

BERKELEY/ALBANY FERRY TERMINAL STUDY

Draft EIS/EIR



Prepared by:

URS

October 2008

Prepared for:

WATER EMERGENCY TRANSPORTATION AUTHORITY

WETA

BERKELEY/ALBANY FERRY TERMINAL STUDY

Draft EIS/EIR

Prepared for
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October 2008

**BERKELEY/ALBANY FERRY TERMINAL STUDY
BERKELEY/ALBANY, CALIFORNIA**

**DRAFT ENVIRONMENTAL IMPACT STATEMENT/
DRAFT ENVIRONMENTAL IMPACT REPORT
PREPARED PURSUANT TO:**

National Environmental Policy Act of 1969, §102 (42 U.S.C. §4332); Federal Transit Law (49 U.S.C. §5301(e), §5323(b), and §5324(b)); 49 U.S.C. §303 (formerly Department of Transportation Act of 1966 §4(f)); National Historic Preservation Act of 1966, §106 (16 U.S.C. §470f); Executive Order 11990 (Protection of Wetlands); Executive Order 11988 (Floodplain Management); Executive Order 12898 (Environmental Justice); and California Environmental Quality Act, PRC 21000 *et seq*; and the State of California CEQA Guidelines, California Administrative Code, 15000 *et seq*

by the

**FEDERAL TRANSIT ADMINISTRATION
U.S. DEPARTMENT OF TRANSPORTATION**

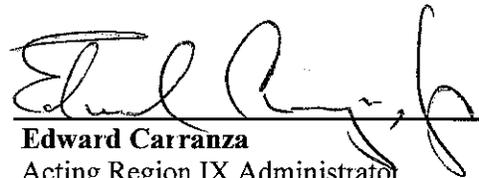
and the

**SAN FRANCISCO BAY
WATER EMERGENCY TRANSPORTATION AUTHORITY**

Date:

10/22/08

For FTA:

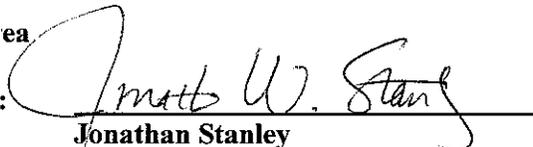


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For San Francisco Bay Area
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Jonathan Stanley
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ABSTRACT

The San Francisco Water Emergency Transportation Authority (WETA) is considering operating new ferry service between the San Francisco Ferry Building and the Berkeley/Albany waterfront. To implement this service, the WETA would construct a ferry terminal and associated waterside and landside facilities for berthing ferry boats and to provide access for ferry patrons. The WETA has identified four potential ferry terminal site alternatives in Berkeley and Albany:

- **Alternative A:** located at the Berkeley Marina, adjacent to the Hornblower dock
- **Alternative B:** located between the landside end of the Berkeley Fishing Pier and Hs Lordships Restaurant
- **Alternative C:** located immediately north of the foot of Gilman Street, adjacent to the Golden Gate Fields horse stables
- **Alternative D:** located on the old pier site at the foot of Buchanan Street adjacent to Golden Gate Fields

Sites A through C are in the City of Berkeley, and Site D is in the City of Albany. Sites A through D represent the proposed project alternatives or “action” alternatives. The No-Action Alternative – if the ferry terminal project were not implemented – includes the existing transportation network within the study area and funded transportation improvements. It serves as a baseline of comparison for analyzing impacts generated with and without the project.

Purpose of the Project

The purpose of studying a ferry terminal site along the Berkeley/Albany Waterfront is to expand ferry service on San Francisco Bay, as established in the WETA Implementation and Operations Plan, and to respond to the deficiencies in the transportation network.

Environmental Evaluation

The Draft EIS/EIR examined potential transportation, social, economic, and environmental impacts generated by the No-Action and Action Alternatives. With the exception of traffic impacts in the study area, the No-Action Alternative would not produce construction or operations impacts generated by the new ferry service. However, the transportation and environmental benefits of the Action Alternatives would not occur under this alternative nor would the project Purpose and Need be addressed. In contrast, all Action Alternatives provide beneficial impacts to the environment by establishing an additional modal alternative to driving into San Francisco from the Berkeley/Albany area, thereby removing cars from congested roadways. The Action Alternatives also provide a means to cross the Bay during a catastrophic event that disables the Bay Bridge or BART tube. The plans for the ferry terminal incorporate pathways for pedestrians and bicyclists that enhance the operation of the Bay Trail. Mitigation strategies to reduce anticipated impacts are presented in the Executive Summary and Chapter 5 of the Draft EIS/EIR. Several adverse impacts for Alternatives C and D are identified as unmitigable.

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A 45-day period has been established for comments on this document. Comments may be submitted in writing or may be made orally at the public hearing(s). Written comments should be submitted to John Sindzinski at the address above between October 31, 2008, and December 16, 2008. Information on the public hearing can be obtained from the Water Emergency Transportation Authority.

PREFACE

This Environmental Impact Statement/Environmental Impact Report (EIS/EIR) is prepared pursuant to the requirements of both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). There are a number of differences between the guidelines for CEQA and NEPA that affect reporting in this document. CEQA provides an Initial Study Checklist (Appendix G of the State CEQA guidelines) that describes thresholds for determining significance for environmental topics. These thresholds, along with other local requirements that were used throughout the analysis, are presented in Chapter 5, Table 5-1, CEQA Significance Criteria. CEQA requires identification of and mitigation for significant adverse impacts in an EIR, while under NEPA, measures to avoid, minimize or mitigate affects are considered for all of the adverse impacts of a project regardless of significance. Another important difference between CEQA and NEPA is that CEQA primarily considers impacts to the physical environmental, while NEPA includes impacts to the human environment, such as socioeconomic impacts and environmental justice.

The affected environment or existing conditions are described in Chapter 3, while in Chapter 4 of this combined NEPA/CEQA document, construction, operational and cumulative impacts are described for each of the alternatives, and mitigation measures are described wherever practicable to reduce identified adverse impacts. Specific discussion of the level of impact significance before and after mitigation and or improvement measures, as well as a summary of unavoidable significant impacts, growth-inducing impacts, and cumulative impacts in accordance with CEQA is provided in Chapter 5. The Evaluation of Alternatives Chapter (Chapter 6) summarizes the trade-offs among the four Action Alternatives to provide decision makers information to choose the preferred alternative.

Technical studies, which were prepared as part of the environmental analysis for the project, are available for review by appointment at the Water Emergency Transportation Authority, Pier 9, Suite 111, San Francisco, CA 94111, (415) 291-3377.

**BERKELEY/ALBANY FERRY TERMINAL STUDY
DRAFT EIS/EIR**

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LIST OF ACRONYMS AND ABBREVIATIONS

AASHTO	Association of State Highway and Transportation Officials
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AC Transit	Alameda–Contra Costa County Transit District
ACCMA	Alameda County Congestion Management Agency
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
AFD	Albany Fire Department
ANSI	American National Standards Institute
APE	Area of Potential Effects
APD	Albany Police Department
ARA	Avocet Research Associates
ASC	ambient sediment concentrations
AUSD	Albany Unified School District
AWSC	all-way STOP-controlled
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BCDC	Bay Conservation and Development Commission
BFD	Berkeley Fire Department
BLA	Bicycle Lane Account
BMP	best management practice
BPD	Berkeley Police Department
BUSD	Berkeley Unified School District
CAAA	Clean Air Act Amendments
CAAQS	California Ambient Air Quality Standards
Cal-OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CDPR	California Department of Parks and Recreation
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH ₄	Methane
CHE	Coast & Harbor Engineering
CHRIS	California Historical Resources Information System
CNA	Community Noise Analyzer
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level

CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
COBTMD	City of Berkeley Toxics Material Division
CORRACTS	RCRA Corrective Action Plan
CRHR	California Register of Historic Resources
CSI	Cambridge Systematics, Inc.
CWA	Clean Water Act
DARP	Damage Assessment and Restoration Program
dB	decibel
dBA	A-weighted decibel
DDT	dichloro-diphenyl-trichloroethane
DMMO	Dredged Material Management Office
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EB	eastbound
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Parks District
EDR	Environmental Data Registry
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
EMT	Emergency Medical Technician
EO	Executive Order
EPC	Engineering, Procurement, and Construction
ERL	effects range-low
ERM	effects range-median
ESU	evolutionarily significant unit
°F	degrees Fahrenheit
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FMDS	Field Measurement Data Sheet
FTA	Federal Transit Administration
GHG	greenhouse gases
HCM	Highway Capacity Manual
HMBP	Hazardous Materials Business Plan
HMMA	Hazardous Materials Management Act
HP	horsepower
I-80	Interstate 80
I-580	Interstate 580
IOP	Implementation and Operations Plan
km	kilometers
kV	kilovolt
kwh	kilowatt hour
L#	x percentile distribution of sound level

L _{dn}	day-night average sound level
L _{eq}	equivalent sound level
L _{max}	Maximum sound level
L _{min}	Minimum sound level
LOS	Level of Service
LPA	Locally Preferred Alternative
LT	long-term
LTMS	Long-Term Management Strategy
LUST	Leaking Underground Storage Tank
LWCFA	Department of Interior Land and Water Conservation Fund Act
MEI	maximally exposed individual
MGD	million gallons per day
µg/kg	micrograms per kilogram
mg/kg	milligrams per kilogram
µg/L	micrograms per Liter
mg/L	milligrams per Liter
µg/m ³	micrograms per cubic meter
mg/m ³	milligrams per cubic meter
MHHW	mean higher high water
MHW	mean high water
µm	micrometers
mm	millimeter
mm/yr	millimeters per year
M _L	Local Magnitude
MLLW	mean lower low water
MMI	Modified Mercalli Intensity
µPa	microPascal
mph	miles per hour
MPRSA	Marine Protection, Research, and Sanctuaries Act of 1972
MTC	Metropolitan Transportation Commission
M _w	Moment Magnitude
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NMSA	National Marine Sanctuaries Act
NO ₂	nitrogen dioxide
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOP	Notice of Preparation
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places

NVIC	Navigation and Vessel Inspection Circular
O ₃	Ozone
OPA	Oil Pollution Act
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PAHs	Polyaromatic Hydrocarbons
PCB	polychlorinated biphenyl
PG&E	Pacific Gas & Electric Company
pg/L	picograms per Liter
PM ₁₀	particulate matter less than 10 µm in diameter
PM _{2.5}	particulate matter less than 2.5 µm in diameter
ppm	parts per million
PRC	Public Resources Code
psu	practical salinity units
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
RM	Regional Measure
RMP	Regional Monitoring Program
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
SAP	Sampling and Analysis Plan
SARA	Superfund Amendment and Reauthorization Act
SCR	selective catalytic reduction
SF-DODS	San Francisco Deep Ocean Disposal Site
SFEI	San Francisco Estuary Institute
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLIC	Spills, Leaks, Investigation and Cleanup
SO ₂	sulfur dioxide
SO _x	oxides of sulfur
SPL	sound pressure level
ST	short-term
SW/LF	Solid Waste Facilities/Landfill Sites
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TIP	Transportation Improvement Plan
TMA	Transportation Management Association
TMDL	Total Maximum Daily Load
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCG	U.S. Coast Guard
U.S. DOT	U.S. Department of Transportation
U.S. EPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
v/c ratio	volume to capacity ratio

VTS	Vessel Traffic Safety
WB	westbound
WBS	West Berkeley Shuttle
WETA	Water Emergency Transit Authority
WGNCEP	Working Group on Northern California Earthquake Potential
WTA	Water Transit Authority
WWTP	Wastewater Treatment Plant

EXECUTIVE SUMMARY

INTRODUCTION

In January 2008, the San Francisco Water Transit Authority (WTA) was superseded by the newly created San Francisco Water Emergency Transit Authority (WETA). WETA is considering operating new ferry service between the San Francisco Ferry Building and the Berkeley/Albany waterfront. To implement this service, the WETA would construct a ferry terminal and associated waterside and landside facilities for berthing ferry boats and to provide access for ferry patrons. Four potential ferry terminal site alternatives in Berkeley and Albany have been identified (Figure ES-1):

- **Alternative A:** located at the Berkeley Marina, adjacent to the Hornblower dock
- **Alternative B:** located between the landside end of the Berkeley Fishing Pier and Hs Lordships Restaurant
- **Alternative C:** located immediately north of the foot of Gilman Street, adjacent to the Golden Gate Fields horse stables
- **Alternative D:** located on the old pier site at the foot of Buchanan Street adjacent to Golden Gate Fields

Sites A through C are located in the City of Berkeley, and Site D is located in the City of Albany.

Sites A through D represent the proposed project alternatives or “action” alternatives. The No-Action Alternative – if the ferry terminal project were not implemented – includes the existing transportation network within the study area and funded transportation improvements. It serves as a baseline of comparison for analyzing impacts generated with and without the project.

PURPOSE AND NEED

PURPOSE OF THE PROJECT

The purpose of studying a ferry terminal site along the Berkeley/Albany Waterfront is to enhance mobility and transportation choices of East Bay residents and to respond to the deficiencies in the Transbay transportation network as described below. The Metropolitan Transportation Commission (MTC) is seeking ways to augment Transbay capacity, which is limited by the throughput constraints of the Bay Bridge and Transbay Tube, and vulnerable to emergency situations that obstruct or close the use of these facilities. In addition, the provision of alternative transportation modes is a regional goal to reduce the use of private automobiles for Transbay trips, thereby diminishing emissions and decreasing congestion on the regional roadway system. Similarly, providing San Francisco residents with alternative modes of travel to access state and regional parklands and other destinations in the East Bay would help meet these regional goals.

NEED FOR THE PROPOSED PROJECT

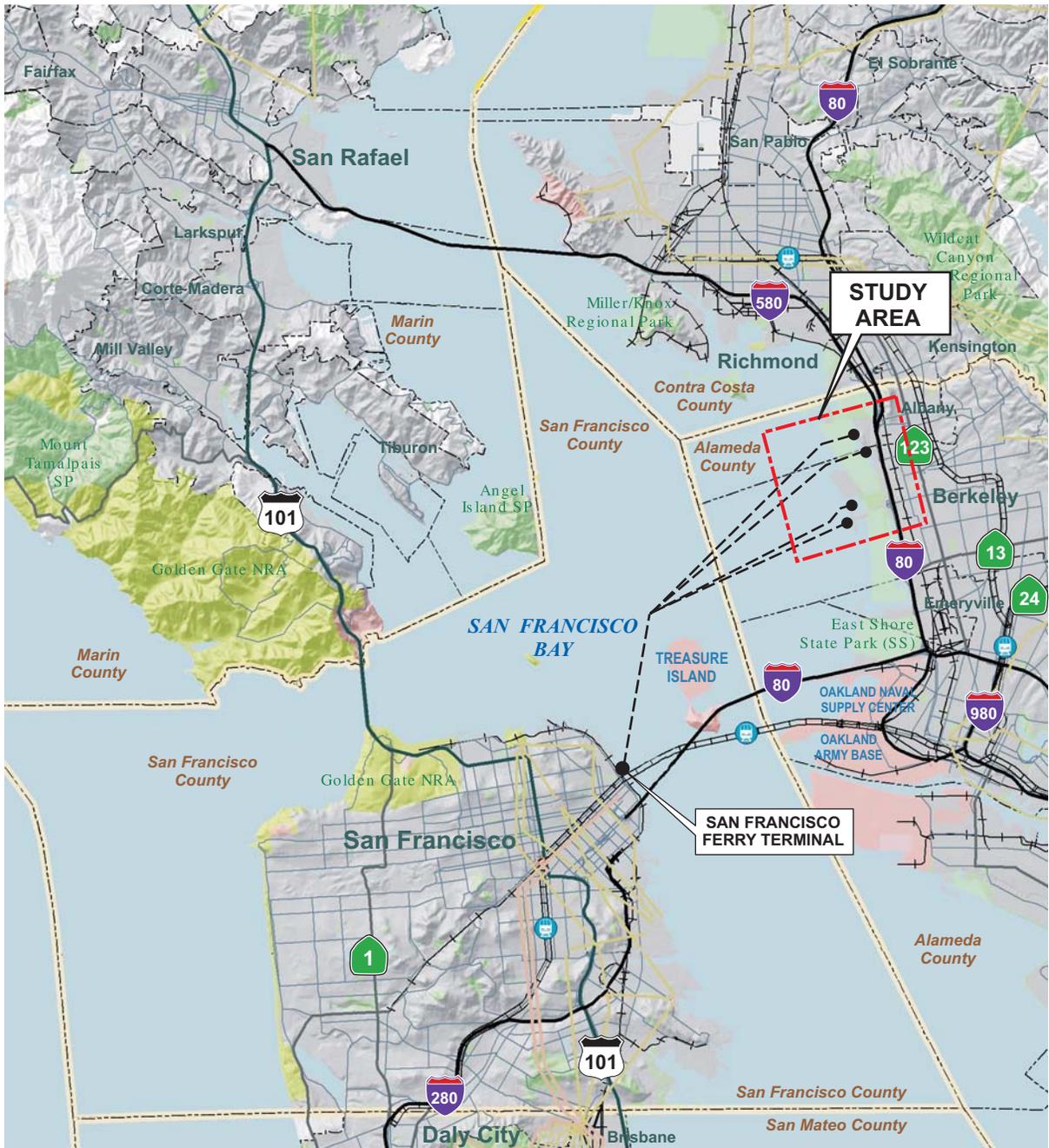
Current and Future Transbay Roadway Congestion

Between now and 2025, the Bay Area is expected to gain 1.4 million residents and 1.2 million jobs. During this time, downtown San Francisco employment will increase to 346,000 jobs, and remain one of the primary employment centers of the region (San Francisco Planning Department, 2001). The MTC estimates that the Bay Bridge corridor will have substantial growth in the number of daily person trips, increasing from 590,000 to 772,000 in 2025, and in vehicular traffic (from 300,000 vehicles to 425,000 vehicles per day), (MTC, 2002). This increase will aggravate travel delay along Interstate 80 (I-80) in the project area. California Department of Transportation's (Caltrans') 2002 Bay Area Freeway Congestion Data indicate that the Eastshore Freeway currently has a daily delay of 24,550 vehicle hours and 49.0 directional miles of congestion, and was ranked number one for vehicle delay in the regional roadway network. By 2025, the Bay Bridge is expected to have 73,400 peak-period vehicle hours of delay, extending morning congestion at the Bay Bridge Toll Plaza from 4 to nearly 5 hours, (MTC, 2002). The delays on the Bay Bridge and I-80 affect goods movement, particularly traveling from the Port of Oakland, and automobile travel.

Current and Future Transbay Transit Capacity

The overall mode split for journeys to work into downtown San Francisco was 54 percent transit, 30 percent drive-alone, and 16 percent ride-share (Badiner, 1995). East Bay residents, comprising one-fourth of downtown San Francisco workers, were second only to San Francisco residents in using transit for their downtown commute trips. Fifty-five percent of commute trips to downtown San Francisco were made via transit, which indicates the availability of transit and the willingness of East Bay residents to forego automobiles in favor of transit.

Transit carries approximately 160,700 Bay Area Rapid Transit (BART) patrons, 15,200 Alameda County (AC) Transit bus passengers, and 4,000 ferry patrons between the East Bay and San Francisco. Ferry patrons use two operating ferry services—Alameda/Oakland and Vallejo—to travel between the East Bay and San Francisco. By 2025, BART will carry 254,000 daily riders, AC Transit's Express Bus service will carry 19,800 passengers, and Ferry services will carry 7,060, or 36 percent of Bay Bridge corridor trips. Carpools, carrying 105,000 people, will capture 14 percent of these trips (MTC, 2002). BART serves crossbay destinations very effectively, carrying substantial numbers of passengers. The BART transbay tube currently has capacity for 30 trains per hour—only eight more than BART currently operates during the peak hour. The BART system is forecast to be able to handle demand between now and 2025 (URS, 2003); however, San Francisco station loading times and slow travel times through the Market Street subway affect the capacity of the transbay tube, and will increasingly do so as BART service increases to meet demand. AC Transit and carpools, the other major alternative means of travel across the Bay into San Francisco, are subject to the traffic delays mentioned in the previous section. Installation of high-occupancy vehicle or bus lanes on the Bay Bridge is not currently planned; therefore, crossbay ferry service can supplement existing transbay transit service with a modal alternative that offers less constrained operations.



STUDY AREA

SAN FRANCISCO FERRY TERMINAL

LEGEND

- Alternative Berkeley/Albany Terminal Locations
- Potential Berkeley/Albany - San Francisco Ferry Route



0 1 2 3 4 5 Miles

0 1 2 3 4 5 Kilometers

NAD 1983 UTM Zone 11N

GENERAL LOCATION MAP

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FIGURE ES-1

Disaster Response

Water transit provides a viable alternative for transporting people around the region when unexpected and long-term disruption renders other components of the regional transportation system inoperable. Disastrous events that have disrupted the transportation system have occurred several times during the past 25 years. After the Loma Prieta earthquake damaged the Bay Bridge, water transit service using excursion vessels was established to supplement BART service between the East Bay and San Francisco, including temporary routes from Berkeley and Richmond. The WETA is currently updating the 1996 *MTC Regional Ferry Contingency Plan* (now called the *Regional Maritime Contingency Plan*) to reflect emergency measures for maritime traffic in addition to ferries. The Plan will also assess current emergency-response assets, develop viable contingencies for a variety of possible emergencies and disasters, and create a workable business resumption plan for the local maritime community.

Regional Air Quality Issues

The San Francisco Bay Area's air quality has improved in recent years, largely in response to technological improvements in motor vehicles and less polluting fuels. The project study area is within the Bay Area Air Basin (BAAB), which is monitored by the Bay Area Air Quality Management District (BAAQMD). According to the BAAQMD, the BAAB is designated nonattainment for ozone (O₃) with respect to federal and California standards, and nonattainment for particulate matter 10 microns in diameter or smaller (PM₁₀) under California standards. The WTA Programmatic Environmental Impact Report (EIR) found that a regional ferry system would result in a net decrease in nitrous oxide (an ozone precursor), carbon monoxide, and PM₁₀. In addition, new ferryboats are planned to have low-emission engines, reducing carbon dioxide emissions.

Public Access to Eastshore State Park and the Bay Trail

Shoreline parks and trails are being developed along the Berkeley/Albany Waterfront. Two major efforts are under way: the implementation of the Eastshore State Park, and the completion of the Bay Trail along the Eastshore. The Eastshore State Park will ultimately include 1,817 acres of land and water along the shoreline between Emeryville and Richmond, securing more than 5 miles of public access with spectacular views of San Francisco Bay. Additions to the San Francisco Bay Trail within the Eastshore State Park area are now under construction. The Park and Trail are regional resources that are accessed primarily via the existing roadway network. Ferry service from San Francisco could provide expanded access to Eastshore State Park and the Bay Trail without adding to regional vehicle trips.

PROJECT OBJECTIVES

The objectives for the Berkeley/Albany Ferry Project include:

- Providing an alternative transbay public transportation mode between the East Bay and San Francisco that is convenient and reliable for commuters, midday riders, recreation users, and tourists;
- Carrying out the plans established in the regional ferry system Implementation and Operations Plan (IOP) and the provisions of RM-2;
- Providing ferry terminal facilities in the East Bay that conform with local and regional plans and policies;
- Minimizing ferry implementation and operation impacts on the Bay shoreline, water quality, water life, and recreational activities;
- Providing convenient access to the terminal site while minimizing traffic and circulation impacts; and
- Developing community and agency support.

ALTERNATIVES

This document analyzes four Action Alternatives (Alternatives A-D) and a No-Action Alternative for the potential ferry terminal site. These alternatives are described below.

No-Action Alternative

In the No-Action Alternative scenario, existing ferry services, land-based transit services, and roadways would remain in their present state with no new improvements other than those that have been programmed and funded through 2012.

Action Alternatives

Fixed Pier and Terminal Facilities Common to All Action Alternatives: The four ferry terminal sites would each include:

- A pier for berthing two vessels and for loading and unloading ferry patrons;
- A covered waiting area containing ticket vending machines and passenger amenities;
- Walkways and pedestrian access areas;
- Bus or shuttle boarding and car drop-off zones;
- A lighted parking area for approximately 400 cars; and
- Dredged channels.

Although the site plans for each ferry terminal alternative may vary, the design of the terminal facility would be the same for each as described below. All facility elements comply with the California Building Code (CBC), applicable local Building Codes, and Americans with Disabilities Act (ADA). For example, the gangway connecting the fixed pier with the float where ferries are

docked would be 92 feet long and 10 feet wide to conform to ADA guidelines. Specific ADA design features for the terminal, pedestrian walkway, and parking areas are presented in Appendix G.

The pier deck would be constructed with cast-in-place reinforced concrete up to 12 inches thick or pre-cast hollow core deck panels at least 8 inches thick. Flooring would have low maintenance non-slip finishes. Piles supporting the fixed pier would be made from 24-inch octagonal precast, prestressed concrete. The adjoining landside terminal plaza area would be constructed with reinforced concrete slab.

The terminal passenger waiting area would have a canopy structure over the fixed pier. The canopy would be elevated approximately 15 feet above the top of the deck, covering the width of the pier (approximately 17 feet wide). The canopy would use a steel frame and exposed wood for the roof/wall sheathing and standing seam metal roof. Glass windows would provide protection from the elements.

Because of the short average anticipated passenger wait times, furnishings would be limited to benches, automated ticketing vending machines, lighting, and the provision for a closed-circuit television system. Change machines, automated teller machines, newspaper vending machines, and automatic passenger and bicycle turnstiles in the terminal design may also be included. All furnishings placed on the pier would be arranged to allow for unimpeded passenger flow.

Each site would require a 150-foot-wide dredged channel to a depth of 10 feet below mean lower low water (MLLW) that would extend to the existing MLLW depth in the Bay. The dredged volumes for each site would vary according to the length and depth of the dredging requirements, as indicated in Table ES-1.

**Table ES-1
Dredging Information**

Alternative	Dredging Volume (cubic yards)	Dredging Area (acres)	Perimeter (ft)
A	110,000	57.8	29,795
B*	150,000	59.2	29,273
C	240,000	48.0	25,424
D	280,000	42.8	22,037

* With breakwater

Information specific to each site alternative, including site plan illustrations, is presented in the following sections. The site plans indicate pier and terminal siting, landside circulation, pedestrian access, and drop-off and parking areas. These facilities will be designed to meet federal ADA, state and local standards. The site plans are conceptual, reflecting a limited (10 percent design) level of engineering. Detailed dimensions for parking areas, bicycle and pedestrian circulation paths, and loading/drop-off zones are not stipulated, but will be incorporated into the preliminary engineering plans (30 percent design) after the preferred alternative is chosen and the next phase of project development commences. Designated parking

areas, described for each alternative below, would be the subject of negotiation between WETA and the property owner for transferring control of and responsibility for the parking areas to WETA. The negotiations would occur after WETA selects the site to be the preferred alternative. More detailed information about each site alternative is presented in the sections below.

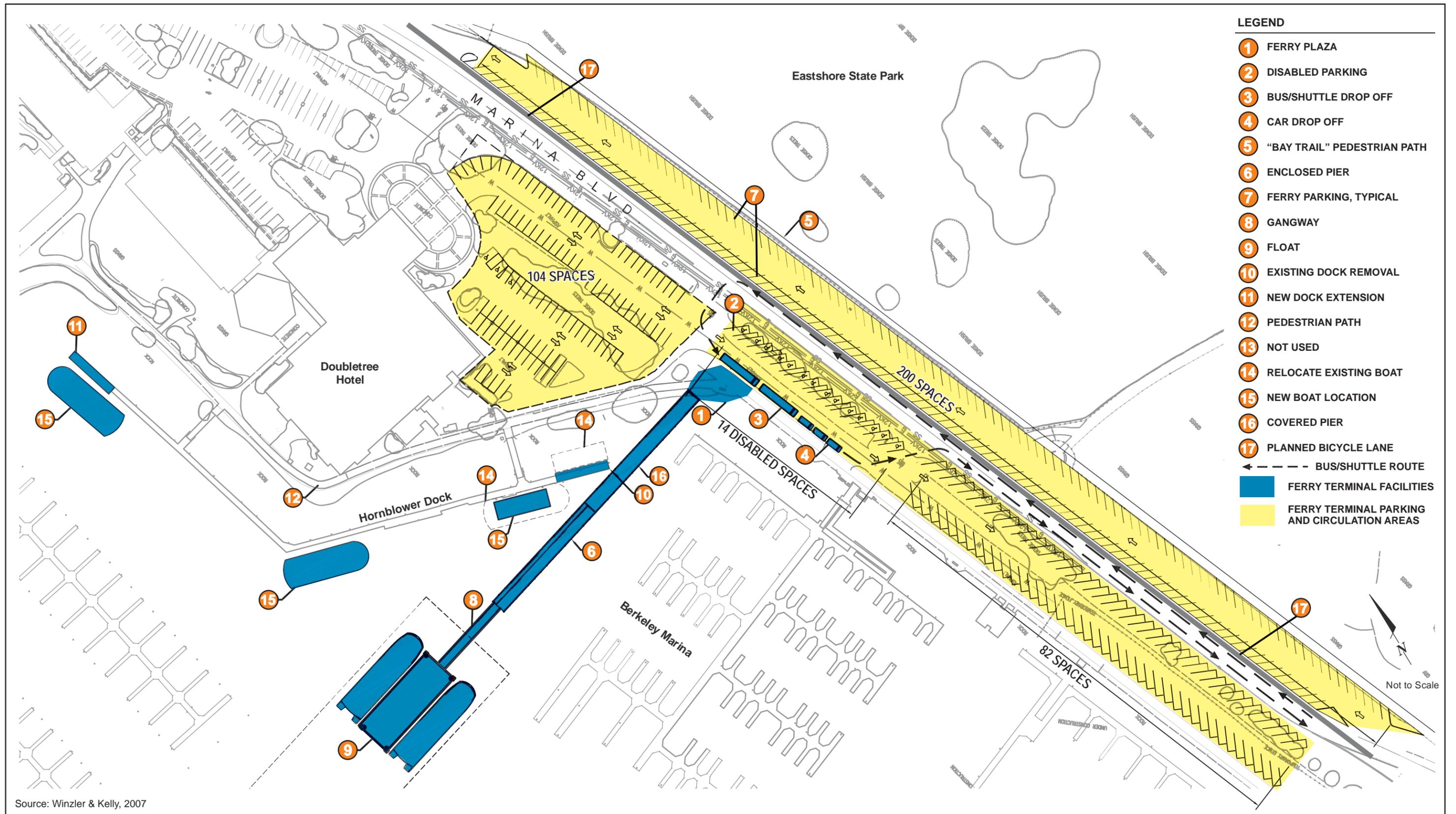
Alternative A: Berkeley Marina

The Berkeley Marina is located off of the west end of University Avenue. The Berkeley Marina was constructed on artificial fill approximately 40 years ago and currently occupies approximately 100 acres of land (52 acres of water). Existing Berkeley Marina facilities include a fuel dock, bait and tackle shop, commercial sport fishing boats, sailing club concessions, and the Berkeley Yacht Club. The Doubletree Hotel, Cesar Chavez Park, and the Shorebird Nature Center are nearby. The Berkeley Marina currently maintains a channel depth of -7 feet mean lower low water (MLLW) and a depth within the Berkeley Marina of approximately -15 feet (City of Berkeley, 2006). The offshore portion of the Berkeley Marina site has approximately 5 to 10 feet of Bay Mud (CDM, 1969). The ferry route would require a water depth of -10 feet at MLLW.

The pier would extend from the existing rock wall embankment near the dock for Hornblower vessels and the Doubletree Hotel (Figure ES-2). Because the ferry pier would be within 4 feet of the Hornblower dock, the Hornblower dock would be extended to the north by approximately 60 feet and the portion closest to the embankment would be removed, providing a lateral separation of 36 feet between the two piers. Docking would be relocated to accommodate the same number of Hornblower vessels along the pier. Existing gangway access to the dock would remain unchanged. To avoid boat circulation conflicts, the ferry pier would be extended into the Berkeley Marina basin 522 feet from the shoreline, approximately 150 feet longer than the piers in the other alternatives (Winzler & Kelly, 2007). The pier would contain an enclosed terminal, the gangway connecting the terminal with the float, and docking space for two ferries. No other Berkeley Marina facilities would have to be relocated to implement this alternative.

The pier would abut a landside plaza along Marina Boulevard at the southern edge of the current parking area for the Doubletree Hotel. Along the ferry plaza curb would be space for two buses or shuttles and three cars to drop off and pick up passengers. A one-way designated circulation system would allow cars, shuttles, and buses to enter and exit the drop-off area without interfering with through traffic on Marina Boulevard.

Immediately across the bus/shuttle and car curbside loading zone would be 14 parking spaces for disabled persons. An additional 282 parking spaces would be created on both sides of Marina Boulevard, in the existing gravel area adjacent to the Eastshore State Park fence and along the embankment. To provide a total of 400 project-related parking spaces, spaces to accommodate 104 cars would be established on the existing parking area adjacent to the Hornblower pier and the Doubletree Hotel. Lighting and pedestrian pathways would link the ferry plaza with the bus/shuttle zone and parking areas to the east and north. Sufficient space along the boundary with the Eastshore State Park would be maintained to allow continuation of the Bay Trail in this area.



SITE PLAN – SITE A BERKELEY MARINA

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FIGURE ES-2

Alternative B: Berkeley Fishing Pier

The Berkeley Pier was built in 1929, and extended 3 miles into the Bay to allow for large transbay ferries. Ferry service was terminated in 1936 with the opening of the Bay Bridge; shortly after, the pier was given to the City of Berkeley. The first 200 feet of the pier were refinished in 1955, and the next 1,000 feet were refinished in 1962. Currently, 3,000 feet of the pier are maintained and open to the public for fishing and sightseeing (Jones, 2005). The remainder of the pier lies in various states of ruin.

The waterfront between the Berkeley Fishing Pier and Hs Lordships is protected by rock riprap. Approximately 10 to 15 feet of fill overlies approximately 5 to 10 feet of Bay Mud (CDM, 1969). The ferry pier would be located south of the Berkeley Fishing Pier, midway between the Pier and Hs Lordships, extending 352 feet into the Bay from the embankment (Figure ES-3). Because of the ferry pier's exposure to the prevailing winds and waves, a breakwater would be constructed as a single, 300-foot-long structure parallel to and 725 feet from the shore and 370 feet from the end of the float. The breakwater is likely to be constructed of either rock or sheet pile (concrete or steel) at the approximate existing water depth of 7.5 feet. A channel dredged to a depth of 10 feet and extending 10,500 feet (Winzler & Kelly, 2007) would be constructed for ferry operation at this site. The channel would be aligned south of the breakwater into the Bay.

A ferry pier entry plaza would be located on the embankment fronting the bus/shuttle loading zone, but allowing space for the Bay Trail to pass along the embankment. Passenger drop-offs would occur immediately to the north of the bus/shuttle zone, and fourteen disabled parking spaces would be provided along the embankment to the north and south of the drop-off area. Lighting and pedestrian pathways would link the ferry plaza with the bus/shuttle zone and parking areas to the east. Bus/shuttle and passenger drop-off circulation would be separated from vehicular access for the main parking area, which would provide 400 spaces in the existing parking area between Hs Lordships and Skates restaurants along Seawall Drive. Seventy spaces would be retained for Hs Lordships customers. Groves of trees that border the existing parking area may have to be removed to allow sufficient area to provide parking and circulation that would be shared with restaurant patrons. Buses, shuttles, and cars dropping off passengers will continue south to a traffic circle located at the end of Seawall Drive near Hs Lordships before reversing direction.

Alternative C: Gilman Street

The Gilman Street site is located at the southern end of the Golden Gate Fields property, north of the foot of Gilman Street. It is near the Gilman Street Playing Fields currently being constructed by the City of Berkeley on the south side of Gilman. While the shoreline in the area is largely armored by poured concrete, the Eastshore State Park General Plan (CDPR, 2002) indicates that the shoreline is to be restored. Offshore at the Gilman Street Site, there is approximately 5 feet of fill overlying approximately 25 feet of Bay Mud (CDM, 1969).

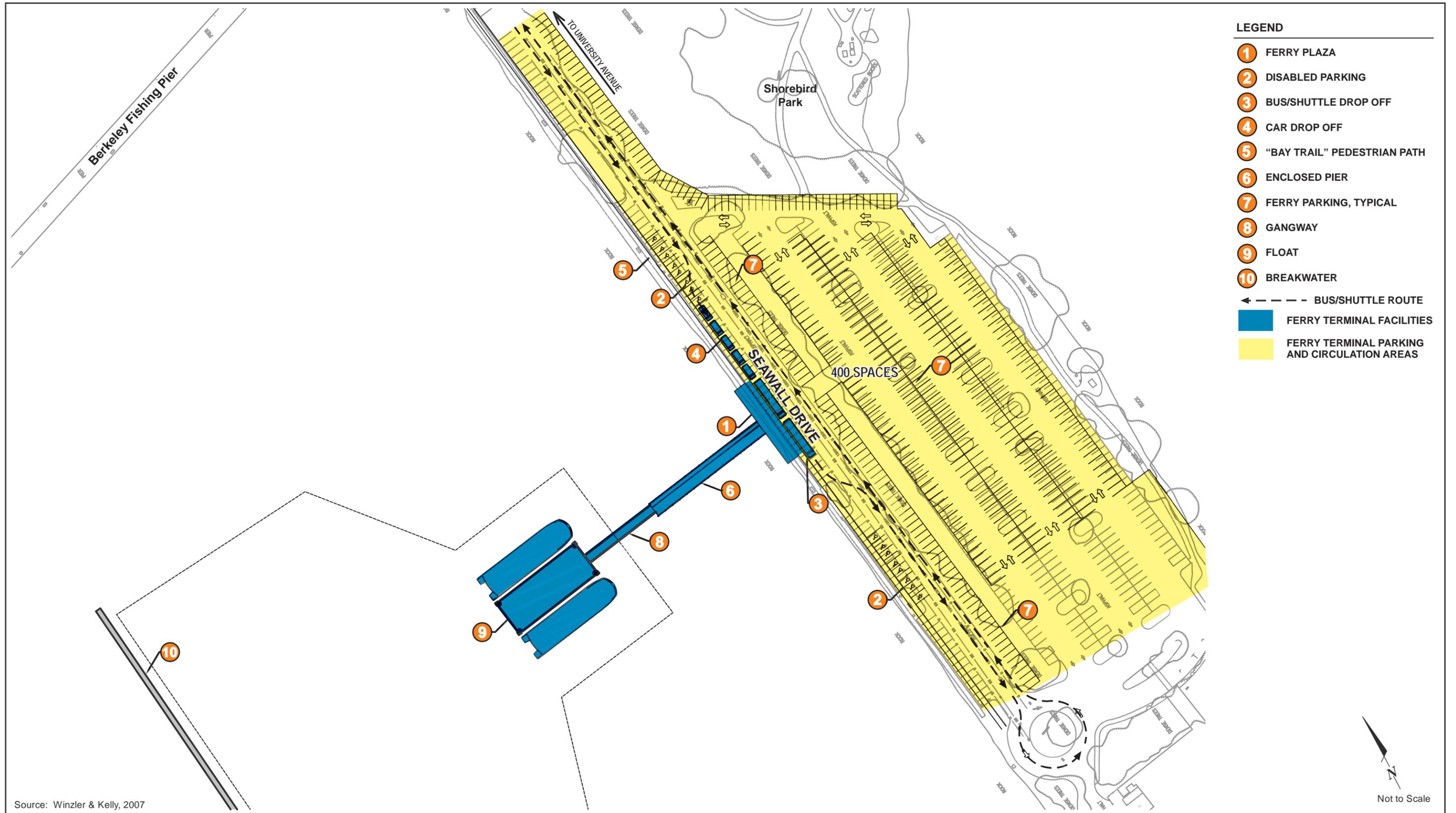
The ferry pier would extend from the embankment, curving west into the Bay for 359 feet (Figure ES-4). Because the depth in this portion of the Bay is shallow, a 10-foot-deep channel would have to be dredged to reach deeper water. This channel would be dredged for 14,300 feet through the Eastshore State Park aquatic park and recreation area into the open Bay. Along the plaza's curbside would be the shuttle loading zone, with a passenger drop-off area immediately to the north. Sufficient area would be provided along the embankment to allow installation and maintenance of the Bay Trail. Thirteen disabled parking spaces would be located across the one-way shuttle and drop-off loop. Lighting and pedestrian pathways would link the ferry plaza with the shuttle drop-off zone and parking areas to the east. An area containing the horse barns located immediately south of Golden Gate Fields would be converted to surface parking to accommodate a total of 401 cars. Designated areas that separate vehicular circulation from parking spaces would be indicated, and improvements would be made to the road connecting the ferry terminal site with Gilman Street (the access road to I-80 and west side Berkeley neighborhoods). None of the parking area associated with the Gilman Street Playing Fields would be used by ferry patrons.

Alternative D: Buchanan Street

The outer approach to the Buchanan Street site is south of the Albany Neck and Bulb, which were formed by filling the Bay with construction debris. The shoreline of the peninsula, and especially the southern shoreline, is armored with concrete debris. Albany Beach, consisting of a small beach and foredunes, is located to the north of the proposed Buchanan Street terminal location, at the old pier site between the Albany Neck to the north and Golden Gate Fields to the south. The shoreline near the potential terminal location is armored with concrete rubble. Offshore, there is approximately 10 feet of fill overlying approximately 20 feet of Bay Mud (CDM, 1969).

The ferry pier would extend from the embankment, curving west into the Bay for 389 feet (Figure ES-5). Because the depth in this portion of the Bay is shallow, a 10-foot-deep channel would have to be dredged to reach deeper water. This channel would be dredged for 14,600 feet through the Eastshore State Park aquatic park and recreation area into the open Bay. The pier would extend 187 feet from a ferry plaza constructed on the embankment to the gangway and float. Along the plaza's curbside would be the shuttle loading zone, with a passenger drop-off area immediately to the north. Sufficient area would be provided along the embankment to allow installation and maintenance of the Bay Trail.

Approximately 400 parking spaces, including sixteen for disabled people, would be provided on the existing Golden Gate Fields parking area north of the racetrack. The disabled spaces would be closest to the ferry plaza. Lighting and pedestrian pathways would link the ferry plaza with the shuttle loading zone and parking areas to the east. The parking area would be encircled by a one-way shuttle and vehicular circulation road that would funnel back to Buchanan Street (the access road to I-80 and the Albany Civic Center).



Source: Winzler & Kelly, 2007

SITE PLAN – SITE B BERKELEY PIER

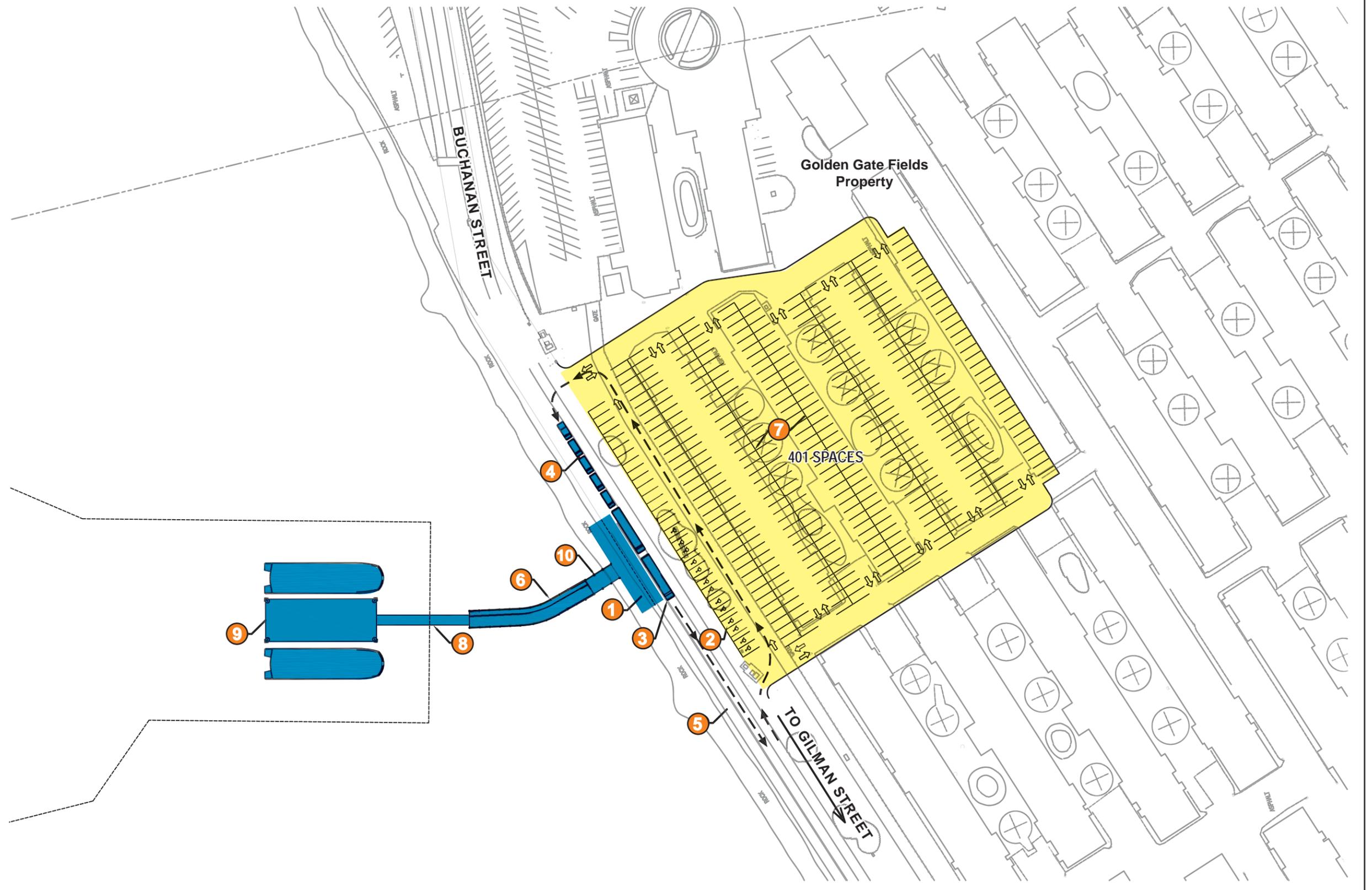
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FIGURE ES-3

LEGEND

- 1 FERRY PLAZA
- 2 DISABLED PARKING
- 3 SHUTTLE DROP OFF
- 4 CAR DROP OFF
- 5 "BAY TRAIL" PEDESTRIAN PATH
- 6 ENCLOSED PIER
- 7 FERRY PARKING, TYPICAL
- 8 GANGWAY
- 9 FLOAT
- 10 NEW DOCK EXTENSION
- ← - - - SHUTTLE ROUTE
- FERRY TERMINAL FACILITIES
- FERRY TERMINAL PARKING AND CIRCULATION AREAS



Source: Winzler & Kelly, 2007

SITE PLAN – SITE C GILMAN STREET

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 Ferry Terminal Study



FIGURE ES-4

LEGEND

- ① FERRY PLAZA
- ② DISABLED PARKING
- ③ SHUTTLE DROP OFF
- ④ CAR DROP OFF
- ⑤ "BAY TRAIL" PEDESTRIAN PATH
- ⑥ ENCLOSED PIER
- ⑦ FERRY PARKING, TYPICAL
- ⑧ GANGWAY
- ⑨ FLOAT
- ⑩ NEW DOCK EXTENSION
- SHUTTLE ROUTE
- FERRY TERMINAL FACILITIES
- FERRY TERMINAL PARKING AND CIRCULATION AREAS

Eastshore State Aquatic Park

Golden Gate Fields Property

400 SPACES



Source: Winzler & Kelly, 2007

SITE PLAN – SITE D BUCHANAN STREET

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Ferry Terminal Study



FIGURE ES-5

ENVIRONMENTAL CONSEQUENCES

Table ES-2 presents a summary of significant and potentially significant impacts for each project alternative, the corresponding mitigation measures for each impact, and the significance level after mitigation, as indicated in Chapter 5. A detailed discussion of these impacts and mitigation measures is included in Chapter 4, Environmental Consequences.

EVALUATION OF ALTERNATIVES

Supporting the Project Purpose and Need

The No-Action Alternative would partially respond to the deficiencies in the transportation network and goals established in the project Purpose and Need by implementing infrastructure improvements that have been identified and funded in the Regional Transportation Plan. The Action Alternatives would more fully support the Purpose and Need by adding an alternative mode of travel for transbay commuters and midday travelers destined for San Francisco or to destinations in the Berkeley/Albany area. The ferry service would provide additional capacity to the already congested transbay transportation network, including the Bay Bridge and the BART transbay tube, and provide emergency access between San Francisco and the East Bay in the event of a catastrophic situation that cripples or shuts down the Bay Bridge or the BART tube.

Inclusion in the Regional Transportation Plan

The MTC “Transportation 2030 Plan for the San Francisco Bay Area,” adopted in February 2005, is the financially constrained Regional Transportation Plan that includes the Berkeley/Albany Ferry Project (#22511). The Plan allots \$22.0 million from the Resolution 3434 Regional Transit Expansion Program and from the Regional Measure 2 Toll Bridge Program for implementation and operation of the new ferry service and terminal facilities.

Environmental Evaluation

With the exception of traffic impacts in the study area, the No-Action Alternative would not produce construction and operations impacts generated by the new ferry service. However, the transportation and environmental benefits of the Action Alternatives would not occur under this alternative nor would the project Purpose and Need be addressed.

In contrast, all Action Alternatives provide beneficial impacts to the environment by establishing an additional modal alternative to driving into San Francisco from the Berkeley/Albany area, thereby removing cars from congested roadways. The Action Alternatives also provide a means to cross the Bay during a catastrophic event that disables the Bay Bridge or BART tube. The plans for the ferry terminal incorporate pathways for pedestrians and bicyclists that enhance the operation of the Bay Trail. Environmental trade-offs among the Action Alternatives are summarized below.

**Table ES-2
Summary of Significant and Potentially Significant Impacts**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.1	Transportation and Circulation				
	Traffic	No-Action	Impact: Existing – 8 of 17 key intersections have substandard operation without project; Future (2030) – 9 of 17 intersections have substandard operation without project.		
		Alternative A	Impact: Existing – 3 of 17 key intersections have substandard operations with project; Future (2030) – 0 of 17 intersections have substandard operation with project.	Mitigation: Existing – signal timing and intersection design modifications; Future (2030) – none required.	Existing: Less than significant, except at University/Frontage Road, which may not be mitigated completely.
		Alternative B	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Existing: Refer to Alternative A.
		Alternative C	Impact: Existing – 0 of 17 key intersections have substandard operation with project; Future (2030) – 2 of 17 intersections have substandard operation with project.	Mitigation: Existing – None required; Future (2030) – None identified.	Future (2030): Unavoidable Significant Impact.
		Alternative D	Impact: Existing – 1 of 17 key intersections have substandard operation with project; Future (2030) – 2 of 17 intersections have substandard operation with project.	Mitigation: Existing – Signal timing and intersection design modifications.	Future (2030): Unavoidable Significant Impact.
	Parking	Alternative A	Impact: Potential to displace existing parking for nearby businesses or residents during construction. This would be an adverse impact.	Mitigation: Alternative parking would be provided, including signage.	Less than Significant
			Impact: Potential to displace existing parking for nearby businesses or residents during operations. This would be an adverse impact.	Mitigation: Parking supply measures, such as provision of additional parking spaces, enforcement of free parking, and a parking availability information system would minimize impacts to a less-than-significant level. WETA would negotiate agreement with property owners for control and responsibility of the designated parking areas. After selection of an LPA, WETA will develop and implement a Parking Mitigation Plan to address potential parking impacts on nearby uses.	Less than Significant

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.1 (cont'd)	Parking (cont'd)	Alternative B	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Alternative C	None identified		
		Alternative D	None identified		
	Transit	Alternative A	Impact: AC Transit service standards would not be affected.	Mitigation: None required.	
		Alternative B	Impact: Potential to adversely affect transit operations during construction.	Mitigation: Flagmen at the construction and staging areas.	Less than Significant
			Impact: AC Transit service standards would not be affected.	Mitigation: None required.	
		Alternative C	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	
		Alternative D	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	
	Bicyclists and Pedestrians	Alternative A	Impact: Potential to adversely affect bicycle and pedestrian circulation during construction. Construction could cause temporary closure of sidewalks and pathways, narrowing of adjacent roadways, and/or degradation of paving surfaces, thereby disrupting bicycle and pedestrian access. This would be an adverse impact.	Mitigation: Access to sidewalks and pathways would be maintained by minimizing closings and providing suitable alternatives during closures. Pavement surfaces would be maintained in the construction zone and appropriate temporary detour signage would be used.	Less than Significant
		Alternative B	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
Alternative C		Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant	
Alternative D		Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant	
4.2	Land Use	Alternative A	None identified		
		Alternative B	None identified		
		Alternative C	Impact: The potential to conflict with existing plans, policies and regulations that govern the areas at and near the ferry terminal alternatives.	Mitigation: Implementation of eelgrass mitigations included in Section 4.9, Biological Resources, would result in compliance with Transportation Policy 5 in the San Francisco Bay Plan.	Less than Significant

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.2 (cont'd)	Land Use (cont'd)	Alternative C	Impact: The potential to conflict with existing plans, policies and regulations that govern the areas at and near the ferry terminal alternatives, in particular compatibility with Eastshore State Park General Plan.	Mitigation: Construction of a ferry terminal on lands under the jurisdiction of the Eastshore State Park General Plan is not permitted, and the Park District has stated that such a project would be difficult to implement. Therefore, this impact cannot be mitigated to a less-than-significant level.	Significant and Unavoidable
		Alternative D	Impact: Refer to second impact for Alternative C.	Mitigation: Refer to second impact for Alternative C.	Significant and Unavoidable
4.3	Socioeconomics	All Alternatives	All impacts less than significant		
4.4	Parklands and Recreational Facilities	Alternative A	None identified		
		Alternative B	None identified		
		Alternative C	Impact: Construction activities at the site would impact "Aquatic Parklands" of Eastshore State Park. According to the Eastshore State Park General Plan, "the park resource must be fully restored to its original condition at the completion of construction and the temporary use of the parkland must terminate before the end of the construction period." Construction of a ferry terminal would not conform to these regulations. This is an adverse impact.	Mitigation: No mitigation for this impact has been identified.	Unavoidable Significant Impact

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.4 (cont'd)	Parklands and Recreational Facilities (cont'd)	Alternative C (cont'd)	Impact: Daily use of the ferry terminal at this site, as well as periodic maintenance dredging for continued ferry operation, would not conform to the regulations of the Eastshore State Park General Plan, and according to Section 4(f) requirements must determine that no feasible and prudent alternatives exist. Also, it is unlikely that a documented agreement to permit this use of the aquatic parkland will be authorized by state officials. This is considered an adverse impact.	Mitigation: No mitigation for this impact has been identified.	Unavoidable Significant Impact
		Alternative D	Impact: Refer to Alternative C.	Mitigation: Refer to Alternative C.	Unavoidable Significant Impact
4.5	Aesthetics and Visual Resources	All Alternatives	All impacts less than significant		
4.6	Cultural Resources	Alternative A	Impact: The potential to adversely affect unknown archaeological resources during construction.	Mitigation: If, during the course of construction within the project area any prehistoric or historic cultural resources (e.g., large amounts of shell, dark soil residues, lithic material, or historic refuse) are discovered, all work in the vicinity must halt, and a qualified archaeologist shall be notified to assess the significance of the find according to CEQA Guidelines Section 5064.5. If any find is determined to be significant, the project proponent and the archaeologist will meet to determine the appropriate avoidance measures or other appropriate mitigation.	Less than Significant

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.6 (cont'd)	Cultural Resources (cont'd)	Alternative A (cont'd)		If human skeletal remains are uncovered during project construction, the project proponent (depending on the project component) will immediately halt work, contact the Alameda County coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the CEQA Guidelines. If the County coroner determines that the remains are Native American, the project proponent will contact the NAHC, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC 5097.98 (as amended by AB 2641). In accordance with PRC 5097.98, the landowner shall ensure that, according to generally accepted cultural or archaeological standards or practices, the immediate vicinity of the Native American human remains is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section (PRC 5097.98), with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.	
		Alternative B	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Alternative C	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Alternative D	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.6 (cont'd)	Cultural Resources (cont'd)	Alternative A	Impact: The project could adversely affect unidentified paleontological resources	Mitigation: In the event that paleontological resources are discovered, the project proponent (depending on the project component) will notify a qualified paleontologist. The paleontologist will document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. If fossil or fossil bearing deposits are discovered during construction, excavations within 50 feet of the find will be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (in accordance with Society of Vertebrate Paleontology standards [Society of Vertebrate Paleontology, 1995]). The paleontologist will notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist will prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important. The plan will be submitted to the project proponent for review and approval prior to implementation.	Less than Significant
		Alternative B	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Alternative C	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Alternative D	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.7	Air Quality	Alternative A	Impact: Construction of the terminal will result in short-term impacts to the existing air quality in the area. These impacts include temporary increases in emissions of CO, CO ₂ , NO _x , PM ₁₀ , PM _{2.5} , ROG, and SO _x . Impacts of construction to air quality are considered to be adverse.	Mitigation: When and where feasible, BAAQMD-recommended mitigation measures will be implemented to reduce the emissions generated from construction equipment exhaust.	Less than Significant
		Alternative B	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Alternative C	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Alternative D	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
4.8	Noise and Vibration	Alternative A	Impact: Noise due to pile driving could impact fish. Pile driving for the terminal facility would include small-diameter concrete piles, such as those used for the San Mateo Bridge. It is therefore not expected that significant fish mortalities would result from pile driving. Harmful sound pressures may still occur, which could produce adverse temporary effects on fish.	Mitigation: Underwater sound monitoring would be conducted if estimated sound pressure levels could approach those that may harm fish (e.g., 180 dB). Measures to reduce sound pressure levels in surrounding waters, such as bubble jackets surrounding the piles, may have to be deployed if sound pressure levels exceed those that could harm fish.	Less than Significant
			Impact: Transiting ferries could disturb marine mammal resting and foraging.	Mitigation: Disturbance by ferries to foraging marine mammals is expected to be similar to existing boat traffic. NMFS guidelines would be followed to minimize acoustic disturbance on nearby mammals, and no adverse impact would be created.	Less than Significant
			Impact: Construction noise could impact existing noise-sensitive users adjacent to the ferry terminal site.	Mitigation: Steps outlined in the Construction Noise Ordinance for the City of Berkeley must be followed.	Less than Significant

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.8 (cont'd)	Noise and Vibration (cont'd)	Alternative B	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Alternative C	Impact: Refer to the first two impacts noted for Alternative A. No noise-sensitive receptors are located adjacent to the site.	Mitigation: Refer to Alternative A.	Less than Significant
		Alternative D	Impact: Refer to Alternative C.	Mitigation: Refer to Alternative A.	Less than Significant
4.9	Biological Resources	Eelgrass – Alternative A	None identified		
		Eelgrass – Alternative B	None identified		
		Eelgrass – Alternative C	Impact: Project construction would result in the disturbance of the Eelgrass Mitigation pilot project for the East Span Bay Bridge construction south of Gilman Street, with the potential to expand northward, eventually encompassing 15 acres.	Mitigation: Because the eelgrass disturbance would be within an existing mitigation plot, suitable compensatory mitigation (mitigation ratio up to 1:10) would be designed in consultation with appropriate state and federal agencies such as the USACE, U.S. EPA, CDFG, BCDC, and the San Francisco Bay RWQCB. A mitigation plan would include monitoring and evaluating the success of the mitigation effort, and an approved contingency plan negotiated with appropriate state and federal agencies if the mitigation fails. It is important to note that there is little data available on replacement of eelgrass in the Bay.	Less than Significant, if mitigation is successful
		Eelgrass – Alternative D	Impact: Refer to Alternative C.	Mitigation: Refer to Alternative C.	Less than Significant

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.9 (cont'd)	Biological Resources (cont'd)	Dredging – Alternative A	Impact: Dredging could adversely impact the California least tern, a listed species.	Mitigation: The LTMS contains a dredging work window for California least terns that applies to the area from the Berkeley Marina south to San Lorenzo Creek. The work window is between August 1 and November 30. Dredging during this time period would reduce impacts to this listed species and no consultation with USFWS would be required. If this work window cannot be adhered to, WTA would enter into consultation with USFWS to obtain an incidental take permit as necessary. This permit may include specifications for monitoring and other mitigation measures to reduce impacts during dredging activities. The DMMO agencies have indicated that minimizing dredging is preferable.	Less than Significant
			Impact: Dredging could affect Pacific herring spawning.	Mitigation: Dredging would not occur between December 1 and March 1 unless a CDFG waiver were obtained.	Less than Significant
			Impact: Construction activities may remove native oysters.	Mitigation: WETA would work with interested resource agencies to determine whether native oysters would be adversely affected by dredging. WETA may agree to conduct pre-construction surveys for native oysters at the Marina site. WETA would consult with the resource agencies to determine whether mitigation measures are required to re-establish the affected beds.	Less than Significant
		Dredging – Alternative B	Impact: Refer to the dredging impacts listed for Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Dredging – Alternative C	Impact: Refer to the dredging impacts listed for Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
			Impact: Dredging can spread invasive nonnative species, such as smooth cordgrass.	Mitigation: Identified strands of cordgrass would be removed prior to dredging and construction of pier.	Less than Significant

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.9 (cont'd)	Biological Resources (cont'd)	Dredging – Alternative D	Impact: Refer to the dredging impacts listed for Alternative C.	Mitigation: Refer to Alternative C.	Less than Significant
		Fish – Alternative A	Impact: Special-status fish species with the potential to be affected by project construction include central California steelhead, winter run chinook salmon, and green sturgeon. These species may be adversely affected by dredging activity.	Mitigation: NMFS would be informally consulted as to any seasonal restrictions on pile driving or other measures to avoid take of listed species. If mitigation that avoids take cannot be implemented, then WTA would enter into formal consultation with NMFS to obtain an incidental take permit.	Less than Significant
		Fish – Alternative B	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Fish – Alternative C	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Fish – Alternative D	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Birds – Alternative A	No impacts identified		
		Birds – Alternative B	No impacts identified		
		Birds – Alternative C	Impact: Ongoing ferry traffic could disturb roosting and foraging water waterfowl in the vicinity and may decrease use of project areas by sensitive bird species. Ferry operations within the North Basin may disturb foraging or resting for special-status bird species, such as the burrowing owl, white-tailed kite, American peregrine falcon, osprey, and long-billed curlew. The repeated disturbance may cause these species to reduce their use of these locations for foraging and resting, constituting an unavoidable adverse impact.	Mitigation: No mitigation for this impact has been identified.	Unavoidable Significant impact

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.9 (cont'd)	Biological Resources (cont'd)	Birds – Alternative D	Impact: Refer to Alternative C.	Mitigation: Refer to Alternative C.	Unavoidable Significant impact
		Bird Habitat – Alternative A	No impacts identified		
		Bird Habitat – Alternative B	No impacts identified		
		Bird Habitat – Alternative C	Impact: Sensitive shorelines and ecosystems within the North Basin could be eroded by ferry wakes, resulting in adverse impacts to habitat used for avian resting, foraging, or nesting.	Mitigation: A no-wake policy within the North Basin would reduce erosion of tidal wetlands, bayflats, and sandy beaches.	Less than Significant
		Bird Habitat – Alternative D	Impact: Refer to Alternative C.	Mitigation: Refer to Alternative C.	Less than Significant
4.10	Water Resources	Alternative A	Impact: Dredging could impact water quality through mobilization of contaminated sediment. Approximately 110,000 cubic yards of dredging would be required in the channel approaching the Berkeley Marina and in the Berkeley Marina.	Mitigation: As required by the DMMO, a SAP would be submitted prior to dredging. DMMO agencies have indicated that minimizing dredging is preferable.	Less than significant
			Impact: Onshore construction could cause stormwater contamination.	Mitigation: Construction would be done in accordance with NPDES General Permits, which require implementation of Best Management Practices.	
			Impact: Dredging could affect the capacity of the San Francisco Deep Ocean disposal site.	Mitigation: Evaluate potential disposal within the Bay at an upland facility, or beneficial reuse.	
			Impact: Inadvertent fuel spills from construction or operation would affect water quality.	Mitigation: Hazardous waste management plan and solid waste management plan will govern the storage and disposal of hazardous materials. All vehicles and construction equipment will be inspected to ensure no leaking fluids occur.	

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.10 (cont'd)	Water Resources (cont'd)	Alternative A (cont'd)	Impact: Stormwater runoff at the terminal site and parking area could degrade water quality.	Mitigation: Gravel or permeable pavement would be used so rainwater could permeate into underlying soil.	
		Alternative B	Impact: Dredging could impact water quality through mobilization of contaminated sediment. Approximately 150,000 cubic yards of dredging would be required along the channel to the Berkeley Fishing Pier.	Mitigation: Refer to Alternative A.	Less than Significant
			Impact: Refer to the second, third, fourth, and fifth impacts for Alternative A.	Mitigation: Refer to Alternative A.	
		Alternative C	Impact: Dredging could impact water quality through mobilization of contaminated sediment. A ferry route to the Gilman Street site would require approximately 240,000 cubic yards of dredging along the channel and terminal turning basin. The EBRPD and California State Parks Department of Parks and Recreation indicated that even with mitigation measures, dredging within aquatic parklands of Eastshore State Park would still be considered an adverse impact.	Mitigation: No mitigation for this impact has been identified.	Unavoidable Significant impact
			Impact: Refer to the second, third, fourth, and fifth impacts for Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.10 (cont'd)	Water Resources (cont'd)	Alternative D	Impact: Dredging could impact water quality through mobilization of contaminated sediment. A ferry route to the Buchanan site would require approximately 280,000 cubic yards of dredging along the channel and terminal turning basin. The EBRPD and California State Parks Department of Parks and Recreation indicated that even with mitigation measures, dredging within aquatic parklands of Eastshore State Park would still be considered an adverse impact.	Mitigation: No mitigation for this impact has been identified.	Unavoidable Significant impact
			Impact: Refer to the second, third, fourth, and fifth impacts for Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
4.11	Geology and Soils	Alternative A	Impact: Seismic shaking could damage facilities and/or injure people.	Mitigation: Terminal facilities shall be designed and constructed at a minimum to "Essential Structure" standards as well as the seismic design requirements for ground shaking specified in the Uniform Building Code for Seismic Zone 4. Additionally, to satisfy the provisions of the 1998 CBC, these facilities shall be designed to withstand ground motions equating to approximately a 500-year return period (10 percent probability of exceedence in 50 years). For design purposes, site-specific ground motions shall be calculated for the project.	Less than Significant

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.11 (cont'd)	Geology and Soils (cont'd)	Alternative A (cont'd)	<p>Impact: Liquefaction or lateral spreading could damage facilities and/or injure people. Liquefaction of soils occurs when loose, cohesionless soils become saturated, temporarily losing shear strength during strong ground shaking. Significant factors that affect soil liquefaction potential are grain-size distribution, relative density, degree of saturation, the initial stresses acting on the soils, and the characteristics of the earthquake, such as the intensity and duration of the ground shaking. All of the study area along the shoreline in the region of the alternatives is potentially prone to liquefaction an adverse impact.</p> <p>In addition to liquefaction, other potential hazards in the study area include compaction consolidation (settlement) and seismically-induced settlement. Dissipation of excess pore pressure generated by ground shaking will produce volume changes within the liquefied soil layers, which would be manifested at the ground surface as settlement.</p>	<p>Mitigation: A program of site-specific exploratory borings and accompanying laboratory testing will be required to delineate any potentially liquefiable materials underneath potential terminal sites. These geotechnical investigations will also be required for consideration prior to foundation design. Potentially liquefiable deposits will either have to be removed or engineered (dewatered or densified) to reduce their liquefaction potential.</p>	Less than Significant
			<p>Impact: Subsidence could damage facilities.</p>	<p>Mitigation: Previous Mitigation applies.</p>	
		Alternative B	<p>Impact: Refer to Alternative A.</p>	<p>Mitigation: Refer to Alternative A.</p>	
		Alternative C	<p>Impact: Refer to Alternative A.</p>	<p>Mitigation: Refer to Alternative A.</p>	
		Alternative D	<p>Impact: Refer to Alternative A.</p>	<p>Mitigation: Refer to Alternative A.</p>	

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.12	Hazardous Materials	Alternative A	Impact: Accidental spills or releases of hazardous materials (e.g., fuels and oils) during construction of the proposed terminal (offshore) and associated parking area (onshore) could potentially create a hazard to the public or the environment. This is considered an adverse impact.	Mitigation: Mitigation measures to address potential releases are presented in Section 4.10, Water Resources.	Less than Significant
			Impact: Contaminated water from fill material exposed during grading could migrate offsite.	Mitigation: If it is determined that contaminated fill would be exposed during construction, a Soil Management Plan would be prepared, identifying engineering controls to be used to mitigate migration of potentially contaminated material offsite via fugitive dust emissions or erosion.	Less than Significant
		Alternative B	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
			Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Alternative C	Impact: Demolition of structures containing lead-based paints and asbestos could expose the public and the environment to these contaminants, an adverse impact.	Mitigation: Prior to any demolition activities of the horse stables/barns a lead-based paint and asbestos survey would be conducted. Required abatement would be conducted by properly licensed abatement contractors.	Less than Significant
		Alternative D	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.13	Utilities and Public Services				
	Fire Protection	Alternative A	Impact: Implementation of the project alternative would require enhanced fire protection facilities. Currently, the Berkeley Marina has limited fire protection infrastructure onsite, consisting of fire hydrants, standpipes, and fire extinguishers. The ferry terminal itself would have to adhere to the California Building and Fire Codes with respect to fire sprinklers and emergency access. Implementation of the Berkeley Marina or Berkeley Fishing Pier project alternatives would result in the need for upgraded fire protection facilities at the Berkeley Marina. Therefore, a potentially adverse impact is anticipated.	Mitigation: The project proponent shall consult with the BFD on acceptable mitigation measures to provide an adequate standard of fire protection at the site.	Less than Significant
		Alternative B	Impact: Implementation of the project alternative would require fire protection facilities.	Mitigation: The ferry terminal itself would have to adhere to the California Building and Fire Codes with respect to fire sprinklers and emergency access. The project proponent shall consult with the BFD on acceptable mitigation measures to provide an adequate standard of fire protection at the site.	Less than Significant

**Table ES-2
Summary of Significant and Potentially Significant Impacts (Continued)**

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.13 (cont'd)	Fire Protection (cont'd)	Alternative C	Impact: Implementation of the project alternative would require fire protection facilities.	Mitigation: The ferry terminal itself would have to adhere to the California Building and Fire Codes with respect to fire sprinklers and emergency access. The project proponent shall consult with the Berkeley Fire Department on acceptable mitigation measures to provide an adequate standard of fire protection at the site.	Less than Significant
		Alternative D	Impact: Implementation of the project alternative would require fire protection facilities.	Mitigation: The ferry terminal itself would have to adhere to the California Building and Fire Codes with respect to fire sprinklers and emergency access the project proponent shall consult with the AFD on acceptable mitigation measures to provide an adequate standard of fire protection at the site.	Less than Significant
	Gas, Electricity, Sanitary Sewer	Alternative A	Impact: Construction activities could come into contact with utility lines, and an adverse impact could occur.	Mitigation: Prior to the start of construction activities, the project proponent shall consult with public utility providers who have infrastructure in the immediate vicinity of the site to determine the exact location and depth of utility lines.	Less than Significant
		Alternative B	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Alternative C	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
		Alternative D	Impact: Refer to Alternative A.	Mitigation: Refer to Alternative A.	Less than Significant
	4.14	Energy	All Alternatives	All impacts less than significant	

Note:
Impacts determined to be less than significant without mitigation are not included in this table.

Alternatives C and D produce multiple environmental issues that would be difficult or impossible to mitigate. For Alternative C, the project would substantially contribute to cumulative traffic impacts at Gilman Street/San Pablo Avenue, which is expected to operate at Level of Service (LOS) F in 2030. This cumulative impact could not be mitigated. In addition, ferry operation would traverse the aquatic parklands of Eastshore State Park and require periodic dredging. The operation would be in conflict with the Park's General Plan and dredging could affect water quality through mobilization of contaminated sediment, an unavoidable impact on the aquatic park. Ferry operation through aquatic parklands may not be permitted by the State or meet U.S. Department of Transportation Section 4(f) requirements. Ferry operation may also disturb foraging or resting for special-status bird species, such as the burrowing owl, white-tailed kite, American peregrine falcon, osprey, and long-billed curlew. The repeated disturbance may cause these species to reduce their use of these locations for foraging and resting. Alternative C also would disturb existing eelgrass beds, including an eelgrass mitigation area that Caltrans has established for the Bay Bridge project. Although it is possible to re-establish eelgrass beds and reduce this impact to less than significant, the mitigation is difficult to implement and may not succeed.

For Alternative D, unavoidable impacts on Eastshore State Park described for Alternative C would also occur. In addition, Alternative D would have multiple unavoidable traffic impacts resulting from the project. This alternative is expected to adversely affect the San Pablo Avenue/Marin Avenue intersection by increasing average vehicle delay during the p.m. peak traffic hour by 3.1 seconds, which exceeds the significance threshold for intersections that operate at LOS E. Also, cumulative traffic impacts would occur at San Pablo Avenue/Solano Avenue and at San Pablo Avenue/Marin Avenue. Ferry operation would substantially increase traffic at San Pablo Avenue/Solano Avenue, reducing LOS from E to F during the p.m. peak traffic hour.

In contrast, Alternatives A and B do not produce unavoidable impacts except for the potential traffic impacts at University/West Frontage Road, which may be difficult to mitigate. Alternatives A and B may produce parking impacts on existing businesses by converting and controlling existing parking areas that are currently used by patrons of the nearby businesses and recreational opportunities. These impacts, which can be mitigated, are less likely to occur at Alternatives C and D. Overall, Alternatives A and B produce similar long-term impacts that can be mitigated. However, differences in waterside impacts occur. For example, Alternative B requires a breakwater to be constructed to protect the terminal pier from wave action, whereas Alternative A uses an existing sheltered harbor,. Potential impacts from breakwater construction can be mitigated. Alternative A requires that eight docks in the Berkeley Marina be moved, including the location of the existing Hornblower dock, and that the harbor channel used by recreational and commercial vessels is shared. Alternative B would also require more extensive dredging than Alternative A, but the disruption to existing marine-related uses would not occur under Alternative B.

Other Considerations

The ferry travel time between the East Bay and San Francisco would be less for Alternatives A and B than the other alternatives, allowing more frequent ferry service during the peak. In addition, the amount of dredging would be less for Alternative A, and the disruption to the existing waterfront land uses would be less for Alternative B than for the other alternatives. The preliminary capital cost estimate, which does not include utility requirements, mitigation costs, or architectural elements of design, is the lowest for Alternative A. A comparison of these trade-offs is provided in Table ES-3.

**Table ES-3
Comparison of Other Considerations for Alternatives**

Consideration	Alternative A – Berkeley Marina	Alternative B – Berkeley Fishing Pier	Alternative C – Gilman Street	Alternative D – Buchanan Street
Travel Time	29 minutes	25 minutes	35 minutes	34 minutes
Peak Period Frequency of Service	35 minutes	35 minutes	45 minutes	45 minutes
Dredging Volumes	110,000 cubic yards	150,000 cubic yards	240,000 cubic yards	280,000 cubic yards
Preliminary Capital Cost Estimate (2007 dollars)	\$17,152,380	\$17,905,949	\$18,277,730	\$19,151,546

COORDINATION, CONSULTATION, AND COMMENTS

A new environmental review process has been established for highways, transit, and multimodal projects. Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, establishes an enhanced environmental review process for certain projects, increasing the transparency of the process, as well as opportunities for participation. Consistent with Section 6002, and as part of the environmental review process for this project, the lead agency must identify, as early as practicable, any other federal and non-federal agencies that may have an interest in the project, and invite such agencies to become participating agencies in the environmental review process. Agencies that have been identified preliminarily as potentially having an interest in this project must be extended an invitation to become actively involved as a participating agency in the project’s environmental review process. The new environmental review process allows more state, local, and tribal agencies a formal role and rights in the environmental process. Consultation with agencies that have had continuing interest in the project are listed below. These agencies have been consulted throughout Phase 1 and Phase 2 of the project. Additional agencies have been contacted during Phase 1 and during Phase 2 scoping, as

indicated in Chapter 7, Appendix B, and Appendix C. More information about the consultation process, including issues discussed and permitting and approvals involving local, state, and federal agencies, is presented in Chapter 7, Appendix B, and Appendix C. Information about the public review of the Draft EIS/EIR and submitting comments on the draft document is provided on the WETA website (<http://www.watertransit.org>).

Agency
City of Berkeley
City of Albany
U.S. Army Corps of Engineers Dredge Material Management Office
San Francisco Bay Conservation and Development Commission (BCDC)
National Oceanic and Atmospheric Administration National Marine Fisheries Service
U.S. Army Corps of Engineers Dredge Material Management Office
BCDC
East Bay Regional Parks District
Eastshore State Park District and California State Parks Department of Parks and Recreation
Regional Water Quality Control Board
Bay Area Air Quality Management District

ISSUES TO BE RESOLVED

Outstanding issues yet to be resolved that will be addressed in the Final EIS/EIR after the WETA Board selects the Locally Preferred Alternative are:

- Parking:** For Alternatives A and B, the location of project parking that is controlled by WETA and also accommodates the nearby businesses that rely on the existing parking in the area needs to be determined and an agreement negotiated with the City of Berkeley, the landowner. For Alternative C, WETA-designated parking requires the displacement and relocation of horse stables associated with Golden Gate Field operation, and the agreement of Golden Gate Field owners to allow WETA to lease the designated parking area. Agreement with Golden Gate Field owners would also be required to secure ferry parking for Alternative D. After selection of an LPA, WETA will develop and implement a Parking Mitigation Plan to address potential parking impacts on nearby uses.

- **Transit Access:** Transit currently only directly serves Alternative B. WETA is committed to provide non-auto modes to access the ferry service. The type and frequency of this service has yet to be determined.
- **Land Use:** For Alternative A, the terminal would reconfigure the existing Hornblower dock and would also require the removal of eight Marina boat slips. The relocation of these docks would need to be clarified and negotiated. For Alternative C, WETA-designated parking requires the displacement and relocation of horse stables associated with Golden Gate Field operation and the agreement of Golden Gate Field owners to allow WETA to lease the designated parking area. Agreement with Golden Gate Field owners would also be required to secure ferry parking for Alternative D.
- **Parklands:** Alternatives C and D would require the use of Eastshore State Park aquatic parklands for ferry construction and operation. In conformance with U.S. DOT Section 4(f) requirements, parkland use for a federally-funded transportation project must demonstrate that no feasible and prudent alternatives exist and also must be approved by the California Parks Department, which owns this parkland. The effect of ferry operation on existing Marina activities and the effect of construction on water habitat would also need to be clarified.
- **Biological Resources:** Construction of Alternative A may disturb native oyster beds. Alternative C would require the removal of eelgrass that has been established as a mitigation for Bay Bridge reconstruction by Caltrans, and could potentially adversely affect rafting bird habitat. Alternative D may also disturb eelgrass beds and rafting bird habitat. The ferry pier constructed for the alternatives may create shaded water areas that could enhance predation and affect benthos and other Bay habitat, particularly for Alternative A, which would have the longest pier. Resolution of these issues would need to be negotiated with state and federal agencies having jurisdiction over biological resource impacts.