Big Canyon Creek Restoration Project

Revised Initial Study

NEWPORT BEACH, ORANGE COUNTY, CALIFORNIA

Lead Agency:

City of Newport Beach
3300 Newport Blvd.
Newport Beach, CA 92663
Contact: David Kiff, City Manager
Phone: 949-644-3002

Prepared for:

Mr. Mark Reader, Project Manager
Public Works Department
City of Newport Beach
3300 Newport Blvd.
Newport Beach, CA 92663
Phone: 949-981-5260

Date:

June 2009

wra
ENVIRONMENTAL CONSULTANTS

2169-G East Francisco Blvd., San Rafael, CA 94901 (415) 454-8868 tel (415) 454-0129 fax info@wra-ca.com www.wra-ca.com

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

TECHNICAL APPENDICES

CHAPTER 1- DOCUMENT SUMMARY

1.1 DOCUMENT PURPOSE AND ORGANIZATION

The purpose of this document is to evaluate the potential environmental effects of the proposed Big Canyon Creek Restoration Project. The Initial Study/Revised Mitigated Negative Declaration (IS/RMND) has been prepared by the City of Newport Beach to evaluate the potential environmental effects of the proposed Big Canyon Creek Restoration Project in Newport Beach, Orange County, California. This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code §21000 *et seq*., and the State CEQA Guidelines, California Code of Regulations (CCR) §15000 *et seq*. Mitigation measures have been incorporated into the project to eliminate any potentially significant impacts or reduce them to a less-than-significant level.

In addition, the purpose of this document is to allow the City of Newport Beach to determine whether or not to adopt the IS/RMND and to approve the proposed project. This document is organized as follows:

- Chapter 1 – Introduction. This chapter provides an introduction to the project and describes the purpose and organization of this document.

- Chapter 2 – Project Description. This chapter describes the reasons for the project, scope of the project, and project objectives.

- Chapter 3 Section I-XVI – Environmental Setting, Impacts, and Mitigation Measures. This chapter identifies the significance of potential environmental impacts, explains the environmental setting for each environmental issue, and evaluates the potential impacts identified in the CEQA Environmental (Initial Study) Checklist. Mitigation measures are incorporated, where appropriate, to reduce potentially significant impacts to a less than significant level.

- Chapter 3 Section XVII – Mandatory Findings of Significance. This chapter identifies and summarizes the overall significance of any potential impacts to natural and cultural resources, cumulative impacts, and impact to humans, as identified in the Initial Study.

- Chapter 4 – References. This chapter identifies the references and sources used in the preparation of this IS/MND.

1.2 REGULATORY GUIDANCE

An Initial Study is conducted by a lead agency to determine if a project may have a significant effect on the environment [CEQA Guidelines §15063(a)]. If there is substantial evidence that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) must be prepared, in accordance with CEQA Guidelines §15064(a). However, if the lead agency determines that revisions in the project plans or proposals made by or agreed to by the applicant mitigate the potentially significant effects to a less-than-significant level, a Mitigated Negative Declaration may be prepared instead of an EIR [CEQA Guidelines §15070(b)]. The lead agency prepares a written statement describing the reasons a proposed project would not have a significant effect on the environment and, therefore, why an EIR need not be prepared. This IS/RMND conforms to the content requirements under CEQA Guidelines §15071.

1.3 DOCUMENT BACKGROUND

A Mitigated Negative Declaration (MND) for the Big Canyon Restoration Plan was prepared and adopted by the City of Newport Beach City Council in September 2007. The original MND was based on a 2006 feasibility report prepared by WRC Consulting. Comments subsequently received during the resource agency permitting process raised concerns regarding protection of sensitive habitats and species as well as high levels of selenium in the Project Area. As a result of these comments, the Project has been redesigned to address these concerns. Design modifications have been developed specifically to address potential indirect impacts to the federal and state endangered salt marsh bird's beak (*Cordylanthus maritimus* ssp *maritimus*). The berm that currently supports Back Bay Road and that separates the tidal marsh from the existing freshwater marsh will remain intact except for an approximately 50-foot wide opening in the same location as the existing concrete dip crossing to allow tidal flow into the new tidal marsh area. Asphalt from the existing Back Bay Road roadbed will be removed and the remaining dirt berm will be planted with Coastal Sage Scrub species.

Design modifications have also been developed to improve water quality and reduce the amount of selenium entering the Project Area, including a sedimentation pond in the upper (eastern) end of Big Canyon. Finally, the redesigned restoration plan includes a freshwater pond system intended to mitigate for impacts to the existing freshwater marsh. This freshwater pond will be out of the line of Big Canyon Creek flows to avoid further accumulation of selenium in the freshwater system. Impacts to the freshwater marsh will also be mitigated by creation of the upper sedimentation pond and planting of tidal marsh vegetation on the western side of the new Back Bay Road. The Project will be completed in two stages to allow for freshwater marsh habitat development before the existing freshwater marsh is converted to tidal marsh. A Habitat Restoration Plan has been prepared for the proposed project (LSA Associates, 2009) which details the restoration work and planting specifications for the project and is included in Appendix A of this document.

1.4 LEAD AGENCY

The City of Newport Beach is the lead agency for preparation of environmental documentation in compliance with CEQA. The lead agency is the public agency with primary approval authority over the proposed project. In accordance with CEQA Guidelines §15051(b)(1), "the lead agency will normally be an agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose." The lead agency for the proposed project is the City of Newport Beach. The contact person for the lead agency regarding specific project information is:

Mr. Mark Reader, Project Manager
Public Works Department
City of Newport Beach
3300 Newport Blvd
Newport Beach, CA 92663
Phone: 949-981-5260
Email: mereader48@sbcglobal.net

Questions or comments regarding this IS/MND should be submitted to:

Mr. Mark Reader, Project Manager
Public Works Department
City of Newport Beach
3300 Newport Blvd
Newport Beach, CA 92663
Phone: 949-981-5260
Email: mereader48@sbcglobal.net

Submissions must be in writing and postmarked or received by fax or email within 30 days of the initial document circulation date. The originals of any faxed documents must be received by regular mail within ten (10) working days following the deadline for comments, along with proof of successful fax transmission. Email or fax submissions must include full name and address.

1.5 SUMMARY OF FINDINGS

Chapter 3 of this document contains the Environmental (Initial Study) Checklist that identifies the potential environmental impacts (by environmental issue) and a brief discussion of each impact resulting from implementation of the proposed project. Based on the IS and supporting environmental analysis provided in this document, the proposed Big Canyon Creek Restoration Project would result in impacts that are less than significant with mitigation related to air quality, biological resources, geology and soils, hydrology and water quality, and noise. The project would result in less-than-significant impacts for the following issues: aesthetics, cultural resources, hazardous materials, land use and planning, recreation, transportation/traffic and utilities and service systems and would have no impact on agricultural resources, mineral resources, population and housing and public services.

In accordance with §15064(f) of the CEQA Guidelines, an MND shall be prepared if the proposed project will not have a significant effect on the environment after the inclusion of mitigation measures in the project. Based on the available project information, and the environmental analysis presented in this document, there is no substantial evidence that, after the incorporation of mitigation measures, the proposed project would have a significant effect on the environment. It is proposed that a Revised Mitigation Negative Declaration be adopted in accordance with the CEQA Guidelines.

CHAPTER 2 - PROJECT DESCRIPTION

2.1 PROJECT INTRODUCTION

Big Canyon Creek Restoration Project (Project Area) is located in the City of Newport Beach, Orange County, California (Figure 1-Location map). Big Canyon Creek Watershed covers approximately 1,280 acres and drains directly into Upper Newport Bay. The creek flows from southeast to northwest through the 60-acre Big Canyon Creek Nature Park, ultimately draining into Upper Newport Bay. The lower portion of Big Canyon is within the Upper Newport Bay State Ecological Reserve. Big Canyon is the only natural, undeveloped portion of the Big Canyon Creek watershed, and the only significant remaining natural canyon on the east side of Newport Bay.

2.2 PROJECT PURPOSE AND NEED

Natural tidal flow into Big Canyon was impeded in the mid-1900s with the construction of Back Bay Drive and placement of dredged materials from Upper Newport Bay, both of which effectively created a barrier and eliminated more than five acres of tidal wetlands. There has been significant habitat degradation throughout the canyon due to decades of dredged fill, invasive non-native plants from surrounding developed areas, erosion, and lack of a comprehensive plan. Dredged materials placed in Big Canyon have resulted in large areas of saline and infertile soils, which cannot support native plant communities. A freshwater pond was constructed in the early 1980s but is now a very shallow marsh filled with sediment. The pond water is characterized by temperatures too high to support native aquatic animal populations.

Newport Bay is listed as an impaired water body under the federal Clean Water Act (CWA) due to the high levels of constituents of concern flowing into the Bay including high levels of selenium. Unfiltered urban runoff carried by Big Canyon Creek is a water quality issue having potential negative impacts on Upper Newport Bay and the nearly 500 species of animals, fish and plants that reside in the Bay.

The Big Canyon Nature Park has been heavily used by local communities for passive recreation and by the Orange County Department of Education for outdoor education. It is an integral part of the Upper Newport Bay ecological preserve and provides unique opportunities for the public to learn about the diversity of biological resources and environmental protection within a short walking distance.

The project intends to achieve the following objectives:

- Restore historic tidal marsh habitat
- Preserve, restore and create habitat for special status species
- Improve water quality by reducing the level of selenium flowing into the Bay
- Reduce flood/erosion/sedimentation damage

- Encourage public participation and provide education

2.3 PROJECT AREA BACKGROUND

The Project is located between Jamboree Road and Back Bay Drive, approximately one mile north of Coast Highway along the east shore of Upper Newport Bay. The Project Area occupies a 60-acre area that consists of a nature park bounded by residential developments on bluffs to the north and south. The Project Area is bounded by Upper Newport Bay to the west and Jamboree Road to the east. A small parking lot, information kiosk, and Upper Newport Bay are located west of Back Bay Drive within the tidal zone. Land uses vary within and adjacent to the Project Area and include residential areas, golf courses, paved and unimproved roads, power lines, and commercial developments. Relatively undisturbed natural areas associated with the Upper Newport Bay Ecological Reserve are present within and to the north, south, and west of the Project Area.

The Project Area is characterized topographically by steeply sloping bluffs and a narrow moderately sloped floodplain; slopes range in elevation from 20 to 75 feet above mean sea level (msl) and the canyon creek ranges in elevation from below mean sea level to 25 feet msl. A perennial stream area is present within the Project Area and supports riparian species. An artificial dam and freshwater pond are located east of Back Bay Drive.

Many of the existing plant communities are fragmented, discontinuous, and threatened by invasive weeds such as Brazilian peppertree (*Schinus terebinthifolius*) and myoporum (*Myoporum laetum*). Native plant communities in the upper part of Big Canyon include arroyo willow scrub, alkali meadow, freshwater marsh, and sagebrush scrub. The lower (western) portion of the canyon is dominated by a large area of freshwater marsh, along with cottonwood-willow riparian forest, alkali meadow, brackish marsh, mulefat scrub, alkali grassland, chenopod scrub, coyote brush scrub, and sagebrush scrub. The canyon slopes contain areas of coastal bluff scrub and coyote brush scrub.

The tidal wetlands on the bayside of Back Bay Drive are dominated by saltmarsh, with smaller areas of alkali grassland, alkali meadow, alkali marsh, brackish marsh, mulefat scrub and sagebrush scrub along the edges of the roadway. Mudflats and shallow tidal channels are present in Upper Newport Bay.

Big Canyon provides habitat for protected plant and wildlife species. A large population of the federally endangered (FE) and state endangered (SE) salt marsh bird's beak (SMBB; *Cordylanthus maritimus* ssp., *maritimus*) is present at the mouth of Big Canyon Creek in salt marsh and sandy flats. Big Canyon also presently provides habitat for the California Native Plant Society (CNPS) List 1.B Southern tarplant (*Hemizonia parryi* spp. *australis*), Southwestern spiny rush (*Juncus acutus* spp. *leapoldii*, CNPS List 4), California boxthorn (*Lycium californicum*, CNPS List 4), Estuary seablite (*Suaeda esteroa*; CNPS List 1B), Woolly seablite (*Suaeda taxifolia*; CNPS List 4), Beldings savannah sparrow (*Passerculus sandwichensis*; ST), California brown pelican (*Pelicanus occidentalis*; FE, SE), Light-footed clapper rail (*Ralius longirostris levipes*; FE, SE), California least tern (*Sterna antilarum browni*; FE, SE), and Coastal California gnatcatcher (*Polioptila californica californica*; FT, CSC). A Technical Biological Report has been prepared for the property (Keane Biological Consulting, 2004) which describes the habitats and species associated with the project site. The biological report is included in Appendix B.

2.4 PROJECT CHARACTERISTICS

The Location Map, Grading Plan (Figure 2), and Project Cross Sections (Figures 3-5) are attached for reference. The Big Canyon Creek Restoration Project will occur in two phases. The first phase is slated to begin in September, 2009 and last through February, 2010. The second phase will occur from September, 2010 through February, 2011.

The following work is proposed for the first phase:

- **Freshwater pond:** An approximately 2-acre freshwater pond is planned adjacent to Big Canyon Creek. The pond will replace an existing freshwater pond that will be filled for the realignment of Back Bay Drive to restore historic tidal marsh. The new pond will be lined with a 40-milliliter PVC plastic liner and have a potable water source via a supply water line connection to a 16-inch municipal water line in Jamboree Road. The pond will be hydrologically separated from Big Canyon Creek in order to prevent selenium-laden creek flows and soil from contaminating it. Approximately 47,310 cubic yards (4.35 acres) of material will be excavated and 34,650 cubic yards (2.29 acres) of fill material will be used to create the freshwater pond. About half of the perimeter of the freshwater pond will contain a shallow bench to support marsh planting. An island in the center of the pond will be planted with riparian and wetland plants and will provide opportunities for western pond turtle (*Actinemys marmorata pallida*) basking.

  The freshwater pond will require minimal maintenance including sediment/organic matter removal and vector control as needed. Maintenance activities will also take place as needed to ensure that the circulation and aeration devices are functioning properly.

- **Interpretive area pad:** A rough-graded pad will be created at the interpretive area for construction staging. The interpretive area access road will also be rough graded to provide construction access to the freshwater pond grading area.

- **Access road from Jamboree Road:** An access road will be built at the north end of the Project Area. The access road will be 15 feet wide. A 15-foot wide maintenance road running along the cliff side of the proposed pond from the interpretation area and connecting the existing maintenance road will also be created. A 10-foot wide trail will be built between the proposed freshwater pond and flood conveyance control along with a six-foot wide minor trail along the northerly side of the flood conveyance near the riparian spillway.

The following work is proposed for the second phase of the project and is described in full detail in Appendix A of this document:

- **Regrading Big Canyon Creek:** Approximately 40,635 cubic yards (4.29 acres) of material will be excavated and 12,515 cubic yards (0.72 acre) of fill used to regrade Big Canyon Creek. The new flood control conveyance channel will be approximately 140 feet wide with a minimum depth of nine feet and a maximum depth of 16 feet. The longitudinal channel slope will be graded to two percent and the side slopes will be at a 2:1 ratio. The channel bed and banks substrate will be native soil and native riparian woodland species will be planted along the broad flood plain and up the channel banks.

- **Restoration of historic tidal marsh and Back Bay Drive realignment:** The historic tidal wetlands at the mouth of Big Canyon Creek will be restored by dredging and realigning the existing Back Bay Drive inland along the historic extent of tidal marsh. The existing Back Bay Drive berm will be left in place to protect existing populations of salt marsh bird's beak, but the asphalt and concrete associated with the road and parking lot will be removed. The existing berm and restored paving area will be planted with coastal sage scrub vegetation. Back Bay Drive will be realigned to the vicinity of the historical tidal inundation boundary, which is approximately 500 feet from the existing road at the maximum inland extent. To avoid flow concentration and provide better transition from tidal marsh to Big Canyon Creek, a series of four culverts, each approximately 5 feet high and 10 feet wide and 63 feet long, is planned under the realigned Back Bay Drive. The new road will maintain the same width for pavement of 20 feet following the alignment of the existing maintenance road and trail dike. The length of road will increase from 1,000 to 1,620 linear feet for the improved reach. Approximately 2.93 acres of existing freshwater marsh will be impacted by realigning Back Bay Drive and restoring the tidal marsh.

  Approximately 107,400 cubic yards of soil will be excavated (6.46 acres) and 63,100 cubic yards (5.32 acres) of fill will be required to realign Back Bay Drive and restore the tidal marsh. As a result, approximately 3.6 acres of additional salt marsh habitat will be created, including low marsh, high marsh, and mud flat. Salt marsh plantings will be installed in the newly created habitat. The restored tidal marsh will improve the transition between freshwater and saltwater habitat, enhance habitat for benthic invertebrates, and increase habitat diversity and complexity.

Restoration of the tidal marsh will substantially increase benthic biological productivity as a consequence of the introduction of tidal creeks, mudflats, salt marsh habitat, and transitional brackish water connecting the tidal habitats. Invertebrate species likely to colonize the area will be similar in species composition to that which occurs along the existing mudflats and tidal channels in the vicinity of Big Canyon. These species are likely to include opportunistic species such as polychaetes (*Polydora nuchalis*, *Streblospio benedicti* and *Polydora cornuta*), oligochaetes, and amphipods (*Grandidierella japonica* and *Monocorophium acherusicum*). Larger tidal marsh and mudflat marsh invertebrates will include California horn snails (*Cerithidea californica*), yellow shore crabs (*Hemigrapsus oregonensis*), and fiddler crabs (*Uca crenulata*).

- **Freshwater marsh creation:** At the downstream end of the flood conveyance channel, a shallow freshwater marsh will be created. The marsh will be planted with rush and wetland grass species. The restored freshwater marsh habitat is expected to support dragonflies, raccoons, and a variety of invertebrates, amphibians, and birds. Amphibians that may use the marsh and associated freshwater aquatic habitat include Pacific treefrog and western pond turtle. Bird species relying on the freshwater marsh habitat may include pied-billed grebe (*Podilymbus podiceps*), great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), mallard (*Anas platyrhynchos*), American coot (*Fulica americana*), greater yellowlegs (*Tringa melanoleuca*), song sparrow (*Melospiza melodia*), and red-winged blackbird (*Agelaius phoeniceus*).

- **Access trails, roadways, parking, and interpretive center:** The project is intended to enhance public use and educational opportunities as well as provide coordinated trail access and interpretive signage. Included in the plan are trails, roadways, parking, and interpretive areas. The components of the plan were identified to meet public and interpretive education needs to the greatest extent possible while not impacting restoration goals or practical considerations (e.g., access to sewer line for necessary maintenance).

  The existing parking lot (24,000 square feet and 35 parking stalls) and restroom facilities (2 to 4 portable toilets) will be moved out of the sensitive tidal wetlands area and relocated to the existing disturbed area between the previously mitigated and enhanced coastal sage scrub and the degraded freshwater marsh. The proposed parking will have capacity similar to that of the existing parking (36 stalls). Additionally, there will be six overlook areas along the trail and roads as rest stops where visitors can observe key natural features of the restored canyon and watch birds. Materials excavated during tidal marsh restoration and other activities will be reused at the central interpretive area to the maximum extent possible.

During the two phases of the project, new planting and removal of invasive exotic species under the restoration project will facilitate restoration of tidal marsh, freshwater marsh, riparian and upland habitats. Dense infestations of Brazilian peppertree and myoporum and other invasive exotic species will be removed in riparian, coastal sage scrub and alkali meadow habitats. Spot removal of exotic species will be applied to portions of woodland, riparian scrub, and coastal sage scrub with less dense infestations. Native vegetation will be planted in place of the removal exotic species.

Approximately 5.6 acres of riparian habitat will be impacted by this project largely as the result of creating the freshwater pond. However, approximately 7.1 acres of new riparian will be created, providing a net increase of 1.5 acres of riparian habitat resulting from this restoration project.

CHAPTER 3 - ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

I. AESTHETICS

Environmental Setting

The Project Area provides great views of Upper Newport Bay and tidal flats, freshwater marsh, and coastal bluffs. Views and aesthetics will be further enhanced with the proposed project.

IMPACT **WOULD THE PROJECT**:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion

a) The proposed project would not impact scenic vistas. Restoration activities proposed for the project would in the long-term improve the visual character of the area. Scenic overlooks at the north edge of the restored tidal wetlands, on the new berm at Back Bay Drive, at the southern end of the new freshwater pond and at the upper end of the freshwater pond would provide views of the restored canyon.

b,c)The Project Area is located approximately one mile north of Coast Highway. Relatively undisturbed natural areas associated with the Upper Newport Bay Ecological Reserve surround the Project Area to the north, south, and west. Temporary impacts to views of these surrounding scenic resources during restoration activities would be less than significant due to their limited duration.

d) The proposed project would not create a new source of substantial light or glare. No additional lighting is proposed as part of the Project.

Mitigation Measure Aesthetics:

- **None Required**

II. AGRICULTURAL RESOURCES

Environmental Setting

The proposed Project is located within an urbanized area consisting of a nature park bounded by residential developments, golf courses, commercial developments and the Upper Newport Bay Ecological Reserve. The Project Area does not contain any farmlands.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT*:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	☐	☐	☐	☒

*In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997), prepared by the California Department of Conservation as an optional model for use in assessing impacts on agricultural and farmland.

Discussion

a, b, c) The proposed Project would not convert prime farmland, unique farmland, or farmland of statewide importance. The Project would also not conflict with existing zoning for agicultural use or a Williamson Act contract, or result in the conversion of any Farmland to non-agricultural uses. No impacts would occur.

Mitigation Measure Agricultural Resources:

- **None Required**

III. AIR QUALITY

Environmental Setting

The South Coast Air Quality Management District (SCAQMD) governs air quality in the South Coast Air Basin, which includes Orange County and portions of Los Angeles, Riverside and San Bernardino Counties. Air pollution is significant in this region due to high population density (approximately 15 million people), and tends to stagnate within this basin due to natural barriers, such as mountains. SCAQMD has a comprehensive strategy for reducing air pollution from all sources to compliance with federal and state health-based standards.

Ambient air monitoring data indicate that the South Coast area is currently in nonattainment status for two of six criteria air pollutants listed in the Clean Air Act: ozone (8-hour standard) and small particulate matter ($PM_{2.5}$). The remaining criteria air pollutants are carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. SCAQMD has attained federal and state standards for all these pollutants, as well as for larger particulate matter (PM_{10}[10]).

WOULD THE PROJECT*:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Conflict with or obstruct implementation of the applicable air quality plan or regulation?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations (e.g., children, the elderly, individuals with compromised respiratory or immune systems)?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

*Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make these determinations.

Discussion

a) The Project will not conflict with or obstruct implementation of any applicable air quality plans or regulations. The project area is governed by the Southern California Air Quality Management Plan. The region currently exceeds standards for ozone and $PM_{2.5}$. The most significant sources of these pollutants are vehicle and other mobile source emissions. This Project will restore a degraded tidal wetland and creek watershed area for ecological value and public use. The functioning of this natural area will not generate air emissions nor obstruct implementation of air quality plans.

b) The South Coast region is currently in violation of air quality standards for ozone and PM2.5, and is anticipated to reach attainment in 2010. The Project is not expected to result in significantly increased air emissions during operations. During construction and restoration operations, dust resulting from vehicle travel and fuel combustion from vehicles may cause locally increased levels of particulate matter. Approximately 75,000 cubic yards are expected to be excavated and 50% of this amount (40,000 cubic yards) will need to be hauled off during the creation of the tidal wetlands. Removal of dredge material is expected to begin in 2009 and will take approximately 125 days per year for two years. These materials are to be disposed of at Frank R. Bowerman Landfill at 11002 Bee Canyon Access Road, Irvine, CA, approximately 15 miles from the Project Area. The haul route will be from the site to Bee Canyon Access Road via Jamboree Road, Ford Road/Bonita Canyon Road, University/Jeffrey Road, and Portola Parkway. Approximately 20 cubic yards of material would be hauled per truck, eight truck trips per day in average. This may yield approximately 0.24 lb PM2.5 emitted per day (SCAQMD 2007) in average for the duration of the removal process.

As an alternative to 125 days of work conducted each year for two years, excess material may be removed during a shorter duration. Additionally, transportation of other construction materials may occur; therefore it is necessary to define maximum truck traffic allowance per day in the construction specifications. For 40 truck trips per day maximum, the maximum daily PM2.5 emission level may be increased to 1.20 lb/day. This value is significantly less than 760 lb/day which is the average PM2.5 emission level for heavy diesel trucks across Orange County, (CARB 2006). Based on this analysis, potential emissions from truck traffic associated with this project would represent insignificant sources of pollutant contributing to the overall PM2.5 emissions. Nonetheless, because the South Coast airshed is a nonattainment area for PM2.5, mitigation should be employed to minimize particulate emissions during construction (MMAQ-1). (SCAQMD 2003, SCAQMD 2007, California Air Resources Board 2006).

c) The Project is not expected to result in a cumulatively considerable net increase in air emissions during operations. However, construction may cause locally increased dust emissions from vehicle travel, as discussed in b) above. The South Coast area is a nonattainment area for $PM_{2.5}$, and

therefore mitigation measure should be employed to minimize particulate emissions (MMAQ-1).

d) The Project will not expose sensitive human receptors to substantial pollutant concentrations. There are no residences in Big Canyon, and best management practices will be used to curtail locally increased dust levels resulting from construction, so there will be minimal off-site transfer of particulate matter from the site.

e) The Project will not create objectionable odors impacting a substantial number of people. There are no residences within the Big Canyon area, and odor emissions will not be changed after implementation of the restoration project.

Mitigation Measures Air Quality:

MMAQ-1:

- Best management practices (BMPs) shall be employed to minimize dust emissions from vehicle travel during site restoration. Dust control BMPs shall include the following:

    - Cover all trucks hauling soil and other loose materials or require all trucks to maintain at least two feet of freeboard.
    - Roadways shall be watered down to reduce dust emissions and vehicle trips to and from the site shall be minimized.
    - Remove loose soil from truck surfaces before leaving the Project Area.
    - Limit traffic speeds on unpaved roads to 15 mph.
    - Suspend excavation and grading activity when winds exceed 25 mph.
    - Minimize idling time.
    - Maintain properly tuned equipment.
    - Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use.

    As part of the BMPs, construction activities shall comply with all applicable SCAQMD rules and regulations from the 2007 “Air Quality Analysis Guidance Handbook”, which is currently being developed to replace the 1993 Handbook.

IV. BIOLOGICAL RESOURCES

Environmental Setting

Habitats present within the Project Area were identified and mapped as part of the Phase I study for the project (Figure 6) and are fully described in Appendix B of this Initial Study. Forty-two native plant communities are present in the Project Area. Many of these communities are fragmented, discontinuous, and threatened by invasive plants such as Brazilian peppertree and lollipop tree. Native plant communities in the upper part of Big Canyon include arroyo willow scrub, alkali meadow, freshwater marsh, and sagebrush scrub. The lower (western) portion of the canyon is dominated by a large area of freshwater marsh, along with cottonwood-willow riparian forest, alkali meadow, brackish marsh, mulefat scrub, alkali grassland, chenopod scrub, coyote brush scrub, and sagebrush scrub. The canyon slopes contain areas of coastal bluff scrub and coyote brush scrub.

The tidal wetlands on the bayside of Back Bay Drive are dominated by saltmarsh, with smaller areas of alkali grassland, alkali meadow, alkali marsh, brackish marsh, mulefat scrub and sagebrush scrub along the edges of the roadway. Mudflats and shallow tidal channels are present in Upper Newport Bay. A freshwater marsh, riparian areas, and stream channel occur on the project site.

The existing freshwater marsh was created in the early 1980's as part of mitigation for impacts proposed for the Back Bay Trunk Sewer project (K.P. Lindstrom, Inc., 2000). This freshwater marsh, dominated by freshwater emergent vegetation, was intended to mitigate for impacts to habitat used by Light-footed Clapper Rail (*Ralius longirostris levipes*; FE, SE, State Fully Protected) (D. Villines, pers. comm. 2009). Research since the early 1980's has documented salt marsh dominated by cordgrass (*Spartina* sp.) as the preferred foraging and nesting habitat (Natureserv 2009)

Wetlands, waters, riparian areas and other sensitive habitats that are subject to jurisdiction by the Corps of Engineers, the City of Newport Beach Local Coastal Program (LCP), California Coastal Commission (CCC), and the California Department of Fish and Game (CDFG) have been identified by these resource agencies. The Project Area contains approximately 13.90 acres of wetlands and 5.80 acres of "other waters" under U.S. Army Corps of Engineers jurisdiction through Section 404 of the federal Clean Water Act (Figure 7, Table 1). Approximately 11.81 acres of wetlands and 1.66 acres of open waters as defined by the City of Newport Beach LCP, and under the jurisdiction of the CCC, occur in the Project Area (Figure 8, Table 2). Fifteen unique habitat types under CDFG jurisdiction occur in Big Canyon (Figure 9, Table 3), and Tables 1-3 show the habitat type and acreage of each agency's specific jurisdiction. Approximately 15.13 acres of coastal sage scrub habitat, which is an environmentally sensitive habitat area (ESHA) according to the City of Newport Beach LCP, is also present in the Project Area.

Several federally listed plant and avian species associated with wetland and salt marsh habitats have been observed or have a high potential to occur within the Project Area. Patches of salt marsh bird's beak (*Cordylanthus maritimus* ssp. *maritimus*; FE, SE) occurs in salt marsh near the mouth of Big Canyon. With 30,000 individuals counted in 2003, Big Canyon has the most significant population in Southern California. Five additional special status plant species occur within the Project Area: southern tarplant (*Hemizonia parryi* spp. *australis*; CNPS List 1B), California boxthorn (*Lycium californicum*; CNPS List 4.2), southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*; CNPS List 4.2), estuary seablite (*Suaeda esteroa*; CNPS List 1B), and woolly seablite (*Suaeda taxifolia*; CNPS List 4.2).

The Coastal California Gnatcatcher (*Polioptila californica californica*; FT) has been observed in saltbrush scrub habitat. The Light-footed Clapper Rail has been observed in cordgrass dominated habitats and Beldings Savannah Sparrow (*Passerculus sandwichensis beldingi*; ST, State Fully Protected) has been observed in pickleweed habitat within the Project Area. In addition, the California Brown Pelican (*Pelicanus occidentalis*, FE, SE) was observed foraging in channels west of the salt marsh in Upper Newport Bay and California least tern (*Sterna antilarum browni*, FT) was observed foraging in tidal water areas near the Project Area. Neither species has been observed within the Project Area.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a sensitive, candidate, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands, as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion

a) In 2004, Keane Biological Consulting (KBC) conducted surveys for rare species with potential to occur within the Project Area (Appendix B). There are six special status plant species that were observed or are expected to occur in the Project Area and twelve species that are present in Upper Newport Bay and therefore could potentially occur at Big Canyon. Eleven special status bird species were observed within the Project Area and ten bird species have potential to occur. Two herpetological species have potential to occur and one special status insect species was observed. Twenty additional insect species have potential to occur within the Project Area. Mitigation measures have been established for those species impacted during restoration construction (see Mitigation Measure Biological Resource-1 [MMBR-1] and MMBR-4).

b) Approximately 5.57 acres of native riparian habitat will be impacted by the restoration project, including arroyo willow scrub, cottonwood willow and non-native riparian forest in the northwest and central portion of the Project Area. The black willow riparian forest in the southeastern portion of Big Canyon will not be impacted as a result of the project. Of the 15.13 acres of coastal sage scrub found in the Project Area, approximately 1.22 acres will be permanently impacted. Riparian habitats are considered sensitive and protected through the LCP, CCC, and CDFG, and coastal sage scrub habitats are protected through the LCP and CDFG. (see MMBR-2).

c) This restoration project includes permanently filling 0.49 acres of seasonal wetland, 5.34 acres of freshwater marsh, 0.02 acres of salt marsh and 1.66 acres of waters under Section 404 jurisdiction as a result of the Back Bay Road realignment, non-native plant removal, and grading in stream, pond, and marsh areas for their conversion to salt marsh or pond habitat. An overall decrease of 1.63 acres of freshwater marsh would occur as a result of the project.

The project would permanently fill 5.38 acres of freshwater marsh, 0.52 acres of seasonal wetlands, 3.83 acres of riparian, 0.02 acres of salt marsh, 2.06 acres of non-native riparian habitat, as well as 1.66 acres of open water subject to LCP and CCC policies. (see MMBR-3)

d) Removal of riparian habitat would occur as a result of the relocation of Back Bay Road, the creation of the open water pond above the new road, and construction of a diversion berm and new sediment basin at the east end of the canyon. The removal of riparian habitat may interfere with the movement of wildlife species (see MMBR-4).

No part of the Project would permanently impact migratory fish species populations. Construction activities may generate debris or sediment that could enter Newport Bay (Coastal Resources Management, Inc. July 2008, Appendix C) (see MMBR-4).

e,f) The proposed Project would not conflict with protection of biological resources under the City of Newport Beach LCP Coastal Land Use Plan (as Adopted December 13, 2005). The proposed tidal marsh restoration would serve to enhance and restore marine resources. The biological productivity and the quality of coastal waters, tidal marsh, Big Canyon Creek, and wetlands would be enhanced and restored. The proposed Project would control runoff, maintain natural vegetation buffer areas that protect riparian habitats and provide erosion control to protect Big Canyon Creek. The proposed Project would protect ESHAs against significant disruption of habitat values by carefully controlling public use. Recreation, interpretation and educational areas are designed to prevent impacts to environmentally sensitive habitats through their proposed siting on currently disturbed or paved soils. The Project would not conflict with the provisions of any local policies and ordinances.

Mitigation Measures Biological Resources:

MMBR-1:

- The restoration of the Project Area would create native transitional and wetland habitats, which would increase the nesting and foraging habitats for wildlife species. The restoration of native habitats would also improve habitat for special status plants. Impacts to special status species may occur during the construction of the restored creek.
    - Project construction will be limited to the non-breeding period for sensitive wildlife, generally between September 1st to February 15th. However, should work be conducted outside this period, a qualified biologist will conduct preconstruction surveys within two weeks prior to the commencement of construction to verify the presence or absence of birds, including raptors, passerines, and their nests. If the survey indicates the potential presence of nesting raptors or protected passerines, construction workers will adhere to CDFG avoidance guidelines, which are typically a minimum 500-foot buffer zone surrounding active raptor nests and a 250-buffer zone surrounding nests of other birds.

- Populations of *Cordylanthus maritimus* ssp. *maritimus* within 100 feet of project construction will be marked and construction fencing will be erected to protect these areas during construction. A seed collection and monitoring program has been developed, and additional mitigation and avoidance measures are described in the Salt Marsh Bird's Beak Avoidance and Monitoring Plan (WRA, Inc 2009, Appendix D). No take of this species is anticipated with the project.

MMBR-2:

- Approximately 7.13 acres of riparian willow scrub and woodland will be restored and enhanced through removal of invasive exotic plant species. A net increase of 1.47 acres of native riparian habitat will occur as a result of the Project. Native riparian species will be planted and seeded in areas that are opened up with the removal of exotic species. A mix of each canopy layer will be planted. Specific placement of species will depend on soil and hydrologic conditions. In addition, 2.28 acres of coastal sage scrub habitat will be created or restored with the implementation of this project, for a net increase of 4.97 acres of this habitat type.

MMBR-3:

- Approximately 2.19 acres of waters, 1.30 acres of freshwater marsh and 3.58 acres of salt marsh would be created as a result of the Project, for a net increase of 0.62 acres of waters and 3.57 acres of salt marsh. Wetland and open water creation and restoration will increase acreage of important sensitive habitats under the Corps and CCC jurisdiction. Although a net loss in freshwater marsh would occur as a result of the proposed project, freshwater marsh is not an historic habitat type for local aquatic ecosystems and the existing freshwater marsh has been implicated in bioaccumulation of toxic substances in aquatic wildlife in Big Canyon (Community Conservancy International 2004). Relocating the freshwater marsh offline from the creek flows will improve water quality for marsh species, and creation of more salt marsh habitat will encourage establishment of the historic tidal marsh ecosystem. Wetlands will be restored and enhanced through improving drainage and planting native wetland species.

MMBR-4:

- Restoration of the riparian habitats will improve habitat and water quality for wildlife species and restore migratory corridors within the Project Area. Best Management Practices (BMPs), such as deploying sand bags and silt curtains at appropriate locations during construction, will be implemented to protect fish species in Newport Bay.

V. CULTURAL RESOURCES

Environmental Setting

The Project Area is in an area of known resources according to the Archaeological Sites of Upper Newport bay (Archaeological Research Inc., 1976) (Appendix E). A resource site does exist on the landward side of the road at the base of the bluff near Big Canyon.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Cause a substantial adverse change in the significance of a historical resource, as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource, pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

Discussion

a, b, c) The resource site would be fenced so that there will be no trespassing or construction in this area. The Project will have no impact on known archaeological/paleontological resources. (See MMCR-1).

d) No known human remains, including those interred outside of formal cemeteries would be disturbed by the Project.

Mitigation Measures Cultural Resources:

MMCR-1:

- An archaeological observer will be present during excavation to inspect the materials. If a significant resource is found, contract provisions will be made to halt construction for three days to facilitate resource removal.

VI. GEOLOGY AND SOILS

Environmental Setting

Surface materials at the Project Area generally consist of dredged fill which is typically silty sand. Native site material contains sandy clay. The deposition of dredge materials in Big Canyon combined with the construction of Back Bay Drive have apparently modified the topographic features of the canyon and influenced the establishment of both native and non-native plant communities. The specific chemistry and soil characteristics of the dredge spoil locations have created large infertile areas and areas dominated by exotic species. A Geotechnical Feasibility Report has been prepared by GeoSoils, Inc. (2006) and is included in Appendix F of this Initial Study.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☒	☐	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Discussion

a) The Project Area is located in the City of Newport Beach. There are a number of faults in the southern California area which are considered active and will have an effect on the Project Area in the form of moderate to strong ground shaking, should they be the source of an earthquake.

   i) The Project Area is not located within an Alquist-Priolo Earthquake Fault Zone. No known active or potentially active faults are shown crossing the Project Area on published maps. No evidence for active or potentially active faulting was encountered during the onsite geotechnical evaluation (GSI 2006, Appendix F).

   ii) Based on analyses by GeoSoils, Inc. (GSI 2006, Appendix F) historical seismic activity in the area surrounding the proposed Project shows that the largest earthquake magnitude within a 100-mile radius of the Project Area between 1800 and 2006 was 7.6. The Project Area would be subject to varying groundshaking intensities in the event of an earthquake on any of the potentially active faults in the region. The proposed Project includes facilities such as restrooms and an outdoor seating area. These structures could be damaged in the event of an earthquake (see MMGS-1).

   iii) Liquefaction, a secondary earthquake-induced hazard, occurs when water-saturated soils lose their strength and liquefy during intense and prolonged groundshaking. According to analyses by GeoSoils, Inc. (GSI 2006, Appendix F), areas within the middle of the canyon have liquefaction potential in the Seismic Hazard Zone. The hazards known to influence liquefaction potential include soil type and grain size, relative density, groundwater level, confining pressures, and both intensity and duration of ground shaking.

   iv) The Project Area does not contain any existing landslide hazards.

b) During Project construction, excavation and grading will be required. Construction is likely to occur in and near the water due to habitat impact restrictions (March to August). An Erosion Control Plan will be included in the Construction Stormwater Pollution Prevention Plan (SWPPP) and implemented at the onset of the construction to avoid temporary erosion caused by rainstorms. The contractor will provide a surface flow control plan to avoid erosion for approval prior to construction.

   The Proposed Project involves beneficial changes to creek topography, including creation of ponds and modification to Back Bay Drive and tidal marsh. This will result in a more stable channel condition and reduce erosion potential as summarized below. Supporting hydraulic calculations are provided in the “Big Canyon Creek Restoration Project, Hydraulic and Structural Calculations Package (Phase 1 & 2)” dated May 2009. (VA Consulting 2009, Appendix G).

The north channel, which is currently subject to severe erosion, will have lesser flows and lower velocities during high flow events due to reduction in the trail dike length. Additionally, the channel will only receive overtopping flows from the south channel and high stormwater flows will be reduced and retarded from the new channel design.

Back Bay Drive will have relatively higher elevations compared to the 100-year flood level. Drainage culverts will be much wider than the existing weir and pipe culverts to avoid flow concentration and reduce scour potential.

The aquatic habitat created above the service road crossing, partially by fill at the service road (embankment) and partially by excavation, will maintain similar hydraulic features as the existing condition – as described in the hydraulic calculations report (VA Consulting 2009, Appendix G). Therefore, no negative impacts on channel stability and erosion/sedimentation will result from the construction of these features (see MMGS-2).

c) The canyon slope near the central gathering area has been identified as potentially unstable; however, Project elements will be placed with sufficient setback (20 feet at minimum) and will not cause any impact to the slope stability. No active fault zones exist in the area (Geosoils 2006, Appendix F). With only minor, temporary alterations to site topography resulting from Project construction, no impacts to unique geologic features will occur.

d) The Project Area contains previously dredged materials from Upper Newport Bay and may contain expansive soils.

e) The Proposed Project does not include septic tanks or alternative waste disposal systems. As such, there is no potential for soil failure associated with the installation of septic tanks or alternative waste disposal systems.

Mitigation Measures Geology and Soils:

MMGS-1:

- Proposed facilities will be designed in accordance with the most recent California Building Code requirements for seismic activity or more stringent local building code provisions.

MMGS-2:

- Soil loss prevention will be provided through the implementation of the erosion control plan and surface flow control plan, as described under Mitigation Measure Hydrology and Water Quality -2.

MMGS-3:

- A licensed geotechnical engineer has prepared a foundation recommendation report (Geosoils, 2006) for roadways and minor structures, such as overlooks and the outdoor seating area. A registered civil engineer will prepare structural and facility foundation details per the geotechnical engineer's recommendation or City standards (if more conservative). Other excavation and competent materials will be described on the detailed plans to guide the contractors where needed (such as roadways and minor structures), as recommended by the soils engineer. The Project will result in no significant impacts. Design and construction will follow the currently available public work construction standards, including City's standards.

VII. HAZARDS AND HAZARDOUS MATERIALS

Environmental Setting

Weston Solutions, Inc. conducted a preliminary soil contaminant analysis of soils within the Project Area and examined water quality of the Big Canyon Watershed (Weston, 2007). Additional soil testing was performed by CH2MHILL (2008) These reports are included in Appendix H of this Initial Study.

Preliminary studies of sediment in the overall Big Canyon drainage revealed elevated selenium in sediment (over the 4 mg/kg dry weight ecological risk guideline [Sutula et al., 2008]) (Byron, E. and Santolo, G., 2008). Soil core sampling conducted in the existing freshwater marsh showed very high concentrations of selenium associated with surface sediments, ranging from 84 to 122 µg Se/g. This pattern suggests that the marsh functions as a sediment trap for selenium sources from the upper canyon and for settling pond biota that have taken up waterborne selenium.

The results of the soil contaminant analysis also show that metals including arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver were all detected at levels below effects range-low (ERL) for marine sediment and within background levels for soil established by NOAA (Weston Solutions, 2007, Appendix H). Organochlorine pesticides and PCBs and organotins were not detected. With the implementation of the Project, approximately 47,300 cubic yards of excavated fill material will be generated.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒

b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials, substances, or waste into the environment?	☐	☐	☐	☒
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d)	Be located on a site which is included on a list of hazardous materials sites, compiled pursuant to Government Code §65962.5, and, as a result, create a significant hazard to the public or environment?	☐	☐	☐	☒
e)	Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport? If so, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
f)	Be located in the vicinity of a private airstrip? If so, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h)	Expose people or structures to a significant risk of loss, injury, or death from wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Discussion

a) No known hazardous materials are present within the Project Area and the Project would not involve the transport, use, or disposal of any hazardous materials. Soil toxicity testing conducted to date by CH2MHill, Inc. (Appendix H) has shown high levels of selenium in freshwater marsh soils, which have the potential to pose ecological risks. These soils will not be used as lining for the proposed freshwater pond and thus not be exposed to pond biota. Therefore, no impact would occur.

b) No foreseeable upset and/or accident conditions involving the release of hazardous materials, substances, or waste into the environment is anticipated with the implementation of this Project. Soils with levels of selenium concentrations above established background levels will not be used as the liner for the proposed pond but may be used for fill in the interpretive area if the geotechnical engineer finds the material suitable.

c) No schools are present or proposed within one-quarter mile of the Project Area, nor are hazardous emissions expected to be emitted or handled through the implementation of this Project.

d) No portion of the Project Area is included on a list of hazardous materials sites that would create a significant hazard to the public or environment.

e, f) John Wayne Airport is approximately two miles from the Project Area. However, given the nature of the project (habitat restoration and installation of recreational and interpretive facilities), safety hazards are not expected for people working or visiting the Project Area.

g) The proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

h) The proposed Project is a restoration project covering a 60-acre site of open space and includes the replacement of dense non-native vegetation with sparse native vegetation. The density and type of vegetation proposed for restoration and enhancement are less fire-prone to those that are present in the Canyon.

Mitigation Measures Hazards and Hazardous Materials:

- **None Required**

VIII. HYDROLOGY AND WATER QUALITY

Environmental Setting:

Big Canyon Creek's watershed of approximately two square miles is highly urbanized and completely developed and contributes significant water flow to the Project Area. The Creek drains this watershed directly into Upper Newport Bay. The headwaters are located near the San Joaquin Reservoir east of MacArthur Blvd.

Big Canyon Creek is in a natural, un-channelized condition within the Project Area. The natural function of Big Canyon includes accommodating storm events and flooding; during large floods, such as a 100-year flood, the entire canyon floor is inundated. This natural flooding process provides the necessary soil moisture for plant growth. However, the channel banks and inverts are subject to erosion and sedimentation during flood events which may cause damages to roadways, boardwalk bridge, and other infrastructures. This may also impact the existing habitats. The Project intends to improve the creek stability and prevent major erosion hazards during future flood events. Recognizing the environmental sensitivity, no major engineering work is allowed to entirely armor the creek and canyon. The Project's goal is to protect the infrastructure and reduce potential habitat loss with erosion and sedimentation management acceptable to the regulatory agencies.

Tidal inundation in the Project Area is limited to the bayside of Back Bay Drive. Construction of Back Bay Drive cut off tidal flow but historic aerial photographs and maps of Big Canyon show that the historic range of the tidal wetlands once extended approximately 500 feet inland from Back Bay Drive and reached across the entire canyon mouth. Big Canyon currently drains through three 15-inch pipes under Back Bay Drive.

The water in Big Canyon Creek is unfiltered urban runoff draining a two-square mile developed watershed. The creek carries fertilizers and pesticides from lawns, landscaping and golf courses and pollutants from cars, streets and paved areas upstream of the Project Area. During storms, water sampling has shown very high levels of fecal bacteria at the Big Canyon Creek outlet in Upper Newport Bay based on 2004 monitoring results. Preliminary studies of the water quality and sediment in this drainage revealed water quality exceedances for selenium (over the 5 µg/L chronic criterion for protection of aquatic life (Weston, 2007)). Results from a July 2008 monitoring program conducted by CH2MHill showed that all freshwater Big Canyon Creek sites were in exceedance of the California and national water quality criterion value for selenium (5 µg/L as total recoverable selenium).

Upper Newport Bay is listed as an impaired water body under section 303(d) of the Clean Water Act. According to this classification, the following contaminants occur in both Upper and Lower Newport Bay: pesticides and metals, nutrients, pathogens, and sediments/siltation. Total Minimum Daily Loads (TMDL) for Newport Bay have been established for sediments, nutrients, and fecal coliform. The Project intends to help meet these TMDLs by addressing the polluted runoff in the creek before contaminated water reaches Upper Newport Bay. The proposed Project includes an integrated system of water quality improvement components, erosion and sedimentation control and use of natural habitats (see Chapter 2 and Figure 2).

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?	☐	☒	☐	☐

d)	Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	☐	☐	☐	☒
e)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f)	Substantially degrade water quality?	☐	☐	☒	☐
g)	Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place structures that would impede or redirect flood flows within a 100-year flood hazard area?	☐	☐	☐	☒
i)	Expose people or structures to a significant risk of loss, injury, or death from flooding, including flooding resulting from the failure of a levee or dam?	☐	☐	☐	☒
j)	Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion

a) The Proposed Project would not violate any water quality standards or waste discharge requirements.

b) Groundwater will be used initially to fill the 7.51 acre-foot freshwater pond. From that time forward, groundwater would be extracted to keep the lake water surface at the 25 foot elevation. Rate of groundwater extraction would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge, such that there would be a net deficit in aquifer volume or a permanent lowering of the local groundwater table levels.

c) The existing creek shows moderate sedimentation potential upstream of the service road crossing and within the freshwater marsh area. Under the project condition, the fresh water marsh would be constructed in the existing sedimentation area upstream of the service road crossing and a sedimentation basin constructed at the outlet of the Jamboree Road culvert. The marsh would trap sediments as the flows move through and the upper pond will serve as a debris/sediment management area which will significantly reduce the sedimentation levels within the lower pond and protect its habitat value. The upper pond will be routinely maintained by the City to achieve the desired restoration objectives. No development exists downstream which would be impacted by the sediment levels within the pond. Since the upper watershed is heavily urbanized, it is expected that sediment removal is feasible and may need to be performed only after major rainstorms.

The fresh water marsh downstream of the service road crossing would be reduced significantly and the sedimentation potential would be significantly reduced. (see MMHWQ-1)

d) The Project would maintain the same drainage paths and patterns as currently exist. The surface flow rates would also remain the same with the implementation of the Project.

e) The additional impervious surfaces or other similar features are insignificant to cause any noticeable increase in surface runoff.

f) The Project would result in positive water quality improvement. This project involves major riparian woodland creation work which might result in negative impacts associated with wildlife pollutants. The restoration elements provide an integral system of water quality filtration: riparian wetlands, freshwater ponds (upper pond also serves sediment detention), freshwater marsh, and additional end of the pipe BMPs. The sedimentation pond in the upper portion of Big Canyon will be maintained to remove settled solids, which will help attenuate levels of selenium in the Canyon. In addition, the riparian channel (North Channel) would receive less flows, therefore, reduce the erosion potential during high flows (approximate at or larger than 1,000 cfs). (See MMHWQ-2).

g) All residential properties are on the high banks above the 100-year floodplain. These banks will not be impacted by the Proposed Project.

h) One-Hundred year flows from Big Canyon Creek will be directed through the proposed flood control conveyance. This project element would improve surface water hydrology by reducing the force of high flows and erosion potential. The proposed freshwater pond and interpretive areas will not be within the 100-year floodplain of Big Canyon Creek. The water surface elevations in most of the excavated area below the proposed Back Bay Drive would be reduced to tidal levels and the realigned portion of Back Bay Drive would not be subject to riverine or tidal flooding.

i) The embankments of the freshwater pond would be constructed with sufficient stability against erosion by a 100 year flood. The proposed embankment between the freshwater pond and flood control conveyance will be constructed of compacted fill and is configured per geotechnical recommendations. The proposed freshwater pond will be lined and therefore there will be no pond water seepage through the embankment. No risk associated with property loss or life threatening conditions would result from the project since no development is below the pond embankment.

Hydraulic analysis of the proposed flood control conveyance show that velocities in the conveyance will be below erosive levels due to the 2% longitudinal slope and heavily vegetated side slopes. The Proposed Project would not increase the risk of people or structures to loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

j) The Proposed Project would not increase the risk of the Project Area or surrounding land to be inundated as a result of seiche, tsunami, or mudflow. The watershed is heavily urbanized and the Upper Newport Bay is protected against ocean waves.

Mitigation Measures Hydrology and Water Quality:

MMHWQ-1:

- A California State registered civil engineer with sufficient knowledge of Big Canyon Creek erosion and sedimentation issues will develop a maintenance program prior to construction completion. The City will inspect and maintain the freshwater pond per the guidelines stated in the maintenance program.

MMHWQ-2:

- The WQMP would implement all applicable Best Management Practices (BMPs) as outlined in the Countywide NPDES Drainage Area Management Plan to ensure that potential adverse effects on water quality are minimized.

  A California State registered civil engineer with knowledge of the erosion, sedimentation, and water quality issues of Big Canyon Creek will prepare a Water Quality Management Plan (WQMP) according to the Orange County Resources and Development Management Department's Drainage Area Management Plan guidelines and specific project needs for construction water quality management. Construction phasing, construction SWPPP, and surface flow control will be part of the WQMP. A resident engineer or City representative will certify plan implementation and will monitor the construction activities from preparation for construction to construction completion.

  Weston Solutions, Inc. (2006) has prepared a Monitoring Plan and Quality Assurance Project Plan for assessing baseline water quality data and to assess the water and sediment quality that need to be addressed in the design and long-term sustainability of the Project.

IX. LAND USE AND PLANNING

Environmental Setting

The proposed project would maintain the current Open Space land use and restore the Project Area to improve open space activities for the public. The Project Area is currently a primary access point to Upper Newport Bay and the estuary is used by the public for recreation, wildlife observation and wetland-based education. Existing interpretive signage, parking lot and trails are degraded and in need of repairs.

The Project would construct a new educational kiosk within Big Canyon adjacent to Coastal Sage Scrub habitat, which is considered an Environmentally Sensitive Habitat Area (ESHA) under the California Coastal Act.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with the applicable land use plan, policy, or regulation of any agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion

a) The proposed Project would restore Big Canyon Creek and the surrounding open space. It would not involve dividing an established community.

b) The proposed interpretive center and restoration activities will be located in an area that contains coastal sage scrub habitat that may be considered an Environmentally Sensitive Habitat Area (ESHA) due to the presence of the California gnatcatcher (a federally Threatened species and California Species of Special Concern). The California Coastal Act (PRC, Division 20) Section 30107.5 defines ESHA as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments". The Coastal Act (section 30240) also restricts development activities within ESHA and states "Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas." The proposed project will result in a net increase of coastal sage scrub and project activities within sage scrub habitat include an interpretive center for environmental education.

The Project is also consistent with the City of Newport Beach Coastal Land Use Plan Policy 4.1.3-1 as it includes mitigation measure outlined for the mouth of Big Canyon in Table 4.1.1 as a part of the proposed project except for measure 4.1.3-1G since the Project Area does not include any blufftops (City of Newport Beach 2005).

The Project is also consistent with the City of Newport Beach General Plan, specifically Natural Resources component 3.9, 3.10, 3.13, 3.18, 4.2, 4.3, and 4.4 (City of Newport Beach, 2006).

A separate guidance letter (CCC 2007) states that "only 'resource dependent' development, such as restoration or nature study, is allowed in ESHA". As the proposed project does not pose a significant disruption to habitat values (see Biological Resources section for more detailed discussion of this topic) and the proposed uses appear to be compatible with ESHA, no significant environmental impacts related to Land Use are expected as a result of the proposed project.

c) The proposed Project would restore tidal influence to Big Canyon Creek and re-establish natural transitions between wetland and upland communities. In addition, the Project would involve the removal of infertile soils, repair flood damage, address urban runoff, remove non-native plant species, restore native habitats and restore the freshwater pond. None of these activities conflict with the City of Newport Beach LCP.

Mitigation Measures Land Use and Planning:

- **None Required**

X. MINERAL RESOURCES

Environmental Setting

The Project Area is located primarily on dredged fill. There are no known mineral resources of value to the region or the state.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Result in the loss of availability of a known mineral resource that is or would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Discussion

a) Because the Project does not contain any mineral resources, there would not be any potential for the loss of known mineral resources and no impact would occur.

b) Based on the type of underlying soils, there is no known locally important mineral resource within the Project Area. As such, there would not be any potential for the loss of known mineral resources and no impact would occur.

Mitigation Measures Mineral Resources:

- **None Required**

XI. NOISE

Environmental Setting

The project is located in a canyon, which is surrounded on both sides by residences. The closest residences are approximately 500 feet from the Project Area and elevated above the site. The project is an ecological restoration of a creek and wetland area, which will not generate any noise when completed. Proposed outdoor seating areas are designed to accommodate up to 100 people.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Generate or expose people to noise levels in excess of standards established in a local general plan or noise ordinance, or in other applicable local, state, or federal standards?	☐	☐	☐	☒
b) Generate or expose people to excessive groundborne vibrations or groundborne noise levels?	☐	☐	☐	☒
c) Create a substantial permanent increase in ambient noise levels in the vicinity of the project (above levels without the project)?	☐	☐	☐	☒
d) Create a substantial temporary or periodic increase in ambient noise levels in the vicinity of the project, in excess of noise levels existing without the project?	☐	☒	☐	☐
e) Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport? If so, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) Be in the vicinity of a private airstrip? If so, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

a, b, c) The project would not generate or expose people to noise levels in excess of standards established in a local general plan, noise ordinance, or other applicable federal, state or local standards. Educational programs currently occur within Big Canyon and the proposed additional seating capacity will not increase noise levels during educational activities as sound amplification devices will be prohibited. The project would also not expose people to excessive ground-borne vibrations or ground-borne noise levels, or create a substantial permanent increase in ambient noise levels.

d) The project could create a substantial temporary or periodic increase in ambient noise levels in the project vicinity during construction of tidal marshes and riparian habitat, removal of fill material, trail-building and other activities. Other than roadway pavement and erosion control work, grading operation is the only other significant activity and no other development activities will be involved. Several elements such as restrooms and outdoor seating areas have been changed to involve portable equipment and more environmentally friendly facilities. This will reduce construction noise significantly. In addition, proper scheduling of construction activities and control of construction equipment are planned to reduce noise to the extent possible (MNNS-1).

e) The Project is within two miles from John Wayne Airport. However, the Project is outside of the 60 CNEL contour for traffic noise levels (City of Newport Beach 2005, Figure N-1) and thus people residing or working in the project area would not be exposed to excessive noise levels. The Project is located within and will remain Open Space, which according to the City of Newport Beach General Plan Noise component is “Clearly Compatible” use at or below 60-65 CNEL. The Project does not include any additional permanent source of noise.

f) The project is not located in the vicinity of a private airstrip.

Mitigation Measures Noise:

MMN-1:

- Construction will be scheduled for normal work hours (between 7 am and 5 pm) when most neighboring residents are at work. Construction will occur during fall and winter seasons only for a two to three year time period but about 50% of the time period will involve only planting activities that will not generate excessive noise. Construction materials and methods which do not require heavy and noisy equipment will be applied to the extent possible.

XII. POPULATION AND HOUSING

Environmental Setting

The proposed Project is a creek restoration project and does not contain any housing developments.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a) The proposed Project would not directly or indirectly induce population growth through the provision of new homes, businesses, infrastructure, or service.

b,c) No existing housing would be displaced as a result of implementing the proposed Project, nor would the Project result in the displacement of people. Therefore, no replacement housing would be required and no impact would occur.

Mitigation Measures Population and Housing:

- **None Required**

XIII. PUBLIC SERVICES

Environmental Setting

Police and fire protection are provided by the City of Newport Beach, and access for these services is gained on the existing dirt road through Big Canyon. The Project Area is managed by the Department of Fish and Game. Schools in the vicinity are managed by the Newport Mesa Unified School District.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Result in significant environmental impacts from construction associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Discussion

a) The Project would not result in the construction of new or altered police protection, school, or other public facilities. Improved access roads will remain accessible to police and fire protection services. The new outlet to Jamboree Road will Road will provide a safer outlet for vehicles exiting onto Jamboree Road due to the 90 degree connection. The Project would not induce population growth, and therefore, the need for new or physically altered governmental facilities (fire and police protection, schools, and other public facilities) would not be required.

Mitigation Measures Public Services:

- **None Required**

XIV. RECREATION

Environmental Setting

The Project would restore Big Canyon Creek and provide opportunities for recreation by means of trails, bike paths, overlook sites and interpretative media.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☒	☐

Discussion

a) The Project would result in a beneficial impact and would not cause deterioration of Big Canyon Park and other adjacent facilities. The Project will maintain and enhance its current function for outdoor education and passive recreation. The trail network in Big Canyon would be improved to provide continuous ADA access within the central gathering area and the public viewing of the freshwater pond and wetlands. In addition to ADA trails, two-way bike trails along Back Bay Drive and the loop road (connecting to parking and the central gathering area) will also function as hiking and jogging trails for physical fitness.

b) The new trails and interpretive facilities would be constructed in areas without environmental significance under existing and Project conditions; therefore, no significant impact is expected. The Project would provide outdoor education and passive recreation for nearby residents, school children in Orange County and other public groups. A major objective of the project is to increase environmental awareness. Interpretive, regulatory, and directional signs would be posted to educate visitors on biological resources and water quality protection, while avoiding any unintentional disturbance.

Mitigation Measures Recreation:

- **None Required**

XV. TRANSPORTATION/TRAFFIC

Environmental Setting

The Project Area is currently accessible by the public through San Joaquin Hills Road and Back Bay Drive, which is also a primary access to Upper Newport Bay. The Project Area and estuary are used by the public for recreation, wildlife observation and outdoor education. The existing daily vehicular traffic on the Back Bay Drive was measured at 136 and 164 on April 17 and 18, 2007, respectively, by the City of Newport Beach. There are 35 existing automobile parking spaces and two for buses to accommodate the existing parking demand with less than 50% of these lots occupied most of time. Back Bay Drive has a one-way lane (northward) with two-way dedicated bike trails on the bayside. This will be maintained under the Project condition except for realignment of the road for tidal marsh creation. Vehicular access to the Big Canyon will continue via Back Bay Drive. Back Bay Drive will continue to function as a throughway along the edge of Upper Newport Bay Ecological Preserve (Community Conservancy International 2004).

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Cause a substantial increase in traffic, in relation to existing traffic and the capacity of the street system (i.e., a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Exceed, individually or cumulatively, the level of service standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Cause a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	☐	☐	☐	☒
d) Contain a design feature (e.g., sharp curves or a dangerous intersection) or incompatible uses (e.g., farm equipment) that would substantially increase hazards?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

Discussion

a) As a goal of this Project is to promote public use through recreation and education, visitor counts are expected to increase with the implementation of the Project. By proper scheduling of visitor groups, it is expected that vehicular traffic increase will be insignificant. Since the land use is preserved under the Project condition, it is expected that traffic changes or associated hazards would not occur due to design features or incompatible use.

During the construction phase of the Project, trucks will be used to haul off approximately 40,000 cubic yards of dredge material. Removal of dredge material is expected to begin in 2008 and will take approximately 125 days per year for two years. The dredged material is expected to be disposed of at Frank R. Bowerman Landfill, located at 11002 Bee Canyon Access Road, Irvine, CA, approximately 15 miles from the Project Area. Approximately 20 cubic yards of material would be hauled per truck, an average of eight truck trips per day with 40 truck trips per day maximum (See Air Quality section, discussion (b) for details on construction traffic). Modified traffic conditions resulting from the project will be temporary, and will not change the overall Level of Service (LOS) in the long term from a "D" classification, which is the designated LOS for most roads in the City of Newport Beach, as described in the Circulation Element of the City's General Plan (City of Newport Beach 2006). This will not cause significant impacts on Back Bay Drive or adjoining streets.

b) Project-generated traffic would not cause the level of service standards established by the county congestion management agency for designated roads or highways to be exceeded.

c) The construction of the Project and related facilities would not affect air traffic facilities. The Project Area is not near any air traffic facility or function. Therefore, no impacts are anticipated.

d) To create the tidal marsh, Back Bay Drive would be lengthened with curves at a minimum of 100 feet radius. Since there are no major hills obstructing the views of the drive, it would not cause significant impacts. The Project would limit speeds to 15 miles per hour and would include speed limit and warning signs to enforce traffic safety.

e) The Project Area is accessible to and from Jamboree Road, San Joaquin Hill Road/Big Canyon Drive, and several service roads on the high banks. The Project would maintain all these access points.

f) The parking lot will be moved out of the sensitive tidal wetlands area and relocated to the opposite side of the road. Relocation of the parking lot will allow school groups and other visitors to assemble safely away from traffic on Back Bay Drive.

g) Implementation of the Proposed Project would not conflict with any adopted policies supporting alternative transportation.

Mitigation Measures Transportation/Traffic:

- **None Required**

XVI. UTILITIES AND SERVICE SYSTEMS

Environmental Setting

Orange County Sanitation District (OCSD) sewer main is the only major utility crossing the Project Area. The sewer main and manholes will not interfere with project construction. The sewer lines are deep below the proposed grade without potential to be damaged. OCSD is extending the maintenance road to the manhole north of the channel bank near Jamboree Road. City's sewer lines are on the high bank and will not be impacted. Temporary irrigation water for construction and plant establishment will be tapped to those along Jamboree Road under the agreement with the City. The new freshwater pond would have a groundwater or potable municipal water source via a supply water line connection to a 16-inch water line in Jamboree Road.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Exceed wastewater treatment restrictions or standards of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider that serves or may serve the project, that it has adequate capacity to service the project's anticipated demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and	☐	☐	☐	☒

regulations as they relate to solid waste?

Discussion

a, b) The Project would not require construction of a new water treatment or wastewater treatment facility or expansion of the existing treatment facilities serving the project vicinity. The project would not impact the wastewater treatment quality based on the restrictions or standards of the applicable Regional Water Quality Control Board. Groundwater or potable water would be used to supply adequate hydrology to the new freshwater marsh.

The Project may require long-term potable water source if groundwater supplies shows selenium concentrations above ecological risk levels or do not provide adequate hydrology for the freshwater pond. Recharge of the freshwater pond levels will be dependent on variable evaporation rates of this open water system. Potable or groundwater will be used to fill and maintain this 7.51 acre-foot feature at 25 feet elevation. The pond does not have a constant-flow outlet; there is however a drainline at the western end of the proposed pond that will be used for periodic maintenance activities.

Additionally, short-term irrigation would be needed to establish the plants outside of the creek or outside tidal inundation areas. Temporary water may also be needed during construction. A temporary water lateral from the Jamboree Road water main will be provided during construction and the two year plant establishment period. Solar power could be used to operate the temporary irrigation system.

The restroom facility included in the Project contains four unisex portable chemical toilets. The toilets are near the existing sewer manhole but there is no immediate plan for gravity sewer connection.

c) The Project is within and near Big Canyon Creek. No new storm water system is required.

d) The Project would have sufficient water supplies available to serve the implementation of the restoration. No new entitlements would be needed.

e) The restroom facility included in the Project contains four unisex portable chemical toilets. The toilets are near the existing sewer manhole but there is no immediate plan for gravity sewer connection. The existing sewer has the capacity to accommodate the toilet discharge and the Orange County Sanitation District (OCSD) has approved the connection per OCSD standards.

f) Project construction will produce debris and dirt. The Frank R. Bowerman Landfill located at 11002 Bee Canyon Access Road, Irvine, CA 92602 would be the closest disposal site. Approximately 75,000 cubic yards of excavated materials would be generated; of which, approximately 50%

would be reused for on-site fill or application to other public construction. The project waste will not exceed the existing landfill capacity.

h) Based on the 2008 CH2M Hill soil toxicity analysis (Byron, E. and Santolo, G.), there is selenium contamination in the freshwater marsh soils that would be excavated during construction. These soils are not considered toxic waste.

Mitigation Measures Utilities and Service Systems:

- **None Required**

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or Restrict the range of a rare or endangered plant or animal or eliminate important examples of the major Periods of California history or prehistory?	☐	☒	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means the incremental effects of a project are considerable when viewed in connection with the effects of past projects, other current projects, and probably future projects?)	☐	☐	☐	☒
c) Have environmental effects that will cause substantial adverse effects on humans, either directly or indirectly?	☐	☐	☐	☒

Discussion

a) The proposed Project was evaluated for potential significant adverse impacts to the natural environment and its plant and animal communities. It was determined that the project could potentially impact birds and other sensitive wildlife species as well as sensitive plant species and communities. However, implementation of all conditions and mitigation measures incorporated into this document would reduce those impacts, both individually and cumulatively, to a less than significant level.

b) The proposed Project would not have cumulatively considerable impacts.

c) The proposed Project would not have environmental effects that would cause substantial adverse effects on humans.

CHAPTER 4 - REFERENCES

Archaeological Research Inc. 1976. Archaeological Sites of Upper Newport Bay Report

Byron, G. and Santolo, G. July 25, 2008. Draft Big Canyon Wash Wetlands Restoration: Baseline Selenium Results. Prepared for the City of Newport Beach, California, and the Santa Ana Regional Water Quality Control Board.

California Air Resources Board. 2006. Almanac Emissions Projection Data, Annual Average Emissions (2005), Orange County.

CH2MHill. 2008. Draft Big Canyon Wash Wetlands Restoration: Baseline Selenium Results July 25 2008.

City of Newport Beach 2005. City of Newport Beach Local Coastal Program Coastal Land Use Plan. Adopted December 13 2005. Resolution No. 2005-64.

City of Newport Beach 2006. City of Newport Beach General Plan. Adopted July 25, 2006.

City of Newport Beach 2006. City of Newport Beach General Plan. Adopted July 25, 2006.

Coastal Resources Management, Inc. July 2008. Big Canyon Restoration Project Essential Fish Habitat Analysis. Report.

Community Conservancy International. 2004. Big Canyon Creek: Historic Tidal Wetlands Conceptual Restoration Plan.

County Sanitation Districts of Orange County. 1976. Environmental Assessment of Back BayTrunk Sewer (East Side).

Environmental Protection Agency (EPA). 1978. Protective Noise Levels. Condensed Version of US EPA Levels Document. USEPA 550/9-79-100.

Geosoils, Inc. 2006. Geotechnical Feasibility Report: Big Canyon Creek Restoration, Upper Newport Bay, Newport Beach, County of Orange, California.

K.P. Lindstrom, Inc. May 24, 2000. Back Bay Trunk Sewer Project Environmental Assessment, Appendix A

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 1.8. NatureServe, Arlington, Virginia. Available: http://www.natureserve.org/explorer.

South Coast Air Quality Management District (SCAQMD). 2007. Emissions Factors (EMFAC) Version 2.3. Onroad, Heavy Duty Diesel Trucks, http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html.

SCAQMD. 2003. Air Quality Management Plan.

Sutula, M., J. Brown, E. Fetscher, S. Madon, G. Santolo, E. Byron, and C. Stransky. 2008. Habitat Value of Urban Wetlands. *Final report to the Los Angeles Regional Water Quality Control Board for the "Assessment of Effectiveness of Treatment Wetlands for Stormwater BMPs and Compatibility with Wildlife Beneficial Uses"*. Grant Agreement No. 04-090-554-0. SCCWRP Technical Report.

VA Consulting. May 2009. Big Canyon Creek Restoration Project, Hydraulic and Structural Calculations Package (Phase 1 & 2).

Weston Solutions, Inc. 2006. Monitoring Plan and Quality Assurance Project Plan for Big Canyon Creek Flow and Water Quality Assessment.

Weston Solutions, Inc. February 2007. *Big Canyon Soil Assessment.* Report. prepared for WRC Consulting Services.

WRC Consulting Services, Inc. 2007. Big Canyon Creek Restoration Project Phase II: Feasibility Study Report.

FIGURES

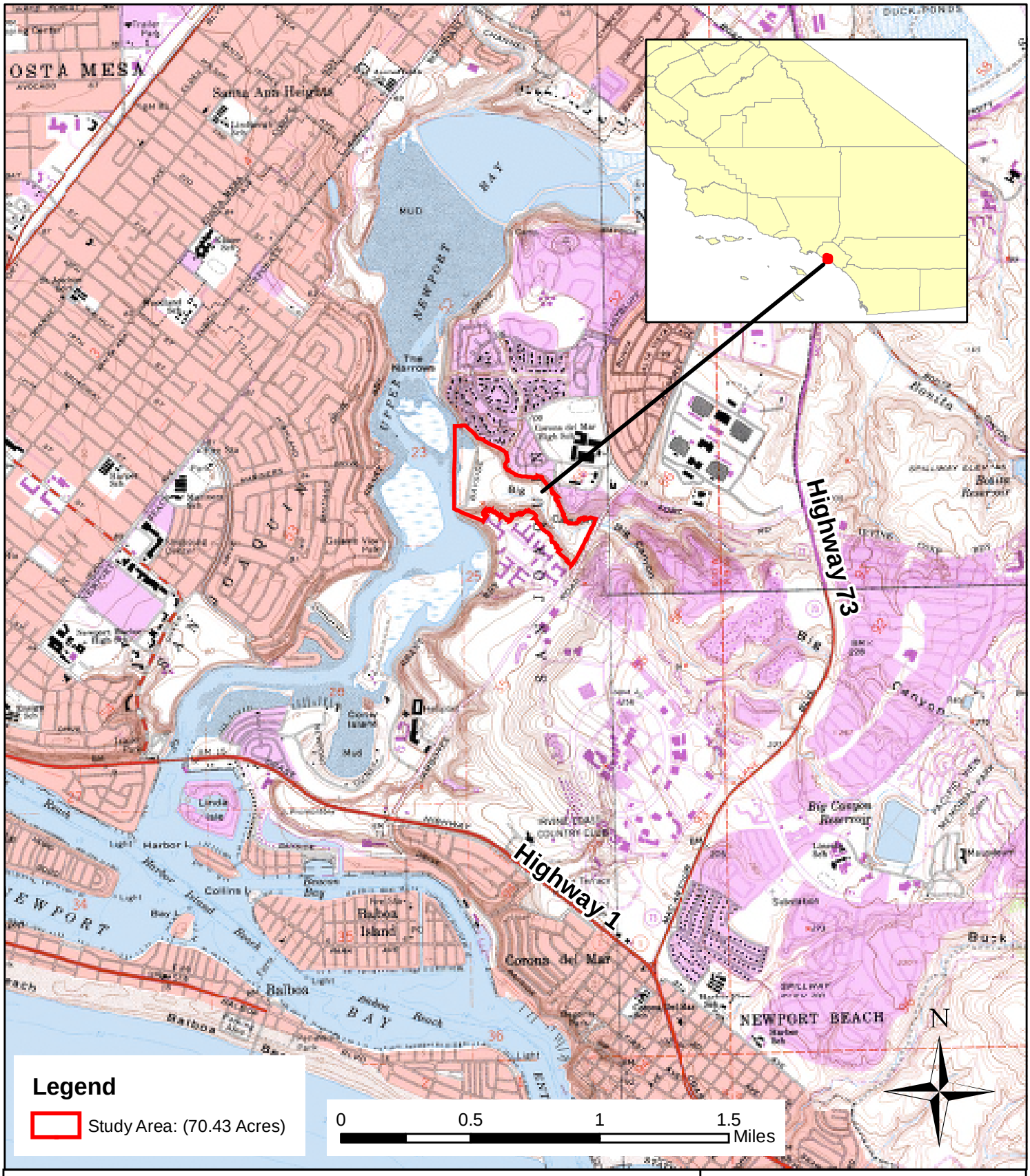
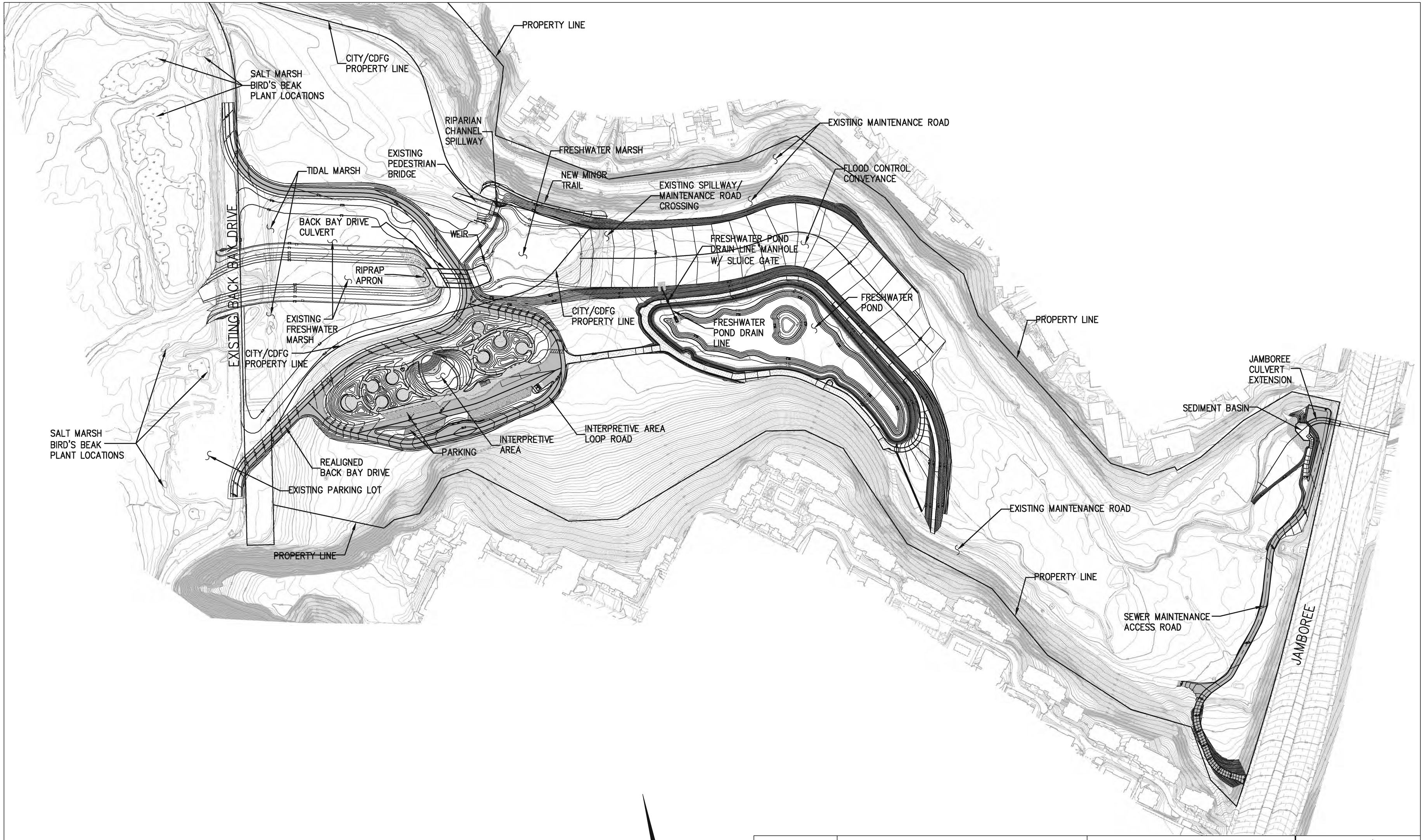


Figure 1. Location Map

Big Canyon Study Area
Newport Beach, California

wra
ENVIRONMENTAL CONSULTANTS

Date: November 2006
Basemap: USGS Topo Quad
Map By: Sundaran Gillespie
Filepath: I:\ACAD2000\13075\GIS\ArcMap\Location Map.mxd



CONSULTING

VA Consulting, Inc.

ENGINEERS · PLANNERS · SURVEYORS

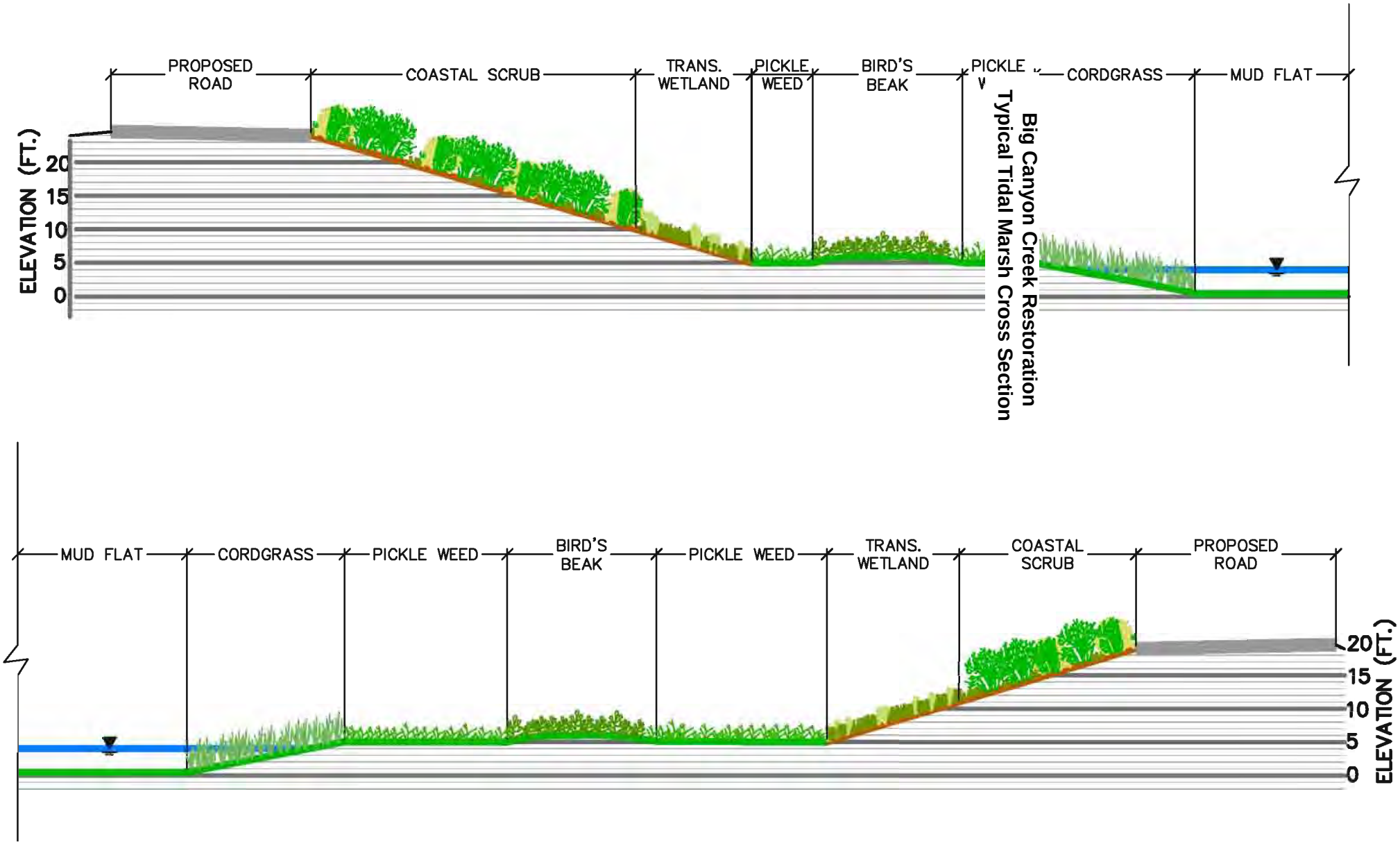
6400 OAK CANYON, STE. 150 (949) 474-1400 TEL
IRVINE, CA 92618 (949) 261-8482 FAX

BIG CANYON RESTORATION PROJECT

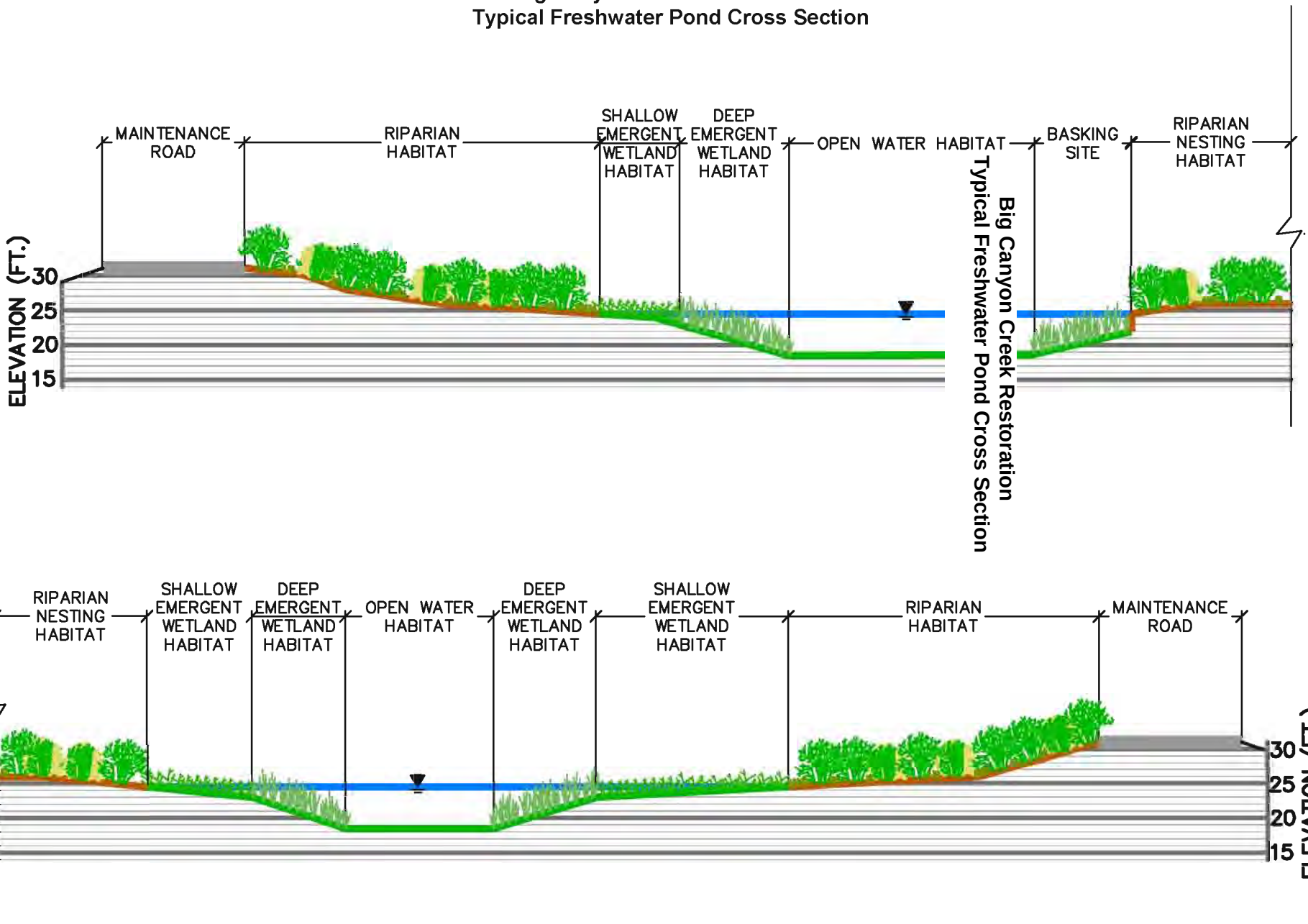
GRADING PLAN

LATEST REV DATE:	04/09
PROJECT NO:	373.01.0400
	1" = 100
PROJ MGR:	SHEET 1
SURVEYOR:	
DRAFTER:	1

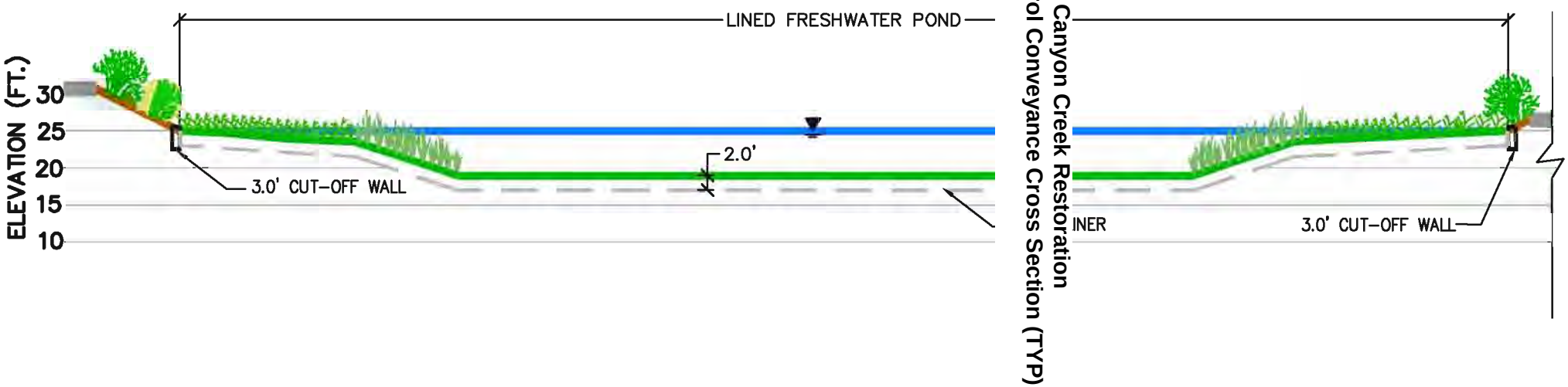
Big Canyon Creek Restoration
Typical Tidal Marsh Cross Section



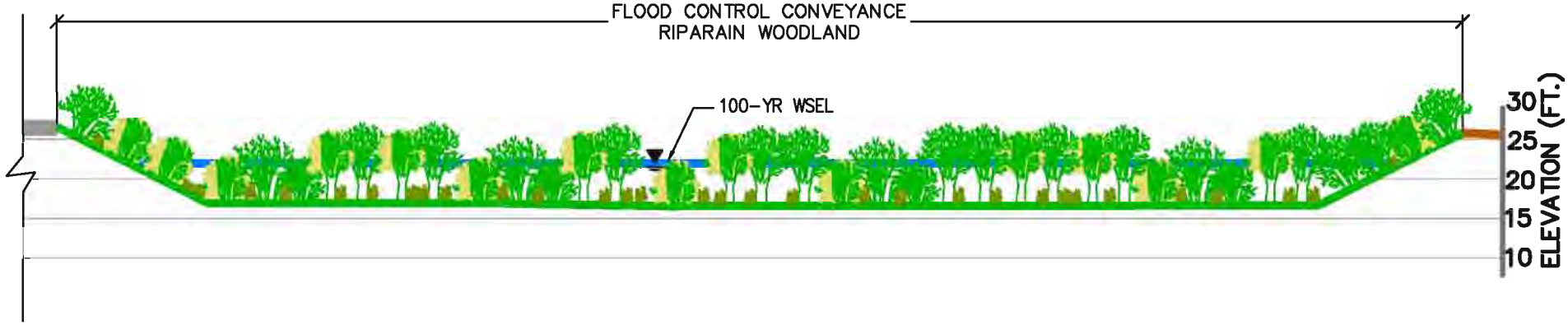
Big Canyon Creek Restoration
Typical Freshwater Pond Cross Section



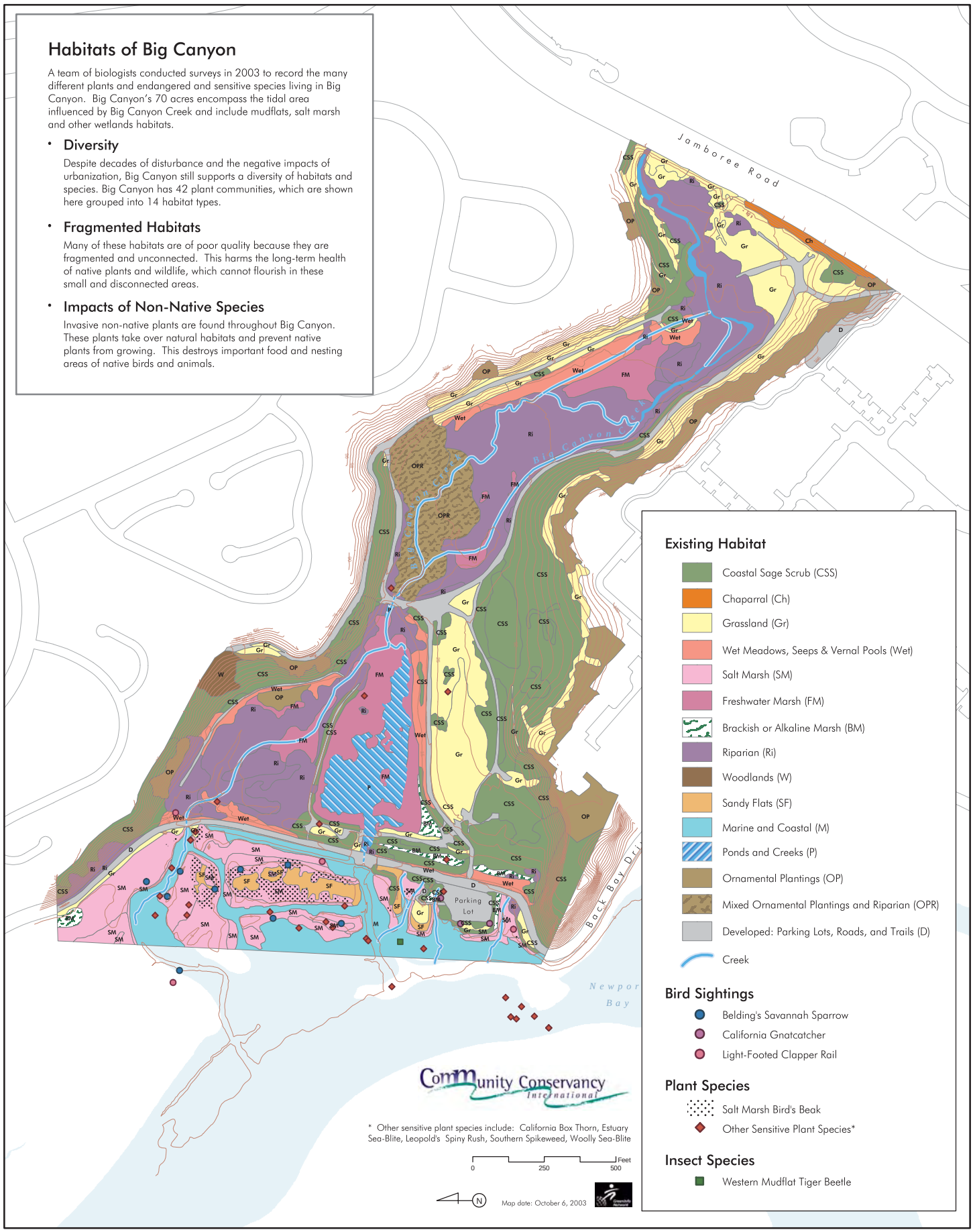
Big Canyon Creek Restoration
Flood Control Conveyance Cross Section (TYP)

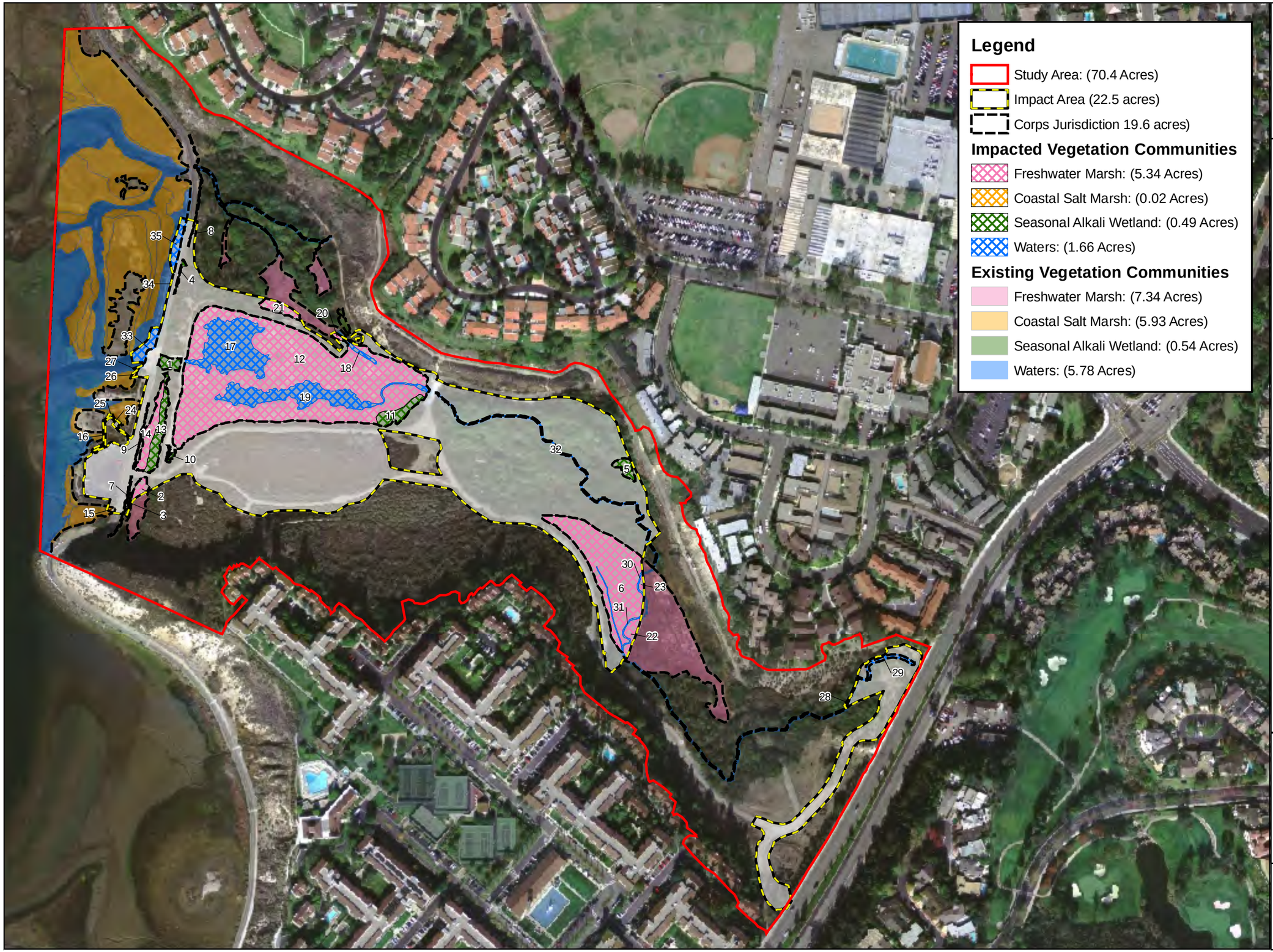


Big Canyon Creek Restoration
Flood Control Conveyance Cross Section (TYP)



HABITATS AND SENSITIVE SPECIES OF BIG CANYON





wra
ENVIRONMENTAL CONSULTANTS
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Big Canyon Restoration Project

Newport, CA

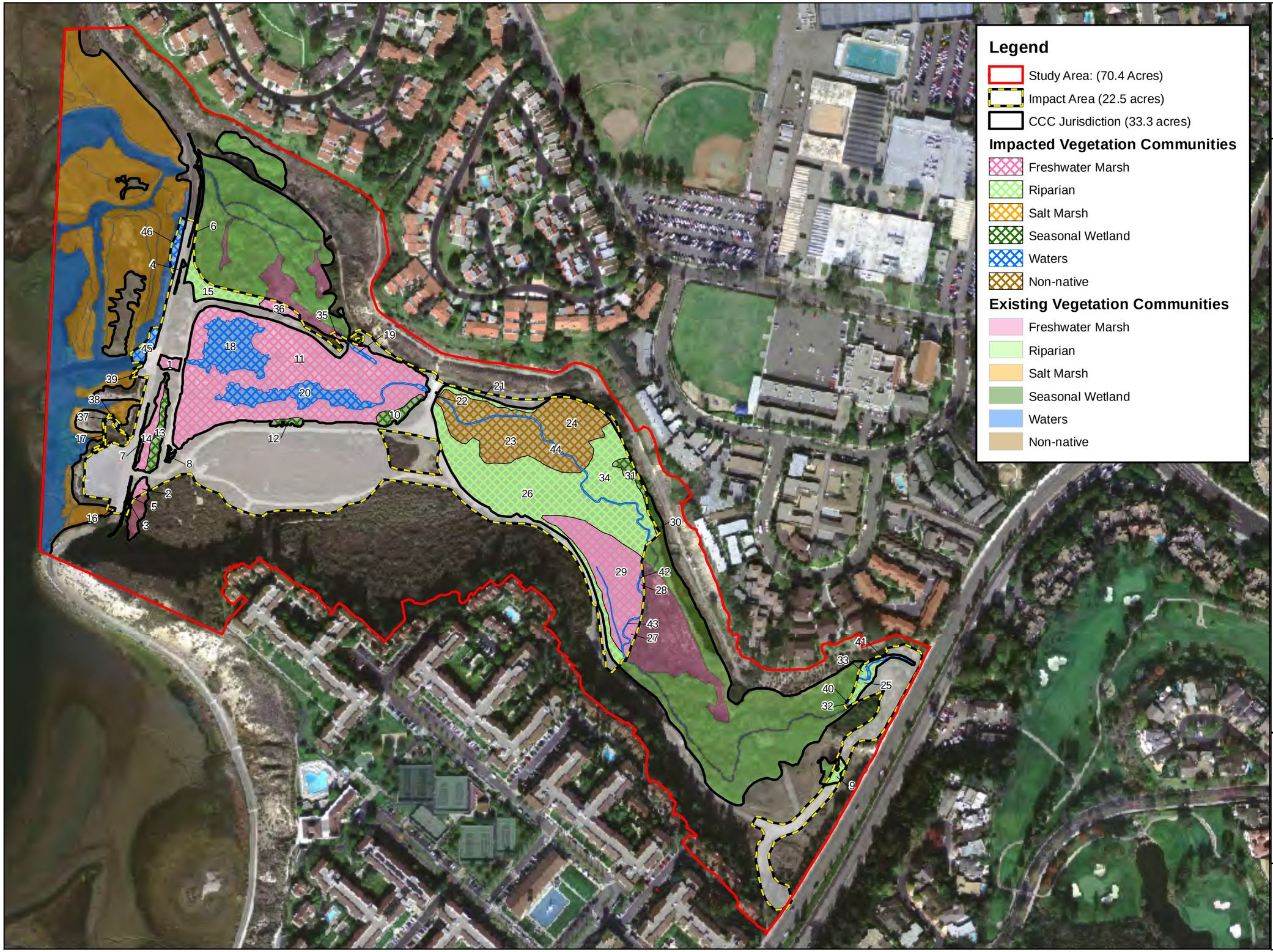
Impacts to Wetlands within Corps Jurisdiction

This map is representational only, and not meant for use in detailed design.

N
W E
S

0 150 300 600
Feet

Date: April 2009
Image Date: 3/29/2004
Image Source: TerraServer
Map By: Derek Chan
Filepath: L:\Acad 2000 Files\13000\13075\gis\ArcMap\April 2009\Corps_Wetlands_20090414.mxd



wra
ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Big Canyon Restoration Project

Newport, CA

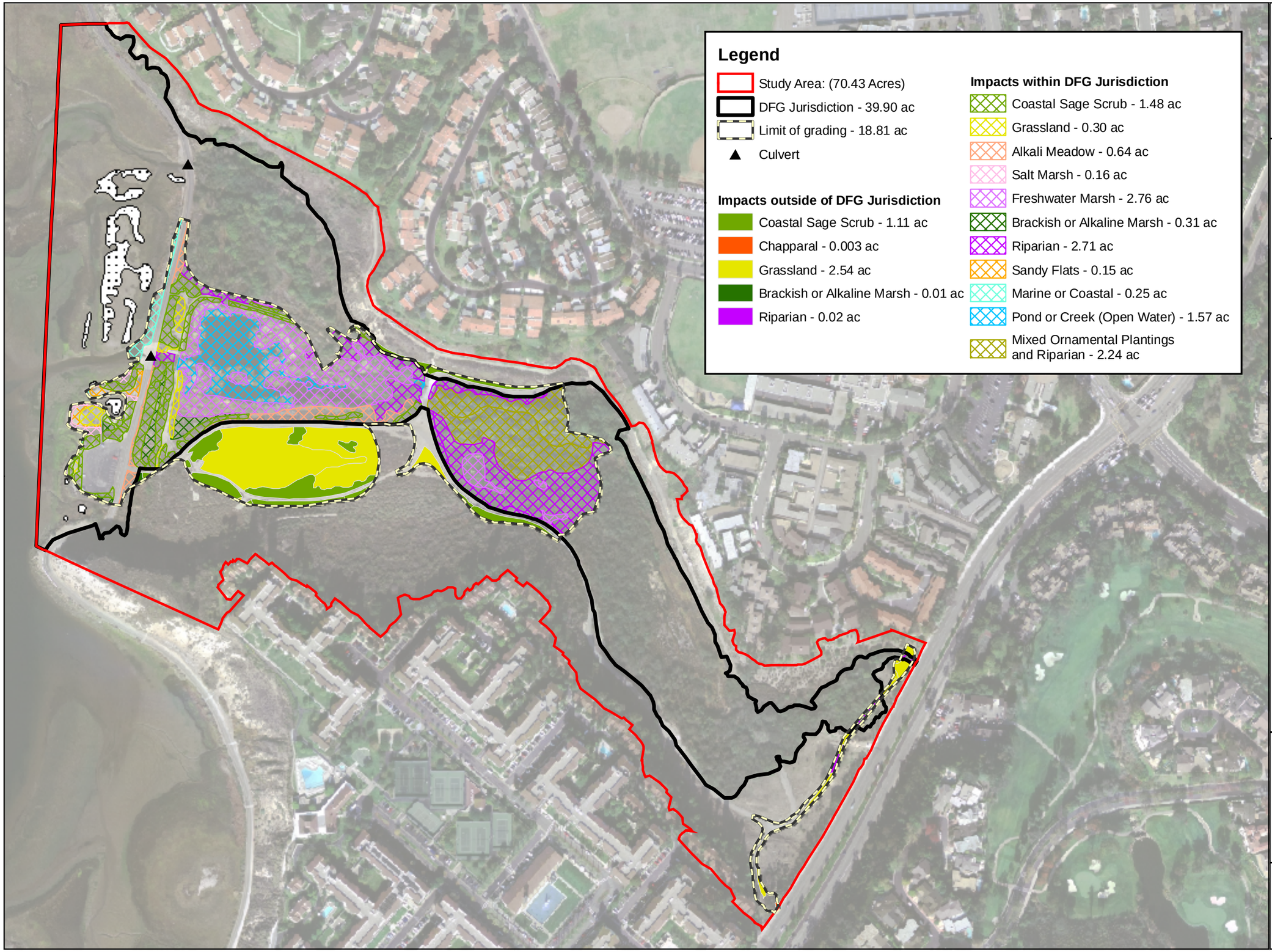
Impacts to Wetlands within CCC Jurisdiction

This map is representational only, and not meant for use in detailed design.

N
W E
S

0 150 300 600
Feet

Date: April 2009
Image Date: 3/29/2004
Image Source: TerraServer
Map By: Derek Chan
Filepath: L:\Acad 2000 Files\13000\13075\gis\ArcMap\April 2009\Impacts_VegComm_20090407.mxd



wra
ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Big Canyon Restoration Project

Newport, CA

Impacts within DFG Jurisdiction

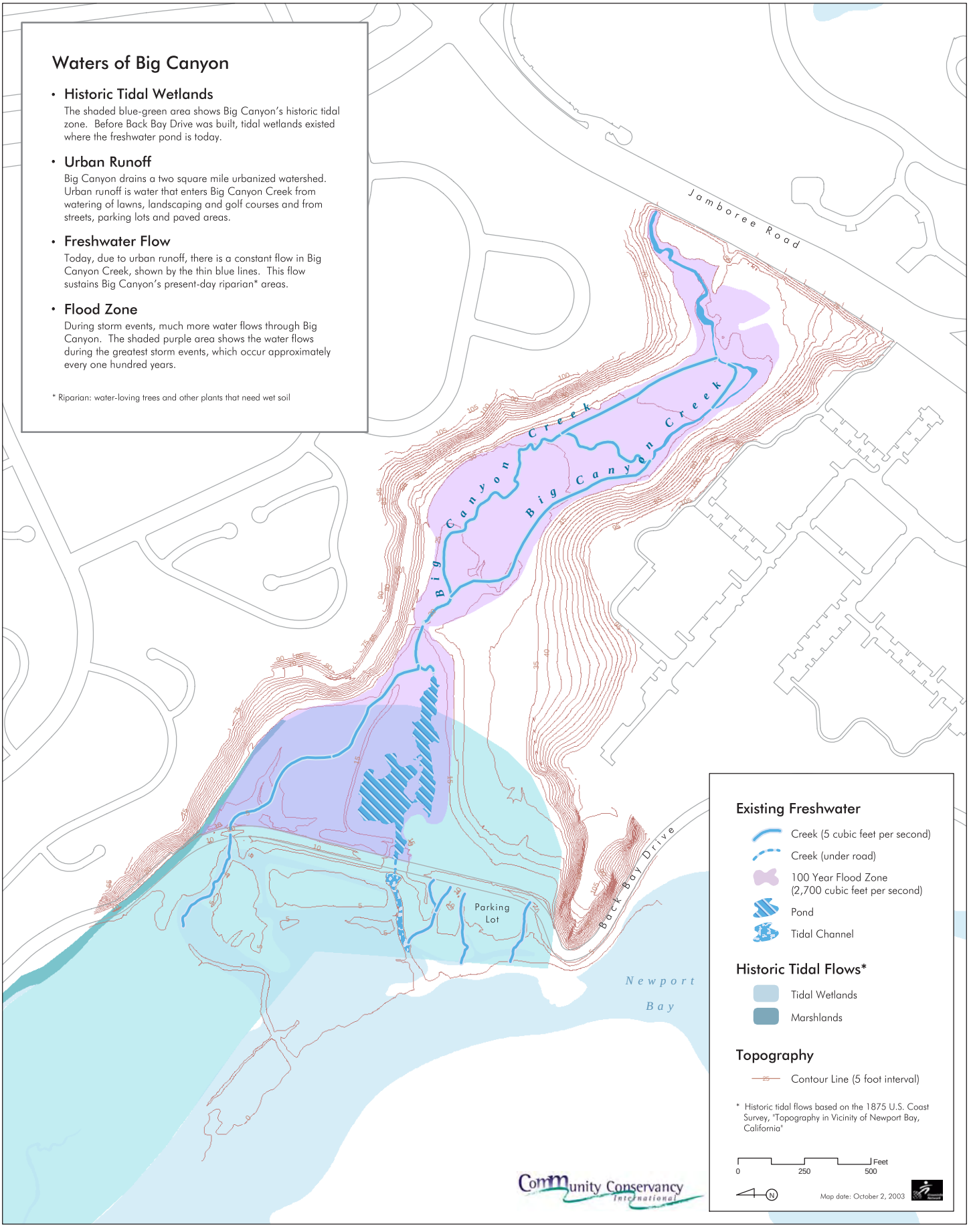
This map is representational only, and not meant for use in detailed design.

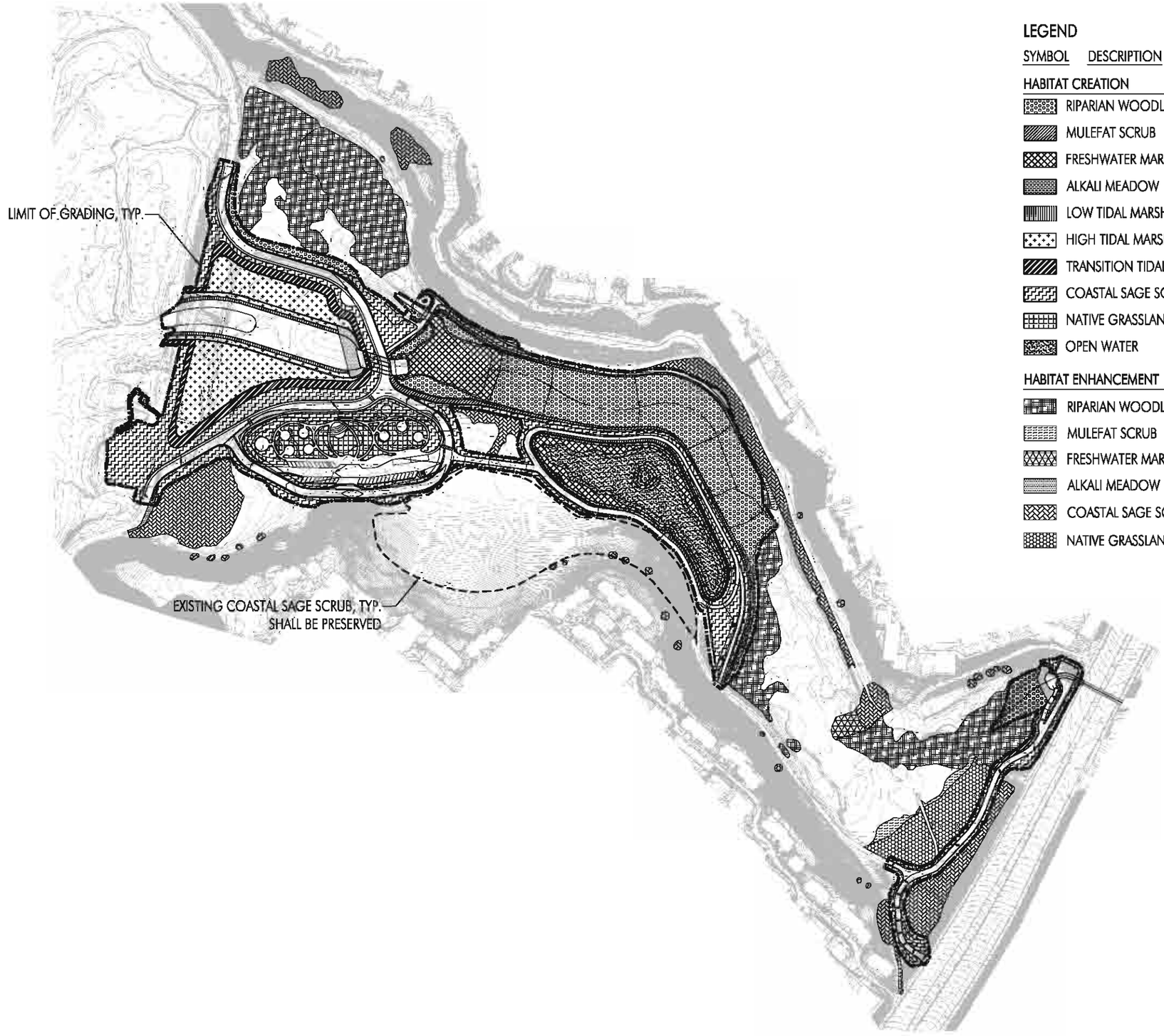
N
W E
S

0 150 300 600
Feet

Date: May 2008
Image Date: 3/29/2004
Image Source: TerraServer
Map By: Derek Chan
Filepath: L:\Acad 2000Files\13000\13075\gis\ArcMap\
DFG_Impacts.mxd

HISTORIC TIDAL WETLANDS & WATERS OF BIG CANYON





LEGEND

SYMBOL	DESCRIPTION
HABITAT CREATION	
	RIPARIAN WOODLAND
	MULEFAT SCRUB
	FRESHWATER MARSH
	ALKALI MEADOW
	LOW TIDAL MARSH
	HIGH TIDAL MARSH
	TRANSITION TIDAL MARSH
	COASTAL SAGE SCRUB
	NATIVE GRASSLAND
	OPEN WATER
HABITAT ENHANCEMENT	
	RIPARIAN WOODLAND
	MULEFAT SCRUB
	FRESHWATER MARSH
	ALKALI MEADOW
	COASTAL SAGE SCRUB
	NATIVE GRASSLAND

wra
ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Big Canyon
Restoration Project

Newport Beach, California

Conceptual Planting Plan

N

0 300' 600'

SCALE IN FEET

Date: June 2009
Project No.: 13075
Figure By: ICM

TABLES

BIG CANYON CREEK RESTORATION, NEWPORT BEACH, ORANGE COUNTY

Table 1. Section 404 Jurisdictional Areas and Impacts
Vegetation and acreage data for each polygon.

POLYGON ID	COMMUNITY	Acres
1	Seasonal_Wetland	0.06
2	Freshwater_Marsh	0.05
3	Seasonal_Wetland	0.01
4	Seasonal_Wetland	0.01
5	Seasonal_Wetland	0.07
6	Freshwater_Marsh	1.16
7	Seasonal_Wetland	0.01
8	Seasonal_Wetland	0.00
9	Seasonal_Wetland	0.01
10	Seasonal_Wetland	0.01
11	Seasonal_Wetland	0.13
12	Freshwater_Marsh	3.76
13	Seasonal_Wetland	0.17
14	Freshwater_Marsh	0.17
15	Salt_Marsh	0.01
16	Salt_Marsh	0.00
17	Waters	0.68
18	Waters	0.03
19	Waters	0.56
20	Freshwater_Marsh	0.01
21	Freshwater_Marsh	0.09
22	Freshwater_Marsh	0.08
23	Freshwater_Marsh	0.02
24	Salt_Marsh	0.00
25	Salt_Marsh	0.00
26	Salt_Marsh	0.01
27	Salt_Marsh	0.00
28	Waters	0.00
29	Waters	0.05
30	Waters	0.01
31	Waters	0.03
32	Waters	0.10
33	Waters	0.11
34	Waters	0.00
35	Waters	0.09
	TOTAL	**7.50**

Summary	Acres Impacted	Existing Acres
Seasonal Wetland	0.49	0.54
Freshwater Marsh	5.34	7.34
Salt Marsh	0.02	5.93
Waters	1.66	5.78
TOTAL	**7.50**	**19.59**

BIG CANYON CREEK RESTORATION, NEWPORT BEACH, ORANGE COUNTY

Table 2. California Coastal Commission Jurisdictional Areas and Impacts
Vegetation and acreage data for each polygon.

POLYGON ID	COMMUNITY	ACRES
1	Freshwater Marsh	0.06
2	Freshwater Marsh	0.05
3	Seasonal Wetland	0.01
4	Seasonal Wetland	0.01
5	Seasonal Wetland	0.01
6	Seasonal Wetland	0.00
7	Seasonal Wetland	0.01
8	Seasonal Wetland	0.01
9	Riparian	0.06
10	Seasonal Wetland	0.13
11	Freshwater Marsh	3.74
12	Seasonal Wetland	0.05
13	Seasonal Wetland	0.17
14	Freshwater Marsh	0.17
15	Riparian	0.30
16	Salt Marsh	0.01
17	Salt Marsh	0.00
18	Waters	0.68
19	Waters	0.03
20	Waters	0.56
21	Riparian	0.10
22	Riparian	0.00
23	Non-native	0.99
24	Non-native	1.07
25	Riparian	0.09
26	Riparian	2.51
27	Freshwater Marsh	0.08
28	Freshwater Marsh	0.02
29	Freshwater Marsh	1.16
30	Seasonal Wetland	0.01
31	Seasonal Wetland	0.10
32	Riparian	0.00
33	Riparian	0.03
34	Riparian	0.74
35	Freshwater Marsh	0.01
36	Freshwater Marsh	0.09
37	Salt Marsh	0.00
38	Salt Marsh	0.00
39	Salt Marsh	0.01
40	Waters	0.00
41	Waters	0.05
42	Waters	0.01
43	Waters	0.03
44	Waters	0.10
45	Waters	0.11
46	Waters	0.09
	TOTAL	**13.46**

Summary	Acres Impacted	Existing Acres
Freshwater Marsh	5.38	7.39
Seasonal Wetland	0.52	0.91
Riparian	3.83	11.23
Salt Marsh	0.02	5.93
Waters	1.66	5.78
Non-native	2.06	2.06
TOTAL	**13.46**	**33.3**

BIG CANYON CREEK RESTORATION, NEWPORT BEACH, ORANGE COUNTY

Table 3. Corresponding Table for Impacts Figure 8: Vegetation and acreage data for each polygon:

POLYGON ID	COMMUNITY*	QUALITY	DFG IMPACTS	TOTAL IMPACT
1	Ch	Moderate		0.032
2	Ri	Low		0.070
3	Gr	Moderate		0.024
4	CSS	Low		0.004
5	Gr	Low		0.031
6	Ri	Low	0.026	0.026
7	Ri	Moderate	0.001	0.001
8	Gr	Low/ Moderate		0.002
9	Gr	Moderate		0.058
10	Gr	Low/ Moderate		0.052
11	Gr	Low		0.080
12	Gr	Moderate		0.014
13	Gr	Low/ Moderate		0.063
14	CSS	Low		0.022
15	Wet	Low	0.079	0.079
16	Wet	High	0.008	0.008
17	Wet	Low	0.056	0.056
18	Gr	Low/ Moderate		0.002
19	SM	High	0.008	0.008
20	BM	High	0.010	0.010
21	SM	High	0.002	0.002
22	SF	High	0.001	0.001
23	Gr	High	0.002	0.002
24	CSS	Low		0.096
25	Gr	Moderate		0.050
26	FM	High	0.044	0.044
27	CSS	High	0.085	0.085
28	D	High	0.052	0.052
29	Ri	High	0.013	0.013
30	FM	Low/ Moderate	0.062	0.062
31	CSS	High	0.017	0.017
32	CSS	High		0.089
33	Wet	High	0.086	0.086
34	BM	High		0.030
35	CSS	High	0.049	0.049
36	Gr	High	0.020	0.020
37	CSS	High	0.016	0.016
38	Gr	High	0.072	0.072
39	P	Low/ Moderate	0.022	0.022
40	Ri	Low/ Moderate	0.238	0.238
41	CSS	High	0.044	0.044
42	CSS	High	0.090	0.090
43	Wet	Moderate	0.064	0.064
44	Wet	High	0.056	0.056
45	Ri	High	0.014	0.014
46	BM	High	0.137	0.137
47	D	High	0.274	0.274
48	Gr	High	0.020	0.020
49	Gr	High	0.052	0.052
50	CSS	High	0.127	0.127
51	Gr	High	0.025	0.025
52	Ri	High	0.037	0.037
53	BM	High	0.135	0.135
54	CSS	High	0.083	0.083
55	CSS	High	0.052	0.052
56	CSS	High	0.202	0.202
57	CSS	High	0.090	0.090
58	CSS	Low/ Moderate	0.044	0.044
59	Wet	High	0.096	0.096
60	CSS	Moderate	0.029	0.029
61	CSS	High	0.084	0.084
62	CSS	Low		0.054
63	CSS	Moderate		0.033
64	CSS	Moderate		0.279
65	CSS	Low		0.045
66	Gr	Low		1.413
67	Gr	Low		0.621
68	CSS	High		0.138
69	Gr	Low		0.023
70	Ri	Moderate	0.008	0.008
71	Ri	Low/ Moderate	0.400	0.400
72	Ri	Moderate/High	0.037	0.037
73	Ri	Low	0.115	0.115
74	CSS	Moderate	0.056	0.056
75	CSS	Moderate		0.008
76	OPR	Low	1.216	1.216
77	FM	Low	0.180	0.180
78	FM	Low	0.017	0.017
79	Ri	Low	0.033	0.033
80	FM	Low	0.035	0.035
81	Ri	Low	0.164	0.164
82	OPR	Low	1.387	1.387
83	OPR	Moderate/High	0.014	0.014
84	Ri	Moderate/High	0.061	0.061
85	OP	Low		0.050
86	D	N/A	0.289	0.289
87	D	N/A	0.282	0.282
88	CSS	Low/ Moderate		0.008
89	CSS	Low/ Moderate		0.002
90	D	Low		0.020
91	Gr	Low		0.130
92	Ri	Low/ Moderate	0.322	0.322
93	Ri	Low/ Moderate	0.002	0.002
94	Ri	Low/ Moderate	0.299	0.299
95	Ri	Low/ Moderate	0.001	0.001
96	CSS	High	0.000	0.000
97	Gr	Low		0.009
98	Gr	Low		0.001
99	Gr	Low		0.008
100	Gr	Low		0.017
101	Gr	Low		0.001
102	Gr	Low		0.001
103	Gr	Low		0.000
104	Gr	Low		0.023
105	Gr	Low/ Moderate		0.020
106	Gr	Low/ Moderate		0.016
107	Gr	Low		0.055
108	Gr	Low		0.001
109	Gr	Low		0.003
110	Gr	Low		0.119
111	Gr	Low		0.145
112	CSS	Low		0.000
113	CSS	Low		0.027
114	D	N/A	0.414	0.414
115	D	N/A	0.031	0.031
116	CSS	High	0.016	0.016
117	CSS	High	0.001	0.001
118	CSS	High	0.008	0.008
119	CSS	High	0.001	0.001
120	CSS	High	0.013	0.013
121	CSS	High		0.001
122	CSS	High		0.066
123	Gr	High		0.008
124	P	High	1.550	1.550
125	SF	High	0.005	0.005
126	SM	High	0.006	0.006
127	Wet	High	0.407	0.407
128	CSS	High	0.115	0.115
129	FM	High	2.588	2.588
130	Gr	Moderate		0.134
131	Gr	Moderate		0.062
132	CSS	High		0.003
133	CSS	High		0.083
134	CSS	High		0.026
135	CSS	High		0.028
136	CSS	High		0.001
137	CSS	High		0.040
138	CSS	High		0.004
139	Ri	Low	3.795	3.795
140	M	High	0.088	0.088
141	M	High	0.108	0.108
142	CSS	Moderate		0.024
143	CSS	Moderate		0.006
144	D	Low		0.029
145	D	Low		0.001
146	D	N/A		0.725
147	D	N/A		0.001
148	D	N/A		0.017
149	D	N/A		0.299
150	D	N/A		0.009
151	D	N/A		0.183
		TOTAL IMPACTED ACRES		16.787	22.526

*PLANT COMMUNITY
BM=Brackish Marsh
Ch=Chaparral
CSS=Coastal Sage Scrub
D=Urban/Commercial
FM=Freshwater Marsh
Gr=Grassland
M=Marine Mudflats
OP=Ornamental Plantings
OPR=Mixed Ornamental and Riparian
P=Rond or Creek
Ri=Riparian
SF=Sandy Flats
SM=Salt Marsh
W=Woodland
Wet=Wet Meadow, Seep, Vernal Pool

BIG CANYON CREEK RESTORATION, NEWPORT BEACH, ORANGE COUNTY

Table 4. Corresponding Table for Impacts Figure: Vegetation and acreage data for each polygon:

POLYGON ID	COMMUNITY*	QUALITY	DFG IMPACTS (acres)	TOTAL IMPACT (acres)
1	Ch	Moderate		0.032
2	Ri	Low		0.070
3	Gr	Moderate		0.024
4	CSS	Low		0.004
5	Gr	Low		0.031
6	Ri	Low	0.026	0.026
7	Ri	Moderate	0.001	0.001
8	Gr	Low/ Moderate		0.002
9	Gr	Moderate		0.058
10	Gr	Low/ Moderate		0.052
11	Gr	Low		0.080
12	Gr	Moderate		0.014
13	Gr	Low/ Moderate		0.063
14	CSS	Low		0.022
15	Wet	Low	0.079	0.079
16	Wet	High	0.008	0.008
17	Wet	Low	0.056	0.056
18	Gr	Low/ Moderate		0.002
19	SM	High	0.008	0.008
20	BM	High	0.010	0.010
21	SM	High	0.002	0.002
22	SF	High	0.001	0.001
23	Gr	High	0.002	0.002
24	CSS	Low		0.096
25	Gr	Moderate		0.050
26	FM	High	0.044	0.044
27	CSS	High	0.085	0.085
28	D	High	0.052	0.052
29	Ri	High	0.013	0.013
30	FM	Low/ Moderate	0.062	0.062
31	CSS	High	0.017	0.017
32	CSS	High		0.089
33	Wet	High	0.086	0.086
34	BM	High		0.030
35	CSS	High	0.049	0.049
36	Gr	High	0.020	0.020
37	CSS	High	0.016	0.016
38	Gr	High	0.072	0.072
39	P	Low/ Moderate	0.022	0.022
40	Ri	Low/ Moderate	0.238	0.238
41	CSS	High	0.044	0.044
42	CSS	High	0.090	0.090
43	Wet	Moderate	0.064	0.064
44	Wet	High	0.056	0.056
45	Ri	High	0.014	0.014
46	BM	High	0.137	0.137
47	D	High	0.274	0.274
48	Gr	High	0.020	0.020
49	Gr	High	0.052	0.052
50	CSS	High	0.127	0.127
51	Gr	High	0.025	0.025
52	Ri	High	0.037	0.037
53	BM	High	0.135	0.135
54	CSS	High	0.083	0.083
55	CSS	High	0.052	0.052
56	CSS	High	0.202	0.202
57	CSS	High	0.090	0.090
58	CSS	Low/ Moderate	0.044	0.044
59	Wet	High	0.096	0.096
60	CSS	Moderate	0.029	0.029
61	CSS	High	0.084	0.084
62	CSS	Low		0.054
63	CSS	Moderate		0.033
64	CSS	Moderate		0.279
65	CSS	Low		0.045
66	Gr	Low		1.413
67	Gr	Low		0.621
68	CSS	High		0.138
69	Gr	Low		0.023
70	Ri	Moderate	0.008	0.008
71	Ri	Low/ Moderate	0.400	0.400
72	Ri	Moderate/High	0.037	0.037
73	Ri	Low	0.115	0.115
74	CSS	Moderate	0.056	0.056
75	CSS	Moderate		0.008
76	OPR	Low	1.216	1.216
77	FM	Low	0.180	0.180
78	FM	Low	0.017	0.017
79	Ri	Low	0.033	0.033
80	FM	Low	0.035	0.035
81	Ri	Low	0.164	0.164
82	OPR	Low	1.387	1.387
83	OPR	Moderate/High	0.014	0.014
84	Ri	Moderate/High	0.061	0.061
85	OP	Low		0.050
86	D	N/A	0.289	0.289
87	D	N/A	0.282	0.282
88	CSS	Low/ Moderate		0.008
89	CSS	Low/ Moderate		0.002
90	D	Low		0.020
91	Gr	Low		0.130
92	Ri	Low/ Moderate	0.322	0.322
93	Ri	Low/ Moderate	0.002	0.002
94	Ri	Low/ Moderate	0.299	0.299
95	Ri	Low/ Moderate	0.001	0.001
96	CSS	High	0.000	0.000
97	Gr	Low		0.009
98	Gr	Low		0.001
99	Gr	Low		0.008
100	Gr	Low		0.017
101	Gr	Low		0.001
102	Gr	Low		0.001
103	Gr	Low		0.000
104	Gr	Low		0.023
105	Gr	Low/ Moderate		0.020
106	Gr	Low/ Moderate		0.016
107	Gr	Low		0.055
108	Gr	Low		0.001
109	Gr	Low		0.003
110	Gr	Low		0.119
111	Gr	Low		0.145
112	CSS	Low		0.000
113	CSS	Low		0.027
114	D	N/A	0.414	0.414
115	D	N/A	0.031	0.031
116	CSS	High	0.016	0.016
117	CSS	High	0.001	0.001
118	CSS	High	0.008	0.008
119	CSS	High	0.001	0.001
120	CSS	High	0.013	0.013
121	CSS	High		0.001
122	CSS	High		0.066
123	Gr	High		0.008
124	P	High	1.550	1.550
125	SF	High	0.005	0.005
126	SM	High	0.006	0.006
127	Wet	High	0.407	0.407
128	CSS	High	0.115	0.115
129	FM	High	2.588	2.588
130	Gr	Moderate		0.134
131	Gr	Moderate		0.062
132	CSS	High		0.003
133	CSS	High		0.083
134	CSS	High		0.026
135	CSS	High		0.028
136	CSS	High		0.001
137	CSS	High		0.040
138	CSS	High		0.004
139	Ri	Low	3.795	3.795
140	M	High	0.088	0.088
141	M	High	0.108	0.108
142	CSS	Moderate		0.024
143	CSS	Moderate		0.006
144	D	Low		0.029
145	D	Low		0.001
146	D	N/A		0.725
147	D	N/A		0.001
148	D	N/A		0.017
149	D	N/A		0.299
150	D	N/A		0.009
151	D	N/A		0.183
		TOTAL IMPACTED ACRES	**16.787**	**22.526**

*PLANT COMMUNITY
BM=Brackish Marsh
Ch=Chaparral
CSS=Coastal Sage Scrub
D=Urban/Commercial
FM=Freshwater Marsh
Gr=Grassland
M=Marine Mudflats
OP=Ornamental Plantings
OPR=Mixed Ornamental and Riparian
P=Rond or Creek
Ri=Riparian
SF=Sandy Flats
SM=Salt Marsh
W=Woodland
Wet=Wet Meadow, Seep, Vernal Pool