Draft Environmental Impact Report

San Francisco Bay Area Water Trail Plan

SCH# 2007112080

June 2008

Prepared for:

California State Coastal Conservancy
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DRAFT
ENVIRONMENTAL IMPACT REPORT

FOR THE

San Francisco Bay Area Water Trail Plan

SCH # 2007112080

PREPARED FOR:
CALIFORNIA STATE COASTAL CONSERVANCY
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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This section of the Draft Environmental Impact Report (DEIR) provides a summary overview of the project environmental analysis, impacts and mitigation measures. For additional detail regarding specific issues, please consult the appropriate sub-section of **Section 3.0, Environmental Setting, Impacts and Mitigation Measures.**

INTRODUCTION

The San Francisco Bay Area Water Trail (Water Trail, or WT) would formalize a network of access sites, or "trailheads," that allow people in small, non-motorized boats, such as kayaks, canoes, sailboards, and dragon boats, to safely enjoy the historic, scenic, and environmental richness of San Francisco Bay through single and multiple-day trips on the Bay. The Water Trail would bring education about personal boating, navigational safety, and appropriate boating behavior near sensitive wildlife species and shoreline habitat to the boating public through a variety of means. The large majority of the 112 trailheads proposed for the network already exist and are used by the public. They are located along the shoreline of the nine San Francisco Bay Area counties.

The WT was authorized by the San Francisco Bay Area Water Trail Act (Water Trail Act), signed into law in September 2005. The Act directed the San Francisco Bay Conservation and Development Commission (BCDC), in coordination with other agencies and organizations, to conduct a public process to develop the San Francisco Bay Area Water Trail Plan (WT Plan), and assigned the California State Coastal Conservancy (SCC) as the lead agency for implementing the Plan. The development of the WT Plan was led by BCDC, with the active participation of a broad-based steering committee, stakeholders, and experts on specific topics. All background reports, meeting notes, and the final draft Plan itself are posted on BCDC's website at www.bcdc.ca.gov.

The SCC is the Lead Agency under the California Environmental Quality Act (CEQA). This document is a Programmatic EIR (CEQA Guidelines Section 15168) in that it analyzes the potential regional and cumulative effects of implementing the WT Plan rather than analyzing the impacts of any particular site-specific project. This EIR identifies mitigation strategies and measures applicable to general types of potential impacts that may occur from implementation of the Water Trail Plan, including possible trailhead enhancements or the development of new access sites. This approach allows for efficient tiering of subsequent project-level CEQA documents. More detail on the CEQA review process is provided in **Chapter 1.0, Introduction**.

PROJECT DESCRIPTION

The WT Plan (September 2007) includes trailhead development and management strategies, organizational structure and responsibilities, trailhead designation processes, and guidance on trail planning and program development. The Plan's trailhead development and management strategies promote boater outreach and education; appropriate trailhead location, and improvement design; and maintenance and operation plans. It is a guide to trail implementation for agencies and organizations that will

develop and manage the WT program as well as for site owners and managers interested in becoming part of the WT and other stakeholders from around the region.

Of the 112 potential "Backbone Sites" identified in the Water Trail Plan, a subset of 57 were identified as "High Opportunity Sites," meaning that they need little more than educational signage to meet the criteria for inclusion in the Water Trail program. Additional access sites may be considered for addition to the WT in the future, as appropriate, following the same evaluation procedures as for the sites identified in the Water Trail Plan. Access site improvements may range from signage only to development of entirely new access sites. Typical facility improvements may include, as examples, new docks, ramps, boat storage facilities, parking improvements, and restrooms. Official inclusion of access sites into the Water Trail program ("trailhead designation") would be accomplished through evaluation of site characteristics and management ("Site Descriptions" for High Opportunity Sites and more elaborate "Trailhead Plans" for all other sites) for each site and decisions would be made at public meetings.

Details about implementation of the project are in **Chapter 2.0, Project Description**.

ALTERNATIVES

The project also considers the following two alternatives.

- **Revised High Opportunity Sites (HOS) Only**: The Revised HOS-Only alternative includes a revised list of 47 HOS sites based on the analyses presented in this EIR. Under this alternative, only sites with minimal improvement needs and no significant management issues would be included in implementation of the Plan. Management strategies would not be changed compared with the Project.
- **No Project:** The No Project alternative assumes continued public use of existing sites without any educational/public outreach programs or support for site improvements.

Alternatives Considered and Rejected. Other potential alternatives, such as site-closure alternatives and alternatives that were limited to certain regions of the Bay were considered and rejected as being infeasible. The Water Trail program is non-regulatory and has no power to direct site owners to close their sites. A program limited to certain regions of the Bay and not others is contrary to the mandate of the Water Trail Act to enact the Water Trail in the nine-county Bay Area throughout the jurisdictional area of BCDC.

Environmentally Superior Alternative. The Revised HOS-Only alternative was determined to be the Environmentally Superior Alternative, but would meet fewer of the project's goals and objectives than the Proposed Project, and not provide the Bay-wide benefits of the Proposed Project.

SUMMARY OF ENVIRONMENTAL IMPACTS

The EIR identified potentially significant impacts on: recreation; public services and navigation; aesthetics; biological resources; cultural resources; hazardous materials; hydrology and water quality; land use planning; and traffic, circulation and parking. Mitigation measures identified in the EIR would reduce all of these impacts to a less than

significant level. The Proposed Project would not result in any significant irreversible impacts. The Project's contribution to cumulative impacts and growth inducement also would be less than significant.

Table ES-1 presents a summary of project impacts. The level of significance of each environmental impact is indicated after the application of the mitigation measure(s) identified in the EIR. For detailed discussions of all project impacts and mitigation measures, the reader is referred to topical environmental analysis in **Section 3.0** of this DEIR.

The EIR includes mitigation measures for all potentially significant impacts. Sites meeting HOS criteria generally have less than significant impacts and therefore would not require mitigation. Applicability of mitigation measures to specific non-HOS sites would need to be evaluated at the time that a Trailhead Plan is prepared for that site. Therefore, most mitigation measures identified in this EIR are dependent on the degree of development proposed in the Trailhead Plan, the potential for that development to substantially increase use of a site, the location of a site in relation to sensitive wildlife species and habitat, and the results of the CEQA review of the Trailhead Plan with respect to the impact for which the mitigation is proposed.

Table ES-1: Summary of Potential Impacts and Levels of Significance

Potential Project Impact	Level of Significance
Recreation	
Impact 3.1-1. Increased Use of Existing Sites or Other Recreational Sites Causing Accelerated Physical Deterioration of the Facility or Substantial Unplanned Expansion	Less than Significant
Impact 3.1-2. Increased Use of WT Sites by Motorized Boats from Implementation of the WT Program	Potentially Significant but Mitigable
Impact 3.1-3. Conflict with, and Preclusion of Existing Recreation Activities due to Facility Improvements and Use of WT Sites	Potentially Significant but Mitigable
Public Services and Navigational Safety	
Impact 3.2-1. Need for New Facilities or Substantial Increase in Demand for Public Services	Potentially Significant but Mitigable
Impact 3.2-2. Substantial Expansion of Local Agency Capacity for Sites Designated for Overnight Use or Unacceptable Increase in Service Ratios, Response Times or Other Public Service Performance Objectives	Potentially Significant but Mitigable
Impact 3.2-3. Increased Risk of Incidents Including Accidents Involving Loss of Life, or Collisions between Recreational Water Users and Other Boats, and Groundings	Potentially Significant but Mitigable
Aesthetics	
Impact 3.3-1: Degradation of the Existing Visual Quality of a WT Site or its Surroundings	Potentially Significant but Mitigable
Impact 3.3-2: Degradation of a Scenic Vista or View from an Eligible State Scenic Highway	Potentially Significant but Mitigable
Biological Resources	
Impact 3.4-1. Wetland Habitat Impacts due to Construction, Repair, Rehabilitation, or Maintenance of Trailheads	Potentially Significant but Mitigable

Table ES-1: Summary of Potential Impacts and Levels of Significance	
Potential Project Impact	**Level of Significance**
Impact 3.4-2. Wetland Habitat Impacts due to Increased Trampling of Wetland Shoreline Vegetation and Soil	Potentially Significant but Mitigable
Impact 3.4-3. Impacts to Special-status Wetland Plant Species	Potentially Significant but Mitigable
Impact 3.4-4. Spread of Non-native Invasive Plants	Potentially Significant but Mitigable
Impact 3.4-5. Impacts on Special-status Animals of Bayland Marshes	Potentially Significant but Mitigable
Impact 3.4-6 Disturbance of Rafting Waterbirds from Roosting and Foraging Habitat	Potentially Significant but Mitigable
Impact 3.4-7 Disturbance of Ardeiid and Shorebird Roosting and Foraging Habitat	Potentially Significant but Mitigable
Impact 3.4-8 Disturbance of Ardeiids and Shorebird Nesting Habitat	Potentially Significant but Mitigable
Impact 3.4-9 Disturbance of Rails and Other Marsh Bird Nesting Habitat	Potentially Significant but Mitigable
Impact 3.4-10 Disturbance of Rails and Other Marsh Birds from Roosting, Foraging, and Nesting Habitat due to Construction Activities at Launch Sites	Potentially Significant but Mitigable
Impact 3.4-11. Disturbance of Western Burrowing Owls from Nesting Habitat due to Increased Watercraft Traffic and Facility Construction	Potentially Significant but Mitigable
Impact 3.4-12. Disturbance to Harbor Seals due to Construction/ Improvements at WT Sites	Potentially Significant but Mitigable
Impact 3.4-13. Disturbance to Harbor Seals due to Increased Use of Waters Near New or Existing WT sites	Potentially Significant but Mitigable
Impact 3.4-14. Avoidance or Abandonment of Traditional Harbor Seal Haul-out Sites, due to Cumulative Impacts of Increased Use of San Francisco Bay Waters by Non-powered Watercraft	Potentially Significant but Mitigable
Cultural Resources	
Impact 3.5-1: Disturbance to Prehistoric Archaeological Deposits during Improvements to Bay Access and/or Development of Infrastructure	Potentially Significant but Mitigable
Hazardous Materials	
Impact 3.6-1. Exposure of Workers to, or Release of, Contaminated Soil or Groundwater from Soil Excavation	Potentially Significant but Mitigable
Hydrology and Water Quality	
Impact 3.7-1. Local Degradation of Water Quality due to Construction Activities	Potentially Significant but Mitigable
Impact 3.7-2. Degradation of Water Quality due to Runoff from Launch Facilities	Potentially Significant but Mitigable
Impact 3.7-3. Increased Littering in the Bay	Less than Significant
Impact 3.7-4: Placement of Structures within 100-Year Flood Zones that could Impede or Redirect Flows	Potentially Significant but Mitigable
Land Use Planning	
Impact 3.8-1: Conflict with the BCDC Bay Plan	Less than Significant
Impact 3.8-2: Conflict with Federal, State, or Local Land Use Plans and Policies	Les than Significant
Impact 3.8-3: Incompatibility with Adjacent or Nearby Land Uses	Potentially Significant but Mitigable

Table ES-1: Summary of Potential Impacts and Levels of Significance	
Potential Project Impact	**Level of Significance**
Transportation, Circulation and Parking	
Impact 3.9-1. Degradation in Levels of Service on Access Roadways	Potentially Significant but Mitigable
Impact 3.9-2. Inadequate Parking at New WT Site	Potentially Significant but Mitigable
Impact 3.9-3. Inadequate Emergency Vehicle Access	Potentially Significant but Mitigable
Impact 3.9-4. Hazards Due to Unsafe Access Roadways	Potentially Significant but Mitigable

1. INTRODUCTION

1.0 INTRODUCTION

The purpose of this EIR is to evaluate the potential environmental effects associated with the implementation of the San Francisco Bay Area Water Trail Plan (hereinafter "Water Trail Plan" or "WT Plan"). The WT Plan includes a proposed network of water access points (both trailheads and destination sites) for non-motorized small boats (NMSB) as well as education and outreach components and stewardship policies. The WT Plan area is within the San Francisco Bay Conservation and Development Commission's (BCDC's) jurisdiction, within the nine-county San Francisco Bay Area. The enabling legislation and history of WT Plan development are summarized in Chapter 2, Project Description.

1.1 OVERVIEW OF THE PROJECT

The WT Plan strives to create a network of launch and landing sites, or "trailheads," to allow people in human-powered boats and beachable sail craft to enjoy the historic, scenic and environmental richness of San Francisco Bay through continuous, multiple-day and single-day trips on the Bay. This network of sites is the Water Trail. The WT is intended to promote safe and responsible use of the Bay, while protecting and increasing appreciation of its environmental resources through education and coordinated, strategic access to the Bay. The WT has the potential to enhance Bay Area communities' connections to the Bay and create new linkages to existing shoreline open space and other regional trails.

The WT Plan is a guide to trail implementation for the agencies and organizations that will develop and manage WT access points and programs, as well as trail proponents and other stakeholders also involved in implementation. Recommended policies and procedures in the Plan define how the WT will take shape over time by guiding trail planning, development and management on organizational, programmatic and trailhead project-specific levels.

The WT Plan identifies 112 potential "Backbone" access sites, including 57 High Opportunity Sites (HOS). HOS are sites that require minimal improvements (i.e., signage only) to qualify for designation as part of the WT. The WT Plan also includes trailhead development and management strategies, organizational structure and responsibilities, trailhead designation processes, and guidance on trail planning and program development. The WT Plan is summarized in Chapter 2, Project Description, and the full text of the Plan is available for review on the Coastal Conservancy's website (www.scc.ca.gov).

1.2 PURPOSE AND USE OF THIS PROGRAMMATIC EIR

The State Coastal Conservancy (SCC), as the lead agency under the California Environmental Quality Act (CEQA), has prepared this EIR to address the potential environmental impacts of the draft Water Trail Plan, pursuant to the California

Environmental Quality Act Statutes (Public Resources Code Sections 21000, *et. seq*.) and implementing Guidelines (14 California Code of Regulations Sections 15000 et. seq.). This EIR satisfies the procedural, analytical, and public disclosure requirements of CEQA.

This document is a Programmatic EIR (CEQA Guidelines Section 15168) in that it analyzes the potential effects of implementing a regional plan, rather than the impacts of an individual project. This program-level EIR identifies mitigation measures that will be applied to reduce or eliminate impacts at various bay access locations. SCC will use this document to evaluate the WT Plan for approval.

CEQA review for specific sites may tier off of this programmatic EIR. SCC and members of the Project Management Team, composed of staff from BCDC, the Association of Bay Area Governments (ABAG), and the Department of Boating and Waterways (Cal Boating) and assisted by an Advisory Committee to be formed, will reference and tier off of this document in their site-specific CEQA review of trailheads as they are considered for inclusion into the WT. BCDC may use this document when BCDC permits are required for trailhead improvement projects. Local agencies proposing trailhead designations and/or facility improvements also may tier their site-specific CEQA reviews of such designations and/or improvements from this document.

CEQA lead agencies intending to use this document for future site-specific projects may prepare Initial Study checklists to determine if there could be site-specific impacts beyond those identified in this document. This document is intended to address cumulative impacts of implementing the Plan on Bay-wide resources. It also addresses general impacts that may occur with increased use and/or development of WT sites. It does not include site-specific environmental analyses of each site, but does consider proposed WT sites in the context of sensitive environmental resources. As such, it may be used to guide subsequent environmental review of designation/improvements at those sites.

Provided the environmental impacts of future activities are adequately addressed in this document, additional CEQA documentation may not be required for individual projects. If additional environmental analysis is required for future activities and newly identified impacts, or to introduce new mitigation measures, subsequent environmental documents would be tiered from the analyses contained herein (CEQA Guidelines Section 15168 [c] and Section 15177).

1.3 PUBLIC INVOLVEMENT PROCESS

A Notice of Preparation (NOP) for this EIR was issued for agency and public review on November 15, 2007 (Appendix A). The NOP included an attached Initial Study (See Appendix B) that summarized the proposed scope of environmental analyses to be included in the EIR. A public scoping meeting on the proposed EIR was held in San Francisco on November 28, 2007. Scoping comments were accepted through December 23, 2007. A wide range of comments were received during the scoping process. These comments are summarized in Appendix C, Summary of Scoping Comments. The public will have the opportunity to comment on this DEIR during the 45-day public review

period, and substantive comments on environmental issues will be responded to in writing in the Final EIR.

1.4 DOCUMENT ORGANIZATION

Chapter 1: **Introduction**. Provides an overview of the project, purpose and use of the EIR, public involvement process, and document organization.

Chapter 2: Project Description. This section describes the project location, existing conditions, purpose and objectives, and regulatory environment for the project.

Chapter 3: Environmental Setting, Impacts, and Mitigation Measures. Includes descriptions of the environmental setting, and the impacts that may occur on each resource as a result of implementation of the projects. Mitigation measures for potentially significant impacts are identified, and residual impacts (following application of mitigation measures) are discussed.

Chapter 4: Alternatives to the Project. Provides a comparison of the impacts or effects of each alternative analyzed in the document, and identifies the CEQA "environmentally superior" alternative.

Chapter 5: Cumulative Impacts and other CEQA Sections. Summarizes the project's growth inducement, unavoidable significant adverse impacts, cumulative impacts/mitigation, and irreversible/irretrievable impacts.

Chapter 6: Report Preparers, References and Definitions. Identifies the preparers of this document, lists references cited in the document and defines technical language and acronyms used in the document.

Appendices. The appendices provide additional information on the environmental review process and technical information that was used in the EIR analyses. Pursuant to CEQA requirements, materials and literature referenced in the EIR, but not included in Appendices, are maintained at the SCC offices in Oakland, California.

Appendix A – Notice of Preparation (NOP)

Appendix B – Initial Study

Appendix C - Summary of Scoping Comments

Appendix D – Water Trail Act

2. PROJECT DESCRIPTION

2.0 PROJECT DESCRIPTION

This chapter describes the project background, location, existing bay access and usage, proposed project changes in facilities and uses, and other aspects of the WT Plan that are applicable to the assessment of the potential environmental effects of implementation of the Plan.

2.1 OBJECTIVES AND UNDERLYING PURPOSE OF THE SAN FRANCISCO BAY AREA WATER TRAIL

The San Francisco Bay Area Water Trail (Water Trail, or WT) project strives to create a network of launch and landing sites, or "trailheads," to allow people in human-powered boats and beachable sail craft (small, non-motorized boats) enjoy the historic, scenic, and environmental richness of San Francisco Bay through single and multiple-day trips on the Bay. Trailhead owners and managers would join the Water Trail network on a voluntary basis, as the Water Trail project has no regulatory powers. It has been designed to promote safe and responsible recreational use of the Bay, while protecting and increasing appreciation of its environmental resources through education and coordinated, strategic access. Currently there is no regional project or program dedicated to the safe and responsible use of the Bay by those who access its waters from the existing launch and landing sites.

Principles, guidelines, strategies, recommendations, and other aspects of the Water Trail are outlined in the Water Trail Plan, the development of which was mandated by the Water Trail Act. Both are described below.

2.2 ORIGINS OF THE WATER TRAIL

THE WATER TRAIL ACT

The California legislature established the San Francisco Bay Area Water Trail by enacting the Water Trail Act, ("the WT Act") (AB 1296, see Appendix D) in 2005. In approving the WT Act, the legislature found that water-oriented recreational uses of San Francisco Bay are "of great benefit to the public welfare of the San Francisco Bay Area" and that "with loss of public open space, the public increasingly looks to the Bay, the region's largest open space, for recreational opportunities." This legislation culminated years of advocacy work by Bay Access, Incorporated, a non-profit organization dedicated to the creation of the Water Trail as well as by other non-motorized boating advocates.

The WT Act points to the proven benefits of other water trails in the United States, citing their effective promotion of water-oriented recreation for citizens of all economic means, their influence on the renewal of industrial waterfronts, and their positive regional economic benefit. It finds that "water trails can inform the public about natural, cultural, and historic features and foster public stewardship of these resources." It also finds that San Francisco Bay is an aquatic habitat of international importance, emphasizing that it "provides critical habitat for 70 percent of the shore birds and 50 percent of the diving ducks on the Pacific Flyway…" as well as "for marine mammals, other aquatic species,

and colonial nesting birds…" including many federally and state-listed species, such as the California clapper rail.

The Water Trail is intended to link existing and future access points around the Bay, advancing the regional goals and state mandate of BCDC to foster public access and recreational use of the Bay. It is also meant to be implemented consistent with the goals of improving access consistent with the rights of private property owners, and without having a significant adverse impact on agricultural operations and environmentally sensitive areas and wildlife, including wetlands and other wildlife habitats, and considering navigational safety and homeland security concerns. Other specific objectives include the provision of diverse water-accessible overnight accommodations, including camping.

The WT Act outlines requirements for planning and implementing the trail. It directs BCDC, in coordination with other agencies and organizations, to conduct a public process to develop the San Francisco Bay Area Water Trail Plan (WT Plan), which is discussed below.

The WT Act directs the Coastal Conservancy to lead the funding and development of projects implementing the Plan: "In developing the plan and undertaking projects to implement the plan, areas for which access is to be managed or prohibited shall be determined in consultation with resource protection agencies, the United States Coast Guard, the Water Transit Authority [later renamed the Water Emergency Transportation Authority], the State Lands Commission, local law enforcement agencies, and through the environmental review process required by the California Environmental Quality Act (Division 13 (commencing with Section 21000))."

2.3 THE WATER TRAIL PLAN

The WT Plan (September 2007), currently in final draft form, is a guide to trail implementation for the agencies and organizations that will develop and manage WT access points and programs, as well as trail proponents and other stakeholders involved in trail implementation. The development of the WT Plan was led by BCDC and benefited from the active participation of a broad-based steering committee, stakeholders, and experts on specific topics. All background reports, meeting notes, and the final draft Plan itself are posted on BCDC's website at www.bcdc.ca.gov. The WT Plan includes policies and procedures that define how the trail will take shape over time by guiding trail planning, development, and management on organizational, programmatic, and trailhead-specific levels. The WT Plan may also be reviewed in its entirely at www.scc.ca.gov. The process of selecting and designating potential trailheads is described below. The Plan will be finalized when it is accepted by the Coastal Conservancy board along with the final form of this Draft EIR.

TRAILHEADS PROPOSED IN THE WATER TRAIL PLAN

The vast majority of WT access sites will be designated from a starting pool of existing and planned access points. A subgroup of these access points on the Bay have been identified as WT "Backbone Sites" in the Plan (Figures 2-1A and 2-1B and Table 2-1),

Figure 2-1A:

Proposed Water Trail Backbone Access Sites San Francisco Bay

Bay Water Trail GIS data provided by BCDC

GECo Environmental Consulting

WETLANDS AND WATER RESOURCES, INC.

Map file: WaterTrail_SF-bay_1134_2008-0605dg.mxd

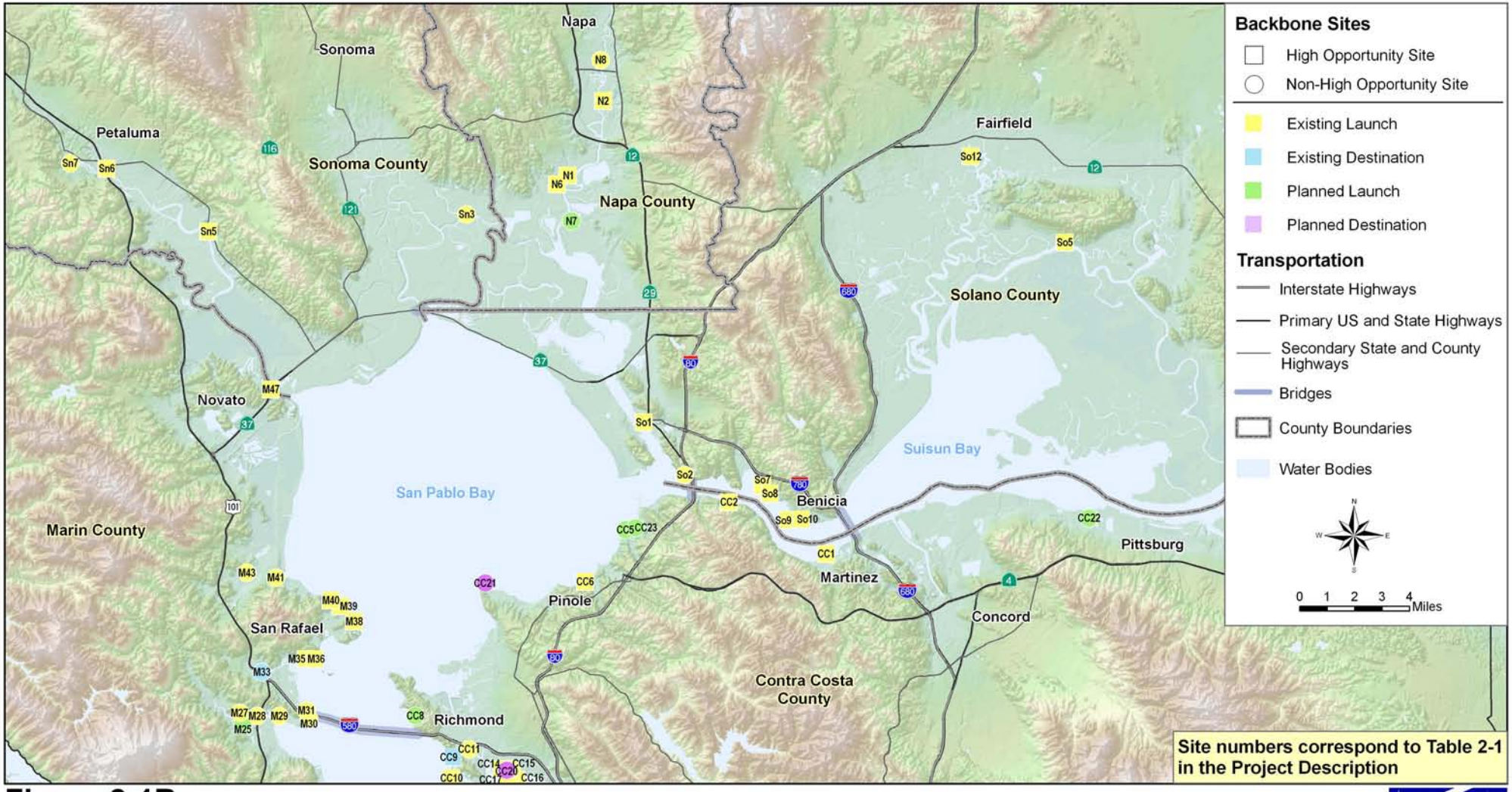

Figure 2-1B:

Proposed Water Trail Backbone Access Sites San Pablo Bay and Suisun Bay

Water Trail GIS data provided by BCDC

GECo Environmental Consulting

WETLANDS AND WATER RESOURCES, INC.

Map file: WaterTrail_North-bay_1134_2008-0605dg.mxd

TABLE 2-1: WATER TRAIL BACKBONE SITES

Site I.D.	Site Name	E/P, L/D*1	HOS?	Ownership	City	Launch Type	General Site Category	Manager
Alameda County								
A1	Albany Beach	EL		public	Albany	sand beach	waterfront park	EBRPD
A2	Berkeley Marina, Ramp	EL	Y	public	Berkeley	ramp	marina/harbor	Berkeley Marina, Harbormaster
A4	Point Emery	EL		public	Emeryville	sand beach	waterfront park	City of Emeryville
A5	Shorebird Park	EL		public	Emeryville	pebble beach	waterfront park	City of Emeryville
A6	Emeryville City Marina	EL	Y	public	Emeryville	ramp	marina/harbor	City of Emeryville
A8	Middle Harbor Park	EL	Y	public	Oakland	sand beach (A)	waterfront park	EBRPD/Port of Oakland
A9	Jack London Square/CCK	EL	Y	public	Oakland	float	public boat launch ramp/float	City of Oakland
A11	Estuary Park/Jack London Aquatic Center	EL	Y	public	Oakland	ramp, float (A)	waterfront park	C. of Oak., Parks and Rec./ Jack London Aq. Cen.
A12	Grand Avenue Boat Ramp	EL	Y	public	Alameda	ramp, float	public boat launch ramp/float	City of Alameda
A14	Robert Crown Memorial State Beach	EL	Y	public	Alameda	sand beach	waterfront park	EBRPD
A15	Encinal Launching and Fishing Facility	EL	Y	public	Alameda	ramp, float	public boat launch ramp/float	City of Alameda
A18	Doolittle Drive; Airport Channel	EL		public	Oakland	ramp	waterfront park	EBRPD
A20	San Leandro Marina	EL	Y	public	San Leandro	ramp, float	marina/harbor	San Leandro Marina, Harbormaster
A22	Eden Landing Ecological Reserve	PL		public	Hayward	planned ramp	refuge/reserve	CA Dept of Fish and Game
A24	Jarvis Landing	EL		public	Newark	ramp	privately owned (business)	US Fish and Wildlife Service/ Cargill
A25	Tidewater Boathouse	PL		public	Oakland	planned float	public boat launch ramp/float	EBRPD
A26	Berkeley Marina, Small Boat Launch	EL	Y	public	Berkeley	dock	public boat launch ramp/float	Berkeley Marina, Harbormaster
A27	Coyote Hills	PD		public	Fremont	NA	refuge/reserve	EBRPD/Alameda Co. Flood Control

TABLE 2-1: WATER TRAIL BACKBONE SITES

Site I.D.	Site Name	E/P, L/D*1	HOS?	Ownership	City	Launch Type	General Site Category	Manager
A28	Elmhurst Creek	EL		public	San Leandro	creek bank	public access area	EBRPD
A30	Hayward's Landing	PD		public	Hayward	NA	refuge/reserve	EBRPD
Santa Clara County								
SC2	Alviso Marina	PL		public	Alviso	planned ramp	waterfront park	County of Santa Clara
SC3	Palo Alto Baylands Launching Dock	EL	Y	public	Palo Alto	ramp, float	waterfront park	City of Palo Alto
San Mateo County								
SM2	Ravenswood Open Space Preserve	EL		public	Menlo Park	sand beach	waterfront park	Midpeninsula Regional Open Space District
SM4	Redwood City Municipal Marina	EL	Y	public	Redwood City	ramp	marina/harbor	Port of Redwood City, Harbormaster
SM6	Docktown Marina	EL		private	Redwood City	ramp	marina/harbor	Docktown Marina, Harbormaster
SM9	Redwood Shores Lagoon	EL		public	Redwood Shores	dirt beach	waterfront park	N/AA
SM11	Beaches on the Bay	EL		public	Foster City	sand beach	waterfront park	N/AA
SM12	Foster City Lagoon Boat Park	EL		public	Foster City	ramp	waterfront park	Foster City
SM13	East 3rd Ave	EL	Y	public	Foster City	sand beach	waterfront park	City of San Mateo
SM16	Seal Point Park	EL	Y	public	San Mateo	ramp (A)	waterfront park	City of San Mateo
SM17	Coyote Point, Marina	EL	Y	public	San Mateo	ramp	marina/harbor	County of San Mateo, Parks and Rec Dept
SM18	Old Bayshore Highway	EL		public	Burlingame	sand beach, riprap	public access area	N/ANA
SM20	Colma Creek/Genentech	EL		public	So San Francisco	creek bank	public access area	N/ANA
SM21	Oyster Point Marina	EL	Y	public	So San Francisco	sand beach, ramp, float	marina/harbor	San Mateo County Harbor District
SM22	Brisbane Marina	EL	Y	private	Brisbane	riprap	marina/harbor	City of Brisbane

TABLE 2-1: WATER TRAIL BACKBONE SITES

Site I.D.	Site Name	E/P, L/D*1	HOS?	Ownership	City	Launch Type	General Site Category	Manager
SM23	Coyote Point, Beach	EL	Y	public	San Mateo	sand beach	waterfront park	County of San Mateo, Parks and Rec Dept
SM24	Westpoint Marina	PL		private	Redwood City	ramp	marina/harbor	Mark Sanders
SM25	Corkscrew Slough Viewing Platform	PD		public	Redwood City	dock	refuge/reserve	US Fish and Wildlife Service
San Francisco County								
SF1	Candlestick Point State Recreation Area	EL	Y	public	San Francisco County	sand beach	waterfront park	CA Dept of Parks and Rec
SF2	India Basin Shoreline Park	EL	Y	public	San Francisco	pebble beach	waterfront park	San Francisco Dept of Parks and Rec
SF4	Islais Creek	EL		public	San Francisco	pebble beach	waterfront park	Port of San Francisco
SF6	The "Ramp"	ED		private	San Francisco	ramp	privately owned (business)	Ramp Restaurant
SF7	Pier 52 Boat Launch	EL	Y	public	San Francisco	ramp	public boat launch ramp/float	Port of San Francisco
SF8	South Beach Harbor (AKA Pier 40)	EL		private	San Francisco	float	marina/harbor	South Beach Harbor, Harbormaster
SF9	Treasure Island	EL		public	San Francisco	ramp	public access area	N/ANA
SF10	Aquatic Park	EL	Y	public	San Francisco	sand beach	waterfront park	City of San Francisco
SF11	Gas House Cove (aka Marina Green)	EL		public	San Francisco	float	marina/harbor	City of San Francisco
SF12	Crissy Field	EL	Y	public	San Francisco	sand beach	waterfront park	NPS, Golden Gate National Recreation Area
SF13	Brannan St Wharf	PL		NA	San Francisco	NA	public boat launch ramp/float	N/ANA
SF14	Northeast Wharf Park	PL		NA	San Francisco	NA	waterfront park	N/ANA
Marin County								
M1	Kirby Cove	ED	Y	public	Sausalito	pebble beach	waterfront park	NPS, Golden Gate National Recreation Area
M2	Horseshoe Cove	EL	Y	public	Sausalito	sand beach	waterfront park	NPS, Golden Gate National Recreation Area

TABLE 2-1: WATER TRAIL BACKBONE SITES

Site I.D.	Site Name	E/P, L/D*1	HOS?	Ownership	City	Launch Type	General Site Category	Manager
M3	Swede's Beach	ED		public	Sausalito	sand beach	waterfront park	City of Sausalito, Dept of Parks and Rec
M4	Turney Street Public Boat Ramp	EL		public	Sausalito	ramp	public boat launch ramp/float	City of Sausalito, Dept of Parks and Rec
M5	Dunphy Park	EL	Y	public	Sausalito	pebble beach (A)	waterfront park	City of Sausalito, Dept of Parks and Rec
M6	Schoonmaker Point	EL	Y	public	Sausalito	sand beach (A)	waterfront park	Schoonmaker Point Marina, Harbormaster
M8	Clipper Yacht Harbor	EL		private	Sausalito	ramp (A)	marina/harbor	Clipper Yacht Harbor, Harbormaster
M10	Shelter Point Business Park	EL	Y	public	Mill Valley	float	public boat launch ramp/float	City of Mill Valley, Dept of Parks and Rec
M11	Bayfront Park	EL	Y	public	Mill Valley	dirt beach, float (A)	waterfront park	City of Mill Valley, Dept of Parks and Rec
M13	Brickyard Park	EL		public	Strawberry	dirt beach (A)	waterfront park	Strawberry Recreation District
M16	Richardson Bay Park/ Blackie's Pasture	EL		public	Tiburon	sand beach	waterfront park	City of Tiburon
M17	Angel Island State Park	ED	Y	public	Marin County	sand beach	waterfront park	CA Dept of Parks and Rec
M19	Sam's Anchor Café	ED		private	Tiburon	float	privately owned (business)	Sam's Anchor Café
M25	Higgins Dock	PL		public	Corte Madera	no access	public boat launch ramp/float	City of Larkspur
M27	Bon Aire Landing	EL		public	Larkspur	float	public boat launch ramp/float	City of Larkspur
M28	Marin Rowing Association Boathouse	EL		public	Larkspur	float	public boat launch ramp/float	City of Larkspur
M29	Ramillard Park	EL		public	Larkspur	pebble beach	waterfront park	City of Larkspur
M30	San Quentin	EL		public	San Rafael	sand beach	waterfront park	County of Marin
M31	Jean & John Starkweather Shoreline Park	EL		public	San Rafael	sand beach	waterfront park	City of San Rafael
M33	Harbor 15 Restaurant	ED		private	San Rafael	ramp	privately owned (business)	Harbor 15 Restaurant
M35	Loch Lomond Marina: Ramp	EL	Y	private	San Rafael	ramp (A)	marina/harbor	Loch Lomond Marina
M36	Loch Lomond Marina: Beach	EL	Y	private	San Rafael	dirt beach	marina/harbor	Loch Lomond Marina
M38	McNear's Beach	EL	Y	public	San Rafael	sand beach	waterfront park	County of Marin

TABLE 2-1: WATER TRAIL BACKBONE SITES

Site I.D.	Site Name	E/P, L/D*1	HOS?	Ownership	City	Launch Type	General Site Category	Manager
M39	China Camp State Park	EL	Y	public	San Rafael	sand beach (A)	waterfront park	CA Dept of Parks and Rec
M40	Bull Head Flat	EL	Y	public	San Rafael	pebble beach (A)	waterfront park	CA Dept of Parks and Rec
M41	Buck's Landing	EL		private	San Rafael	float	privately owned (business)	Buck?
M43	John F. McInnis Park	EL		public	San Rafael	float	waterfront park	County of Marin
M47	Black Point Boat Launch	EL	Y	public	Novato	ramp, float (A)	public boat launch ramp/float	County of Marin
Napa County								
N1	Cutting's Wharf	EL	Y	public	Napa County	ramp, float (A)	public boat launch ramp/float	Napa County
N2	JFK Memorial Park	EL	Y	public	Napa	ramp, float (A)	waterfront park	City of Napa
N6	Napa Valley Marina	EL	Y	private	Napa	ramp	marina/harbor	Napa Valley Marina
N7	Green Island Boat Launch Ramp	PL		public	American Canyon	ramp	public boat launch ramp/float	CA Dept of Fish and Game
N8	Riverside Drive Launch Ramp	EL		public	Napa	ramp	public boat launch ramp/float	N/ANA
Sonoma County								
Sn3	Hudeman Slough	EL		public	Sonoma County	ramp, float	public boat launch ramp/float	Sonoma County Dept of Parks and Rec
Sn5	Papa's Taverna/ Lakeville Marina	EL	Y	private	Petaluma	ramp	privately owned (business)	Papa's Taverna; Lakeville Marina, Harbormaster
Sn6	Petaluma Marina	EL	Y	public	Petaluma	ramp (A)	marina/harbor	Petaluma Marina, Harbormaster
Sn7	Petaluma River Turning Basin	EL		public	Petaluma	float	public boat launch ramp/float	N/ANA
Solano County								
So1	Brinkman's Marina	EL	Y	public	Vallejo	ramp, float	public boat launch ramp/float	City of Vallejo

TABLE 2-1: WATER TRAIL BACKBONE SITES

Site I.D.	Site Name	E/P, L/D*1	HOS?	Ownership	City	Launch Type	General Site Category	Manager
So2	California Maritime Academy	EL		public	Vallejo	ramp	public boat launch ramp/float	CA Maritime Academy (SF State University)
So5	Belden's Landing	EL	Y	public	Fairfield	ramp, float	public boat launch ramp/float	Solano County
So7	Matthew Turner Park	EL	Y	public	Benicia	pebble beach	waterfront park	City of Benicia, Parks and Comm. Serv.
So8	West 9th Street Launching Facility	EL	Y	public	Benicia	ramp, float	waterfront park	City of Benicia, Parks and Comm. Serv.
So9	Benicia Point Pier	EL	Y	public	Benicia	pebble beach	waterfront park	City of Benicia, Parks and Comm. Serv.
So10	Benicia Marina	EL	Y	public	Benicia	ramp (A)	marina/harbor	Benicia Marina, Harbormaster
So12	Suisun City Marina	EL	Y	public	Suisun City	ramp, float	marina/harbor	Suisun City
Contra Costa County								
CC1	Martinez Marina	EL	Y	public	Martinez	ramp, float (A)	marina/harbor	City of Martinez; Westrec
CC2	Carquinez Strait Reg. Shoreline (Eckley Pier)	EL	Y	public	Martinez	pebble beach	waterfront park	EBRPD
CC5	Rodeo Marina	PL		private	Rodeo	no access	marina/harbor	Bennett's Marina, Harbormaster
CC6	Pinole Bay Front Park	EL	Y	public	Pinole	pebble beach	waterfront park	City of Pinole
CC8	Point Molate Beach Park	PL		restricted	Richmond	NA	waterfront park	NA
CC9	Keller's Beach	ED	Y	public	Point Richmond	sand beach	waterfront park	EBRPD
CC10	Ferry Point	EL	Y	public	Point Richmond	sand beach	waterfront park	EBRPD
CC11	Boat Ramp Street Launch Area	EL		public	Richmond	ramp	public boat launch ramp/float	City of Richmond
CC14	Richmond Municipal Marina	EL	Y	public	Richmond	ramp, float	marina/harbor	City of Richmond, Westrec
CC15	Marina Bay Pk. & Rosie the Riveter Memorial	EL		public	Richmond	riprap, dirt beach	waterfront park	City of Richmond, owned by NPS
CC16	Shimada Friendship Park	EL	Y	public	Richmond	steps	waterfront park	City of Richmond
CC17	Barbara & Jay Vincent Park	EL	Y	public	Richmond	sand beach (A)	waterfront park	City of Richmond

TABLE 2-1: WATER TRAIL BACKBONE SITES

Site I.D.	Site Name	E/P, L/D*1	HOS?	Ownership	City	Launch Type	General Site Category	Manager
CC19	Point Isabel Regional Shoreline	EL	Y	public	El Cerrito	dirt beach	waterfront park	EBRPD
CC20	SS Red Oak Victory	PD		private	Richmond	ship	privately owned (business)	SS Red Oak Vict. and Richm. Mus. of History
CC21	Point Pinole	PD		public	Pinole	NA	waterfront park	EBRPD
CC22	Bay Point Regional Shoreline	PL		public	Martinez	NA	waterfront park	EBRPD
CC23	Rodeo Beach	PL		public	Rodeo	sand beach	waterfront park	EBRPD
*1	ED = Existing Destination							
	EL = Existing Launch							
	PD = Planned Destination							
	PL = Planned Launch							
	N/A = Information not available							

meaning that they are thought to be potentially suitable for inclusion in the Water Trail (see discussion below). It is possible that, in the future, other, currently unidentified sites will be added to the network. The environmental analysis provided in this document focuses on the 112 Backbone Sites, while establishing the framework for the consideration of inclusion of other, currently unidentified sites.

BACKBONE SITES

The Backbone Sites were recommended for inclusion in the Water Trail during the planning process. They do not comprise a final trail network, which would be gradually established over time as each recommended site (and possible new sites) are considered for designation as a WT Trailhead. This starting pool of Backbone Sites includes those sites that fulfill two basic criteria. The sites:

1. Have launch facilities or planned facilities (e.g., ramp, float, etc.) or launch areas (e.g., a beach) that are used or are planned for this use.

   Some of the more than 135 existing launch and landing sites around the Bay are informal launches where property owners have not improved the site for access onto the Bay, do not manage it for this purpose, or may not even be aware that it is used for launching or landing. Such sites were not included in the Backbone Sites subgroup.

2. Are open to the public.

   This is an essential selection factor because the Water Trail is a public trail. It is important to note that: (1) many access sites that are open to the public are privately owned or managed, and (2) there may be fees for the public to use a site.

Additionally, some existing and planned sites are not included in the Backbone Site list because they have one or more conditions that could preclude inclusion in the Water Trail. These conditions are:

- the site lacks necessary facilities and does not have the space or capacity to ever provide any of these additional amenities, and is unlikely to be an interesting or useful destination site (i.e. landing-only site);
- property ownership or rights are unclear for the site; or
- the launch or destination site owner or manager does not want the site to be part of the Water Trail.

HIGH OPPORTUNITY SITES

Fifty-seven of the Water Trail Backbone Sites are designated by the WT Plan as “High Opportunity Sites” (HOS). These are indicated in Figure 2-2. HOS are sites where:

1. Launch facilities do not require additional improvements beyond signage.
2. No major management issues (e.g., user conflicts, wildlife disturbances, health risks from poor water quality) are expected to be caused [triggered] by trailhead designation that would [in turn] require further site assessment, planning or management changes prior to designation.

Insert Figure 2-2, HOS Sites, here

These HOS would be the simplest sites to designate as trailheads and incorporate into the Water Trail network because they only require Water Trail-related signage (logo and educational messages), and do not have significant challenges that would complicate site planning and management. Focusing initial trail development efforts on these High Opportunity Sites would enable Water Trail managers to designate many trailheads relatively quickly. These can be promoted as the Water Trail early in the implementation process and would help refine the process of trailhead designation.

TRAILHEAD DESIGNATION PROCESS

Trailhead designation would begin after finalization and certification of this Draft EIR. It will be a multi-step process as illustrated in Figure 2-3 and described in detail in the Water Trail Plan, Section 8.3. In short, at public meetings to be noticed and led by State Coastal Conservancy (SCC) staff, specific potential trailheads will be reviewed by a Project Management Team (PMT) of public agency staff from SCC, BCDC, ABAG, and Cal Boating together with members of an Advisory Committee and other stakeholders or invited experts.

Data on all sites under consideration will be gathered and organized into "Site Descriptions." For High Opportunity Sites, the Site Descriptions and a Signage Plan would be considered by Water Trail management before site designation. For all other Backbone Sites (that are not High Opportunity Sites), the Site Description would be expanded into a "Trailhead Plan," which would address a range of issues related to site improvements, management, maintenance, education, outreach, stewardship, and any other issues that pertain to that site. The installation of an educational sign or its equivalent (such as integration of new information into an existing sign or information structure) would be a condition of trailhead designation.

Trailhead designation decisions, although guided by expert input from the Advisory Committee and other stakeholders, would be made by the PMT and only when fully supported by the managers/owners of each site. If the PMT considers the environmental effects and/or mitigations associated with the site under consideration to be inadequately assessed or mitigated, more environmental review will be needed, and the site owner or manager may need to carry out certain actions before the site will actually be designated. If all impacts or effects have been fully considered and adequately mitigated, designation would proceed. It is anticipated that a checklist based on CEQA guidelines for Initial Studies would be developed and used to facilitate this process.

A trailhead could be undesignated at a future date by the Project Management Team. This action would remove the site from the Water Trail and the benefits of its education and outreach media and program. The Water Trail has no regulatory power to close a site or regulate management practices at a site.

INSERT FIG 2-3: TRAILHEAD DESIGNATION PROCESS FLOW CHART HERE

EDUCATION, OUTREACH, AND STEWARDSHIP

An education, outreach, and stewardship program is an essential element of the WT. Its objectives include:

- protecting the safety of WT users and others on the Bay;
- teaching trail users how to boat in a manner that is consistent with protecting wildlife and habitat;
- fostering stewardship of the trail and of Bay resources; and
- enhancing the experience of paddling of the Bay to attract people to get out onto the trail.

Personal boating and navigational safety, protection of wildlife and sensitive habitat, and stewardship of Bay resources are the issue areas that would need to be addressed in the content of information signs to be incorporated into access sites that become designated WT trailheads. The exact language of the signs has not been crafted yet because it would differ from site to site, but the messages will be consistent and will include at least the first three of these bulleted topics in proportion to the needs of individual sites. For example, sites in proximity to security exclusion zones would likely emphasize avoidance of those facilities (such as the Coast Guard Island in Alameda), or sites in proximity to sensitive wildlife habitat (such as harbor seal pupping areas) would focus on avoidance of that habitat.

The WT management team (PMT and Advisory Committee, with input from stakeholders) plans to emulate education, outreach, and stewardship programs that have been successfully implemented by other water trails. Visitors to the Cascadia Water Trail north of Seattle, Washington, for example, encounter, on and off the trail, consistent messages about safety and environmental protection and conservation. The information is the same whether a visitor reads it on a water trail campsite sign, hears it from a tour guide, or reads it on a brochure available on the ferry ride over. The WT would have a similar coordinated, multi-media effort to provide consistent and accurate information to trail users. No such comprehensive and integrative approach to recreational boating on the Bay currently exists.

To meet the need for both system-wide and site-specific education for boaters, significant gaps in existing education efforts would be identified through interviews with clubs, businesses, associations, and related groups that currently offer some aspect of education about boating on the Bay. Recommendations for expansion, modification, coordination or other changes to what is currently offered would be included in a report based on these interviews and exploration of programs developed by other water trails. The results would be synthesized and presented to the Project Management Team, Advisory Committee and stakeholders for their review and comments before the education and outreach program is finalized. This review and synthesis would take place before trailhead designation begins.

EDUCATION AND OUTREACH

The Water Trail Plan has already identified means by which educational messages would be delivered to the public:

- Interactive dissemination of information at meetings and classes sponsored by boat clubs, businesses, agencies, and a variety of other organizations focused on non-motorized boating on the Bay.
- Media, such as the Internet (Water Trail website), brochures, a guidebook, maps, and occasional newspaper or magazine articles.
- On-the-water education, including guided tours and outings as well as individual boater-to-boater information sharing (see Stewardship, below, for a broader discussion).
- A logo and signs to be posted at all sites, including at decision points as feasible and appropriate. Most key decision points for paddleboaters and boardsailors occur on the water. While it is infeasible to install on-the-water signs in most areas of the Bay, indicator buoys may be a viable alternative for the Water Trail in some locations.

STEWARDSHIP

The phrase "education, outreach, and stewardship" implies that stewardship is something apart from education, and yet it is largely synonymous with education. Where the concept of stewardship differs somewhat from education in the context of the Water Trail is in the realm of physically "caring for" or "taking care of" Bay resources and access sites themselves. Fostering stewardship of the resources of the Bay would be consistent with other water trail programs (e.g., Washington Water Trail Association and the Maine Island Trail Association) that motivate boaters to participate in responsible management and protection of resources. Stewardship is achieved through education and outreach programs that have both passive and active elements. Passive components are signage and educational and outreach media such as a guidebook, websites and newspaper articles that promote boating practices that are safe and consistent with protecting wildlife and habitat. Active components are boater-to-boater education, which may be carried out by docents on the water or at launch sites, and by the organization or sponsorship of special events, classes or tours. As an example, the local non-profit Bay Access, Incorporated sponsored a Leave No Trace (LNT) training workshop specifically tailored for San Francisco Bay in the spring of 2008. This workshop was designed for interested boaters using human-powered sail craft and who would be likely to disseminate the principles of the LNT program to others. The workshop was funded by the Conservancy.

Additionally, some water trails implement stewardship programs in which volunteers help maintain trailheads (e.g., by participating in site clean-ups) and improve trail facilities (e.g., by improving a path to a launch or planting vegetation). This type of volunteer-based site stewardship (e.g., 'adopt-a-site') is especially beneficial at smaller, less developed launch sites, such as in public access areas, where it helps build a constituency of trail users that cares about and has a sense of responsibility for the condition of the trailhead. In many cases, a constituency that cares about (and for) a launch site may already exist (e.g., a boating club or group that launches regularly from a specific site, as is the case at Islais Creek in San Francisco). Rather than implement a *de novo* stewardship effort for these sites, the water trail project can partner with these individuals or organizations to support and promote their ongoing stewardship efforts.

Stewardship of the Bay's natural resources can also involve active participation in habitat clean-ups or restoration events. This type of stewardship effort will probably not be an organized component of the Water Trail education, outreach and stewardship program, but site restoration is a complementary stewardship activity that falls within the enabling legislation of the Conservancy for the San Francisco Bay region and thus may be fundable by the Conservancy.

OTHER PLAN CONSIDERATIONS

WILDLIFE AND HABITAT

Recreation in small, non-motorized boats offers opportunities to enjoy the natural, scenic and historic resources of the Bay in a manner that is generally compatible with sustaining these resources. Despite being relatively low-impact recreational activities, human-powered boating and boardsailing can have adverse impacts on Bay wildlife and habitat. A detailed discussion of potential impacts is provided in Chapter 3.4 (Biological Resources) of this Draft EIR. Implementation of the Water Trail will avoid or minimize impacts as discussed elsewhere in this document. In brief, the principle concerns outlined in the Water Trail Plan and discussed herein are disturbance of harbor seals from their haul-out areas, particularly during breading season; disturbance of migratory waterfowl and shorebirds and other resident bird species both on the open bay and along the shoreline; disturbance of special status species; and trampling of vegetation either at trailheads or stopover spots.

PERSONAL AND NAVIGATIONAL SAFETY

Water trail safety issues fall under two general categories. Personal safety issues encompass factors such as natural boating conditions on the Bay (e.g., wind and currents) and individuals' boating skills. The second category includes navigational safety – interactions among vessels. Navigation is discussed in detail in Chapter 3.2 (Public Services and Navigation).

Cold waters, rapidly changing weather conditions and strong tidal currents create a challenging boating environment on the Bay. Visitors to the area and less experienced local boaters might not be prepared for factors such as strong afternoon gusts, thick fog, currents up to six knots and water temperatures between 45° - 60° F. Even a skilled boater who is familiar with Bay conditions can get into trouble. Windsurfers are vulnerable to changes in winds that can strand them far from shore, and conditions at some sites such as Crissy Field – where windsurfers can get washed out under the Golden Gate Bridge – do not offer much margin for error.

Consistent safety education messages would be part of the education and outreach program and would be supplemented at specific sites by site-specific information about nearby boating hazards, no-boating zones, and other pertinent issues. The likelihood of emergencies can also be reduced through careful trip planning and preparation.

Paddleboat and boardsailing activities involve extensive contact with the water and these boaters are vulnerable to sicknesses caused by poor water quality. Urban runoff that enters the Bay through storm drains – particularly after rainstorms – and occasional

overflows at wastewater treatment plants are major causes of water pollution affecting these user groups. Trail users need to be alerted to water quality problems and avoid boating at specific sites or during certain time periods. Such potential issues would be examined at the time of trailhead designation and a decision will be made about how to best inform potential site users about these hazards.

2.4 PROJECT LOCATION AND SURROUNDING LAND USE

BACKGROUND

The primary project area of the Water Trail ("the Bay") was established by the Water Trail Act (Appendix D) as the area within the jurisdiction of the San Francisco Bay Conservation and Development Commission (BCDC). This area includes Bay waters up to the shoreline, and the land area between the shoreline and the line 100 feet upland and parallel to the shoreline (defined as BCDC's 100-foot "shoreline band"). The shoreline is located at five feet above mean sea level. Nine counties have shoreline along San Francisco Bay: Alameda, Contra Costa, Solano, Napa, Sonoma, Marin, San Francisco, San Mateo, Santa Clara.

Potential Water Trail sites are located in all nine Bay Area counties (See Figures 2-1A and 2-1B) in a variety of locations ranging from highly developed to less developed to natural. These sites are a subset (See Backbone Sites and High Opportunity Sites, below) of the launch and landing sites that currently exist around the Bay.

Highly developed areas include commercial, industrial, or residential complexes. There are three major airports (San Francisco, Oakland, and San Jose International) and several smaller ones along the Bay shore (including those in Hayward, San Carlos, Novato, and Palo Alto). Major ports include Oakland, San Francisco, Richmond, Petaluma, Benicia, and Redwood City. Major refineries and heavy industrial complexes include those on the shorelines of the Carquinez Strait, southeastern portions of San Pablo Bay, and South San Francisco. Urban development near the Bay's edge also includes clusters of commercial buildings and residences as well as suburban and semi-rural residential in many locations.

Less developed and relatively more natural areas around the Bay include federal wildlife refuges; local, regional, state, and federal parks, reserves, and recreation areas; former landfill sites; portions of former military bases undergoing conversion to non-military uses; private undeveloped lands; and to a certain extent agricultural lands. In addition, salt pond complexes around the perimeter of South San Francisco Bay and Redwood City are mostly undeveloped and provide important habitat for birds.

EXISTING ACCESS ONTO THE BAY

Existing access onto the Bay for small, non-motorized boats consists of more than 135 launch and landing sites in waterfront parks (50% of all sites), marinas and harbors (17%), sites with public launch ramps or floats (13%), public access areas (12%), and to a lesser extent, wildlife refuges (1%) and privately owned sites (7%). The sites vary in terms of the level of development and management they offer in support of non-motorized boating. Most sites support multiple recreational uses. There are also many other informal sites to which a portable craft, such as a kayak or canoe, could be carried and launched.

Geographically, the launches are clustered primarily around the central Bay, from southern Marin and Contra Costa Counties south to Redwood City and San Leandro. Most of these sites are in, or near, urban areas, and this portion of the Bay is heavily used for commercial shipping, ferry transportation and all types of recreational boating. In comparison, the South Bay, San Pablo Bay and Suisun Marsh have fewer access points. Access in these areas is physically constrained by the shallowness of the Bay and the potential for becoming stranded in mudflats at low tide.

Many of the launch sites within waterfront parks offer NMSB access via beaches, floats, stairs or ramps. Some have additional improvements that are especially well-suited for human-powered boating and boardsailing, such as areas for preparing equipment or boat storage. At other park sites, launching hand-carried watercraft is possible, but current access or facility conditions are less supportive of these activities. For example, they might have only a boat ramp best-suited to launching motorized watercraft, and/or lack parking or restrooms.

Marinas are usually highly developed for boating activities with on-site management by a harbormaster. Many marinas provide publicly accessible floats, ramps or stairs that are regularly used for landing and launching human-powered boats and sailboards.

At public boat launch ramps, levels of facility improvements such as provision of floats (in addition to the ramp), parking and restrooms vary considerably. Some launch ramps require a fee to park or launch, but most do not have on-site management staff.

Certain public access areas provide physical access to the Bay via launching ramps, floats or beaches. Most of these public access areas do not have additional improvements beyond the access itself, and lack active management or maintenance efforts. Some private businesses – most often shoreline restaurants– offer use of their docks or ramps for a launch fee or are free to their clients.

USE OF EXISTING SITES

Data on the use of the aforementioned access sites around the Bay (by non-motorized or motorized boats) do not exist in a form that would allow for the establishment of a quantified baseline condition either for use of access sites per type of non-motorized watercraft or geographic location of use once on the water. Certain observable patterns for non-motorized boats do exist, however, with regard to season of use, geographic areas commonly accessed (Table 3.1-3), sites used to gain access to the Bay per boat type (Table 3.1-6), and popular routes of travel/destination sites. These are discussed in detail in Chapter 3.1 (Recreation). Regarding seasonality of use, kayaking and canoeing are most popular from May to October, and the less popular use of rowboats or dinghies as a form of recreation occur mostly in calm, clear weather regardless of season. Windsurfing and kiteboarding rely on strong winds and occur all year long. Dragon boating, outrigger canoeing, sculling, and whale boating are forms of team boating that generally occur in calm conditions. Whale boat racing on the Bay takes place from May to October.

2.5 ASSUMPTIONS RELATED TO WATER TRAIL ACCESS IMPROVEMENTS AND IMPLEMENTATION STRATEGIES

ACCESS NEEDS AND FACILITY ENHANCEMENTS

Basic access onto the water consists of a place to launch, whether it is a beach, a dock, ramp, tidal steps, piers, a floating dock, or other means. Parking is usually another essential component of access for human-powered boating and boardsailing recreationists.

Access can be enhanced with a variety of improvements and services, such as restrooms, boat drop-off parking zones, equipment storage, boat houses, transient docking, overnight accommodations (such as a hostel, campsite, historic ship, hotel, or bed and breakfast), rigging areas, fresh water for washing gear, individual or group picnic areas, a restaurant or café, rental concessions, trash and recycling containers, bicycle racks, lighting, emergency phones, landscaping, trail system connections, and trailhead wayfinding signs from the local street network, and safety information and regulatory signs.

INCREASED AND DECREASED USE OF SITES

Non-motorized boating on San Francisco Bay is expected to keep pace with population growth but not exceed it (see discussion in Chapter 3.1, Recreation). Existing use of small, non-motorized boats could shift in location based on outreach and information provided by the Water Trail project, on future improvements to sites, or the creation of new sites, or other unforeseen changes. Shifting use includes the potential to either increase or decrease the use of specific sites. These drivers of potential changes in use are not exhaustive by any means, but serve to illustrate the primary ways in which the creation of the Water Trail may affect current use of access sites around the Bay.

A shift toward increased use could be triggered by new knowledge about a site (if boaters did not know it existed, for example); the creation of a site that did not previously exist; or the addition/enhancement of facilities or amenities (such as additional parking, provision of classes or tours, new overnight accommodations), as examples. A shift toward decreased use of a site could be triggered by new knowledge about a site (for example, if seasonal avoidance of sensitive wildlife areas is recommended); the creation of a site that did not previously exist (drawing users to the new site if it is more desirable and away from one(s) previously used); or the addition/enhancement of facilities or amenities at other sites (drawing users to that site and away from other sites). Other factors unrelated to the Water Trail may also affect site use, such as natural disasters or closure of a site by the site owner or manager.

The development or enhancement of new facilities at existing sites merits additional discussion. Some facility enhancement would not necessarily attract additional use of the site, but other improvements likely would. For example, repaving a parking lot, improving restroom facilities, or improving stormwater management in the parking area may not attract recreational boaters to a site in significant numbers. Nor would outreach about a site necessarily attract boaters who do not want to travel far from home, or attract

those who have their boat stored at a certain site, for example. A site that is already being used at capacity, as limited by parking spaces, may not be able to accommodate additional use, even if more boaters would like to use it (unless parking is increased). Some enhancements -could, however, attract additional site users. For example, the addition of on-site boat storage could attract additional site users because of the great convenience and increased potential for using public transportation to get to the site, particularly in urban areas. The conversion of a site that is not universally accessible to one that is would also be attractive to some people who could not previously use the site.

2.6 STRATEGIES FOR WATER TRAIL IMPLEMENTATION

The Water Trail Plan includes development and management strategies that will address trail-related access, wildlife and habitat, safety and education issues and needs in a way that is meant to minimize impacts and enhance the benefits of the Water Trail. Those strategies are summarized in Table 2.2. These strategies are recommendations and do not modify existing land and resource management laws and regulations. Water Trail managers and partners will apply the strategies within existing regulatory frameworks to help them develop and manage access that is consistent with these laws and regulations as well as with Water Trail objectives. Not all strategies apply to all trailheads. There would be a diversity of trailhead types, from highly developed, such as the Berkeley Marina (A2) to fairly primitive, such as India Basin (SF2). Nonetheless, these strategies would guide Water Trail managers and site owners and managers as Trailhead Plans and Site Descriptions are formed and reviewed as part of the Trailhead Designation process.

TABLE 2-2: STRATEGIES FOR WT IMPLEMENTATION

No.	Name	Strategy
1.	Trailhead Location	Seek opportunities to increase capacity at existing launches or create new access, especially at sites that are most desirable to WT users and where adverse impacts to wildlife and habitat or navigational safety are unlikely.
2.	Linking Access Points	Seek opportunities to link trailheads to one another and to other regional trails (e.g. the Bay Trail) that serve different trail users' needs and interests.
3.	Improvements Consistent with Site Characteristics	Match the type and design of trail-related improvements to the site conditions and likely trail user groups. Ensure that the level of use accommodated provides a high-quality recreational experience, protects the environment and ensures user safety.
4.	Consistency with Policies, Plans and Priorities	Coordinate plans for trailhead development, management, and use with existing policies, plans and priorities of land and resources managers at and around trailheads.
5.	Design Guidelines	Develop and update, as needed, design guidelines for trail-oriented access improvements.
6.	Management Resources	Match the facility improvements and use to the management resources for long-term maintenance and management of the facilities.
7.	Maintenance and Operations	Develop a plan for maintenance and operation of trailhead facilities and identify who will be responsible.
8.	Parking	Provide parking or drop-off zones as close as possible to launch points, extend parking time to at least four hours, with overnight parking where possible. Where necessary, restrict the number of users and protect shoreline visual character in locating parking.

TABLE 2-2: STRATEGIES FOR WT IMPLEMENTATION

9.	Restrooms	Provide restroom facilities where feasible and appropriate.
10.	Accessibility	Develop and improve launch facilities to be in compliance with the Americans with Disabilities Act (ADA).
11.	On-site Equipment Storage	Where feasible and appropriate, provide storage areas and facilities for human-powered boats and beachable sail craft equipment.
12.	Non-Profit Boating Clubs and On-site Equipment Concessions	Promote and encourage publicly accessible non-profit boating clubs and/or on-site equipment concessions at appropriate trailheads and facilitate their provision of information on site-specific safety and security, and wildlife and habitat issues.
13.	Overnight Accommodations	Develop new campsites at or near trailheads where consistent with land managers' plans and resources. Coordinate with land managers, organizations and businesses to provide overnight accommodations on the trail in motels, hostels, historic ships, etc..
14.	Site Review	Conduct, coordinate or sponsor periodic reviews of trailheads to identify site-specific issues such as user conflicts, overuse of facilities or non-compliance with rules and use this information to improve site management or facilities.
15.	Habitat Restoration and Access	Seek opportunities to coordinate trailhead development with habitat restoration, enhancement or creation.
16.	Monitoring Impacts	Sponsor pilot projects to monitor trail impacts in different habitats to develop and test effective and consistent monitoring methods and learn about impacts and ways to avoid them. Monitor wildlife and habitat conditions prior to, during, and after inclusion of the site as part of the trail.
17.	Outreach, Educational and Interpretative Signage	Provide signage and other media at and near trailheads, consistent with other trail outreach and education materials. Materials should be site-specific in terms of users groups, natural, cultural and historic resources, safety issues and rules.
18.	Outreach and Coordination	Coordinate with and conduct outreach to paddleboat and boardsailing teachers and guides, outfitters, and other WT-related businesses, agencies and organizations to make them aware of boating practices consistent with the WT ethic and policies.
19.	Educational Media	Provide a guide for using the WT, a trail website, brochures, maps and other educational media for WT use.
20.	Guided Trips	Provide guided trips or tours led by docents or rangers.
21.	Boater-to-Boater Education	Coordinate with agencies and boating organizations to facilitate and enhance existing boater-to-boater outreach and education, and incorporate trail-supported information and messages. Train volunteers and WT staff to educate boaters, especially during high-use times of the year.
22.	Trailhead Stewards	Recruit and coordinate volunteers to be trailhead stewards to help maintain trailheads through clean-ups, and help managers do site check-ins.
23.	Training for Enforcement	Where feasible and appropriate, provide training to local law enforcement on wildlife and environmental regulations to identify or prevent violations at trailheads.
24.	Limitations on Trailhead Use	Establish limits on the number of trail users at a site to prevent impacts to wildlife, habitat, or damage to facilities. Enforce this through either parking restrictions or limits on boating activities and close access when necessary.

2.7 OTHER REQUIRED PERMITS AND APPROVALS

The State Coastal Conservancy would be responsible for approval of the Water Trail Plan. Once the Plan is approved, the WT Project Management Team would be responsible for approval of required Trailhead Plans and Signage Plans for sites, and designation of access and destination sites into the WT. Implementation of the Plan at specific sites may require approvals of one or more of the following agencies, depending on the specifics of the proposed actions:

- U. S. Army Corps of Engineers 404 and Section 10 permits
- Federal and State Endangered Species Acts permits
- California Department of Fish and Game Streambed Alteration Agreements
- California State Regional Water Quality Control Board 401 Certification and/or Discharge Permit
- San Francisco Bay Conservation and Development Commission Shoreline Development Permit
- For projects on state lands, approvals from applicable California State land and water management agencies including:
  - California Department of Parks and Recreation
  - California Department of Boating and Waterways
  - California State Lands Commission
- For projects on federal lands, approvals from:
  - US Fish and Wildlife Service (National Wildlife Refuge lands)
  - US National Park Service (GGNRA lands)
- Local agency (city or county) approvals
- For projects on regional agency lands, regional agency approvals including:
  - Regional parks and open space districts

Land use permitting agencies and requirements are described in greater detail in Section 3.8, Land Use.

3. Environmental Setting, Impacts and Mitigation Measures

SECTION 3.1
RECREATION

3.1 RECREATION

This section identifies potential recreation resource impacts that could result from the proposed WT program. Recreation issues addressed in this section include boating and general recreation use levels at proposed WT access and destination sites, potential changes in recreation use, conflicts among recreational users, and physical impacts to recreational facilities from program-related recreation development and use. Navigational issues are addressed in Section 3.2, Public Services and Navigational Safety. Secondary impacts of project-induced changes in recreational use that may affect land use, biological resources, water quality, public services, cultural resources, and aesthetics are addressed in those respective sections.

3.1.1 RECREATION RESOURCES SETTING

OVERVIEW OF RECREATION RESOURCES

San Francisco Bay, as the largest open space resource in the region, provides environments for all types of NMSB and presents significant opportunities for dispersed use[1] and eco-recreation[2].

Natural variables that affect the levels of use and use patterns of NMSB include tides, winds, and depth of water. These three attributes combine to provide a highly variable mix of recreational boating settings in different locations. Wildlife habitats and the species they support can also affect use patterns of NMSB by serving as attractions and destinations. Other variables that affect NMSB use and use patterns are location of access points, safety exclusion zones, and other boating activities such as commercial shipping, water transit vessels, and motorized small boats.

Existing formal launch sites vary significantly in terms of the level of development and management that supports NMSB activities. Geographically, the formal launches are clustered primarily around the Central Bay, from southern Marin and Contra Costa Counties south to Redwood City and San Leandro.

Existing access onto the Bay for NMSB consists of many more than the 112 WT identified launch and landing Backbone Sites in waterfront parks, marinas and harbors, sites with public launch ramps or floats, public access areas, wildlife refuges and privately owned sites. Many NMSB, particularly canoes and kayaks, can be transported on a car top, can be carried for short distances, and can be launched from any location that has reasonable vehicular and pedestrian access near the bay shoreline. There are hundreds of informal sites where the physical terrain and shoreline conditions could be used for NMSB access to the Bay. The South Bay, San Pablo Bay and Suisun Marsh have fewer access points than the Central Bay.

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[1] Dispersed Recreation: Recreation that does not occur in a developed recreation site.

[2] Eco-Recreation: Low-impact recreation where the natural and/or cultural resources are the major attraction; outdoor recreation opportunities dependent upon a diverse and undisturbed landscape setting; recreational opportunities and facilities using alternative, sustainable design (such as solar/wind power and composting toilets) so as not to impact the natural/cultural resources.

EXISTING BAY NMSB USERS AND USE PATTERNS

Targeted WT users identified in the Draft Plan include people in: kayaks, canoes, dragon boats, outrigger canoes, sculls, whaleboats, rowboats/dinghies, and sailboards (windsurfers and kiteboarders). Table 3.1-1 gives an overview of the characteristics of each type of boat and its existing use characteristics on the Bay.

Numerous interest groups in the Bay Area have formed around, or offer, a variety of NMSB pursuits, share information, promote safety, and protect Bay resources. Table 3.1-2 provides a representative listing of these organizations. There are also numerous rowing clubs associated with high schools and colleges throughout the Bay Area that teach boating safety.

INDIVIDUAL AND GROUP BOATING

Kayaking: Kayaking is by far the most flexible of the different WT target boating types, in terms of the variety of Bay environments that can be safely used and in seasons of use. Kayakers are also the most likely WT users to embark on multi-site and multi-day trips on the Bay. Relative to other WT users, kayaks are versatile in terms of launch site requirements. In almost all cases, launches developed for other NMSB types or for trailered boats can serve kayaks as well, although with significant challenges for water entry and exit at times.

There are two categories of kayaks used on the Bay that are quite different in terms of the areas they typically use. These are: traditional kayaks including sea or touring kayaks, and sit-on-top kayaks. Sit-on-top kayaking accounts for the majority of kayak rentals around the Bay in part because their use does not require a training session as do traditional kayaks. However, sit-on-top kayaks have a higher center of gravity than traditional kayaks and therefore are not as stable on the Bay's often choppy waters. To compensate for this higher center of gravity, a sit-on-top kayak is often wider than a traditional kayak of the same length, which renders it slower and not easily paddled for long distances.

Kayaking is most popular from May to October. Many boaters prefer not to kayak in the winter months when weather is unpredictable, varying from severe storms to tranquil days. Even though the calm winter days may make for ideal kayaking opportunities, the general public does not commonly perceive kayaking as a winter activity (personal communication Bob Licht, Sea Trek Kayak).

Traditional kayakers will typically travel up to eight miles per day, or about four miles for a day-use round trip. Sit-on-top kayakers could be expected to travel much shorter distances, due to their higher center of gravity and relative difficulty of rowing compared to a sea kayak.

Canoeing: Canoeing on San Francisco Bay is not very popular relative to other NMSB because other craft are more stable. Canoeing clubs and solo canoeists in the Bay Area occasionally paddle on the open Bay. However, they tend to keep to the quieter waters of channels, sloughs, tributary rivers and creeks along the margins of the Bay where waters are not as deep and winds and waves are not typically as strong. Popular canoeing areas are: Richardson Bay; Petaluma River; North Bay creeks and sloughs in Sonoma, Napa and western Solano Counties including the San Pablo Bay National Wildlife Refuge; Suisun Marsh; and the Don Edwards San Francisco

TABLE 3.1-1: WATER TRAIL TARGET USERS

Boat Type	Use Characteristics
Kayak	• Sea or touring kayaks are generally stable in most types of water conditions; Sit-on-top kayaks (aka recreation kayaks) are less stable, more strenuous to navigate over long distances, and more suitable for calmer waters • Different kayak types accommodate 1 or 2 people • Sea or touring kayaks may have water-tight space for equipment and are therefore suitable for camping trips • Kayaks are well-suited to and used in most environments of the Bay
Canoe	• Open-hulled; single-blade paddle • Typically accommodates 1 to 3 people • Can have space for equipment, but not water-tight • Not well-suited to open Bay waters with strong currents, high waves, and winds • Predominant use in protected waters of back bays, sloughs and creeks
Dragon boat	• A wood or fiberglass canoe-like boat • Open-hulled; up to 45' long • Group (team) use with up to 22 people on board; team racing is popular • Some hull designs stable enough for open Bay waters, offering option for large group trips • Predominant existing use in protected Bay waters such as the Oakland Estuary, Berkeley South Sailing Basin, and Bair Island Aquatic Center • Treasure Island is location of an annual festival
Outrigger Canoe	• Generally stable in most types of water conditions • Usually accommodates up to 6 paddlers • Team racing is popular • Well-suited to open Bay waters
Scull	• Very narrow and long requiring calm waters • Group use: 2, 4 or 8 rowers • Team racing is popular • Predominant existing use in protected estuaries and back bays with calm wind conditions such as the Oakland Estuary and Bair Island Aquatic Center
Whaleboat	• Generally stable in most types of open water conditions • Usually teams of 10 people (8 rowers) • Team racing is popular • Well-suited to touring; very stable and space for equipment
Rowboat / Dinghy	• Very stable and usually rowed by one person • Space for equipment; well-suited to touring
Sailboards: Windsurfing & Kitesurfing	• Windsurfing: A hand-held sail and rig attached to a board; operated by standing on the board. • Kitesurfing (also called Kiteboarding): A power kite connected to a harness and control bar; operated with a harness while standing on a board • Active single-person sport • Racing is popular • General use localized to portions of the Bay with strong winds

TABLE 3.1-2: NON-POWERED BOATING GROUPS AND ORGANIZATIONS

Organization	Location	Description
Bay Access Inc. (http://www.bayaccess.org/)	Area-wide (web-based)	A nonprofit organization of kayakers dedicated to improving non-powered boat access and water trails
Bair Island Aquatic Center (http://www.gobair.org/)	Redwood City	A nonprofit organization focused on human-powered water sports such as rowing, sculling, paddling, and dragon boating
Bay Area Sea Kayakers (http://www.bask.org/)	San Francisco	Club dedicated to the safe enjoyment of the sport of sea kayaking
Berkeley Paddling and Rowing Club (http://www.berkeleyrowingclub.org/)	Berkeley	Local chapter of U.S. Canoe / Kayak organization
Benicia Outriggers	Benicia	Outrigger canoe club
California Dragon Boat Association (http://www.cdba.org/)	San Francisco	Nonprofit organization to foster the growth and development of dragon boating in the San Francisco Bay Area
Bay Area Whaleboat Rowing Association (http://www.bawra.org)	San Francisco	Represents over 12 Rowing Clubs in the Bay Area
Dolphin Club (http://www.dolphinclub.org/)	San Francisco	Nonprofit, public-access athletic organization
DragonMax Dragon Boat Club of Berkeley (http://www.dragonmax.org/)	Berkeley	Outrigger canoe club
Embarcadero Rowing Club (http://www.rowrenegade.org/)	San Francisco	A non-profit organization for whaleboat rowing
Friends of the Napa River (http://www.friendsofthenapariver.org/)	Napa	Nonprofit organization dedicated to the protection and restoration of the Napa River; sponsors canoe and kayak trips
He'E Nalu o'Marin Outrigger Canoe Club (http://www.heenaluocc.org/)	Larkspur	Outrigger canoe club
Ho'okahi Pu'uwa Outrigger Canoe Club (http://www.hpocc.com/)	Foster City	Outrigger canoe club
Hui Wa'a O San Jose Outrigger Canoe Club (http://www.kanuclub.org/)	Redwood City	Outrigger canoe club
Jack London Aquatic Center (http://www.jlac.org/)	Oakland	Organization that provides dragon boats, kayak, and rowing programs
Kaimanu Hawaiian Outrigger Canoe Club (http://www.kaimanu.com/)	San Leandro	Outrigger canoe club
Kamali'i 'O Ke Kai Outrigger Canoe Club (http://www.kamaliiokekai.org/)	San Jose	Outrigger canoe club
Kilohana Outrigger Canoe Club (http://www.kilohanaocc.org/)	Fremont	Outrigger canoe club
Lokahi Outrigger Canoe Club	Petaluma	Outrigger canoe club

TABLE 3.1-2: NON-POWERED BOATING GROUPS AND ORGANIZATIONS

Organization	Location	Description
(http://www.lokahiocc.org/)		
Marin Canoe and Kayak Club (http://www.marincanoeclub.org/)	San Rafael	Encourages and supports boating
Marin Rowing Association (http://www.marinrowing.org/)	Greenbrae	A non-profit organization
North Bay Rowing Club (http://www.northbayrowing.org/)	Petaluma	Rowing club
Oakland Strokes (http://www.oaklandstrokes.org)	Oakland	Rowing club for high school ages
O Kalani Outrigger Canoe Club	Alameda	Outrigger canoe club
Ohana Wa'a Outrigger Canoe Club	Petaluma	Outrigger canoe club
Open Water Rowing Center (http://www.owrc.com/)	Sausalito	A Limited Liability Corporation (LLC) for open water sculls whose partners are rowers and members of the OWRC
Pacific Rowing Club (http://www.pacificrowingclub.org/)	San Francisco	Sculling club
Petaluma Paddlers	Petaluma	Local canoe and sea kayak paddling group
Pu Pu O Hawai'i Outrigger Canoe Club (http://www.pupuohawaii.org/)	Los Gatos	Outrigger canoe club
San Francisco Bay Area Kiteboarding (http://www.bayareakiteboarding.com)	Area-wide (web-based)	Website with information about kitesurfing
San Francisco Boardsailing Association (http://www.sfba.org/)	San Francisco	A non-profit organization that addresses concerns of boardsailing
San Francisco Outrigger Canoe Center (http://www.sfocc.org/)	South San Francisco	Outrigger canoe organization
Save the Bay (http://www.savesfbay.org)	Oakland	Nonprofit organization working exclusively to protect, restore and celebrate San Francisco Bay; sponsors canoe and kayak outings on the Bay often associated with restoration programs
South End Rowing Club (http://www.south-end.org/)	South San Francisco	Local rowing club
Stanford Kayak Club (http://www.stanford.edu/group/KayakClub/)	Palo Alto	Local kayak club
Stanford Canoe and Kayak (http://www.stanford.edu/group/sck/)	Redwood Shores	Local chapter of U.S. Canoe / Kayak organization
Tamalpais Outrigger Canoe Club (http://www.geocities.com/paddletam/)	Sausalito	A non profit organization which provides instruction in basic and advanced techniques in the sport of outrigger canoeing
Wavechaser Paddle Series	Area-wide (web-based)	Winter racing organization for outriggers and kayaks
Western Sea Kayakers	San Jose	Sea kayak club

TABLE 3.1-2: NON-POWERED BOATING GROUPS AND ORGANIZATIONS

Organization	Location	Description
(http://www.westernseakayakers.org/)		
Women on Water (http://www.uswindsurfing.org/WOW/WOWhome.htm)	San Francisco	Promotes women's windsurfing and kitesurfing

Bay National Wildlife Refuge. Like kayaking, canoeing is most popular from May to October.

Rowboats/Dinghies: Rowboats and dinghies on the Bay are often thought of as small open boats carried as a tender, lifeboat, or pleasure craft on a larger vessel. They are relatively small boats of shallow draft with cross thwarts for seats and rowlocks for oars. Depending on their size and design, these craft may be powered by individuals or small groups. Rowboating on the Bay as recreation is a relatively minor activity in terms of overall numbers. The Dolphin Swimming and Boating Club located in Aquatic Park and Lake Merced in San Francisco is one organization that offers a variety of rowing activities, including participation in rowing races and trips. Popular day trips are to Sam's in Tiburon, The Ramp on San Francisco's south waterfront, and around Alameda Island. Once a year, Club rowers travel up the Delta to Sacramento. Non-motorized rowboats are sometimes used by individuals for fishing and nature observation in the sloughs and creeks in the North and South Bay.

Windsurfing and kitesurfing: These recreation activities focus on areas of the Bay where winds are sufficiently strong to support these uses. As strenuous sports where water safety is paramount, use tends to be directed to the zone immediately around the launch point, rather than a linear travel point-to-point recreation experience. The sailing season usually starts in March or April, and runs into September, when wind speeds are at least in the mid to high teens, and often stronger. However, many in the windsurfing community sail all year long, particularly before, during and after winter storms. Over the past ten years, kitesurfing emerged as a new form of on-water recreation on the Bay. The number of kitesurfers (also referred to as "kiteboarers") on the Bay remains relatively small partly because the skill level required creates a barrier to casual participation.

The San Francisco Boardsailing Association claims 1,600 members and represents the interests of windsurfers on San Francisco Bay. The San Francisco Kitesurfing Association does not post membership numbers, and as a fairly new sport it has relatively few participants. Some kitesurfers came from the ranks of windsurfers, and some pursue both activities. Although windsurfers and kitesurfers are unlikely to make point-to-point trips, they launch and sail at sites that are also suitable for other WT users.

TEAM BOATING

Dragon boating, outrigger canoeing, sculling, and whale boating are popular team activities, most often involved with racing. The exception is the single scull that is often used for training. Outrigger canoe racing, along with dragon boat racing, has experienced rapid growth in the Bay Area in the last five to ten years. Use of dragon boats, outrigger canoes, and sculls are generally limited to use areas around the Bay where wind and water conditions are calm and most conducive to that type of boating.

Dragon boats have twenty paddlers, ten to a side. A drummer sets the pace and a 22nd team member is responsible for steering. Most dragon boat clubs are focused on sprint racing. The California Dragon Boat Association (CDBA), based in the Bay Area, has at least seven clubs that practice year-round on a weekly basis with about 1,000 members, and an additional 700 non-members participating in events. CDBA has about twenty boats in several locations, including Lake Merced, Bair Island Aquatic Center, and the Oakland-Alameda Estuary. There are also non-CDBA boats at Lake Merritt, the Berkeley Marina and the Foster City Lagoon.

The most popular-sized outrigger canoe is propelled by six paddlers. Outriggers are pulled up on the beach by hand, and do well in rough water. There are about a dozen outrigger canoe clubs around the Bay that promote the recreational and cultural values of the sport, and train crews year-round for international races that range from 500-meter sprints to 30-mile marathon events.

Whaleboat use occurs around the entire Bay but is concentrated in the more urban areas of the Bay. There are several whaleboat teams in the Bay Area with public agency and corporate sponsors. Using heavy, open-water boats rowed historically for life-saving and whale hunting, teams of ten practice year-round in preparation for the racing season, which consists of around ten races, and lasts from May through October. The races vary in duration, from about eight minutes to one hour. The longest race is the Bridge to Bridge, a race from the Golden Gate Bridge to San Francisco/Oakland Bay Bridge. The Bay Area Whaleboat Rowing Association (BAWRA) sponsors and organizes the races.

EXISTING LAUNCH SITES

Many launch sites are located within parks owned or managed by cities, counties, regional park districts, California Department of Parks and Recreation (California State Parks), and the National Park Service (NPS). These are listed in Section 3.8 Land Use Planning.

Table 3.1-3 and Figure 3.1-1 identify subregions around the Bay where selected NMSB use is prevalent.

EXISTING DESTINATION SITES

Recreational NMSB use on San Francisco Bay is essentially a dispersed recreation activity. With the exception of established exclusion zones enforced by the U.S. Coast Guard (see Section 3.6), no agency or specific bay-wide program directs boaters where, or where not, to travel. Though general, there are selected recreational routes of travel and destination points that are popular for non-powered small boat recreation, commercial eco-tourism, nature observation, and environmental education. The more popular of these include:

ROUTES OF TRAVEL / DESTINATION SITES

- From Crissy Field to Marin Headlands / Kirby Cove (camping permitted) and Sausalito
- From Horseshoe Cove to Alcatraz and/or Angel Island (camping permitted)
- From Sausalito / Richardson Bay / San Francisco to Alcatraz and/or Angel Island (camping permitted)
- From Shoreline Park in San Rafael to the Marin Islands

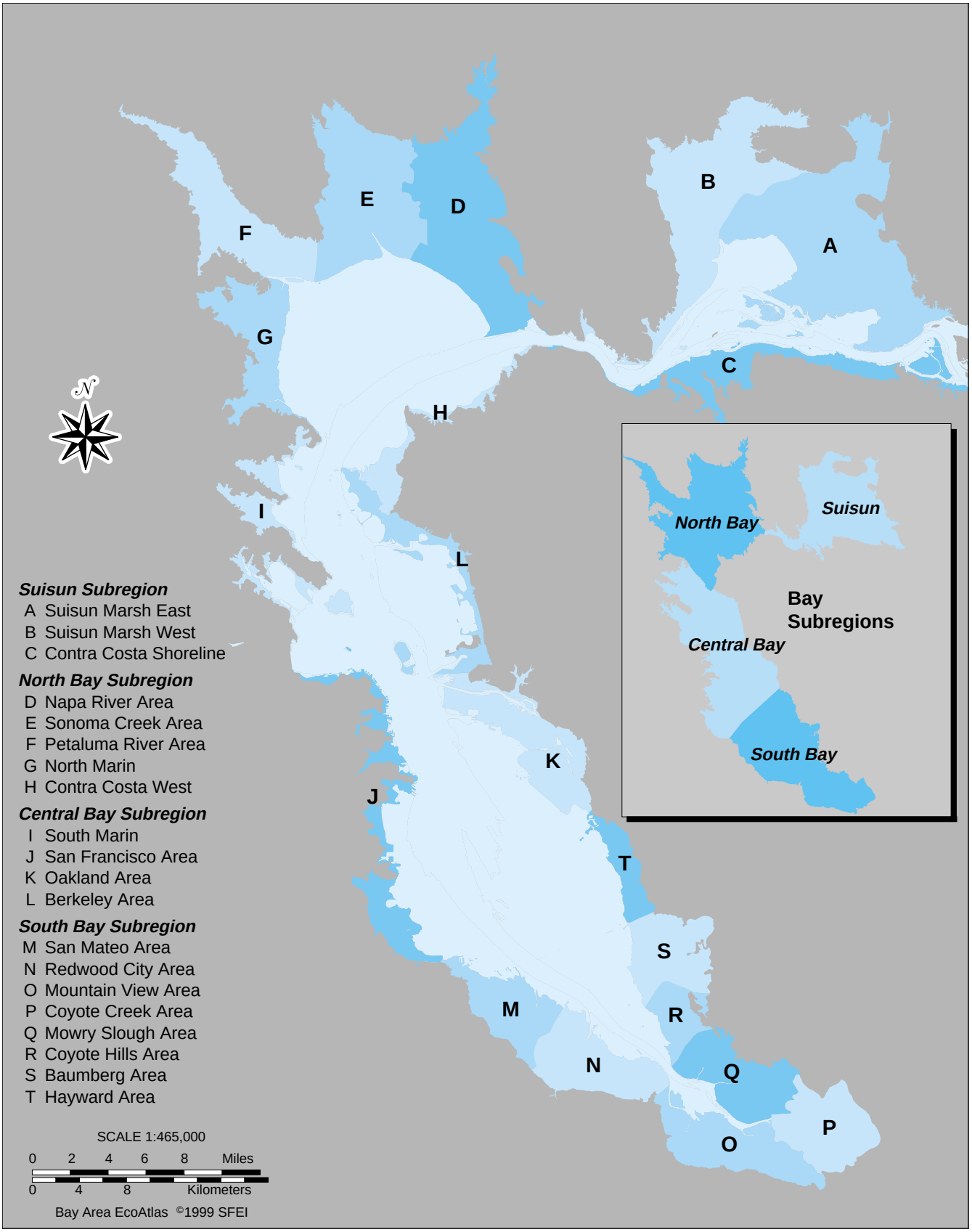

FIGURE 3.1-1:
San Francisco Bay Subregions

TABLE 3.1-3: GENERALIZED LEVELS OF EXISTING USE FOR SELECTED NMSB TYPES BY SUBREGIONS

Project Subregions (See Figure 3.1-1)	Kayaking	Canoeing	Dragon Boating & Sculling	Windsurfing & Kitesurfing
A				
B				
C				
D				
E				
F				
G				
H				
I		protected waters of back bays, sloughs and creeks	protected waters of back bays, sloughs and creeks	
J				
K			protected waters of back bays, sloughs and creeks	
L				
M				
N				
O				
P				
Q				
R				
S				
T				

Source: 2M Associates

Key

- Subregions with relatively high levels of existing use
- Subregions with relatively moderate levels of existing use
- Subregions with little or no existing use; users frequent occasionally

- From Gallinas Slough to China Camp, the Sisters Islands, and McNears Beach County Park
- Along the East Bay from Richmond to Emeryville shoreline
- Along the City of San Francisco shoreline
- Along the Oakland inner harbor shoreline
- From Jack London Square to Yerba Buena and Treasure Islands
- Around Alameda Island
- Around the Bair Island Ecological Reserve and Corkscrew Slough

ADDITIONAL DESTINATION SITES

- China Camp Shoreline, Marin County
- Newark Slough, SF Bay National Wildlife Refuge
- San Leandro Bay, San Leandro
- Petaluma River and Petaluma Marsh, Lakeville
- Brooks Island
- Tolay Creek, Sonoma County
- Bull Island, Napa
- Arrowhead Marsh, Martin Luther King Regional Shoreline, Oakland
- Newark Slough, Newark
- Palo Alto Baylands, Palo Alto
- Bothin Marsh, Mill Valley
- Gallinas Creek, San Rafael
- Heron's Head Marsh, San Francisco

NMSB USE TRENDS

No comprehensive use and trend data are kept for NMSB use on San Francisco Bay. No specific surveys of NMSB ownership or participation rates in California have been published.

The Association of Bay Area Governments (ABAG)[3] estimates that the population of the nine-county region will increase by 1.6 million people (23.7%) in the next 25 years, from approximately 6.8 million in the year 2000 to 8.4 million in the year 2025. This population growth rate is not as dramatic as in the late 1990s and early 2000s (ABAG 2001). At a minimum, it can be assumed that general non-powered small boat use is likely to increase proportionally with the population growth of the Bay Area, or about 0.9% per year. Any changes in boating use due to population increases therefore are expected to be gradual.

Though not specific to the Bay Area, a number of national and statewide studies help to understand use levels and trends associated with the types of NMSB targeted for the WT. These include:

[3] Source: Association of Bay Area Governments, *Projections 2007.*

- *National Survey on Recreation and the Environment*: a national survey sponsored by the U.S. Forest Service and others that has been conducted eight times, with the first survey conducted in 1960, and the most recent survey conducted from September 1999 through 2003.
- *Outdoor Recreation Participation Study*: an annual survey of participation in "human powered outdoor activities" prepared by the Outdoor Industry Foundation that is the nonprofit research arm of an industry trade group, the Outdoor Industry Association. This study began by tracking ten outdoor recreation activities in 1998, but has added activities over the years to include canoeing and kayaking, with a breakdown for recreation sit-on-top, touring, sea, and whitewater kayaking (added in 2001).
- *The Recreation Roundtable Survey*: sponsored by the American Recreation Coalition, a non-profit organization that promotes partnerships in outdoor recreation. The survey of attitudes and participation in outdoor recreation was first conducted in 1994 with the most recent survey in 2003. The survey included canoeing/kayaking, rowing, and sailing activities.
- T*he National Recreational Boating Survey*: conducted for the U.S. Coast Guard in 2002; it included surveys of motorized and non-motorized small boat use, examining the characteristics of each type of boater.
- *Superstudy of Sports Participation*: an annual survey prepared since 1987 by the research company American Sports Data that collected data for five NMSB use activities: canoeing, kayaking, rafting, sailing (all), and sailboarding.
- *Boating Statistical Abstract*: prepared annually by the National Marine Manufacturers Association. With a sales focus, the Abstract is a compendium of recreational boating statistics for motorized and non-motorized boats, and includes overall recreational boating participation data.
- *Public Opinions and Attitudes on Outdoor Recreation in California*: a 2002 survey prepared by California Department of Parks and Recreation as part of the California Outdoor Recreation Plan and focusing on: public attitudes, opinions, and values regarding key areas of interest relating to outdoor recreation opportunities in California; and public participation interests in different types of outdoor recreation activities, including latent or unfulfilled demand.

Only general information can be deduced from these studies because of a number of variables including: use of different definitions of boat types; the aggregation of boat types into differing categories of NMSB; different years of study; different survey methods; and in some cases an emphasis on sales that cannot be directly translated into participation rates. However, while national studies may not exactly mirror California's trends in NMSB use, referencing longer-term national trends provides a contextual baseline for projecting how use trends may affect the WT.

General NMSB use: Trends in active outdoor recreation activities in general, and kayaking and canoeing in particular, suggest that the popularity of NMSBing nationwide has indeed increased over the last ten years. Between 1997 and 2002, the statewide

participation in paddlesports[4] increased from 18.3% to 23% (Public Opinions and Attitudes on Outdoor Recreation in California). Eleven percent of Californians participate in recreational boating that includes canoeing, kayaking of all types, and rafting (Outdoor Recreation Participation Study). However, based on other national surveys and sales information from recent years as outlined below, general non-powered boating participation levels by individuals have, with few exceptions, basically remained stable or have declined in popularity.

Kayaking: Of all the boating types targeted by the WT, kayaking has shown the most dramatic increase in popularity over the past few years. National kayak participation rates were first measured in 1994, when they were still quite low, at 1.3% of the national population (National Marine Manufacturers Association, *Boating Statistical Abstract*). In the early 1990s, kayaking was considered a specialty sport, requiring some training and a relatively high level of skill for either of the sport's two main subsets: whitewater kayaking or sea kayaking. More recently, the advent of the recreation/sit-on-top kayaks has changed kayaking use levels. Recreational kayaks are relatively inexpensive, easy to operate, and appropriate for entry-level NMSB users. When rented, sit-on-top kayaks do not require a safety training session, which also adds to their popularity.

By 2005, national kayak participation had increased to about 4.0% (Outdoor Industry Foundation, *Outdoor Recreation Participation Study – Eighth Edition for the Year 2005*, June 2006). As presented in Table 3.1-4, participation nationwide in non-whitewater kayaking increased significantly (+26.3%) between 2003 and 2005. That increase was largely due to recreation/sit-on-top kayaking (+34.4%), with touring/sea kayaking as an outdoor recreation participation decreasing (-4.7%) during the same period.

Canoeing: Canoeing is the most traditional NMSB activity in the nation, and has been tracked for the longest period of time. Recently, canoeing participation rates have slightly declined.

There are several sources of data on canoe participation and demographics, although some combine canoeing with kayaking, or other paddle sports. These include:

- U.S. Forest Service, National Survey on Recreation and the Environment
- American Recreation Coalition, The Recreation Roundtable Survey
- Outdoor Industry Foundation. Outdoor Recreation Participation Study
- American Sports Data. Superstudy of Sports Participation

Canoe participation rates were generally higher than for other NMSB use activities. While canoeing is a popular NMSB activity nationally, all data sources indicate that canoe participation is lower in California and other western United States. Participation nationwide in canoeing increased 8.5% between 1998 and 2005 but decreased by 8.7% between 2003 and 2005 (see Table 3.1-4). The popularity of canoeing peaked in 2001 when a record number of Americans not only participated in canoeing but also participated much more frequently. However, the total number of outings has

[4] The term "paddlesports" involves many types of boats and is a general classification also applied to river and lake recreation, and whitewater rafting. NMSB use on the Bay is a much more limited activity.

TABLE 3.1-4: PARTICIPANT LEVELS AND TRENDS

Activity	Americans 16 Years of Age or Older					
	Incidence of Participation in 2006	Participant Population (Millions)	Total Number of Outings (Millions)*	Participation Incidence % Change		
				2005 vs. 1998	2005 vs. 2003	2005 vs. 2004
Paddlesports – Any Type	15.3%	34.3	191	N/A	3.9%	7.2%
Rafting	9.3%	20.8	83	8.5%	-8.7%	-7.5%
Canoeing	4.7%	10.6	21	3.1%	0.9%	10.5%
Kayaking – Any Type	5.6%	12.6	86	N/A	23.0%	23.3%
Kayaking – Non-whitewater	5.3%	11.9	82	N/A	26.3%	25.3%
Kayaking – Sit-on-Top	4.0%	9.0	54	N/A	34.0%	22.4%**
Kayaking – Touring / Sea	2.5%	5.6	28	N/A	-4.7%	-1.6%
Kayaking – Whitewater	1.0%	2.2	4	N/A	16.1%	-2.8%

* Total Outings are calculated by summing totals for the sub-categories as appropriate.

** Represents a large percent growth or decline (greater than 20%) but is not significantly different from 2005 at the 95% confidence level

Source: Outdoor Industry Foundation, Outdoor Recreation Participation Study – Eighth Edition for the Year 2005. June, 2006

significantly declined since 2001. In 2005 there were 83 million outings taken compared to 192 million outings in 2001. National canoe sales reflect this trend. Sales have averaged around 100,000 per year dating back to 1980, the first year data were available. The highest two sales years were 1981, at 126,000 canoes sold, and 1999, with 121,000 canoes sold. With the exception of 2004, when canoe sales saw a slight increase, canoe sales have dropped each year since 1999. In 2005, one of the lowest sales years on record, 77,200 canoes were sold nationwide. Since 1999, the general slow decline in national canoe participation and more rapid decline in national canoe sales are in contrast to the rapid rise of recreational kayaking.

Windsurfing and Kitesurfing: Windsurfing is a sport whose popularity peaked in the 1980s and early 1990s, and has since declined in popularity (U.S. Forest Service, *National Survey on Recreation and the Environment;* American Sports Data. *Superstudy of Sports Participation*). It is likely that use will generally remain at current levels for the foreseeable future.

Because of the demanding physical requirements of the activity, participation rates represent a relatively low percentage of the population even though windsurfing participation rates in California appear to be slightly higher than national rates. The 2005

national participation rate for windsurfing ranged between 0.2 percent and 1.1 percent. Sailboard sales peaked between 1980 and 1990, when sales were at 42,000 units. The highest year on record was 1987, at 70,000 units. Sales have declined in each of the years since.

Rowing: In participation studies there is no standard definition of rowing, so the category could includes sculls and shells, rowboats, dinghies, tenders, dories, driftboats, dragon boats, and rowing boats that are sometimes used with a motor. The 2005 national participation rate for rowing was between 3.0% and 4.3% (National Marine Manufacturers Association, *Boating Statistical Abstract*; American Recreation Coalition. *Recreation Roundtable Survey*). Participation rates in California appeared to be slightly lower than national rowing participation rates.

The popularity of group-rowing activities such as in dragon boats, outrigger canoes, sculls, and whale boats is increasing. However, the aggregate of these users is a small fraction compared to other boating types.

3.1.2 REGULATORY SETTING

FEDERAL AGENCIES AND REGULATIONS

AMERICANS WITH DISABILITIES ACT (ADA)

The ADA mandates that individuals with disabilities must be given an equal opportunity to access public facilities and that reasonable accommodations must be made to account for physical and mental limitations of individuals with disabilities. As stated in Section 3.0, Assumptions, construction of ADA features would be addressed at a project-level CEQA review.

U.S. COAST GUARD (COAST GUARD)

The Coast Guard oversees management and enforcement of navigation in San Francisco Bay through a series of regulations that govern navigation practices, marine events, and safety and security zones within the Bay. These are discussed in Section 3.2.2 below.

NATIONAL PARK SERVICE

The National Park Service (NPS) has jurisdiction over several bayfront National Parks, including the Golden Gate National Recreation Area and the Rosie the Riveter Historic Park. Recreation policies for these parks are discussed in detail in Section 3.8, Land Use Planning.

U.S. FISH AND WILDLIFE SERVICE

The U.S. Fish and Wildlife Service (FWS) owns and manages National Wildlife Refuges and Bay waters totaling 30,000 acres. The National Wildlife Refuge System Improvement Act of 1997 designates wildlife-dependent recreational uses involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation as “priority general public uses.” When these activities are compatible with species protection goals (as determined by FWS), they are welcome on refuges and

receive priority over other uses. FWS policies for Bay refuges are discussed in detail in Section 3.8, Land Use Planning

STATE AGENCIES AND REGULATIONS

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION, BAY PLAN

The design and implementation of all WT improvements will be within the jurisdiction of the San Francisco Bay Conservation and Development Commission (BCDC) and will require a BCDC permit. The Bay Plan and these guidelines have applicability as to how proposed WT Backbone Sites might be developed and are also discussed in Section 3.8 Land Use Planning. Specific guidelines developed by BCDC for public access improvements along the Bay shoreline are summarized in *Shoreline Spaces: Public Access Design Guidelines for the San Francisco Bay* (2005). Guidelines are provided for a full range of specific public access improvements including parking and staging areas and launching ramps.

REGIONAL AND LOCAL AGENCIES AND REGULATIONS

ASSOCIATION OF BAY AREA GOVERNMENTS (ABAG) – BAY TRAIL PLAN

The San Francisco Bay Trail is a planned recreational corridor that, when complete, will encircle San Francisco and San Pablo Bays with a continuous 500-mile network of bicycling and hiking trails and cross all the major toll bridges in the Bay Area. To date, approximately 290 miles of the alignment, over half the Bay Trail's ultimate length, have been completed.

The Bay Trail Plan was adopted by ABAG in July 1989. In 1990, the San Francisco Bay Trail Project was created as a nonprofit organization dedicated to planning, promoting and advocating implementation of the Bay Trail. The Bay Trail Plan includes: a proposed alignment; a set of policies to guide the future selection, design and implementation of routes; and strategies for implementation and financing. Bay Trail policies and design guidelines are intended to complement rather than supplant the adopted regulations and guidelines of local managing agencies.

Bay Trail alignment policies reflect the goals of the Bay Trail program—to develop a continuous trail which highlights the wide variety of recreational and interpretive experiences offered by the diverse bay environment and is situated as close as feasible to the shoreline, within the constraints defined by other policies of the plan. Bay Trail policies also include the investigation of water trails as an enhancement to the shoreline trail system.

The Bay Trail offers access to commercial, industrial and residential neighborhoods; points of historic, natural and cultural interest; recreational areas like beaches, marinas, fishing piers, boat launches, and over 130 parks and wildlife preserves totaling 57,000 acres of open space. It passes through highly urbanized areas like downtown San Francisco as well as remote natural areas like the San Francisco Bay National Wildlife Refuge. Depending on the location of its segments, the Bay Trail consists of paved multi-use paths, dirt trails, bike lanes, sidewalks or city streets signed as bike routes.

The Bay Trail currently leads to or through 72 of the 112 WT Backbone Sites (See Table 3.1-5).

3.1.3 PROGRAM IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Program elements are considered to have a significant impact to recreation resources if:

- Construction or expansion of recreational facilities may have an adverse physical effect on the environment. This criterion is addressed in the other sections of this EIR, as well as the Initial Study (see Appendix A).
- There is a substantial increase in 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.
- The location, design or use of proposed WT Backbone Sites would preclude existing recreation activities.

As noted in the introduction to this section, conflicts between WT users and other resources are addressed in those respective sections.

IMPACTS AND MITIGATION MEASURES

Impact 3.1-1. Increased Use of Existing Sites or Other Recreational Sites Causing Accelerated Physical Deterioration of the Facility or Substantial Unplanned Expansion

Table 3.1-3 presents a broad comparison of how existing NMSB use is distributed around sub-regions of the Bay. Table 3.1-6 lists the WT Backbone Sites and identifies the existing sites that are currently popular for each type of non-powered boating, based on information provided by user groups, commercial operators, and/or concessionaires. Sites without highlights may also receive some use, but at substantially lower levels.

Geographically, the WT sites are clustered primarily around the Central Bay, from southern Marin and Contra Costa Counties south to Redwood City and San Leandro. Existing use patterns generally reflect the pattern of existing launch sites that also make up the WT High Opportunity Sites. Most of these sites are in or near urban areas, and the portion of the Bay that is heavily used for commercial shipping, ferry transportation and all types of recreational boating. Comparatively, the South Bay, San Pablo Bay and Suisun Marsh have fewer proposed WT access points. Partly this reflects the management priorities and limitations of the major landowners in these regions, the U.S. Fish and Wildlife (USF&WS) Service and California Department of Fish and Game (CDF&G), to protect and preserve wildlife and habitat (see also Section 3.4, Biological Resources and Section 3.8 Land Use Planning). However, access is also physically limited because the Bay is very shallow in these areas, and boating trips require careful coordination with the tides to avoid boats becoming stranded in mudflats at low tides.

The most popular WT use would be from kayakers and, to a lesser extent, canoeists. Use of dragon boats, outrigger canoes, and sculls would generally be limited to existing popular use areas around the Bay where wind and water conditions are most conducive to that type of boating.

TABLE 3.1-5: WT BACKBONE SITES ADJACENT TO EXISTING BAY TRAIL SPINE

Map Key: Fig 2-1A and 2-1B	Site Name	Existing / Planned	Launch / Destination	Bay Trail
Alameda County				
A1	Albany Beach	Existing	Launch	Yes
A2	Berkeley Marina, Ramp	Existing	Launch	Yes
A4	Point Emery	Existing	Launch	Yes
A5	Shorebird Park	Existing	Launch	Yes
A6	Emeryville City Marina	Existing	Launch	Yes
A8	Middle Harbor Park	Existing	Launch	Yes
A9	Jack London Square	Existing	Launch	Yes
A11	Estuary Park/Jack London Aquatic Center	Existing	Launch	Yes
A12	Grand Avenue Boat Ramp	Existing	Launch	Yes
A14	Robert Crown Memorial State Beach	Existing	Launch	Yes
A15	Encinal Launching and Fishing Facility	Existing	Launch	Yes
A18	Doolittle Drive; Airport Channel	Existing	Launch	Yes
A20	San Leandro Marina	Existing	Launch	Yes
A22	Eden Landing Ecological Reserve	Planned	Launch	
A24	Jarvis Landing	Existing	Launch	Yes
A25	Tidewater Boathouse	Planned	Launch	Yes
A26	Berkeley Marina, Small Boat Launch	Existing	Launch	Yes
A27	Coyote Hills	Planned	Destination	Yes
A28	Elmhurst Creek	Existing	Launch	Yes
A30	Hayward's Landing	Planned	Destination	Yes
Santa Clara County				
SC2	Alviso Marina	Planned	Launch	Yes
SC3	Palo Alto Baylands Launching Dock	Existing	Launch	Yes
San Mateo County				
SM2	Ravenswood Open Space Preserve	Existing	Launch	Yes
SM4	Redwood City Municipal Marina	Existing	Launch	Yes
SM6	Docktown Marina	Existing	Launch	
SM9	Redwood Shores Lagoon	Existing	Launch	
SM11	Beaches on the Bay	Existing	Launch	Yes
SM12	Foster City Lagoon Boat Park	Existing	Launch	
SM13	East 3rd Ave	Existing	Launch	Yes
SM16	Seal Point Park	Existing	Launch	Yes

TABLE 3.1-5: WT BACKBONE SITES ADJACENT TO EXISTING BAY TRAIL SPINE

Map Key: Fig 2-1A and 2-1B	Site Name	Existing / Planned	Launch / Destination	Bay Trail
SM17	"Coyote Point, Marina"	Existing	Launch	Yes
SM18	Old Bayshore Highway	Existing	Launch	Yes
SM20	Colma Creek/Genentech	Existing	Launch	Yes
SM21	Oyster Point Marina	Existing	Launch	Yes
SM22	Brisbane Marina	Existing	Launch	Yes
SM23	"Coyote Point, Beach"	Existing	Launch	
SM24	Westpoint Marina	Planned	Launch	Yes
SM25	Corkscrew Slough Viewing Platform	Planned	Destination	
San Francisco County				
SF1	Candlestick Point State Recreation Area	Existing	Launch	Yes
SF2	India Basin Shoreline Park	Existing	Launch	Yes
SF4	Islais Creek	Existing	Launch	Yes
SF6	"The ""Ramp"""	Existing	Destination	Yes
SF7	Pier 52 Boat Launch	Existing	Launch	Yes
SF8	South Beach Harbor (AKA Pier 40)	Existing	Launch	Yes
SF9	Treasure Island	Existing	Launch	
SF10	Aquatic Park	Existing	Launch	Yes
SF11	Gas House Cove (aka Marina Green)	Existing	Launch	Yes
SF12	Crissy Field	Existing	Launch	Yes
SF13	Brannan St Wharf	Planned	Launch	Yes
SF14	Northeast Wharf Park	Planned	Launch	Yes
Marin County				
M1	Kirby Cove	Existing	Destination	
M2	Horseshoe Cove	Existing	Launch	
M3	Swede's Beach	Existing	Destination	
M4	Turney Street Public Boat Ramp	Existing	Launch	
M5	Dunphy Park	Existing	Launch	
M6	Schoonmaker Point	Existing	Launch	
M8	Clipper Yacht Harbor	Existing	Launch	
M10	Shelter Point Business Park	Existing	Launch	Yes
M11	Bayfront Park	Existing	Launch	Yes
M13	Brickyard Park	Existing	Launch	
M16	Richardson Bay Park/ Blackies Pasture	Existing	Launch	Yes
M17	Angel Island State Park	Existing	Destination	

TABLE 3.1-5: WT BACKBONE SITES ADJACENT TO EXISTING BAY TRAIL SPINE

Map Key: Fig 2-1A and 2-1B	Site Name	Existing / Planned	Launch / Destination	Bay Trail
M19	Sam's Anchor Café	Existing	Destination	
M25	Higgins Dock	Planned	Launch	
M27	Bon Aire Landing	Existing	Launch	
M28	Marin Rowing Association Boathouse	Existing	Launch	
M29	Ramillard Park	Existing	Launch	Yes
M30	San Quentin	Existing	Launch	
M31	Jean & John Starkweather Shoreline Park	Existing	Launch	Yes
M33	Harbor 15 Restaurant	Existing	Destination	
M35	Loch Lomond Marina: Ramp	Existing	Launch	
M36	Loch Lomond Marina: Beach	Existing	Launch	
M38	McNear's Beach	Existing	Launch	
M39	China Camp State Park	Existing	Launch	Yes
M40	Bull Head Flat	Existing	Launch	Yes
M41	Buck's Landing	Existing	Launch	
M43	John F. McInnis Park	Existing	Launch	Yes
M47	Black Point Boat Launch	Existing	Launch	
Napa County				
N1	Cutting's Wharf	Existing	Launch	Yes
N2	JFK Memorial Park	Existing	Launch	Yes
N6	Napa Valley Marina	Existing	Launch	
N7	Green Island Boat Launch Ramp	Planned	Launch	
N8	Riverside Drive Launch Ramp	Existing	Launch	
Sonoma County				
Sn3	Hudeman Slough	Existing	Launch	
Sn5	Papa's Taverna/ Lakeville Marina	Existing	Launch	
Sn6	Petaluma Marina	Existing	Launch	
Sn7	Petaluma River Turning Basin	Existing	Launch	
Solano County				
So1	Brinkman's Marina	Existing	Launch	Yes
So2	California Maritime Academy	Existing	Launch	Yes
So5	Belden's Landing	Existing	Launch	
So7	Matthew Turner Park	Existing	Launch	Yes
So8	West 9th Street Launching Facility	Existing	Launch	Yes
So9	Benicia Point Pier	Existing	Launch	Yes

TABLE 3.1-5: WT BACKBONE SITES ADJACENT TO EXISTING BAY TRAIL SPINE

Map Key: Fig 2-1A and 2-1B	Site Name	Existing / Planned	Launch / Destination	Bay Trail
So10	Benicia Marina	Existing	Launch	Yes
So12	Suisun City Marina	Existing	Launch	
Contra Costa County				
CC1	Martinez Marina	Existing	Launch	Yes
CC2	Carquinez Strait Reg. Shoreline (Eckley Pier)	Existing	Launch	Yes
CC5	Rodeo Marina	Planned	Launch	
CC6	Pinole Bay Front Park	Existing	Launch	Yes
CC8	Point Molate Beach Park	Planned	Launch	
CC9	Keller Beach	Existing	Destination	Yes
CC10	Ferry Point	Existing	Launch	Yes
CC11	Boat Ramp Street Launch Area	Existing	Launch	Yes
CC14	Richmond Municipal Marina	Existing	Launch	Yes
CC15	Marina Bay Park & Rosie the Riveter Memorial	Existing	Launch	Yes
CC16	Shimada Friendship Park	Existing	Launch	Yes
CC17	Barbara & Jay Vincent Park	Existing	Launch	Yes
CC19	Point Isabel Regional Shoreline	Existing	Launch	Yes
CC20	SS Red Oak Victory	Planned	Destination	
CC21	Point Pinole	Planned	Destination	Yes
CC22	Bay Point Regional Shoreline	Planned	Launch	
CC23	Rodeo Beach	Planned	Launch	

TABLE 3.1-6: GENERAL USE BY BOAT TYPE OF WT BACKBONE SITES[1]

Map Key: Fig 2-1A and 2-1B	Site Name	Kayak	Canoe	Dragon Boat	Outrigger Canoe	Scull	Whaleboat	Rowboat / Dinghy	Windsurfing	Kitesurfing
A1	Albany Beach	■								
A2	Berkeley Marina, Ramp	■		■						
A4	Point Emery	■							■	
A5	Shorebird Park (Point Emery?)								■	■
A6	Emeryville City Marina	■								
A8	Middle Harbor Park									
A9	Jack London Square / CA Canoe and Kayak	■								
A11	Estuary Park / Jack London Aquatic Center (Mariner Square?)	■		■		■				
A12	Grand Avenue Boat Ramp	■								
A14	Robert Crown Memorial State Beach									
A15A	Encinal Launching and Fishing Facility (Alameda Rockwall?)	■								
A15B	Carlsbad State Beach								■	■
A18	Doolittle Drive; Airport Channel (MLK Regional Shoreline?)	■								
A20	San Leandro Marina	■								
A22	Eden Landing Ecological Preserve									
A24	Jarvis Landing (Newark Slough?)	■								
A25	Tidewater Boathouse									
A26	Berkeley Marina, Small Boat Launch (South Sailing Basin)	■							■	
A27	Coyote Hills (planned Desstination Site)									
A28	Elmhurst Creek									
A30	Hayward's Landing (planned Desstination Site)									
CC1	Martinez Marina	■								
CC2	Carquinez Strait Regional Shoreline (Eckley Pier)									
CC5	Rodeo Marina									
CC6	Pinole Bay Front Park	■								
CC8	Point Molate Beach Park									

TABLE 3.1-6: GENERAL USE BY BOAT TYPE OF WT BACKBONE SITES[1]

Map Key: Fig 2-1A and 2-1B	Site Name	Kayak	Canoe	Dragon Boat	Outrigger Canoe	Scull	Whaleboat	Rowboat / Dinghy	Windsurfing	Kitesurfing
CC9	Keller's Beach (Desstination Site)	■								
CC10	Ferry Point									
CC11	Boat Ramp Street Launch Area									
CC14	Richmond Municipal. Marina	■								
CC15	Marina Bay Park & Rosie the Riveter Memorial									
CC16	Shimada Friendship Park	■								
CC17	Barbara & Jay Vincent Park	■								
CC19	Point Isabel Regional Shoreline	■							■	
CC20	SS Red Oak Victory (planned Desstination Site)									
CC21	Point Pinole (Desstination Site)									
CC22	Bay Point Regional Shoreline									
CC23	Rodeo Beach									
M1	Kirby Cove (Desstination Site - camping permitted)	■								
M2	Horseshoe Cove	■								
M3	Swede's Beach (Desstination Site)	■	■							
M4	Turney Street Public Boat Ramp	■	■							
M5	Dunphy Park	■	■							
M6	Schoonmaker Point	■	■			■				
M8	Clipper Yacht Harbor	■	■							
M10	Shelter Point Business Park	■	■							
M11	Bayfront Park	■	■							
M13	Brickyard Park		■							
M16	Richardson Bay Park / Blackies Pasture									
M17	Angel Island State Park (Desstination Site - camping permitted)	■								
M19	Sam's Anchor Café (Desstination Site)									
M25	Higgins Dock (note: dock removed?)									
M27	Bon Aire Landing	■								

TABLE 3.1-6: GENERAL USE BY BOAT TYPE OF WT BACKBONE SITES[1]

Map Key: Fig 2-1A and 2-1B	Site Name	Kayak	Canoe	Dragon Boat	Outrigger Canoe	Scull	Whaleboat	Rowboat / Dinghy	Windsurfing	Kitesurfing
M28	Marin Rowing Association Boathouse					■				
M29	Ramillard Park (Larkspur Landing ?)	■							■	
M30	San Quentin (San Quentin Village?)	■								
M31	Jean & John Starkweather Shoreline Park (Rod and Gun Club ?)	■							■	
M33	Harbor 15 Restaurant (Desstination Site)									
M35	Loch Lomond Marina: Ramp									
M36	Loch Lomond Marina: Beach	■								
M38	McNear's Beach County Park	■								
M39	China Camp State Park	■								
M40	Bull Head Flat	■								
M41	Buck's Landing									
M43	John F. McInnis Park	■								
M47	Black Point Boat Launch	■								
N1	Cutting's Wharf	■								
N2	JFK Memorial Park	■	■							
N6	Napa Valley Marina									
N7	Green Island Boat Launch Ramp	■	■							
N8	Riverside Road									
SC2	Alviso Marina	■	■							
SC3	Palo Alto Baylands Launching Dock	■	■						■	
SF1	Candlestick Point State Recreation Area	■							■	■
SF2	India Basin Shoreline Park									
SF4	Islais Creek	■	■							
SF6	The "Ramp" (Desstination Site)									
SF7	Pier 52 Boat Launch (aka China Basin)	■								
SF8	South Beach Harbor	■								
SF9	Treasure Island (Clipper Cove)			■	■				■	

TABLE 3.1-6: GENERAL USE BY BOAT TYPE OF WT BACKBONE SITES[1]

Map Key: Fig 2-1A and 2-1B	Site Name	Kayak	Canoe	Dragon Boat	Outrigger Canoe	Scull	Whaleboat	Rowboat / Dinghy	Windsurfing	Kitesurfing
SF10	Aquatic Park	■						■		
SF11	Gas House Cove (aka Marina Green)									
SF12	Crissy Field	■								
SF13	Brannan Street Wharf (South Beach Harbor?)									
SF14	Northeast Wharf Park (Aquatic Park?)									
SM2	Ravenswood Open Space Preserve (Ravenswood?)	■	■							
SM4	Redwood City Municipal Marina (Bair Island Aquatic Center?)			■						
SM6	Docktown Marina									
SM9	Redwood Shores Lagoon									
SM11	Beaches on the Bay									
SM12	Foster City Lagoon Park			■						
SM13	East 3rd Ave (Foster City)	■							■	■
SM16	Seal Point Park (San Mateo)									
SM17	Coyote Point County Recreation Area: Marina									
SM18	Old Bayshore Highway (Embasssy Suites?)	■							■	
SM20	Colma Creek / Genentech								■	
SM21	Oyster Point Marina (Windsurf Access Area)	■							■	
SM22	Brisbane Marina									
SM23	Coyote Point County Recreation Area Beach	■							■	■
SM24	Westpoint Marina									
SM25	Corkscrew Slough Viewing Platform (planned Desstination Site)									
Sn3	Hudeman Slough	■	■							
Sn5	Papa's Taverna / Lakeville Marina									
Sn6	Petaluma Marina	■								
Sn7	Petaluma River Turning Basin	■	■							
So1	Brinkman's Marina	■								
So2	California Maritime Academy									

TABLE 3.1-6: GENERAL USE BY BOAT TYPE OF WT BACKBONE SITES[1]

Map Key: Fig 2-1A and 2-1B	Site Name	Kayak	Canoe	Dragon Boat	Outrigger Canoe	Scull	Whaleboat	Rowboat / Dinghy	Windsurfing	Kitesurfing
So5	Beldon's Landing									
So7	Matthew Turner Park	■								
So8	W. 9th Street Launch	■								
So9	Benicia Point Pier	■							■	■
So10	Benicia Marina									
So11	Suisun City Marina									

1. Highlight Key:
■ Site referenced by user groups based on review of web sites listed in Table 3.1-2 and through personal communications with selected site managers, users, and concessionaires (see section references).

Source: 2M Associates

Use levels of WT-designated sites and other travel routes and areas now popularly visited by NMSB users would slowly increase over time in concert with the growing population. For the foreseeable future, any such increase in use, with or without the implementation of the WT, would likely be realized proportionally on the existing popular routes of travel and at destination points currently targeted by NMSB users, club groups, and commercial enterprises associated with eco-tourism. To a great extent, the relative use patterns identified in Table 3.1-6 would likely continue. There are 12 destination sites identified in the WT program. It should be noted that the indicated planned sites would undergo individual project-level environmental review prior to their designation.

The proposed WT Plan is intended to increase visibility of non-powered small boating opportunities on the Bay and adjoining waterways. Most existing NMSB owners who reside in the Bay Area can be assumed to be aware of these opportunities. Over time, however, the WT program may increase use by non-resident visitors to the San Francisco Bay region or may shift use among access points. Visitors from outside the Bay region would likely visit recreational routes of travel and destination points that are already popular for non-powered small boat recreation, commercial eco-tourism, nature observation, and environmental education. d Many will rely commercial tour companies for equipment and/or guide services

Increased use is inherent in the WT Plan in that the WT Plan is both an improvement program and a management plan. How trailhead locations and improvements are implemented and managed (See Table 2-2: WT Plan Strategies #1, #3, and #24) would direct both the levels of WT use and the patterns of use that may be encouraged by the WT Plan. How the boating public is made aware of trailhead locations and destination opportunities (see Table 2-2: WT Strategies #17, #18, #19, #20, and #21) would

educate and help control such use. Boating use levels at a specific location may therefore increase or decrease due to the designation of specific launch, combination launch / overnight, or destination sites as part of the WT.

Determining the change in behavior of existing and new boaters who would use the WT-designated sites is at best an inexact process. WT Plan Strategies # 17, #18, #19, #20, and #21 (see Table 2-2) would serve to educate WT access site users (including existing users) to boating laws, the importance of boating safety, local hazard conditions, and nearby sensitive resources along with related seasonal closures, as appropriate. It is assumed that responsible boaters would benefit from the use information provided at trailheads and would respect it. Program monitoring and enforcement measures (see Table 2-2: WT Plan Strategies #6 and #16) would be used to address potential impacts of non-compliance.

Most of the WT Backbone Sites are located in or near established Bay shoreline parks, open space areas, refuges, and reserves. Combined with the anticipated slow change in use levels, potential impacts created by any increased use would be minimized by the WT Plan's strategies. Localized changes in use levels and patterns of use resulting from the implementation of the WT would be directly related to how the WT Plan strategies are put into practice. An increase in use could result from public outreach, publicity, and educational strategies of the WT Plan, but where and how that potential use increase occurs could also be directed by the WT Plan strategies.

Based on anticipated changes in overall use levels and the ability of the WT Plan strategies to direct and manage use, the impact is considered **less than significant** and no mitigation is required.

Impact 3.1-2. Increased Use of WT Sites by Motorized Boats from Implementation of the WT Program

Some motorized boating of WT sites may be sanctioned, such as for safety-education classes or rescue operations. A secondary non-quantifiable impact of the WT designation program is that it may stimulate additional motor boating on the Bay and unauthorized motor boating use of WT launch and destination sites, or other recreation areas. Motorized boating at and between WT sites could adversely affect the recreational experience of non-motorized WT users. However, in some cases WT sites are located within marina complexes where motor boating already takes place and facilities are already being shared.

The designation of WT sites and accompanying education and outreach about destination sites could also induce motorized boats to make similar trips. This could result in potentially increasing secondary effects to Bay habitat and cultural resources. These impacts are addressed in those respective sections of this EIR.

The signage and educational media components of the WT program as contained in Strategies #6, #17 and #19 (see Table 2-2) do not clearly address these issues. WT program Strategies #21 and #23 would resolve potential conflicts in that they involve boater to boater education and potential involvement by staff and volunteer docents as "trail stewards" where other strategies are not sufficient to monitor and maintain sites. This impact is considered **potentially significant but mitigable** by application of Mitigation 3.1-2, below. (Mitigations for secondary impacts on biological and cultural resources are included in those sections of the EIR.)

Mitigation 3.1-2: Develop identity signage to reduce use by motorized watercraft.

The WT shall develop an identity logo and other labeling for the WT that clearly communicates that the WT is intended for non-motorized watercraft.

Impact 3.1-3. Conflict with, and Preclusion of Existing Recreation Activities due to Facility Improvements and Use of WT Sites

Existing access onto the Bay for small, non-motorized boats consists of more than 135 launch and landing sites. In most cases, the WT Backbone Sites are multi-use areas and, as such, depend upon various types of recreation users to functionally co-exist in order for the site to operate smoothly. However, conflicts between recreation uses can and do occur. The potential for the WT designation to preclude existing recreation from taking place could result from the following: where access plans for facilities would displace or exceed the capacity of existing facilities; or where increased use related to the WT could create sufficient conflicts among recreation users of any type such that existing users do not return.

Conflicts between WT users and other existing recreation activities could occur both on the shoreline and in the water. Conflicts could be created by: poor site planning that, for example, places WT access routes, boat ramps, or rigging areas in direct conflict with other recreation activities, such as the use along the Bay Trail; competition for limited parking at some locations; use of WT access facilities by motorized boats; or on-water capacity conflicts among all types of boating at popular public launch ramps where ramp and dock space are scarce or in narrow waterways where maneuvering options are limited. Navigational issues between motorized and non-motorized small boats are addressed in Section 3.2.

Potential use conflicts can be characterized into three scenarios:

- Where designation would involve only signage such as at existing HOSs. Here existing use levels and any associated use-conflicts at sites can be assumed to be part of the baseline condition. However, some of these sites may be experiencing significant use and management challenges where any additional recognition may only serve to exacerbate problems for management. For example, access and parking at the Crissy Field and Kirby Cove are often at capacity and additional use frustrates both park visitors and management (personal communications: Steve Ortega and Mia Monroe, NPS).
- Where existing developed sites may be enhanced to introduce features that, if not sensitively planned and designed, could conflict with existing use patterns. For example, the Bay Trail currently passes through the rigging area at the East 3rd Avenue site in Foster City that is popularly used by windsurfers and kiteboarders.
- Where new sites would involve substantial new improvements and would be introducing small boat launching activities to an area where they do not now exist. As each site is unique, site-specific use impacts and appropriate mitigation cannot be assessed at a program level, and would be addressed in project level CEQA review if and when expansions of existing facilities or construction of new sites are proposed.

For all new, proposed WT sites or WT sites requiring major improvements (not HOS sites that require only signage for designation), the WT Plan includes requirements for the preparation of a Site Description and Trailhead Plan (a Site Description is also required for HOS sites). As described in the WT Plan, the Site Description would include:

- Manager's/owner's goals for the site, including site master plans, use plans, general plan policies, zoning, etc.
- Use of the site – including non-boating uses
- Descriptions of existing or planned:
  - Launch (type of launch or landing, accessibility, current and expected user groups and usage)
  - Parking (amount available for trail-related use, restrictions, fees, drop-off spots, distance to launch)
  - Restrooms (number, type, accessibility)
  - Other boating-related facilities (staging areas, boat storage, wash station, etc.)
  - Overnight accommodations
  - Signage
  - Education, outreach and stewardship
  - Site management and maintenance
- Proximity to other launches and landing sites
- Existing and/or anticipated trail-related issues and opportunities:
  - Access (e.g., good boating areas nearby; user conflicts; accessibility; security concerns; vandalism)
  - Wildlife and habitat (e.g., disturbance at a nearby harbor seal haul out or other sensitive wildlife area; wildlife viewing or interpretive opportunities)
  - Safety (e.g., strong currents nearby; adjacent to a security exclusion zone; poor water quality)

The scope for the Trailhead Plan is specifically directed to the uses and features of the site that are WT-specific. The Trailhead Plan describes, among other items, addresses proposed trail-related improvements, management and maintenance, and education, outreach and stewardship for the site. Additionally, the plan is intended to identify who will be responsible or take the lead for implementing the proposed components including a budget describing funding that the site manager is seeking for the trailhead development.

Prior to site designation, the WT program includes the following strategic actions (see Table 2-2) that would help manage use and lessen the level of the potential conflicts between recreation uses:

- Strategy #3 requires that the type and design of trail-related improvements match site characteristics, including existing facilities and uses.
- Strategy #4 requires trailhead development to be consistent with existing policies, plans and priorities of land and resources managers at and around trailheads. If

such plans include other facilities and uses then the WT Trailhead Plan would need to accommodate those facilities and uses.

- Strategy #6 addresses the need for management resources to include enforcement. This would help control inappropriate uses and resolve user conflicts.
- Strategy #14 addresses the provision for monitoring use as part of the program.
- Strategy #22 provides for Trailhead Stewards who would assist in resolving use conflicts.
- Strategy #24 identifies the option of employing parking restrictions to potentially limit use at trailheads.

The presence of the general public who would use WT sites provides a level of observation not typically provided by a managing agency, unless there is a full-time staff member assigned to a particular site. WT Strategies #17, #18, and #19 (see Table 2-2) address a variety of means to inform the public about the WT, but do not provide a channel for the public to inform the Project Management Team about their opinions of the WT and its use. Therefore, for sites where existing use levels are at capacity, or where use conflicts may reasonably be expected to occur, implementation of the WT Plan could result in a **potentially significant but mitigable** impact.

Mitigation Measure 3.1-3a. Emphasize site management in development of Trailhead Plan

All Trailhead Plans shall include an analysis of opportunities and constraints as they relate to the physical environment and use of the area, and identify the means and methods to avoid or minimize those impacts.

The Trailhead Plan shall include the following, as appropriate, to site conditions:

- A site assessment to identify potential site resources that may be negatively impacted by WT-related development and use.
- A description of existing recreation use and use patterns with identification of the means and methods to avoid or minimize conflicts between users. The Trailhead Plan also shall address the need to initially monitor use patterns to determine if additional design or adaptive management actions would be necessary.

Mitigation Measure 3.1-3b. Web-based comment form

A web-based comment form shall be provided for users to document use observations and conflicts. The web page address for this form shall be posted on WT signs and applicable education/outreach materials.

Mitigation Measure 3.1-3c. Conduct recreational use surveys and develop/implement adaptive management recommendations

Based on the recommendations contained in the Trailhead Plan and/or the professional judgment of the Site Manager, and consistent with WT Plan Strategies #6, #14, and #22 (See Table 2-2), when presented with information about use conflicts the Site Manager and volunteers shall monitor recreation use for a reasonable period and determine if additional physical or management measures are necessary to alleviate use conflicts. Any such measures shall be incorporated into a revised Trailhead Plan and implemented by the site manager.

CUMULATIVE IMPACTS

Potential impacts of the WT related to recreation resources generally would be site specific and not cumulative. The WT and the San Francisco Bay Trail program do coincide at numerous sites. Implementation of the WT would typically complement the San Francisco Bay Trail program by providing for a full range of non-motorized recreation opportunities. Where the Bay Trail intersects with WT sites, the two programs, as identified in WT Strategy #2, present an opportunity for sharing visitor amenities. The outreach and education functions of the Bay Trail would be supportive of WT Plan Strategies #17, #18, and #19 (see Table 2-2). Therefore, the WT Plan's contribution to cumulative impacts on recreational resources would be generally a positive one and is considered **less than significant**.

SECTION 3.2
PUBLIC SERVICES AND NAVIGATIONAL SAFETY

3.2 PUBLIC SERVICES AND NAVIGATION

This section of the DEIR identifies the potential impacts to public services that could occur from operating and maintaining the WT. The Initial Study focused these services to police, fire, and emergency services. Navigational and safety issues relating to WT users are also addressed in this section.

3.2.1 PUBLIC SERVICES AND NAVIGATIONAL SAFETY ENVIRONMENTAL SETTING

The locations of proposed WT Backbone Sites are listed in Table 2-1 in the Project Description. The level of existing operations and maintenance provided by a public agency or private commercial enterprise at existing sites varies. The access conditions, facilities, and levels of use requiring services also vary widely from site to site.

The 548-square-mile San Francisco Bay has an irregular 1,000-mile shoreline composed of a variety of urban and suburban areas, marshes, and salt ponds. Islands within the Bay that may attract boaters as a destination, may present navigational safety hazards in the fog, or may be used for emergency landings include:

- Alameda Island
- Alcatraz Island
- Angel Island
- Bair Island
- Ballena Bay, a very small island off the coast of western Alameda
- Bird Island, a very small island adjacent to Brooks Island
- Brooks Island
- East Brother Island
- West Brother Island
- Castro Rocks, rocks under the Richmond-San Rafael bridge
- Coast Guard Island, in the Oakland Estuary between Alameda Island and Oakland
- East Marin Island
- West Marin Island
- Red Rock Island
- The Sisters Islands
- Treasure Island
- Whitell Rocks, very small rocks south of the Brothers Islands in Richmond
- Yerba Buena Island

HAZARDS TO NAVIGATION

Hazards to navigation for NMSBs and boating in general can be divided into six categories: (1) mudflats, shoals and islands; (2) bridges and other structures; (3) fog and inclement weather, particularly winds; (4) tides and currents; (5) non-commercial motorized boating traffic; (6) and commercial and ferry vessel traffic. Navigating the Bay becomes more difficult during periods of restricted visibility due to winter storms and

fog. The combination of these factors at any particular time presents an endless array of conditions challenging the safety of NMSB recreationists.

According to Coast Guard information, California had 904,863 registered boats in 2000 and ranks second (after Michigan) among the states in the number of registered recreational vessels. Recreational vessels include both motorized and non-motorized watercraft.

Navigational accidents and loss of life related to NMSB use do occur. Tables 3.2-1 through 3.2-4 present accident and fatality statistics about boating in general and those attributed to selected NMSB use.

TABLE 3.2-1: NATIONWIDE NMSB USE INJURIES AND FATALITIES BY VESSEL TYPE

CATEGORY	NUMBER	
	2005	2006
Total Injuries (all boats)	3451	3474
Total Fatalities (all boats)	697	710
Canoe/Kayak Injuries	72	54
Canoe/Kayak Fatalities	78	99
Rowboat Injuries	7	13
Rowboat Fatalities	39	35
Source: U.S. Department of Homeland Security, U.S. Coast Guard		

TABLE 3.2-2: TOTAL BOATING ACCIDENTS IN CALIFORNIA BY TYPE OF VESSEL

CATEGORY	NUMBER	
	2005	2006
Total All Boating	1149	1128
Rowboat	1	4
Canoe/Kayak	13	8
Sailboard/Kiteboard	3	2
Source: California Department of Boating and Waterways		

TABLE 3.2-3: TOTAL BOATING FATALITIES IN CALIFORNIA BY TYPE OF VESSEL

CATEGORY	NUMBER	
	2005	2006
Total All Boating	58	44
Rowboat	0	2
Canoe/Kayak	6	2
Sailboard/Kiteboard	1	0
Source: California Department of Boating and Waterways		

TABLE 3.2-4: BOATING ACCIDENTS AND FATALITIES IN SAN FRANCISCO BAY

YEAR	NUMBER	
	Accidents	Fatalities
2000	43	4
2001	40	3
2002	52	3
2003	48	4
2004	18	3
2005	27	0
2006	24	2
Source: California Department of Boating and Waterways		

There are significant hazards associated with NMSB use on San Francisco Bay. From a navigational standpoint the Bay's waters and its currents present extreme conditions for NMSB use. Cold waters, rapidly changing weather conditions, strong tidal currents, and tidal fluctuations create a challenging boating environment on the Bay and around its margins. Even a skilled boater who is familiar with Bay conditions can get into trouble and require emergency services from either the Coast Guard or from land-based emergency response providers.

The Central Bay, from southern Marin and Contra Costa Counties south to Redwood City and San Leandro is heavily used for commercial shipping, ferry transportation and all other types of boating. Some of the WT sites are located in industrial areas or near airports and exclusion zones, where there are safety issues related to recreational use in these settings. Inland Navigation Rules of the Coast Guard apply to all boaters. However, the potential for collision by NMSB with other boats – particularly where scale and speed differences are significant such as with commercial vessels and ferries – raises concerns for public safety. This is especially egregious where NMSB launches are in close proximity to commercial and ferry vessel terminals or enter into a designated shipping or ferry route.

Recreational NMSB use in San Francisco Bay is essentially a dispersed recreation activity. With the exception of established exclusion zones enforced by the U.S. Coast Guard (see below), no agency or specific Bay-wide program directs boaters where, or where not, to travel.

SHIPPING LANES AND FERRY ROUTES

Existing shipping lanes and ferry routes are described under Regulatory Setting, below.

3.2.2 REGULATORY SETTING

WT Backbone Sites will be subject to a variety of federal, state, county, and municipal regulations.

FEDERAL AGENCIES AND REGULATIONS

U.S. COAST GUARD (COAST GUARD)

The Coast Guard oversees management and enforcement of navigation in San Francisco Bay through a series of regulations that govern navigation practices, marine events, and safety and security zones within the Bay.

In the United States, two sets of regulations govern navigation. The Inland Navigational Rules Act of 1980 (Title 33, Chapter 34, Subchapter I, Part A), more commonly known as the Inland Rules, govern navigation in the Bay and associated rivers and inland waterways.

The Ports and Waterways Safety Act of 1972 (Title 33, Chapter 25, Section 1221) authorized the Coast Guard to establish, operate, and maintain vessel traffic services for ports, harbors, and other waters subject to congested vessel traffic. As a result, in 1972 the Coast Guard established the Office of Vessel Traffic Management to maintain the Vessel Traffic Service (VTS) for San Francisco Bay, designated traffic lanes for inbound and outbound vessel traffic, specified separation zones between vessel traffic lanes, and set up rules to govern vessels entering and leaving ports. Although some small and private vessels are not required to coordinate their movements by contacting the VTS, the Coast Guard monitors all commercial, Navy, and private marine traffic within San Francisco Bay and local coastal waters.

The San Francisco VTS area “begins” at the outer limit of the Offshore Sector, a 38.7-nautical-mile radius around Mount Tamalpais, includes Central San Francisco Bay, and ends at the Port of Redwood City in the south. To the north and east, it extends to the entrance to the Petaluma River, into the Napa River as far as the Mare Island Causeway Bridge, and upriver to Sacramento and Stockton. Central San Francisco Bay is the busiest part of the VTS area. It must be traversed by each tanker, container ship, and other large vessel inbound to any of the Bay Area's ports, and also by almost every scheduled ferry route in the Bay Area. Finally, it is also one of the most popular recreational sailing areas in the United States, resulting in a challenging transit for large ships on busy summer weekends. The VTS areas are shown in Figure 3.2-1.

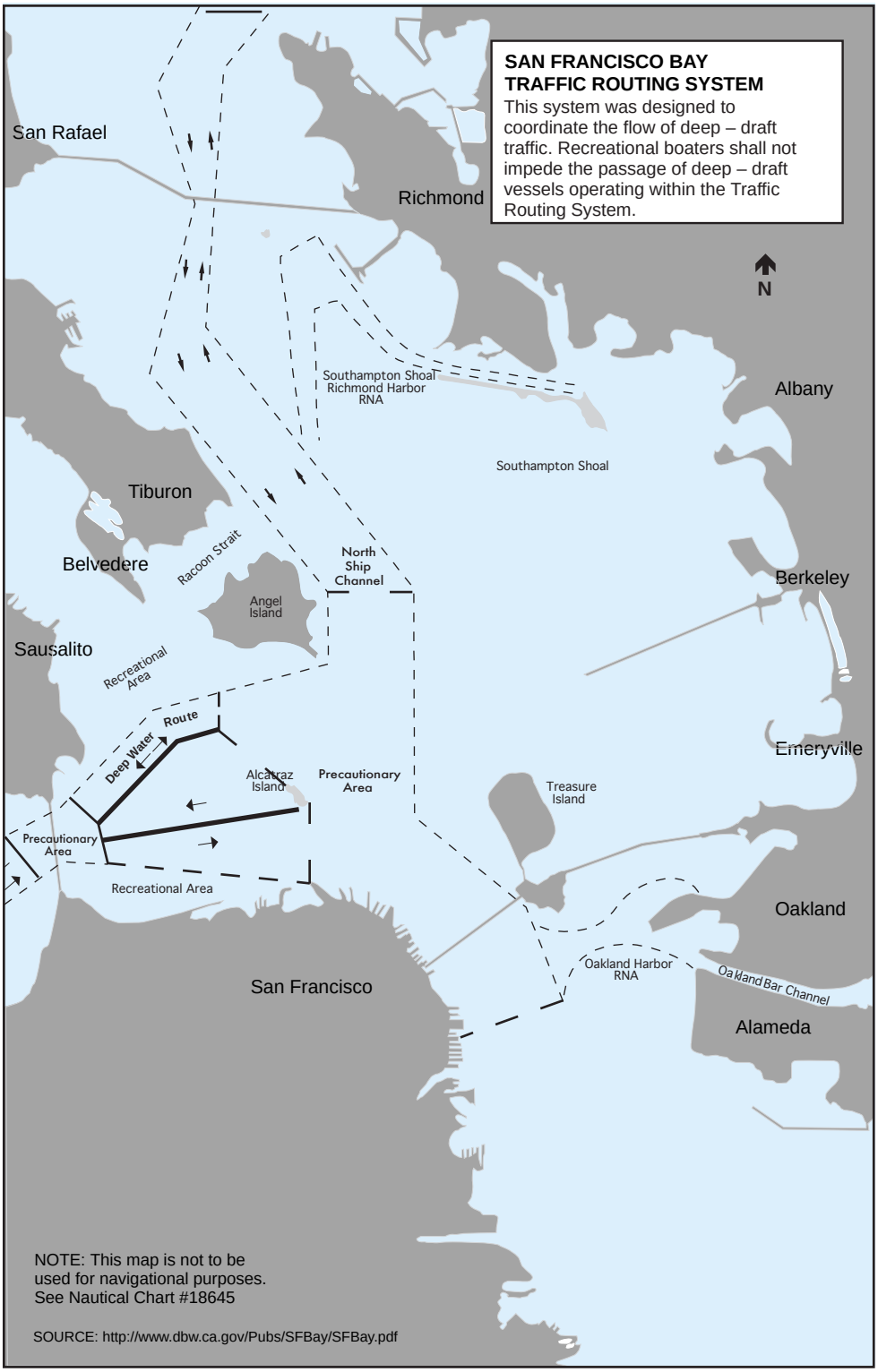

FIGURE 3.2-1:
Regulated Navigation Areas

Security Zones

The following Security Zones administered by the Coast Guard have been established (33 Code of Federal Regulations 165):

- 150 feet surrounding the Coast Guard Island Pier in the Oakland Estuary
- 25 yards around any pier, abutment, fender, or piling of the Golden Gate and San Francisco/Oakland Bay Bridges
- 100-yard radius around any cruise ships, tankers, or other high interest vessels
- 500-yard slow transit zone and 100 yard exclusion zone around all naval vessels greater than 100 feet in length
- 200 yards around the San Francisco and Oakland International Airports
- 500 yards around the Military Ocean Terminal Concord during periods when military shipments are being made
- 200 yards ahead and 100 yards on the sides of vessels transporting nuclear materials on behalf of the Department of Energy in San Francisco Bay, San Pablo Bay, Carquinez Strait, and Suisun Bay

The following locations are Restricted Areas (33 CFR 334):

- 100 yards around the eastern shore of Yerba Buena Island, surrounding the Coast Guard Base
- 500 feet around the MARAD Reserve Fleet in Suisun Bay
- 100 yards around the Chevron Richmond, Conoco-Phillips, Valero, Shell Martinez, Tesoro-Amoco, and Tesoro-Avon refinery pier facilities (Temporary Final Rule)

(Source: http://www.piersystem.com/go/doc/823/79218/)

Boaters who violate the above Security Zones and Restricted Areas may be subject to penalties of up to $32,500 for each incident.

Regulated Navigation Areas

Within San Francisco Bay, the Coast Guard has established Regulated Navigation Areas (RNAs) shown in Figure 3.2-1 and summarized in Table 3.2-5. The RNAs increase navigational safety by organizing traffic flow patterns; reducing meeting, crossing, and overtaking situations between large vessels in constricted channels; and limiting vessel speed. RNAs apply to "large vessels" only, defined as power-driven vessels of 1,600 or more gross tons, or tugs with a tow of 1,600 or more gross tons. When navigating within the RNAs, large vessels follow specific guidelines. They must have their engines ready for immediate maneuver, operate their engines in a control mode and on fuel that allows for an immediate response to any engine order, and not exceed a speed of 15 knots through the water.

NATIONAL PARK SERVICE (NPS)

The Golden Gate National Recreation Area (GGNRA) and Rosie the Riveter/World War II Home Front National Historical Park are owned and managed by the National Park Service. There are three WT sites within the GGNRA. These are: SF12, Crissy Field; M1,

Kirby Cove; M2, Horseshoe Cove. Site CC15, Marina Bay Park is located in Rosie the Riveter/World War II Home Front National Historical Park. In addition NPS also manages Alcatraz island that, though not identified as part of the WT, is a popular destination for kayakers.

U.S. FISH AND WILDLIFE SERVICE

The San Francisco Bay National Wildlife Refuge Complex is owned and managed by the U.S. Fish and Wildlife Service. The complex comprises a significant portion of the Bay environment, and includes the following:

- Don Edwards San Francisco Bay National Wildlife Refuge
- Marin Islands National Wildlife Refuge
- San Pablo Bay National Wildlife Refuge

The Corkscrew Slough Viewing Platform (WT Site #SM25), identified as a WT Destination Site, is located in the Don Edwards San Francisco Bay National Wildlife Refuge.

TABLE 3.2-5 REGULATED NAVIGATION AREAS

Name	Description
San Francisco Bay RNA	Extending from the precautionary zone east of the Golden Gate Bridge to Alcatraz Island. Because of the large number of vessels entering and departing San Francisco Bay, traffic lanes are established under the Golden Gate Bridge and in the Central Bay to separate opposing traffic and reduce vessel congestion. Because vessels converge and cross in such a manner that one-way traffic flow patterns could not be established, two precautionary areas were established in this RNA. These are the Golden Gate Precautionary Area, which encompasses the waters around the Golden Gate Bridge between the Golden Gate and the Central Traffic Lanes; and the Central Bay Precautionary Area, which encompasses the large portion of the Central Bay and part of the South Bay.
Oakland Harbor RNA	Encompassing the Oakland Bar Channel, Oakland Outer Harbor Entrance, Middle Harbor, and Inner Harbor Entrance channels. A power-driven vessel of 1,600 or more gross tons, or tug with a tow of 1,600 or more gross tons, cannot enter this RNA while another vessel or tug meeting these same criteria is navigating within its boundaries, if such an entry would result in meeting, crossing, or overtaking the other vessel.
North Ship Channel and San Pablo Strait Channel RNAs	Consisting of the existing charted channels and delineating the only areas where the depths of water are sufficient to allow the safe transit of large vessels. The strong tidal currents in these channels severely restrict the ability of large vessels to safely maneuver to avoid smaller vessels.
Pinole Shoal Channel RNA	A constricted waterway where use is restricted to vessels with a draft greater than 20 feet, or towboats with tows drawing more than 20 feet.
Southern Pacific Railroad (SPRR) Bridge RNA	Consisting of a small, circular area, 200 yards in radius, centered on the middle of the channel under the SPRR Bridge. The limited horizontal clearance results in a greater chance of vessel collisions with the bridge, which is significantly increased when visibility is poor. Large vessels are precluded from transiting this RNA when visibility is less than 1,000 yards.

STATE AGENCIES AND REGULATIONS

HARBOR SAFETY COMMITTEE OF THE SAN FRANCISCO BAY REGION

In 1990, the California state legislature enacted the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (California Government Code Chapter 7.4). The Oil Spill Prevention and Response Act created, among others, the Harbor Safety Committee of the San Francisco Bay Region to prepare a Harbor Safety Plan that considers all vessel traffic for the safe navigation and operation of tankers, barges, and other vessels. The original Harbor Safety Plan for San Francisco, San Pablo and Suisun Bays was adopted in 1992. The most recent available San Francisco Bay Region Harbor Safety Plan is for 2001.

The Harbor Safety Committee of the San Francisco Bay Region is composed of representatives from the maritime community, port authorities, pilots, tug operators, the Coast Guard, the Office of Spill Prevention and Response, the petroleum and shipping industries, and others with expertise in shipping and navigation. The Committee meets regularly to develop additional strategies to further safe navigation and oil spill prevention.

CALIFORNIA DEPARTMENT OF BOATING AND WATERWAYS (CAL BOATING)

By the end of the 1950s, boating had become one of California's most popular forms of recreation. Under the authority of the Federal Boating Act of 1958, the State Harbors and Navigation Code was amended to provide registration of vessels by the State of California instead of the Coast Guard. Also, the Code established a comprehensive set of state laws and regulations governing the equipment and operation of vessels on all waters of the state. The California Harbors and Navigation Code vests authority with the California Department of Boating and Waterways (Cal Boating) to regulate matters of navigational safety for the state's boating public.

The mission of Cal Boating is to provide safe and convenient public access to California's waterways and leadership in promoting the public's right to safe, enjoyable, and environmentally sound recreational boating. Cal Boating has a number of programs to support recreational boating including grants and loans for boating law enforcement and boating safety education. Cal Boating also maintains a system for reporting boating accidents. California law (Section 656 of the California Harbors and Navigation Code) requires a boater who is involved in an accident to file a written report with Cal Boating when:

- A person dies, disappears, or is injured requiring medical attention beyond first aid; or
- Damage to a vessel or other property exceeds $500, or there is complete loss of a vessel.

Cal Boating staff review reported accidents, determine the causes, and identify preventative measures and specific safety-related problems. Safety education and public information program staff incorporate these safety problems and related solutions into updated course materials, promotional activities, and brochures. Law enforcement staff also communicate these safety problems during Department-sponsored training sessions for law enforcement officers.

SAN FRANCISCO BAY WATER EMERGENCY TRANSPORTATION AUTHORITY (WETA)

The WETA is a regional agency authorized by the State of California (SB 976) with the authority over and control of all public transportation ferries in the Bay Area region, except those owned and operated by the Golden Gate Bridge District. It was created in 2007 from the San Francisco Bay Water Transit Authority.

There are currently six major ferry routes on the Bay, with an average of 78 daily one-way transits. Operating Ferry terminals are located in San Francisco, Larkspur, Sausalito, Tiburon, Vallejo, Harbor Bay, Oakland, and Alameda.

Figure 3.2-2 illustrates proposed ferry routes being considered by the WETA for ferry service expansion. New terminals may eventually be located in: Antioch, Berkeley, Hercules/Rodeo, Martinez, Mission Bay (San Francisco), Oyster Point (South San Francisco), Redwood City, Richmond, and Treasure Island (San Francisco).

CALIFORNIA DEPARTMENT OF PARKS AND RECREATION (CALIFORNIA STATE PARKS)

WT Site M17, Angel Island State Park, WT Site M39, China Camp State Park, and WT Site SF1, Candlestick Point State Recreation Area, are owned and managed by California State Parks . Angel Island is identified as a WT destination and currently has camping available. California State Parks also owns WT Site A14, Crown Memorial State Beach and the Eastshore State Park whose facilities are managed through a cooperative agreement with the East Bay Regional Park District.

CALIFORNIA DEPARTMENT OF FISH AND GAME (CDF&G)

CDFG owns significant bay lands in the form of Wildlife Areas and Ecological Reserves in both San Pablo Bay and South San Francisco Bay. The only proposed WT site located on CDFG managed lands is at Eden Landing Ecological Reserve (A22).

REGIONAL AND LOCAL AGENCIES AND REGULATIONS

In most cases, regional and local municipal public agencies provide basic on-site services for recreation-related operations and management of existing marinas, shoreline parks, open space areas, and refuges. However, these services are often complemented by other public agencies that provide shoreline fire protection, police protection, and emergency response services to recreational boaters while they are either accessing or boating on the Bay.

There are a myriad of such agencies and organizations that individually provide public services to WT sites or do so through cooperative agreements with the site owner/ manager. Fire protection, and emergency medical services are most often provided by local fire departments. Law enforcement services for selected WT sites are provided by managing agencies that have their own ranger/police units, such as the National Park Service, California, and the East Bay Regional Park District. However, law enforcement services at the majority of WT sites are provided either directly or through contract with County sheriff departments and local municipal police departments.

While the Coast Guard is the primary search and rescue agency in an emergency, many County sheriff departments, municipalities, and marina managers also provide emergency response when called for. For some non-emergencies the Coast Guard may refer boaters to a commercial tow-boat service.

FIGURE 3.2-2:
Existing Ferry and Proposed Ferry Terminals
Existing Ferry Routes

3.2.3 PROGRAM IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Impacts would be considered significant if they would:

- Result in substantial increases in public services in order to maintain acceptable service ratios, response times or other performance objectives for police protection, parks operations, fire protection, water or sewer services, or emergency rescue on land or on the water
- Affect the safe navigation on the Bay, resulting in death by drowning or substantial increases in the number of incidents reported by the Vessel Traffic Service (VTS), and/or
- Interfere substantially with the recreational water uses in the Bay through increases in the number of accidents involving the interaction of commercial shipping ferries and recreational vessels.

IMPACTS AND MITIGATION MEASURES

Impact 3.2-1. Need for New Facilities or Substantial Increase in Demand for Public Services

Trailhead Management

The management responsibility for trailheads would be the responsibility of the site owner and/or manager. A primary way that the WT project would assist site owners with trailhead management is through implementation of the education, outreach and stewardship program, which would teach about and encourage compliance with managing agency rules and regulations.

High Opportunity Sites have existing management and are served by various police, fire, and emergency service providers. Existing boating activities are managed by the Coast Guard and local police and fire department vessels. From a management perspective, designation of an HOS would not significantly affect public services, as these sites are already in operation and no enhancements beyond signage are anticipated. However, entirely new WT sites or development of overnight facilities may create a need to increase existing levels of: ranger/police patrols; maintenance; sewer and water services; and fire and other emergency response services. Likewise, entirely new WT sites could alter NMSB use patterns on the Bay, resulting in impacts to on-water incidents and rescue operations of the Coast Guard and local agency services above.

All launch sites require some active management to maintain and operate the launch access and related facilities. Without sufficient funding and staff resources devoted to upkeep, launch sites tend to degrade, becoming unusable or unsafe, and managers may be forced to remove or close access (e.g., Paradise Beach County Park in Tiburon). Insufficient management resources for enforcement at launch sites can also leave site managers with little choice but to remove or restrict launching access. For example, vandalism or inability to prevent access to sensitive wildlife areas could force managers to restrict access to avoid further problems.

Public Services

Each WT Backbone Site would have a different set of potential impacts on the existing public services and infrastructure of a city or county, depending on the current capacity of local sewer and water infrastructure and the capabilities of the existing public services workforce. This includes existing local marinas and associated boating facilities where use associated with the WT may have adverse impacts on the management of those facilities. Therefore, it is important that designation of, and improvements at, each potential WT site be considered in light of the local conditions.

Typically, all public services are designed to be adequate for the growth planned in the local general plan or management plan. However, the exact size and nature of future planned development is not always known, so the capacity of public services is often determined by the maximum development allowed by the local zoning ordinance. Although some of the proposed WT Backbone Sites may not be specifically identified in local planning documents, new sites may not necessarily adversely impact public services.

Improvements at proposed access sites and increased day use of existing sites may result in small numbers of additional calls for local police or emergency services due to conflicts between users (as discussed in Recreation, Impacts 3.1-2 and 3.1-3). Since the access points are dispersed throughout the Bay, demands presented by most day-use WT users on police, emergency response, and fire services would be spread among a number of departments and would not excessively burden any one department. This would allow departments to maintain acceptable service ratios while addressing the needs of the proposed project. However, at selected WT sites located where safety and homeland security issues may exist, such as near airports or industrial areas, the introduction of a new WT site and increase in recreational use in these settings may require a police presence not typical in recreational settings.

WT Strategies recognize the challenges of ongoing management and maintenance needs. These include WT Strategy # 9 addressing restrooms and Strategy # 13 (see Table 2-2) addressing overnight accommodations (see Impact 3.2-2 below). In addition, prior to site designation, the WT program does includes the following actions that would help reduce the impacts to public services:

- Strategy #6 addresses the need to match facility improvements to management resources, including staffing and funding.
- Strategy #7 addresses developing a plan for how trailhead facilities will be maintained and operated, and identification of who will be responsible for maintenance and operations. This would be part of a Trailhead Plan that, among other items, describes proposed management and maintenance needs.
- WT Strategy #22 specifically identifies a program of Trailhead Stewards that would assist the property owner/site manager with maintenance and other on-site management responsibilities.

Although these strategies would reduce impacts on public services, this impact is still considered **potentially significant but mitigable**.

Mitigation Measure 3.2-1a. Obtain WT site owner/manager concurrence with designation.

As stated in the WT Plan, a pre-requisite to WT site designation is that the property owner/site manager formally concurs with the designation. If there were specific management concerns about WT designation significantly affecting the need for public services, site designation would only proceed if such concerns were resolved prior to designation.

Mitigation Measure 3.2-1b. With involvement of the site owner/manager, prepare a Site Description and Trailhead Plan that address public service requirements.

The Site Description and Trailhead Plan prepared for the nominated site shall include information related to operations and management functions associated with use of the site including, but not limited to: parking, site management and maintenance staffing levels and responsibilities, safety issues, and education, outreach and stewardship. The Trailhead Plan shall be prepared in cooperation with the site owner/manager and in consultation with the appropriate police and fire departments as identified by the site owner/manager. This coordination will provide the site owner/manager the opportunity to identify additional site management requirements, if any, and the level of such requirements for the Project Management Team's consideration.

Mitigation Measure 3.2-1c. Identify management needs and funding.

New launch or destination sites shall only be designated as a component of the WT once the Project Management Team determines, based on review of the Trailhead Plan, that there are both adequate staffing and commensurate funding identified by the Site Manager for the operations and management of those facilities. Operations and management includes all aspects of public service needs. Staffing could be provided by the managing agency, partner agencies lease agreements with concessionaires, or through management agreements with non-profit organizations.

Impact 3.2-2. Substantial Expansion of Local Agency Capacity for Sites Designated for Overnight Use or Unacceptable Increase in Service Ratios, Response Times or Other Public Service Performance Objectives

Two existing overnight camping areas exist on the Bay that are identified as WT Backbone sites. These are: Kirby's Cove operated by the National Park Service; and Angel Island operated by the California Department of Parks and Recreation. Both of these are available on a reservation basis, and are typically booked months in advance.

Overnight use would increase the need for policing and security patrols at new WT campsites and overnight parking areas. While certain waterfront parks could accommodate camping, this could only occur if the organizational structure is in place to provide 24/7 services and the funding necessary for managing overnight use is in place. Managing agencies around the Bay that now provide overnight camping as part of current programs are limited to federal, state, and county parks and open space districts. Overnight use would particularly impact those land-managing agencies that do not now allow overnight use within their jurisdictional lands. In resource areas around the Bay where hunting is permitted, new opportunities for overnight

accommodations might draw unexpected interest such as from duck hunters or, if accessible by car, general recreation use.

WT Strategy #13 (see Table 2-2) encourages the designation of overnight accommodations consistent with land managers' policies and resources. Prior to site designation, the WT program also includes the following actions that would help recognize, define, and minimize the impacts to public services:

- Strategy #6 addresses the need to match facility improvements to management resources, including staffing and funding
- Strategy #7 addresses developing a plan for how trailhead facilities will be maintained and operated, and identification of who will be responsible for maintenance and operations

Implementation of **Mitigation Measures 3.2-1a through 3.2-1c** above, would reduce this impact to a **less than significant** level.

Impact 3.2-3. Increased Risk of Incidents Including Accidents Involving Loss of Life, or Collisions between Recreational Water Users and Other Boats, and Groundings

It would be likely that most WT use would occur around the Bay margins rather than in the middle of the Bay. However, once on the water, the WT program does not provide for specific routes of travel, such as a system of point-to-point buoys that orient and direct use. Once on the water, a NMSB might enter or cross defined shipping channels and ferry routes presenting a potential navigation safety impact. Furthermore, while the WT program does identify 12 specific destination sites, these sites are likely not the only places that boaters may wish to explore. Thus, it can be assumed that boating associated with the WT program may occur anywhere on the Bay, whether given conditions of the day make it safe or not.

WT Backbone Sites located near commercial or ferry vessel terminals increase the chances for accidents between vessels. For ferry terminals, potential boating conflicts can be minimized through careful site planning and design that clearly separate motorized and NMSB use launch areas and shipping terminals (personal communication, John Sindzinski, WETA). WT Strategies also address this issue (see discussion of strategies 3, 12, and 17, below).

The Inland Navigation Rules (the Rules) apply to all watercraft and address vessel sailing and steering, as well as use of lights and sound. Knowing and following the Rules is important for all mariners – including those sailing NMSBs which are often the smallest vessels on the Bay, and most difficult for other mariners to see and avoid.

Once on the water, a significant hazard to vessel navigation is other vessel traffic. Large commercial and naval vessels are required by Coast Guard regulations to use designated traffic lanes when traveling in inland waterways, and the Rules oblige other vessels (including NMSBs) not to “impede the passage” of these deep-draft vessels traveling in the lanes. Ferry boats and other small commercial vessels (e.g., tugboats and private vessels) often do not navigate within specific traffic lanes, but rather travel in the most direct route. For interactions between other vessel types that are common on the Bay, particularly for NMSBs, the Rules are less explicit.

The Rules require a boater to try to avoid a collision even if she/he has the right of way, but without explicit, broadly accepted navigational protocols or norms for vessel interactions, the expected increases in fast ferry traffic, large sailing vessels and WT users on the Bay may lead to more accidents. Some maritime user groups such as fast ferries are developing standard practices (e.g., consistent travel routes) to minimize accidents in general. The San Francisco Bay Harbor Safety Committee coordinates these and other efforts to improve navigational safety.

The WT program includes the following strategic actions (see Table 2-2) that would be required prior to site designation to encourage navigational safety and minimize NMSB use incidents and accidents:

- Strategy #3 requires that the type and design of trail-related improvements match site characteristics, including avoiding uses of the site that are incompatible with safe boating.
- Strategy #12 encourages on-site concessions to provide site-specific safety information.
- Strategies #17 through #24 include a variety of programs that would educate the user about boating safety or provide for organized use that recognizes safety as a goal.

Impact 3.2-3 would be reduced by the WT Plan strategies. This impact is considered **potentially significant but mitigable** with the addition of Mitigation Measures 3.2.3a and 3.2.3b below. It should be noted that no system of information and training, including the WT programs and the mitigation measures outlined herein, can ensure absolute user compliance with navigational rules and/or forcastable natural conditions to provide for risk-free navigation on the Bay.

Mitigation 3.2.3a: Develop and implement safety signage.

In cooperation with Cal Boating, the WT program shall sponsor and fund coordinated sign and web-based information programs about NMSB use safety. These programs shall be incorporated into all WT launching sites and emphasized to WT users at sites nearby a commercial docking facility or ferry terminal and shall include maps and notices about shipping and ferry routes and, when known, schedules.

Mitigation 3.2.3b: Sponsor WT training and education programs.

Additional training, education, and public advisory programs for NMSB users related to navigation safety requirements could reduce the risk of incidents associated with boating on the Bay. Therefore, consistent with WT Strategy #21, the WT program shall implement and/or sponsor education and training programs and create web-based information to promote boating safety and to educate users about the unique conditions of operating NMSBs in the Bay's environments.

Mitigation 3.2.3c: Design of WT sites near ferry terminals.

For all sites near ferry terminals, potential boating conflicts shall be minimized through careful site planning and design to clearly separate motorized and NMSB use launch areas.

SECTION 3.3
AESTHETICS

3.3 AESTHETICS

This section of the EIR assesses the potential impacts on aesthetic resources from the implementation of the San Francisco Bay Area Water Trail (WT). This section focuses on visual quality. Other aesthetic considerations (noise, odors, light, and glare) were focused out from further review in the Initial Study (IS) (Appendix B to this EIR). Of the 112 proposed WT Backbone Sites, 57 have been designated High Opportunity Sites that would only require minimal improvements (i.e., signage). The remaining 55 sites could potentially involve more extensive construction that could affect visual quality.

3.3.1 VISUAL RESOURCES SETTING

REGIONAL CONTEXT

Urbanization and industrial uses characterize the San Francisco Estuary margins, although major portions of the area around San Francisco Bay remain undeveloped. Views of and from tidal flats and salt marshes in many areas around the Bay include expanses of open space and natural areas uncommon to an urban setting.

The landscapes of the bayside environment vary widely among geographic subregions in the Bay. Their visual character is largely related to the predominant land uses, such as commercial, residential, or industrial/port developments along urban shorelines, or agricultural activities in rural/agricultural areas. The ability of the shoreline landscape to the visually absorb changes associated with development of the WT Backbone Sites and related activities varies with location. The general landscape setting within the geographic scope of the WT is discussed below.

URBAN SHORELINES

The visual character of urban shorelines as viewed from San Francisco Bay is generally dominated by a developed and highly managed landscape composed of an artificial shoreline edge in the foreground, with structures and landscaping in the middleground and background. The artificial edge may be port structures, piers, revetments, rip-rap, seawalls, or other structures. Narrow strips of tidal wetland vegetation may occur locally along the urban shoreline.

Urban shorelines are common over a broad part of Central San Francisco Bay. The few urban shorelines that do not fit the typical characteristics as described above include Arrowhead Marsh in San Leandro Bay, Crown Beach/Elsie Roemer Marsh in Alameda, or Crissy Field in San Francisco. They are nonetheless included in this group because they are surrounded by a highly developed, urban environment.

Of the 112 Backbone Sites, 85 are located in urban areas where the shoreline's visual character is dominated by other development in the immediate vicinity. These sites are listed in Table 3.3-1. Of the 85 urban sites, 71 of the sites are existing launches; five are existing destinations; eight are planned launches and one is a planned destination.

URBAN/WILDLAND INTERFACE

Urban development along the Bay shoreline often occurs adjacent to large expanses of wetlands within regional parks, wildlife refuges, and ecological reserves. This mix of urban development and natural-appearing wildlands prevails in: the South San Francisco Bay; most of the Marin County portion of Central San Francisco Bay; around expanding cities in San Pablo Bay along the northern Contra Costa County shoreline; and northern Suisun Marsh.

Natural areas intermixed with residential, commercial, and industrial or military port/marina developments occur along shorelines in Vallejo, Fairfield, Concord, San Rafael, and Richardson Bay.

Of the 112 Backbone sites, 16 are at the urban/wildland interface. These sites are listed in Table 3.3-1. Of the 16 sites at the urban/wildland interface, 13 of the sites are existing launches; two are existing destinations; and one is a planned destination.

RURAL OPEN SPACE / AGRICULTURAL

Visually undeveloped open space lands along the Bay edge are largely confined to San Pablo Bay, the vicinity of Suisun Marsh, and sections of the South Bay including the Coyote Hills Regional Park and the San Francisco Bay National Wildlife Refuge. Of the 112 sites, 11 are in rural open space and agricultural areas. These sites are listed in Table 3.3-1. Of the 11 sites in rural or agricultural areas, four of the sites are existing launches; two are existing destinations; two are planned launches; and three are planned destinations. Much of these areas are marshland, or wetland with sloughs and levees and, in the south Bay, salt ponds. A few of these areas have sandy or pebble beaches. The adjacent uplands may have trails or other recreational facilities, but these are visually subordinate to the vastness of the Bay and its margins. These landscapes are not dominated by prominent structures.

VIEWER SENSITIVITY

Viewer sensitivity is a measure of public concern for changes to scenic quality and one criterion for evaluating visual impact significance. Viewer activity, view duration, distance from visible objects (foreground, middleground, background), adjacent land uses, and special planning designations such as scenic route designation are used to characterize viewer sensitivity.

San Francisco Bay and its environs are known worldwide as a scenic resource. Viewer groups from around the Bay that may be affected include tourists, individuals pursuing a variety of outdoor recreation pursuits and residents with views of the Bay shoreline. Viewer sensitivity levels are considered high throughout the Bay region.

TABLE 3.3-1: VISUAL SETTING OF BACKBONE SITES

Site i.d.	Location	City/County	Characteristic Landscape
Urban Shoreline			
A1	Albany Beach	Albany	urban waterfront park
A2	Berkeley Marina, Ramp	Berkeley	urban marina/harbor
A4	Point Emery	Emeryville	urban waterfront park
A5	Shorebird Park	Emeryville	urban waterfront park
A6	Emeryville City Marina	Emeryville	urban marina/harbor
A8	Middle Harbor Park	Oakland	urban waterfront park
A9	Jack London Square/CCK	Oakland	urban boat launch
A11	Estuary Park/Jack London Aquatic Center	Oakland	urban waterfront park
A14	Robert Crown Memorial State Beach	Alameda	urban waterfront park
A18	Doolittle Drive; Airport Channel	Oakland	urban waterfront park
A12	Grand Avenue Boat Ramp	Alameda	urban boat launch
A15	Encinal Launching and Fishing Facility	Alameda	urban boat launch
A20	San Leandro Marina	San Leandro	urban marina/harbor
A25	Tidewater Boathouse	Oakland	urban boat launch
A26	Berkeley Marina, Small Boat Launch	Berkeley	urban boat launch
A28	Elmhurst Creek	San Leandro	urban public access area
SF1	Candlestick Point State Recreation Area	San Fran. Co.	urban waterfront park
SF2	India Basin Shoreline Park	San Francisco	urban waterfront park
SF4	Islais Creek	San Francisco	urban waterfront park
SF6	The ""Ramp""	San Francisco	urban boat launch adjacent to restaurant
SF7	Pier 52 Boat Launch	San Francisco	urban boat launch
SF8	South Beach Harbor (AKA Pier 40)	San Francisco	urban marina/harbor
SF9	Treasure Island	San Francisco	urban public access area
SF10	Aquatic Park	San Francisco	urban waterfront park
SF11	Gas House Cove (aka Marina Green)	San Francisco	urban marina/harbor
SF12	Crissy Field	San Francisco	urban waterfront park
SF13	Brannan St Wharf	San Francisco	urban boat launch
SF14	Northeast Wharf Park	San Francisco	urban waterfront park
SM4	Redwood City Municipal Marina	Redwood City	urban marina/harbor
SM6	Docktown Marina	Redwood City	urban marina/harbor
SM9	Redwood Shores Lagoon	Redwood Shores	urban waterfront park

TABLE 3.3-1: VISUAL SETTING OF BACKBONE SITES

Site i.d.	Location	City/County	Characteristic Landscape
SM11	Beaches on the Bay	Foster City	urban waterfront park
SM12	Foster City Lagoon Boat Park	Foster City	urban waterfront park
SM13	East 3rd Ave	Foster City	urban waterfront park
SM16	Seal Point Park	San Mateo	urban waterfront park
SM17	Coyote Point, Marina	San Mateo	urban marina/harbor (adjacent to waterfront park)
SM18	Old Bayshore Highway	Burlingame	urban public access area
SM20	Colma Creek/Genentech	So San Francisco	urban public access area
SM21	Oyster Point Marina	So San Francisco	urban marina/harbor
SM22	Brisbane Marina	Brisbane	urban marina/harbor
SM23	"Coyote Point, Beach"	San Mateo	urban waterfront park
SM24	Westpoint Marina	Redwood City	marina/harbor
M3	Swede's Beach	Sausalito	urban waterfront park
M4	Turney Street Public Boat Ramp	Sausalito	urban boat launch
M5	Dunphy Park	Sausalito	urban waterfront park
M6	Schoonmaker Point	Sausalito	urban waterfront park
M8	Clipper Yacht Harbor	Sausalito	urban marina/harbor
M10	Shelter Point Business Park	Mill Valley	urban boat launch
M13	Brickyard Park	Strawberry	urban waterfront park
M16	Richardson Bay Park/ Blackies Pasture	Tiburon	urban waterfront park
M19	Sam's Anchor Café	Tiburon	lauch adjacent to restaurant
M25	Higgins Dock	Corte Madera	urban boat launch
M27	Bon Aire Landing	Larkspur	urban boat launch
M28	Marin Rowing Association Boathouse	Larkspur	urban boat launch
M29	Ramillard Park	Larkspur	urban waterfront park
M30	San Quentin	San Rafael	urban waterfront park
M31	Jean & John Starkweather Shoreline Park	San Rafael	urban waterfront park
M33	Harbor 15 Restaurant	San Rafael	urban launch adjacent to restaurant
M35	Loch Lomond Marina: Ramp	San Rafael	urban marina/harbor
M36	Loch Lomond Marina: Beach	San Rafael	urban marina/harbor
M38	McNear's Beach	San Rafael	urban waterfront park
N6	Napa Valley Marina	Napa	urban marina/harbor
SC2	Alviso Marina	Alviso	urban waterfront park
Sn6	Petaluma Marina	Petaluma	urban marina/harbor

TABLE 3.3-1: VISUAL SETTING OF BACKBONE SITES

Site i.d.	Location	City/County	Characteristic Landscape
Sn7	Petaluma River Turning Basin	Petaluma	urban boat launch
So1	Brinkman's Marina	Vallejo	urban boat launch
So2	California Maritime Academy	Vallejo	urban boat launch
So7	Matthew Turner Park	Benicia	urban waterfront park
So8	West 9th Street Launching Facility	Benicia	urban waterfront park
So9	Benicia Point Pier	Benicia	urban waterfront park
So10	Benicia Marina	Benicia	urban marina/harbor
So12	Suisun City Marina	Suisun City	urban marina/harbor
CC1	Martinez Marina	Martinez	urban marina/harbor
CC5	Rodeo Marina	Rodeo	urban marina/harbor
CC6	Pinole Bay Front Park	Pinole	urban waterfront park
CC9	Keller Beach	Point Richmond	urban waterfront park
CC10	Ferry Point	Point Richmond	urban waterfront park
CC11	Boat Ramp Street Launch Area	Richmond	urban boat launch
CC14	Richmond Municipal Marina	Richmond	urban marina/harbor
CC15	Marina Bay Park & Rosie Riveter Memorial	Richmond	urban waterfront park
CC16	Shimada Friendship Park	Richmond	urban waterfront park
CC17	Barbara & Jay Vincent Park	Richmond	urban waterfront park
CC19	Point Isabel Regional Shoreline	El Cerrito	urban waterfront park
CC20	SS Red Oak Victory	Richmond	historic ship – docked in urban port setting
CC23	Rodeo Beach	Rodeo	urban waterfront park
Urban/Wildland Interface			
SC3	Palo Alto Baylands Launching Dock	Palo Alto	waterfront park
SM2	Ravenswood Open Space Preserve	Menlo Park	waterfront park
M2	Horseshoe Cove	Sausalito	waterfront park
M11	Bayfront Park	Mill Valley	waterfront park
M39	China Camp State Park	San Rafael	waterfront park
M40	Bull Head Flat	San Rafael	waterfront park
M41	Buck's Landing	San Rafael	private marina
M43	John F. McInnis Park	San Rafael	waterfront park
M47	Black Point Boat Launch	Novato	boat launch
N1	Cutting's Wharf	Napa County	pub boat launch

TABLE 3.3-1: VISUAL SETTING OF BACKBONE SITES

Site i.d.	Location	City/County	Characteristic Landscape
N8	Riverside Drive Launch Ramp	Napa	pub boat launch
Sn5	Papa's Taverna/ Lakeville Marina	Petaluma	marina/restaurant
CC2	Carquinez Strait Reg. Shoreline (Eckley Pier)	Martinez	waterfront park
CC8	Point Molate Beach Park	Richmond	waterfront park
CC21	Point Pinole	Pinole	waterfront park
CC22	Bay Point Regional Shoreline	Martinez	waterfront park
Rural and Agricultural			
A22	Eden Landing Ecological Reserve	Hayward	refuge/reserve
A24	Jarvis Landing	Newark	privately owned (business)
A27	Coyote Hills	Fremont	refuge/reserve
A30	Hayward's Landing	Hayward	refuge/reserve
SM25	Corkscrew Slough Viewing Platform	Redwood City	refuge/reserve
M1	Kirby Cove	Sausalito	waterfront park
M17	Angel Island State Park	Marin County	waterfront park
N2	JFK Memorial Park	Napa	waterfront park
N7	Green Island Boat Launch Ramp	Amer. Canyon	pub boat launch
So5	Belden's Landing	Fairfield	pub boat launch
Sn3	Hudeman Slough	Sonoma County	pub boat launch

3.3.2 REGULATORY SETTING

A variety of government agencies have jurisdiction over the 112 Backbone Sites. These include federal, state and local agencies that may be the site manager or whose regulations affect activities and development on the margins of the Bay.

FEDERAL AGENCIES AND REGULATIONS

SOUTH BAY SALT PONDS

The State of California and the Federal government are currently working on restoration plans for the large area (15,100 acres) of former salt ponds in the South Bay. Restoration will affect the distribution of levees and ponds and public access to these lands as well as the aesthetic qualities of sites in and adjacent to the following areas: Ravenswood, Alviso and Eden Landing Ecological Reserve (www.saltbayrestoration.org).

This could alter viewsheds of the following sites:

- SM2: Ravenswood Open Space Preserve (Midpeninsula Open Space District)

- SC3: Alviso Marina (County of Santa Clara)
- A27: Coyote Hills (EBRPD/Alameda Co. Flood Control)

Only Site SM2 is directly affected. This is described in more detail in Section 3.8: Land Use Planning.

Salt ponds in the North Bay are part of USFWS Napa-Sonoma Marshes Wildlife Area and would be restored as part of the Napa-Sonoma Marsh Restoration Project.

This could alter viewsheds of the following sites:

- N7: Green Island Boat Launch Ramp (CDFG)
- N6: Napa Valley Marina (Napa Valley Marina)
- N1: Cutting's Wharf (Napa County)

STATE AGENCIES AND REGULATIONS

STATE SCENIC HIGHWAY PROGRAM

The State Scenic Highway Program was established in 1963 to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. Scenic highway nominations are evaluated using the following criteria:

- The State or county highway consists of a scenic corridor that is comprised of a memorable landscape that showcases the natural scenic beauty or agriculture of California.
- Existing visual intrusions do not significantly impact the scenic corridor.
- Demonstration of strong local support for the proposed scenic highway designation.
- The length of the proposed scenic highway is not less than a mile and is not segmented.

For a highway to be officially designated as a State Scenic Highway, a local jurisdiction must adopt a scenic corridor protection program, apply to the California Department of Transportation (Caltrans) for a scenic highway approval, and receive notification that the highway has been adopted as a Scenic Highway. When the city or county nominates the sites, it must define the scenic corridor, which is land adjacent to and visible to a motorist on the highway. The agency must then adopt or document ordinances to preserve the scenic quality of the corridor.

As of February 2008, the following highways located near WT Backbone Sites were eligible to become State Scenic Highways, although none had yet received that designation (http://www.dot.ca.gov/hq/LandArch/scenic_highways/).

- Highway 37: From Marin County where it joins 101, east through Sonoma to Solano until the junction with Interstate 80 in Solano County
- Highway 121 and 29: In Napa from 37 north until just north of junction with 29 and 29 west from 121 then north up Saint Helena Highway
- Highway 1: On the approach to the Golden Gate Bridge in San Francisco and in Marin County until the split with 101
- Highway 4 and 160: In Contra Costa County from the Delta crossing on 160 south and inland

- Interstate 80: On the approach to the Bay Bridge to the 580 split

The status of a proposed State Scenic Highway changes from eligible to officially designated when the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a Scenic Highway.

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION (BCDC)

BCDC was established in 1965 through the McAteer-Petris Act and has authority to issue or deny permit applications for placing fill, extracting materials, or changing the use of any land, water, or structure within the area of its jurisdiction. This area includes Bay waters up to the shoreline, and the land area between the shoreline and the line 100 feet upland and parallel to the shoreline, which is defined as the Commission's 100-foot "shoreline band" jurisdiction. BCDC has adopted the *San Francisco Bay Plan* (1968, rev. 2007) to regulate land uses within its shoreline band. The *Bay Plan* contains the following recommendations with respect to visual quality:

Appearance, Design and Scenic Views

1. *To enhance the visual quality of development around the Bay and to take maximum advantage of the attractive setting it provides, the shores of the Bay should be developed in accordance with the Public Access Design Guidelines.*
2. *All bayfront development should be designed to enhance the pleasure of the user or viewer of the Bay…*
4. *Structures and facilities that do not take advantage of or visually complement the Bay should be located and designed so as not to impact visually on the Bay and shoreline. In particular, parking areas should be located away from the shoreline…*

LOCAL AGENCIES AND REGULATIONS

Each city and county has a general plan with land use, open space, conservation, recreation, and other elements containing policies pertaining to scenic resources, and may identify areas within their jurisdictions of high scenic value (including sensitive viewsheds, scenic routes, and viewpoints) that require special consideration when making development decisions.

3.3.3 PROGRAM IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Impacts would be considered significant if they would:

- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Have a substantial adverse effect on a scenic vista.

As noted in the introduction to this section, other aesthetic considerations (noise, odors, light, and glare) were focused out from further review in the Initial Study (IS) (Appendix B to this EIR).

METHODOLOGY

This visual analysis is based on the methodology used by the California Department of Transportation (Caltrans) and the U.S. Department of Transportation as well as the Federal Highway Administration for assessing visual impacts. Three visual traits that are considered are intactness, vividness, and unity.

IMPACTS AND MITIGATION MEASURES

POTENTIAL FOR VISUAL CHANGES AT WT PLAN BACKBONE SITES

Visual changes to sites designated as HOS, which make up 57 of the 112 Backbone Sites would, by definition, be limited to only minimal improvements (i.e., signage). Some or all of the 55 non-HOS launch sites could potentially be subject to substantial facility improvements. Any such improvements would be described in a Trailhead Plan that would be required prior to designation of the site into the WT.

Twelve sites (three HOS and nine non-HOS) are designated as destination-only sites rather than launch sites and improvements for these sites would likely be minimal.

Potential WT improvements at non-HOS launch sites could include:

- **Ramps and Floats.** These facilitate the entry of the boat to the water at launch sites, and, although not essential for some craft, are desirable. Because of their low profile, simple wooden ramps (without guard rails) and floats are not highly visible from land or the Bay (see Figures 3.3-1a and b) and do not represent a visually prominent component in the landscape. Wooden ramps with guard-rails are slightly higher profile and more visible (see Figure 3.3-1c). Ramps that are compliant with the Americans with Disabilities Act (ADA) can be larger structures that, depending on the materials used, may be visually prominent unless they are screened by topography or vegetation as seen from the Bay or other vista points (See Figure 3.3-1e).
- **Parking**. This is desirable at most launch sites, and not necessary at destination sites. All of the existing non-HOS launch sites have some parking, although at waterfront sites on the Embaracadero in San Francisco, it is unavailable at some times of day, limited to short periods of time, and may be expensive. Parking lots can occupy a substantial portion of land areas at access sites. Although most facility parking would be low-lying and not visually prominent, larger parking lots may be visible from the Bay or from vista points that are elevated above the WT site. BCDC guidelines suggest that parking be located inland from the Bay's edge so as not to impact views to or from the Bay. More details on the amount of parking required are provided in Section 9 Traffic, Circulation and Parking.
- **Restrooms.** These are present at all but two (M10 and SF7) of the HOS. Of the existing non-HOS launch sites, seven have restrooms while 27 do not. Restroom facilities may range from small portable toilets to larger structures up to 15 feet or more in height (see Figure 3.3-1f). Depending on their design and location, restroom structures could be a visually prominent component in the landscape and could possibly block views towards the Bay.
- **Additional Use Amenities:** Additional WT site improvements may include many features typically found along shoreline parks: family and/or group picnic areas

(with tables, drinking fountains, and trash and recycling containers); landscaping; bicycle racks; lighting[1]; emergency phone; trail system connections, and signage. Rigging areas (for sailboarders) and boat-washing facilities are additional WT access amenities that may not be found in typical parks. These features are generally small in scale and, depending on their design and materials used, would not be highly visually prominent or affect the visual unity of the overall landscape.

- **Other WT Facilities:** Other WT facilities include: boat houses for all boat types including sculling shells; fenced outdoor areas for outrigger canoes; modified shipping containers for kayaks and sailboards; and provision of inside dock ties at marinas for in-water storage of dragon boats and kayaks. Boat-houses can be visually prominent depending on their design and materials. Concession stands for boat rentals and for food and beverage also may be developed at some WT sites.
- **Overnight Camping Facilities:** Additional overnight camping facilities may be developed as part of the WT (beyond the two existing sites at Kirby Cove and Angel Island). Overnight camping facilities would be similar to those of many shoreline parks and may include picnic tables, maintenance access routes, and trash and recycling containers. Camping features are generally low in profile and, depending on their design and materials, would not be visually prominent components in the landscape.

Impact 3.3-1: Degradation of the Existing Visual Quality of a WT Site or its Surroundings

The visual impacts of each site would vary and must be considered in the context of the line, form, color, and textures of the facility designs and the characteristic landscape setting.

Urban Shorelines

Given the complexity of the built environment at the water level for the majority of sites in urban shoreline areas, it is unlikely that any facility improvements associated with the WT would be distinguished from other local development. Several sites are located in areas of particular scenic beauty along San Francisco Bay, with views of the most famous features of the built environment (such as the Golden Gate Bridge, Bay Bridge, City of San Francisco, Alcatraz) and of the background natural setting of undeveloped hills and mountains. Given the scale and panoramic nature of these shoreline area views, localized facility improvements at WT sites would not intrude into or dominate the view. As seen from the water, the WT access point facilities in urban shoreline areas would not necessarily be particularly visually prominent. The existing level of development would dominate the visual prominence of any additional facilities, which would tend to blend in with the site as seen from the immediate foreground views.

Many of the WT sites are in urban waterfront parks that appear as open, landscaped areas in an otherwise densely populated urban setting. Generally they are developed

[1] Lighting was not considered to have a significant impact in the Initial Study and will not be addressed further in this EIR.

with a variety of amenities. See Figures 3.3-1c, Martin Luther King Shoreline Park and 3.1-1d, Middle Harbor Park, both in Oakland, for typical examples of waterfront parks.

A large number of the urban WT sites are located in marinas. Typical marina development includes larger motorized boats and a variety of docks, floats and walkways. The marinas often are associated with restaurants, cafes and other small retailers in a dense patchwork of waterfront buildings. These areas may receive large numbers of visitors whose main purpose is water-based recreation or enjoyment of the waterfront scenery. Some of these areas have only recently been redeveloped from former industrial sites. The Oakland waterfront near Jack London Square is an example of this.

For sites in urban areas with modified shorelines and significant existing improvements, the visual impacts of WT improvements with design considerations that respect the characteristic setting would be less than significant.

Urban/Wildland Interface

Many WT sites in urban/wildland interface settings are located in existing park or open space lands that are generally prized for their less-developed character in an otherwise densely populated setting. Many provide spectacular views of the Bay. These areas generally have visitor-serving amenities such as parking, restrooms and trails. If the WT access point is near existing improvements, NMSB facility improvements would not greatly affect the visual integrity of the area.

However, if the WT site is located in a more naturally appearing, undeveloped area it may be highly visually prominent and detract from the intactness and unity of the area.

Examples of WT sites at the urban/wildland interface, not located in park or open space lands but still located outside the major urban centers are N1: Cutting's Wharf, Napa County and Sn5: Papa's Taverna/Lakeville Marina. Existing improvements at these sites are usually very simple with a dock and possibly a ramp, perhaps parking or a restroom, with the area maintaining a low-development character. These basic facilities, already present, do affect the view of the site and from the site.

Some of the WT sites are located at undeveloped beaches where the provision of access facilities might be highly distinctive as seen from the Bay, although perhaps less visually prominent from the land as they may be screened by topography and vegetation.

Rural/Agricultural

In general there are few existing amenities at these sites. Two of the existing launches (A24: Jarvis Landing; Sn3: Hudeman Slough) within this characteristic landscape do not have restrooms, although they do have parking. As the areas are generally low-lying, new restroom or storage buildings near the shoreline could be visually prominent components of the landscape as seen from inland and from the Bay. Any noticeable change in the undeveloped character and unity of these sites caused by site construction may require modification of natural features or removal of vegetation but would be unlikely to restrict views.

FIGURE 3.3-1: VISUAL CHARACTER OF WT SITES AS SEEN FROM LAND

Figure 3.3-1a. Highly developed site: marina with ramp, floats and commercial kayak rentals (City Kayak, South Beach, San Francisco)

Figure 3.3-1b. Highly developed site: marina with ramp and float (Petaluma Marina)

Figure 3.3-1c. Relatively undeveloped site in waterfront park: ramp with floats (Doolittle Dr. MLK Shoreline Park, Oakland)

Figure 3.3-1d. Beach launch inaccessible when tide is out (Middle Harbor Park, Port of Oakland)

Figure 3.3-1e. ADA compliant boat ramp (Pier 1½, San Francisco)

Figure 3.3-1f. ADA compliant bathroom (Middle Harbor Park, Oakland)

All WT projects involving more than minimal site improvements would require approval of both a Trailhead Plan and BCDC Design Review as part of the permitting process. Depending of the level of proposed development, the BCDC permit would be subject to design review conducted either administratively or by the BCDC Design Review Board. The aesthetic design of the proposed facilities and visual impacts of a project would be considered prior to the issuance of a BCDC permit. Specific guidelines developed by BCDC for public access improvements along the Bay shoreline address aesthetics and are summarized in *Shoreline Spaces: Public Access Design Guidelines for the San Francisco Bay* (2005). In addition, most local agencies have design review provisions in their zoning ordinances that would apply to WT improvements on privately owned sites in their jurisdictions.

HOS sites would typically require only signage or other minor improvements that would not have the potential to cause a significant visual impact.

The Trailhead Plan would be reviewed by the Project Management Team and Advisory Committee for compliance with the following WT Plan strategies that are intended to reduce visual impacts:

- Strategy #3 requires that the type and design of trail-related improvements match site characteristics, including helping preserve the character of the trailhead setting and increasing the quality of boaters' experiences.
- Strategy #5 requires the development and updating, as needed, of design guidelines for trail-oriented access improvements.

However, even with BCDC design review and implementation of the above strategies, the impact is considered **potentially significant but mitigable**. To reduce visual impacts of site improvements to **less than significant** levels, the following mitigation measure shall be implemented:

Mitigation Measure 3.3-1: Include Visual Characteristics and Site Relationships in Design Guidelines and Trailhead Plans.

When Design Guidelines are developed, and for each Trailhead Plan for new or expanded WT Sites, the following design relationships will be addressed:

- For all sites, new access facilities, including restrooms, parking lots, boat storage buildings, and ramps, shall be designed to be as low in profile as feasible, made from materials that are in character with the surroundings and, if possible, screened from view with native landscaping.
- For sites where the characteristic landscape is essentially natural in appearance, WT facilities shall be restricted to the minimum necessary.
- Locations for all new sites shall be chosen to avoid blocking view corridors to and from the water.
- New or expanded parking facilities shall be located away from the water's edge, preferably shielded from views to and from the water by existing structures and/or native landscaping.
- Trailhead Plans shall include detailed landscape plans that blend development with the surrounding characteristic landscape.

Impact 3.3-2: Degradation of a Scenic Vista or View from an Eligible State Scenic Highway

WT sites may be located in an area of notable scenic value, or part of a scenic vista where counties or cities may have enacted ordinances that guide development.

No State Scenic Highways have yet been designated in areas that would be affected by WT sites. However, there are highways that are considered sufficiently scenic to be worthy of designation and there are WT sites located near those highways. These include: M47, Black Point Boat Launch near Highway 37; M1, Kirby Cove and M2, Horseshoe Cove visible from the Golden Gate Bridge; N8 Riverside Drive Launch Ramp possibly visible from Highways 121/29.

Marin sites M1, M2 and M47 are existing launch or destination sites and are identified in the WT Plan as HOS (minimal proposed improvements). Site N8 is not an HOS and therefore could potentially be subject to substantial facility development. Any such development would be described in the required Trailhead Plan that would be subject to subsequent CEQA review.

Local zoning and design review regulations may limit the impacts in views from these roadways. Site-specific impacts and any conflicts with visually sensitive sites, viewsheds, or vistas designated in local or regional plans are possible and would be assessed in project-level reviews. This impact is considered **potentially significant but mitigable**. With appropriate consideration placed on preserving and enhancing visual relationships, potential impacts can be avoided.

Mitigation Measure 3.3-2: Trailhead Plans shall minimize degradation of a scenic vista or view from an eligible State Scenic Highway

Trailhead Plans for sites visible from designated or eligible Scenic Highways shall include design standards and screening techniques that protect those views.

Mitigation measure 3.3-1, above, also applies to this impact.

CUMULATIVE IMPACTS

Potential impacts to visual resources and corresponding mitigation measures are site-specific and present no cumulative impacts.