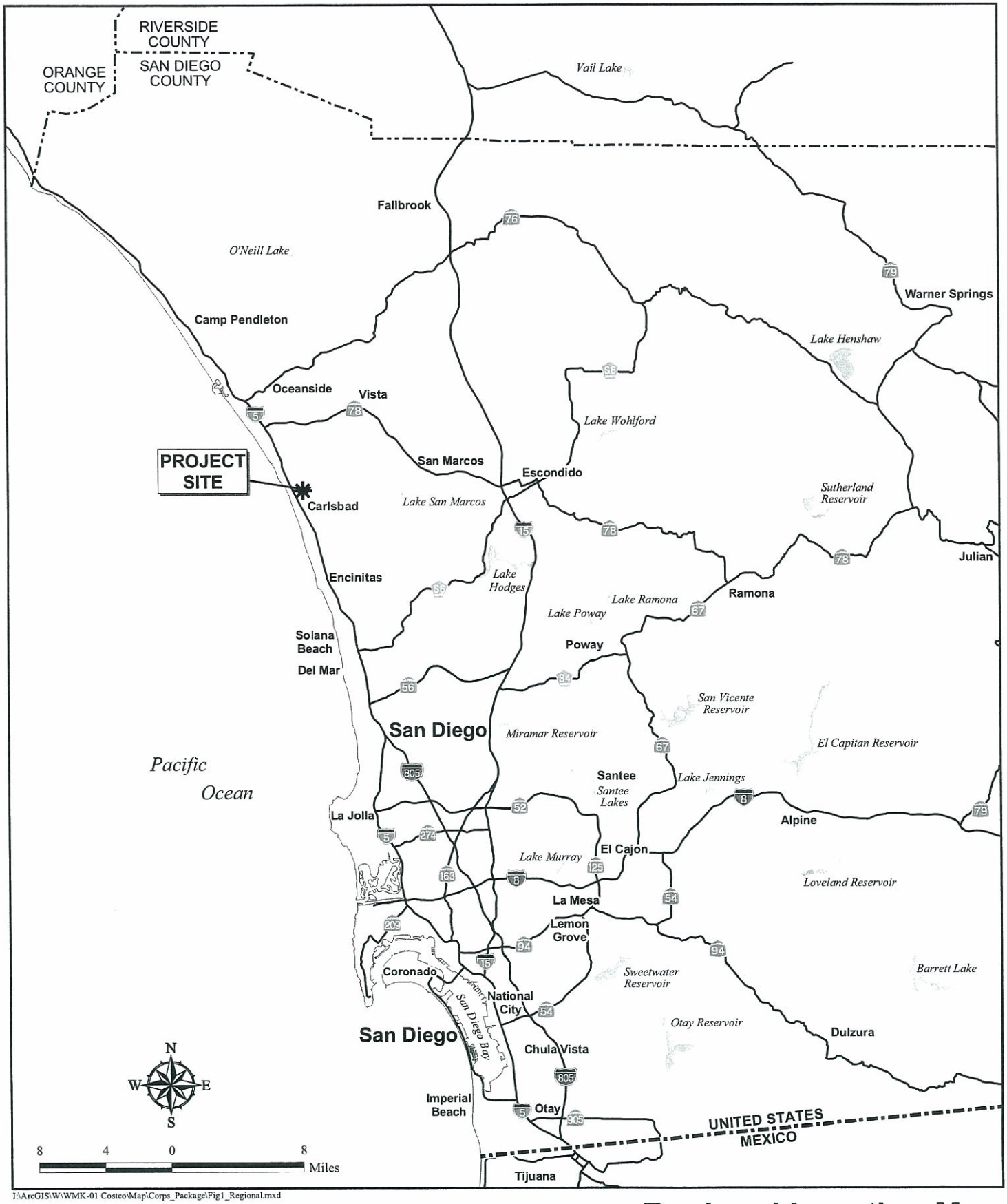
Focused wildlife surveys for the site have not been conducted; however, the least Bell's vireo (*Vireo bellii pusillus*) was observed at the eastern end of the property in 2000 (B. Jones pers. obs.).

Nomenclature for this report follows Hickman, ed. (1993) and Beauchamp (1986) for plants; Holland (1986) for vegetation communities; Emmel and Emmel (1973) for butterflies; Collins (1997) for reptiles and amphibians; the American Ornithologists' Union (1998) for birds; and Jones et al. (1997) for mammals. Sensitive animal and plant status is taken from CDFG (2000a) and CDFG (2000b), respectively. Sensitive animals and plants are those formally recognized as such at local (City of Carlsbad), federal (USFWS), or state (CDFG) levels.

3.0. RESULTS

3.1 VEGETATION COMMUNITIES/HABITATS

The site supports five native and one non-native vegetation communities or habitats: riparian forest, mule fat scrub, freshwater marsh, Diegan coastal sage scrub, coastal sage scrub/ chaparral, non-native grassland, and disturbed habitat. Only those habitats within the proposed Bank are included in Table 1. Figure 3 includes areas with existing sewer and road easements, as well as a 1.55-acre conservation easement proposed for inclusion in the Bank.



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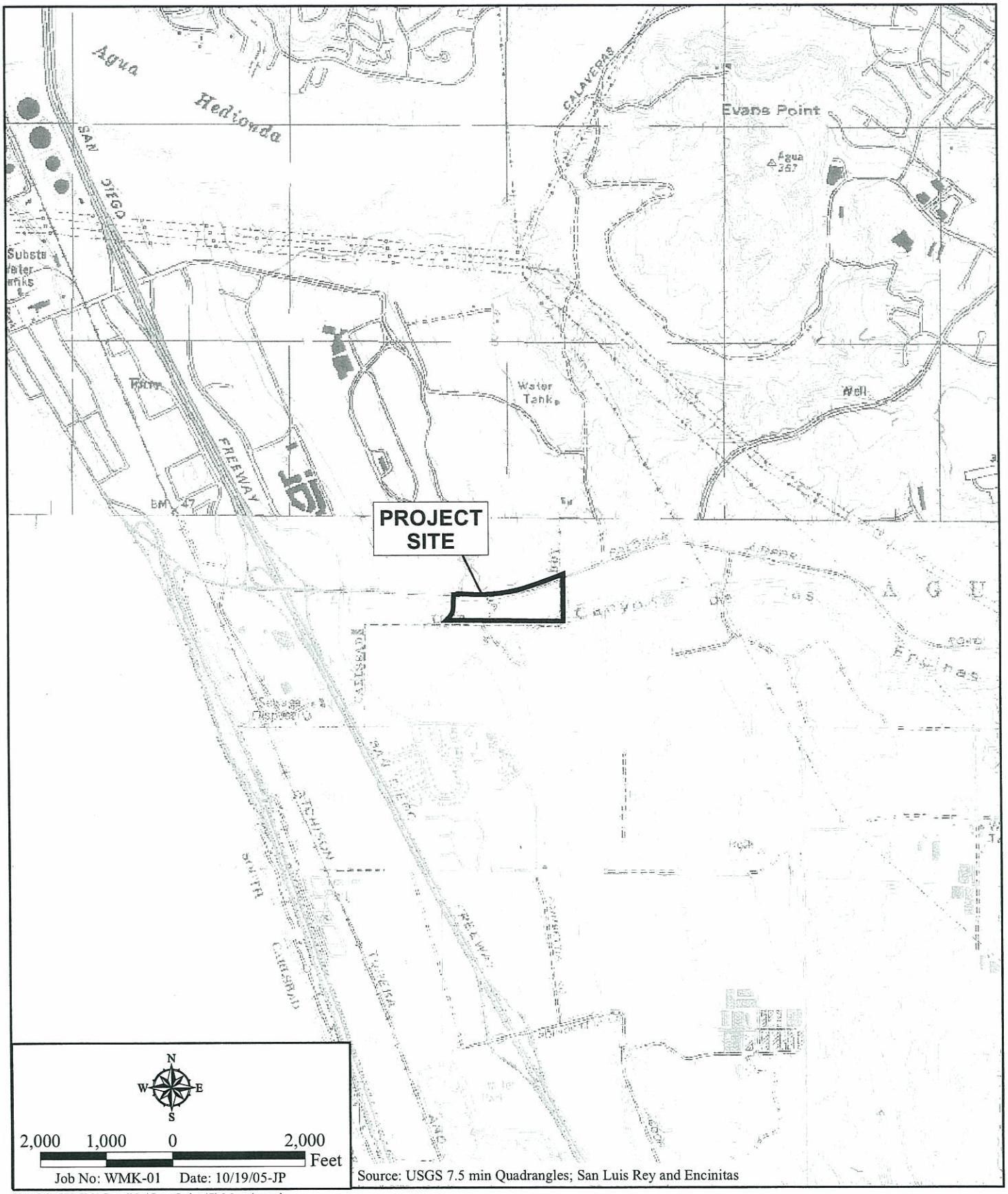
Regional Location Map

NORTH COUNTY HABITAT BANK

HELIX

Figure 1



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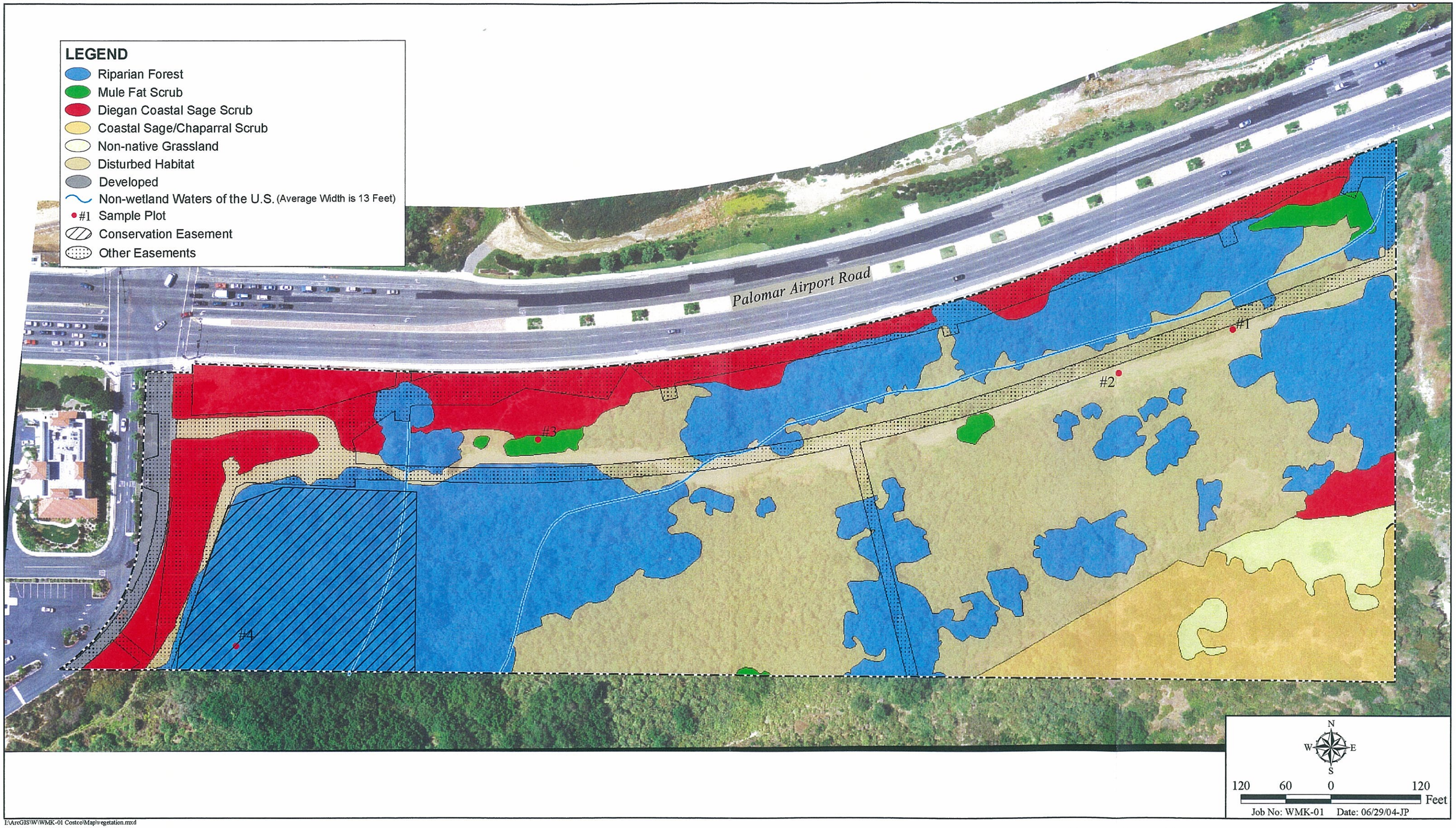
Project Location Map

NORTH COUNTY HABITAT BANK

HELIX

Figure 2



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Existing Vegetation and Easements

NORTH COUNTY HABITAT BANK

HELIX

Figure 3

Table 1 EXISTING VEGETATION COMMUNITIES	
VEGETATION COMMUNITY	Acres*
Riparian forest	6.57
Mule fat scrub	0.21
Freshwater marsh	+
Diegan coastal sage scrub	1.01
Coastal sage scrub/chaparral	1.38
Non-native grassland	0.45
Disturbed habitat	6.07
TOTAL	15.69

*Areas are given in approximate acreage.
+Occurs within the 18.7-acre property boundary but outside of the Bank.

3.1.1 Riparian Forest

Riparian forest consists of dense, broad-leaved, winter-deciduous stands of trees dominated by mature willows (*Salix* sp.). On site, the dominant species are black willow (*Salix gooddingii*) and arroyo willow (*Salix lasiolepis*), with an understory of mule fat (*Baccharis salicifolia*). Herbaceous components of riparian forest on site include western ragweed (*Ambrosia psilostachya*), California blackberry (*Rubus ursinus*), and yerba mansa (*Anemopsis californica*).

3.1.2 Mule Fat Scrub

Mule fat scrub is a riparian shrub community dominated by mule fat. The understory includes western ragweed and ox-tongue (*Picris echioides*).

3.1.3 Freshwater Marsh

Freshwater marsh is dominated by perennial, emergent monocots that can reach a height ranging from 12 to 15 feet. Cattail (*Typha latifolia*) is the dominant plant species in this habitat type. These areas are permanently flooded by freshwater yet lack a significant current (Holland 1986).

3.1.4 Diegan Coastal Sage Scrub

Diegan coastal sage scrub is a sensitive vegetation community and a southern California subset of coastal sage scrub. Coastal sage scrub is one of the major shrub communities that occur in California. The Diegan coastal sage scrub on the site includes California sagebrush (*Artemisia californica*), laurel sumac (*Malosma laurina*), lemonadeberry (*Rhus integrifolia*), California buckwheat (*Eriogonum fasciculatum*), and California encelia (*Encelia californica*). Diegan coastal sage scrub is considered a sensitive resource by several resource agencies, including the City (1999), CDFG (Holland 1986), and

USFWS because it supports many sensitive plants and animals and because it is declining due to development and other factors.

3.1.5 Coastal Sage Scrub/Chaparral

Coastal sage scrub/chaparral is a habitat type where two habitats, Diegan coastal sage scrub and chamise or southern mixed chaparral co-dominate. Chaparral is composed of broad- and thick-leaved shrubs that grow to about six to ten feet tall and form dense and often nearly impenetrable stands. Coastal sage scrub/chaparral has these components, but is much more open with integrations of Diegan coastal sage scrub. Plant components of coastal sage scrub/chaparral include chamise (*Adenostoma fasciculata*), lemonadeberry, mission manzanita (*Xylococcus bicolor*), scrub oak (*Quercus* sp.), California sagebrush, and flat-top buckwheat (*Eriogonum sasciculatum*).

3.1.6 Non-native Grassland

Non-native grassland consists mostly of annual rather than perennial grasses that are characteristically associated with flowering forbs. The dominant species in non-native grasslands are mediterranean, introduced species.

3.1.7 Disturbed Habitat

Disturbed habitats are lacking in vegetation or dominated by weedy species, primarily pampas grass. Disturbed areas occur as a result of past agriculture or development.

3.2 WETLANDS AND WATERS OF THE U.S.

Three wetland/riparian vegetation communities occur on site: riparian forest, freshwater marsh-disturbed, and mule fat scrub (Figure 3; Table 2). A total of 0.05 acre of ACOE jurisdictional non-wetland Waters of the U.S., and 6.83 acre of CDFG jurisdictional areas occur on site (Figure 3).

Table 2
JURISDICTIONAL AREAS

HABITAT	JURISDICTIONAL AREAS	
	ACOE	CDFG
Riparian forest	--	6.57
Mule fat scrub	--	0.21
Waters of the U.S./Streambed	0.05	0.05
TOTAL	0.05	6.83

3.2.1. Description of Sample Points

Sample Point 1. This sample point was taken in the eastern portion of the property in freshwater marsh habitat. Hydrological criteria was met by indicators of current inundation. Wetland vegetation was present, with cattail being the dominant plant species. This point was in a wetland.

Sample Point 2. This sample point was taken in the eastern portion of the property just west of sample point 1 in an area mapped as disturbed habitat. There were no primary or secondary wetland hydrology indicators. Wetland vegetation was not met, as pampas grass was the dominant species. Hydrological criteria were not met as there were no saturated soils in the upper 14 inches. Soils exhibited upland characteristics (i.e., 10.5 YR 3/2) with no mottling. This point was not in a wetland.

Sample Point 3. This sample point was taken in the western portion of the property in an area mapped as mule fat scrub. Hydrological criteria were not met, and no wetland vegetation was present. Soils were 10 YR 5/4. This point was not in a wetland.

Sample Point 4. This sample point was taken in the southwestern portion of the property in an area mapped as riparian forest. Hydrological criteria were not met.

3.3 SENSITIVE PLANT SPECIES

There are no known occurrences of sensitive plant species from the site. If present, sensitive plant species would almost certainly occur in the sage scrub, sage scrub/chaparral, and grassland habitats. These areas are not proposed to be enhanced. Rare plant surveys would be conducted once the Bank is formally established.

3.4 SENSITIVE ANIMAL SPECIES

As noted above, the least Bell's vireo is known to have occupied the site fairly recently. Several other riparian-dependant species including yellow-breasted chat (*Icteria virens*), and yellow warbler (*Dendroica petechia*), have a high probability of occurring on site. The site may also be used by several raptor species including Cooper's hawk (*Accipiter cooperii*). A number of upland-dependant species may occupy the Diegan coastal sage scrub, sage scrub/chaparral, and grassland habitats. Focused surveys for the least Bell's vireo and coastal California gnatcatcher (*Polioptila californica californica*) will be conducted during the spring of 2004.

4.0 REGULATORY CONTEXT

Biological resources are subject to regulatory review by the City, USFWS, and CDFG. The federal government administers non-marine plant and wildlife related issues through the USFWS, while wetlands and Waters of the U.S. issues are administered by ACOE. California law relating to wetland, water-related, and wildlife issues is administered by the CDFG.

4.1 FEDERAL GOVERNMENT

Sections 7 and 10(a) of the federal ESA regulate actions that could jeopardize endangered or threatened species. Section 7 allows issuance of permits for 'incidental' take of endangered or threatened species. The term 'incidental' applies if the taking of a listed species is incidental to, and not the purpose of, an otherwise lawful activity. The project may require a Section 7 Consultation if any listed species are observed on the site. For purposes of the mitigation banking process on this project, the applicant is assuming that a Section 7 Consultation will be required, and will be processing this through the ACOE permit process.

Nesting raptors, such as red-tailed hawks (*Buteo jamaicensis*) and burrowing owls (*Speotyto cunicularia*), are protected under the Federal Migratory Bird Treaty Act (MBTA). This law is generally protective of migratory birds but does not actually stipulate the type of protection required. Any wetland restoration work on site will avoid impacts to nesting raptors.

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the Clean Water Act. The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of all Waters of the U.S. Permitting for projects filling Waters of the U.S. is handled by the ACOE under Section 404 of the Clean Water Act. A 404 permit will be required for implementation of the Bank.

4.2 STATE OF CALIFORNIA

The California ESA is similar to the federal ESA in that it contains a process for listing of species and regulating potential impacts to listed species. Section 2081 of the California ESA authorizes CDFG to enter into a memoranda of agreement for take of listed species for scientific, educational, or management purposes.

The California NCCP Act (Section 2835) allows the CDFG to authorize take of species covered by plans in agreement with NCCP guidelines. An NCCP initiated by the State of California under Section 4(d) of the federal ESA focuses on conserving Diegan coastal sage scrub in order to avoid the need for future federal and state listing of Diegan coastal sage scrub-dependent species. The coastal California gnatcatcher is presently listed as threatened under the federal ESA, while several additional species inhabiting Diegan coastal sage scrub are candidates for federal listing. Any impacts to Diegan coastal sage scrub would require take authorization through either Section 7 of the ESA, or through the City's MHCP subarea plan.

The CDFG Code (Sections 1600-1602 [formerly 1603]) requires agreement with CDFG for projects affecting riparian and wetland habitats through issuance of a Streambed Alteration Agreement. The Bank will require a 1602 Streambed Alteration Agreement.

The California Environmental Quality Act (CEQA) and its implementing guidelines require projects that potentially have significant effects (or impacts) on the environment to be submitted for environmental review. The City is the lead agency under CEQA. Significant impacts to the environment are typically mitigated through the environmental review process, in accordance with existing laws and regulations. The City will make the determination on the necessary CEQA documentation for the project.

4.3 CITY OF CARLSBAD

The City Habitat Management Plan has been in preparation since 1990 and is now a finalized NCCP subarea plan, addressing potential impacts to native species and habitats (and some non-native habitats) while at the same time providing mitigation options that satisfy the federal and state ESAs. The primary objective of the HMP is to allow development while identifying and maintaining a preserve system that allows for the sustained existence of animals and plants at both the local and regional levels. The HMP preserve is a network of large habitat blocks with interconnecting linkages. The Bank is within Local Facility Management Zone (LFMZ) 5 of the HMP. The southern portion of the site is shown as a hardline preserve by the HMP, although no conservation easement or long-term management is in place. The proposed Bank would expand the hardline preserve in this location, and would provide assurances for long-term management of the site.

5.0 BANKING PROPOSAL

The banking proposal will consist of three parts: 1) wetland habitat creation; 2) wetland habitat preservation; and 3) upland preservation.

5.1 WETLAND CREATION

Currently significant portions of the floodplain portion of the site are dominated by pampas grass. Riparian habitat occurs where there has not been past disturbance to allow the pampas grass to invade. The disturbed habitat areas will be cleared of the pampas grass and other non-native species, grading down to improve wetland hydrology, and restored to wetland and riparian habitats. Species used in the restoration will be consistent with those species found in adjacent habitats. A combination of container stock and cuttings will be used for woody species, while a native seed mix will be used for herbaceous species. A final decision will be made on whether artificial irrigation will be used for the site prior to initiating the restoration effort. The wetland creation areas will be maintained throughout the initial restoration process, and will be incorporated into the long-term management plan for the site upon meeting success criteria. Banking credits will be based on the level of success achieved in the restoration effort.

5.2 WETLAND PRESERVATION

All existing wetland and riparian habitats will be preserved and managed in perpetuity. Portions of these areas have a weedy component and will be enhanced through removal of the weedy species and restoring the disturbed areas. Banking credits will be their full value at the initiation of the Bank Agreement.

5.3 UPLAND PRESERVATION

All existing upland habitats will be preserved and managed in perpetuity. Portions of these areas have a weedy component and will be enhanced through removal of the weedy species and restoring the disturbed areas. Banking credits will be their full value at the initiation of the Bank Agreement.

5.4 LONG-TERM MANAGEMENT

The entire site will be managed for biological resources through the development of a long-term management plan for the site. Funding of the long-term plan will be provided through the sale of mitigation credits. Long-term management shall include access control to the site, annual weed maintenance, trash removal, habitat monitoring, and annual monitoring reports. Long-term management will be conducted by a management entity acceptable to the City and resource agencies.

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