DRAFT

INITIAL STUDY
MITIGATED NEGATIVE DECLARATION

CANDLESTICK POINT STATE RECREATION AREA
YOSEMITE SLOUGH RESTORATION PROJECT

December 2005

State of California
California State Parks

CALIFORNIA STATE PARKS FOUNDATION
800 COLLEGE AVENUE
P.O. BOX 548
KENTFIELD, CA 94914

MITIGATED NEGATIVE DECLARATION

PROJECT: **YOSEMITE SLOUGH RESTORATION PROJECT**

LEAD AGENCY: California Department of Parks and Recreation (DPR)

AVAILABILITY OF DOCUMENTS: The Initial Study for this Mitigated Negative Declaration is available for review at:

- Northern Service Center
  California Department of Parks and Recreation
  One Capitol Mall, Suite 500
  Sacramento, CA 95814

- Candlestick Point State Recreation Area
  P.O. Box 34159
  San Francisco, CA 94134

- San Francisco Main Library
  100 Larkin Street
  Civic Center, San Francisco, CA 94102

- City of San Francisco Bayview/Anna E. Waden Branch Library
  5075 3rd Street
  San Francisco, CA 94124

  California Department of Parks and Recreation Internet Website
  http://www.parks.ca.gov/?page_id=980

PROJECT DESCRIPTION:

The California State Parks Foundation (Foundation) proposes to restore a portion of the Candlestick Point State Recreation Area (SRA).

The proposed project would consist of the following:

- Restore approximately 12 acres of tidally influenced area
- Create two isolated nesting islands and nursery areas for fish and benthic organisms
- Create transitional and upland areas to buffer sensitive habitats
- Provide approximately 5,000 feet of interpretative trails with five vista points
- Construct an approximately 1,200 square feet (sq. ft.) multi-use interpretive center with restrooms
- Create approximately 2.5 acres of passive recreation area
- Re-vegetate designated areas with native species
- Provide parking to accommodate approximately 30 vehicles and 2 buses
- Provide access to the restored area

- Install perimeter fencing, security/safety lighting, benches, and drinking water fountains
- Remediate contaminated soil areas

A copy of the Initial Study is attached. Questions or comments regarding this Initial Study/Mitigated Negative Declaration (IS/MND) may be addressed to:

Patricia DuMont
Northern Service Center
California State Parks
One Capitol Mall, Suite 500
Sacramento, CA 95814

Pursuant to Section 21082.1 of the CEQA, DPR has independently reviewed and analyzed the Initial Study and Mitigated Negative Declaration for the proposed project and finds that these documents reflect the independent judgment of DPR. DPR, as lead agency, also confirms that the project mitigation measures detailed in these documents are feasible and will be implemented as stated in the Mitigated Negative Declaration.

Signature on Original Document _____ _____
Date

District Superintendent

Signature on Original Document _____ _____
Patricia DuMont Date
Environmental Coordinator

TABLE of CONTENTS

Chapter/Section **Page**

1 INTRODUCTION 1

2 PROJECT DESCRIPTION 5

3 ENVIRONMENTAL CHECKLIST 23

ENVIRONMENTAL ISSUES 25
- I. Aesthetics 26
- II. Agricultural Resources 28
- III. Air Quality 29
- IV. Biological Resources 34
- V. Cultural Resources 38
- VI. Geology and Soils 42
- VII. Hazards and Hazardous Materials 45
- VIII. Hydrology and Water Quality 54
- IX. Land Use and Planning 58
- X. Mineral Resources 60
- XI. Noise 60
- XII. Population and Housing 64
- XIII. Public Services 66
- XIV. Recreation 67
- XV. Transportation/Traffic 68
- XVI. Utilities and Service Systems 73

4 MANDATORY FINDINGS OF SIGNIFICANCE 77

5 SUMMARY OF MITIGATION MEASURES 81

6 REFERENCES 97

7 REPORT PREPARATION 103

Appendices

A TABLES, AND CHARTS A-1

B PROJECT DESIGN GRAPHICS B-1

C PHASE II ENVIRONMENTAL SITE ASSESSMENT YOSEMITE SLOUGH WETLANDS RESTORATION (EXCERPT) C-1

D Acronyms D-1

CHAPTER 1
INTRODUCTION

1.1 INTRODUCTION AND REGULATORY GUIDANCE

The Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the California Department of Parks and Recreation (DPR) to evaluate the potential environmental effects of the proposed Candlestick Point State Recreation Area (SRA), Yosemite Slough Restoration Project at San Francisco, San Francisco 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*.

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/MND conforms to the content requirements under CEQA Guidelines §15071.

1.2 LEAD AGENCY

Although the Foundation is the project sponsor, DPR is the lead agency for preparation of environmental documentation in compliance with the California Environmental Quality Act (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 DPR. The contact person for the lead agency regarding specific project information is:

Patricia DuMont
One Capitol Mall, Suite 500
Sacramento, CA 95814
Phone: 916-445-9081
pdumont@parks.ca.gov

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

Melissa Wahlstrom
California State Parks Foundation
800 College Avenue
P.O. Box 548
Kentfield, CA 94914
melissa@calparks.org

Submissions must be in writing and postmarked or received by fax or email no later than January 3, 2006. The originals of any faxed document 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.

1.3 PURPOSE AND DOCUMENT ORGANIZATION

The purpose of this document is to evaluate the potential environmental effects of the proposed Yosemite Slough Restoration Project at Candlestick Point SRA. 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 DPR to determine whether or not to adopt the IS/MND and to approve the proposed project. This document will also allow the Foundation to use this document to support grant applications should the proposed project be approved by DPR.

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 - 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 4 - 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 5 - Summary of Mitigation Measures.
  This chapter summarizes the mitigation measures incorporated into the project as a result of the Initial Study.

- Chapter 6 - References.
  This chapter identifies the references and sources used in the preparation of this IS/MND.

- Chapter 7 - Report Preparation
  This chapter provides a list of those involved in the preparation of this document.

1.4 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 Yosemite Slough Restoration Project would result in less-than-significant impacts for the following issues: aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic, and utilities and service systems.

In accordance with §15064(f) of the CEQA Guidelines, a 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 Mitigated Negative Declaration be adopted in accordance with the CEQA Guidelines.

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CHAPTER 2
PROJECT DESCRIPTION

2.1 INTRODUCTION

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the California Department of Parks and Recreation (DPR) to evaluate the potential environmental effects of the proposed Yosemite Slough Restoration Project at Candlestick Point SRA located in the City of San Francisco, San Francisco County, California.

The proposed project would increase the existing tidally influenced area from nine acres to over 20 acres, create two isolated bird nesting islands (including one designed specifically for special status species), provide nursery areas for fish and benthic organisms, transitional and upland areas to buffer sensitive habitats, more than 5,000 feet of new interpretative trails with five vista points, an approximate 1,200 square foot multi-use interpretive center with restroom facilities, 2.5 acres of passive public use areas, parking for 30 vehicles and 2 buses, new access to the restored area, and additional amenities including parking, fencing, lighting, benches, and drinking water fountains. The restoration design, which would include re-vegetation, would also address soil contaminant issues arising from previous fill activities that could affect human and wildlife health.

Assistance and input from local and state agencies, reports and surveys from community organizations, and concerns expressed by stakeholders from the Bayview/Hunters Point have been used to guide the project's restoration design.

2.2 PROJECT LOCATION

Candlestick Point SRA is located along the western shoreline of the San Francisco Bay, in the southeast part of the City of San Francisco, and the northeast portion of San Mateo County (see Figure 2-1 in Appendix B). Candlestick Point SRA, a 252-acre park, provides a variety of recreation opportunities (e.g., hiking, bicycling, fishing, windsurfing, and picnicking) that are primarily provided in the central to southern portion of the park. Existing facilities in the SRA include the DPR offices, community gardens, walking trails (some of which are handicapped accessible), open lawns, fishing access, and a restroom. The park provides structured programs such as intertidal walks, bird walks, and fishing instruction programs to schools and other groups on requests.

The park is adjacent to industrial and urban neighborhoods. The inactive United States (U.S.) Navy Shipyard bounds the SRA to the north, and the San Mateo County Line demarcates the southern boundary of the SRA. The Bayview community is located to the northwest, and Monster Park (formerly referred to as Candlestick Park and 3Com Park) is located to the southwest. The Hunter's Point Community is located north of the Bayview community.

The proposed project site consists of the northern-most portion of the 252-acre SRA. Figure 2-2 (in Appendix B) shows the existing uses at and adjacent to the 34-acre project site, including Yosemite Slough, approximately 9 acres of wetlands habitat (including primarily mud flats and open water), and industrial uses. The land surrounding the current wetland area consists of fill that was placed over the historic wetland. Streets bounding the project site include Thomas Avenue to the north, Ingalls Street to the east, Yosemite Avenue and Carroll Avenue to the south. Industrial uses flank the proposed project site.

2.3 BACKGROUND AND NEED FOR THE PROJECT

2.3.1 Site History

The project site was historically part of the tidal marshes and mudflats of San Francisco Bay. The history of the Yosemite Slough has been one of tidal habitat loss due to gradual filling for residential and industrial use. Development of the area began in the 1850s. Since the late 1800s, imported fill has been placed over the area, raising the ground surface to a level approximately 5 to 20 feet above sea level. Filling of the tidelands continued through the 1960s until the approximate current shoreline became established in 1972. The project site has been utilized for import of fill (and potentially other debris), and light industrial and commercial development including an auto salvage and wrecking yard. The site also contains utility corridors for several sewer lines and the slough is a discharge location for storm/sanitary water overflow via three outfalls, or combined sewer outfalls (CSOs) (see Figure 2-2 in Appendix B). The current Yosemite Slough consists of a remnant channel within the original tidal marsh.

2.3.2 Documents Relevant to the Proposed Project

2.3.2.1 Candlestick Point State Recreation Area General Plan

The Candlestick Point State Recreation Area General Plan (*Candlestick Point SRA GP – as amended* March 1988) was adopted by the DPR Commission on May 8, 1987. The *Candlestick Point SRA GP* provides guidance on the development and management of the Candlestick Point SRA. The *Candlestick Point SRA GP* provides conceptual design criteria intended to maximize the link between nature, humanity, and the city, and includes the following objectives:

- Increase the quality of urban life, and instill a sense of responsibility, and pride in the environment around the city.
- Identify and understand the ecological life cycles of the San Francisco Bay shoreline and its natural and cultural resources.
- Identify the surrounding influences on the site and the recreational and human resources of the San Francisco Bay Area.
- Provide public accessibility to the shoreline of the San Francisco Bay.
- Expand visitor opportunities for reflection, appreciation, and enjoyment of natural, cultural, recreational, and human resources.
- Identify the need for paid and voluntary public participation in building, maintaining, and programming the unit facilities.

- Establish policies for management, protection, and interpretation of the resources.
- Identify valuable land acquisition opportunities outside the existing park boundaries.
- Recommend additional studies beyond the scope of the *Candlestick Point SRA GP.*
- Determine the potential environmental impacts of visitor activities and land uses.

In addition, the *Candlestick Point SRA GP* identifies the following facilities that could be developed within the SRA:

- Trails for hiking, biking, jogging, wheelchair, and emergency vehicle service access
- Group and family picnic areas
- Group campgrounds
- Fishing piers
- Non-powered boat rental
- Wind surfing facilities
- Boating center
- Sand beach
- Quiet area
- Cultural program center
- Boat access facility
- Ferry landing
- Open grassy area
- Service area (maintenance and service yard)

Within the project site, the *Candlestick Point SRA GP* Land Use and Facilities Map identified a reconfigured Yosemite Slough with an island in the center of a restored wetland habitat area. The proposed habitat for the island and the restored project site would consist of native trees and shrubs with open grassy areas/rocky outcrops. A trail would traverse the north- and south- eastern portion of the project site, with a scenic overlook from the north to provide views of the restored wetlands (DPR 1988).

The Operations Element of the *Candlestick Point SRA GP* also discussed the need for public involvement for developing a construction-operation-maintenance program, and addressing the potential for interpretative programs (related to the cultural environment, historic and present day uses of the bay, natural features, etc.) (DPR 1988).

The plan recommended continuing analyses at the SRA, and recognized that the result of these analyses may change the proposed facility development (DPR 1988).

2.3.2.2 Yosemite Wetland Restoration Feasibility Study

The Yosemite Wetland Restoration Feasibility Study was published in January 2002. The purpose of the report was to examine the potential and feasibility for wetland restoration at and around the Yosemite Slough area. Three alternatives were

developed that provided various levels of contaminated soils and nonnative vegetation removal, as well as restoration of natural habitats. The alternatives included: 1) Alternative A: Seasonal / Brackish Water Ponds, 2) Alternative B: Mixed Tidal Wetlands and Seasonal Ponds, and 3) Alternative C: Tidal Salt Marsh with Isolated Nesting Island. The plan reviewed constraints associated with contaminated fill, existing infrastructure (utilities and buildings), non-native plants and feral animals, debris, tidal hydrodynamics, and storm water discharge for each alternative (RTC 2002).

The Feasibility Report concluded that Alternative C is the preferred alternative as it meets most of the goals and objectives of the *Candlestick Point SRA GP* and provides the greatest benefits to local and regional natural resources, including providing the greatest area of tidally influenced wetlands. The creation of an isolated nesting island for special status species and refuge island would benefit those species and local wildlife. The nursery areas for fish, increased areas for benthic organisms, and transitional and upland areas to buffer sensitive habitats would result in increased habitat diversity. The public interpretative trails and passive public use areas with an environmental education center would be beneficial to the surrounding community while being the least impacting on the restored habitat (RTC 2002).

2.3.3Public Involvement

Public outreach for the project began in 2001 and continued through 2005. Public outreach efforts have included distribution of newsletters, presentations at community meetings, coverage in newspaper, dissemination of relevant information on the DPR website, and collaboration with the community. These efforts were intended to provide information on the status of the proposed project, educate interested parties on proposed project components, and provide a forum for the local public to discuss their issues and concerns with the project. Public feedback was encouraged throughout the process. Table 2-1 (in Appendix A) identifies the public involvement that has occurred to date for the proposed project.

2.4 PROJECT OBJECTIVES

The primary purpose of the Yosemite Slough Restoration Project is to restore tidal wetlands in a 34-acre parcel of Candlestick Point SRA[1]. This project is consistent with the objectives of the *Candlestick Point SRA GP* (discussed above), which has identified the restoration of natural areas within the project site as a high priority. In addition, the proposed project would provide some of the facilities (public access trails, interpretive center, parking, recreational area, etc.) identified in the *Candlestick Point SRA GP*.

The project not only supports the *Candlestick Point SRA GP* for Candlestick Point SRA, but would also contribute to the overall regional goal of restoring native habitats along San Francisco's bay front. Recent restoration projects at Chrissy Field and Heron's Head Park have demonstrated the value of restoring natural habitat along San Francisco Bay's shoreline.

[1] The 34-acre project area excludes the Yosemite Slough proper; restoration of the project would not include Yosemite Slough.

The community would benefit from expanded open space opportunities including recreational trails linked to other regional trails, wildlife viewing, reduction in soil contaminants within the Park, and economic benefits associated with increased visitor use of the Park. The proposed project could also act as a catalyst for other recreational and open space opportunities along the Bayview/Hunter's Point shoreline and for further clean up activities within Yosemite Slough and the nearshore areas.

The specific objectives of the proposed project, consistent with the goals of the *Candlestick Point SRA GP*, include:

- Increase the area subject to tidal influence.
- Restore habitat diversity by re-establishing tidal flats and marsh in areas of present upland fill.
- Improve local foraging and roosting habitat for migratory and resident birds.
- Improve quality of life for surrounding community.
- Remediate, sequester, or remove contaminated soils to reduce potential for human and wildlife contact.
- Create a clean, beautiful, and local park that the public can visit and view wildlife habitat.
- Create an environmental area that local schools can use for educational field trips.
- Benefit local businesses by increasing the number of visitors coming to the area.
- Connect the Bay Trail through Candlestick Point SRA with the Bay Trail that is proposed for Hunters Point.

2.5 PROJECT DESCRIPTION

2.5.1 Proposed Facilities and Uses

Figure 2-3 (in Appendix B) shows the proposed habitat areas and facilities. The project would consist of the following components:

- tidal wetlands
- two isolated islands and nursery areas for fish/benthic organisms
- transitional and upland buffer areas
- 5,000 feet of interpretative trails with five vista points
- 1,200 square feet multi-use interpretive center with restrooms
- 2.5 acres of passive recreation area
- native species revegetation
- parking for 30 vehicles and 2 buses
- access to the restored area
- fencing, lighting, benches, drinking water fountains
- soil remediation

Details on the proposed components are described below.

2.5.1.1 Tidally Influenced Area (Wetlands)

The proposed project would add approximately 12 acres of wetlands to the tidally influenced area of Yosemite Slough through the excavation of three embayments, herein referred to as North A area, North B area, and the South area (see Figure 2-3 in Appendix B). The existing acreage in each of the geographic zones and the amount of tidal wetlands and uplands that would be restored are shown in Table 2-2 (see Appendix A). The proposed restoration project would involve inland excavation only, and no dredging would occur within the main channel of the Slough.

Limited grading along the slough banks would be undertaken to make the connection to the new embayments. This excavation along the margins of the Slough would occur with the least intrusion of existing canal habitat areas as possible. This design is intended to avoid disturbing any existing polychlorinated biphenyls (PCB) contamination in sediments within the slough.

The goal for soil concentrations in the wetland cover layer[2] would be to achieve mean concentrations that are near-ambient concentrations in San Francisco Bay sediments. To achieve this goal, soils that do not currently meet the proposed screening criteria (ER-Ms[3] for most chemicals and wetlands non-cover criteria[4] for nickel and selenium) in the wetland cover layer would be excavated and removed. They would be replaced either with soils that can be bioremediated for total extractable petroleum hydrocarbons (TEPH) and polycyclic aromatic hydrocarbons (PAHs) and meet the criteria or cut soils[5]/imported fill that meet the screening criteria. Figure 2-4a provides a vegetation elevation profile of the wetland and upland areas and of the slough proper.

Construction of the planned wetland is expected to generate approximately 263,000 cubic yards (cy) of cut soils and debris (see Table 2-3 in Appendix A), which would need to be classified and managed in accordance with applicable regulations. All areas with tidal influence would be excavated to three feet below the final design elevation and would have a slope of 1:10 to transitional areas.

In the North A Area, approximately 50,000 cy of soil in the area to receive tidal influence containing metals above the proposed screening criteria would be removed to a depth of one to three feet below the wetland design surface[6] (see Figure 2-3 in Appendix B); this would require excavation to a depth up to 10 feet below the current ground surface (bgs). In the North B Area, approximately 36,000 cy of soil in the area to receive tidal

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[2] The wetland layer soil consists of soil within the three-foot interval below the planned wetland design surface.

[3] ER-Ms are toxicity-based thresholds for sediment that were developed by the National Oceanic and Atmospheric Administration (NOAA). Although NOAA did not develop these values for use as regulatory criteria, they are commonly used by state and federal regulatory and resource agencies as screening guidelines for assessing the potential for biological effects associated with contaminants in San Francisco Bay sediments.

[4] RWQCB Wetland Cover and Noncover Criteria: the San Francisco Bay RWQCB has promulgated sediment screening guidelines for use in evaluating the beneficial reuse of dredged sediment for wetland creation, levee repair, and landfill cover (SFBRWQCB 1992). The criteria are intended to facilitate the creation, enhancement, and restoration of wetlands in marine and estuarine environments. The criteria were developed in part based on NOAA's criteria.

[5] Cut soils are soils removed from the restoration area to construct the wetlands.

[6] The wetland design surface is the elevation of the wetland when the restoration is complete.

influence containing metals above proposed screening criteria would be removed to a depth of 1 to 3 feet below the wetland design surface, which is equivalent to an excavation depth up to 8 feet bgs. In the South Area, approximately 90,000 cy of soil in the area to receive tidal influence containing metals above proposed screening criteria would be removed to a depth of 1 to 3 feet below the wetland design surface; this would require excavation of up to 18 feet bgs. In total, an estimated 106,000 cy of remediated cut soils or imported fill would be needed to backfill the removal areas in the wetland design layer. Approximately 62,000 cy of remediated cut soils are estimated to be potentially suitable for reuse as wetland cover.

The new wetlands would be vegetated with cordgrasses along the slough, pickleweed within most of the wetland, and gumplant (*Grindelia stricta var. angustifolia*), salt grass (*Distichlis spicata*), fat hen (*Atriplex triangularis*), and alkali heath (*Frankenia salina*) within the transitional areas separating the grasslands from the wetlands.

2.5.1.2 Nesting Islands/Nursery Areas

Excavation on the north and south sides of the Slough would create embayments and two isolated nesting islands (see Figure 2-3 in Appendix B). A sandy nesting island would be created on the northern side of the Slough to provide ideal habitat for birds such as plovers, curlews and sandpipers. This island would be approximately 0.71 acres in size and would be located in a stable area that would be minimally subject to erosion from tidal action. A second island, approximately 1.34 acres in size, would be created on the southern side of the Slough. This island would primarily be constructed of shells with vegetation composed of coyote brush (*Baccharis pilularis*) to provide ideal loafing and foraging habitat for birds such as ducks, Western grebes (*Aechmophorus occidentalis*), and Greater and Lesser scaups (*Aythya marila, A. affinis*).

The increased areas of cordgrass created in the restoration wetland areas will provide refuge and a high quality foraging area for juvenile fish thus creating a nursery habitat for local and migratory fish. The restored areas of cordgrass and pickleweed with the appropriate imported and amended soils will provide habitat for benthic invertebrates, including various ‘worm’ and bivalve species. Benthic invertebrates are known to be important sources of food for shore birds and bottom feeding fish.

2.5.1.3 Transitional and Upland Buffer Areas

A transitional area is the topographical and vegetated area between the wetland and upland ecotones[7]. Transitional zones range from the upper limits of the normal high tide to the upper range of the highest high tides. Vegetation in this ecotone provides cover and foraging environments for numerous amphipod species and terrestrial birds. The transitional zone also provides a buffer between the wetlands and upland human and wildlife activities.

[7] Ecotone is a transitional zone between two communities containing the characteristic species of each.

2.5.1.4 Trail System and Vista Points

Figure 2-3 and Figures 2-4a, 2-4b, and 2-4c in Appendix B shows the recreational facilities that would be provided in the project site. The San Francisco Bay Trail (Bay Trail) would enter the restoration site via Carroll Avenue connecting with an existing Candlestick Point SRA trail. The Bay Trail would be a multi-use trail (for pedestrians, bicyclists, and dogs [on leash only]) set back from the restored wetlands and would traverse along the project site boundary, passing by the interpretive center, recreational area and associated parking. It would potentially connect to the proposed Bay Trail at Hunters Point. The approximately 5,000-foot trail would meander past five observation (vista) points, which would be located both north and south of Yosemite Slough with views of the restored tidal wetlands, nesting islands, and the Bay (see Figure 2.3 in Appendix B). The length of the trail within each geographic zone is approximately 1,130 feet (North A Area), 1,960 feet (North B Area), and 1,920 feet (South Area).

The Bay Trail would be designed in conformance with DPR's Trail Manual prescriptions. The Bay Trail, constructed of decomposed granite, would be eight feet wide to allow for emergency vehicles access. It would also be handicapped accessible. The relationship of the proposed segment of the Bay Trail relative to existing and proposed segments along San Francisco Bay is shown in Figure 2-5 in Appendix B.

2.5.1.5 Interpretive Center

The Interpretive Center would be a multi-use facility located on the southeastern portion of the site adjacent to the existing DPR offices and community garden (see Figure 2-3 and Figure 2-4a in Appendix B). The Center's design is proposed to be an open air structure with an A-frame roof. The facility would likely have a footprint of 30 by 40 feet (width and length) and a height of 17 feet at the ridge of the roof (10 feet at the lowest point of the roof). The facility would have a hard floor, counterspace, lighting, PA system, plastic display cases, and enclosed accessible restroom facilities. Drinking-water fountains would also be provided at this location. The facility would be connected to the City's electricity, water, and sewer systems.

The facility, which would be unmanned except during specific events, would be dedicated primarily to displays and literature on the ecology of San Francisco Bay intertidal zone and a history of the restoration project itself. The facility would also provide information on the natural history of Candlestick Point and cultural history of the Bayview/Hunters Point neighborhood. Space for organized educational and outreach programs would be incorporated into the facility.

2.5.1.6 Passive Recreation Area

The passive recreation area would be located west of the proposed parking lot in the North A area (see Figure 2-3 and Figures 2-4b and 2-4c in Appendix B). The approximately 2.5-acre site would allow for passive activities including picnicking, kite flying, and playing. The area would maintain a hilly topography covered by turf, and surrounded on the perimeters by native shrubs. The proposed Bay Trail would provide

access to this area. Amenities provided within the recreation area would include picnic tables and benches, general park information, and restroom facilities.

2.5.1.7 Re-vegetation

Figure 2-3 (in Appendix B) shows general habitat types distributed within the project site. Salt marsh vegetation typically exhibits vertical zonation, in which different dominant species or groups of species consistently occur within a particular elevational zone. Three subtypes of salt marsh (low, middle, and high) can be distinguished on the basis of elevation, which determines frequency of tidal flooding. Under the proposed project, each tidal zone would be planted with the appropriate native species, as described below and conceptually shown in Figures 2-4a, 2-4b, and 2-4c (in Appendix B).

Salt marsh vegetation occurs along the shoreline which is alternately exposed by low tides and inundated by high tides on a daily basis, between Mean Low Water (MLW) and Mean Higher High Water (MHHW). Low salt marsh typically occurs above MLW. This zone would be planted with Pacific cordgrass (*Spartina foliosa*), a native species typically found in this zone. Middle salt marsh occurs around Mean Tide Level (MTL) and planting in this zone would be primarily pickleweed. Within the zone of irregular flooding by the higher high tides, Mean High Water (MHW) to MHHW, plantings would include alkali heath, fleshy jaumea (*Jaumea carnosa*), and salt grass. High salt marsh intergrades with middle salt marsh, and occurs near the upper limits of tidal flooding, between MHHW to Extreme High Tide (EHT). Plantings in this zone would include sea lavender (*Limonium californicum*), marsh gumplant, and salt marsh sand spurry (*Spergularia marina*).

Upland areas would be planted with native shrubs, grasses and forbs to help control erosion and reduce the invasion of non-native grasses. Plantings would include shrubs such as coyote brush (*Baccharis pilularis*), toyon (*Heteromeles arbutifolia*), California coffeeberry (*Rhamnus californica*), California brome (*Bromus carinatus*), blue wildrye (*Elymus glaucus*), and California poppy (*Eschscholzia californica*). Irrigation for shrubs would be required for the first several years and irrigation would be required for the turf (in the passive recreation area) over the longer period.

2.5.1.8 Parking

The proposed parking lot would be located off Griffith Street, on the northeastern portion of the project site (west of the passive recreation area) (see Figures 2-4b and 2-4c). The parking lot, with an estimated dimensions of 200- by 60-feet, would be paved, lighted, and within the security fence of the restoration area. It would provide sufficient space to accommodate 30 vehicles and 2 buses. The availability of bus parking is intended to encourage school field trips. In addition, 10 parking spaces would be provided adjacent to the proposed Interpretative Center.

2.5.1.9 Access

Several existing access would be upgraded to provide direct ingress and egress of the restored project site; all of these access would be installed with gates. The northern portion of the project site would include vehicular access from Griffith Street; DPR would pave the access into the parking lot and install a gate which would be closed after dark. Pedestrian access would be provided from the south end of the project site, off Carroll Avenue adjacent to the DPR facilities as well as from the west end of Yosemite Slough, at both Yosemite Avenue and Wallace Avenue. Additional access to the project site would be provided by the Bay Trail from the south (connecting from the existing SRA) and the north (connecting from Parcel E at Hunter's Point[8]). Park and emergency information, hours of public use, and maps of the Park would be posted at these access points.

2.5.1.10 Miscellaneous Appurtenances

Miscellaneous appurtenances include fencing around the entire restoration site and some lighting, which would be installed at vista points and other strategic locations to guide visitors to entrance/exits. Benches and drinking water fountains would also be installed adjacent to proposed facilities. All amenities at the project site would be designed in conformance with DPR guidelines.

2.5.1.11 Soil Remediation

Due to the presence of hazardous materials onsite, surface soils that are chemically-impacted would be treated onsite, treated offsite, removed to an appropriate disposal facility, or covered with soils that meet specific screening criteria to protect the environment and public health.

Cut soils would need to be carefully stockpiled, separated for treatment as necessary, and retested prior to reuse on-site. Cut soils that meet the screening criteria would be reused as wetlands or uplands cover soils. Some of the cut soils and wetland layer soils would require removal and on-site treatment for TEPH and PAHs prior to reuse. Soils that cannot be reused on-site would be disposed of at a licensed approved facility.

Options being considered for reuse of cut soils that meet or can be remediated to meet appropriate criteria include placement as wetland or upland cover. Soils that do not meet criteria for reuse as wetland or upland cover would be treated and sequestered on the Candlestick Point SRA property, or if necessary, disposed at an approved, licensed, off-site facility. The Regional Water Quality Control Board's (RWQCB's) draft staff report, "Beneficial Use of Dredge Materials: Sediment Screening and Testing Guidelines" (RWQCB 2000) would be used as a guide for decision-making regarding reuse of cut soils as wetlands cover, as well as consultation with RWQCB staff. The RWQCB's Environmental Screening Levels (ESLs) (RWQCB 2005) would also be used to screen soil for potential reuse as uplands cover. Criteria for recreational land use may

[8] Access from the Bay Trail at Hunter's Point would be closed until completion of the proposed park on that parcel.

also be developed in consultation with the RWQCB for upland cover soils. If necessary, clean soil meeting these criteria may need to be imported from off-site for use as cover.

The thickness of the final wetland cover layer may be one to three feet, depending on the surface elevation of the wetlands relative to tidal elevations. Further engineering analysis, including hydraulic modeling, will be conducted to properly assess the wetland cover thickness to protect against potential erosion due to tidal currents, rainfall, and runoff that could expose deeper fill below. The engineering design documents will provide final details on the analysis of potential erosion processes. For the purpose of estimating volumes, the wetland cover thickness is assumed to be three feet and the upland cover thickness is assumed to be one foot. The upland cover thickness and design will be evaluated further and the engineering design documents will provide final details on the upland cover.

It is estimated that 263,000 cy of cut soils and debris would be excavated to construct the wetlands, including the volume of wetlands layer soil that would be removed because it exceeds proposed screening criteria (ER-Ms for most chemicals and wetlands non-cover criteria for nickel and selenium). Cut soils being considered for potential reuse as backfill in the wetlands cover layer would be screened using these proposed criteria.

In the uplands area, soils that do not meet screening criteria for upland cover would be covered with cut soils that meet the criteria (residential ESLs for direct exposure, with site-specific ambient criteria for arsenic and chromium; alternatively, criteria for recreational land use may be developed for upland cover soil, in consultation with the RWQCB). These criteria would not apply to areas of the site that would be covered by a parking lot or interpretive center building where there is not a potential for direct contact with soil.

The possible reuse of cut soils within the project site is summarized in Table 2-3 (in Appendix A) based on Phase II investigation results. The actual volumes of soil available for various reuse options would be determined following retesting of the excavated soil. The estimates provided below are intended to provide a rough approximation of the quantities of soil potentially available for reuse:

- In the North A Area, an estimated 14,200 of cut soils (clean or remediated) would be potentially available for reuse as upland or wetland cover.

- In the North B Area, an estimated 36,900 cy of cut soils (clean or remediated) would be potentially available for reuse as upland or wetland cover.

- In the South Area, an estimated 11,460 cy of cut soils (clean or remediated) would be potentially available for wetland cover.

An estimated net excess of up to 110,440 cy of cut soils would need to be trucked off-site for disposal, and approximately 33,300 cy of clean fill would need to be imported for use as wetland and upland cover. The volume of wetland layer soil requiring

biotreatment for TEPH and PAHs is estimated to be approximately 34,000 cy (based on a 1- to 3-foot wetland cover thickness) and the volume of cut soils proposed for upland cover requiring treatment for TEPH and PAHs is estimated to be approximately 28,000 cy (based on a 1-foot upland cover thickness).

General methods for handling and placement of excavated materials on site are as follows:

- All excavated material would be 'watered' to maintain a moist condition during handling to prevent wind borne distribution (dust); soil material leaving or arriving the restoration site area by truck would be covered as a dust abatement measure.

- All truck traffic would be routed along the bayside perimeter of Candlestick Point SRA and on commercial streets adjacent to the restoration area away from residential areas.

- Soil handling activities in North A and North B would include on-site bioremediation for soils to be reused, stabilization of soils and debris scheduled for off-site disposal, and importation of clean capping soils. All materials would be maintained in a moist condition, covered during non-operational periods, and working areas would be signed and fenced to prevent public contact with the soil materials. Approximately 84,000 cy of materials would be required to be disposed of off site, thereby generating approximately 4,700 truck trips over a 30 week period. Additionally, approximately 535 truck trips would be required to bring 9,600 cy of clean capping soil to the site, which would also occur during a three-to four-week period.

- In the South Area, soil handling would include onsite bioremediation of soils for reuse, soil stabilization for materials scheduled for off site disposal in a disposal facility appropriate to the level of contamination, and placement of excess excavated materials on adjacent DPR property (a portion of the Monster Park parking area). All materials would be maintained in a moist condition, covered during non-operational periods, and working areas would be signed and fenced to prevent public contact with the soil materials and operations. Soils would be tested to determine their disposition for remediation, disposal, or use on site. It is estimated that up to 90,000 cy can be deposited on the parking lots on DPR property. An additional 26,500 cy of material may need to be disposed of off-site, which would require approximately 1,500 truck trips. Additionally, approximately 1,300 truck trips would be required to bring approximately 23,700 cy of clean capping soil to this area. Truck trips would occur over a 17- to 18-week period.

- An 18-acre area within DPR property that is currently used for parking would be used for permanent disposal of a portion of the materials excavated from the project (Figure 2-6 in Appendix B). Soil to be placed on this property would be suitable for use as general fill. Approximately three feet of material would be placed over existing parking areas and the site would be subsequently repaved. This would accommodate approximately 90,000 cy of materials. The disposal area would be adequately fenced and secured during the disposal period, which

would occur only outside the football season, from the end of January through the end of July. As such, the parking area would be open to the public during the football season.

2.5.1.12 Operations and Maintenance

The restored habitat would require biological monitoring for five years; this would consist of conducting relevant plant, elevation, and wildlife surveys potentially on a semi-annual basis on the first year and annually thereafter for the remainder of the five years. Park operations and maintenance would be similar to existing services at Candlestick Point SRA and guided by adaptive management developed for this specific area. Upkeep of the Interpretative Center and restroom facilities would be conducted by existing maintenance staff. Management of feral cat populations would be conducted by the San Francisco SPCA, upon request by DPR if problems occur.

2.6 PROJECT IMPLEMENTATION

2.6.1 Construction

Restoration activities would be divided into separate areas to accommodate the management of potentially contaminated soils and to take into consideration seasonal constraints. The three restoration areas, corresponding to the proposed embayment areas, are shown in Figure 2-3 (in Appendix B) and described briefly:

- North A area: the northeastern portion of the project site that currently contains leased/abandoned buildings and open space, and is bounded by Griffith Avenue, Hunters Point property, and the Yosemite Slough.

- North B area: the northwestern portion of the project site that is currently unused and vacant. It is bounded by Thomas Avenue and Hawes Street and includes the area at the westerly end of Yosemite Slough.

- South Area: north of the DPR offices and Community Garden and generally in the area where the southeastern embayment would be excavated.

In general, construction activities would include demolition, removal of debris, excavation, contaminated soil treatment, grading, creation of habitat, construction / erection of new facilities, and plantings. Equipment typically used during construction includes cranes, dump trucks, scrapers, backhoes, and dozers. Equipment and material staging would occur within the same geographic location as described above and on DPR property. Habitat restoration and construction for each geographic location is described below. Significant changes to the overall restoration design are not anticipated under the phased construction program. Minimal modification may be made to the construction methods in response to adaptive management lessons learned from previously constructed portions.

2.6.1.1 North A Area

As shown in Figure 2-3 in Appendix B, this area would contain the sandy beach nesting island, cordgrass and pickleweed habitats, transitional areas, uplands, public access parking, and a segment of the Bay Trail. Specific construction activities for these habitats and facilities include:

- Installation of a temporary water intrusion barrier between the construction area and the slough (to prevent water intrusion into the excavation work area),
- Demolition of existing structures,
- Grubbing and removal of surface debris,
- Excavation, testing, and stockpiling of soils, consisting of the following
    - Bioremediation of TEPH soils on site,
    - Removal of soils unable to be remediated on site,
    - Placement of remediated soil in upland or wetland portions of site, and
    - Placement of clean wetland cover, as necessary
- Grading and planting of native habitat vegetation,
- Removal of temporary water intrusion barrier, and
- Construction of public facilities (e.g. trail, signage, parking area, lighting, fencing, etc.).

2.6.1.2 North B Area

As shown in Figure 2-3 in Appendix B, habitat and facilities included in this area include cordgrass and pickleweed habitat, transitional and upland areas, the open grassy public recreation area, and the connecting segment of the Bay Trail. Specific construction activities include:

- Installation of a temporary water intrusion barrier between the construction area and the slough (to prevent water intrusion into the excavation work area),
- Grubbing and removal of surface debris,
- Excavation, testing, and temporary stock piling of soils, consisting of the following:
    - Removal of soils unable to be remediated on site,
    - Placement of imported and processed soils for restoration of the various habitats,
    - Placement of clean wetland cover, as necessary, and
    - Enhancement of the western portion of Yosemite Slough
- Finish grading and planting of specific habitat vegetation,
- Removal of temporary water intrusion barrier, and
- Construction of public facilities (e.g. trail, signage, lighting, fencing, etc.).

2.6.1.3 South Area

As shown in Figure 2-3 in Appendix B, this area would contain the shell beach foraging and loafing island,[9] pickleweed marsh area (bordered by cordgrass adjacent to the slough and the South Basin), transitional area, uplands habitat adjacent to the current DPR offices and community garden, a segment of the Bay Trail with interpretative signage, and the Interpretative Center. The South Area could be designated as the "demonstration project" for evaluation of construction techniques and overall project performance compliance.

Specific construction activities include:

- Installation of a temporary water intrusion barrier between the construction area and the slough (to prevent water intrusion into the excavation work area),
- Grubbing and removal of surface debris,
- Excavation, testing, and stockpiling of soils consisting of the following types of soil
    - Removal of soils unable to be remediated on site,
    - Sequestering of treated soils within other areas of Candlestick Point SRA that cannot be used within restoration area and can be disposed of under paved areas (i.e. parking lots), and
    - Placement of imported and processed soils for restoration of the various habitats.
- Finish grading and planting of specific habitat vegetation,
- Removal of temporary water intrusion barrier, and
- Construction of public facilities (e.g. trail, signage, lighting, fencing, Interpretive Center, etc.); the construction schedule for the Interpretative Center would be determined by the availability of funding.

2.6.2 Schedule

Construction of the facilities and restoration of the project site is expected to occur over a two-year period. Construction and restoration would begin in late spring 2006 and be complete in 2008. Construction activities near or in water would occur during the dry season only, from mid-April to mid-October. Land activities would occur during the rainy season. Construction windows would be further defined by conditions of permits issued for the project.

Construction activities would be restricted to 7:00 a.m. to 5:30 p.m. Monday through Friday, in accordance with the San Francisco noise ordinance. Weekend construction is not anticipated, although may occur in the later parts of the construction period to ensure that work can be completed on schedule. The majority of the truck trips (for

[9] Loafing island is a location where birds (shorebirds, wading and dabbling ducks, and other water fowl, typically gather at high tide and rest during foraging activities.

import and export of material) would occur in two distinct phases during the course of construction and restricted to the construction hours identified above. The first phase would last from 30 to 34 weeks, and the second phase would last from 17 to 18 weeks, which correspond with construction activities at the embayment areas.

2.7 VISITATION TO THE CANDLESTICK POINT SRA AT YOSEMITE SLOUGH

The new interpretative center, public trails, and recreation area would be operated daily during open park hours, which extend from 8 a.m. to approximately sunset. The closing time varies by season, and up-to-date closing hour is posted at the park entrance. No fees would be required to use the new recreation facilities. Available public recreation activities include hiking, bicycling, dogwalking (on leash), picnicking, and kite-flying. However, the new recreational facilities would not provide locations for fishing or launching windsurfing equipment.

DPR maintains visitation statistics for Candlestick Point SRA, as shown on Table 2-4 (see Appendix A).

2.8 CONSISTENCY WITH LOCAL PLANS AND POLICIES

All project components would be implemented entirely within the boundaries of Candlestick Point SRA, and would be consistent with the *Candlestick Point SRA GP.* Additionally, the project would provide some of the facilities recommended in the *Candlestick Point SRA GP* (see Section 2.3.2).

The proposed project also would be consistent with the relevant objectives and policies of the *City of San Francisco South Bayshore Area Plan, which* specifically discusses the recommendations identified in the *Candlestick Point SRA General Plan and the San Francisco General Plan*.

2.9 DISCRETIONARY APPROVALS

Portions of the project site are within the jurisdiction of the U.S. Army Corps of Engineers (Corps) and the Bay Conservation and Development Commission (BCDC). Tidal wetlands within the Project Area are vegetated areas located below the calculated high tide line (HTL = 4.12 feet NVGD), which defines the upper boundaries of the Corps' jurisdiction. As such, the Section 404 and Section 10 permits would be required for the project.

BCDC's jurisdiction includes open water, marshes and mudflats of greater San Francisco Bay, including the first 100 feet inland from the shoreline around San Francisco Bay. As such, the proposed project would be subject to a BCDC permit.

A summary of the jurisdictional areas within the project site is shown in Table 2-5 and Figure 2-7 (in Appendices A and B, respectively).

In addition to permits from the Corps and BCDC, additional approval or permits that would be required include:

- RWQCB 401 Water Quality Certification or Waiver
- City and County of San Francisco general construction permits
- Other permits as may be required to facilitate general construction activities

2.10 RELATED PROJECTS

The California State Parks Foundation (Foundation) and the Literacy for Environmental Justice (LEJ) has implemented the Bay Youth for the Environment Program at Candlestick Point SRA. The program is directly relevant to the proposed project as it would provide the plant material for the revegetation and restoration effort at the project site. It is a science-based, after-school work program which provides high-school aged youth in Bayview Hunter's Point the opportunity to develop environmental knowledge and other skills. Under the guidance of trained staff and input from the Foundation, students have been collecting native plant seeds and growing a portion of the plants needed for native grass restoration, transition zone revegetation and tree plantings for the proposed project. These plants are grown at the Candlestick Garden, an onsite community garden and greenhouse located in the southeastern portion of the project site next to the DPR offices.

The City and County of San Francisco has proposed the Bayview Transportation Improvements Project to address the impacts of truck traffic in the Bayview and Hunters Point shipyard areas. The goal of the project is to provide a more direct truck route between Highway 101 and the Hunters Point Shipyard and the industrial areas of Bayview. To date, seven preliminary, conceptual alignments have been considered. Three of the concepts involve constructing a new bridge over Yosemite Slough or South Basin. Two concepts utilize overland roadway routes only.

The Hunter’s Point Naval Shipyard is located northeast of the project area (see Figure 2-1). The Environmental Protection Agency (EPA) placed the shipyard on the National Priorities List in 1989 due to the presence of contamination on-site and proximity of an off-site drinking water source. The shipyard was closed in 1991 by the Department of Defense and in 1992, the Navy, EPA, and the State of California signed an agreement to coordinate the environmental investigation and cleanup of the site. The shipyard is intended to be cleaned up to a level that would allow for multiple reuses, including residential, industrial, open space, mixed, maritime, and recreational uses. Upon final cleanup, parcels would be transferred to the City of San Francisco for redevelopment and reuse.

The City and County of San Francisco Redevelopment Agency signed a Conveyance Agreement in March 2004 with the Navy that sets forth the terms and conditions for the cleanup and transfer of the Hunters Point Shipyard to the Redevelopment Agency (California Coastal Conservancy 2004). Under the terms of the Agreement, the Navy is required to meet the future use requirements and provide the necessary funding to implement the cleanup. The redevelopment plan for the entire shipyard includes

housing, mixed-use retail, light industrial, and open space. Parcel E, an 80-acre shoreline property located immediately adjacent to and northeast of the proposed project (and part of the shipyard property), is proposed for a shoreline park; grant funding has been acquired for the preparation of a Master Plan for this future park. The master plan would consist of habitat restoration (including the creation of wetlands and restoration of habitat), connection to the Bay Trail, and the provision of recreational facilities (e.g., soccer fields, basketball courts, tennis courts, etc.), landscaping, and interpretative signage (about the history of the shipyard). The shoreline park project, also currently named "the Yosemite Slough Restoration Project" is a collaborative effort among several community groups, including Arc Ecology, Alliance for a Clean Water Front, Bayview Hunters Point Community Advocates, Clean Water Fund, Golden Gate Audubon Society, LEJ, and the University of San Francisco (Arc Ecology 2005).

CHAPTER 3
ENVIRONMENTAL CHECKLIST

PROJECT INFORMATION

1.	Project Title:	Candlestick Point State Recreation Area Yosemite Slough Restoration Project
2.	Lead Agency Name & Address:	California Department of Parks and Recreation
3.	Contact Person & Phone Number:	Patricia DuMont, 916-445-9081
4.	Project Location:	Candlestick Point State Recreation Area, San Francisco
5.	Project Sponsor Name & Address:	California Department of Parks and Recreation *Northern Service Center* California State Parks One Capitol Mall, Suite 500 Sacramento, CA 95814
6.	General Plan Designation:	Parks and Open Space; (*San Francisco General Plan, South Bayshore Area Plan*)
7.	Zoning:	P – Public Use Districts (San Francisco Zoning Map)

8. Description of Project:
The proposed project would increase the existing tidally influenced area from nine acres to over 20 acres, create two isolated bird nesting islands (including one designed specifically for special status species), provide nursery areas for fish and benthic organisms, transitional and upland areas to buffer sensitive habitats, more than 5,000 feet of new interpretative trails with five vista points, an approximate 1,200 square foot multi-use interpretive center with restroom facilities, 2.5 acres of passive public use areas, parking for 30 vehicles and 2 buses, new access to the restored area, and additional amenities including parking, fencing, lighting, benches, and drinking water fountains. The restoration design, which would include re-vegetation, would also address soil contaminant issues arising from previous fill activities that could affect human and wildlife health.

9.	Surrounding Land Uses & Setting:	Refer to Chapter 3 of this document (Section IX, Land Use Planning)
10.	Approval Required from Other Public Agencies	Refer to Chapter 2, Section 2.9

1. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Less Than Significant with Mitigation Incorporation", as indicated by the checklist on the following pages.

☒	Aesthetics	☐	Agricultural Resources	☒	Air Quality
☒	Biological Resources	☐	Cultural Resources	☐	Geology/Soils
☒	Hazards & Hazardous Materials	☒	Hydrology/Water Quality	☐	Land Use/Planning
☐	Mineral Resources	☐	Noise	☐	Population/Housing
☐	Public Services	☐	Recreation	☒	Transportation/Traffic
☒	Utilities/Service Systems	☒	1Mandatory Findings of Significance		

DETERMINATION

On the basis of this initial evaluation:

I find that the proposed project **COULD NOT** have a significant effect on the environment and a **NEGATIVE DECLARATION** will be prepared. ☐

I find that, although the original scope of the proposed project **COULD** have had a significant effect on the environment, there **WILL NOT** be a significant effect because revisions/mitigations to the project have been made by or agreed to by the applicant. A **MITIGATED NEGATIVE DECLARATION** will be prepared. ☒

I find that the proposed project **MAY** have a significant effect on the environment and an **ENVIRONMENTAL IMPACT REPORT** or its functional equivalent will be prepared. ☐

I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated impact" on the environment. However, at least one impact has been adequately analyzed in an earlier document, pursuant to applicable legal standards, and has been addressed by mitigation measures based on the earlier analysis, as described in the report's attachments. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the impacts not sufficiently addressed in previous documents. ☐

I find that, although the proposed project could have had a significant effect on the environment, because all potentially significant effects have been adequately analyzed in an earlier EIR or Negative Declaration, pursuant to applicable standards, and have been avoided or mitigated, pursuant to an earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, all impacts have been avoided or mitigated to a less-than-significant level and no further action is required. ☐

Signature on Original Document _____ _____

Patricia DuMont Date

Environmental Coordinator

ENVIRONMENTAL ISSUES

A brief discussion of the baseline setting, or current environmental conditions prior to proposed project implementation, is presented here. More detailed characterizations of the baseline project site are presented in each of the environmental issue subsection.

Land uses within the project site include industrial uses, ruderal open space, and park facilities. Land uses around the project site include light manufacturing, industrial, recreation, and vacant land. Figure 2-2 (in Appendix B) shows the existing land uses within the boundaries of the project site. The northern part of the project site consists of vacant land west of the undeveloped Griffith Street extension. This area is currently off-limits to the public, although it is sometimes used as an illegal off-road biking recreation area. A small cluster of buildings currently occupied by a cabinetmaker is located east of the Griffith Street extension; adjacent to these buildings is a large unoccupied corrugated metal building that has been reportedly used for diesel engine manufacturing. A waste sump is located under a concrete pad between the cabinetmaker's shop and the unoccupied building. The suspected oil sump is no longer in use, but may have been used by the former occupant of the metal building. Another metal building, used by DPR for storage, is also located in this area. The southern area consists primarily of vacant land, with a small corporation yard for DPR located at the corner of Carroll Avenue and Griffith Street. The Park Office and community gardens are also located in the southeastern portion of the project site along Carroll Avenue. Unauthorized public use of volunteer trails to gain access to the slough also exists in this area.

The approximately 1,700 feet long and 200 to 300 feet wide Yosemite Slough bisects the project area but is not located within the project area. The slough is bounded by relatively steep banks (approximately four to eight feet in height). Water levels within the slough are influenced by tidal action, and water depths vary between zero and eight feet during the spring tide cycle. Tidal action affects the vegetation along the fringe of the slough (within the project area). Tidal salt marsh vegetation is present at the western end of the Slough with limited vegetation along the perimeter of the Slough, including but not limited to pickleweed (*Salicornia virginica*), cordgrass (*Spartina, spp.*), marsh rosemary (*Andromeda polifolia*), California saltbush (*Atriplex californica*), brass button (*Cotula cornopifolia*), and weeds.

The City of San Francisco owns a combined sanitary/storm sewer system which discharges into the slough. In some cases during periods of heavy rainfall overflow discharges of untreated effluent occur at the combined sewer outfalls (CSOs). There are three CSOs located in or near Yosemite Slough, as shown in Figure 2-2 (in Appendix B) and described below: (1) at the end of the Fitch Street easement at the southeastern boundary of the project site; (2) on the Yosemite Avenue easement, between Ingalls and Hawes Streets, at the mouth of Yosemite Slough; and (3) at the southern end of the Griffith Street easement where the outfall is located at the slough edge. The outfalls are currently permitted for one discharge from San Francisco's combined sewage and storm water system per year. In addition to the CSOs, a railroad line bounds the northwestern portion of the project site. Other existing utilities (water mains and wastewater pipelines) are located within the developed portion of the project site, at the clusters of buildings in the northern portion of the site, and at the buildings along Carroll Avenue.

Surface soils at the project site consist primarily of fill overlaying bay mud, with outcrops of bedrock of the Franciscan Complex in the northwest portion of the site. Since the late 1800s imported fill has been placed over the area raising the ground surface to a level approximately 5 to 20 feet above mean high tide. Fill material at the site is likely partially derived from Franciscan bedrock in the site vicinity. Soils derived from mafic and ultramafic rocks (such as serpentinite), which are common in the Franciscan Complex, are known to contain higher concentrations of chromium and nickel than soils developed from other rock types. The historical, industrial, and commercial uses of the project site and surrounding vicinity may have contributed to contaminants in the soil and groundwater.

I. AESTHETICS.

ENVIRONMENTAL SETTING

Short- to medium-range public views of the project site are available at eye-level from the southern portion of Candlestick Point SRA and adjacent streets west and north of the project site (e.g., Carroll Avenue, Yosemite Avenue, Van Dyke Avenue, Thomas Avenue, and Griffith Street). In addition, private views of the project site are available from the Alice Griffiths Public Housing (which is located on a hill adjacent to and south of the project site – see Figure 2-6 in Appendix B); although these views are limited due to a row of trees that separates the public housing and the South Area. Long-range public and private views of the project site are available from Bay View Park to the southwest and residential homes located on the hillside to the north, respectively. Views of the project site are also available from within the bay (e.g., for kayakers, windsurfers).

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
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) Scenic vistas overlooking the project site from the southwest may be located along trails within Bay View Park.

During construction activities, the visual character of the site would temporarily be in disarray, consisting of scattered construction equipment and material, stockpiles of soil, and construction-related vehicles. The alteration of the visual quality would be short-term, intermittent, and lasting in total for approximately two years. From vista points in Bay View

Park, construction activities at the project site would appear as one visual element amongst the incongruent industrial facilities of South Bayshore area (buildings, junk yards, parking, etc.), and against a larger backdrop of the San Francisco Bay. Construction equipment, material, and soil stockpiles would be similar to the existing visual character of the site, integrate with the surrounding industrial uses, and as such, construction-related views would not dominate the visual field.

Creation of wetlands, upland habitats, and a passive recreation area would in the long-term improve the visual character of the entire area by creating a linkage between the project site and the remaining portions of the SRA. The restoration would also integrate the site with the San Francisco Bay. Because views of the site from scenic vistas would temporarily and minimally change during construction activities and would improve overall after these activities are completed, potential visual quality impacts on scenic vistas would be considered less than significant.

b) There are no scenic highways that pass in or around the area. Scenic resources in the area consist of views of the San Francisco Bay from the Candlestick Point SRA. No other types of scenic resources (trees, rock outcroppings) exist in the area, as the surrounding area is composed primarily of industrial uses (e.g., buildings, warehouses, etc.). As such, the project would not result in significant damage to scenic resources

c) The proposed project would alter the visual environment of the project site by integrating the site with the natural surrounding of San Francisco Bay and Candlestick Point SRA. As part of the proposed project, existing, onsite industrial facilities (buildings and warehouses) would be demolished, the shoreline would be restored to wetlands and islands, and the upland areas would be reestablished with native vegetation. These changes would result in a softer texture at the project site compared to the overall visual environment and provide a visual linkage to San Francisco Bay and the Candlestick Point SRA. Therefore, the proposed project would improve the aesthetic quality of the site and add to the City's scenic resources through the provision of five additional vista points (see Figure 2-3 in Appendix B) within the SRA. These vista points would provide viewing areas of the restored habitats (wetlands and nesting islands) in addition to the Bay.

The design of proposed facilities (e.g., interpretative center, trails, amenities, etc.) is preliminary in nature. To ensure that the proposed facilities do not degrade the existing visual character or quality of the site, they will be designed to be visually consistent with existing facilities at the SRA (see Mitigation Measure Aesthetics-1). Implementation of the mitigation measure would reduce significant impacts to less-than-significant levels.

d) The proposed project would include installation of structures (e.g., interpretative center and parking,) and low level lighting at proposed vista points and other strategic locations to guide visitors to the entrance/exits. Lighting is intended to increase security and safety for park users.

The design of these facilities has not yet been determined. However, structures (e.g., interpretative center and the proposed parking area) would be situated at the end of or adjacent to public streets and surrounded by natural vegetation to the extent possible.

Natural vegetation would reduce the potential for glare. For buildings, design elements (e.g., low-glare paints) would be used to reduce the potential for glare (see Mitigation Measure Aesthetics-1).

Lights located within the park and near streets would not adversely alter day or nighttime views because they would represent an incremental addition to light emitted in the area (from streetlights, existing DPR offices, etc.). In addition, all lighting would be shielded and directed downward to avoid light pollution. As such, impacts associated with glare and light affecting day or nighttime views in the area would be considered less than significant.

MITIGATION MEASURE AESTHETICS-1
▪ DPR will design structures that agree with the general character of the area to minimize visual impacts. ▪ All exterior surfaces of proposed structures will be painted with low-glare paints to reduce glare.

II. AGRICULTURAL RESOURCES.

ENVIRONMENTAL SETTING

The proposed project is located within an urbanized area consisting of and surrounded by park and industrial uses. The project site does not contain any farmlands.

WOULD THE PROJECT*:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
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 would not conflict with existing zoning for

agricultural use or a Williamson Act contract, or result in the conversion of any Farmland to non-agricultural uses. No impacts would occur.

MITIGATION MEASURE AG-1
▪ None Required

III. AIR QUALITY.

ENVIRONMENTAL SETTING

Air quality regulations focus on the following air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM – PM_{10} and $PM_{2.5}$[10]), and lead. Because these are the most prevalent air pollutants known to be deleterious to human health and extensive health-effects criteria documents are available, they are commonly referred to as "criteria air pollutants." Ambient concentrations of criteria air pollutants are used as indicators of air quality conditions. Both the California Air Resources Board and the Environmental Protection Agency use ambient monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify those areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. Nonattainment refers to an area that does not meet the air quality standards for the pollutants. Attainment refers to an area that meets air quality standards for the pollutants. Unclassified is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. The most recent (2005) attainment statuses for the above criteria pollutants based on California and national standards are shown in Table 3-1 (Appendix A).

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)?	☐	☐	☒	☐

[10] PM is any finely divided solid or liquid material, other than uncombined (i.e., pure) water. A subscript denotes the upper limit of the diameter of particles included. Thus, PM10 includes only those particles equal to or less than 10 micrometers (0.0004 inch) in diameter. PM2.5 includes only those particles equal to or less than 2.5 micrometers in diameter.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
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 Bay Area Air Quality Management District (BAAQMD) has adopted several air quality plans to achieve state and federal air quality standards in compliance with the requirements of the Federal Clean Air Act (CAA) and amendments thereof (CAAA); and the California Clean Air Act (CCAA). These air quality attainment plans, the most recent of which are the 2001 Ozone Attainment and 2000 Clean Air Plans, present comprehensive strategies to reduce air pollutant (e.g., ozone precursors) emissions from stationary, area, mobile, and indirect sources. Such strategies include the adoption of rules and regulations; enhancement of CEQA participation; implementation of a new and modified indirect source review program; adoption of local air quality plans; and stationary, mobile, and indirect-source control measures. Development of the project would not result in the operation of any major stationary emission sources nor would the proposed project conflict with or obstruct implementation of the applicable air quality plans. This impact would be considered less than significant.

b) Short-term Construction Air Pollutant Emissions

Construction emissions are described as “short term” or temporary in duration and have the potential to represent a significant impact with respect to air quality, especially in the case of particulate matter (PM_{10}). Fugitive dust emissions are associated primarily with site preparation and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and vehicle miles traveled (VMT) on- and off-site. Reactive organic gases (ROG) and nitrogen oxides (NO_X) emissions are associated primarily with construction equipment exhaust and the application of architectural coatings.

With respect to the proposed project, construction activities would temporarily generate emissions of ROG, NO_X, and PM_{10} from site grading and excavation, material transport, paving, demolition, motor vehicle exhaust associated with construction equipment, employee commute trips, and material transport (especially on unpaved surfaces), and other construction operations.

The BAAQMD emphasizes implementation of effective and comprehensive control measures rather than require a detailed quantification of construction emissions. The

BAAQMD requires that all feasible control measures, which are dependent on the size of the construction area and the nature of the construction operations involved, will be incorporated into the project design and implemented during all construction activities. Emissions of ozone precursors (ROG and NO_X) and PM_{10} could violate or contribute substantially to concentrations that exceed the ambient air quality standards if dust control best management practices (BMPs) based on BAAQMD required control measures are not implemented. Dust control BMPs would ensure that short-term air pollutant emissions from construction activities would be less than significant. Dust control BMPs typically include the following:

- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.
- Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Hydroseed, cover, or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).
- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.
- Remove loose soil from truck surfaces before leaving the site.
- Install wheel washers for all exiting trucks, or wash off the tire or tracks of all trucks and equipment before leaving the site.
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.
- Limit the area subject to excavation, grading, and other construction activity at any one time.
- 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 will need to comply with all applicable BAAQMD rules and regulations, specifically Rule 8-3 regarding architectural coatings, Rule 8-15 regarding asphalt paving, Rule 11-2 regarding demolition, and Regulation 6 regarding particulate matter and visible emissions.

Long-term Operational Emissions

As discussed in Section XV, Transportation/Traffic, the long-term operation of the proposed project would only result in minor increases in vehicle traffic on the local

roadway system from visitor and regular maintenance trips. In addition, development of the project is not anticipated to result in the operation of any major stationary emission sources. Consequently, the long-term operation of the proposed project would not result in unmitigated emissions that exceed the BAAQMD's significance threshold of 80 lb/day for ROG, NO_x, or PM_{10}, nor be anticipated to result in substantial local CO emissions. As a result, long-term operation emissions would not be anticipated to violate or contribute substantially to concentrations that exceed the ambient air quality standards. Long-term operational emissions impacts would be considered less than significant.

c) As discussed above, construction emissions could violate or contribute substantially to concentrations that exceed the ambient air quality standards if dust control BMPs are not implemented. In such a case, emissions could result in a cumulatively considerable net increase for which the project area is nonattainment under applicable ambient air quality standards[11]. However, because dust control BMPs are conditions of the proposed project that must be implemented, potential effects would be considered less than significant.

d) The project site is primarily surrounded by industrial uses. The nearest sensitive receptor, the Alice Griffiths Public Housing, is located adjacent to the South Area (see Figure 2-6 in Appendix B). Other sensitive residential receptors are located west of Ingalls Street. There are no schools or convalescent homes immediately adjacent to the project site, although one school is located within a quarter-mile south of the project area (see Figure 2-1 in Appendix B).

<u>Criteria Air Pollutant Emissions (e.g., ROG, NO_X, PM_{10}, and CO)</u>

If the required dust control BMPs are not incorporated into the project design, unmitigated construction emissions could violate or contribute substantially to concentrations that exceed the ambient air quality standards. In such a case, emissions could result in a cumulatively considerable net increase for which the project area is nonattainment under applicable ambient air quality standards, and expose adjacent sensitive receptors (at the Alice Griffiths Public Housing) to substantial criteria pollutants. As discussed above, dust control BMPs, which are conditions of the project, would be implemented and as such would ensure that sensitive receptors are not exposed to pollutant emissions.

<u>Toxic Air Emissions</u>

Construction of the proposed project would result in short-term diesel exhaust emissions from on-site heavy duty equipment. Particulate exhaust emissions from diesel-fueled engines (diesel PM) were identified as a toxic air contaminant by the ARB in 1998. Construction of the project would result in the generation of diesel PM emissions from the use of off-road diesel equipment required for site grading and excavation, paving, and other construction activities. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has with the substance. Dose is positively correlated with time, meaning that a longer

[11] The SF Bay region is considered nonattainment for the following criteria pollutants: state ozone 1-hour (serious), state PM 2.5 and 10, and federal 8-hour ozone nonattainment (marginal).

exposure period would result in a higher exposure level for the maximally exposed individual. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project (Salinas, pers. comm., 2004). Thus, the duration of the proposed construction activities (approximately two years) would constitute less than three percent of the total exposure period. Because the use of mobilized equipment would be temporary, diesel PM from construction activities would unlikely result in the exposure of sensitive receptors to levels that exceed applicable standards. In addition, the long-term operation of the project would not result in the operation of any major sources of toxic air emissions.

According to the environmental site assessment prepared for this project (discussed in Section VII, Hazards and Hazardous Materials), concentrations of metals, PAHs, polychlorinated biphenyls (PCBs), pesticides, TEPH, and traces of asbestos were detected during analyses of some wetland layer, cut soils, and upland soils. Some of the metals (i.e., arsenic, chromium, and nickel) and asbestos are believed to be naturally occurring and derived from the local sources of fill. Soil disturbance during construction activities (including mass grading and excavation) could result in airborne entrainment of some of these toxic air contaminants in fugitive dust, and as such could expose workers and nearby sensitive receptors to potentially toxic air emissions, although the concentrations of these contaminants in fugitive dust emissions are not anticipated to reach levels that could present significant risks. This would be considered a potentially, although unlikely, significant effect. Implementation of dust control BMPs described above, and if necessary, implementation of air quality monitoring (see Mitigation Measure Air-1), may be necessary to ensure and confirm that fugitive dust does not present unacceptable health risks to workers and nearby residents. Implementation of Mitigation Measure Air-1, as necessary, would reduce the potential for workers and nearby resident to be exposed to toxic air contaminants impact to a less-than-significant level.

e) The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

Construction of the project would result in odorous diesel emissions from the exhaust of on-site equipment. Such emissions would be intermittent and would dissipate rapidly from the source. In addition, mobile diesel equipment would only be present on site temporarily during construction activities. With respect to the long-term operation of the proposed project, implementation would not include any major odorous emission source, and no major existing sources have been identified in the project area. As a result, neither the construction nor the operation of the proposed project would create

objectionable odors affecting a substantial number or people. This impact would be considered less than significant.

MITIGATION MEASURE AIR-1
▪ To limit potential exposure of workers and nearby sensitive receptors to toxic contaminants contained in the fugitive dust particles, DPR or its contractors will implement Mitigation Measures Hazmat-3, Hazmat-6, and Hazmat-7.

IV. BIOLOGICAL RESOURCES.

ENVIRONMENTAL SETTING

Habitats present within the project site were identified and mapped on December 2001 and October 2002 by John Dreier (Dreier 2002) and LSA Associates (LSA 2004), respectively. Five habitat types were identified within the site: 1) ruderal areas dominated by non-native grasses and forbs; 2) coyote brush scrub; 3) a narrow, fragmented band of tidal salt marsh vegetation associated with Yosemite Canal; 4) intertidal mudflat; and 5) subtidal habitat. In addition, developed areas (e.g., paved parking lots, commercial and industrial buildings, landscaping, etc.) occur in and around the project site.

Ruderal areas support non-native grasses, including wild oats (*Avena fatua*), Italian ryegrass (*Lolium multiflorum*), pampas grass (*Cortaderia* spp.), and in many places integrated with ruderal weeds such as sweet fennel (*Foeniculum vulgare*). Coyote brush (*Baccharis pilularis*), a native shrub, is found scattered throughout portions of the site. Tidal salt marsh vegetation found within the site is composed of cordgrass (*Spartina* spp.), pickleweed (*Salicornia virginica*), saltgrass (*Distichlis spicata*), gumplant (*Grindelia* spp.), and alkali heath (*Frankenia salin*a). Due to tidal inundation, vegetation was not noted in the intertidal mudflats and subtidal areas

Field reconnaissance surveys identified 148 species using the project site. Birds had the most diverse population diversity, followed by butterflies. This is believed to be due in part to the fact that both of these taxa can fly, making it easier for them to reach areas that are relatively isolated from other open space areas and native habitats. Fifteen species of birds were observed in the study area during the 2001 survey, while 118 species of birds were observed during the 2002 survey period. Transitional upland habitats occupying most of the project site provided habitat for landbirds, which showed the greatest number of species. This was followed by shorebirds, other waterbirds, waterfowl, gulls and terns, and raptors (in descending order). Fourteen butterfly species were observed within the study area during the 2002 survey period, representing about 15 percent of the species recorded for San Francisco County.

The lowest population diversity was seen in the amphibians, with only one species observed during the 2002 survey period. The bay does not provide suitable aquatic habitat for amphibians and there are no freshwater habitats on or near the project site that could serve as breeding habitat for species such as frogs and toads. Reptiles also had a low diversity rate; three snake species and two lizard species were observed on the site during the 2002 survey period. The abandoned fields, extensive debris (providing cover), and presence of prey (e.g., mice, invertebrates, salamanders) provide suitable habitat for these species.

Mammalian species diversity was also low in the study area. Only two species of mammal were identified during the 2001 survey. Three of the 10 species observed during the 2002 survey period were non-native species (feral cats, feral dogs, and Norway rats).

	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) The potential for any of the on-site habitat types to support special-status species[12] is greatly limited by the level of disturbance the site has been subject to over the years in combination with the site's isolation from more developed functional habitat areas along the San Francisco Peninsula.

[12] Special status species, including both plants and animals, are species designated for protection due to their declining numbers. There are several categories of special status species. An endangered species is one that is considered in danger of becoming extinct throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered within the foreseeable future. Endangered and threatened species are legally protected under the Federal Endangered Species Act.

Table 3-2 in Appendix A presents the special-status species that may occur, or are known to occur, in habitats similar to the proposed restored habitats at Yosemite Slough. The list represents a compilation of a CDFG Natural Diversity Database (CNDDB) search conducted in December 2001 and on September 29, 2003 with California Native Plant Society (CPNS) Electronic Inventory occurrence records, personal communication with park ranger Anne Meneguzzi (WRA 2001) and species observations during the Jeff Dreier and LSA habitat assessments or other visits to site.

With the exception of burrowing owl, which was recently introduced to the site by the Audubon Society, the potential for presence of any special-status wildlife species within the Yosemite Slough project area is presently low. Occupation by these species is greatly limited by existing site conditions, which either are not suitable or are not of sufficient stature to support most species. In addition to the species identified in the Table 3-2, there have been casual observations of other transient special-status species visiting the site, including red-tailed hawk, golden eagle, red-winged blackbird, great blue heron, and song sparrows.

It is likely that restoration of the site would create native transitional and wetland habitats, which would substantially increase nesting and foraging habitats for wildlife species, particularly for sensitive species such as Western snowy plover, saltmarsh common yellowthroat, double-crested cormorant, and the California clapper rail.

Because of the number of avian species observations made within the project site, upland and wetland habitat areas would be surveyed prior to the commencement of construction in order to avoid loss of any nesting special-status or migratory bird species (see Mitigation Measure Bio-1).

Five special-status plant species have the potential to occur in similar habitats to those on the project site (Refer to Table 3-2 in Appendix A). Of these, Point Reyes bird's beak and San Francisco gumplant have been identified in adjacent off-site locations. However, no special-status plant species were observed within the project site during field reconnaissance surveys (Dreier 2002, LSA 2004). Therefore, impacts to special-status plant species are not expected to result from project implementation.

b, c) Of the habitat types identified on the project site, only tidal salt marsh represents a sensitive habitat type. Tidal salt marsh also is a federally-protected wetland type. It is estimated that approximately 0.18 acre of tidal salt marsh exists within the project site along the fringe of Yosemite Slough.

The proposed recontouring and the excavation of embayments would increase the tidally influenced salt marsh by 12 acres. To the extent possible, tidal salt marsh habitat would be protected through specific project design elements including the following: new native grass buffers would be created, trails would be distanced from the sensitive areas, dogs would be required to be leashed, and excavation would be conducted with the least possible intrusion upon existing wetland habitat (see Section 2.6 of this report). A small amount of existing tidal salt marsh would be temporarily displaced in locations where the existing slough margins are breached to connect to the proposed new embayments. This

would result in an impact of approximately 0.05 acre, and would be self-mitigated by the project design. In addition, long-term biological monitoring of the project site would be required to ensure the protection and successful establishment of new habitats and associated species (see Mitigation Measure Bio-2).

There would not be any removal, filling or hydrological interruption or other substantial adverse effect on any existing wetlands; however, there is potential for erosion and/or sedimentation of exposed soils during project grading. The implementation of BMPs, development of an erosion control and monitoring plan, and spill response plan to be implemented during project construction, as well as other construction limitations, would further protect existing wetland habitat (see Mitigation Measures Hazmat-2, Hazmat-4, Hazmat-5, Hydro-1 and Hydro-2).

d) The proposed project would not impact Yosemite Slough in a way that would interfere substantially with the movement of any native resident or migratory fish or wildlife species. No effects (death or injury) of aquatic resources are expected as the proposed project would be constructed in a manner that minimizes impacts to the slough (only limited construction would occur at the edge of the slough during connection of the new embayment with the slough). The project site is isolated, is currently not a nursery site, nor is it a significant nesting spot for waterfowl. In addition, there are no wildlife corridors in the area. As such, no impacts would occur.

e) The proposed project would not conflict with any local policies or ordinances protecting biological resources. The project would be consistent with the *Candlestick Point SRA GP* and the *City of San Francisco South Bay Shore Area Plan* (see Section 2.8 of this report).

f) The proposed project would not conflict with any approved, local, regional, or state habitat conservation plan. No impact would occur.

MITIGATION MEASURE BIO-1
▪ A DPR Environmental Scientist and/or 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-foot buffer zone surrounding nests of other birds. However, the exact width of the buffer zone will be established in consultation with CDFG.

MITIGATION MEASURE BIO-2
▪ DPR staff or its contractors will prepare a Monitoring and Adaptive Management Plan that will set the framework for long-term (5-year) biological monitoring of the project's restored habitats. The plan will specify the monitoring requirements for each year of the plan which will include, but are not limited to, establishment of transects for vegetative data collection, measurement of plant survivorship

rates, invasive species monitoring, continued reconnaissance surveys for wildlife use of the site, installation of sediment traps (for determining accretion/erosion at the site), limited bioassays for contaminants, and the establishment of photo documentation points. Transects will be established during the first year of monitoring, and the remaining requirements will occur during the 1st, 3rd, and 5th years. In addition, evaluation of dispersion/density of vegetation will occur during year 4.

V. CULTURAL RESOURCES.

ENVIRONMENTAL SETTING

The project area lies on the shores of San Francisco Bay, an area heavily utilized by Native Americans (and historic-era groups) due to the temperate climate and abundant resources. Regional archaeological evidence indicates that early Native peoples likely occupied or at least occasionally passed through central and northern California as early as 12,000 years ago (Fredrickson 1974, Moratto 1984). Over time, changing climatic patterns affected the variety and availability of natural resources throughout California. These changes led to shifts in subsistence and settlement patterns among the Native American inhabitants and contributed, at least in part, to regional cultural differentiation seen in the archaeological record.

By mid-prehistoric times, Native groups associated with the Ohlone and Miwok peoples resided in and near the project area (Moratto 1984). There were an estimated 7,000-10,000 Native Americans living near the Bay by the time of the first major European contact in 1770 (Kroeber 1925, Levy 1978). Archaeological remains related to the prehistoric occupation of the area are evidenced by hundreds of shellmounds that line the shores of the San Francisco, San Pablo and Suisun Bays (Nelson 1909, Gifford 1916), as well as less prominent occupation sites. The locations of these shellmounds approximately follow the current shoreline, but also line major tributaries feeding into the Bay.

During the last major ice age, San Francisco Bay was located well above sea level as the site of converging river valleys that drained through the Golden Gate and towards the continental shelf (Bickel 1978, Howard 1979). Glacial melt began approximately 15,000 years ago; the Bay began filling around 10,000-11,000 B.P. Sea levels rose rapidly until approximately 6,000 years before present (B.P.) and have continued to rise more slowly since then (see Milliman and Emery 1968, Emery 1969, and Bloom 1971 as cited in Bickel 1978). The more gradual rise in sea level was marked by minor up and down oscillations until reaching the present sea level (Lajoie 1972, Atwater and Hedel 1976, and Atwater et al. 1977 as cited in Bickel 1978). The slower rise in sea levels allowed sediment accumulation in some areas, which promoted the growth of marshes; many of the shellmounds known in the Bay have been found in close relationship with such marshy areas. A number of known shellmounds stand partially below current sea level, indicating that their accumulations were begun during lower water level periods in the past (Nelson 1909, Bickel 1978). Given the long duration both of the Bay water rise and human occupation of the shore zone, it is likely that other sites, such as shellmounds, are below current sea levels but nearby.

The configuration of the Bay shoreline has also changed in the last hundred years due to the deposition of gold mining sediments, agriculture, the narrowing of river channels through levee construction, construction of salt ponds, development of “made land,” and more modern construction and fill near the shore. These factors have affected the prehistoric sites in the region, destroying or disturbing some and burying others. The cumulative effect of these impacts has intensified the significance of the remaining shellmounds as they become increasingly rare.

Currently, Yosemite Slough is limited to a narrow inlet from the bay; the land on either side is relatively level and several feet above current sea level. Gravel, debris, hazardous materials, and other deposits have been scattered across the project site over time. Several recent structures stand within the project site, on the north side of the slough.

Background Studies

EDAW requested a records search from the Northwest Information Center (NWIC) of the California Historical Resources Information System.

Historic maps depict the gradual narrowing of Yosemite Slough through time as various fill and siltation episodes added to the local pre-existing deposits. These maps also show the gradual approach of streets and structures in the immediate vicinity. Most critically, the NWIC documented evidence of two shellmounds along the north border of the project site: the Thomas-Hawes shellmound and the Griffith-Shafter shellmound.

The Thomas-Hawes mound, also known as CA-SFR-7 or Nelson mound #387, was partially excavated in 1910 and augured in 1981 (Banks 1981). Nelson recorded the mound dimensions as 520 feet east-west by at least 300 feet north-south; the mound was 16.5 feet high, at least 5 feet of which were below sea level. Nelson recovered 24 burials as well as an assembly of artifacts dating to approximately 800-1200 A.D. (Banks 1981). The 1981 augering program also identified intact portions of the mound below approximately 14 feet of fill.

The Griffith-Shafter mound, probably CA-SFR-110/Nelson mound #390 (the early mapping by Nelson raises some doubt as to specific numbering) was depicted on an 1852 coastal survey map (Banks 1981). The mound was explored by auger in 1981, in conjunction with the CA-SFR-7 testing project. Intact mound deposits were found running for approximately 500 feet north-south, beginning at approximately 8 feet below surface.

Other historic and prehistoric sites dot the vicinity of the project site. Within 0.5 mile of the project site, there are seven known historic and prehistoric sites. All but one consist of shellmounds. The non-shellmound site is the Simon Mattress Factory.

	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) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

DISCUSSION

a) There are no historic structures on the project site. However, historic fill materials have been deposited across the local landscape since approximately the mid-19th century; the pattern and volume of these deposits are unknown. Additionally, the 1896 quadrangle map appears to depict two structures near the northern edge of the project site. These resources, dating to the earliest era of significant settlement in San Francisco, may be considered historic under CEQA definitions. Because the following conditions would be implemented as part of the project, potential impacts to these as-yet unrecorded historic resources would be less than significant:

- Prior to any ground-disturbing activity associated with the proposed project, a DPR-qualified archaeologist will conduct a pre-construction meeting to alert construction crews to the possibility of encountering sub-surface historic resources during construction.

- DPR qualified archaeologist will monitor any ground disturbing activities associated with the construction of the proposed project. If pockets of historical materials are discovered, construction will cease in that vicinity until the archaeologist has evaluated the find and implemented appropriate treatment and disposition of artifact(s). Treatment measures may include avoidance, removal, preservation, and/or recordation in accordance with accepted professional archaeological practice.

b) Documentary investigations have identified at least two shellmounds, the Thomas/Hawes mound and the Griffith/Shafter mound, along the north side of the project site. While there has been some limited archaeological exploration of these sites, their full extent has not been delineated. These shellmounds may extend into the project site and therefore may be impacted by project-related activities. Other, as-yet unknown archaeological resources may also exist within the project site; these may have been covered by the dumping that has taken place over the last 150 years, be buried under gold rush sediments, or be below current sea level but within the project construction zone.

No meaningful survey was possible at the project site during a site visit on July 27, 2005 due to historic and modern fill and the built environment; therefore, no assessment as to

the presence of previously recorded or unrecorded cultural resources could be made. Given the extremely sensitive nature of the surrounding area, the potential exists for the known shellmounds or previously undiscovered resources to be uncovered or disturbed during construction activities. Disturbance of or damage to these resources would be a potentially significant impact. In addition, if intact portions of shellmounds or other archaeological resources are discovered during project construction and they appear to be eligible for listing to the California Register of Historic Resources (CRHR), then any impact to them resulting from the project would also be significant. However, because the following conditions would be implemented as part of the project, potential impacts to shellmounds or unrecorded cultural resources would be less than significant:

- Prior to any ground-disturbing activity associated with the proposed project, a qualified archaeologist will conduct a pre-construction meeting to alert construction crews to the possibility of encountering archaeological resources during construction. A DPR-qualified archaeologist will monitor any ground disturbing activities associated with the construction of the proposed project. There will be one monitor per piece of ground disturbing equipment. If the shellmounds, or unusual amounts of bone, organically stained soils, stone or shell are discovered, construction will cease in that vicinity until the cultural resource specialist has assessed the find and determined and implemented appropriate disposition of artifact(s)

c) As described in the response to b) above, prehistoric shellmound sites containing human remains are known to occur adjacent to the project site as identified in the records search. It is possible that additional unidentified archaeological resources, including human remains, may be uncovered during project grading and construction operations. Disturbance of burials would be a potentially significant impact. The following conditions would be implemented in the event of a burial find, and as such, potential impacts would be less than significant:

- Prior to any ground-disturbing activity associated with the proposed project, a DPR-qualified cultural resource specialist will conduct a pre-construction meeting to alert construction crews to the possibility of encountering Native American burials during construction. DPR will retain qualified professional archaeologists to monitor any ground disturbing activities associated with the construction of the proposed project. If Native American burials are identified, construction will cease in that vicinity, and DPR and the San Francisco County Coroner will be notified.

- In the event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR personnel. Any human remains and/or funerary objects will be left in place or returned to the point of discovery and covered with soil. The DPR District Superintendent (or authorized representative) will notify the County Coroner, in accordance with 7050.5 of the California Health and Safety Code, and the Native American Heritage Commission (or Tribal Representative). If a Native American monitor were on-site at the time of the discovery, the monitor will be responsible for notifying the appropriate Native American authorities.

- If the coroner or tribal representative determines the remains represent Native American interment, the Native American Heritage Commission in the Sacramento and/or tribe would be consulted to identify the most likely descendants and appropriate disposition of the remains. Work would not resume in the area of the find until proper disposition is complete (PRC 5097.98). No human remains or funerary objects will be cleaned, photographed, analyzed, or removed from the site prior to determination.

- If it is determined the find indicates a sacred or religious site; the site will be avoided to the maximum extent practicable. Formal consultation with the State Historic Preservation Officer and review by the Native American Heritage Commission/Tribal Cultural representatives will also occur as necessary to define mitigation measures or future restrictions.

VI. GEOLOGY AND SOILS.

ENVIRONMENTAL SETTING

Surface materials at the project site generally consist of artificial fill to depths ranging from 10 to 20 feet below the ground surface (bgs) (Northgate 2005). The fill contains a mixture of gravel, sand, silt, and clay with various amounts of construction debris (wood, concrete, brick, ceramic tile, metal, and glass) (Northgate 2005; Holguin, Fahan & Associates, Inc. 1990). The debris and rubble may comprise 10 to 25 percent of the fill material at observed locations (Northgate 2005). The fill likely originated from excavations for Monster Park Stadium (formerly known as Candlestick Park), construction of projects in the City of San Francisco, and from the leveling of two Franciscan Complex bedrock hills formerly located adjacent to the project site (Holguin 1993 as referenced in Northgate 2005). The fill is underlain by Bay Mud, Bayside Sand, and the bedrock of the Franciscan Formation. Bedrock is exposed at the ground surface on the northern portion of the site.

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?	☐	☐	☐	☒

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable, as a 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 (1997), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems, where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?	☐	☐	☐	☒

DISCUSSION

a) The project area is located in the San Francisco Bay area, a region of high seismic activity. There are no known active faults in San Francisco (City of San Francisco 1996). However, several faults are located in the proximity of the proposed project site. The most significant faults in the vicinity of the project site include the San Andreas fault (less than 10 miles from the proposed project site) and Hayward fault (more than 15 miles from the proposed project site). These faults are considered active because they have ruptured in the last 11,000 years.

i. The proposed project site would not be located on mapped fault traces or fault zones designated in the Alquist-Priolo Earthquake Fault Zoning map, and therefore would be unlikely damaged by fault rupture. Impacts would be considered less than significant.

ii. According to ABAG Shaking Hazards Map, maximum credible earthquake events that could affect the site include a magnitude 7.5 on the San Andreas fault (North Golden Gate segment) and magnitude 7.2 on the San Andreas fault (Peninsula segment) (ABAG 2003). These events would generate violent groundshaking on the Modified Mercalli Intensity Scale[13]. Violent groundshaking corresponds to heavy damages to structures (ABAG 2003)

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. However, because the proposed project would not include habitable structures, the potential for groundshaking impacts associated with the risk of loss, injury, or death would be

[13] The Modified Mercalli Scale consists of 12 steps that describe the observed effects of an earthquake on people and facilities corresponding to increasing earthquake intensities.

considered less-than-significant under CEQA. However, damage to the proposed structures (specifically, the Interpretative Center) may occur with associated groundshaking. The risk of damage from seismic groundshaking impacts would be reduced to a level of acceptable risk (for the Interpretative Center) because project design would be in accordance with applicable sections and editions of the 2001 California Building Code (CBC) and local building code provisions. As such, potential effects would be considered less than significant.

iii. Liquefaction, a secondary earthquake-induced hazard, occurs when water-saturated soils lose their strength and liquefy during intense and prolonged groundshaking. According to the Liquefaction Susceptibility Map, liquefaction in the vicinity of the project is considered very high (ABAG 2004). However, as no habitable structure is proposed, the potential impacts associated with liquefaction associated with the risk of loss, injury, or death are considered less than significant. Similar to groundshaking above, to reduce damage to the proposed Interpretative Center, project design would be in accordance with applicable sections and editions of the 2001 CBC and local building code provisions. In addition, a geological/ engineering study would be conducted for the Interpretative Center, and the results of that study (including identified actions to reduce geologic hazards) would be incorporated in the design of the facility. The actions to reduce potential damage from the structure include standard or specialized construction procedures and foundation support systems.

iv. The area is located on generally flat terrain where there are no existing landslide hazards. As such, no impact would occur. Therefore, potential impacts would be considered less than significant.

b) Construction activities such as excavation would expose soils to wind and water erosion forces. Construction of the planned wetland is expected to generate approximately 263,000 cubic yards (cy) of cut soils and debris. Implementation of BMPs for soil erosion, and implementation of an erosion control and monitoring plan (Measure Hazmat-2 in Section VII, Hazards and Hazardous Materials) would reduce the potential for loss of topsoil to a less-than-significant level.

c) The underlying Bay Mud is a weak soil susceptible of ground failure. However, lateral spreading[14], subsidence[15], and collapse of the underlying soils are not expected from the restoration of the wetlands and placement of most facilities due to their minimal weight. Landslides, as discussed above, would not occur due to the topographic terrain. Differential settlement could occur over bay muds. The installation of facilities (specifically the Interpretative Center) could result in uneven compression of the underlying bay mud, thus leading to foundation damage due to differing settlement of the underlying soils. A geological/engineering study would be required as part of the project to determine the extent differential settlement could occur at the proposed Interpretative Center site; identified actions from the geological/engineering study would be incorporated into project

[14] Lateral spreading is the horizontal movement of loose, unconsolidated sediments that are displaced towards an unsupported face such as a river or creek bank.

[15] Subsidence (or settlement) is the gradual downward movement of an engineered structure (such as a building) due to the compaction of unconsolidated material below the foundation.

design and implemented to reduce potential foundation damage to the Interpretative Center. Therefore, potential effects would be considered less than significant.

d) Bay Mud is considered a highly expansive soil[16]. Changes in the moisture content of Bay Mud would not result in adverse changes to the restored wetland areas (no structures would be built in this area), as those areas would be designed to be subject to the fluctuating tides. Within areas of the proposed Interpretative Center, it is possible that the shrinking and swelling potential of the Bay Mud would damage the foundation. Inclusion of a foundation support system into project design would ensure that the potential for facility damage from expansive soils would be less than significant.

e) The proposed project would not include septic tanks or alternative waste disposal systems. Sanitary facilities would be connected to the City of San Francisco's sewer system. As such, the potential for soil failure associated with the installation of septic tanks or alternative waste disposal systems would not occur.

f) Project construction activities would take place in Holocene-age (10,000 years B.P. to present day) artificial fill (Wagner et al. 1991 as referenced in Northgate). By definition, in order to be considered a fossil, objects must be more than 10,000 years old. Furthermore, fill material, because of the construction process involved, would not contain intact fossil specimens. Therefore, project activities would have no impact on paleontological resources.

VII. HAZARDS AND HAZARDOUS MATERIALS.

ENVIRONMENTAL SETTING

Northgate Environmental Management, Inc. (in consultation and collaboration with WRA, Romberg Tiburon Center, Noble Consultants, and Lipton Environmental Group) conducted environmental assessments at the project site to determine soil and groundwater quality. The first phase of the study was conducted in January 2004 and consisted of soil and groundwater investigations. The second phase of the hazardous materials assessments (Phase II Assessment), conducted in September through October 2004, focused on soils up to 20 feet below existing ground surface. This approach was taken because it would be impractical and infeasible to remove all of the contaminated soils beneath the restoration area[17]. The Phase II hazardous materials assessment for this project evaluated cut soils (soils removed from the restoration area to construct the wetlands) and wetland layer soils (soil within the three-foot interval below the planned wetland design surface, below the cut soils) for metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), pesticides, total extractable petroleum hydrocarbons (TEPHs), semi-volatile organic compounds (SVOCs), and volatile

[16] Expansive soils undergo large volume changes with changes in moisture content (i.e., it shrinks when dried and swells when wetted). Shrink and swell movements occur in fine-grained sediments containing expansive clays. Shrink/swell movement can adversely affect building foundations, often causing them to crack or shift, with resulting damage to the buildings.

[17] Phase 1 results indicated that fill soils at the site and in the surrounding area are impacted to depths below the groundwater table. Based on the findings of the study, it was determined that removal of all chemically-impacted fill beneath the restoration area would be impractical and infeasible. As such, existing fill below the restoration area would be left in-place and covered with fill soil that meets acceptable screening criteria for wetlands and uplands cover.

organic compounds (VOCs). Excerpts of the Phase II Assessment report are provided in Appendix C of this document. The results of the study are briefly summarized below. For more quantitative results, please refer to the actual Phase II Environmental Site Assessment report, which is available for review at the California State Parks Foundation office at 800 College Avenue, Kentfield, CA 94914.

Screening criteria were established from various sources (e.g., RWQCB and the National Oceanic and Atmospheric Administration [NOAA]), to evaluate the suitability of the existing fill soil for use in the restored wetland (to support wetland habitat) and upland areas of the site (to prevent human exposure to unsafe levels of chemicals). The screening criteria for the wetlands restoration area include RWQCB's San Francisco Bay sediment ambient concentrations, NOAA's effects based sediment concentrations for chemical constituents of concern known as "effects range – median" (ER-M) values[18], and RWQCB's wetland cover and non-cover criteria (which are typically used for evaluating reuse of dredged materials in wetlands environments). The screening criteria for the proposed project, which corresponds to ER-Ms for most metals, PAHs, PCBs, and pesticides, and wetland non-cover criteria for nickel and selenium[19]) would be used to meet the goal of achieving average concentrations in the final wetland layer that are near ambient levels for San Francisco Bay sediments through the removal of soils that exceed these criteria (by testing) and replacement with fill (one to three feet thick) that meet the criteria.

The screening criteria for upland restoration areas include RWQCB's environmental screening level (ESLs)[20] for direct exposure under several scenarios (residential land use scenario and commercial/industrial land use scenarios) and site-specific ambient concentrations for arsenic and chromium[21]. ESLs have not been established for recreation use, and thus residential ESLs were selected to provide a more conservative standard to determine the adequacy of soil as an upland cover. With concurrence by RWQCB, recreation-screening levels may alternatively be calculated for cover soils that are protective of human health and the environment. Similar to the soils for wetland cover layer, if the upland soils exceed the above criteria (termed screening criteria), then they would be covered with soil that meets the criteria. In areas where pavement or buildings are planned, cover soil would not be needed as the soils would be capped with a hard, impervious material. For upland areas that would be covered with vegetation, a buffer layer up to two feet thick of soil that meets commercial/industrial ESLs may be placed between the chemically-affected fill and the cover soils to provide additional protection from erosion and potential exposure of the underlying fill.

Based on the analytical results of the Phase II investigation, groundwater at the project site is not impacted by chemicals detected in the fill except for two localized areas: (1) detections of lead, nickel, cobalt, and TEPH within a limited area of the North B area (see Figure 2-3 in

[18] ER-Ms are commonly used sediment screening values that represent concentrations above which biological effects on benthic organisms are probable.

[19] The non-cover criterion for nickel has been selected as the screening criteria because the San Francisco Bay ambient concentration is higher than the ER-M and because naturally-occurring nickel is associated with the Franciscan bedrock present in fill materials at the site. The non-cover criterion for selenium has been selected because ER-M has not been established for selenium.

[20] ESLs are concentrations of chemicals of concern below which risks to human health and the environment can be considered insignificant.

[21] Due to the presence of certain metals in San Francisco Bay area soils that exceed health risk-based screening levels (e.g., arsenic and chromium), standards were developed using statistical analysis of samples taken from the project site.

Appendix A for location of the North B area), and (2) TEPH at one location in the vicinity of a suspected sump in the North A area (see Figure 2-3 in Appendix A for location of the North A area); the TEPH was found not to be migrating in groundwater beyond this localized zone.

TEPH (primarily hydraulic oil) was distributed in fill materials in the South, North A, and North B areas of the project site. PAHs are also widely distributed in the fill, with the highest levels in the North A area, in the vicinity of a suspected sump. The origins of these chemicals are unknown, although PAHs may be associated with asphalt fragments or hydraulic oil at the site.

Based on the soil analytical concentrations, wetland layer soils exceeding proposed screening criteria for wetland cover (ER-Ms for most chemicals and wetland non-cover criteria for nickel and selenium) was identified in portions of the North A and North B areas and most of the South area (see Figure 3-1 in Appendix B). The primary metals that exceed the screening criteria include copper, lead, nickel, and zinc. Other metals (cadmium, chromium, mercury, and selenium), PAHs, PCBs, and pesticides also exceed the proposed wetland cover criteria in a few samples.

Detected concentrations in cut soils were also compared to the proposed wetlands and uplands screening criteria, to assess their potential reuse as wetland and upland cover. Locations where cut soils exceeded the proposed screening criteria for wetland reuse are shown in Figure 3-2 in Appendix B; these chemicals include metals and isolated exceedances of PAHs, PCBs, pesticides, and SVOCs. The primary metals that exceed wetland screening criteria include lead, mercury, nickel, and zinc. Isolated exceedances of cadmium, copper, selenium, and silver were also found.

The locations where cut soils exceeded the upland screening criteria (residential and commercial/industrial) are shown in Figures 3-3 and 3-4 in Appendix B. The primary chemicals that exceed site-specific ambient concentrations or residential ESLs include cadmium, chromium, lead, nickel, TEPH, and PAHs. Isolated exceedances of other metals and PCBs were also found. The primary chemicals that exceed commercial/industrial ESLs include chromium, lead, nickel, and PAHs. In addition, measurable asbestos (0.5% or less) was found in three of 20 samples, of which two were in the North B area and trace amounts were found in one sample near the shoreline in the North A area.

Upland soils were also evaluated against the screening criteria, to assess their potential reuse as either wetlands or uplands cover soils. Concentrations of metals and organic compounds (PAHs, pesticides, PCBs, and SVOCs) are generally below detection limits or below site-specific ambient concentrations or ESLs for residential land use, with the exceptions of a few detections of cadmium, chromium, one type of PAH, and TEPH. Only single detections of nickel and PCBs exceeded the proposed screening criteria for wetland cover.

Construction of the proposed wetland is expected to generate approximately 263,000 cy of cut soils which would need to be classified and managed. An estimated excess of approximately 110,000 cy of cut soils would be generated that would be hauled off-site for disposal. During construction activities, soils for on-site reuse as wetland or upland cover would be screened to remove debris, stockpiled, and segregated for confirmation testing prior to reuse on-site.

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
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, b) Operation

Operation of the proposed project would not require the routine transport, use, or disposal of hazardous materials. As such, no impacts would occur.

Although no significant impact would result from the routine transport, use, or disposal of hazardous materials, other aspect of operation would result in significant effects requiring mitigation. To ensure that the deeper, chemically-impacted soil below the wetland layer soils (which would be left in place due to the infeasibility of removing all chemically-impacted soils) would not be exposed in the restored wetland (e.g., through erosion from tidal action), DPR would conduct an engineering analysis, including hydrodynamic

modeling, to assess the wetland cover thickness necessary to protect against potential erosion due to tidal currents, rainfall, and runoff. The engineering design documents would also provide final details on the analysis of potential erosion processes, such that the wetlands and nesting islands would be designed and placed in a manner that would reduce erosion potential (see Mitigation Measure Hazmat-1).

To ensure that chemically-impacted upland soils are not exposed to human contact (e.g., due to runoff of surface soils), DPR would prepare and implement a Erosion Control Monitoring Plan (ECMP) (see Mitigation Measure Hazmat-2). The ECMP would identify measures that would minimize erosion of the soil and exposure of the deeper chemically-impacted soils to human contact, and set in place a long-term monitoring plan that ensures direct pathways to human contact of these soils do not result. As such, public health and safety would be maintained and protected.

To ensure that there would not be any long-term disturbance and exposure of chemically-impacted soils, DPR would prepare a Risk Management Plan (RMP) and require that all future contractors implement the RMP (see Mitigation Measure Hazmat-3).

Implementation of mitigation measures would reduce potentially significant impact to a less than significant level

Construction

Construction of the proposed project could also potentially create significant impacts, as described below.

Construction of the proposed project would require the use of certain potentially hazardous materials such as fuels, oils, and solvents. These materials would generally be used for excavation equipment, generators, and other construction equipment and would be contained within vessels engineered for safe storage. Spills during onsite fueling of equipment or an upset condition (e.g., puncture of a fuel tank through operator error or slope instability) could result in a release of fuel or oils into the environment, including Yosemite Slough and subsequently San Francisco Bay. Implementation of a Spill Prevention and Response Plan would ensure the safe handling of potentially hazardous materials and provide containment procedures in the event of a spill (see Mitigation Measure Hazmat-4). In addition, regular maintenance of construction equipment would ensure that contamination of the environment from improperly maintained equipment would be reduced to a less-than-significant level (see Mitigation Measure Hazmat-5).

During construction activities (e.g., grading), soil that contains hazardous materials would be disturbed and handled. To ensure protection of workers from exposure to concentrations of hazardous materials (e.g., TEPH, PAHs, PCBs, pesticides, and heavy metals) that could potentially cause adverse health effects, a Health and Safety Plan (HSP) will be prepared and implemented (see Mitigation Measure Hazmat-6). The HSP would identify the policies and procedures to protect workers and the public from potential hazards posed by the handling of hazardous materials.

To ensure the adequate treatment or removal of chemically-impacted soils, and to reduce the potential for contamination of the surrounding environment, only soils that meet the screening criteria would be used for the wetlands or upland cover layer. Cut soils that do not meet appropriate criteria for reuse as wetland or upland cover would be placed in the uplands and covered with cut soils that meet appropriate uplands cover criteria, or would be disposed off-site in accordance with the Soil Handling and Materials Management Plan (SHMMP) (see Mitigation Measure Hazmat-7). Chemically-impacted soils in the two areas of localized groundwater contamination would be removed by contractors and treated in compliance with all federal, state, and local regulations and policies to reduce the chemically solubility of the soils, or disposed off site, in accordance with the SHMMP (see Mitigation Measures Hazmat-7). In addition, TEPHs and PAHs would be bioremediated in-situ before grading or ex-situ during grading in accordance with the SHMMP (see Mitigation Measure Hazmat-7).

Analytical results for the final wetland layer consisting of cut soils proposed for reuse and wetland layer soils left in-place would be statistically evaluated to ensure that project goals are achieved in accordance with the SHMMP (e.g., concentrations in the final wetland layer do not exceed screening criteria and the average concentrations are near ambient concentrations for San Francisco Bay sediments) (see Mitigation Measure Hazmat-7).

Limited de-watering would occur once the soils are removed to a management area for testing. The water would be captured for testing; if it contains elevated contaminants above ambient concentrations for water in Yosemite Slough, the water would be stabilized or disposed of off site. If the water does not contain contaminants above ambient concentrations for water in Yosemite Slough, then it would be discharged through a sediment filtering device (e.g., settling pond) prior to discharge into the Bay (see Mitigation Measure Hazmat-7).

Up to 90,000 cy of soils would be placed over the existing parking area at Candlestick Point SRA, north of Monster Park. Because a new pavement would be placed over potentially chemically-impacted soils, there would be no pathway exposure that would expose people using the parking area or passersby to potential toxic levels of hazardous materials. During disposal activities, the area would be prohibited to non-workers. Potential impacts would be considered less than significant. Please refer to Section III, Air Quality for a discussion of impacts associated with the potential for airborne toxic contaminants in fugitive dust.

c) The Bret Harte Elementary School is located at 4945 Ingerson Avenue, approximately 0.2 miles south of the existing DPR offices and west of the westernmost corner of the proposed disposal area. Gloria R. Davis Middle School (1195 Hudson Avenue) is located more than 0.3 miles north of the project site. Operation of the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste; therefore, impacts resulting from operation of the proposed project would not occur.

However, movement of soils containing hazardous materials during construction activities could expose school children to hazardous materials. As described in the Chapter 2, Project Description, construction activities in the area would consist of grading activities throughout the site. Contaminated soils within the project site would be treated onsite, covered by non-contaminated soils or other hard surfaces (e.g., pavement), or excavated and hauled off (disposed of) at an appropriate waste management facility (either Class I or Class II disposal facility, depending on the type of chemically-impacted soils). Although soils containing hazardous materials would be handled within a quarter mile of the school (Harte Elementary School) during construction activities, mitigation measures requiring management of chemically-impacted soils in accordance with the SHMMP and HSP (see Measures Hazmat-6 and Hazmat-7) would ensure that construction activities would not generate hazardous emissions that would expose nearby school children to toxic levels of hazardous materials. Trucks carrying contaminated soils would not be hauled on roadways next to the school. Therefore, impacts would be reduced to a less-than-significant level.

d) The northwest portion of the project site (1055 Underwood Avenue) has been identified on the Cortese List (a list of hazardous materials sites). The property was listed in 1988 because of an underground storage tank (Bennett 2005). However, when the property was transferred to DPR, the tank was removed and the site was cleaned up, and as such, the case was determined closed (although it remains on the Cortese list). Subsequent investigations confirmed that there was no residual contamination at the site. Therefore, impacts are considered less than significant.

e, f) The proposed project is located more than six miles north of the San Francisco International Airport and more than seven miles west of the Oakland International Airport. There are no private airstrips in the vicinity of the project site. Given the distance from these airports and the nature of the proposed project (restoration of wetlands and installation of recreational facilities), the proposed project would not result in a safety hazard for people residing or working in the project area.

g) The proposed project would be located entirely within the DPR property. Access to the project site and trails would be provided from local streets, from Griffith Street in the northern portion of the project site, adjacent to the DPR facilities at the southern end of the project site, and from the western end of Yosemite Slough. All trails would be designed in conformance with requirements of the DPR Trails Handbook and emergency vehicle access. Because the project site consists of several access points, and the trails are designed to accommodate emergency vehicles, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. No impact would occur.

h) The proposed project is located within an urbanized area consisting of and surrounded by park, industrial, and limited residential uses. It does not contain any wildlands. As such, the proposed project would not expose people or structures to a risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

MITIGATION MEASURE HAZMAT-1
▪ Qualified DPR staff or a qualified engineer will conduct engineering analysis, including hydrodynamic modeling, to identify existing erosion processes along the shoreline edge of the project site (from tidal currents, wave action, rainfall, runoff, etc.). The analysis results will contribute to the design of the nesting islands and wetlands (determine depth of wetland cover) to reduce the potential for erosion and exposure of deep chemically-impacted soils.

MITIGATION MEASURE HAZMAT-2
▪ DPR or a qualified engineer/contractor will develop an Erosion Control and Monitoring Plan (ECMP) which will be a stand-alone document or incorporated into the Risk Management Plan (RMP) (see Mitigation Measure Hazmat-3). The ECMP will identify long-term erosion control measures that will be implemented in the upland areas of the project site, to reduce erosion and runoff of soils and subsequent exposure of deeper chemically-impacted soils, as well as monitoring of these soils[22]. Construction specifications for the proposed project will require contractors to implement the ECMP, and to maintain a copy of the ECMP onsite. Erosion control measures would be necessary for two years prior to reestablishment of vegetation. The type of measures would be determined based on the site-specific location, but could include the following: - Waffle mats - Silt fences - Protection drain inlets

MITIGATION MEASURE HAZMAT-3
▪ Qualified DPR staff or its contractors will develop a Risk Management Plan (RMP) that would guide soil disturbing activities at the project site. The RMP would include the ECMP (described in Mitigation Measure Hazmat-2, above) and Soil Handling and Materials Management Plan (SHMMP - described in Mitigation Measure Hazmat-7, below). ▪ All contractors working at the project site will implement the RMP whenever soil-disturbing construction activities occur. Compliance with the RMP will ensure that chemically-impacted soils will not be exposed and pose a risk to people working and living in the area.

[22] It should be noted that an ECMP is not the same as a Stormwater Pollution Prevention Plan (SWPPP). The ECMP is intended to prevent the exposure of chemically-impacted soils during the long-term. A SWPPP is implemented during construction activities to protect water quality of receiving waters (see Section VIII, Hydrology and Water Quality).

MITIGATION MEASURE HAZMAT-4
▪ Prior to the start of construction, qualified DPR staff and/or its contractors will prepare an emergency Spill Prevention and Response Plan and maintain the plan and a spill kit on-site during project construction. The plan will include a map that delineates construction staging areas, where refueling, lubrication, and maintenance of equipment may occur. In the event of any spill or release of any chemical in any physical form at the project site or in Yosemite slough during construction, the contractor will immediately notify the appropriate DPR staff (e.g., project manager, supervisor, or State Representative).

MITIGATION MEASURE HAZMAT-5
▪ Prior to the start of construction, contractors will inspect all equipment for leaks, and regularly inspect equipment until all equipment is removed from SRA properties.

MITIGATION MEASURE HAZMAT-6
▪ Qualified DPR staff and/or its contractors will prepare a Health and Safety Plan that includes project-specific monitoring procedures and action levels for dust, and specific actions to be implemented if these action levels are exceeded. The portion of the plan that relates to the control of toxic contaminants contained in fugitive dust will be prepared in accordance with the Bay Area Air Quality Management District (BAAQMD) guidelines. The BAAQMD guidelines to prevent the exposure of sensitive receptors to levels above applicable thresholds will be implemented. The Health and Safety Plan, applicable to all excavation activities, will establish policies and procedures to protect workers and the public from potential hazards posed by hazardous materials. The plan will be prepared according to federal and California OSHA regulations. DPR and/or its contractors will maintain a copy of the Plan on-site during construction activities.

MITIGATION MEASURE HAZMAT-7
▪ Qualified DPR staff or a qualified engineer/contractor will prepare a Soil Handling and Materials Management Plan (SHMMP), which will be incorporated into the Risk Management Plan (RMP) (see Mitigation Measure Hazmat-3). The SHMMP will identify proper procedures for the management (excavation, handling, treatment, reuse, and disposal) of both chemically impacted soils and non-chemically impacted soils at the project site. Construction specifications for the proposed project will require contractors to implement the SHMMP, and to maintain a copy of the SHMMP onsite. The SHMMP will include results of the Phase II Environmental Site Assessment, which include but are not limited to those measures identified below. Specific details of the requirements (e.g., methods of excavation, protocols for in-situ and ex-situ treatment, etc.) will be developed and completed prior to the start of construction activities. ▪ Contractors will be required to implement the SHMMP, and to maintain a copy of the SHMMP onsite at all times.

- The SHMMP will require DPR or its contractors to remove chemically-impacted soils in two localized zones to reduce chemical solubility of the soils and remove the localized potential for groundwater contamination.

- The SHMMP will require DPR or its contractors to conduct bioremediation within the project area (South, North A, and North B areas) where TEPH and PAHs have been detected. Bioremediation could be completed in-situ before grading or ex-situ during grading.

- The SHMMP will require DPR or its contractors to remove wetland layer soils that do not meet the screening criteria for the project, and replace the soil with suitable material taken from cut soils or with clean imported fill that meet the screening criteria.

- The SHMMP will require DPR or its contractors to place cut soils that do not meet appropriate criteria for reuse as wetland or upland cover in upland areas underneath soils that meet appropriate uplands cover criteria; alternatively, these soils would be treated and/or adequately disposed of off-site in accordance with federal, state, and local regulations.

- The SHMMP will require DPR or its contractors to conduct analysis and statistical evaluation of the final wetland layer soils (consisting of cut soils proposed for reuse and wetland layer soils left in-place) to ensure that project goals are achieved (i.e., concentrations in the final wetland layer do not exceed screening criteria and the average concentrations are near ambient concentrations for San Francisco Bay sediments).

- The SHMMP will require DPR or its contractors to properly dispose of groundwater during de-watering activities. Chemically impacted water will be treated prior to discharge or disposed of at a licensed facility. Non chemically-impacted water will be passed through settlement devices (e.g., settling pond) prior to discharge into the Bay.

VIII. HYDROLOGY AND WATER QUALITY.

ENVIRONMENTAL SETTING

The project site is located within the jurisdiction of the San Francisco RWQCB. The RWQCB is responsible for protecting all beneficial water uses from pollution and nuisance that may occur as a result of waste discharges in the region. The Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin identifies beneficial uses for surface water bodies in the San Francisco Bay basins. Yosemite Slough does not have its own beneficial use designation; however, the San Francisco Bay Lower beneficial uses would be applicable. Table 3-3 (in Appendix A) identifies the beneficial uses relevant for Yosemite Slough.

	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) Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

DISCUSSION

a) Stormwater facilities, installed under the proposed parking lot and the existing, re-graded parking lot, would collect and discharge stormwater from these areas into Yosemite Slough (associated with operation of the proposed project). These facilities would be designed with screening, filtering, and/or settling devices to treat stormwater prior to discharge. In accordance with the State Water Resources Control Board's Nonpoint Source Pollution Control Program, any person discharging or proposing to discharge waste that could degrade water quality must file a report of waste discharge (RoWD) with

RWQCB. Upon receipt of the RoWD, the RWQCB would determine whether to issue waste discharge requirements (WDR) or conditionally waive the requirements. Compliance with the WDR, if deemed necessary by RWQCB, would ensure that potentially significant impact associated with water quality degradation of Yosemite Slough and San Francisco Bay would be reduced to less than significant levels (see Mitigation Measure Hydro-1).

b) Groundwater is present at depths of approximately 5 to 10 feet bgs across the site (Northgate 2005). Groundwater is locally influenced by tidal action in San Francisco Bay and flow direction is variable. Groundwater generally flows eastward toward Yosemite Slough and the San Francisco Bay on a regional basis. The proposed project would require excavation activities that in some cases would reach groundwater levels (excavation depth would vary by location but may reach up to 18 feet below ground surface). Because a barrier would be placed between the slough and the inland area prior to excavation, de-watering would be limited. Likely, de-watering activities would be required once the material is moved to a management area for testing. However, de-watering activities would not deplete groundwater supplies, as groundwater is not used for drinking water purposes. In addition, construction-related activities would not interfere substantially with groundwater recharge such that there would be a lowering of groundwater table. This is a less than significant impact.

c, d) The proposed project would alter the existing drainage pattern of the project site through the restoration of tidal wetlands. Three new embayments and two nesting island would be develop as part of the proposed project (see Figure 2-3 in Appendix B). The restoration would open up elevated lands recently unaffected by tides (since filling occurred) to tidal action, and as such the new shoreline areas would be susceptible to erosion. In addition, it would create new islands that would similarly be exposed to tidal action, and new upland areas that would be exposed to rainfall and runoff. To the extent feasible, the restoration area would be designed to minimize erosion, through siting within stable areas (e.g., sandy nesting island) and planting of vegetation where possible (e.g., upland areas). Further engineering analysis, including hydraulic modeling would be required to asses the wetland and upland cover thickness to protect against potential erosion due to tidal currents, rainfall, and runoff (see Mitigation Measure Hazmat-2).

The proposed project would also include the construction of a new parking lot in the northern portion of the site. The approximately 200- by 60-foot parking lot would have an area large enough to accommodate 30 vehicles and two school buses. Because portions of the existing area are currently unpaved, the new parking lot would increase the overall impermeable surfaces by about 6,000 square feet. Stormwater runoff that would otherwise infiltrate into the ground would run off to adjacent areas. The additional runoff is not expected to result in erosion or flooding, as stormwater runoff would be collected in facilities that direct flows to Yosemite Slough. Potential impacts associated with erosion and flooding in the new parking lot area would be considered less than significant.

e) As described in item a above, stormwater facilities would be installed under the proposed parking lot and existing re-graded parking lot. Storm flows would be conveyed through a dedicated pipeline that would be discharged directly into Yosemite Canal. Flows would not be combined with the City's existing storm flows, and thus would not exceed the

capacity of the City's existing CSOs. To ensure that DPR would not contribute to additional sources of polluted runoff, it would file a RoWD with RWQCB as described in item a above (Measure Hydro-1).

f) Construction activities would involve mass grading which could contribute to water quality degradation through sediment runoff. In addition, construction activities on the edges of Yosemite Slough may contribute to soil erosion directly into the slough or accidental release of fuels, oils, or grease from construction equipment. As described in the project description, a temporary water intrusion barrier would be placed between the construction area and the slough, which would limit some of the construction-related sedimentation into Yosemite Slough. However, additional measures would be needed to reduce water quality degradation resulting from construction activities. Implementation of standard erosion and sedimentation control techniques, and limitations on construction activities (e.g., restrict construction to non-rainy season) (see Mitigation Measure Hydro-2) would reduce potential water quality impacts to Yosemite Slough. Because the proposed project would be greater than one acre, DPR would be required to prepare and implement the Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would specify BMPs to prevent construction pollutants from contacting stormwater, with the intent of keeping products of erosion from moving offsite into receiving waters. BMPs include measures guiding the management and operation of construction sites to control and minimize the potential contribution of pollutants to storm runoff from the project area. These measures address procedures for controlling erosion and sedimentation and managing all aspects of the construction process to ensure control of potential water pollution sources. Erosion and sedimentation control practices could include installation of silt fencing, straw wattle, fiber rolls, mulch, soils stabilization, detention basins, straw bales, silt check dams, geofrabrics, drainage swales, sand bag dikes, revegetation, and runoff control, or other applicable techniques to limit increases in sediment in storm water runoff. In addition, all storm water inlets in the project vicinity would be protected during ground disturbing activities with one of the measures identified above. Implementation of BMPs and Mitigation Measure Hydro-2 would ensure that potential degradation of water quality would be reduced to less-than-significant levels.

g, h) According to the *City of San Francisco General Plan*, San Francisco is not subject to flooding of natural waterways because the National Flood Insurance Program did not identified flood-prone areas in San Francisco (City and County of San Francisco 1996). The proposed project would not result in any impacts associated with placement of housing within a 100-year flood hazard zone or the placement of structures which would impede or redirect flood flows. Therefore, no impact would occur.

i) Although the project site is not located within a flood zone, it is located adjacent to areas influenced by tides (Yosemite Slough). Within these areas, the proposed project would not expose people or structures to a significant loss, injury or death involving flooding. Structures and recreational areas proposed for use by people would be elevated above areas inundated by water. As such, no impact would occur. Please refer to item j below regarding inundation by tsunamis.

j) The project area is not subject to seiches[23] or mudslides[24]. A tsunami, which is a series of ocean waves generated by sudden displacements in the sea floor (e.g. from earthquakes) was recorded near Ft. Point (west of the Golden Gate Bridge) during the 1906 San Francisco Earthquake (USGS 2005). A tsunami wave of 10 centimeters resulted from the magnitude 7.8 earthquake. However, there has been no recorded evidence of tsunamis inside San Francisco Bay and there is no geologic evidence to suggest that any has occurred (Adelson 2005). According to the *City and County of San Francisco General Plan*, the shoreline along Candlestick Point SRA, including the project site, would be susceptible to inundation during a tsunami. National warning systems are in place to provide warning in the event tsunamis occur. These warnings would provide sufficient time for evacuation if necessary. Because the proposed project would not include habitable structures, and warning systems would allow for evacuation of the shoreline in such an event, inundation by tsunamis would not expose people to potential injury or death. Due to the limited facilities adjacent to the shoreline (e.g., trails), potential damages would be considered less than significant.

MITIGATION MEASURE HYDRO-1
▪ Qualified DPR staff or its contractor will prepare and file a report of waste discharge with RWQCB, and obtain a WDR, or waiver, from the RWQCB for discharge of stormwater to Yosemite Slough. The project will comply with all applicable water quality standards as specified in the SFRWQCB Basin Plan.

MITIGATION MEASURE HYDRO-2
▪ Contractors will not work along the shoreline (during connection of restored area to the slough) during high tides or rainy season (October 31 to May 1). Grading activities occurring during the winter months will require special measures, including covering (tarping of stockpiled soils).

IX. LAND USE AND PLANNING.

ENVIRONMENTAL SETTING

The land uses within the project site are described at the beginning of this chapter. The project site is located within the Candlestick Point SRA. and consist of industrial uses, ruderal open space, and park facilities. The entire SRA, including the project site, is designated a Public Use District according to the City of San Francisco Zoning Map. Uses permitted with this district include structures and uses of governmental agencies.

[23] Seiche is a wave on the surface of a lake or landlocked bay; San Francisco Bay is not a landlocked bay because it opens to the Pacific Ocean.

[24] A mudslide is a type of soil failure where saturated soil (from rainfall) causes soil to slide down a slope. The project site is flat and therefore is not subject to a mudslide.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
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 consist of wetlands and upland restoration, and installation of recreation facilities within the existing Candlestick Point SRA. There are no housing communities located within the SRA, although existing and abandoned industrial uses are located on the northern portion of the site. These industrial facilities are not consistent with the *Candlestick Point SRA General Plan* and would be demolished as part of the restoration project. The implementation of the proposed project would not physically divide an established community, but rather create a linkage from this currently unused portion of the SRA to the remainder of the SRA. As such, the impact would be considered beneficial. No impact would occur.

b) The components of the proposed project would be consistent with the Public Use District zoning designation.

As described in Section 2.8, Consistency with Local Plans and Policies, the proposed project would be consistent with land use plans and policies that guide development of the project area, including the *Candlestick Point SRA General Plan*, the *City of San Francisco South Bayshore Area Plan,* and *the City of San Francisco General Plan*.

Implementation of the proposed project would require acquisition of permits from state, regional, and local regulatory agencies with jurisdiction over the project site (see Section 2.9, Discretionary Approvals, for a list of agencies with jurisdiction over the project). These agencies have adopted regulations for the purpose of avoiding or mitigating an environmental effect, and require project proponents to comply with certain permit conditions that ensure protection of natural resources (e.g., biological or water resources). As such, DPR would be required to obtain relevant permits and implement permit conditions as part of project implementation. No conflicts with the applicable land use plan, policy or regulation with jurisdiction over the project.

c) The project site is not located within the jurisdiction of habitat conservation plan or natural community conservation plans. Therefore, no conflicts to such plans would occur.

X. MINERAL RESOURCES.

ENVIRONMENTAL SETTING

The proposed project site is within the Candlestick Point SRA and located primarily on artificial fill underlain by Bay Mud, Bayside Sand, and the bedrock of the Franciscan Formation. There are no known mineral resource of value to the region or the state.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
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 site does not contain any mineral resources, there would not be any potential for the loss of known mineral resource and no impact would occur.

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

MITIGATION MEASURE MINERAL-1
▪ None Required

XI. NOISE.

ENVIRONMENTAL SETTING

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
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?	☐	☐	☒	☐

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
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) Short-Term Construction Source Noise

On-site Construction Equipment

Construction activities at the project site would include demolition, removal of debris, excavation, contaminated soil treatment, grading, creation of habitat, construction/erection of new facilities, and plantings. On-site equipment required for the above construction activities would include cranes, dump trucks, scrapers, backhoes, dozers, loaders, and other miscellaneous pieces of equipment. According to the EPA, the noise levels of primary concern are typically associated with the site preparation phase because of the on-site equipment associated with clearing, grading, and excavation. Depending on the operations conducted, individual equipment noise levels can range from 78 to 91 dBA[25] at 50 feet, as indicated in Table 3-4 (in Appendix A).

Simultaneous operation of on-site construction equipment associated with the proposed project, as identified above, could potentially result in combined intermittent noise levels of approximately 94 dBA at 50 feet from the proposed project site without feasible noise control. Based on these equipment noise levels and assuming a typical noise attenuation rate of 6 dBA per doubling of distance from the source, exterior noise levels at approximately 2,540 feet from the proposed project site could potentially exceed 60 dBA. In addition, pile driving would occur, though only for approximately one week, along the slough to install barriers in the North A, North B, and South areas. However, construction equipment would be equipped with noise control devices such as intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturers' specifications.

[25] DBA is a frequency-dependent rating scale devised to relate noise to human sensitivity.

Consequently, the above projected noise levels would likely be much lower (78 dBA at 100 feet), in compliance with Section 2907 (b) (Construction Equipment) of San Francisco's noise ordinance which limits equipment noise levels to 80 dBA at 100 feet, and Section 2907 (c) which (c) exempts impact equipment from the 80 dBA standard provided that such are equipped with intake and exhaust mufflers. The Alice Griffiths Public Housing is located approximately 100 feet from the South Area. However, construction activities would be restricted to the less noise sensitive hours of the day between 7:00 a.m. to 5:30 p.m., in compliance with Section 2908 (Construction Work at Night) of San Francisco's noise ordinance (which prohibits such activities between the hours of 8:00 p.m. of any day and 7:00 a.m. of the following day). As a result, construction of the proposed project would not generate or expose people to noise levels in excess of the applicable standards. This impact would be considered less than significant.

Off-site Construction Traffic

As discussed in Section XV (Transportation/Traffic), the export and import of soils to and from the South area would result in the generation of approximately 33 and 31 daily two-way truck trips. With respect to the construction in the North A and B areas, the export and import of soils to and from the areas would result in the generation of approximately 35 to 27 daily two-way truck trips. Construction activities in the South Area are not anticipated to overlap with those in the North A and B areas. As such, the increase in traffic due to construction in the South area would be up to 33 (4 per hour) daily two-way truck trips and in the North A and B areas up to 35 (4 per hour) daily two-way truck trips. Based on available traffic data, the contribution of approximately 4 truck trips per hour would not result in a substantial increase in traffic on the local roadway system (refer to Section XV). Noticeable increases of 3 dBA (CNEL/Ldn[26]) do not typically occur without a substantial (i.e., doubling) increase in roadway traffic volumes. Consequently, the construction of the project would not result in a noticeable change in the traffic noise contours of area roadways. In addition, the temporary nature of construction activities coupled with the implementation of permit and construction requirements (e.g., daytime hour limitation, use of city-designated truck routes and the shortest distances from the construction areas to Highway 101 that minimizes disturbance to residential uses) would further prevent potentially adverse noise impacts. As a result, construction of the proposed project would not generate or expose people to noise levels in excess of the applicable standards. This impact would be considered less than significant.

[26] Ldn and CNEL are descriptors of noise. Ldn (Day-Night Noise Level): The 24-hour Leq with a 10-dBA "penalty" for the noise-sensitive hours between 10:00 p.m. and 6:00 a.m. The Ldn accounts for the fact that noise during this period of time is a potential source of sleep disturbance. CNEL (Community Noise Equivalent Level): The CNEL is similar to the Ldn described above, but with an additional 4.77 dBA "penalty" for the noise-sensitive hours between 7:00 p.m. to 10:00 p.m., which are typically reserved for relaxation, conversation, reading, and television. If using the same 24-hour noise data, the CNEL is typically about 0.5 dBA higher than the Ldn.

Long-Term Operational Stationary, Area, and Vehicle Source Noise:

On-site Stationary and Area Source Noise

Long-term operation of the proposed project would not include any major stationary noise sources. Project implementation would include the use of a parking lot, passive recreational area, and limited maintenance equipment. Noise levels attributable to the use of such sources would only be anticipated to occur during the less sensitive daytime hours. In addition, because of the nature of the existing land uses near the project area (e.g., primarily industrial and some residential in the outlying areas of the park) such sources would unlikely result in noise levels that differ substantially from those that comprise the existing environment. As a result, operation of the proposed project would not generate or expose people to noise levels in excess of the applicable standards. This impact would be considered less than significant.

Off-site Traffic Noise

As discussed in Section XV, Transportation/Traffic, the long-term operation of the proposed project would only result in minor increases in vehicle traffic on the local roadway system from visitor and regular maintenance trips. Noticeable increases of 3 dBA (CNEL/Ldn) do not typically occur without a substantial (i.e., doubling) increase in roadway traffic volumes. Consequently, the operation of the project would not result in a noticeable change in the traffic noise contours of area roadways. As a result, operation of the proposed project would not generate or expose people to noise levels in excess of the applicable standards. This impact would be considered less than significant.

b) Construction activities have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Table 3-5 (in Appendix A) displays vibration levels for typical construction equipment.

As mentioned above, construction of the proposed project would involve pile driving along the slough to install barriers in the North A, North B, and South areas. This would last approximately one week,. According to the Federal Transit Administration (FTA), typical vibration levels associated with the use of impact pile drivers are approximately 0.644 in/sec PPV and 104 VdB[27] at 25 feet, as shown in Table 3-5 (in Appendix A). Thus, using Applying FTA's recommended propagation adjustment procedure, groundborne vibration generated by pile driving would diminish to approximately 0.0062 in/sec PPV and 77.15 VdB [2] at the nearest sensitive receptors (Alice Griffith Public Housing) located nearly 500 feet to the southwest. Based on these equipment vibration levels and typical attenuation rates, construction of the proposed project would not result in levels above 0.2 in/sec PPV (the California Department of Transportation's recommended standard with respect to the prevention of structural building damage) or 80 VdB (the FTA's maximum acceptable vibration standard with respect to human response at residential uses) at the

[27] Lv is the velocity level in decibels (VdB), which is based on the root mean square (RMS) velocity amplitude.

nearest land uses. In addition, construction activities would be restricted to the less noise sensitive hours of the day between 7:00 a.m. to 5:30 p.m. As a result, construction of the proposed project would not generate or expose people excessive groundborne vibration or noise levels. This impact would be considered less than significant.

c) As discussed in item a above, project implementation would not generate or expose people to noise levels in excess of the applicable standards from the long-term operation of stationary, area, or vehicle noise sources. As a result, this impact would result in less than significant impacts associated with permanent increase in ambient noise levels in the vicinity of the project.

d) As discussed in item a above, project implementation would not generate or expose people to noise levels in excess of the applicable standards from the construction noise sources. As a result, this impact would result in less than significant impacts associated with the temporary or periodic increase in ambient noise levels in the vicinity of the project.

e, f) The proposed project is located more than six miles north of the San Francisco International Airport and more than seven miles west of the Oakland International Airport. There are no private airstrips in the vicinity of the project site. Given the distance from these airports and the nature of the proposed project (restoration of wetlands and installation of recreational facilities), the proposed project would not expose people residing or working in the project area to excessive noise levels. Therefore, no impacts would occur.

MITIGATION MEASURE NOISE-1
▪ None Required

XII. POPULATION AND HOUSING.

ENVIRONMENTAL SETTING

The project site is part of the Candlestick Point SRA 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?	☐	☐	☐	☒

	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
WOULD THE PROJECT:				
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. The project consists of restoration of an area that has been part of the existing Candlestick Point SRA. The restored site would consist of tidal wetlands, uplands, and limited recreation facilities that would be designed consistent with the 1988 *Candlestick Point SRA General Plan*. The project would meet the objectives of the Plan, which includes, but are not limited to, adding to the improvement of the quality of urban life, identifying and understanding ecological life cycles of the San Francisco Bay frontage and its natural and cultural resources, providing public accessibility to the shoreline, and expanding visitor experiences (detail objectives of the *Candlestick Point SRA General Plan* are outlined in Section 2.3.2, Documents Relevant to the Proposed Project). The *Candlestick Point SRA General Plan* was aimed at helping to fulfill the demand for outdoor recreational facilities in the San Francisco Bay Area, as this area had been identified as having the largest per capital demand for outdoor recreational facilities of any in the state (DPR 1988). The proposed project would meet the demand for recreational opportunities previously identified for Candlestick Point SRA. Expansion of recreational opportunities at Candlestick Point SRA within existing DPR properties destined for such use would not induce additional usage that would lead to substantial population growth in the area. Therefore, no impacts would occur.

b, c) The proposed project would not displace any housing or people such that replacement of housing would be required. Therefore, no replacement housing would be required and no impact would occur.

MITIGATION MEASURE POP-1
▪ None Required

XIII. PUBLIC SERVICES.

ENVIRONMENTAL SETTING

Police and fire protection are provided by the City of San Francisco. The Candlestick Point SRA is owned and managed by DPR, but nearby parks are managed and maintained by the City's Recreation and Park Department. Schools in the vicinity of the project are managed by the San Francisco 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 fire protection, police protection, school, or other public facilities. As described in Section VII, Population and Housing, above, the proposed 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. In addition, the project would not alter the performance standards of public services. The proposed project would consist of the alteration of an existing SRA. Physical impacts associated with this alteration are identified in this IS/MND, and potentially significant impacts to the environmental would be mitigated to less than significant effects through the implementation of mitigation measures identified throughout this chapter.

MITIGATION MEASURE SERVICE-1
▪ None Required

XIV. RECREATION.

ENVIRONMENTAL SETTING

The project site is located within the Candlestick Point SRA, which is a recreational facility. Currently, the project site is not open to the public for recreational purposes.

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
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, b) The proposed project would involve the restoration of the northern portion of the Candlestick Point SRA, creation of a link to the southern portion of the Candlestick Point SRA, and provision of additional passive recreational opportunities. The provision of these facilities would likely increase the use of this SRA at the project site, by existing users of the SRA as well as those living in the surrounding community. However, because the proposed project would not be expected to induce population growth, the proposed project would unlikely result in the substantial physical deterioration of other existing neighborhood and regional parks in the area through increase demand.

The proposed project area would not disturb existing public-access recreational facilities. Only areas that are currently accessed illegally (North B and South areas) would be disrupted. However, as these areas are not open to the public, preclusion of recreation during construction activities in these areas would be considered less than significant.

Operation of the project site would be similar to that of the existing SRA, with respect to the hours of operation, provision of water, wastewater, and solid waste management services, and upkeep of recreational facilities (e.g., interpretative center, trails, amenities, etc.). No impacts associated with the operation of the proposed recreation would occur.

MITIGATION MEASURE REC-1
▪ None Required

XV. TRANSPORTATION/TRAFFIC.

ENVIRONMENTAL SETTING

As shown on Figure 2-1 in Appendix B, the project site is surrounded by local streets, including Thomas Avenue, Underwood Avenue, Van Dyke Avenue, Wallace Avenue, Yosemite Avenue, Armstrong Avenue, and Carroll Avenue. All of these streets run parallel and perpendicular to the nearest arterial street (3rd Street), which provides direct linkage to Highway 101 (west of the site). Truck volume data is not available for the streets immediately adjacent to the project site. However, data is available for these local roadways at 3rd Street, as well as on 3rd Street, as shown in Table 3-6 (in Appendix A). These counts do not reflect traffic volume on streets during football game days (Keck 2005).

WOULD THE PROJECT:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
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,b) Construction

Construction-related traffic is associated primarily with delivery of material and equipment, and transport of construction workers. The primary off-site impacts from construction truck traffic would include short-term and intermittent reduction of roadway capacities due to slower travels on and off local streets.

In San Francisco, construction-related traffic impacts are generally not considered significant as they are temporary and limited in duration. Construction activities that affect roadway operations are typically regulated locally though permits and construction requirements to ensure acceptable levels of traffic flow during the period of traffic disruption. Construction best management practices (BMPs), including the preparation of a traffic control plan, are required by the City of San Francisco to be in place to ensure the safety of construction workers, motorists, bicyclists and pedestrians throughout project construction. Prior to initiation of construction, a Traffic Control Plan, conforming to the State's Manual of Traffic Controls for Construction and Maintenance Work Areas, would be prepared and implemented. Since construction impacts are not considered significant impacts due to their limited duration and temporary nature, no mitigation measures are required. The traffic control plan would ensure that temporary impacts resulting from the construction activities would not be considered significant. The traffic control plan would be prepared by the contractor(s) prior to the start of construction and would be reviewed by the City of San Francisco prior to its implementation. It would include specifications on construction traffic scheduling, hours of operation, haul routes, construction parking, staging area management, visitor safety, detour routes and speed controls.

Traffic conditions in the vicinity of the proposed project would be affected over two distinct periods (17 to 18 weeks in the South Area and 30 to 34 weeks in the North A and North B areas).

Construction of the proposed project would generate approximately 263,000 cy of cut soils. About 110,500 cy of cut soils would be moved to other areas of Candlestick Point SRA or trucked off-site for disposal, and about 33,300 cy of clean fill would be imported as cover soil.

In the North A and North B areas, approximately 84,000 tons of materials would be disposed of off-site generating 4,700 truck trips over a 30 week period (150 days assuming five work days in a week). Additionally, 535 truck trips would be required to bring clean capping soil to the site over a 3- to 4-week period (15 to 20 days, respectively). Soils destined for off-site removal would be hauled in 18-wheel trucks. A total of 5,235 total truck trips would be generated during the 34-week period. Approximately 31 vehicular round-trips per day would result from off-haul of soil during the 30-week period, equivalent to about 4 vehicular round-trips per hour (assuming an 8 hour day). Approximately 35 to 27 vehicular round-trips per day would result from import of soil during the 3 to 4 week period, equivalent to about 4 and 3 vehicular round-trip per hour, respectively. Based on available traffic data, the westbound traffic volume on Thomas Avenue at 3rd Street is 1,039 vehicles, and the total daily truck traffic on 3rd Street at Thomas Avenue is 24,681 vehicles (see Table 3-6 in Appendix A). Table 3-6 also shows pm peak traffic on other intersections in the vicinity of the project site. The contribution of approximately 4 truck trips per hour would unlikely increase traffic to a level where congestion would occur and roadway capacities would be exceeded on Thomas Avenue or 3rd Street. In addition, this incremental increase would last for a period of about 34 weeks (less than a year) and thus would be temporary in nature. Similar to the discussion above, the short duration of construction traffic disruption, limited increases in traffic

volume, and the implementation of required traffic BMPs would render potential traffic impacts as less than significant.

In the South Area, up to 90,000 cy of materials would be moved to the existing parking lot for disposal. The transferal of material would utilize smaller trucks (5 ton-trucks with 10 wheels compared to 15 ton-trucks with 18 wheels) and truck traffic would be confined to within the SRA property only. An additional 26,000 tons of materials may be disposed offsite, which would require 1,500 truck trips over a 17 to 18 week period (or 85 to 90 days, respectively assuming a 5 day work week). Additionally, 1,300 truck trips would be required to bring clean capping soil to the project site. The export and import of soils from and to the South Area would total 2,800 truck trips. Assuming they would occur over a 17- to 18-week period, approximately 33 and 31 truck round-trips per day, respectively, would be generated. Assuming an 8-hour work day, that would be approximately 4 truck trips per hour. Based on available traffic data, PM peak traffic on westbound Carroll Avenue is 38 vehicles, and the total daily truck traffic on 3rd Street at Carroll Avenue is 22,400 vehicles in both directions (north and south bound), with a.m. and p.m. peak of 1,592 and 1,712 vehicles, respectively (see Table 3-6 in Appendix A). The contribution of approximately 4 truck trips per hour would unlikely increase traffic to a level where congestion would occur and roadway capacities would be exceeded on Carroll Avenue or 3rd Street. In addition, this incremental increase would last for a period of 17 to 18 weeks and thus would be temporary in nature. Implementation of permit and construction requirements, including traffic BMPs and preparation and implementation of a traffic control plan (described above), would ensure acceptable levels of traffic flow during the period of traffic disruption as well as safety of construction workers, motorists, bicyclists and pedestrians throughout project construction. The short duration of construction traffic disruption, limited increases in traffic volume, and the implementation of required traffic BMPs would render potential traffic impacts less than significant.

All truck traffic would be routed along the bayside perimeter of Candlestick Point SRA and on commercial streets adjacent to the restoration area. From the North A and B areas, truck traffic would follow one of the adjacent streets (Griffith Street, Thomas Avenue, Van Dyke Avenue or Yosemite Avenue), and subsequently southbound on 3rd before entering Highway 101. From the South Area, truck traffic would follow Carroll Avenue, southbound on 3rd Street and onto Highway 101. Carroll Avenue is a City-designated truck route (City and County of San Francisco Planning Department 1997).

It is unlikely that work in the North A and North B areas would overlap with work in the South Area. As such, increases in truck traffic would not need to be combined and could be considered separately.

Traffic counts are not available for 3rd Street during San Francisco 49er football game days, but it is expected that traffic volumes would increase substantially during such days (specifically, Mondays[28]). There is a potential that project-related truck trips during these times could contribute to congestion and reduced roadway capacity on 3rd Street during

[28] Although most football games occur on Sundays, Monday night games occur on occasion. Since construction activities are planned during weekdays (Monday to Friday), traffic from construction activities could conflict with those associated with Monday night football games.

game days. Although traffic volume data on game days is not available, for the purposes of a conservative analysis, it is assumed that construction-related truck trips would contribute to congestion on Carroll Avenue (for the South Area) due to the function of this street as an access to parking for football games and 3rd Street (which is the only arterial in the area that provides freeway access). Avoidance of Carroll Avenue and 3rd Street by construction-related haul traffic on Monday football game days would be required (see Mitigation Measures Trans-1) to reduce potential traffic effects during Monday night game days to less than significant.

Operation

Operation of the proposed project would likely generate additional visitors to the site and regular maintenance vehicle trips. Visitors may come to the site by various modes of transportation, including driving, bicycling, taking public transportation, or walking. A parking lot that accommodates 30 car and 2 buses is proposed as part of the project. Off-street parking would also be available on adjacent streets to accommodate cars. Although DPR has not conducted demand studies to determine additional usage of the project site, it is unlikely that the parking lot would be completely filled on a daily basis, but may be filled during occasional special events. Visitors would likely visit at different times of the day and the week, although more use might occur during the weekends.

The proposed project would offer recreation activities (e.g., bicycling, walking, picnicking, etc.) that are already provided by the existing Candlestick Point SRA. Wetlands viewing, bird-watching, and additional educational and public participation programs associated with the ecology of wetlands are currently available at Heron's Marsh, located approximately one mile north at Heron's Head Park (managed by the City of San Francisco). As such, the addition of these activities in the proposed project would unlikely result in Candlestick SRA becoming a designation point that would create substantial increases in traffic that would in turn reduce roadway capacity and create congestion in and around the project site. The proposed project is intended to serve the local community, who would likely access the site on local roadways. As such, operation of the proposed project is not expected to cause a substantial increase in traffic in relation to the existing load and potential effects would be considered less than significant.

c) The proposed project is located more than six miles north of the San Francisco International Airport and more than seven miles west of the Oakland International Airport. There are no private airstrips in the vicinity of the project site. As such, the proposed project would not alter air traffic patterns. No impacts would occur.

d) The proposed project components would be located entirely within the existing Candlestick Point SRA. Structures that would be located within the project site include an interpretative center, trails, and other park amenities (e.g., picnic tables, benches, etc.). These features would be compatible with park uses and would be designed and located in a manner that would not increase safety hazards to the public. As such, no impacts would occur.

e) With the exception of designated access points, the remainder of the project site would be fenced. Access to the project site would be available from several locations: 1) Griffith Street in the northern portion of the project site; 2) adjacent to the DPR facilities at the southern end of the project site; 3) west end of Yosemite Slough; and 4) within the existing SRA. All of the access points with the exception of internal access from the SRA are located off local roadways. The proposed project would not result in inadequate emergency access.

f) The proposed project would include a parking lot in the northern portion of the site that accommodates 30 vehicles and 2 school buses (see Figure 2-3 in Appendix B for the location of the site). Existing parking spaces (eight on-street and eight at the corporation yard) located at the southeastern portion of the project site would be temporarily eliminated during construction of the proposed project but would be restored at the completion of construction activities; however, parking spaces are available in and around the project site, including within the SRA (south of the project site and on streets). Parking spaces proposed for temporary removal as part of the project are primarily for attendants of Monster Park events (located east of the proposed Interpretative Center). The removal of these areas from the City's concession parking would not reduce spaces for the SRA (as it is closed during non-game or event days). It would also unlikely reduce the number of spaces available for game or event days at Monster Park because the parking lot typically is not full. Due to the availability of parking spaces in the proposed and existing parking lots and on the streets, the proposed project would not result in inadequate parking capacity for SRA users. Similarly, due to the availability of parking lots accommodating Monster Park, the proposed project would not result in inadequate parking capacity for Monster Park attendants. This impact would be considered less than significant.

g) The nearest bus route (line 54) passes along Ingalls Street and Van Dyke Avenue, approximately 1 block north of the project site (City and County of San Francisco 2005) and the nearest citywide bicycle route is located along Carroll Road, south of the project site. Therefore, no bus stops or routes are located at the project site. Although this project will not conflict with any adopted policies, plans, or programs supporting alternative transportation, during specific concentrated truck traffic periods, increases in construction truck traffic along Carroll Avenue could potentially increase the conflict between bicyclists (an alternative transportation method) and construction-related truck traffic. Implementation of Mitigation Measure Trans-2 will reduce this impact to a less than significant level.

MITIGATION MEASURE TRANS-1
▪ Construction truck traffic will be prohibited during 49er football game days.

MITIGATION MEASURE TRANS-2
▪ The bicycle routes on Carroll Avenue will be detoured to adjacent streets during construction activities to ensure safety.

XVI. UTILITIES AND SERVICE SYSTEMS.

ENVIRONMENTAL SETTING

Utilities within the project site are described at the beginning of this chapter. There are three CSOs located in or near Yosemite Slough. In addition, water mains and wastewater pipelines are located within the developed portion of the project site, at the clusters of buildings in the northern portion of the site, and at the buildings along Carroll Avenue.

	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?				
Would the construction of these facilities cause significant environmental effects?	☐	☒	☐	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities?				
Would the construction of these facilities 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) The project would include restroom facilities connected to the City's sewer systems. Wastewater generated from the facilities would not contain chemicals that cannot be treated by the conventional wastewater treatment systems. Therefore, the proposed project would not exceed wastewater treatment requirements mandated by RWQCB. As such, no impact would occur.

b) The proposed project would include water and wastewater pipeline connection from proposed facilities (e.g., interpretative center, restrooms, drinking water fountains) to existing water mains and wastewater pipeline on nearby streets. However, these would serve only the proposed uses on site and would not increase the overall capacities of water and wastewater mains or require construction or expansion of water or wastewater treatment facilities in the City of San Francisco. Installation of these facilities is covered in the overall evaluation of the proposed project, under specific topics in this IS/MND, including Section I, Aesthetics, Section III, Air Quality, Section IV, Biological Resources, Section V, Cultural Resources, Section VI, Geology and Soils, Section VII, Hazards and Hazardous Materials. Mitigation measures to reduce potential effects, where relevant, are provided in these sections.

c) The project would include the construction of onsite stormwater facilities for the proposed and re-graded, existing parking lot. Construction-related effects associated with the installation of these facilities are covered in the overall evaluation of the proposed project, under specific topics in this IS/MND, including Section I, Aesthetics, Section III, Air Quality, Section IV, Biological Resources, Section V, Cultural Resources, Section VI, Geology and Soils, Section VII, Hazards and Hazardous Materials. Mitigation measures to reduce potential effects, where relevant, are provided in these sections.

d) The proposed project would require connection to the City's potable water supply system. Existing facilities (DPR offices and the community garden) are currently connected to the water system. Additional water demand to meet the needs of the proposed facilities (interpretative center, restrooms and water fountains) would be met by existing facilities. According to the City's Public Works Department, additional water demand from existing development would be accommodated by the existing mains (Martin 2005). DPR would be required to submit an application for connection to the water mains. As such, SFPUC, the City's water purveyor, would have sufficient water supplies to serve the project and no new or expanded entitlements would be needed. Therefore, no impacts would occur.

e) The proposed project would connect to the City's combined sanitary/storm sewer system. Existing facilities (DPR offices, community garden) adjacent to Carroll Avenue are currently connected to the combined sanitary/storm sewer system. According to the City of San Francisco, additional wastewater capacity needs for an existing development would be accommodated by the existing pipeline (Martin 2005). DPR would be required to submit an application for connection to the wastewater system. As described in the beginning of Chapter 3, during periods of heavy rainfall overflow discharges of untreated effluent may occur at the CSOs. The project is not anticipated to contribute to such overflows because during the winter, rainy season, few visitors to the project site are expected. Impacts would be considered less than significant.

f) <u>Operation</u>

The proposed project would result in a minimal increase in solid waste generation. Trash receptacles would be located in and around the proposed structures as well as along the proposed trails. Trash would be collected by the existing DPR waste management provider (Sunset Scavenger Company) and ultimately delivered to the Altamont Landfill in Livermore, CA. Although the volume of solid waste associated with operation of the

proposed project cannot be projected, large volumes are not expected. As such, the proposed project would not exceed the capacity of the landfill serving the proposed project and impacts would be considered less than significant.

Construction

Approximately 110,000 cy of soil would be disposed of off-site. The precise amount of hazardous and/or nonhazardous material cannot be determined until such time that testing of these soils occur during the construction period.

Nonhazardous wastes, including debris from the existing fill, would be disposed off-site at a permitted Class II or III waste disposal facility. Contaminated soils that would be disposed of off-site would be taken to an appropriate Class I or Class II waste management disposal facility. These facilities have not yet been determined, but would be determined by the contractor. However, all facilities would be contacted prior to disposal to ensure that sufficient capacity is available to accommodate the construction waste (see Mitigation Measure Utilities-1).

g) As described in item f above, contaminated soils that would be disposed of off-site would be appropriately delivered to a permitted Class I or II waste management disposal facility. Non-contaminated soils would be reused to the extent feasible or delivered to a Class III waste disposal facility. The U.S. Department of Transportation (DOT), Office of Hazardous Materials Safety regulates the transportation of hazardous materials and enforces guidelines created to protect human health and the environment through hazardous material packaging and transportation requirements. The DOT provides hazardous materials safety training programs and supervises hazardous materials activities. The DOT also develops and recommends regulations governing the multimodal transportation of hazardous materials. As such, the proposed project would comply with relevant regulations related to handling and disposal of solid waste.

MITIGATION MEASURE UTILITIES-1
▪ Prior to the start of construction, contractors will disclose the name and location of the permitted waste disposal facility that will accept the proposed project's Class I, Class II or Class III wastes.

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CHAPTER 4
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?	☐	☒	☐	☐
b) Have the potential to eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
c) 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?)	☐	☒	☐	☐
d) 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 impact to the natural environment and its plant and animal communities. It was determined that the project could potentially impact birds and sensitive habitats. 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 was evaluated for potential significant adverse impacts to the cultural resources at Candlestick SRA and its immediate environment. It has been determined that this project would not impact archaeological resources because conditions of the project incorporated into this document would ensure that impacts are at a less than significant level.

c) As discussed in Chapter 2, Project Description, the City and County of San Francisco proposes the Bayview Transportation Improvements Project to provide a more direct truck route between Highway 101 and the Hunters Point Shipyard and the industrial areas of Bayview. To date, seven preliminary, conceptual alignments have been considered. Three of the concepts involve constructing a new bridge over Yosemite Slough or South

Basin. Two concepts utilize overland roadway routes only. Based on the current schedule, the project's environmental document is not anticipated until the end of spring of 2008, with approval occurring in the fall of 2007. The City and County has not determined the construction schedule for the Bayview Transportation Improvements Project. However, it is possible that construction of the Bayview Transportation Improvements Project could overlap with the end part of the proposed project construction schedule (which would occur from spring 2006 to 2008). Cumulative effects, if both projects occur simultaneously, would be primarily construction-related and associated with increased dust, noise, and traffic. However, because the proposed project would reduce its contribution of constructed-related effects through the implementation of required conditions and mitigation measures identified in this IS/MND, its contribution to cumulative effects would be considered less than significant.

In addition to the Bayview Transportation Improvements Project, the closure of PG&E's Hunters Point Power Plant could occur at the end of 2006 or thereafter. The Hunters Point Power Plant is located approximately five miles northeast of the project area. On July 9, 1998, Pacific Gas and Electric Company entered into an agreement with the City and County of San Francisco to close the Hunters Point Power Plant when it is no longer needed for electric reliability. However, a series of project that would ensure sufficient energy for the citizens of San Francisco must be implemented prior to closure. The last project (Jefferson-Martin project) that must be implemented was approved for construction by the California Public Utilities Commission (CPUC), and is expected to be complete in mid-2006. Once this project is completed, PG&E can ask the California Independent System Operator to close the Hunters Point Plant. Closure of the Hunters Point Plant would require dismantling some of the existing site facilities.

It is possible dismantling of the Hunters Point Power Plant facilities could occur simultaneously with the proposed project. Such activities would primarily result in construction-related effects, which when combined, could result in cumulative impacts. However, because the proposed project would reduce its contribution of constructed-related effects through the implementation of mitigation measures identified in this IS/MND, its contribution to cumulative effects would be considered less than significant.

Another project that would increase the electric reliability of San Francisco and is one of the projects that must be implemented prior to closure of the Hunters Point Power Plant is the Potrero to Hunter's Point 115-kv Cable Project. The approved route begins at the Potrero switchyard in eastern Potrero Hill and passes through city streets (through northern Bayview and Hunter's Point) to the existing Hunters Point Power Plant; the buried cable line would generally be located on city streets through commercial and industrial areas. The entire project is located north of the proposed project area. Construction of the underground cable line began in May 2005 and is expected to be complete in December of 2005. As such, construction activities of the PG&E project and the proposed project would not overlap and no cumulative effects would occur.

DPR proposes to remove an existing, abandoned boat ramp at Candlestick Point State Recreation Area, near the confluence of Hunters Point Expressway and Gilman Avenue. The existing boat ramp is located south of the project site. The project would involve the removal of a wooden entrance sign for the abandoned boat launch, ten channel marker

piers, approximately 40 feet in length and embedded approximately 25 to 35 feet into the bay mud. Two of the piers are located approximately 2,000 feet offshore, two are approximately 800 feet offshore, and six are adjacent to the shore. DPR filed a Notice of Exemption (based on a Class 1 Categorical Exemption for Existing Facilities) on February 8, 2005. Removal of the boat ramp is expected to be completed by January 2006, and as such would not overlap with proposed construction activities of the proposed project. No cumulative impacts would occur associated with the implementation of these two projects. However, due to the proximity of the project sites and proximate timing of activities, and because DPR is the lead agency for both projects, the boat ramp removal project is discussed.

The development of Hunters Point Naval Shipyard Parcel E as a shoreline park and the redevelopment of the entire shipyard for mixed uses are summarized in Chapter 2, Project Description. The implementation of these projects has not been identified, and will depend on the completion of clean up activities, completion of the environmental process, as well as availability of funding. It is not possible to determine when construction would be expected to occur. As such, these projects are not considered part of the cumulative analysis. However, they are identified here due to the proximity of the sites and to acknowledge that these projects could occur in the future.

d) The proposed project would have less than significant effects on humans after implementation of mitigation measures incorporated into this document. The potential for exposure of workers and nearby sensitive receptors to hazardous materials (in soil or air) are discussed under in Section II, Air Quality, and Section VII, Hazards and Hazardous Materials. Toxic contaminants entrained in fugitive dust during construction activities would be controlled through the implementation of dust control BMPs and a Health and Safety Plan. Chemically impacted fill that does not meet the screening criteria would be treated, disposed of at an appropriate facility, or covered by soils that meet the screening criteria. The potential long-term exposure of deep chemically-impacted soils would be addressed by the results of additional engineering analysis and ECMP. Exposure of humans to hazardous materials contamination would be reduced to less than significant levels.

MITIGATION MEASURE
▪ None required

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CHAPTER 5
SUMMARY OF CONDITIONS AND MITIGATION MEASURES

The following conditions would be integrated and mitigation measures would be implemented by DPR as part of the Yosemite Slough Restoration Project, where relevant.

AESTHETICS

MITIGATION MEASURE AESTHETICS-1

- DPR will design structures that agree with the general character of the area and to minimize visual impacts.
- All exterior surfaces of proposed structures will be painted with low-glare paints to reduce glare.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Review design of above-ground structures	DPR	DPR / its consultants	Design incorporates measure	Prior to completion of final design

AGRICULTURAL RESOURCES

None required.

AIR QUALITY

MITIGATION MEASURE AIR-1

- To limit potential exposure of workers and nearby sensitive receptors to toxic contaminants contained in the fugitive dust particles, DPR or its contractors will implement Mitigation Measures, Hazmat-3, Hazmat -6, and Hazmat-7.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
See Mitigations Hazmat-13, Hazmat-6, and Hazmat-7				

CONDITIONS OF THE PROJECT

Dust control BMPs would ensure that short-term air pollutant emissions from construction activities would be less than significant. Dust control BMPs typically include the following:

- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.
- Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Hydroseed, cover, or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).
- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.
- Remove loose soil from truck surfaces before leaving the site.
- Install wheel washers for all exiting trucks, or wash off the tire or tracks of all trucks and equipment before leaving the site.
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.
- Limit the area subject to excavation, grading, and other construction activity at any one time.
- 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 will need to comply with all applicable BAAQMD rules and regulations, specifically Rule 8-3 regarding architectural coatings, Rule 8-15 regarding asphalt paving, Rule 11-2 regarding demolition, and Regulation 6 regarding particulate matter and visible emissions.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Include dust control measures in construction specifications	DPR	DPR / its consultants	All measures are incorporated into the construction specifications	During development of construction specifications
Implement dust control measures	BAAQMD	DPR / its consultants	Dust emissions will meet BAAQMD re-commendations and applicable rules	Prior to and during construction activities

BIOLOGICAL RESOURCES

MITIGATION MEASURE BIO-1

- A DPR Environmental Scientist and/or 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-foot buffer zone surrounding nests of other birds. However, the exact width of the buffer zone will be established in consultation with CDFG.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Conduct preconstruction surveys	DPR / its consultants	DPR / its consultants	Birds and their nests are not present at the project site	Within two weeks before start of construction

MITIGATION MEASURE BIO-2

- DPR staff or its contractors will prepare a Monitoring and Adaptive Management Plan that will set the framework for long-term (5-year) biological monitoring of the project's restored habitats. The plan will specify the monitoring requirements for each year of the plan which will include, but are not limited to, establishment of transects for vegetative data collection, measurement of plant survivorship rates, invasive species monitoring, continued reconnaissance surveys for wildlife use of the site, installation of sediment traps (for determining accretion/erosion at the site), limited bioassays for contaminants, and the establishment of photo documentation points. Transects will be established during the first year of monitoring, and the remaining requirements will occur during the 1st, 3rd, and 5th years. In addition, evaluation of dispersion/density of vegetation will occur during year 4.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Prepare a Monitoring and Adaptive Management Plan	DPR / its consultants	DPR / its consultants	Plan provides goals and a framework for 5-year of biological monitoring	Prior to or operation of the project
Implement the Plan	DPR / its consultants	DPR / its consultants	At the end of the 5-year period, the goals of the Plan are achieved	Five years following completion of construction

CULTURAL RESOURCES

MITIGATION MEASURE

None required.

CONDITIONS OF THE PROJECT

The following conditions would be implemented to protect as-yet unrecorded historic resources:

- Prior to any ground-disturbing activity associated with the proposed project, a DPR-qualified archaeologist will conduct a pre-construction meeting to alert construction crews to the possibility of encountering sub-surface historic resources during construction.

- DPR qualified archaeologist will monitor any ground disturbing activities associated with the construction of the proposed project. If pockets of historical materials are discovered, construction will cease in that vicinity until the archaeologist has evaluated the find and implemented appropriate treatment and disposition of artifact(s). Treatment measures may include avoidance, removal, preservation, and/or recordation in accordance with accepted professional archaeological practice.

The following conditions would be implemented as part of the project to protect shellmounds or unrecorded cultural resources:

- Prior to any ground-disturbing activity associated with the proposed project, a qualified archaeologist will conduct a pre-construction meeting to alert construction crews to the possibility of encountering archaeological resources during construction. A DPR-qualified archaeologist will monitor any ground disturbing activities associated with the construction of the proposed project. There will be one monitor per piece of ground disturbing equipment. If the shellmounds, or unusual amounts of bone, organically stained soils, stone or shell are discovered, construction will cease in that vicinity until the cultural resource specialist has assessed the find and determined and implemented appropriate disposition of artifact(s)

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Conduct a pre-construction meeting	DPR / its consultants	DPR's consultants	All education materials have been disseminated	Prior to start of construction
Monitor for cultural resources	DPR / its consultants	DPR's consultants	Monitors are available to observe construction and make decision on required actions if cultural resources are found	During construction

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Prepare relevant reports if cultural resources are found	DPR / its consultants	DPR's consultants	Any reports prepared during the project are available onsite	During construction

The following conditions would be implemented in the event of a burial find:

- Prior to any ground-disturbing activity associated with the proposed project, a DPR-qualified cultural resource specialist will conduct a pre-construction meeting to alert construction crews to the possibility of encountering Native American burials during construction. DPR will retain qualified professional archaeologists to monitor any ground disturbing activities associated with the construction of the proposed project. If Native American burials are identified, construction will cease in that vicinity, and DPR and the San Francisco County Coroner will be notified.

- In the event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR personnel. Any human remains and/or funerary objects will be left in place or returned to the point of discovery and covered with soil. The DPR District Superintendent (or authorized representative) will notify the County Coroner, in accordance with 7050.5 of the California Health and Safety Code, and the Native American Heritage Commission (or Tribal Representative). If a Native American monitor were on-site at the time of the discovery, the monitor will be responsible for notifying the appropriate Native American authorities.

- If the coroner or tribal representative determines the remains represent Native American interment, the Native American Heritage Commission in the Sacramento and/or tribe would be consulted to identify the most likely descendants and appropriate disposition of the remains. Work would not resume in the area of the find until proper disposition is complete (PRC 5097.98). No human remains or funerary objects will be cleaned, photographed, analyzed, or removed from the site prior to determination.

- If it is determined the find indicates a sacred or religious site; the site will be avoided to the maximum extent practicable. Formal consultation with the State Historic Preservation Officer and review by the Native American Heritage Commission/Tribal Cultural representatives will also occur as necessary to define mitigation measures or future restrictions.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Same as above.				
Contact coroner if human remains are found	DPR	DPR's consultant	Human remains are appropriately treated or disposed of	During construction, if human remains are found

GEOLOGY AND SOILS

MITIGATION MEASURE

None required.

CONDITIONS OF THE PROJECT

Proposed facilities will be designed in accordance with the 2001 California Building Code (based on 1997 Uniform Building Code) requirements for seismic activity or more stringent local building code provisions.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Incorporate relevant CBC requirements in the design of proposed structures	DPR	DPR / its consultants	Design incorporates CBC requirements	Prior to completion of final design

DPR or its contractors will conduct a site-specific geological/ engineering study for the Interpretative Center. The study will evaluate the potential for liquefaction, differential settlement, and expansion to occur at the proposed Interpretative Center site, and identify the actions needed to reduce damage to the proposed building from geologic hazards. The identified actions of that study will be incorporated in the design of the facility. Actions to reduce potential damage from the structure could include standard or specialized construction procedures and foundation support systems.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Conduct site-specific geological/engineering study for the Interpretative Center	DPR	DPR / its consultants	The re-commendations of the study are incorporated into design	Prior to completion of final design

HAZARDS AND HAZARDOUS MATERIALS

MITIGATION MEASURE HAZMAT-1

- Qualified DPR staff or a qualified engineer will conduct engineering analysis, including hydrodynamic modeling, to identify existing erosion processes along the shoreline edge of the project site (from tidal currents, wave action, rainfall, runoff, etc.). The analysis results will contribute to the design of the nesting islands and wetlands (determine depth

of wetland cover) to reduce the potential for erosion and exposure of deep chemically-impacted soils.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Conduct engineering analysis	DPR	DPR / its consultants	The restored area is design to minimize erosion (confirm during biological monitoring)	Prior to completion of final design

MITIGATION MEASURE HAZMAT-2

- DPR or a qualified engineer/contractor will develop an Erosion Control and Monitoring Plan (ECMP) which will be a stand-alone document or incorporated into the Risk Management Plan (RMP) (see Mitigation Measure Hazmat-3). The ECMP will identify long-term erosion control measures that will be implemented in the upland areas of the project site, to reduce erosion and runoff of soils and subsequent exposure of deeper chemically-impacted soils, as well as monitoring of these soils . Construction specifications for the proposed project will require contractors to implement the ECMP, and to maintain a copy of the ECMP onsite. Erosion control measures would be necessary for two years prior to reestablishment of vegetation. The type of measures would be determined based on the site-specific location, but could include the following:

  - Waffle mats
  - Silt fences
  - Protection drain inlets

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Prepare an ECMP	DPR	DPR / its consultants	An ECMP is available onsite during construction and will continue to provide guidance after construction activities	Prior to construction activities
Implement erosion control measures	DPR / its contractors	DPR / its consultants	Perform visual inspection and water quality monitoring during and after construction	Prior to, during, and following construction

MITIGATION MEASURE HAZMAT-3

- Qualified DPR staff or its contractors will develop a Risk Management Plan (RMP) that would guide soil disturbing activities at the project site. The RMP would include the ECMP (described in Mitigation Measure Hazmat-2, above) and Soil Handling and Materials Management Plan (SHMMP - described in Mitigation Measure Hazmat-7, below).

- All contractors working at the project site will implement the RMP whenever soil-disturbing construction activities occur. Compliance with the RMP will ensure that chemically-impacted soils will not be exposed and pose a risk to people working and living in the area.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Prepare a RMP	DPR	DPR / its consultants	A RMP is available onsite and filed with the San Francisco Building Department	Prior to construction activities
Implement the RMP	DPR / its contractors	DPR / its consultants	Inspection during construction	During construction activities

MITIGATION MEASURE HAZMAT-4

- Prior to the start of construction, qualified DPR staff and/or its contractors will prepare an emergency Spill Prevention and Response Plan and maintain the plan and a spill kit on-site during project construction. The plan will include a map that delineates construction staging areas, where refueling, lubrication, and maintenance of equipment may occur. In the event of any spill or release of any chemical in any physical form at the project site or in Yosemite slough during construction, the contractor will immediately notify the appropriate DPR staff (e.g., project manager, supervisor, or State Representative).

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Prepare Spill Prevention and Response Plan	DPR	DPR / its consultants	A RMP is available onsite and filed with the San Francisco Building Department	Prior to construction activities
Implement the Spill Prevention and Response Plan	DPR / its contractors	DPR / its consultants	Inspection during construction	During construction activities

MITIGATION MEASURE HAZMAT-5

- Prior to the start of construction, contractors will inspect all equipment for leaks, and regularly inspect equipment until all equipment is removed from SRA properties.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Include above measure in construction specifications	DPR	DPR / its consultants	All measures are incorporated into the construction specifications	During development of construction specifications
Regular maintenance of construction equipment	DPR / its contractors	DPR / its consultants	Leaks, if any, occurring during construction are contained and do not runoff into Yosemite Slough	During construction activities

MITIGATION MEASURE HAZMAT-6

- Qualified DPR staff and/or its contractors will prepare a Health and Safety Plan that includes project-specific monitoring procedures and action levels for dust, and specific actions to be implemented if these action levels are exceeded. The portion of the plan that relates to the control of toxic contaminants contained in fugitive dust will be prepared in accordance with the Bay Area Air Quality Management District (BAAQMD) guidelines. The BAAQMD guidelines to prevent the exposure of sensitive receptors to levels above applicable thresholds will be implemented. The Health and Safety Plan, applicable to all excavation activities, will establish policies and procedures to protect workers and the public from potential hazards posed by hazardous materials. The plan will be prepared according to federal and California OSHA regulations. DPR and/or its contractors will maintain a copy of the Plan on-site during construction activities.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Prepare a Health and Safety Plan	DPR	DPR / its consultants	The HSP is available onsite	Prior to construction activities
Coordinate with BAAQMD on the dust-related portion of the BAAQMD	BAAQMD	DPR / its consultants	Re-commendations of the BAAQMD are implemented and as required, incorporated into the HSP	Prior to construction activities

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Implement the HSP	DPR / its contractors	DPR / its consultants	Workers are protected during construction activities	During construction activities

MITIGATION MEASURE HAZMAT-7

- Qualified DPR staff or a qualified engineer/contractor will prepare a Soil Handling and Materials Management Plan (SHMMP), which will be incorporated into the Risk Management Plan (RMP) (see Mitigation Measure Hazmat-3). The SHMMP will identify proper procedures for the management (excavation, handling, treatment, reuse, and disposal) of both chemically impacted soils and non-chemically impacted soils at the project site. Construction specifications for the proposed project will require contractors to implement the SHMMP, and to maintain a copy of the SHMMP onsite. The SHMMP will include results of the Phase II Environmental Site Assessment, which include but are not limited to those measures identified below. Specific details of the requirements (e.g., methods of excavation, protocols for in-situ and ex-situ treatment, etc.) will be developed and completed prior to the start of construction activities.

- Contractors will be required to implement the SHMMP, and to maintain a copy of the SHMMP onsite at all times.

- The SHMMP will require DPR or its contractors to remove chemically-impacted soils in two localized zones to reduce chemical solubility of the soils and remove the localized potential for groundwater contamination.

- The SHMMP will require DPR or its contractors to conduct bioremediation within the project area (South, North A, and North B areas) where TEPH and PAHs have been detected. Bioremediation could be completed in-situ before grading or ex-situ during grading.

- The SHMMP will require DPR or its contractors to remove wetland layer soils that do not meet the screening criteria for the project, and replace the soil with suitable material taken from cut soils or with clean imported fill that meet the screening criteria.

- The SHMMP will require DPR or its contractors to place cut soils that do not meet appropriate criteria for reuse as wetland or upland cover in upland areas underneath soils that meet appropriate uplands cover criteria; alternatively, these soils would be treated and/or adequately disposed of off-site in accordance with federal, state, and local regulations.

- The SHMMP will require DPR or its contractors to conduct analysis and statistical evaluation of the final wetland layer soils (consisting of cut soils proposed for reuse and wetland layer soils left in-place) to ensure that project goals are achieved (i.e.,

concentrations in the final wetland layer do not exceed screening criteria and the average concentrations are near ambient concentrations for San Francisco Bay sediments).

- The SHMMP will require DPR or its contractors to properly dispose of groundwater during de-watering activities. Chemically impacted water will be treated prior to discharge or disposed of at a licensed facility. Non chemically-impacted water will be passed through settlement devices (e.g., settling pond) prior to discharge into the Bay.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Prepare a Soils Handling and Materials Management Plan	DPR	DPR / its consultants	The HSP is available onsite	Prior to construction activities
Implement the SHMMP	DPR / its contractors	DPR / its consultants	That contaminated soils are adequately remediated onsite or disposed of at appropriate facilities offsite	During construction activities

HYDROLOGY AND WATER QUALITY

MITIGATION MEASURE HYDRO-1

- Qualified DPR staff or its contractor will prepare and file a report of waste discharge with RWQCB, and obtain a WDR, or waiver, from the RWQCB for discharge of stormwater to Yosemite Slough. The project will comply with all applicable water quality standards as specified in the SFRWQCB Basin Plan.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Obtain WDR or waiver from RWQCB	RWQCB	DPR / its consultants	Conditions of the WDR, if required, are met	Prior to construction activities

MITIGATION MEASURE HYDRO-2

- Contractors will not work along the shoreline (during connection of restored area to the slough) during high tides or rainy season (October 31 to May 1). Grading activities

occurring during the winter months will require special measures, including covering (tarping of stockpiled soils).

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Include above measure in construction specifications	DPR	DPR / its consultants	All measures are incorporated into the construction specifications	During development of construction specifications
Implementation of the measure	DPR / its contractors	DPR / its consultants	During the rainy season or high tide, connection activities do not occur	During construction activities

CONDITIONS OF THE PROJECT

Preparation of a SWPPP would be required as part of the project to ensure to prevent water quality degradation. The SWPPP would specify BMPs to prevent construction pollutants from contacting stormwater, with the intent of keeping products of erosion from moving offsite into receiving waters. BMPs include measures guiding the management and operation of construction sites to control and minimize the potential contribution of pollutants to storm runoff from the project area. These measures address procedures for controlling erosion and sedimentation and managing all aspects of the construction process to ensure control of potential water pollution sources. Erosion and sedimentation control practices could include installation of silt fencing, straw wattle, fiber rolls, mulch, soils stabilization, detention basins, straw bales, silt check dams, geofrabrics, drainage swales, sand bag dikes, revegetation, and runoff control, or other applicable techniques to limit increases in sediment in storm water runoff. In addition, all storm water inlets in the project vicinity would be protected during ground disturbing activities with one of the measures identified above.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Include SWPPP requirements in construction specifications	DPR	DPR / its consultants	All measures are incorporated into the construction specifications	During development of construction specifications
Implementation of the measure	DPR / its contractors	DPR / its consultants	All measures are implemented during the rainy season	During construction activities

LAND USE AND PLANNING

MITIGATION MEASURE

None required.

CONDITIONS OF THE PROJECT

DPR would be required to obtain relevant permits and implement permit conditions as part of project implementation.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Acquire permits	DPR	DPR / its consultants	Original or copies of relevant permits are in project files	Prior to construction activities
Implementation of permit conditions	DPR	DPR / its consultants	Conditions are implemented	Prior to, during, and after construction (dependent on permit conditions)

MINERAL RESOURCES
None required.

NOISE
None required.

POPULATION AND HOUSING
None required.

PUBLIC SERVICES
None required.

RECREATION
None required.

TRANSPORTATION/TRAFFIC

MITIGATION MEASURE TRANS-1

- Construction truck traffic will be prohibited during 49er football game days.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Include above measure in construction specifications	DPR	DPR / its consultants	All measures are incorporated into the construction specifications; truck traffic would not occur during 49er game days	During development of construction specifications

MITIGATION MEASURE TRANS-2

- The bicycle routes on Carroll Avenue will be detoured to adjacent streets during construction activities to ensure safety.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Include above measure in construction specifications	DPR	DPR / its consultants	All measures are incorporated into the construction specifications	During development of construction specifications
Provide bicycle route detours	DPR / its contractors	DPR	Signage has been installed identifying detours	Prior to start of construction activities at the South Area only

CONDITIONS OF THE PROJECT

Construction best management practices (BMPs), including the preparation of a traffic control plan, are required by the City of San Francisco to be in place to ensure the safety of construction workers, motorists, bicyclists and pedestrians throughout project construction. Prior to initiation of construction, a Traffic Control Plan, conforming to the State's Manual of Traffic Controls for Construction and Maintenance Work Areas, would be prepared and implemented. The traffic control plan would be prepared by the contractor(s) prior to the start of construction and would be reviewed by the City of San Francisco prior to its implementation. It would include specifications on construction traffic scheduling, hours of operation, haul routes, construction parking, staging area management, visitor safety, detour routes and speed controls.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Prepare a Traffic Control Plan	DPR	DPR / its consultants	A copy of the Traffic Control Plan is retained at the project site	During development of construction specifications
Implementation of Traffic Control Plan	DPR	DPR / its consultants	Requirements of the Plan are implemented	Prior to, during, and after construction

UTILITIES AND SERVICE SYSTEMS

MITIGATION MEASURE UTILITIES-1

- Prior to the start of construction, contractors will disclose the name and location of the permitted waste disposal facility that will accept the proposed project's Class I, Class II or Class III wastes.

IMPLEMENTATION PROCEDURE	ENFORCEMENT AGENCY	MONITORING AGENCY	EFFECTIVENESS CRITERIA	TIMING
Include above measure in construction specifications	DPR	DPR / its consultants	All measures are incorporated into the construction specifications	During development of construction specifications
Confirm waste management agency has sufficient capacity to accept waste	DPR / its contractors	DPR	Waste Management acceptance of waste	Prior to start of construction activities

MANDATORY FINDINGS OF SIGNIFICANCE

None required.

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CHAPTER 6
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None

PUBLIC SERVICES

None

RECREATION

None

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None

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CHAPTER 7
REPORT PREPARATION

CALIFORNIA DEPARTMENT OF PARKS AND RECREATION
NORTHERN SERVICE CENTER
1416 9TH STREET
SACRAMENTO, CA 95814

PATTI DUMONT, DPR PROJECT MANAGER

CALIFORNIA STATE PARKS FOUNDATION
800 COLLEGE AVENUE
PO BOX 548
KENTFIELD, CA 94914

BARBARA HILL, VICE PRESIDENT
MELISSA WAHLSTROM, PROGRAM MANAGER

EDAW, INC
150 CHESTNUT STREET
SAN FRANCISCO, CA 94111

MARCIA TOBIN, CEQA PROJECT MANAGER
SUET CHAU, DEPUTY PROJECT MANAGER
JEFF THOMAS, SENIOR BIOLOGIST
HONEY WALTERS, AIR QUALITY/NOISE SPECIALIST
CHARLANE GROSS, ARCHAEOLOGIST
BRIAN LUDWIG, ARCHAEOLOGIST
WENDY COPELAND, PALEONTOLOGIST
LISA LAXAMANA, WORD PRODUCTIONS MANAGER
MILTON SARDENIA, PRODUCTIONS STAFF

BILL MARTIN, PROJECT MANAGER
PO BOX 71243
PT. RICHMOND, CA 94807

WETLANDS RESEARCH ASSOCIATES, INC.
2169 E. FRANCISCO BLVD., STE. G
SAN RAFAEL, CA 94901

MICHAEL JOSSELYN, PRESIDENT

NORTHGATE ENVIRONMENTAL MANAGEMENT, INC.
3629 GRAND AVENUE
OAKLAND, CA 94610

DENI CHAMBERS, PRINCIPAL
TAYLOR BENNET, SENIOR PROJECT HYDROGEOLOGIST

APPENDIX A
TABLES, AND CHARTS

TABLE 2-1
PUBLIC INVOLVMENT THAT HAS OCCURRED TO DATE FOR THE YOSEMITE SLOUGH PROJECT

Medium	Notes
Conversations with Local Community Representatives	2001 and 2002
Newsletters & Mailings	Three newsletters were sent to a mailing list of over 600 community members and interested stakeholders on: • November 2003, • June 2004, and • March 2005. Additional newsletters were distributed and displayed at Candlestick Point SRA, in the Anna E. Warden Library and the Bayview Opera House to promote the project and meetings.
Community Meetings and Presentations	Two community meetings at the Bayview Opera House on 4705 Third St. in San Francisco: • December 4, 2003 • April 13, 2005. Hunters Point Shipyard Restoration Advisory Board (HPS RAB) meeting in 2004
Newspaper Coverage	• Sacramento Bee • San Francisco Bayview
Website	Newsletters and press releases were posted on the website of the California State Parks Foundation
Community Collaboration	Partnership with LEJ; hiring local contractor

TABLE 2-2
EXISTING ACREAGE IN EACH OF THE GEOGRAPHIC ZONES AND THE AMOUNT OF TIDAL WETLANDS AND UPLANDS THAT WOULD BE RESTORED

Geographic Zone	Existing Acreage	Total Acreage Restored	Restored Tidal Wetlands (acres)	Restored Upland (acres
North A Area	10.48	5.06	3.10	1.96
North B Area	13.63	6.53	3.24	3.29
South Area	13.10	6.46	4.33	2.13
Restored Tidal Wetlands (acres) refers to only those areas that are currently filled areas of the historic Yosemite Slough wetlands and not the perimeter wetland areas identified as existing in the jurisdictional mapping of the slough. Additionally, this acreage does not include the most westerly portion of the slough where degraded wetlands areas are scheduled for enhancement.				

TABLE 2-3
APPROXIMATE QUANTITIES IN THE THREE SUB-AREAS OF THE PROPOSED RESTORATION PROJECT IN YOSEMITE SLOUGH

Soil Quantities (cubic yards)	Sub-Areas			Total
	South	North A	North B	
Total Excavated [1]	127,900	83,400	51,700	263,000
Potentially Reused On-Site [2]	101,460	14,200	36,900	152,560
Disposed Off-Site	26,440	69,200	14,800	110,440
Imported Clean Fill	23,700	9,000	600	33,300

[1] This quantity refers to the total volume (in cubic yards) of existing fill that will be excavated to reach the final elevation (feet, NAVD 1988) of the wetland design surface (referred to as "cut soils"), plus wetland layer soil that will be removed because it exceeds criteria for wetland cover.
[2] Estimated reuse volumes assume 20% debris is removed before reuse as cover soil. Includes approximately 90,000 cubic yards to be placed in other areas of the CSPSRA.

TABLE 2-4
VISITATION NUMBERS AT THE CANDLESTICK POINT SRA

Fiscal Year	Paid Day Use	Free Day Use	Total Attendance
1995-96	16,293	296,133	31,2426
1996-97	24,504	394,386	41,8890
1997-98	26,983	225,288	25,2271
1998-99	32,907	227,704	26,0611
1999-2000	24,304	242,569	26,6873
2000-01	12,273	147,646	15,9919
2001-02	5,529	79,547	85,076
2002-03	4,008	56,078	60,086
2003-04	2,570	60,203	62,773
2004-15	10,335	174,080	184,415
Total Attendance	159,706	1,903,633.7	2,063,339.7
Average Attendance	15,970.6	190,363.37	2,063,33.97
Courtesy of State Parks, Park Operations Division			

TABLE 2-5
JURISDICTIONAL AREAS WITHIN THE PROJECT AREA

SECTION 404	**11.01 acres (479,698 s.f.)**
Section 404 Tidal Wetlands Vegetated areas below the HTL (5.13 feet NGVD)	1.76 acres (76,575 s.f.)
Section 404 Tidal Waters Unvegetated tidal areas below the HTL	9.25 acres (403,123 s.f.)
SECTION 10	**10.06 acres (438,083 s.f.)**
Section 10 Tidal Wetlands Vegetated areas below MHW (3.13 feet NGVD)	1.50 acres (65,340 s.f.)
Corps Section 10 Waters Unvegetated tidal waters below MHW	8.56 acres (372,878 s.f.)
BCDC	**18.31 acres (797,519 s.f.)**
BCDC Tidal Wetlands Areas dominated by tidal marsh vegetation above and below MHW	1.76 acres (76,575 s.f.)
BCDC Waters Unvegetated areas below MHW	8.56 acres (372,878 s.f.)
BCDC Shoreline Band	8.0 acres (348,066 s.f.)
Note: Areas refer only to existing wetland and Waters for the US and acreages are identified for jurisdictional purposes only.	

TABLE 3-1
State and National Criteria Pollutant Attainment Status

Criteria Pollutant	State Designation	National Designation
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified/Attainment
$PM_{2.5}$	Non-attainment	Unclassified
PM_{10}	Non-attainment	Attainment
Ozone	Non-attainment	Non-Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Not applicable[1]
Hydrogen Sulfide	Unclassified	
Vinyl Chloride	Unclassified/Attainment	
Visibility-Reducing Particle Matter	Unclassified	

[1] No National Standards

TABLE 3-2
POTENTIAL FOR OCCURRENCE OF SPECIAL-STATUS SPECIES
WITHIN THE YOSEMITE SLOUGH PROJECT SITE

Species	Status	Habitat Preference	Potential for Occurrence
Saltmarsh harvest mouse *Reithrodontomys raviventris*	FE, CE	Salt marsh with Salicornia	**None.** Not seen at site or in immediate area. Site too isolated.
Western snow plover *Charadrius alexandrinus nivosus*	FT, CSC	Sandy beaches, salt pond levees	**Low.** Not seen at site, but is at Coyote Point, 10 miles away.
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	FSC,CSC	Fresh and salt water marshes. Requires thick cover to water for foraging. Tall grass, tule for nesting.	**Low.** Suitable habitat condition not present on-site. Not observed.
California brown pelican *Pelecanus occidentalis californicus*	FE, CE	Colonial nester on coastal islands of small to moderate size just outside of surfline.	**Low.** Suitable nesting habitat condition not present on-site. Not observed, but may forage within subtidal and intertidal areas on-site.
Double-crested cormorant *Phalacrocorax auritus*	CSC	Yearlong resident along California coast and on inland lakes, in fresh, salt and estuarine waters.	**Low.** Suitable nesting habitat condition not present on-site. Not observed, but may forage within subtidal and intertidal areas on-site.
California clapper rail *Rallus longirostris obsoletus*	FE, CE	Saltwater and brackish marshes. Near dense areas of cordgrass and tidal channels.	**Low.** Suitable habitat condition limited on-site. Not observed, but seen 6 miles away at San Bruno Pt.
Burrowing owl *Athene cunicularia*	FSC	Grasslands with animals to excavate burrows.	**Moderate **.** Audubon Society recently introduced one at site, but LSA observations do not confirm presence. Habitat conditions suitable.
Compact cobwebby thistle *Cirsium occidentale var. compactum*	FSC	Coastal scrub and dunes. Blooming period is April to June.	**Unlikely.** Not at site. Last seen in Bay Area in 1957.
Point Reyes bird's-beak *Cordylanthus maritimus ssp. Palustris*	FSC	Coastal salt marsh, usually with Spartina. Blooming period is June to October.	**Moderate.** Observed adjacent to but not in the site.
San Francisco's gumplant *Grindelia hirsutula var. maritime*		Coastal areas. Blooming period is August to September.	**Moderate.** Observed adjacent to but not in the site.

TABLE 3-2 (Continued)
POTENTIAL FOR OCCURRENCE OF SPECIAL-STATUS SPECIES
WITHIN THE YOSEMITE SLOUGH PROJECT SITE

Species	Status	Habitat Preference	Potential for Occurrence
San Francisco owl's clover *Triphysaria floribunda*	FSC	Coastal bluffs and flatlands. Blooming period from April to May.	**Low.** Not observed at site. Seen 5 miles away at San Bruno Pt.
California seablite *Suaeda californica*	FE	Marshes and swamps. Blooming period is July to October	**Low.** Not observed at site.

** - Personal communication with local park staff

Status Key:
FE Federal Endangered
FT Federal Threatened
FSC USFWS Species of Concern
CE California Endangered
CT California Threatened
CSC CDFG Species of Special Concern

TABLE 3-3
BENEFICIAL USES OF PROJECT AREA WATERS

Beneficial Uses	Description
Ocean, Commercial, and Sport Fishing	Commercial or recreational collection of fish, shellfish, or other organisms in oceans, bays, and estuaries, including, but not limited to, uses involving organisms intended for human consumption or bait purposes
Estuarine Habitat	Support estuarine ecosystems, including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds), and the propagation, sustenance, and migration of estuarine organisms
Industrial Service Supply	Industrial activities that do not depend primarily on water quality, including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization
Fish Migration	Support habitats necessary for migration, acclimatization between fresh water and salt water, and protection of aquatic organisms that are temporary inhabitants of waters within the region
Navigation	Shipping, travel, or other transportation by private, military, or commercial vessels
Preservation of rare and endangered species	Support habitats necessary for the survival and successful maintenance of plant or animal species established under state and/or federal law as rare, threatened, or endangered
Water Contact Recreation	Recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and uses of natural hot springs
Noncontact Water Recreation	Recreational activities involving proximity to water, but not normally involving contact with water where water ingestion is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities
Shellfish Harvesting	Support habitats suitable for the collection of crustaceans and filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sport purposes.
Wildlife Habitat	Support wildlife habitats, including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl.

TABLE 3-4
TYPICAL EQUIPMENT NOISE LEVELS

Type of Equipment	Noise Level in dBA at 50 feet	
	Without Feasible Noise Control	With Feasible Noise Control*
Loader	79	75
Dozer or Tractor	80	75
Crane	83	75
Pile driver (impact)	101	95
Scraper	88	80
Excavator	88	80
Compactor	82	75
Backhoe	85	75
Grader	85	75
Generator	78	75
Truck	91	75

* Feasible noise control includes the use of intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturers' specifications.

Source: U.S. Environmental Protection Agency 1971, Federal Transit Administration 1995

TABLE 3-5
VIBRATION SOURCE FOR TYPICAL CONSTRUCTION EQUIPMENT

Equipment		PPV at 25 feet (in/sec)[1]	Approximate Lv at 25 feet[2]
Pile Driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile Driver (sonic)	upper range	0.734	105
	typical	0.170	93
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

[1] Where PPV is the peak particle velocity
[2] Where Lv is the velocity level in decibels (VdB) and based on the root mean square (RMS) velocity amplitude.

Source: Federal Transit Administration 1995

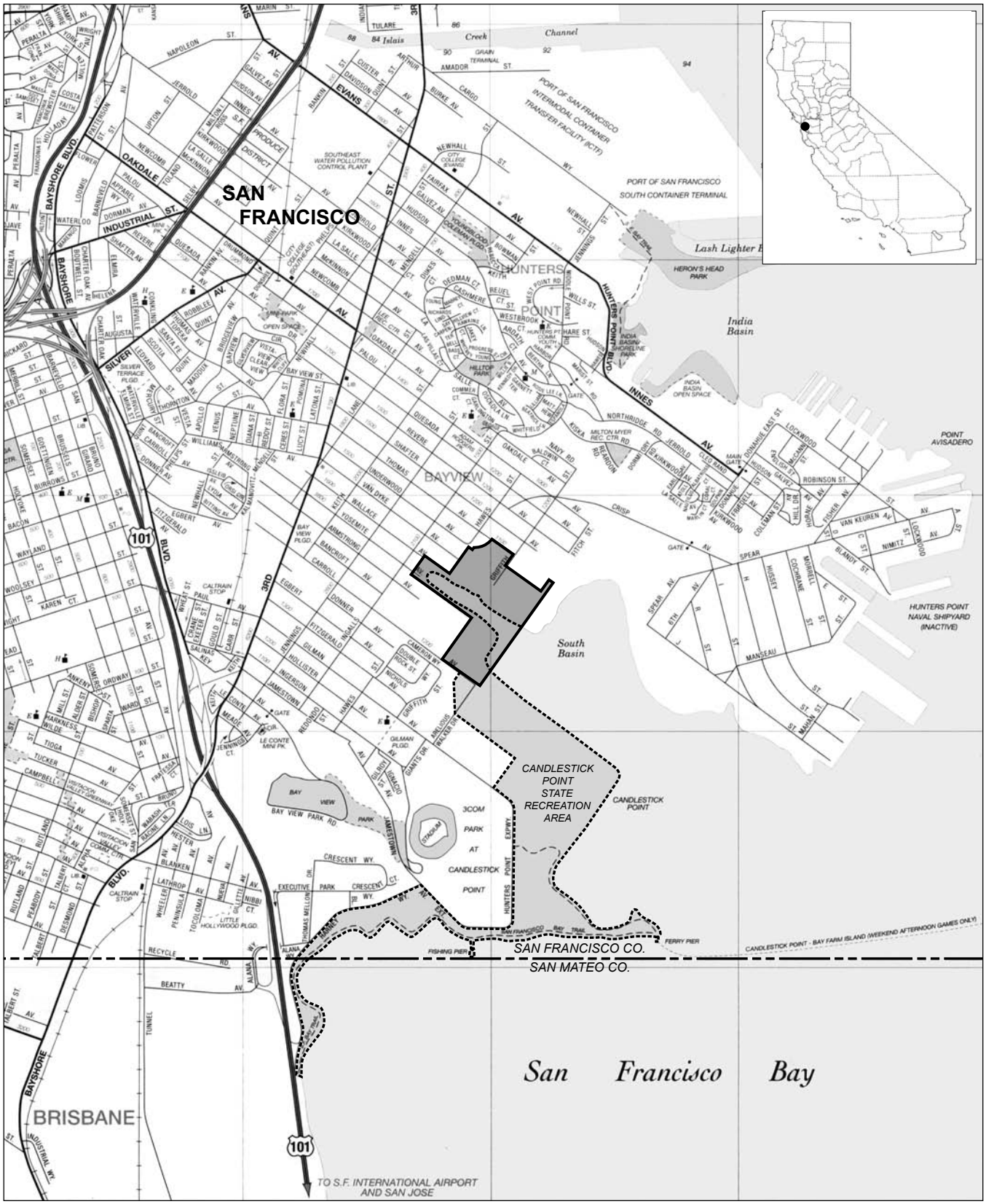
TABLE 3-6
TRUCK VOLUME DATA IN THE VICINITY OF THE PROJECT AREA

Primary Street (location)	Cross Street (direction)[1]	Volume	AM Peak	PM Peak	Date Data Taken
3rd Street[2]	Van Dyke (N)	NA	NA	732	1996
3rd Street[2]	Van Dyke (S)	NA	NA	862	1996
Van Dyke Avenue[2]	3rd (E)	NA	NA	130	1996
Van Dyke Avenue[2]	3rd (W)	NA	NA	150	1996
3rd Street[2]	Yosemite (N)	NA	NA	780	1996
3rd Street[2]	Yosemite (S)	NA	NA	859	1996
Yosemite Avenue[2]	3rd (E)	NA	NA	17	1996
Yosemite Avenue[2]	3rd (W)	NA	NA	17	1996
Carroll Avenue[2]	Jennings (E)	NA	NA	39	August 2003
Carroll Avenue[2]	Jennings (W)	NA	NA	38	August 2003
Jennings Street[2]	Carroll (N)	NA	NA	90	August 2003
Jennings Street[2]	Carroll (S)	NA	NA	87	August 2003
3rd Street[3]	Carroll (S)	12,145	750	961	7/11/2001
3rd Street[3]	Carroll (N)	10,255	842	751	7/11/2001
3rd Street[3]	Thomas (N)	11,620	NA	NA	10/16/1996
3rd Street[3]	Thomas (S)	13,061	NA	NA	10/16/1996
Thomas[3]	3rd Street (W)	1,039	NA	NA	7/15/1997

[1] This is the direction that traffic is going; S = southbound; N = northbound; W = westbound.
[2] Data from EIP Associates, 2004.
[3] Data from San Francisco Department of Parking and Traffic, 2004

APPENDIX B

PROJECT DESIGN GRAPHICS



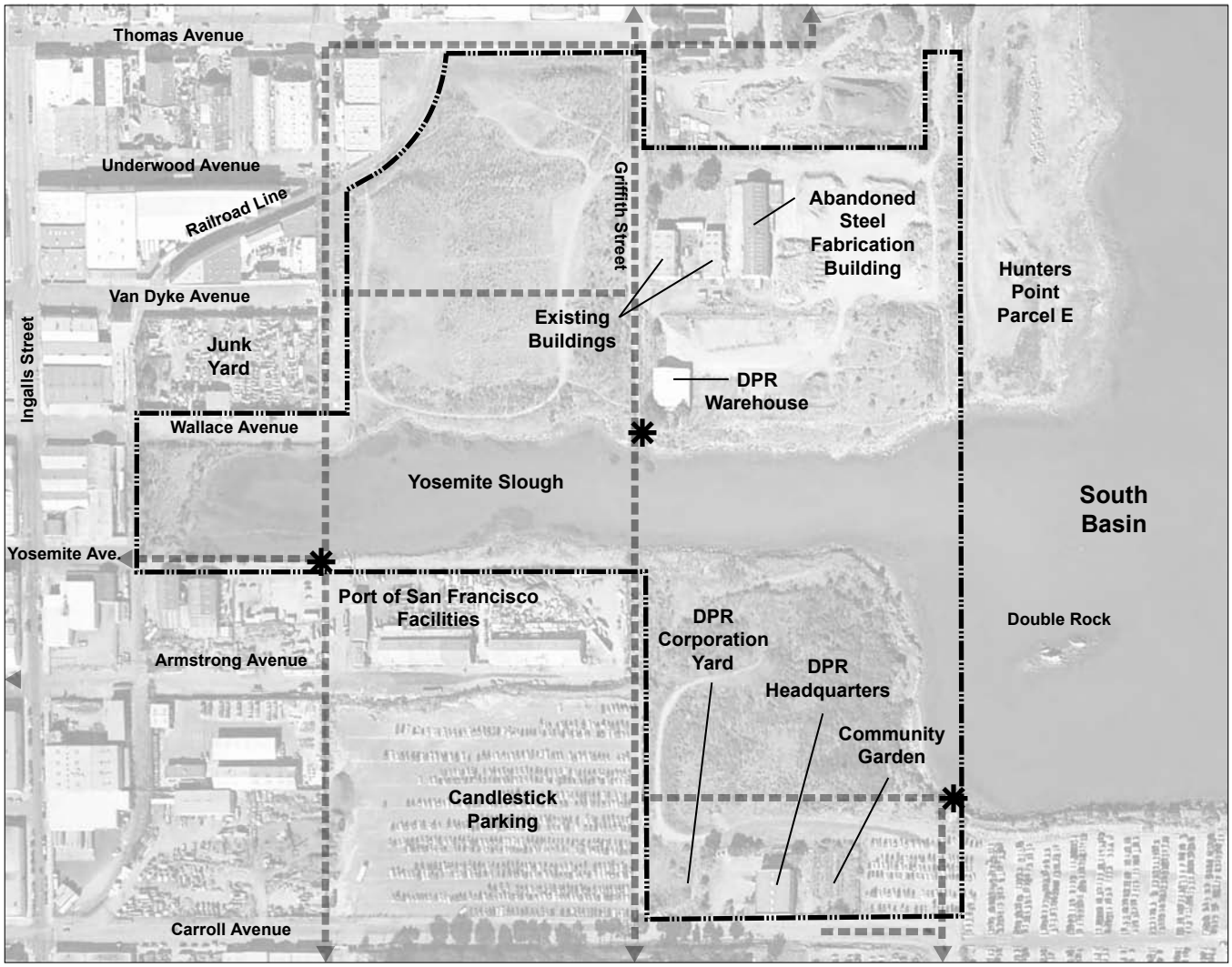
Source: California State Automobile Association, 2002

Project Site

0 500 1000 1500
FEET

N

FIGURE 2-1
Regional Location



Source: Keyhole.com, 2004; Noble Consultants, Inc., 2005

Project Site

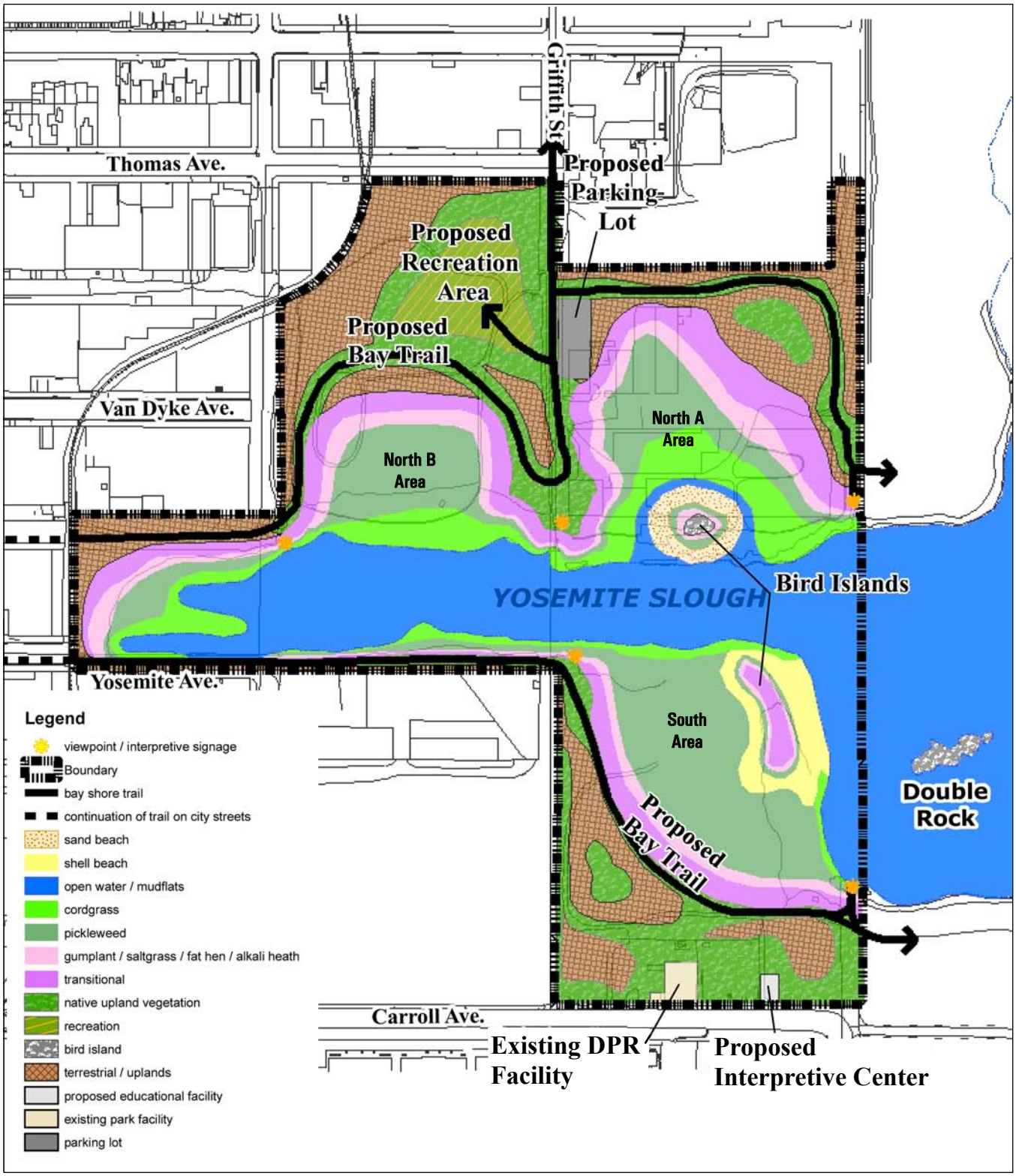
Existing CSOs

Utility Corridor

0 150 300 450
FEET

N

FIGURE 2-2
Project Site Existing Land Uses



Source: WRA/EDAW for California State Parks Foundation, 2005

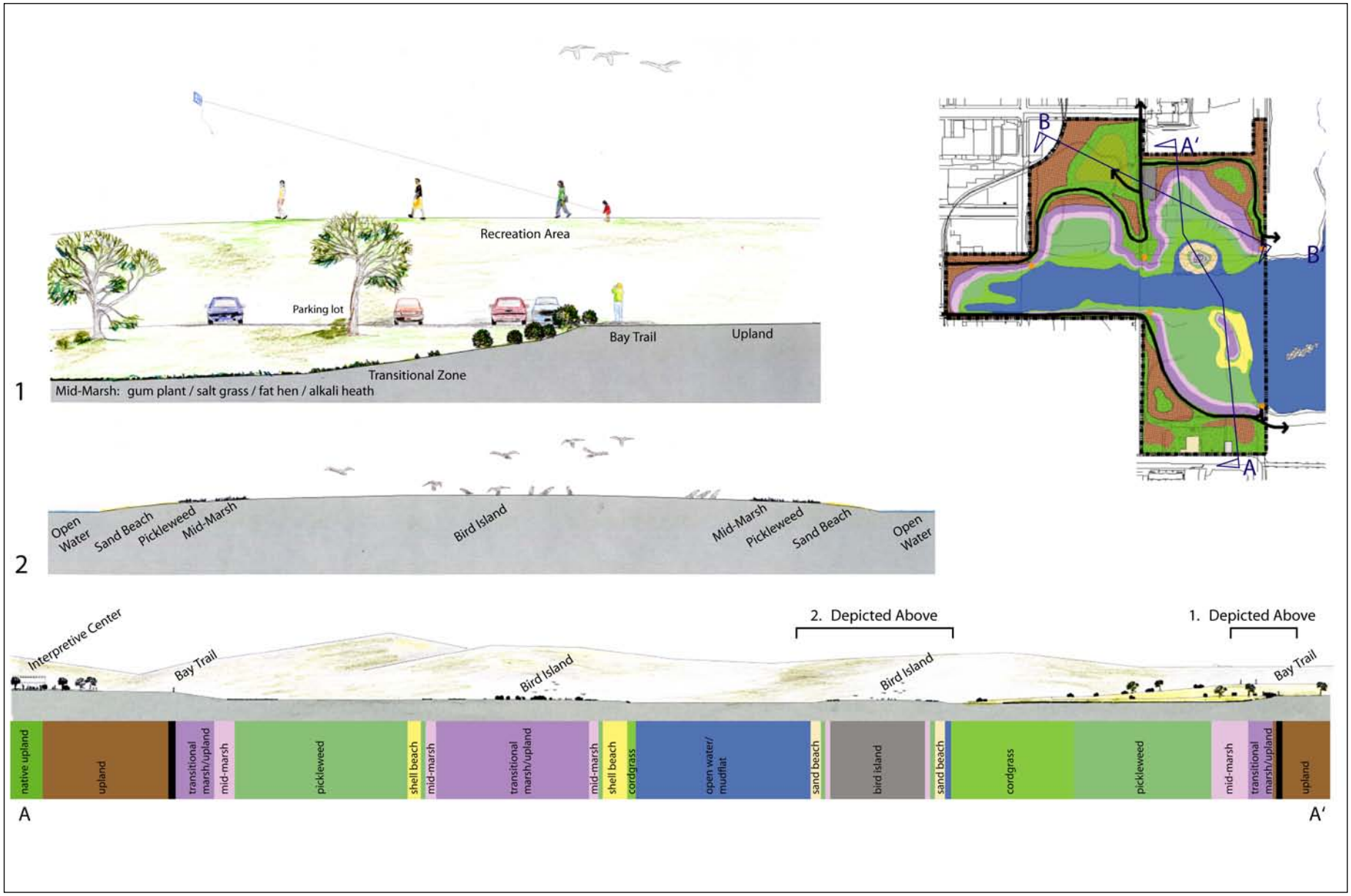
0 150 300 450
FEET

N

FIGURE 2-3
Proposed Habitat and Facilities at Project Site

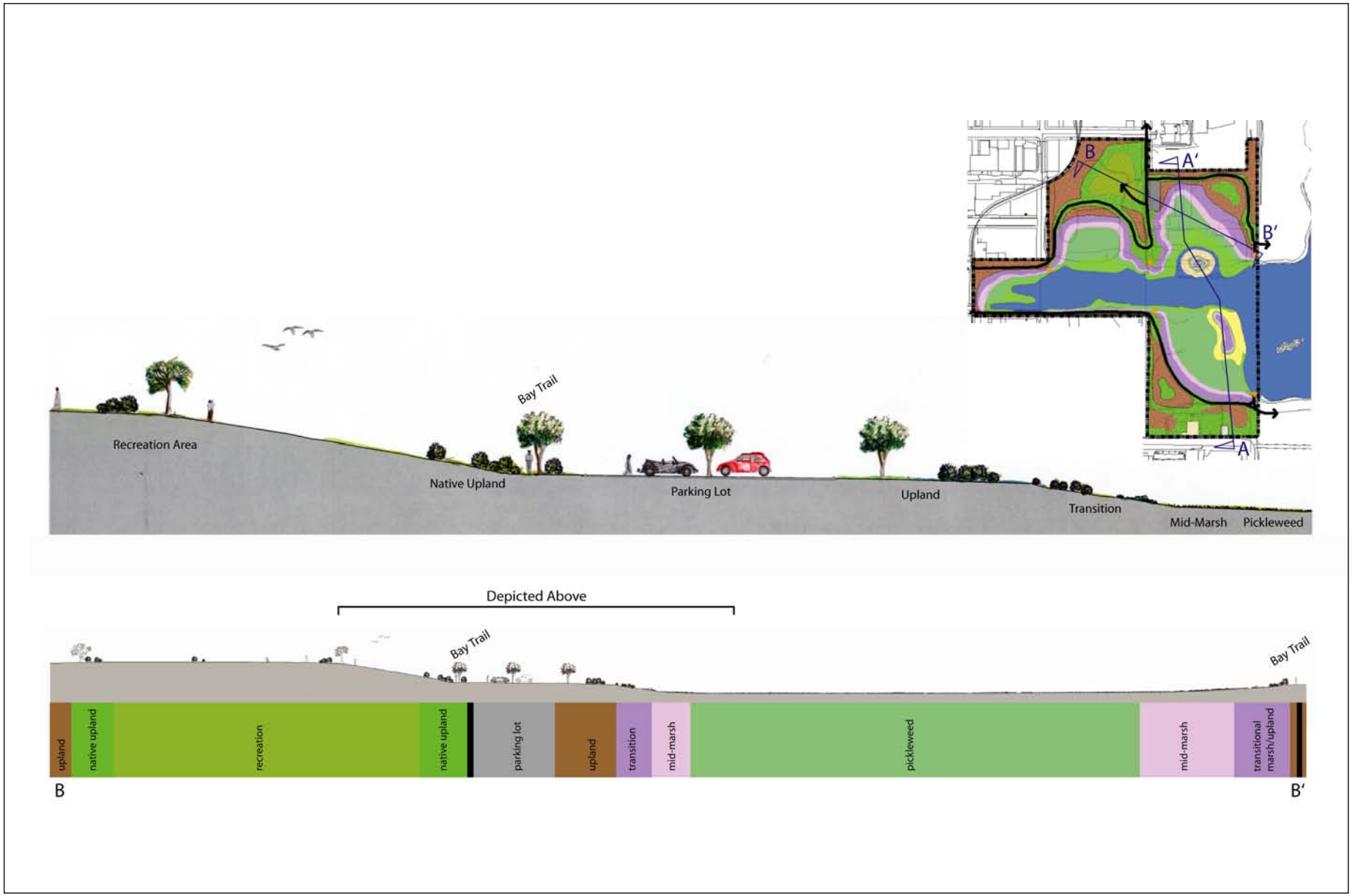
Source: WRA, 2005

FIGURE 2-4a
Facilities Rendering and Vegetation Elevational Profile



Source: WRA, 2005

FIGURE 2-4b
Facilities Rendering and Vegetation Elevational Profile



Source: WRA, 2005

FIGURE 2-4c
Facilities Rendering and Vegetation Elevational Profile

Source: ABAG, ????

0 .5 1
MILES

N

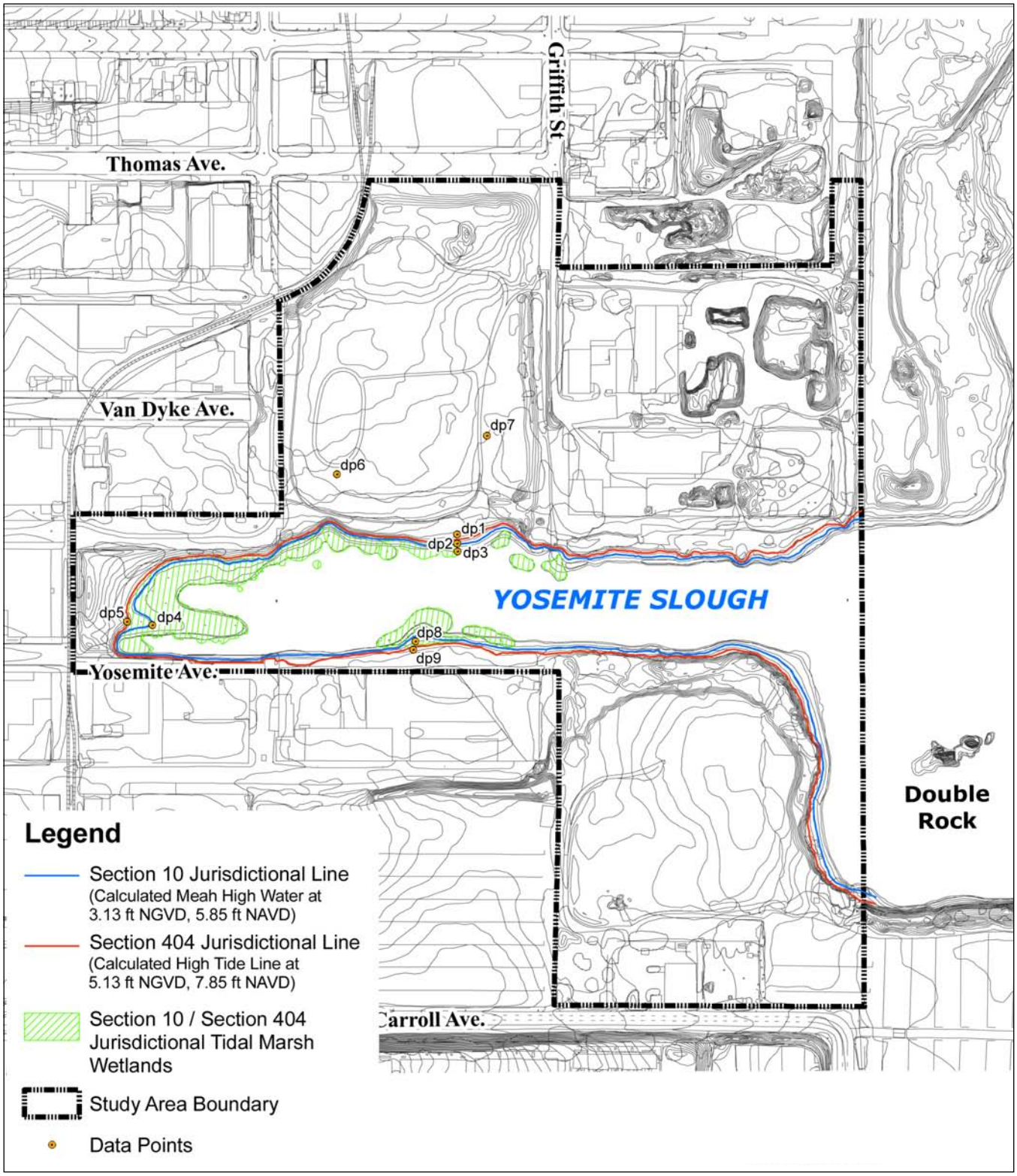
FIGURE 2-5
Existing and Proposed Bay Trail Segments (Relationship to the Proposed Project)

Source: WRA, 2005

0 350 700 1,050
FEET

N

FIGURE 2-6
Proposed Disposal Area on DPR Property in Relation to Proposed Project



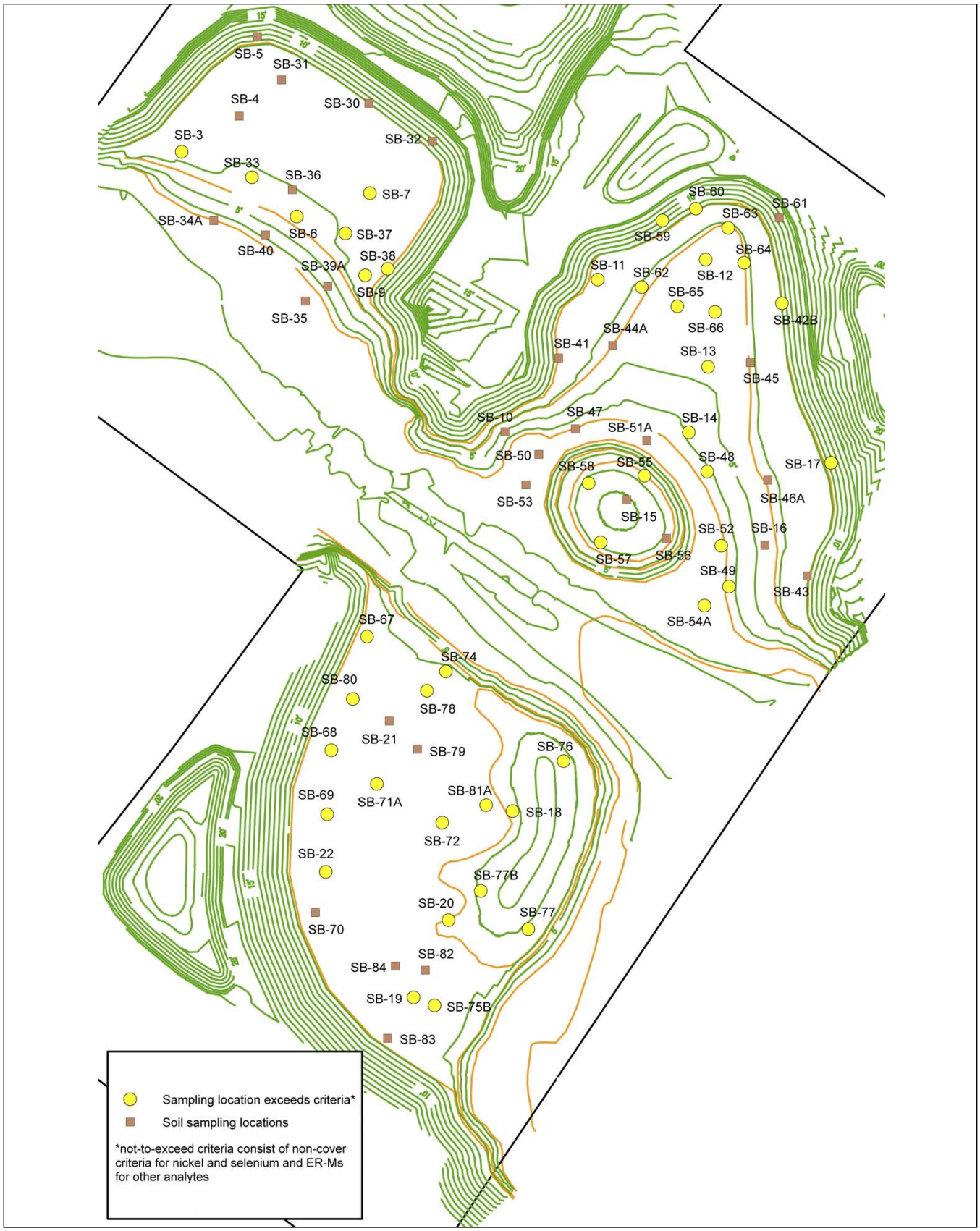
Source: WRA, 2005

0 150 300 450

N

FIGURE 2-7

Project Site Jurisdictional Determination for Section 10/404

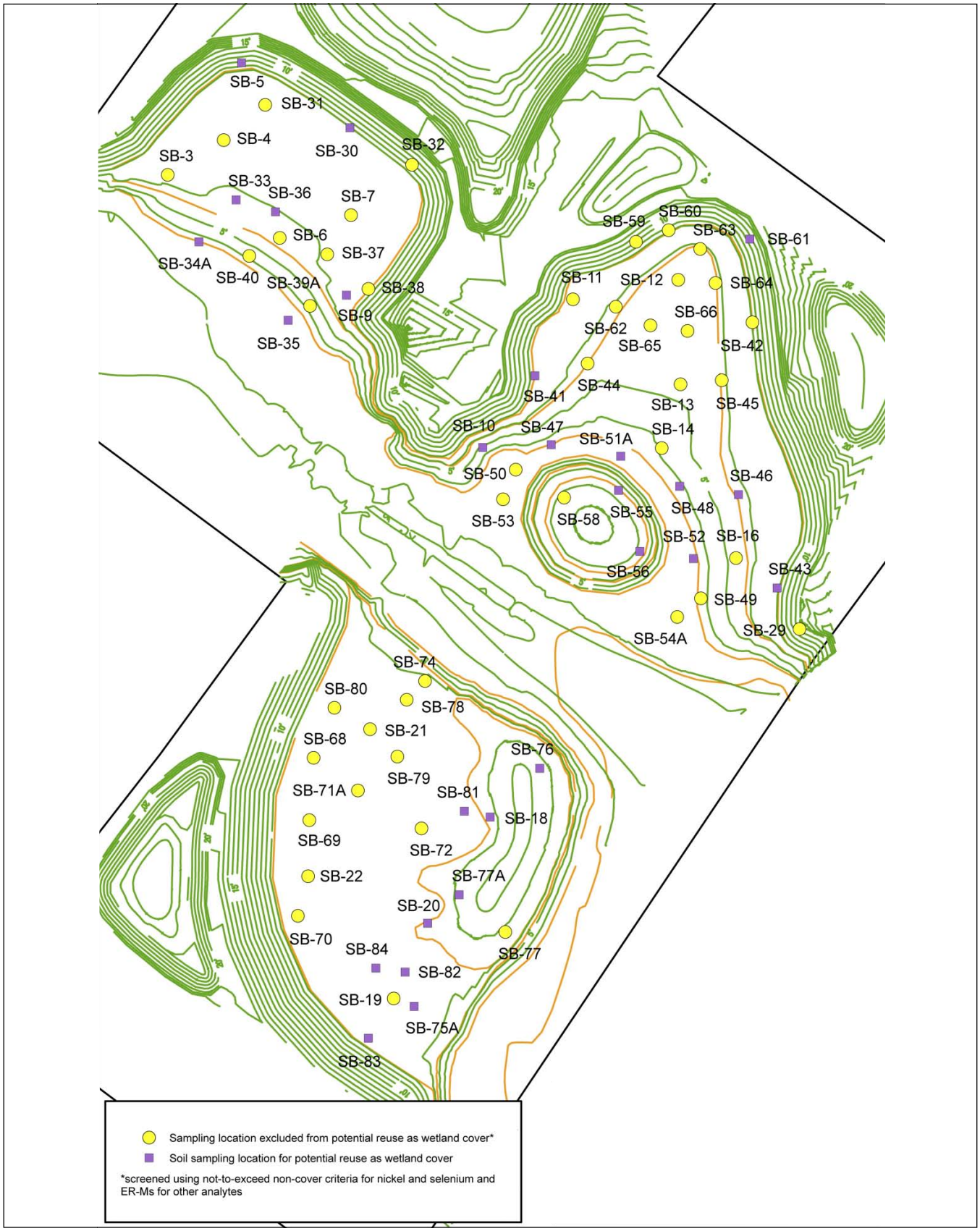


Source: Northgate, 2005

0 100 200 300
FEET

N

FIGURE 3-1
Wetlands Layer Soils Screened Using Not-to-Exceed Criteria

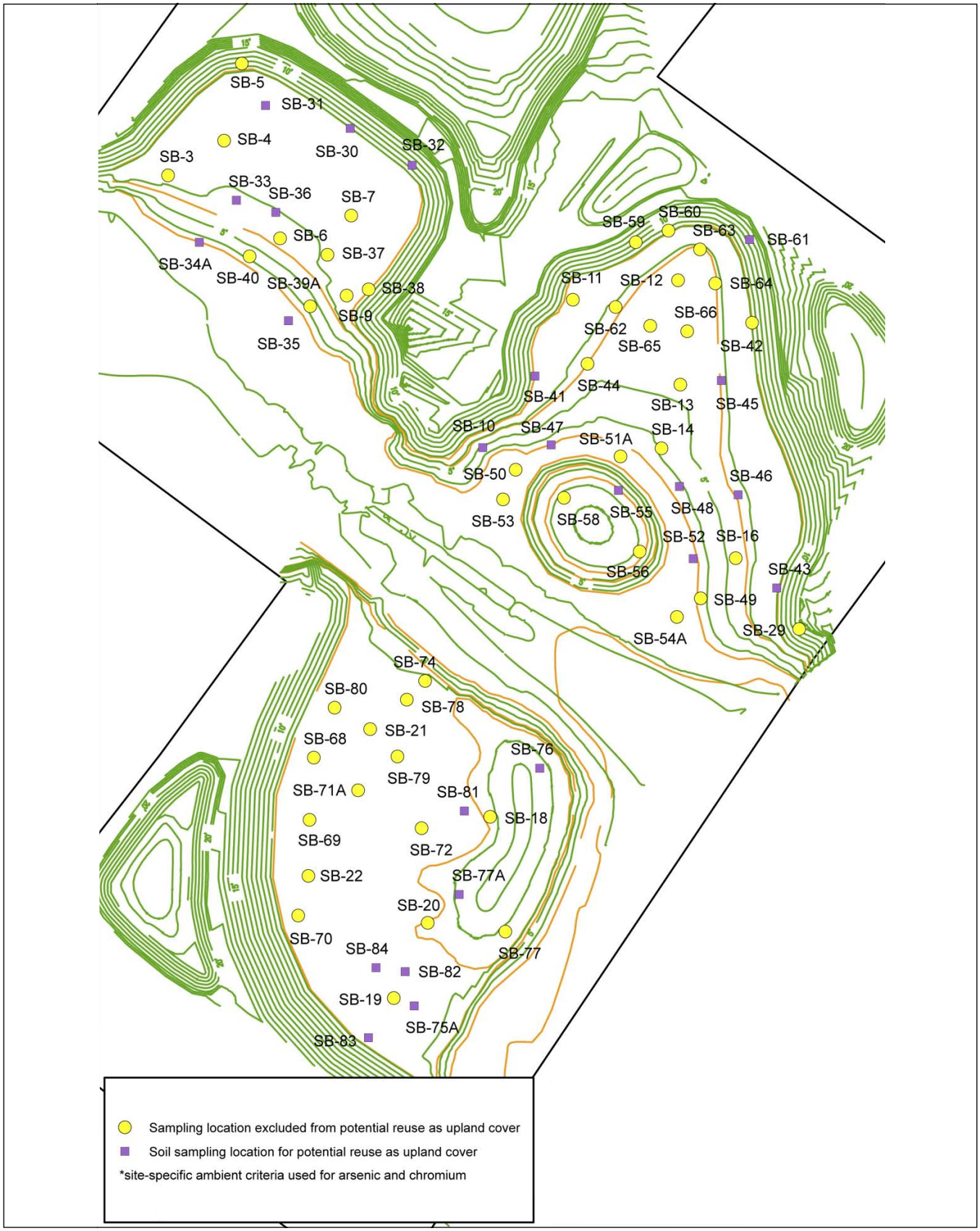


Source: Northgate, 2005

0 100 200 300
FEET

N

FIGURE 3-2
Cut Soils Screened for Potential Reuse as Wetland Cover

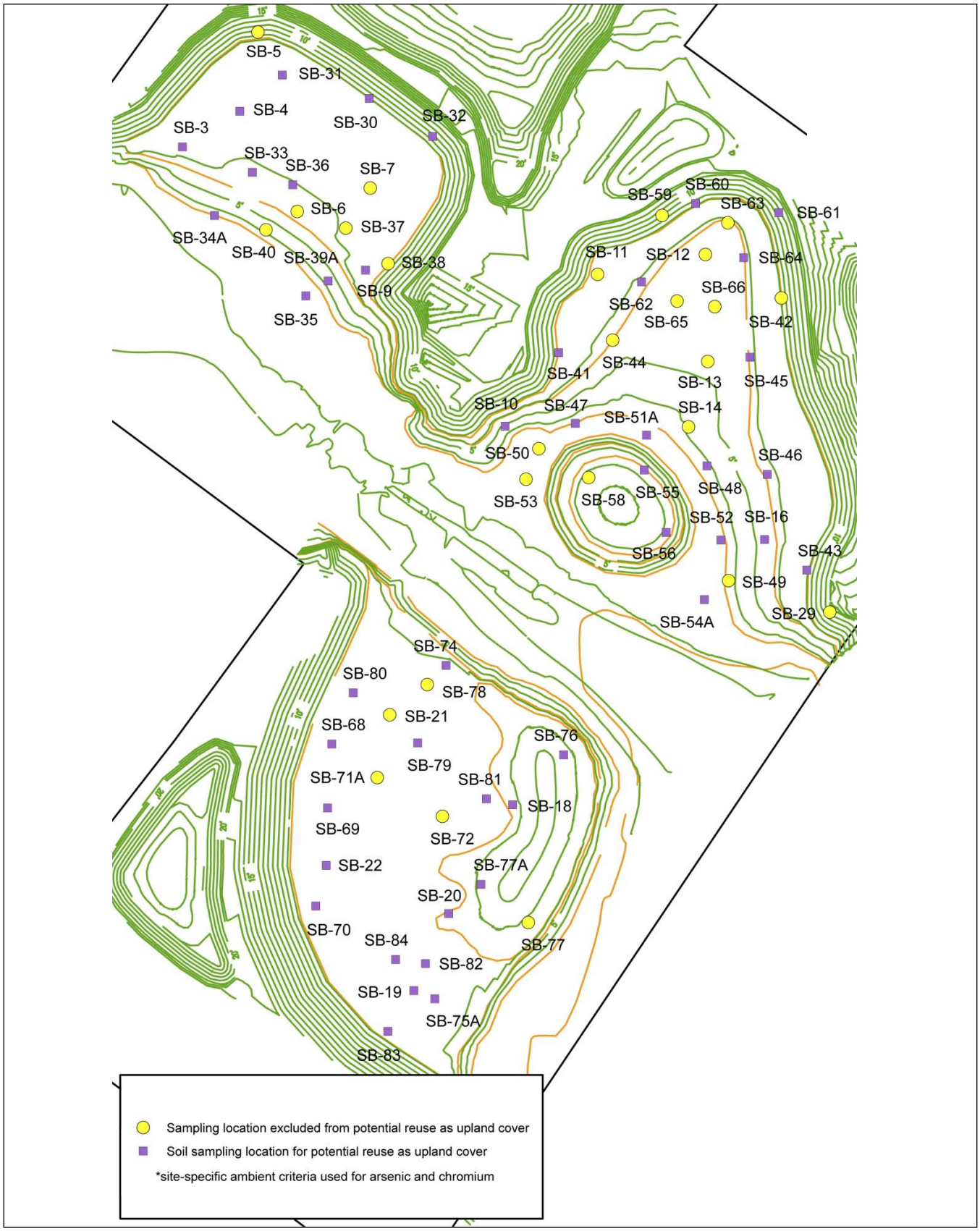


Source: Northgate, 2005

0 100 200 300
FEET

N

FIGURE 3-3
Cut Soils Screened for Potential Reuse as Upland Cover Using Residential ESLs*



Source: Northgate, 2005

0 100 200 300
FEET

N

FIGURE 3-4
Cut Soils Screened for Potential Reuse as Upland Cover Using Commercial/Industrial ESLs*

APPENDIX C

PHASE II ENVIRONMENTAL SITE ASSESSMENT YOSEMITE SLOUGH WETLANDS RESTORATION (EXCERPT)

Phase II Environmental Site Assessment

Yosemite Slough Wetlands Restoration

San Francisco, California

February 11, 2005

Prepared For:

California State Parks Foundation
800 College Avenue
P.O. Box 548
Kentfield, California 94914

Prepared By:

Northgate Environmental Management, Inc.
3629 Grand Avenue
Oakland, California 94568

In Collaboration With:

Wetland Research Associates

Romberg Tiburon Center
San Francisco State University

Noble Consultants

Lipton Environmental Group

1116.03

TABLE OF CONTENTS

ACKNOWLEDGEMENTS ..... **IV**

1.0 INTRODUCTION **1**

2.0 BACKGROUND **2**
- 2.1 Site Description 2
- 2.2 Current and Proposed Land Use 3
- 2.3 Geologic Setting 4
- 2.4 Ambient Concentrations of Arsenic, Chromium and Nickel 5
- 2.5 Screening Criteria 7
  - 2.5.1 Wetlands Restoration Area 7
  - 2.5.2 Uplands Area 9

3.0 SCOPE OF WORK **11**
- 3.1 Stage 1 Investigation 11
- 3.2 Stage 2 Investigation 12

4.0 SUMMARY OF PHASE II INVESTIGATION RESULTS **14**
- 4.1 Groundwater Analytical Results 14
- 4.2 Soil Analytical Results 15
  - 4.2.1 Detections of TEPH and PAHs in Fill Materials 16
  - 4.2.2 Comparisons of Soil Analytical Results with Screening Criteria 17
    - 4.2.2.1 Wetland Layer Soil Analytical Results 17
    - 4.2.2.2 Cut Soil Analytical Results 18
      - 4.2.2.2.1 Screening of Cut Soils for Wetland Reuse 18
      - 4.2.2.2.2 Screening of Cut Soils for Upland Reuse 18
  - 4.2.3 Comparison of Chemicals of Concern in Upland Soils with Screening Criteria.. 19

5.0 DISCUSSION AND RECOMMENDATIONS **21**
- 5.1 Groundwater 21
- 5.2 Options for Reuse, Treatment, or Disposal of Cut Soils 21
- 5.3 Wetland Layer Soils 22

6.0 REFERENCES **24**

TABLES

1 Summary of Screening Criteria for Analytes Detected in Soil Samples

2a Groundwater Analytical Results for Metals
2b Groundwater Analytical Results for TEPH
2c Groundwater Analytical Results for PAHs
2d Groundwater Analytical Results for Pesticides
2e Groundwater Analytical Results for PCBs
2f Groundwater Analytical Results for VOCs

3a Soil Analytical Results for Metals
3b Soil Analytical Results for TEPH
3c Soil Analytical Results for PAHs
3d Soil Analytical Results for Pesticides
3e Soil Analytical Results for PCBs
3f Soil Analytical Results for SVOCs
3g Soil Analytical Results for VOCs

4a Statistical Summary of Analyte Detections In Wetland Layer Soil Samples Screened Using Proposed Not-to-Exceed Wetland Criteria
4b Statistical Summary of Analyte Detections In Cut Soil Samples

5 Statistical Summary of Analyte Detections In Wetland Layer Soil Samples After Removal of Samples Exceeding Proposed Not-to-Exceed Wetland Criteria

FIGURES

1 Site Location Map

2 Stage 1 and Stage 2 Groundwater Sampling Locations

3 Stage 1 and Stage 2 Soil Sampling Locations

4 Wetlands Layer Soils with Total PAHs or Hydraulic Fluid Detections

5 Cut Soils with Total PAHs or Hydraulic Fluid Detections

6 Wetlands Layer Soils Screened Using Not-to-Exceed Criteria

7 Cut Soils Screened for Potential Reuse as Wetland Cover

8 Cut Soils Screened for Potential Reuse as Upland Cover Using Residential ESLs

9 Cut Soils Screened for Potential Reuse as Upland Cover Using Commercial/ Industrial ESLs

APPENDIX A
Statistical Evaluation of Arsenic, Chromium, and Nickel in Soil

APPENDIX B
Laboratory Analytical Reports for Soil and Groundwater (CD-ROM)

APPENDIX C
Asbestos Analytical ReportS

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Wetland Research Associates
2169 East San Francisco Blvd., Suite G
San Rafael, California 94901

Romberg Tiburon Center
San Francisco State University
3152 Paradise Drive
Tiburon, California 94920

Noble Consultants
359 Bel Marin Keys Blvd., Suite 9
Novato, CA 94949

Lipton Environmental Group
4250 West Dry Creek
Healdsburg, CA 95448

1.0 INTRODUCTION

This report summarizes the results of a Phase II environmental site assessment (Phase II ESA) conducted on behalf of the California State Parks Foundation by Northgate Environmental Management, Inc. ("Northgate") at Yosemite Slough, which lies within the Candlestick Park State Recreation Area in San Francisco, California ("the Site"; Figure 1). The purpose of the soil and groundwater investigations was to assess soil and groundwater quality to support the design and construction of a planned wetlands restoration at the Site. The Phase II soil and groundwater investigations were conducted in two stages. Stage 1 investigations were conducted in January 2004 and Stage 2 investigations were conducted September through October 2004.

The remainder of this report is organized as follows:

- Section 2.0 provides background information, including a site description.
- Section 3.0 describes the scope of the Phase II soil and groundwater investigations.
- Section 4.0 presents the results of soil and groundwater investigations
- Section 5.0 provides a discussion of the results and recommendations.

2.0 BACKGROUND

2.1 Site Description

The Site is located on the eastern shore of the San Francisco Peninsula within the Candlestick Point State Recreation Area (Figure 1) in the City and County of San Francisco. The Site consists of approximately 34 acres, and is bisected by the Yosemite Slough, a channel that extends from Ingalls Avenue at its northwest end to its outlet in San Francisco Bay. The northern portion of the Site is bounded on the northeast by Thomas Avenue and a corporation yard for the City of San Francisco; on the northwest by Hawes Street and a railroad right-of-way; and on the southeast by Hunters Point Naval Shipyard. The southern portion of the Site is bordered on the southwest by Yosemite Avenue and Carroll Avenue, and on the southeast by San Francisco Bay and Candlestick Park. For the purpose of discussions presented in this report, the Site is subdivided into three sub-areas (northwest, northeast, and southeast). The sub-area boundaries are defined by Yosemite Slough, which runs northwest to southeast across the Site, and by the extension of Griffith Street, which bisects the northern portion of the Site. A combined sewer overflow (CSO) pipeline runs underneath Griffith Street (see Figures 2 and 3).

The Site was historically part of the tidal marshes and mudflats of San Francisco Bay. Fill was placed over the site and surrounding areas in the 1950s and 1960s to provide space for industrial and residential development, and Yosemite Slough consists of a remnant channel within the original tidal marsh. The slough is approximately 1,700 feet long and measures approximately 200 to 300 feet wide. It is bounded by relatively steep banks, approximately 4 to 8 feet in height. The City and County of San Francisco is evaluating chemical concentrations in sediments in the slough and whether there is a need to remediate the sediments.

Water levels in the slough are influenced by tidal action in San Francisco Bay. Tidal elevations in Yosemite Slough (relative to North American Vertical Datum [NAVD] 1988) are as follows:

Tide Level	Elevation (feet, NAVD 1988)
Mean Higher High Water (MHHW)	6.49
Mean High Water (MHW)	5.85
Mean Tide Level (MTL)	3.33
Mean Low Water (MLW)	0.83
Mean Lower Low Water (MLLW)	-0.34

2.2 Current and Proposed Land Use

The objective of the restoration planning effort for the Site is to restore approximately 12 acres of wetland habitat on park property adjoining Yosemite Slough. The restoration plan calls for areas of high and low marsh, with islands for bird nesting habitat in the northeast and southeast sub-areas. The proposed wetland restoration design is represented on Figures 2 and 3, which show the tidal elevation contours for mean low water (0.83 feet NAVD), mean tide level (3.33 feet NAVD), mean high water (5.85 feet NAVD), and mean higher high water (6.49 feet NAVD). The proposed grading contours are shown on Figures 4 through 9. Under the proposed restoration plan, the uplands area will be used as a shoreline park with paved walking trails, a picnic area, and a building with an interpretive center (recreational land use).

Currently, the northern area of the Site consists of vacant land to the northwest of the extension of Griffith Street. A small cluster of buildings currently occupied by a cabinetmaker is located southeast of the extension of Griffith Street. A large unoccupied corrugated metal building, reportedly used for diesel engine manufacturing, is located just east of the cabinetmaker's shop, and a suspected waste oil sump is located under a concrete pad between the cabinetmaker's shop and the unoccupied building. The suspected sump is no longer in use, and may have been used by the former occupant of the metal building. The southern area consists primarily of vacant land, with a small corporation yard for the State Department of Parks and Recreation located at the corner of Carroll Avenue and Griffith Street. The surrounding area generally consists of a mixture of residential and industrial or commercial development.

A meeting was held on April 27, 2004 with representatives of the Regional Water Quality Control Board (RWQCB), Northgate, Wetlands Research Associates (WRA), and Romberg-Tiburon Center (RTC) to review the Stage 1 investigation results and discuss modifications to the proposed restoration design. The modifications to the restoration design proposed during the April 27, 2004 meeting are based on the distribution of chemicals in fill materials as reflected in the Stage 1 data, and are intended to limit potential exposures of wetland species and park users to chemicals, reduce the amount of soil to be transported off-site, and allow reuse of excavated soils.

As discussed with the RWQCB and approved during the April 27, 2004, meeting, the modified restoration design proposes to leave in-place chemically-affected fill soils below the surface of the modified restoration design, provided the chemicals of concern are not migrating (based on groundwater sampling and analysis) and chemical concentrations within the cover soil throughout the restoration area do not exceed appropriate criteria, thereby limiting potential exposure pathways and risks to the environment.

The current shoreline of Yosemite Slough and its vicinity, including Candlestick Point and Hunters Point, is the result of many decades of extensive filling, and the chemicals observed in the fill during Phase II investigations (extending well below the groundwater and tidal levels to depths of approximately 10 to over 20 feet below the existing ground surface) are typical of fill materials in this area. Because it is not practical or feasible to remove all of the chemically-impacted fill beneath the restoration area, existing fill below the restoration area will be left in-place and covered with fill soil that meets acceptable screening criteria for wetlands and uplands cover, as described in Section 2.5 of this report. A work plan for Stage 2 investigations that outlined this general approach was submitted to the RWQCB on August 6, 2004. Mr. John West of the RWQCB concurred with the approach for modifying the restoration design which would leave the deeper chemically-impacted fill in-place, and approved the work plan for conducting Stage 2 investigations in a telephone conversation with Ms. Deni Chambers of Northgate on September 3, 2004 (confirmed via e-mail correspondence from Deni Chambers to John West dated September 3, 2004).

2.3 Geologic Setting

Surface materials at the site generally consist of artificial fill to depths ranging from about 10 to over 20 feet below the ground surface (bgs). The fill materials are underlain by native alluvium and bay-margin deposits (Bay Mud) of Pleistocene and Holocene age. Previous subsurface investigations at the site indicate that the fill material generally consists of a heterogeneous mixture of gravel, sand, silt, and clay, with varying amounts of construction debris (wood, concrete, brick, ceramic tile, metal, and glass) and refuse. Previous reports and Phase II investigations performed by Northgate indicate that debris and rubble may comprise 10 to 25 percent of the fill material at observed locations. A Preliminary Endangerment Assessment report (PEA) prepared for the site by Holguin, Fahan and Associates (Holguin,1993) suggests that the majority of the fill was derived from excavations for Candlestick Park Stadium, construction projects in the City of San Francisco, and from the leveling of two Franciscan Complex bedrock hills formerly located adjacent to the Site. Section 2.4 discusses the naturally-occurring ambient concentrations of arsenic, chromium, and nickel associated with fill soils derived from the Franciscan Complex in the Site vicinity.

Estuarine deposits beneath the fill consist of Bayside Sand and Bay Mud. The Bay Mud consists of a soft, gray to green clay and silty clay, with localized layers of sand, peat, and other organic materials.

Bedrock of the Franciscan Complex is exposed at the ground surface on the northern portion of the site. The bedrock outcrop at this location consists of metamorphosed volcanic rock called greenstone. Franciscan Complex bedrock is also exposed on a large hill to the south of the site. However, the depth to bedrock beneath the entire site is not known.

Groundwater is present at depths of approximately 5 to 10 feet bgs across the site. On a regional basis, groundwater flows toward the Yosemite Slough and the adjacent San Francisco Bay. On a local basis, groundwater flow direction appears to be variable, and is influenced in part by tidal action in San Francisco Bay.

2.4 Ambient Concentrations of Arsenic, Chromium and Nickel

Arsenic and chromium are metals known to be present in San Francisco Bay area surficial soils at concentrations exceeding health risk-based screening levels (RWQCB, 2003). To avoid triggering remedial actions due to ambient levels in soil, risk-based environmental screening levels (ESLs) developed by the RWQCB substitute average background concentrations for these metals in place of health risk-based criteria. However, the average background concentrations of arsenic and chromium do not necessarily reflect the local background concentrations for each given site in the San Francisco Bay area.

As discussed in Section 2.3, bedrock consisting of greenstone of the Franciscan Complex is exposed at the ground surface on the northern portion of the site. The fill material at the Site is believed to be derived, in part, from Franciscan bedrock in the Site vicinity. Soils derived from mafic and ultramafic rocks, which are common in the Franciscan Complex, are known to contain higher concentrations of chromium, cobalt, and nickel than typical soils developed from other rock types. Background concentrations of total chromium in Bay area soils developed over mafic and ultramafic rocks sometimes exceed 1,000 milligrams per kilogram (mg/kg) (RWQCB, 2003). Nickel concentrations in soils derived from similar rock types also have been reported to exceed 1,000 mg/kg (Oze et. al., 2004). For these reasons, it is important to evaluate and consider the local background (ambient) concentrations of metals in fill soils at the Site when making decisions regarding the management of soil.

To assess local background concentrations of arsenic and chromium in fill soils, statistical analyses of arsenic and chromium concentrations in samples of the approximately 217,000 cubic yards of fill that are anticipated to be removed to construct the wetlands (referred to in this report as "cut soils") were performed in accordance with Department of Toxic Substances Control guidance (DTSC, 1997).

The statistical method for assessing ambient or local background concentrations for each metal consisted of the following steps, which are described in detail in Appendix A:

a) Performing goodness-of-fit tests for normality and lognormality of distributions;

b) Evaluating summary statistics, including minimum and maximum detected concentrations and coefficients of variation;

c) Plotting concentration or $\log_{10}$[concentration] (if lognormally distributed) vs. cumulative probability;

d) Identifying the sample population(s); and

e) Estimating the 95th and 99th percentile values of the sample population nearest the origin of the cumulative probability plot.

Using the above procedure, the site-specific ambient concentration of arsenic in fill soils is estimated to be 14.7 mg/kg. This ambient concentration is well within the range of background concentrations in Bay area soils, which typically range from 5 to 20 mg/kg, (RWQCB 2003). A similar analysis for chromium yielded a site-specific ambient concentration of 122 mg/kg, which is also within the range of background concentrations in Bay area soils (Appendix A).

It is important to note that hexavalent chromium was detected in only 4 of 17 soil samples analyzed at the Site, and the highest detected concentration of hexavalent chromium (0.16 mg/kg in a sample containing 65 mg/kg of total chromium) is an order of magnitude less than the ESL for direct exposure (1.8 mg/kg). The ratios of total to hexavalent chromium in Site soil samples range from approximately 400:1 to 1,400:1. Dividing the maximum detected concentration of total chromium in cut soils (340 mg/kg) by the more conservative ratio (400:1 total to hexavalent chromium) provides an estimated maximum concentration of hexavalent chromium of 0.85 mg/kg, which is less than one-half of the ESL. These results indicate that the presence of chromium in fill soils will not pose a significant human health risk.

To assess whether observed concentrations of nickel in fill soils are representative of naturally-occurring Franciscan bedrock from which the fill was derived, a statistical comparison of the distributions of nickel, total chromium, and cobalt concentrations in cut soil samples at the Site was performed using Spearman's rank correlation method (Appendix A). This analysis shows that nickel concentrations are significantly correlated with chromium and cobalt, indicating that concentrations of these metals in fill soils are consistent with the reported sources of some of the fill materials (Franciscan bedrock) and the observed presence of greenstone or serpentinite rock fragments in fill at the Site.

2.5 Screening Criteria

As discussed during the April 27, 2004 RWQCB meeting and presented in the August 6, 2004 work plan for Stage 2 investigations (Section 2.2), various screening criteria were proposed to help evaluate the analytical results and assess the suitability of existing fill soil for use in the wetland and upland areas of the Site. For this report, we have compiled a table summarizing the various screening criteria that are potentially applicable for both the wetlands and uplands restoration areas (Table 1). The proposed screening criteria for cover soils in the wetlands restoration and uplands areas are discussed in more detail in Sections 2.5.1 and 2.5.2, below. In this report, the wetland cover soil is also referred to as the "wetland layer." Soils removed from the restoration area to construct the wetlands are referred to as "cut soils."

Deni Chambers of Northgate discussed the criteria for wetlands and uplands cover with John West and Naomi Feger of the RWQCB in telephone conversations on January 6 and 18, 2005, which were summarized in e-mail messages from Ms. Chambers to Mr. West and Ms. Feger on these dates. Based on these discussions, the thickness of cover soils in the wetlands restoration area may be 1 to 3 feet, depending on the surface elevation of the wetlands relative to tidal elevations. However, the WRA team plans to conduct further engineering analysis, including hydraulic modeling, to properly assess the wetland and upland cover thickness to protect against potential erosion due to tidal currents, rainfall, and runoff that could expose deeper fill below. The engineering design documents will provide final details on the analysis of potential erosion processes.

Cut soils will be carefully managed by segregating into stockpiles for further testing prior to reuse on-site. The detailed plans for managing and testing of cut soils will be developed in engineering design documents, to be submitted at a future date. After appropriate testing, the cut soils that meet screening criteria may be reused, either as wetland cover or uplands cover (Sections 2.5.1 and 2.5.2). All upland areas of the site that are not covered with pavement or buildings will have a minimum thickness of 1 foot of cover soils that meet appropriate criteria. The thickness of uplands cover will be evaluated further in the engineering design documents. A Risk Management Plan (RMP) will be prepared for the project to describe erosion monitoring and long-term operation and maintenance procedures for the wetland and upland cover layers.

2.5.1 Wetlands Restoration Area

Screening criteria for the wetlands restoration area are summarized in Table 1 and include San Francisco Bay sediment ambient concentrations for soils containing less than 100 percent fines (RWQCB, 1998) and the National Oceanic and Atmospheric Administration's (NOAA's) effects-

based sediment concentrations for chemical constituents of concern known as "effects range – median" values (ER-Ms; Long et. al., 1995). ER-Ms are commonly used sediment screening values that represent concentrations above which biological effects on benthic organisms are probable. In addition, screening criteria for wetland cover and non-cover sediments are presented in Table 1. The wetland cover and non-cover criteria are commonly used criteria for evaluating reuse of dredged materials in wetland environments (RWQCB, 1992).

The goals for the wetland restoration area are to achieve average concentrations in the final wetland layer that are near ambient levels for San Francisco Bay sediments. The average concentration of each chemical in the wetland layer is calculated by adding the concentrations of each chemical in the wetland layer samples, using one-half the reporting limit for non-detected results, and dividing by the total number of samples analyzed for each chemical. To achieve these goals and identify wetland layer soils that may require removal during construction of the planned wetlands, soil analytical results in the wetland layer are compared to proposed "not-to-exceed" criteria, which consist of ER-Ms for most metals, polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and pesticides, and wetland non-cover criteria for nickel and selenium. The non-cover criterion for nickel (200 mg/kg) is proposed as the not-to-exceed value as the San Francisco Bay ambient concentration (112 mg/kg) is higher than the ER-M (58 mg/kg), and because naturally-occurring nickel is associated with the Franciscan bedrock present in fill materials at the Site, as previously discussed in Section 2.4 and Appendix A. The non-cover criterion for selenium (1.4 mg/kg) is proposed as a not-to-exceed value as an ER-M has not been established for selenium. Removal of soils exceeding these not-to-exceed criteria is expected to reduce the average concentrations of wetland layer soil to near-ambient concentrations for San Francisco Bay sediments, as discussed in Section 4.2.2.1. Where concentrations within the wetland layer exceed the not-to-exceed criteria, soils will be removed during the construction phase and replaced with appropriate fill meeting not-to-exceed criteria, so that final average chemical concentrations in the wetland layer will be near San Francisco Bay ambient sediment concentrations.

Cut soils being considered for reuse in the wetland cover layer will be stockpiled and tested to ensure these soils meet the not-to-exceed criteria for reuse in the wetland. Testing of cut soils for reuse in the wetland may also include leachability tests (to be performed using deionized water, Site groundwater, or water collected from Yosemite Slough to represent natural conditions in the wetland) and bioassays if analysis indicates they contain concentrations of chemicals of concern significantly above ambient concentrations for San Francisco Bay sediments. Analytical results for the final wetland layer consisting of cut soils proposed for reuse and wetland layer soils left

in-place will be statistically evaluated to ensure that project goals are achieved (i.e., concentrations in the final wetland layer do not exceed the not-to-exceed criteria and the average concentrations are near ambient concentrations for San Francisco Bay sediments).

2.5.2 Uplands Area

The proposed land use for the uplands portion of the Yosemite Slough wetland restoration is recreational. Most visitors to the proposed park will not have significant direct contact with soils, since much of the Site will be covered with vegetation and visitor access will be limited primarily to paved pathways. A picnic area, paved parking area, and a building with an interpretive center are planned as part of the overall wetland restoration design. The RWQCB has not calculated risk-based ESLs for recreational land use. To provide a very conservative benchmark for evaluating reuse options for cut soils, Table 1 summarizes the RWQCB's ESLs for direct exposure under a residential land use scenario. Site-specific ambient concentrations of arsenic (14.7 mg/kg) and chromium (122 mg/kg) are substituted for their respective ESLs in the screening process, as discussed in Section 2.4 and Appendix A, in accordance with RWQCB and DTSC guidance (RWQCB, 2003; DTSC, 1997). The RWQCB's ESLs for direct exposure under commercial/industrial land use are also summarized in Table 1.

Direct exposure screening criteria are appropriate for evaluating the suitability of cut soils for upland cover because direct exposure is considered to be the only potentially complete exposure pathway for this soil under the recreational land-use scenario. As discussed in Section 4.1, chemicals of potential concern at the Site are not migrating in groundwater except in limited areas. Based on high electrical conductivity measurements, groundwater is unsuitable for beneficial use as a drinking water source (Section 4.1). Soil containing total extractable petroleum hydrocarbons (TEPH) and PAHs will be bioremediated to reduce concentrations to acceptable levels, as discussed in Section 4.2.1. The potential for inhalation of particulates during construction of the wetlands will be evaluated as part of the engineering design process.

In uplands areas of the site that will be covered with landscape vegetation, and in the planned picnic area, cover soils will meet either residential ESLs for direct exposure or recreational screening levels, which may be established with the RWQCB's concurrence. The residential ESLs are very conservative for the proposed recreational land use and recreational screening levels may be calculated for cover soils that are protective of human health and the environment. Cover soil will not be placed over areas where pavement or buildings are planned. A buffer layer up to 2 feet thick of soil that meets commercial/industrial ESLs may be placed between the chemically-affected fill and the cover soils to provide additional protection from erosion and

potential exposure of the underlying fill. Soil placed in the buffer layer that meets commercial/ industrial ESLs may be further tested for leachability if analysis indicates this soil contains chemicals of concern significantly greater than ER-Ms. The upland cover thickness and design will be evaluated further and the engineering design documents will provide final details on the upland cover. Because chemically-impacted fill will be left in-place (as discussed in Section 2.2 and presented in the August 6, 2004 report on Stage 1 investigations), an important component of this project will require strict adherence to an RMP that will be prepared to describe erosion monitoring and long-term operation and maintenance procedures for the upland cover layers.

3.0 SCOPE OF WORK

Northgate conducted two stages of investigation at the Site, referred to as Stage 1 and Stage 2. The sampling and analysis program was designed to meet the following objectives:

- Assess whether chemicals detected in soil (primarily metals and TEPH) are migrating in groundwater.
- Assess the occurrence, nature, and extent of chemicals of concern in fill to be removed to construct the wetlands (referred to as "cut soils" in this report).
- Assess the quality of soil within a 3-foot interval below the future surface of the planned wetland restoration area (referred to as the "wetland layer" or "wetland cover layer" in this report).
- Assess whether the cut soil can potentially be reused as wetland or upland cover at the Site.

3.1 Stage 1 Investigation

Northgate conducted Stage 1 soil and groundwater investigations at the Site in January 2004. The investigations included the following:

- Collecting "grab" groundwater samples from eight boring locations (SB-6, SB-12, SB-13, SB-14, SB-15, SB-17, SB-22, and SB-25; Figure 2);
- Collecting groundwater samples from five monitoring wells previously installed by others (TW-18, TW-20, TW-22A, TW-24, and TW-25; Figure 2);
- Collecting two utility corridor grab water samples (GW-1 and GW-2; Figure 2);
- Observing the nature of fill materials in 16 test pits (TP-1 through TP-16); and
- Drilling 27 soil borings and collecting soil samples (SB-3 through SB-29; Figure 3).

Stage 1 soil samples were analyzed for 17 California Assessment Manual (CAM-17) metals (antimony, arsenic, barium, beryllium, cadmium, total chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc) using EPA Methods 6010B and 7471A; and TEPH with a silica gel cleanup using EPA Method 8015M. Selected samples were also analyzed for hexavalent chromium; PAHs using EPA Method 8270 SIM; semivolatile organic compounds (SVOCs) using EPA Method 8270; organochlorine pesticides using EPA Method 8081; PCBs (including the PCB mixtures known as Aroclors as well as 20 individual PCB congeners listed by NOAA) using EPA Method 8082; and VOCs using EPA Method 8260.

Stage 1 groundwater samples were analyzed for dissolved CAM 17 metals and TEPH, and selected samples were analyzed for VOCs.

Analytical results for the Stage 1 investigations were presented in the August 6, 2004 report, which also presented the work plan for Stage 2 investigations. As presented in the Stage 1 investigation report, fill soils at the Site and in the surrounding area are impacted to depths well below the groundwater table. Because it is not practical or feasible to remove all of the chemically-impacted fill beneath the restoration area, existing fill below the restoration area will be left in-place and covered with fill soil that meets acceptable screening criteria for wetlands and uplands cover, as previously described in Section 2.5. In accordance with the work plan approved by the RWQCB (Section 2.2), the Stage 2 investigations did not target the chemically-impacted deeper fill and were focused on characterizing the wetland cover layer and cut soils, as discussed below.

3.2 Stage 2 Investigation

Northgate conducted Stage 2 soil and groundwater investigations at the Site in September and October 2004. The scope of work for Stage 2 soil and groundwater investigations were as follows:

- Install and collect groundwater samples from nine temporary groundwater monitoring points and eight existing monitoring wells (MW-2, MW-4, TW-18, TW-20, TW-21, TW-22A, TW-24, and TW-25; Figure 2).
- Survey top-of-casing elevations of the temporary groundwater monitoring points and existing groundwater monitoring wells using a common datum (NAVD 1988) to assess the directions of groundwater movement.
- Collect soil samples to assess the extent of affected soils identified during Stage 1 investigations, and to provide additional data to assess soil conditions within cut soils and the wetland layer.

Figure 2 shows the locations of temporary groundwater monitoring points and monitoring wells at the Site. Figure 3 shows the locations of soil borings drilled during the Phase II ESA, including Stage 1 and Stage 2 investigations.

Stage 2 soil samples were analyzed for selected metals identified in each quadrant during Stage 1 investigations. Selected samples were also analyzed for hexavalent chromium; PAHs using EPA Method 8270 SIM; SVOCs using EPA Method 8270; organochlorine pesticides using EPA Method 8081; PCBs (including the mixtures known as Aroclors, as well as 20 individual PCB congeners listed by NOAA) using EPA Method 8082; and VOCs using EPA Method 8260.

During Stage 2 investigations, Northgate installed and collected groundwater samples from nine temporary groundwater monitoring points (TMP-1 through TMP-9); groundwater samples were also collected from eight identified monitoring wells (MW-2, MW-4, TW-18, TW-20, TW-21, TW-22A, TW-24, and TW-25). The locations of temporary monitoring points and monitoring wells are shown on Figure 2. The monitoring wells identified at the Site were installed by others, and except for wells MW-2, MW-4, and MW-5, which were installed by Holguin (Holguin, 1990), their installation history and construction details are not known. A search of records at the San Francisco Department of Public Health, Monitoring Well Section, did not reveal any permits or construction information for the wells. Groundwater samples collected from temporary groundwater monitoring points and monitoring wells during Stage 2 investigations were analyzed for dissolved metals and TEPH. Selected groundwater samples were also analyzed for pesticides, PCBs, PAHs, and VOCs.

4.0 SUMMARY OF PHASE II INVESTIGATION RESULTS

4.1 Groundwater Analytical Results

Tables 2a through 2f present the analytical results of grab groundwater samples collected from the soil borings and the two borings located adjacent to the CSO utility backfill, and groundwater samples collected from monitoring wells. Laboratory analytical reports for Stage 1 and Stage 2 groundwater samples are presented in Appendix B (in CD-ROM format). The grab groundwater sampling locations and temporary monitoring points and well locations are shown on Figure 2.

Groundwater analytical results (Tables 2a through 2f) were compared to groundwater ESLs for protection of aquatic habitats where groundwater is not considered to be a potential drinking water source (RWQCB, 2003; Table F-1b). Shallow groundwater at the Site is not suitable as a potential drinking water source because of high dissolved solids (based on electrical conductivity measurements exceeding 4,000 umhos/cm, as compared with the California Department of Health Services' [DHS] secondary maximum contaminant level [MCL] of 900 umhos/cm).

Dissolved metals were not detected above the ESLs in Stage 1 groundwater samples collected from soil borings, wells, and the utility corridor, except for barium (SB-3), cobalt (SB-6), nickel (GW-1 and SB-6), and zinc (GW-1). Selenium was detected in four grab groundwater samples (SB-3, SB-6, SB-13, and SB-15); however, the laboratory reported that selenium detections might have been false positives caused by interference. This interpretation is supported by the fact that selenium concentrations in soil at the Site are not elevated above ESLs for shallow soil (RWQCB, 2003) and was confirmed during Stage 2 investigations (discussed below) which did not detect selenium in groundwater.

TEPH slightly exceeds the ESL of 640 micrograms per liter (μg/l) in the Stage 1 grab groundwater samples collected from boring SB-6 in the northwest quadrant, and exceeds the ESL in the grab groundwater sample collected from boring SB-12, adjacent to a possible sump in the northeast quadrant. VOCs were not detected above ESLs in grab groundwater samples collected at the Site.

During the Stage 2 investigations, Northgate conducted a comprehensive evaluation of groundwater quality by sampling all existing wells at the Site and installing and sampling nine additional temporary monitoring points. The analytical results for Stage 2 groundwater samples collected from monitoring wells or temporary monitoring points are consistent with those reported for Stage 1 samples collected from the wells or grab groundwater samples, with the exception that selenium was not detected in any of the groundwater samples collected during Stage 2 investigations.

This confirmed the conclusion (discussed above) that selenium detections during Stage 1 investigations were false positives. Dissolved lead and nickel were detected at concentrations above the ESLs in the groundwater sample collected from TMP-3, and nickel was also detected above the ESL in the sample collected from TW-25, in the northwest quadrant. Nickel was detected at a concentration above the ESL (8 milligrams per liter [mg/L]) in the groundwater sample collected from well MW-4 (39 mg/L), which is located outside the planned restoration area and adjacent to the slough and western boundary of the southwest quadrant (Figure 2). However, nickel was not detected in any of the wells or temporary monitoring points in the southwest quadrant. Detections in groundwater at this location are due to upgradient migration from an offsite source. TEPH was not detected in any of the Stage 2 groundwater samples, with the exception of a trace of gasoline-range hydrocarbons detected in TMP-4. Pesticides, PCBs, PAHs, and VOCs were not detected in groundwater samples collected in Stage 2 investigations, with the exception of trace concentrations of PAHs in the northeast sub-area (Table 2c) and individual PCB congeners in TMP-8 (Table 2e; the PCB mixtures known as Aroclors were not detected). The laboratory stated that the detections of PCB congeners in TMP-8 were suspected false positives caused by interference of sulfur in the sample, and could not rule out this possibility. Therefore, Northgate re-sampled TMP-8 on October 25, 2004, and PCB congeners were not detected in the second sample.

Based on these analytical results, groundwater at the Site is not impacted by chemicals detected in the fill with the exception of two localized areas: (1) detections of lead, nickel, cobalt, and TEPH within a limited area of the northwest sub-area defined by three adjacent sampling locations (SB-6, TMP-3, and TW-25; Figure 2); and (2) TEPH at one location in the vicinity of a suspected sump in the northeast sub-area (SB-12). Based on groundwater samples collected downgradient from the suspected sump in the northeast quadrant (from soil boring SB-13 and temporary monitoring point TMP-4), TEPH is not migrating in groundwater beyond this localized area.

4.2 Soil Analytical Results

Soil boring locations drilled during Stage 1 and Stage 2 investigations are shown on Figure 3. Laboratory analytical reports for Stage 1 and 2 soil samples are presented in Appendix B (CD-ROM). Summaries of the Stage 1 and Stage 2 soil analytical results are shown in Tables 3a through 3g, which are organized as follows:

- Table 3a presents the soil analytical results for metals.
- Table 3b presents the soil analytical results for TEPH.
- Table 3c presents the soil analytical results for PAHs.

- Table 3d presents the soil analytical results for pesticides.
- Table 3e presents the soil analytical results for PCBs.
- Table 3f presents the soil analytical results for SVOCs.
- Table 3g presents the soil analytical results for VOCs.

Soil samples in Tables 3a through 3g are grouped into the following categories:

- Wetland layer soil samples (identified in the tables as "ECO") representing the 3-foot interval below the proposed wetland design surface;
- Cut soil samples (identified as "CS"), which represent soil to be removed between the current ground surface and the proposed wetland design surface;
- Deeper soils (identified as "DS") collected below the wetland layer; and
- "Upland" samples, which were collected outside of the planned wetland restoration design area and will be covered with cut soils taken from construction of the wetland.

Under the proposed wetland design (as approved by RWQCB; Section 2.2), chemically-impacted deeper soils will not come in contact with potential human or ecological receptors; therefore the deeper soils were not evaluated further in this report (see Tables 3a through 3g for analytical results for deeper soils).

4.2.1 Detections of TEPH and PAHs in Fill Materials

TEPH was found to be distributed in fill materials in all three sub-areas of the Site, in the wetland layer, cut soils, deeper soils, and upland soils (Table 3b). The laboratory analytical reports indicate that TEPH in soil is characterized primarily as hydraulic oil. PAHs are also widely distributed in fill (Table 3c and Figures 4 and 5). The exact source of hydraulic oil and PAHs in soil at the site is unknown, but nearly all of the samples collected near the suspected sump in the northeast sub-area contained PAHs, and the highest concentrations of PAHs at the Site are found in the northeast sub-area, south of the suspected sump (Section 2.1). PAHs may also be associated with asphalt fragments that were observed in several soil borings at the Site. PAHs are considered to have low mobility in the environment, and only trace concentrations were detected in groundwater in the northeast sub-area. It is anticipated that TEPH and PAHs in fill soils can be bioremediated at the Site, either in situ before grading begins or ex situ during grading.

4.2.2 Comparisons of Soil Analytical Results with Screening Criteria

Tables 4a and 4b present statistical summaries of the analytical results for wetland layer soil samples and cut soil samples, respectively, including the number of samples analyzed for each chemical analyte, the number of samples with detected analytes, the maximum detected concentrations, and the number of samples exceeding each chemical's respective screening criteria. The following sections discuss the results of the soil screening process.

4.2.2.1 Wetland Layer Soil Analytical Results

This section presents the results of the screening evaluations of wetland layer soils. To assess the suitability of the wetland layer soils to support wetland habitat and identify soils that may need to be removed to construct the wetlands, soil analytical concentrations were compared with their respective not-to-exceed screening criteria (ER-Ms for most chemicals and wetland non-cover criteria for nickel and selenium), as described in Section 2.5. The numbers of samples for which concentrations of chemicals exceed their respective not-to-exceed criteria are given in Table 4a.

Figure 6 shows the locations of soil samples within the wetland layer that exceed the proposed not-to-exceed criteria (ER-Ms for most chemicals and non-cover criteria for nickel and selenium). The primary metals that exceed the not-to-exceed criteria include copper (14 of 90 samples), lead (35 of 96 samples), nickel (21 of 92 samples), and zinc (19 of 66 samples; Table 4a). Less frequently, concentrations of cadmium (4 of 94 samples), chromium (2 of 74 samples), mercury (5 of 93 samples), and selenium (6 of 51 samples) exceed their respective criteria. Isolated detections of PAHs, PCBs, and pesticides also exceed the criteria in a few samples.

As discussed in Section 2.5, once the wetlands cover soil thickness is determined, soils that exceed proposed not-to-exceed screening criteria will be removed from the wetlands cover layer, by which the average concentrations in wetland layer soil are expected to be reduced to near-ambient concentrations for San Francisco Bay sediments. As an initial analysis of the concentrations expected to be achieved in the wetlands cover layer, Table 5 presents summary statistics for the wetland layer soils assuming that soils containing concentrations above the not-to-exceed criteria (ER-Ms for most chemicals and wetland non-cover criteria for nickel and selenium; Section 2.5.1) will be removed. The maximum and mean (average) concentrations and 95% upper confidence limits (UCLs) of the mean concentrations are shown in Table 5 for comparison with San Francisco Bay sediment ambient concentrations and the proposed not-to-exceed criteria. The table shows that the mean concentrations are less than San Francisco Bay sediment ambient concentrations if the soils containing concentrations above the not-to-exceed criteria are removed from the wetland layer.

4.2.2.2 Cut Soil Analytical Results

As an initial evaluation of options for potential reuse of cut soils as cover in the wetlands restoration area or as cover in the uplands areas of the Site, Northgate compared the detected concentrations in cut soils to the proposed not-to-exceed criteria for the wetlands cover layer and residential ESLs and commercial/industrial ESLs for uplands cover soils, as discussed in Section 2.5. Cut soils will be carefully managed by segregating into stockpiles and retesting prior to reuse. The following sections present the results of the screening evaluations of cut soils.

4.2.2.2.1 Screening of Cut Soils for Wetland Reuse

This section presents the screening of cut soils to assess their potential for reuse as wetland cover in the proposed wetland design. Cut soil analytical results are compared to their respective not-to-exceed screening criteria for the wetlands restoration area (Table 4b). The proposed criteria for reuse of cut soils as wetland cover are the same as the not-to-exceed criteria for soil to be left in-place in the wetland layer (ERMs for most chemicals, and noncover criteria for nickel and selenium, as discussed in Section 2.5), with a goal of achieving near-ambient mean concentrations in the final wetland layer.

Figure 7 shows the distribution of cut soil samples with concentrations above the proposed not-to-exceed wetland screening values. Chemicals that exceed the proposed not-to-exceed criteria for wetland reuse include metals and isolated detections (1 to 4 samples) of PAHs, PCBs, pesticides, and SVOCs (Table 4b). The primary metals that exceed their respective not-to-exceed wetland criteria include lead (28 of 92 samples), mercury (13 of 92 samples), nickel (25 of 93 samples), and zinc (14 of 88 samples). Less frequently, concentrations of cadmium (1of 91 samples), copper (6 of 91 samples), selenium (2 of 88 samples), and silver (1 of 84 samples) exceed their respective criteria for wetlands reuse.

4.2.2.2.2 Screening of Cut Soils for Upland Reuse

This section presents the screening of cut soils to assess their potential for reuse as upland cover in the proposed wetland design. Cut soil analytical results are compared to residential and commercial/ industrial ESLs, with the calculated site-specific ambient concentrations of arsenic (14.7 mg/kg) and chromium (122 mg/kg) substituted for their respective ESLs, as discussed previously in Sections 2.4 and 2.5.2 (Table 4b). Figures 8 and 9 show the distribution of cut soil samples with concentrations exceeding residential and commercial/industrial ESLs, respectively. Concentrations of arsenic exceed the site-specific ambient concentration in 2 of 84 samples, and concentrations of total chromium exceed the site-specific ambient concentration in 21 of 87 samples. The metals cadmium (13 of 91 samples), lead (25 of 92 samples), and nickel (15 of 93 samples) exceed their

Respective residential ESLs, while only a few samples contained antimony, barium, cobalt, copper, mercury, thallium, or zinc at concentrations exceeding their respective residential ESLs (Table 4b). Nine samples contained lead and six samples contained nickel at concentrations above the commercial/ ndustrial ESLs and no more than two samples contained antimony, cadmium, or cobalt at concentrations exceeding the commercial/industrial ESLs (Table 4b).

TEPH as hydraulic fluid exceeds the residential ESL in 9 of 29 samples (Table 4b). PAHs, primarily benzo(a)pyrene (17 of 44 samples), were detected at concentrations exceeding their respective residential ESLs (Table 4b). Figure 5 shows the distribution of cut soils with detections of TEPH and PAHs, as discussed in Section 4.2.1. PCBs were detected at concentrations above the residential ESL in 3 of 19 samples. TEPH, PAHs, and PCBs did not exceed the commercial/ industrial ESLs in cut soils.

One of the Stage 1 cut soil samples collected from soil boring SB-6, where significant amounts of greenstone or serpentinite fragments were observed, was analyzed using polarized light microscopy (PLM) for asbestos fibers. The results of the PLM analysis indicated the sample from boring SB-6 contained approximately 2% asbestos, indicating that further evaluation of asbestos in fill materials was warranted. Therefore, 20 randomly selected Stage 2 samples of cut soils were analyzed using PLM for asbestos fibers. If asbestos was detected using PLM, samples were analyzed using the California Air Resources Board (CARB) method 435, which consists of a point-count of asbestos fibers. Therefore, twenty samples of Stage 2 cut soil samples were randomly selected for further testing of asbestos. The results of the asbestos testing are presented in Appendix C. The results of the PLM testing of Stage 2 cut soil samples indicated that three of the twenty samples contained detectable amounts of chrysotile asbestos. The results of the CARB-435 point counts for these three samples indicated they contained trace (less than 0.25%) to 0.50% asbestos. Two of the samples containing measurable asbestos were from soil borings SB-32 and SB-35, located in the northwest sub-area, and the sample with trace asbestos was from soil boring SB-54, located near the shoreline in the northeast sub-area.

4.2.3 Comparison of Chemicals of Concern in Upland Soils with Screening Criteria

The upland area of the Site will be covered with fill soil that meets not-to-exceed criteria for uplands cover, as discussed in Section 2.5.2. Although this area will be covered, Northgate has compared results for soil samples collected in the uplands area to not-to-exceed criteria to assess potential reuse of these soils as either wetlands or uplands cover. The analytical results of upland soil samples are presented in Tables 3a through 3g (the samples are designated as "Upland" in the column labeled "Design Layer"). As shown in these tables, concentrations of metals and organic

compounds (PAHs, pesticides, PCBs, and SVOCs) in upland soil samples are below detection limits or below ESLs for residential land use, with the exceptions of the PAH benzo(a)pyrene, which exceeds the residential ESL of 38 ug/kg at two locations, and TEPH, which exceeds the residential ESL of 500 mg/kg at two locations.

5.0 DISCUSSION AND RECOMMENDATIONS

This section summarizes the results of groundwater and soil investigations and discusses the options for on-site reuse, treatment, and management of cut soils.

5.1 Groundwater

Groundwater samples were collected from 23 locations, and with the exception of two localized areas, groundwater is not impacted by chemicals detected in fill. Stage 2 results showing no impact to groundwater, except as noted, are consistent with the previous Stage 1 results. The two localized areas where chemicals were found to be present in groundwater include the following:

- Dissolved nickel (up to 82 mg/L] compared to the screening criterion of 8.2 mg/L for protection of aquatic habitats) and one detection of dissolved lead (5.4 mg/L compared to the screening criterion of 2.5 mg/L) in a limited portion of the northwest sub-area defined by three adjacent sampling locations within approximately 150 feet of each other; and
- TEPH characterized as hydraulic oil in groundwater at one location in the vicinity of a suspected sump in the northeast sub-area.

In both of these areas the dissolved chemical concentrations are well defined and have not migrated significantly downgradient. Chemically impacted soil in these limited areas will be removed, treated, as necessary, to reduce leachability of chemicals, as discussed below, or will be disposed off-site.

5.2 Options for Reuse, Treatment, or Disposal of Cut Soils

The Phase II investigations assessed the occurrence, nature, and extent of chemicals of concern in fill that will be removed to construct the wetlands (cut soils). The potential suitability of cut soils for reuse as wetland or upland cover is evaluated in this report. Construction of the planned wetland is expected to generate approximately 217,000 cubic yards of cut soils, which will need to be classified and managed in accordance with applicable regulations. An estimated excess of approximately 151,000 cubic yards of cut soils will be generated that will need to be hauled off-site for disposal. During construction, we anticipate that cut soils will need to be screened to remove debris, carefully stockpiled, and segregated for additional confirmation testing prior to reuse on-site. The RWQCB's interim guidelines for beneficial reuse of dredged sediment and ESLs will be used as a guide, in consultation with RWQCB staff, for decision-making regarding reuse of cut soils for on-site purposes (e.g., wetland creation, recreation, construction, etc).

Cut soils that do not meet appropriate criteria for reuse as wetland or upland cover, as discussed below, will be placed in the uplands and covered with cut soils that meet appropriate uplands cover criteria, or will be disposed off-site. The two localized areas of the Site where chemicals were found to be soluble (detected in groundwater) will be removed and/or treated to reduce the chemical solubility of the soils and these soils will either be reused onsite or disposed of at an appropriate off-site landfill facility.

We propose to use the RWQCB's ESLs for residential direct exposure (modified with site-specific ambient criteria for arsenic and chromium) to evaluate cut soils for reuse as cover in upland areas of the Site, including the planned picnic area. Alternatively, criteria for recreational land use may be developed, in consultation with the RWQCB, for upland cover soils. If necessary, clean soil meeting these criteria may need to be imported from off-site for use as cover in these areas. These criteria will not apply to areas of the Site that will be covered by a parking lot or visitor center building, where there is limited potential for direct human contact with soil. Cut soils will be carefully managed, stockpiled and retested prior to reuse as cover in the uplands areas of the Site, as discussed in Section 2.5.1. Because chemically-impacted fill will be left in-place (as discussed in Section 2.2 and presented in the August 6, 2004 report on Stage 1 investigations), an important component of this project will require strict adherence to an RMP that will be prepared for the project to describe erosion monitoring and long-term operation and maintenance procedures for the upland and wetland cover layers.

5.3 Wetland Layer Soils

The wetland layer evaluated in this report consists of soil within the 3-foot interval below the planned wetland surface. The thickness of the final wetland cover layer may be 1 to 3 feet, depending on the surface elevation of the wetlands relative to tidal elevations. However, further engineering analysis, including hydraulic modeling, will need to be conducted to properly assess the wetland cover thickness to protect against potential erosion due to tidal currents, rainfall, and runoff that could expose deeper fill below. The engineering design documents will provide final details on the analysis of potential erosion processes. To assess the suitability of the wetland layer soils to support wetland habitat and identify soils that may need to be removed to construct the wetlands, soil analytical concentrations were compared with various screening criteria, including ER-Ms, wetland non-cover criteria, and San Francisco Bay sediment ambient concentrations.

We propose to remove soil from the wetlands layer with concentrations above proposed not-to-exceed criteria consisting of ER-Ms for most chemicals and wetland non-cover criteria for nickel and selenium. We anticipate that this will result in achieving mean (average) concentrations in the wetland layer that are near ambient concentrations in San Francisco Bay sediments. Soil removed from the wetland layer will be replaced with suitable material taken from cut soils or with clean imported fill meeting not-to-exceed criteria for the wetlands.

Cut soils that are being considered for reuse in the wetland cover layer will be stockpiled and tested to ensure that these soils meet the not-to-exceed criteria for reuse in the wetland. Testing of cut soils for reuse in the wetland may also include leachability tests (to be performed using deionized water, Site groundwater, or water collected from Yosemite Slough to represent natural conditions in the wetland) and bioassays if analysis indicates they contain concentrations of chemicals of concern significantly above ambient concentrations for San Francisco Bay sediments. Analytical results for the final wetland layer consisting of cut soils proposed for reuse and wetland layer soils left in-place will be statistically evaluated to ensure that project goals are achieved (i.e., concentrations in the final wetland layer do not exceed the not-to-exceed criteria and the average concentrations are near ambient concentrations for San Francisco Bay sediments).

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APPENDIX D
ACRONYMS

ARB – AIR RESOURCES BOARD

BAAQMD – BAY AREA AIR QUALITY MANAGEMENT DISTRICT

BCDC – BAY CONSERVATION AND DEVELOPMENT COMMISSION

BMPS – BEST MANAGEMENT PRACTICES

CAA – CLEAN AIR ACT

CAAA – CLEAN AIR ACT AMENDMENTS

CCAA – CALIFORNIA CLEAN AIR ACT

CCR – CALIFORNIA CODE OF REGULATIONS

CO – CARBON MONOXIDE

CEQA – CALIFORNIA ENVIRONMENTAL QUALITY ACT

CNEL – COMMUNITY NOISE EQUIVALENT LEVEL

CORPS – UNITED STATES ARMY CORPS OF ENGINEERS

CY – CUBIC YARD

DBA – A-WEIGHTED DB SCALE

DPR – CALIFORNIA STATE PARKS, DEPARTMENT OF PARKS AND RECREATION

ECMP – EROSION CONTROL MANAGEMENT PLAN

EHT – EXTREME HIGH TIDE

EPA – ENVIRONMENTAL PROTECTION AGENCY

ER-M – EFFECTS RANGE – MEDIAN

ESL – ENVIRONMENTAL SCREENING LEVELS

GP – GENERAL PLAN

IS/MND – INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

LEG – LITERACY FOR ENVIRONMENTAL JUSTICE

MHHW - MEAN HIGHER HIGH WATER

MHW - MEAN HIGH WATER

MEI - MAXIMALLY EXPOSED INDIVIDUAL

MLW – MEAN LOW WATER

MSL - MEAN SEA LEVEL

MTL - MEAN TIDE LINE

NOAA FISHERS – NATIONAL OCEANIC ATMOSPHERIC ADMINISTRATION, FISHERIES

NWIC - NORTHWEST INFORMATION CENTER

NO_X – NITROGEN OXIDES

OEHHA – OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT

PAH – POLYNUCLEAR AROMATIC HYDROCARBONS

PCB – POLYCHLORINATED BIPHENYLS

PM – RESPIRABLE PARTICULATE MATTER

PPV – PEAK PARTICLE VELOCITY

ROG – REACTIVE ORGANIC GASES

ROWD - REPORT OF WASTE DISCHARGE

RMP – RISK MANAGEMENT PLAN

RWQCB – REGIONAL WATER QUALITY CONTROL BOARD

SFPUC – SAN FRANCISCO PUBLIC UTILITIES COMMISSION

SHMMP – SOILS HANDLING AND MATERIALS MANAGEMENT PLAN

SQ. FT. – SQUARE FEET

SIP – STATE IMPLEMENTATION PLAN

SRA – STATE RECREATION AREA

SVOC – SEMI VOLATILE ORGANIC COMPOUND

SWRCB – STATE WATER RESOURCES CONTROL BOARD

TEPH – TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

USGS – UNITED STATES GEOLOGIC SURVEY

VDB - VELOCITY LEVEL IN DECIBELS (VDB)

VOC – VOLATILE ORGANIC COMPOUND

VMT – VEHICLE MILES TRAVELED