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Accessibility Plan

Public Draft - August 2014



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Accessibility Plan

August 2014

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Acknowledgments

The *San Francisco Bay Area Water Trail Accessibility Plan (Plan)* is a unique, region-specific guidance document focused on improving accessibility of launching and landing sites for non-motorized small boat (NMSB) use. It aims to provide guidance for both site owners and for the Water Trail implementation and designation process. This ambitious undertaking was made possible through the help of many people who contributed their time and expertise, and through the funding provided by the California State Coastal Conservancy.

The *Plan* was developed over a two-year period with input and guidance from agencies, organizations, and individuals. All contributors to this plan are listed below with the organization and position they held at the time of their participation. The California State Coastal Conservancy, project lead, also engaged several consultants and consultant teams to assist with the development of this *Plan*.

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The Advisory Committee and the Accessibility Sub-Committee represent a broad range of interests pertinent to NMSB use, including accessibility; wildlife and habitat protection; navigational safety; hospitality and tourism industry; park management at the local, regional, state, and federal levels; and boating clubs, organizations, and outfitters. Past and present members of the Advisory Committee and Accessibility Sub-Committee include:

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Image Credit Ann Buell

Executive Summary

The San Francisco Bay Area Water Trail (Water Trail or WT) is one among hundreds of water trails supporting non-motorized small boat (NMSB) use around the United States. It is a relative newcomer, having been established through the efforts of the non-profit Bay Access, Inc. and the California legislature in 2005. It is also large, encompassing most of the 1,000-mile shoreline of the nine-county San Francisco Bay Area. Potentially, more than 100 existing marinas, waterfront parks, and other public access areas along this shoreline will become part of the Water Trail (as designated WT trailheads).

The Water Trail is managed by four public agencies: the State Coastal Conservancy (Conservancy), the Association of Bay Area Governments (ABAG), the San Francisco Bay Conservation and Development Commission (BCDC), and California State Parks and Recreation's Division of Boating and Waterways (Cal Boating). It is led by the Conservancy, and implemented in a cooperative and collaborative process with site owners and managers of potential and designated WT trailheads (under public or private ownership), a Project Management Team (PMT), broad-based advisory committee (AC), and the public at large. The Water Trail has a website (www.sfbaywatertrail.org), brochure, educational and identification signage, and staff who are ready to assist site owners and managers with the trailhead designation process.

Since late 2011, nine sites have been designated or conditionally designated as trailheads. As will continue to be the case with all potential WT sites, these sites were reviewed and discussed in public forums following guidelines set forth in the *Enhanced Water Trail Plan* – the Water Trail's guiding planning document developed by the San Francisco Bay Conservation and Development Commission (BCDC) as the *Water Trail Plan (Draft)* and adopted (as the *Enhanced Water Trail Plan*) by the Conservancy after environmental review and minor changes.

These WT trailheads were also reviewed under the programmatic environmental document developed by the Conservancy (*San Francisco Bay Area Water Trail Plan Environmental Impact Report*, referred to in this document as the "EIR") as required by the California Environmental Quality Act (CEQA). Each site was assessed through a checklist process to determine the potential impacts on sensitive wildlife and habitat, navigational safety, aesthetics, and other environmental conditions of concern, to identify mitigation measures required by the EIR for such impacts and to determine if the EIR adequately and fully addressed all impacts and mitigation.

The EIR and the *Enhanced Water Trail Plan* provide guidance and a detailed planning and implementation framework, but they do not provide the answers to what have become pressing questions for Water Trail management:

How can the Water Trail program meet the obligation to provide “meaningful access” to its benefits to persons with disabilities, including reasonable modifications and accommodations?

How can the Water Trail program, which has very limited grant funds and neither owns nor has any regulatory control over any of the sites, be consistent with its own objective of including sites that are accessible to persons with disabilities when most existing sites have one or more barriers?

What can the Water Trail program reasonably ask of site owners with regard to facility design and enhancement when different non-motorized small boat types need different kinds of launching facilities and existing laws don’t extend their requirements beyond boarding piers or high tide lines of beaches?

The search for answers to these questions led to the development of this *San Francisco Bay Area Water Trail Accessibility Plan*. It is written for use by both site owners/managers, and Water Trail PMT and AC members and staff. The term “accessible” is used throughout the document in a more colloquial manner than would be the case when describing accessibility laws. The term should be understood to mean “usable by many persons with disabilities.”

The *Accessibility Plan* includes in its analysis ten principal NMSB sports, most of which were identified in the *Enhanced Water Trail Plan*: kayaking, windsurfing, kite boarding, stand up paddling, outrigger canoeing, dragon boating, whale boating, rowing, and sculling. It also considers the five primary types of launch facilities found around San Francisco Bay: beaches, low-freeboard docks, high-freeboard docks, boat ramps, and entry paths into the water. It aims to improve access for persons with disabilities while serving the needs of all Water Trail users.

The document begins with an introduction and overview of the Water Trail program in Chapter 1 (a full list of sites is provided in Appendix A). A description of the basic nature of the Water Trail and its benefits, the boats it serves and the types of launching/landing found around the Bay Area follows in Chapter 2. Chapter 3 discusses what is needed to make the program accessible, while Chapter 4 summarizes key features at designated or potential Water Trail sites grouped into “geo-regions” around the Bay Area, with

recommendations for improvements. A detailed description of various improvement products that may be used or installed to improve accessibility is in Appendix B, with cost estimates in Appendix C. The final chapters provide an overview of applicable laws and regulations (Chapter 5) and links to additional resources (Chapter 6), including to laws, organizations serving persons with disabilities, adaptive equipment, and other pertinent information.

The large number of possible combinations of boat types and launch facilities around the San Francisco Bay Area requires a wide-ranging evaluation of access needs and options. Water Trail staff and consultants searched for comprehensive assessments and plans developed by other water trail programs around the country to use as models. Several Americans with Disabilities Act (ADA) Self-Evaluation and Transition Plans for park programs run by other public agencies, such as the East Bay Regional Park District (“EBRPD”) and the California Department of Parks and Recreation (“DPR”), were found. These plans address accessibility improvements needed for park users, but do not provide a useful model for the Water Trail.

Agencies that have developed these transition plans, such as EBRPD and DPR, typically own and manage their parks, and therefore were able to be prescriptive about numeric targets and timelines for specific facility upgrades within their system. Because the Water Trail program does not own any sites, a prescriptive approach of this type is not an option for the *Water Trail Accessibility Plan*. The Water Trail program can neither require site owners to make specific improvements at any site, nor dictate the timing of any such improvements.

In further contrast to more typical programs in which park managers own or control management of their facilities, the Water Trail program is a voluntary network of launching and landing sites whose owners and managers join at their discretion. It is very helpful to Water Trail staff if site owners/managers do have updated Self-Evaluation and Transition Plans, or otherwise have knowledgeable staff who can evaluate features at boat launching and landing sites for compliance with pertinent accessibility laws. The Water Trail program does not have the resources to carry out such evaluations, nor would it be appropriate to do so, as it is the owner’s responsibility to comply with accessibility laws. The Water Trail program has no regulatory power in this regard. Requiring site owners to develop such a report as a condition of designation would, in essence, be acting in a regulatory manner and could alter the basic nature of the Water Trail program.

Water Trail staff has, however, collected basic data about facility features at the existing sites around the Bay Area to look for patterns and gaps in the spatial distribution of launch site features (beach or dock, for example) and the usability of sites by persons with disabilities. The results are presented in this document. Actual measurements of gangway lengths and widths, distances between parking and launches, and similar parameters, were collected in the field but are not included in this document. They are included in trip-planning information on the Water Trail website as sites are designated into the Water Trail network.

After considering all of the information gathered and described in Chapters 2 and 3, Water Trail staff and PMT members have concluded that there should ideally be at least one “broadly accessible” site within each of the fourteen geographic regions covered by the Water Trail. The “geo-regions” are described in Chapter 4 and are based on the concept that no one should have to drive long distances to find an accessible site. Additionally, there should be an opportunity to share in each common experience out on the water (common experiences are described in Chapter 3). Experiences should be available at a Bay-wide, rather than geo-region, scale as not every experience exists in every single geo-region.

Although the WT is committed to the goal of at least one broadly accessible site per region, Water Trail management recognizes that even the most accessible sites are not going to be accessible for all persons with disabilities. This is due to the different boat types individuals may favor, and the fact that the needs of persons with different disabilities differ from one another. The Water Trail program will, however, use all the data it has collected to make educated decisions about where to focus resources, and will continue to work with site owners and operators to encourage and support improved accessibility at all potential or designated WT sites around the Bay. As described in this document, the Water Trail program is also committed to sharing important information related to accessibility through the Water Trail website, on a site-specific basis, along with information about programs that assist persons with disabilities with boating in the San Francisco Bay Area.

Chapter 1. Introduction

1.1 About the Water Trail - Purpose, Management, and Origin

Purpose. The San Francisco Bay Area Water Trail (Water Trail or WT) is a voluntary, planned network of access sites, or “trailheads,” designed to help people using non-motorized small boats or boards (collectively referred to as NMSBs) safely enjoy the historic, scenic, cultural, and environmental richness of San Francisco Bay through single and multiple-day trips. The program focuses principally on the following kinds of non-motorized boating: kayaking, windsurfing, stand up paddling (SUP), kite boarding, canoeing, outrigger canoeing, whale boating, dragon boating, rowing, and sculling.

The Water Trail joins the ranks of other regional trail systems – the San Francisco Bay Trail, a 500-mile shoreline trail around San Francisco Bay; and the Bay Area Ridge Trail - a 550+-mile trail for hikers, mountain bicyclists, and equestrians along the ridgelines overlooking San Francisco Bay. The Water Trail is different from these other trails in two notable ways: it is non-linear and it is on the water. It does, however, include a network of land-based trailheads, which open the door to single-day trips with one or more stops, and multiple-day trips with overnight stays at campsites, hotels, hostels, and even historic ships.

Management. This regional, nine-county program is being implemented under the leadership of the California State Coastal Conservancy (Conservancy) in close collaboration with the Association of Bay Area Governments (ABAG), the San Francisco Bay Conservation and Development Commission (BCDC), and California Department of Parks and Recreation’s Division of Boating and Waterways (Cal Boating). These four agencies comprise the Project Management Team (PMT). An Advisory Committee (AC) representing a broad range of interests and expertise deepens the understanding of the managing agencies and the site owners and managers, as do members of the public who actively participate in the public meetings at which trailhead designation and other Water Trail decisions are made.

Origin. The Water Trail was created through legislation (2005, Hancock, Assembly Bill No. 1296, the “San Francisco Bay Area Water Trail Act,” codified at Government Code §§ 66690-66694; also see Public Resources Code §31163(d)). The legislation evolved from the vision and efforts of the non-profit Bay Access, Inc., an organization that aims to ensure a future for the Bay that includes adequate launching and landing facilities for NMSBs. BCDC led the public process and development of the draft *San Francisco Bay*

Area Water Trail Plan and the Conservancy led the environmental review of the plan. The Conservancy certified the *San Francisco Bay Area Water Trail Plan Final Environmental Impact Report* (“Water Trail EIR” or “WT EIR”), and adopted the *Water Trail Plan* in its final form (“*Enhanced Water Trail Plan*”) in 2011. To learn more about the Water Trail’s history and download documents, please visit <http://www.scc.ca.gov>. Documents from the planning phase led by BCDC may be found at <http://www.bcdc.ca.gov>.

1.2 The Water Trail Accessibility Plan – Origin and Goals

Site Designation Process. The PMT began designating sites into the Water Trail network in late 2011. Site designation occurs through a public process, and follows protocols and strategies set forth in the *Enhanced Water Trail Plan*. The designation process, which includes an in-depth review and discussion of features at existing launching and landing sites, quickly revealed several essential truths about the 100+ potential Water Trail sites identified in the *Enhanced Water Trail Plan*:

- Sites are generally more suitable for use by some boat types than others, due to the launching, landing, and wind conditions needed by specific boat types.
- While individual launch sites are more suitable for use by some boat types than others, some sites are used more frequently by individuals or clubs based on launch type preference (e.g., beach vs. high- or low-freeboard dock) or site location (near home, office, or transportation), even if the condition of site features is less than ideal.
- Most sites would benefit from enhancements, but specific improvements appropriate for each site may enhance site use for only some boat types (e.g., kayak storage) or some user preferences.
- Most sites would benefit from a variety of enhancements designed to improve accessibility for persons with disabilities.

This *Accessibility Plan* is focused primarily on this last point, but within the context of all of the factors listed above. This *Plan* also takes into consideration that there are both accessibility requirements required by law and accessibility improvements that are desirable but not required by law. Some accessibility improvements, such as designated parking spaces, are clearly the legal responsibility of site owners, who must develop and maintain the required number and configuration of spaces. Other accessibility improvements are desirable but may not necessarily be required under the law, such as a transfer system designed to assist a person wishing to transfer from a wheelchair into a kayak, for example.

Rather than focusing only on legal requirements for access as they pertain to use of NMSBs, the *Accessibility Plan* strives to meet the higher goal of finding solutions for common barriers to accessibility that exist at many potential Water Trail sites, and to encourage site owners and managers to likewise aim for the most inclusive designs and enhancements feasible for their sites and site users. For this reason, most (but not all) discussion of what is legally required is confined to Chapter 5 (Laws, Standards, and Ordinances).

The Water Trail program has no regulatory powers, but it does have to comply with the legal requirement to make the Water Trail program and its benefits, when viewed in its entirety, accessible to qualified persons with disabilities. The desire to achieve this program-level goal is embraced by all of the staff, organizations, and agencies involved in the management of the Water Trail program. Site owners and managers whose sites are designated into the Water Trail are encouraged to embrace this goal as well.

This *Plan* is designed to help answer the following questions:

- 1) What specific launching and landing facility enhancements could site owners and managers install to increase site usability by persons with disabilities, whether those disabilities are permanent or temporary, and associated with mobility, visual, hearing, or cognitive impairments?
- 2) How do various site enhancements interrelate with the specific needs of various boat types and launch types (what would work at a beach; what would work for a kayaker; etc.)?
- 3) What can Water Trail program management do to achieve program-level accessibility while not owning or controlling any of the potential sites in the network, and without altering the basic nature of the program?

These questions make it clear that the *Accessibility Plan* has two audiences: site owners and managers; and managers of the Water Trail program itself. The **goals** for each overlap, but are essentially as follows:

For Site Owners and Managers, the Accessibility Plan is designed to:

- Provide the knowledge and resources needed to implement accessibility improvements at potential Water Trail sites
- Instill an appreciation for the benefits of inclusive design
- Clarify which laws, standards, and ordinances may be applicable
- Encourage site owners to review the accessibility of facilities at their waterfront sites and make plans for improvements over time

For the Water Trail Program Managers and Staff, the Accessibility Plan is designed to:

- Define the approach for achieving program-level accessibility for the Water Trail Program
- Describe the parameters for how accessibility is evaluated in the Water Trail site designation process
- Provide data about the types and locations of facility features of existing, potential Water Trail sites, organized by geographic groupings, to help identify the locations of gaps in accessibility and suggest where to prioritize improvement efforts to achieve program-level accessibility
- Share input from the Water Trail Accessibility Sub-Committee and respondents of the Water Trail Accessibility Survey (2013)
- Provide resources to help guide decisions about grant funding for site improvements

This *Accessibility Plan* cannot specify or direct which sites will make improvements and what those improvements will be, because the Water Trail does not own or manage any sites. Nonetheless, by working together, site owners/managers and Water Trail program managers, staff, and advisors can achieve the goal of an accessible San Francisco Bay Area Water Trail program.

1.3 Organization of the Accessibility Plan

Chapter 1 introduces the San Francisco Bay Area Water Trail and provides context for the need and desirability of making launching and landing points around San Francisco Bay accessible to persons with disabilities who desire to recreate with a non-motorized small boat.

Chapter 2 expands on the concept and realities of the San Francisco Bay Area Water Trail by describing the basic nature of the program, its intended public benefits, and the boat types (sports) it is designed to serve; and by discussing the types of launching and landing facilities and other site features found around the Bay Area and their importance for the various boat types.

Chapter 3 explores the question of what is needed in order to make the Water Trail program, when viewed in its entirety, accessible to qualified persons with disabilities. The chapter presents and discusses the results of research and public input and describes methods of effective communication, the potential for grant funding, and the experiences that NMSB users typically have access to around the Bay.

Chapter 4 summarizes what is known about existing and planned, potential Water Trail sites around the Bay Area (by geo-region) and makes recommendations for enhancements both at regional and Bay-wide scales.

Chapter 5 provides an overview of the laws, regulations, ordinances, and codes that are intended to protect the rights of persons with disabilities and which must be adhered to by site owners and managers.

Chapter 6 provides a list of resources that will assist site owners and managers in addressing accessibility issues.

Appendix A includes a list of all potential Water Trail sites.

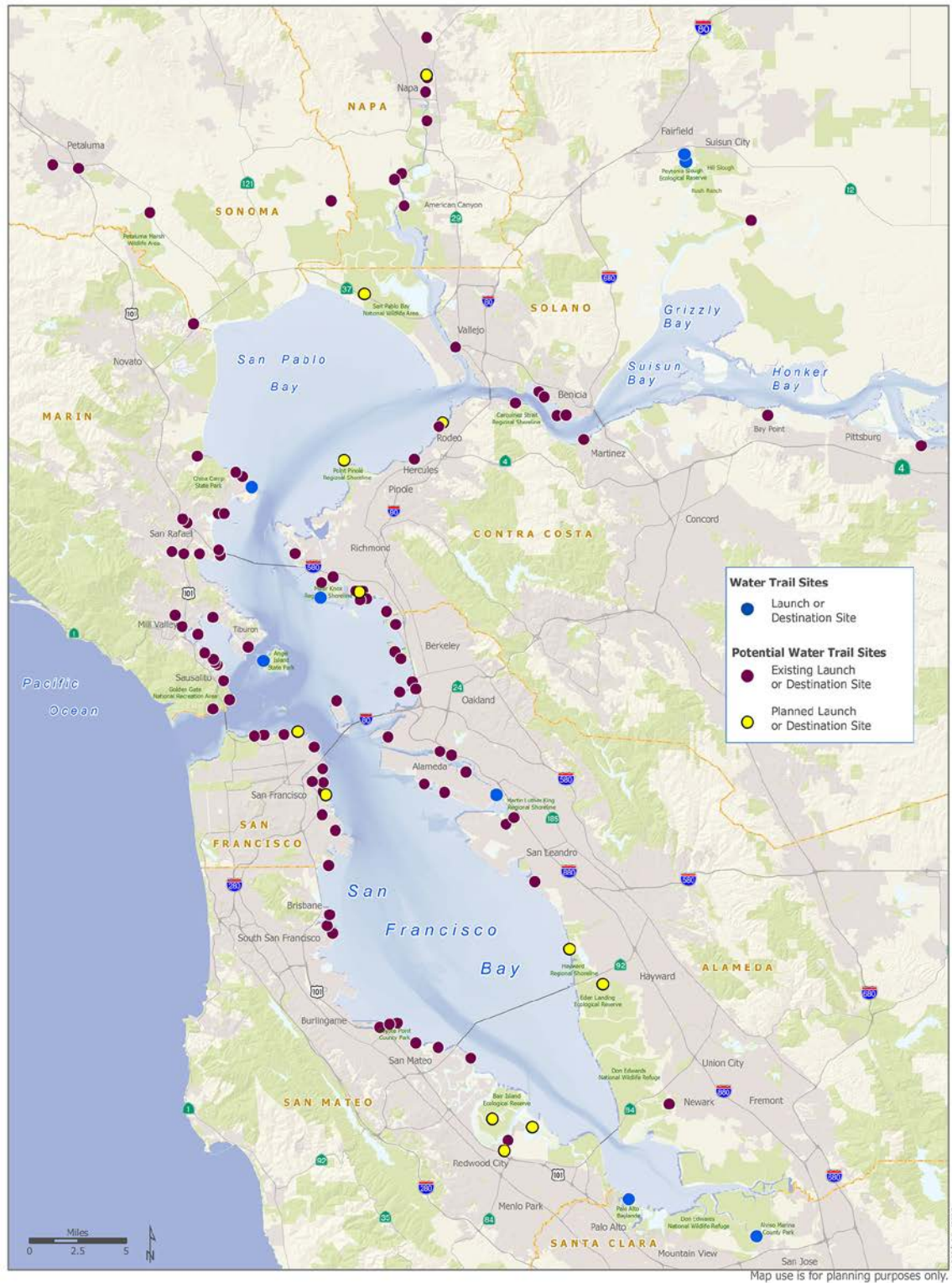
Appendix B provides practical suggestions, descriptions, examples, and recommendations for a variety of different site improvements.

Appendix C presents an overview of funding and cost considerations for a variety of enhancement features.

1.4 Use of the Term “Accessibility”

The terms “accessible” and “accessibility” mean different things to different people and use of these terms can lead to misunderstandings. The terms are not synonymous with compliance with the Americans with Disabilities Act or compliance with any other law or regulation regarding access by persons with disabilities. When used in this document, the terms should be interpreted loosely to mean “usable” by many persons with disabilities, or “allowing access.”

We have also chosen to use the terms “usable” and “suitable” to avoid the confusion that often accompanies “accessible.” Any discussion that is in reference to actual laws and regulations is specific in those references.



2.1 San Francisco Bay Area Water Trail Existing and Potential Sites Map

Chapter 2. The Nature of the Water Trail Program

2.1 Basic Nature of the Water Trail Program

2.1.1 Scope

The San Francisco Bay Area Water Trail includes potential trailheads in all nine Bay Area Counties. These sites, described in Chapter 4 and depicted in Figure 1, were identified in the *Enhanced Water Trail Plan* (2011) or have been identified since then. The great majority of sites already exist, but some are planned. The basic criteria for inclusion include 1) the site is open to the public (or will be), and 2) the site has facilities that could be used to launch and/or land a non-motorized small boat (NMSB). The location of most sites falls within the jurisdiction of the San Francisco Bay Conservation and Development Commission, but a small number are outside of those boundaries, namely in Petaluma, Napa, and possibly some future sites in the Delta (Figure 1).

2.1.2 Goals and Benefits

The overriding goal of the Water Trail, as directed by the San Francisco Bay Area Water Trail Act, is to preserve and enhance access for NMSB use on San Francisco Bay. Other high-priority goals include stewardship of the Bay, an increase in opportunities for camping, boater education and safety, and protection of wildlife.

There are many benefits to site owners and Water Trail users alike. The Water Trail is expected to provide the following benefits or address the following needs:

- Create a coordinated set of NMSB access locations allowing for single point, multiple point, and multi-day excursions.
- Improve existing boat launch facilities and develop more overnight facilities, including camping, along the shoreline for NMSB users.
- Promote placement of enhanced facilities and any new access locations in areas where they would provide the greatest recreational benefit and avoid or minimize significant adverse impacts to wildlife and habitat and/or agricultural operations.
- Plan for increased NMSB use associated with regional population growth and changes in population demographics.
- Promote safe boating practices for non-motorized small boat users.
- Reduce impacts to sensitive wildlife and habitat and other resources through education of boaters.

Chapter 2. The Nature of the Water Trail Program

- Distribute and make available high quality information regarding NMSB access facilities through the development of educational and outreach materials, including a website, maps, brochures, and, in the future, a guidebook.
- Foster stewardship of the Bay and of trailhead facilities.
- Increase opportunities to recreate close to home and use public transportation rather than private vehicles (through the addition of boat storage facilities, for example).
- Streamline planning and implementation of high priority site enhancements through the programmatic San Francisco Bay Area Water Trail Plan Final Environmental Impact Report (FEIR) developed under the California Environmental Quality Act (CEQA).
- Expand the connections with other regional trail systems (Bay Trail, Ridge Trail) to include the waters of the Bay.
- Reduce user conflicts among recreational users of launch sites through planning and facility design.
- Develop design guidelines for NMSB facilities that address the shoreline topography of San Francisco Bay and serve NMSB users with physical disabilities.
- Provide funding, publicity, and, indirectly, possible economic growth to site owners/managers through a variety of business opportunities related to water-oriented recreation (e.g., boat storage, rental concessions, nearby restaurants and hotels).

Through the Water Trail website (<http://sfbaywatertrail.org>), boaters can also gain an increased awareness of the clubs, retailers, and organizations that support and participate in non-motorized small boat use around San Francisco Bay.

2.2 Boat Types Served

The Water Trail serves a variety of NMSB types. Providing “accessibility” for each of these boat types depends on the capabilities of the boater and the characteristics and facilities of the launching and landing environment. The primary types of non-motorized small boats served by the Water Trail are briefly described below. The descriptions are organized in alphabetical order. References to “low-freeboard” docks mean a dock that is less than 9” above the water’s surface. “High-freeboard” docks are at least 9” above the water’s surface. Detailed information regarding suitable launch and landing facilities for each of these boat types is provided in Section 2.3.



Image Credit Galli Basson

2.2.1 Canoes

Canoes are open-hulled boats typically 12 to 19-feet long. Paddlers use single-blade paddles, face the direction of travel, and sit on a bench seat. A canoe is better suited for protected waters such as sloughs and creeks than the open Bay. Canoes can be paddled solo or tandem and may include a passenger and gear. Canoes are often transported on car-top carriers and carried to the water's edge, but can also be stored onsite on racks and in storage containers. Canoes are regularly used on overnight, multiple-stop, and multi-day excursions. Adaptive canoe seats are commercially available.

Low or high- freeboard docks, beaches, and concrete boat ramps are suitable for canoe landing and launching.



Image Credit L. Rifkin

2.2.2 Dragon Boats

The modern dragon boat is open-hulled, 40-feet long, and holds 20 paddlers sitting side by side on bench seats, facing the direction of travel. A drummer sets the cadence and another person controls the direction of the boat. Dragon boats are primarily used in races and festivals, and some designs are stable enough for the open waters of the Bay. Because dragon boat races are typically day-long events with boats launching and landing at a single location, it can be assumed that overnight and intermittent sites for multiple-stop trips would be unusual. Many clubs use adaptive dragon boat seats.

Dragon boats are typically stored near the launch site or preferably directly in the water due to their size and weight. Because dragon boats are very heavy, when launched from out of the water they must be launched from a trailer at a boat ramp. Paddlers would board from a dock. Onsite storage for paddles and personal floatation devices is desirable. Low or high-freeboard docks are used for water access.



Image Credit City Kayak

2.2.3 Kayaks

Kayaks are self-propelled, relatively light water craft that are available for solo, tandem, or three-person paddling. Kayakers use single-blade paddles and face the direction of travel. There are many varieties of kayaks, including long, fast, and relatively heavy sea kayaks paddled with a water-repelling spray skirt that fits around the waist of the paddler and attaches to the kayak to prevent waves and water from entering the hull. Another popular kayak is the “sit-on-top” type that is self-buoyant and easier to enter and exit both in the water and at the water’s edge. Other kayak types include white water river kayaks that are typically short and highly maneuverable in the water, and surf skis, which are long, narrow, and lightweight, with an open (sit-on-top) cockpit and usually a foot pedal-controlled rudder. Like canoes, kayaks are often used for multi-day trips, and the availability of accessible overnight launch/landing sites should be considered.

Adaptive kayak seats are commercially available. Adaptive dock products for transferring into and out of kayaks are available and are designed with kayakers in mind. Various changes to seating systems, paddle grips, and leg position can create a more efficient and safe paddling environment for persons with disabilities.

Kayaks can be transported on car-top carriers and many kayakers carry their kayaks to the water’s edge. Two-wheeled carts (“boat wheels”) are sometimes used to transfer the kayak from a vehicle to the water. Kayaks and surf skis can be launched from a variety of edge conditions; low-float docks and beaches are the preferred launch types.



Image Credit Galli Basson

2.2.4 Kite boards

Kite boarding or kite surfing is an adventurous sport where an individual uses a kite to harness wind power to propel a board similar to a wakeboard or small surf board across the water. The kite boarder stands or sits with an adaptive seat on the board. The kite boarder wears a harness with flying lines attached to a large maneuverable kite. The size of the kite varies depending on the style of kite boarding and the kite boarder's experience. Using the wind, the rider and board skim across the water, and can also briefly sail into the air. Fans of this sport consider the Bay Area a world-class destination for kite boarding. Boards and kites are relatively lightweight, can be easily carried longer distances, and can be stored inside vehicles. Modified boards for seated kite boarding are available, and modified kites are also available.

Launching at one site and exiting the water at another site is practiced in some locations such as from Crissy Field to Berkeley. Kite boarding is wind-dependent and launches and landing are best where winds are favorable. Virtually any type of launch site can be used; however, a rigging area is needed for set-up. Beach entry is the most desirable kind of launch. Kite boarders' flying lines, which range from 49 feet to 131-feet long, can cause injuries to others and catch on overhead wires and other infrastructure. Kite boarders must therefore be especially aware of their environment.



Image Credit Jennifer Villamin

2.2.5 Outrigger Canoes

An outrigger canoe is a narrow canoe with one or more lateral support floats known as outriggers or “amas,” which are fastened to one or both sides of the main hull. There are many variations of outrigger canoes, including canoes that are paddled by 1, 2, 3, 4, 6, and 12-person crews. Canoes are open-hulled and vary in length from 20 feet to 45 feet depending on the number of rowers they will hold. At 19-inches wide, the outrigger canoe is stable because of the outrigger(s) and is well suited to the Bay’s open waters. Adaptive equipment available for outriggers includes different types of adaptive seats and adaptive paddles.

Larger outrigger canoes are typically stored near the launch site due to their size and weight, but they can be hauled by trailer to distant sites. Smaller outriggers are light and can be transported on a car top. Outrigger canoe races are typically a day event with boats launching and landing at a single site. “Downwinding” is popular, and entails paddling from one site with favorable winds and tides and then exiting the water at the destination site. Clubs and organizations plan such multiple-stop trips for fun and practice. There are many outrigger clubs geographically dispersed around the Bay Area. Outrigger canoes are launched from docks and beaches.



Image Credit Ann Buell

2.2.6 Rowboat

A rowboat is a wide, heavy boat that is usually rowed by one person who faces the back of the boat and uses two oars. It is well suited to touring as it is stable and there is space for equipment. It is often used to get to shore from a larger boat moored offshore.

If the boat is not yet in the water, a boat ramp or gantry will be required to transfer the rowboat or dinghy from land to water. “Wet” launches generally involve sloped beach entries where the rower will walk into the water to a depth where the boat can be launched. “Dry” launches will require a dock adjacent to a body of water deep enough for immediate launching; the rower transfers directly from the dock into the boat.



Image Credit Galli Basson

2.2.7 Row Shells

The watercrafts known as “shells” used in rowing are very narrow and long (up to 76’) and generally hold one, two, four, or eight rowers. The oars are held in place, usually with an oarlock. There are two types of rowing: sweeping – where every rower has one oar; and sculling – where every rower has two oars. Rowers face the back (stern) of the boat and there is often a coxswain who helps steer and guide the boat. Rowing, including racing, is generally done in calmer waters and commonly through clubs and organizations. Adaptive paddling seats and stabilizing equipment such as pontoons are available.

Rowers need large parking and turning areas to facilitate the length of boat trailers, which can be up to 76-feet long. Low-freeboard docks are required to launch rowing shells. High-freeboard docks cannot be used, as the arm of the oar would bump up against the dock, making launching and landing infeasible. Similar to outriggers and dragon boats, rowing sculls are typically launched and landed at a single location. Shells are fragile and expensive, and are stored on land.



Image Credit Penny Wells

2.2.8 Stand Up Paddleboards

Stand up paddleboards (SUPs) consist of a board up to 34-inches wide and 10 to 14-feet long. A long paddle is used to propel the board across the water. Inflatable board models are available. The sport is best suited for calm (low-wind) environments. Stand up paddle boarders can adapt to changing tidal conditions more easily than kayakers. Stand up paddling is one of the fastest-growing sports in the Bay Area. It is versatile and suitable for touring, racing, and even surfing and a wide range of athletic abilities. Although the name presupposes that the paddler must stand up, boards have been seen around the Bay Area with seats. The boards are quite stable and as long as a person can balance and paddle, they can find a way to go stand up paddling. Boards adapted for surf wheelchair use are available.

The ideal condition for launching and landing is flat, calm water that is free of obstacles. These conditions can be provided in a number of different environments from sloped beach entries to high or low-freeboard docks.



Image Credit: BCDC

2.2.9 Whale boats

Whale boats are open-water boats weighing about one ton and carrying a crew of ten: eight rowers, a coxswain, and a bowhook. The coxswain is in charge of all personnel and equipment in the boat, and the bowhook handles lines when the boat is coming alongside a pier or ship. The whale boats used for racing in San Francisco Bay are 26-feet long. Team racing and touring are popular. Whale boats are very stable.

Whale boats are typically stored near the launch site or preferably directly in the water due to their size and weight. As with dragon boats, to be launched from a different site, whale boats have to be transported by trailer and launched from the trailer into the water, requiring a boat ramp. High-freeboard docks provide the easiest entry and exit from the boats for most people.



Image Credit Galli Basson

2.2.10 Windsurf boards

Windsurfing (also referred to as “boardsailing”) combines elements of surfing and sailing. A windsurf board is a long board, usually six to ten-feet long, powered by wind on a removable sail. Bay conditions are well suited to windsurfing and many windsurfers consider the Bay Area the best place on the West Coast for this sport. Adaptive equipment is available and includes standers, fixed and swivel seats, and one-two sail configurations.

Windsurfing gear can be transported on car top carriers and many windsurfers carry their gear to the water’s edge without the use of boat wheels. Windsurfing launches are often ramps (“water entry paths”), sloped beaches, or riprap shorelines. Windsurfing launches require a nearby rigging area.



2.3 Launch and Landing Types

Boaters choose particular launching and landing sites around the San Francisco Bay Area for a wide variety of reasons that include the type of boat, the location of the site, the features of the site, and the conditions that will be encountered once they launch. These considerations hold true for all site users, whether or not they have a disability. The site features and accommodations are of particular importance to a person with a disability, or anyone with specific needs (e.g., older people, people who are less fit, and families with small children). This section describes the most common types of launches in the Bay Area. See Appendix B for a discussion of ways in which these launch types can be made more accessible:

- Beaches
- High-freeboard docks (with or without transfer systems)
- Low-freeboard docks (with or without transfer systems)
- Boat ramps
- Informal entry paths into the water (staircases, informal earthen trails, etc.)

The usability of all launch types can be affected by both tides and, where present, an excessively soft Bay bottom. Some launch sites provide safe entry during higher tides, but may have unstable or dangerous footing, be out of the water, or present other obstacles at lower tides. For example, low tide may expose a steep, slippery, or rock-strewn area adjacent to a beach, boat ramp, or informal water entry path. At some launch sites, access into and out of the water at low tide is blocked by soft (sucking) mud.



2.3.1 Beaches

There are many different types of beaches. Beaches can be sandy, pebbly, gravelly, muddy, or rocky. Beaches can be flat or steep. Some beaches are located in protected areas (i.e., they are protected from wind and/or rough water). Beaches typically have an unstable, soft surface, making them unsuitable as a launch site for many persons with mobility limitations.

Beaches can be used to launch most types of NMSBs except whale boats, dragon boats, and rowing shells. Beaches are the preferred launch type for kite boarders, windsurfers, and outrigger canoes, and are one of the best types of launches for canoes, kayaks, and stand up paddleboards.



Image Credit Galli Basson

2.3.2 High-Freeboard Docks

High-freeboard docks are docks with greater than 9" vertical distance between the surface of the water and the dock surface. High-freeboard docks float on the water and move up and down with the tide. They are typically connected to the shoreline by a gangway. The steepness of the gangway changes as the tide stage changes. Some high-freeboard docks are equipped with hoists or other adaptive equipment designed to help persons with mobility limitations enter a boat from the dock. A good example of an adaptive launch site can be found at the Pier 40 Bay Area Association of Disabled Sailors (BAADS) facility in San Francisco where a harness and pulley system is used to assist people with mobility disabilities with getting in/out of the boats. High-freeboard docks are typically designed to launch motorboats and sailboats.

High-freeboard docks are the preferred launch type for row boats (if already in the water), and whale boats. High-freeboard docks can also be used to launch other types of NMSBs, although it may be difficult for some.



Image Credit Ann Buell

2.3.3 Low-Freeboard Docks

Low-freeboard docks are docks with less than 9" vertical distance between the surface of the water and the dock surface. As for high-freeboard docks, low-freeboard docks also move with the tide and are typically connected to the land via a gangway. Consequently, the steepness of the gangway varies with the tide. Low-freeboard docks may be attached to high-freeboard docks. Low-freeboard docks can become unstable when exposed to waves. Some low-freeboard docks are designed to allow kayakers to transfer the kayak onto the dock before exiting the kayak.

Low-freeboard docks are suitable for all major types of NMSBs, and are the preferred launch type for kayaks and rowing shells.



Image Credit Ann Buell

2.3.4 Boat Ramps

Boat ramps are concrete surfaces designed to launch motor boats or larger boats from boat trailers, but they are also used by persons who prefer to not use docks. Concrete boat ramps vary in slope, but are typically relatively steep to provide sufficient water under the trailer to launch the boat while the towing vehicle remains out of the water. The lower portion of boat ramps is typically submerged during higher tides, and frequently becomes slippery due to vegetation (algae) growth.

Concrete boat ramps are suitable for launching boats transported on boat trailers, such as whale boats or outrigger canoes. Some persons walk down boat ramps to launch a canoe, kayak, or stand up paddleboard, despite the risk of slipping on a muddy or algae-covered surface.

Boarding piers are sometimes provided adjacent to boat ramps. Boarding piers are a portion of a pier or dock where a boat is temporarily secured for the purposes of landing or launching. Boarding piers are typically high-freeboard docks, which may be difficult for some to use.



Image Credit Galli Basson

2.3.5 Informal Water Entry Paths

There are a variety of informal, older, and opportunistic water entry paths around the Bay Area. The most common types include stairs (including stairs through rip-rap), narrow paved paths, and informal earthen trails. Windsurfers and kite boarders may also use riprapped shorelines. Informal entry paths typically require higher levels of fitness and mobility than the other launch types, and are usually limited to launching lighter-weight NMSBs. Railing is usually not present because it makes it more difficult to carry windsurf equipment. Depending on site conditions and the abilities of the individual boater, informal water entry paths may be suitable as launches for canoes, kayaks, kite boards, stand up paddle boards, and windsurf boards.

Table 2.1, below, includes a summary of the launch types usable by different boats. As mentioned, not all boat types are served equally well at the different launch types. Table 2.1 is not specific to the launch types that work best for persons with disabilities, but rather what typically works best for persons getting into and out of the watercraft for their respective sports, after the watercraft is in the water, and regardless of their physical condition. The information presented ranges from the “typical preference” to “difficult or improbable” to capture as much individual variation as is possible within the constraints of the boat type. Getting the watercraft into or out of the water is a separate matter, not reflected in this table, but discussed above under each launch type.

Launch Type	Canoe	Dragon Boat	Kayak	Kite Board	Outrigger Canoe	Rowboat/Dinghy	Rowing Shell	Standup Paddleboard	Whale Boat	Windsurf Board
Beaches	●	○	●	●	●	●	○	●	○	●
High-Freeboard	●	●	◐	○	●	●	○	●	●	●
Low-Freeboard	●	●	◐	○	●	●	●	●	◐	●
Boat Ramp	◐	○	◐	○	○	○	○	◐	○	○
Entry Path into Water	◐	○	◐	●	○	○	○	◐	○	●
Dock with Adaptive Equipment	◐	○	●	○	○	◐	○	○	◐	○

● Typical Entry Method
 ◐ Possible Entry Method
 ○ Difficult or Improbable Entry Method

2.1: Launch Types and Boat Types. This table focuses on the person getting into or onto a watercraft already in the water.

Based on the information and feedback obtained during the preparation of this *Accessibility Plan*, the best launch facilities for persons with disabilities include low-freeboard docks, docks with transfer systems (adaptive equipment), and gently-sloped beaches with firm substrate. High-freeboard docks are also usable without adaptive equipment for some people and boat types, but only with adaptive equipment for others.

2.4 Other Site Features

There are many other features at potential Water Trail sites that are of interest to all persons using the sites for NMSB use, but particularly for persons with disabilities. This subset includes:

- 1) Accessible parking
- 2) Accessible restrooms
- 3) Loading/Unloading Area
- 4) Public Boat Storage
- 5) Boating Concession
- 6) Onsite Boating Club

The availability of basic accessible amenities such as restrooms and parking, as well as a loading/unloading area located in close proximity to the launch site, create a much more desirable launch environment. Public boat storage, boating concessions, and onsite boating clubs can all make it easier to get a boat into the water.

The above list is not an exhaustive list of other features. In particular, the path of travel and gangway are critical elements in providing access to a launch site. Gangways are discussed in detail in Appendix B.

Path of Travel. An accessible path of travel must be provided with features and characteristics that comply with:

- Running slope and cross slope
- Firm, stable and slip-resistant surfacing
- Elimination of overhanging and protruding hazards
- Connection to all accessible features, including site entrances when pedestrian facilities are provided in the Right-of-Way, parking, building entrances, and other features
- Maintenance of an accessible condition
- Ramp handrails and landings
- Stair handrails, riser and tread sizes, and visual striping
- Gangway design



Image Credit Lyrinda

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There are more than 600 water trails around the United States, but water trail accessibility plans for specific trail networks such as the San Francisco Bay Area Water Trail are rare. Staff created this unique *Plan* by seeking guidance from regional NMSB users with disabilities, reviewing relevant legal requirements, assessing the facilities and experiences available at landing and launching sites around the Bay, and researching resources and regional programs, including funding opportunities, that would enhance and expand options for persons with disabilities wishing to use NMSBs around the Bay Area.

This chapter describes the pertinent information gathered, summarizes what the Water Trail program is already doing as part of its efforts to achieve programmatic accessibility, and then lays out the plans to complete that vision in the future.

3.1 Public Input and Research

3.1.1 Discussions with the Water Trail Accessibility Sub-Committee

An Accessibility Sub-Committee (Sub-Committee) of people with and without disabilities was formed to assist the Water Trail Advisory Committee, Project Management Team, and staff in understanding the needs of persons with disabilities who use NMSBs on the Bay, and ultimately to help guide the development of this *Water Trail Accessibility Plan*.

The Sub-Committee met in January 2013, and again in September 2013 after additional members were recruited. Members provided insights for persons with cognitive, visual, or mobility-related disabilities. The group met to assist in drafting the Accessibility Survey; review the progress of the *Accessibility Plan*; share ideas about research, solutions, strategies, and organizations; and discuss what accessibility information should be included on the Water Trail website.

Members of the Sub-Committee, Advisory Committee, Project Management Team, staff, consultants and interested parties visited several sites in September 2013. The visit included Pier 40 on the San Francisco waterfront (the home base of the Bay Area Association of Disabled Sailors (BAADS)); Pier 52, also on the San Francisco waterfront and the site of a recently installed low-float dock, parking, and path of travel improvements by the Port of San Francisco; and the Mission Creek dock in San Francisco. Each visit provided an opportunity for a discussion of improvements to these

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recreational boating facilities that would provide better access for persons with disabilities.

Comments received during the site visits included:

- Boating is not an individual activity for safety reasons.
- Edge protection at the dock edge is not desired due to “trip hazards” and because raised edge protection can be an obstacle for transferring, entering, and exiting boats from the edge of the dock surface.
- Carpeting on the dock surface provides slip resistance while making it easier to slide boats, and more comfortable for people to slide themselves.
- The inside of boat slips that are often not used or rented is a perfect location for launching and landing kayaks and other non-motorized small boats.
- A safe, secure way to get access through marina gates is needed.
- Onsite boat storage at launching sites assists non-car users as well as persons with disabilities.
- When parking is provided, accessible spaces for vehicles with boat trailers are desirable.
- Docks with multiple freeboard heights are desirable.
- Transfer systems, such as transfer steps, can be improved when they include a grab bar to facilitate lifting up from the dock surface onto the first step of the transfer structure.
- Other dock features that are desirable include a bright stripe indicating the dock edge, flip up/down cleats, and bumpers at the water line.

The Sub-Committee met again in December 2013 to review and discuss the results of the Accessibility Survey, described below.

3.1.2 Results of the Accessibility Survey

An online survey aimed at collecting information and feedback from persons with disabilities was launched in October 2013. The goal of this survey was to obtain a better understanding of the physical and programmatic needs of persons with disabilities related to getting to and on the water in NMSBs. Water Trail site users are always welcome to send additional comments about sites to Water Trail program staff through the Water Trail website at www.sfbaywatertrail.org.

The Accessibility Survey (Survey) was distributed to clubs, businesses, and non-profit organizations that offer NMSB outings for persons with disabilities. The Survey consultant team was available to help complete the survey for persons needing assistance. Responses were received from 14 people who self-identified as having either

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a cognitive, visual, or mobility-related disability, or a combination of these. Responses were also received from individuals who assist persons with disabilities when engaging in NMSB sports. The boat types used by those who answered the survey, whether among those with self-identified disabilities or helpers to others, included canoes, kayaks, outrigger canoes, rowboats, dinghies, sculls, and paddleboards.

Given the low number of responses, the Survey did not render statistically reliable data. Respondents were mostly members of clubs and organizations, and thus individuals who never recreate with clubs and organizations were presumably underrepresented. Also, a number of boat types were not represented among the respondents.

Although questions aimed at discerning the greatest barriers to site use did not identify clear priorities, they did underscore that persons with disabilities need a minimum suite of usable (accessible) onsite features in addition to information (web-based or otherwise available) for trip planning purposes. This is not an all-inclusive list, but the following features appeared repeatedly as being very important:

- Parking (especially near the launch point)
- Boat/passenger/equipment drop-off area
- Safe, and reasonably flat and stable path of travel without steps or other barriers
- Restrooms, especially near parking and launch point
- Ramps and gangways that are not too steep
- Stable/firm dock or beach surfaces for wheelchair access to water entry, with low-float docks being preferred by some

In addition to these features, other preferences included:

- Assistance available onsite
- Accessible boat storage
- Transfer systems
- Appropriately designed and situated signage
- Shade
- Water for service animals

3.1.3 Recommendations from Beneficial Designs, Inc.

The Conservancy and its consultants from GPPA Architects invited Beneficial Designs, Inc. to come to the San Francisco Bay Area in November 2012, to visit a sampling of potential Water Trail sites in the East Bay (Oakland, Berkeley, and Richmond). These accessible-design specialists were asked to evaluate the potential for improved accessibility at sites with launching and landing features and site conditions that are

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typical around the Bay Area. Beneficial Designs staff visited six sites, and collected data at five. They presented their findings at a public meeting on November 9, 2012 and summarized their findings in [San Francisco Bay Area Water Trail: Issues and Recommendations for Improved Accessibility](http://scc.ca.gov/webmaster/project_sites/watertrail/water_trail_issues_and_recommendations_for_improved_accessibility.pdf)¹, published in April 2013, and available for download on the Conservancy's Water Trail web page (also see Chapter 6 for links). In addition to engineered solutions, they suggested a suite of information that should be available to Water Trail users, both when planning a trip and when at a site.

3.2 Communication and Information Dissemination

Programmatic accessibility for the Water Trail will be realized through the constructive and complementary efforts of many entities working together with a shared vision and understanding of what makes landing and launching sites more usable by persons with disabilities, effective communication, sufficient funding to help enact needed changes, and information resources that will enable site owners to make decisions about changes and will enable persons with disabilities to make decisions about which Water Trail sites might work for them.

3.2.1 Site Designation Process

Bringing knowledge from persons with disabilities into a public forum where launching and landing site features are discussed is critical to the education and decision-making process of Water Trail staff, Project Management Team members, Advisory Committee members, and site owners and managers. As each site is considered for designation and a site description report is prepared, Water Trail staff encourage site owners to make accessibility improvements. Staff discuss funding needs with the site owners and the current status of funds available from the Water Trail grant program. WT staff may also provide general planning support if needed. After publication of this *Accessibility Plan*, WT staff plans to add an accessibility overview section to the site description report prepared for public meetings, highlighting accessibility enhancement recommendations for the geographic region of the Bay in which the specific site is found and providing context for the site-specific discussion. See Chapter 4 for details regarding geographic regions, specific sites, and recommendations.

¹ [San Francisco Bay Area Water Trail: Issues and Recommendations for Improved Accessibility](http://scc.ca.gov/webmaster/project_sites/watertrail/water_trail_issues_and_recommendations_for_improved_accessibility.pdf).
http://scc.ca.gov/webmaster/project_sites/watertrail/water_trail_issues_and_recommendations_for_improved_accessibility.pdf

3.2.2 Effective Communication with the Public

“Effective communication” with the public generally means that relevant, needed information is made available to all people, including in a variety of formats if needed. The Water Trail program strives to communicate effectively with all interested parties to maximize inclusion and transparency. The program has various means of communicating: through public meetings, identification and educational signs for designated sites, a brochure, and a website, as well as a Water Trail page on the Coastal Conservancy website. The following describes the Water Trail program’s effective communication strategy and includes some basic suggestions for site owners wishing to communicate effectively with Water Trail users at their sites.

Public Meetings. The Water Trail program holds public meetings approximately four to six times a year. The meetings are publicly noticed on the Conservancy website and posted in a format that can be “read” by computer screen readers. The room in which meetings are held is accessible, with accessible restrooms, and attendees are invited to contact the Conservancy before the meeting if special accommodations are needed. A toll-free call-in phone line is provided and included in the meeting notice, as is a web-conferencing option, which gives viewers visual access to meeting materials that are being shown on screen in the meeting room.

Signs. Effective communication through signs onsite requires forethought with regard to font size, color contrast, and clear language. Signs should be placed near decision points if possible, at a height that will promote easy reading without obstructing passage or becoming a hazard for a person with a vision impairment, be in good light, and have high contrast. The Water Trail identification and educational signs were developed with these principles in mind. Water Trail staff work with site owners/managers to determine suitable locations for sign installation. Site owners typically also work in conjunction with their own sign/interpretation specialists to create their own signs, and may want to consider tactile options such as Braille. Guidance is also provided by BCDC’s *Shoreline Signs: Public Access Signage Guidelines* (2005).

Brochures. Printed brochures meet the needs of many people using public facilities, but the digital versions of brochures may need to be formatted differently in order to be readable by a screen reader. The Water Trail brochure is available in printed and digital formats. It is helpful to include on a brochure, when possible, the international symbol of accessibility (ISA) for site features that are known to be compliant with applicable

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laws. If a graphic symbol would not work, a section of text can summarize accessible site features. This greatly helps persons with disabilities with trip planning.

Websites. The WT website address is www.sfbaywatertrail.org. This website has been designed to be “readable” by computer screen readers and is meant to be a resource for all persons wishing to participate in NMSB sports around the San Francisco Bay Area.

As potential WT sites are reviewed in a public forum and become conditionally designated (designation is complete when the Water Trail signs are installed and any other conditions met), information of interest to prospective boaters is added to the WT website. It includes a general overview of the site with photos, boat facilities, directions and parking, restrooms, other site amenities, some general notes regarding accessibility, nearby trails, safety tips, wildlife tips, other site-specific tips, and any site owner website links to the site. Elsewhere on the WT website there are links to specialized data sources that provide tide and weather data.

Accurate and descriptive launching/landing site information specific to the usability of each site by persons with disabilities was identified in the Accessibility Survey and in discussions with the Accessibility Sub-Committee as a high priority. To improve this trip planning resource for persons with disabilities, additional information will be added beyond what is listed above (and can currently be reviewed on the WT website for conditionally and fully designated Water Trail sites).

The following list of additional data is derived from ideas originating in public meetings, the WT Accessibility Survey, and the [*San Francisco Bay Area Water Trail Issues and Recommendations for Improved Accessibility*](#) report, by Beneficial Designs, Inc.

- Approximate distance from the current Water Trail site to the nearest known take-out points (from the water) in either direction that a user might choose. This information does not mean to convey, however, that the take-out points will always be open, safe, or usable by all boaters and all boat types.
- Transfer site characteristics - the useable area immediately adjacent to the water craft, including surface type
- Path of travel characteristics - the route of travel between parking and/or transit and the water’s edge or beginning of gangway/dock, including length, surface type and a narrative description of slope
- Parking - number of spaces for vehicles with disabled parking permits, distance from spaces to launch
- Restrooms - number that are accessible, distance to accessible parking, distance to launch

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- Gangway, if present - length, width, presence of guardrail, general condition
- Transfer equipment - systems of any type that are designed to assist transfer into a boat or onto the water, or to the water's edge
- Beach launch - sand, pebbles, hard packed, mat, boardwalk, other
- Boat ramp - cement, earthen
- Other water entry path - type of entry (e.g., stairs, earthen path)
- Other amenities and their accessibility - picnic tables, drinking fountain, benches, BBQ, shade
- General description of known large vessel traffic in the vicinity (such as shipping channel)
- Known issues related to tidal exposure of mudflats that prevent launching or landing of any site user, but which may also affect slope of a gangway or dock

3.2.3 “Levels” of Accessibility

In the course of discussions with the boating community over the past few years, the idea of categorizing sites by their accessibility “level” has been raised. The benefit of doing so would be to give persons with disabilities a quick assessment of whether a site would work for them or not. Such a categorization might, some suggested, also shed light on how to most effectively make the Water Trail program, when viewed in its entirety, accessible to persons with disabilities, in that it might help to pinpoint sites needing enhancements and help create some quantifiable goals to achieve over time.

Instead, what Water Trail management and the community have found is that what is “accessible” or not is highly variable from person to person (as well as boat type) and that what is sometimes desired are features that are not required by accessibility law (see Chapter 5). Some adaptive features work for one boat type but not others (for example, a roller-type transfer system would not help with a whale boat). A “high level” of accessibility for one person or one boat type might not be high for another. A sandy beach might be given a “low level” by a person using a wheelchair but a high level by a person with full mobility but vision problems. Thus, the terms low, medium, and high for accessibility are not useful for this *Plan* as they could be misleading for a person planning a trip.

3.3 Grant Funding

It is the intent of the Coastal Conservancy and the Water Trail program to foster positive relationships with site owners/managers and support site improvements that increase site usability by all persons. Funding from the Coastal Conservancy supports management of the Water Trail program as well as the Water Trail grant program,

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which is available to site owners for capital outlay projects. The Division of Boating and Waterways (California Department of Parks and Recreation) also has various grant programs for boating-related improvements statewide. Site owners and managers are encouraged to contact both granting programs early in the development of project ideas. Other granting organizations, such as the American Canoe Association, offer very limited, if welcome, funding. Staff can provide planning and support

3.4 Experiences and Geographic Distribution of Sites

As discussed in Chapter 2, there are various types of public landing and launching sites available to NMSB users around San Francisco Bay. Each landing or launching type is more or less suitable for use by different boat types, and more or less usable by individual persons with disabilities (Appendix B describes many possible enhancements to increase usability). The considerations addressed in Chapter 2 and Appendix B are focused primarily on the physical access needed to even have a boating experience.

Regarding physical access, the Water Trail program has set the goal of having one “broadly accessible” site within each geographic region (“geo-region”) of the Bay Area, so that persons with disabilities will have the opportunity to engage in NMSB use near their homes or places of work. For the purposes of Water Trail planning, staff identified fourteen geo-regions. The geo-regions are described in detail in Chapter 4.

Persons with disabilities should also have access, at the level of the entire program, to the experiences available to other persons without disabilities (“equivalent experiences”). The types of experiences that may be found on San Francisco Bay include both specific types of physical environments (dynamic/sheltered, urban/industrial, natural, slough, open bay, windy) and activities (wildlife viewing, camping, restaurants, cultural, tours/events, clubs, concessionaires). These experiences are available to persons with disabilities to the extent that the individual launching sites that serve as gateways to these types of experiences have features and facilities that are usable by them and with their chosen watercraft.

The goal related to experiences is set at a Bay-wide scale because the array of experiences is complex, changeable, and difficult to assign by geo-region. The Water Trail program will continue its work to expand the number of opportunities for experiences, especially those that are the most unique, such as camping, through the WT site designation process and improvement of site facilities and features. See Chapter 4 for further discussion.

Chapter 3. What is Needed and Why – Building the Accessibility Plan

The most challenging experiences to make available for persons with disabilities may be those that include multiple-stop trips (whether for one day or overnight). Multiple-stop trips require the ability to disembark at a site other than the site where the trip began. For example, a person who uses a wheelchair and needs transfer assistance into and out of the watercraft may find a multiple-stop trip impossible. Even without the need for a wheelchair being available at the exit point, exiting the water at a site with a high-freeboard dock, boat ramp, or beach may be very difficult.

For some people, at some sites, the assistance of a boating companion, onsite staff person, fellow club member or group leader can make all the difference, and can make multiple-stop trips possible. For other NMSB users, however, assistance may not be welcome. The Water Trail program would like to help make multiple-stop trips possible by looking for possible groupings of sites that are within reasonable paddling distance of one another and with launching and landing facilities that could make such experiences possible. The geo-regional approach to evaluation of site features and experiences and the potential for enhancement will help the WT in its planning efforts for multiple-stop trips.

3.5 Boating Alone or With Groups

The Water Trail program recognizes the desirability of facility design that allows a person with a disability to launch and land personal watercraft without assistance. Nonetheless, the Water Trail program discourages any NMSB user from venturing out on the Bay alone.

Fortunately, there are many opportunities to recreate on the Bay with clubs, non-profit organizations, retail outfitters, and at special events. The Water Trail website (www.sfbaywatertrail.org) includes a list of clubs around San Francisco Bay, and also a list of organizations that offer NMSB outings for persons with disabilities, such as Environmental Traveling Companions (ETC). Clubs generally form around an interest in certain boat types, such as outrigger canoes or kayaks, and tend to be regional, but what they have in common is a supportive atmosphere in which all group members, regardless of age or ability, are welcomed and helped by other group members.

Because of the importance of retailers and clubs with respect to improved access to the Bay, they are included in the geo-region tables detailing site features in the following chapter.

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Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

4.1 Distribution of Potential Water Trail Sites by Geo-Region

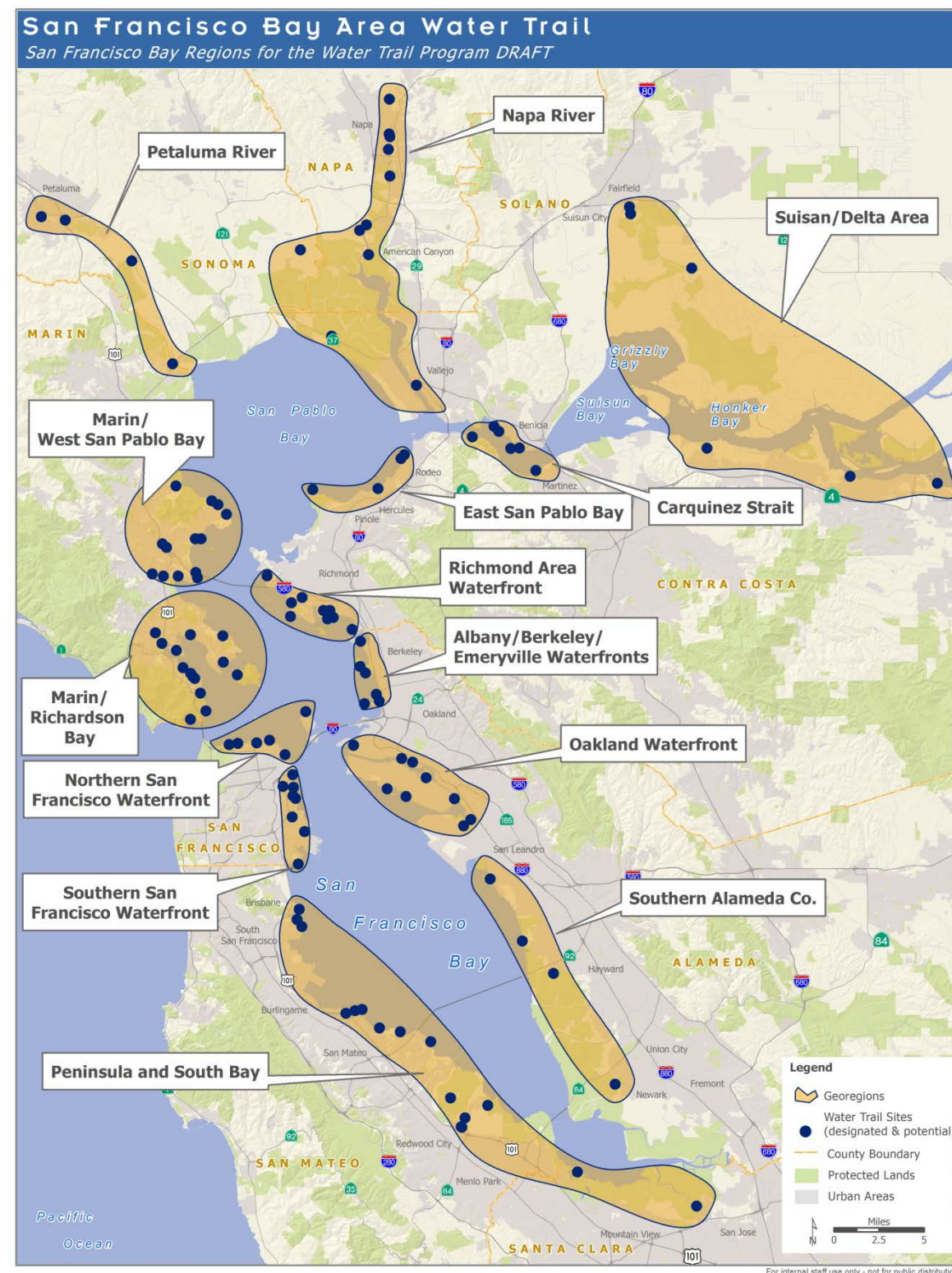
All potential Water Trail sites are located within the nine counties of the San Francisco Bay Area and are widely dispersed when considered at a Bay-wide scale. For planning purposes, Water Trail staff, management, and advisory committee members found it useful to group sites into geographic regions that correspond roughly to the “home range” of many boaters. The geographic groups (“geo-regions”) correspond to sites that people might visit if they chose to avoid a long trip to a launching spot.

The initial list of 112 sites included in the *Enhanced Water Trail Plan* (2011) has been updated to reflect both inclusion of new sites and removal of sites that are no longer considered potential Water Trail Sites (for example, because the site owner is not interested in having the site be designated as a Water Trail site, or because the site is not open to the public). Appendix A provides the list of potential or conditionally/fully designated sites as of the publication of this *Plan*.

Based on local travel distances and the number of sites within a specific region, Water Trail staff and others identified 14 geo-regions (listed clockwise around the Bay from southern Marin County):

- Southern Marin/Richardson Bay
- Marin/West San Pablo Bay
- Petaluma River
- Napa River
- Carquinez Strait
- Suisun/Delta Area
- East San Pablo Bay
- Richmond Area Waterfront
- Albany/Berkeley/Emeryville
- Oakland Waterfront
- Southern Alameda County
- Peninsula/South Bay
- Southern San Francisco Waterfront
- Northern San Francisco Waterfront

The map that follows shows this approach to grouping sites (Figure 4.1).



4.2 Summary of Data Collected at Potential Water Trail Sites

To further support the planning of enhancements for the large number of potential Water Trail sites, staff developed a database to store, organize, and analyze basic information about the existing sites. This database also serves as a repository of information from which to draw content for the Water Trail website.

After site designation began and the need to assess more site features became apparent, Water Trail staff and volunteers returned to the sites to collect more information related to the usability of sites for persons with disabilities. This effort was designed to answer questions and it did, but it also raised new questions and made it clear that there is no “one size fits all” solution for barrier removal. Sites vary greatly in their natural and built environments, including their launch features. Solutions would also depend on the boat types to be used at the site, and the kinds or degree of disability of the site user.

Nonetheless, information about site features can be collected and posted on the Water Trail website, so that potential Water Trail users can learn about site features before they head out, and make their own informed decision about the suitability of the site for their desired experience. As Water Trail sites are officially designated into the network through a quarterly public process, information about the site is added to the Water Trail website at www.sfbaywatertrail.org, including information about features that persons with disabilities may most want to know about. The “Effective Communication” section in Chapter 3 of this report outlines the data fields that are important to include in the Water Trail website description of site features at designated sites.

The database can also further the Water Trail’s efforts to support increased usability (accessibility) of sites in a well-distributed way by helping staff to sort through a very large amount of information about more than 100 potential sites and detect patterns and gaps. These data help to identify which sites have specific kinds of launch features, which in turn informs Water Trail staff about where staff efforts and funding may do the most good for the program as a whole. The same is true for the distribution of boat storage and other elements that contribute to how usable a site may be for persons with disabilities. The results of this effort to collect, sort, analyze, and evaluate data about the potential Water Trail sites are presented for each of the geo-regions in Section 4.3 below, and for the Water Trail as a whole (Bay-wide evaluation) in Section 4.4.

4.3 Distribution of Site Features by Geo-region

The following tables present a summary description of potential Water Trail sites around the San Francisco Bay Area, grouped by the Water Trail geographic regions depicted in Figure 4.1, above. Each table includes site-specific information about launching and landing facilities and other related features that may increase the usability of the sites by persons with disabilities. The geo-region tables are arranged in a clockwise order, starting just north of the Golden Gate Bridge, and ending in San Francisco. Each geo-region map shows the location of the sites in the corresponding table. Site ID numbers with rectangular labels are existing sites. Those in oval labels are planned sites. Only existing sites are included in the tables. Features that are going to be added to sites and for which funding is known to be secured, are marked with an asterisk (*). Both existing and planned sites, if any, are described in more detail below the tables along with general recommendations for improved accessibility in the geo-region.

The Site ID numbers in the tables relate to the numbering system established in the *Enhanced WT Plan*, which identified the original list of 112 potential WT sites, including existing launching/landing sites; planned launching/landing sites; existing destination sites; and planned destination sites. “Existing” sites physically exist already; “planned” sites have not yet been built. “Destination” sites are those from which it would be very difficult or impossible to initiate a trip, but which could be part of a multiple-stop trip (land and then re-launch). As noted in Section 4.1, since the adoption of the *Enhanced WT Plan* by the Conservancy in 2011, a number of potential sites have been added to or removed from the list. See Appendix A for the current list.

Notably absent from the description of site features in the tables below is an assessment of the path of travel, which would include gangways and ramps. The path of travel at each potential WT site is a complex combination of on-land and tidally-influenced overwater components (gangways and docks) and a quantitative analysis and presentation of the path of travel at each potential site is beyond the scope of this *Plan*. A qualitative evaluation of path of travel is performed at the time each site is being considered for designation, along with the collection of limited quantitative data. Known site use constraints related to the exposure of mud flats (as assessed at zero tides) are included in the site description narratives on the following pages because of their significant effect on the usability of the site (getting into and out of the water, and the slope of docks, ramps, and gangways).

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements



Image Credit Penny Wells



Figure 4.2: Southern Marin Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

4.3.1 About the Southern Marin/Richardson's Bay Geo-Region.

This scenic area of the San Francisco Bay Area has more beaches than any other geo-region. Three of the potential sites are “destination sites” – Angel Island, Sam’s Anchor Café, and Swede’s Beach. The region offers virtually all experiences available to NMSB users around the Bay, including opportunities for camping, wildlife viewing, and multiple cultural attractions.

Site ID	Site Name	Beach	Firm Surface Beach	Low-Freeboard Dock	High-Freeboard Dock	Transfer System	Boat/Trailer Ramp	Water Entry Path	Accessible Parking	Accessible Restrooms	Loading/Unloading	Public Boat Storage	Boating Concession	Club
M11	Bayfront Park													
M16	Blackie’s Pasture													
M13	Brickyard Park													
M8	Clipper Yacht Harbor													
M6	Schoonmaker Point													
M5	Dunphy Park													
M4	Turney Street Public Boat Ramp													
M19	Sam's Anchor Café													
M17	Angel Island State Park													
M3	Swede's Beach													
M2	Horseshoe Cove													
M1	Kirby Cove													
Total		10	0	0	4	0	3	0	6	9	6	0	0	3

Table 4.1: Southern Marin Geo-Region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Description of Existing Sites in the Southern Marin Geo-Region (Table 4.1)

Richardson Bay Park/Blackie's Pasture (M16): This site includes a small wetland and beach along the Bay Trail. The sensitivity of the wetland has not yet been evaluated in relation to possible designation as a WT site. Richardson Bay is closed to boaters, including NMSB users, from October 1 to March 31 every year because of possible disturbance to migratory waterfowl. It is best to launch at hide tide only from this site, due to mud flats.

Bayfront Park (M11): The City of Mill Valley is currently designing significant upgrades to this site, including a rebuilt dock for NMSB use. The restroom has limited hours. This site is best used at medium or high tides because of exposed mud.

Brickyard Park (M13): The Bay waters offshore from this site are shallow. The site is thus constrained by exposed mud flats at all but high tides.

Clipper Yacht Harbor (M8): With a high-freeboard dock and boat ramp, this site could be useful to those entering larger NMSBs that could be launched from a trailer.

Schoonmaker Point (M6): This privately owned, sandy beach with its protected waters was the home to boat concessionaire Sea Trek for many years, but currently does not have a boat concessionaire. The site continues to support trips organized and led by Environmental Traveling Companions (ETC). ETC is a non-profit association that leads sea kayak trips in the Bay Area for persons with disabilities.

Dunphy Park (M5): A grassy park with picnic tables offers access to protected waters in Sausalito. The beach can be used at medium or high tide, but is best used at higher tides.

Turney Street Boat Ramp (M4): The City of Sausalito is considering making major upgrades to this boat ramp that currently has a small, high-freeboard dock.

Sam's Anchor Café (M19): This is a privately owned, potential destination site where boaters can tie up at the high-freeboard dock, which is available to customers only.

Angel Island State Park (M17): Angel Island is reachable by boat only. Ayala Cove is the main entry point for ferries, sailboats, and all other boat types. The docks, which were built in compliance with accessibility laws, are high-freeboard docks and thus serve some NMSB types better than others. State Park staff is currently planning to add a lower-freeboard dock to Ayala Cove to enhance landing/launching options for kayakers.

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

There is also a beach in the cove, but the beach surface is soft and provides unstable footing. There is a group camp site called “kayak camp;” however, it is located up a steep slope from the water’s edge. Angel Island State Park is a conditionally designated Water Trail site.

Swede’s Beach (M3): This beach is a destination site that is reached from the water or from a staircase extending down from street level.

Horseshoe Cove (M2): The National Park Service has plans to upgrade the boat ramp at this site. There is also a beach that until recently allowed boat storage for outrigger canoe clubs. Future public uses of the site and the enhancement of site features were unknown at the time of publication.

Kirby Cove (M1): At the mouth of San Francisco Bay and just outside the Golden Gate Bridge, this site, owned and managed by the National Park Service, is subject to waves and is not a good choice for novice boaters. There are accessible facilities in this beautiful park, including for camping and picnicking, but access down to or up from the beach is steep.

Description of Planned Sites in Southern Marin/Richardson Bay Geo-Region

Paradise Beach Park (M48): Marin County Parks intends to improve features at this park in Tiburon in the coming years. The nature of the improvements were not known at the time of publication, but the County of Marin has expressed support for this site eventually becoming part of the Water Trail.

General Recommendations for the Southern Marin/Richardson Bay Geo-Region

Accessibility for persons with disabilities to the WT within this geo-region would benefit from each of the following features or enhancements: the addition of a firm-surface beach crossing, a low-freeboard dock, and a transfer system.

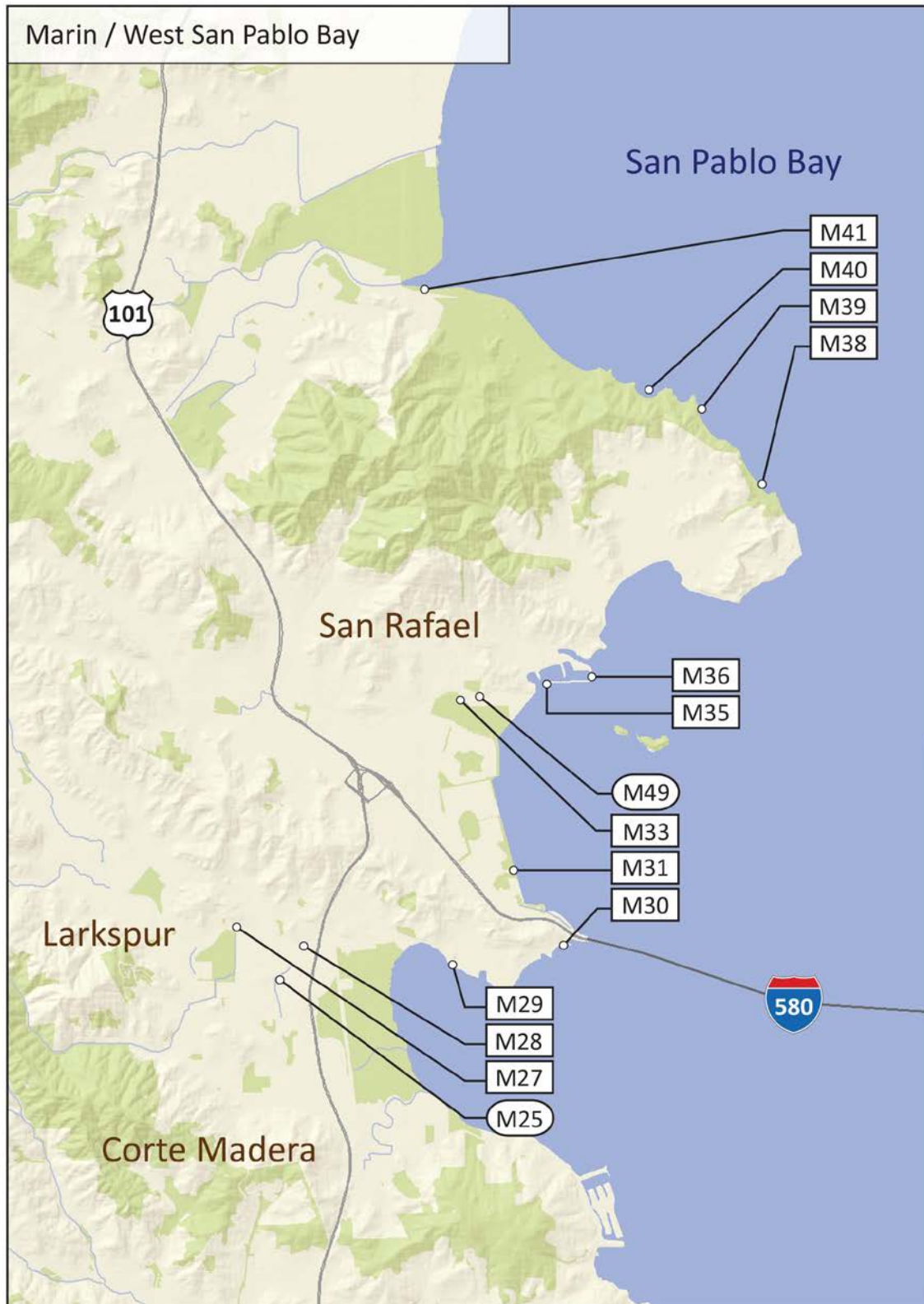


Figure 4.3: Marin / West San Pablo Bay Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

4.3.2 About the Marin/West San Pablo Bay Geo-Region:

This is another exceptionally beautiful area of San Francisco Bay with many beaches, as well as important wetlands and various cultural attractions. There are both protected and windy environments, and many sites are affected by tidally exposed mudflats.

Site ID	Site Name	Beach	Firm Surface Beach	Low-Freeboard Dock	High-Freeboard Dock	Transfer System	Boat/Trailer Ramp	Water Entry Path	Accessible Parking	Accessible Restrooms	Loading/Unloading	Public Boat Storage	Boating Concession	Club
M41	Buck's Landing													
M40	Bull Head Flat													
M39	China Camp State Park													
M38	McNears Beach Park		*											
M36	Loch Lomond Marina: Beach													
M35	Loch Lomond Marina: Ramp													
M33	Harbor 15 Restaurant													
M31	Starkweather Shoreline Park													
M30	San Quentin													
M29	Remillard Park													
M28	Marin Rowing Association Boathouse													
M27	Bon Aire Landing													
Total		7	1	1	3	0	3	0	5	3	7	1	0	1

Table 4.2: Marin / West San Pablo Geo-Region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Description of Existing Sites in the Marin/West San Pablo Bay Geo-Region (Table 4.2)

Bucks Landing (M41): A rustic and relatively remote site that is popular for its rural atmosphere, Bucks Landing has been up for sale in recent years and negotiations for its purchase continue. It has a small dock that sits in the mud at low tide. Its future as a launching and landing site for NMSB use is unknown.

Bull Head Flat (M40): Owned and managed by California State Parks, this site is associated with China Camp State Park to the south but has its own parking and restroom. As is the case with many sites on the Marin County shoreline, NMSB use is best at medium to high tides, as mud extends well offshore at lower tides.

China Camp State Park (M39): Owned and managed by California State Parks, this site offers a glimpse into local history at a beautiful beach. Launching and landing must be well timed, as mud extends out 100 yards or more at low tide.

McNears Beach (M38): A beach mat (funded through a WT grant) and Water Trail signs will be installed this year at McNears Beach, provided a smooth path of travel across the beach to the high tide line. At medium and low tide, NMSB access to and from the Bay is better at the southern end of the park where the beach is steeper. Marin County Parks, the owner/manager, will be planning other enhancements to the park as part of an upcoming master plan update. McNears Beach is a conditionally designated Water Trail site.

Loch Lomond Marina Beach (M36) and Ramp (M35): This marina is under redevelopment and should have much improved access for persons with disabilities to the water at both the marina dock and beach.

Harbor 15 Restaurant (M33): This site has only a steep, narrow, and slippery boat ramp.

Jean and John Starkweather Shoreline Park (M31): This informal City of San Rafael site provides beach access at high tide only. Extensive mudflats are exposed at low tide.

San Quentin (M30): This charming beach is just south of the western end of the Richmond-San Rafael bridge and is accessed by a staircase. It is owned by a homeowner's association and parking is limited.

Remillard Park (M29): Popular with windsurfers, this site has a beach and is located in the City of Larkspur between the ferry terminal and San Quentin. Although there is a

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

small parking lot, most site users park along the Sir Francis Drake Blvd where they also unload their gear.

Marin Rowing Association Boathouse (M28): This private rowing club has two low-float docks, one of which is dedicated to public use. Marin Rowing plans to replace the public low-float public dock, which is in very poor condition, next year.

Bon Aire Landing (M27): Located in a suburban neighborhood, this high-freeboard dock is on Corte Madera Creek. It is accessed via a stairway and the dock sits in mud at low tide.

Description of Planned Sites in Marin/West San Pablo Bay

San Rafael Yacht Club (M49): The San Rafael Yacht Club has local approval to make site improvements, including a low-float dock, accessible restrooms, and a gangway leading from the parking area directly through the dock (for public use). Although the turning basin near the yacht club is subject to mud during lower tides, the dock itself remains usable.

Higgins Dock (M25): The gangway and dock at Higgins Dock were disassembled years ago because of their deteriorated condition. The pilings remain in place and the launch site may be rebuilt one day by the Town of Corte Madera.

General Recommendations for the Marin/West San Pablo Bay Geo-Region

In the near future there will be a beach mat at McNears Beach, providing one improved beach-access option for some persons with disabilities. In order to further enhance accessibility for persons with disabilities to the WT, the region needs at least one site with a low-freeboard dock in good condition and a transfer system of one of the types described in Appendix B.



Figure 4.4: Petaluma River Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

4.3.3 About the Petaluma River Geo-Region

Much of this geo-region has a rural atmosphere despite its main potential sites being in urban areas. There are opportunities for wildlife viewing, river paddling, and participation in events and festivals in Petaluma.

Site ID	Site Name	Beach	Firm Surface Beach	Low-Freeboard Dock	High-Freeboard Dock	Transfer System	Boat/Trailer Ramp	Water Entry Path	Accessible Parking	Accessible Restrooms	Loading/Unloading	Public Boat Storage	Boating Concession	Club
Sn7	Petaluma River Turning Basin													
Sn6	Petaluma Marina													
Sn5	Lakeville Marina (Papa's Taverna)													
M47	Black Point Boat Launch													
Total		0	0	0	4	0	3	0	3	2	3	1	1	1

Table 4.3: Petaluma River Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Description of Sites in the Petaluma River Geo-Region (Table 4.3)

Petaluma River Turning Basin (Sn7): A nonprofit organization is currently working with the Water Trail program to meet conditions for designation and receive a requested grant that would fund a low-float dock. There is currently a high-freeboard dock in this location. Long-term plans include a boating concession as well.

Petaluma Marina (Sn6): This marina has a typical boat ramp and high-freeboard dock facility. It also allows storage of outrigger canoes owned by a local club.

Lakeville Marina (Papa's Taverna) (Sn5): This privately owned marina was for many years home to Papa's Taverna, the Greek restaurant that closed in January 2013. The marina continues to operate with a narrow boat ramp (mud at bottom of ramp) and high-freeboard dock.

Black Point Boat Launch (M47): Marin County Parks supports the possible designation of this site into the Water Trail. Facilities are designed for the launching of larger vessels. Boat washing equipment is provided in addition to other features listed in the table.

General Recommendations for the Petaluma River Geo-Region

In order to enhance accessibility for persons with disabilities to the WT, this region needs a low-freeboard dock and/or transfer system to facilitate entry into and out of watercraft. There are no beaches.



Image Credit Members of BASK

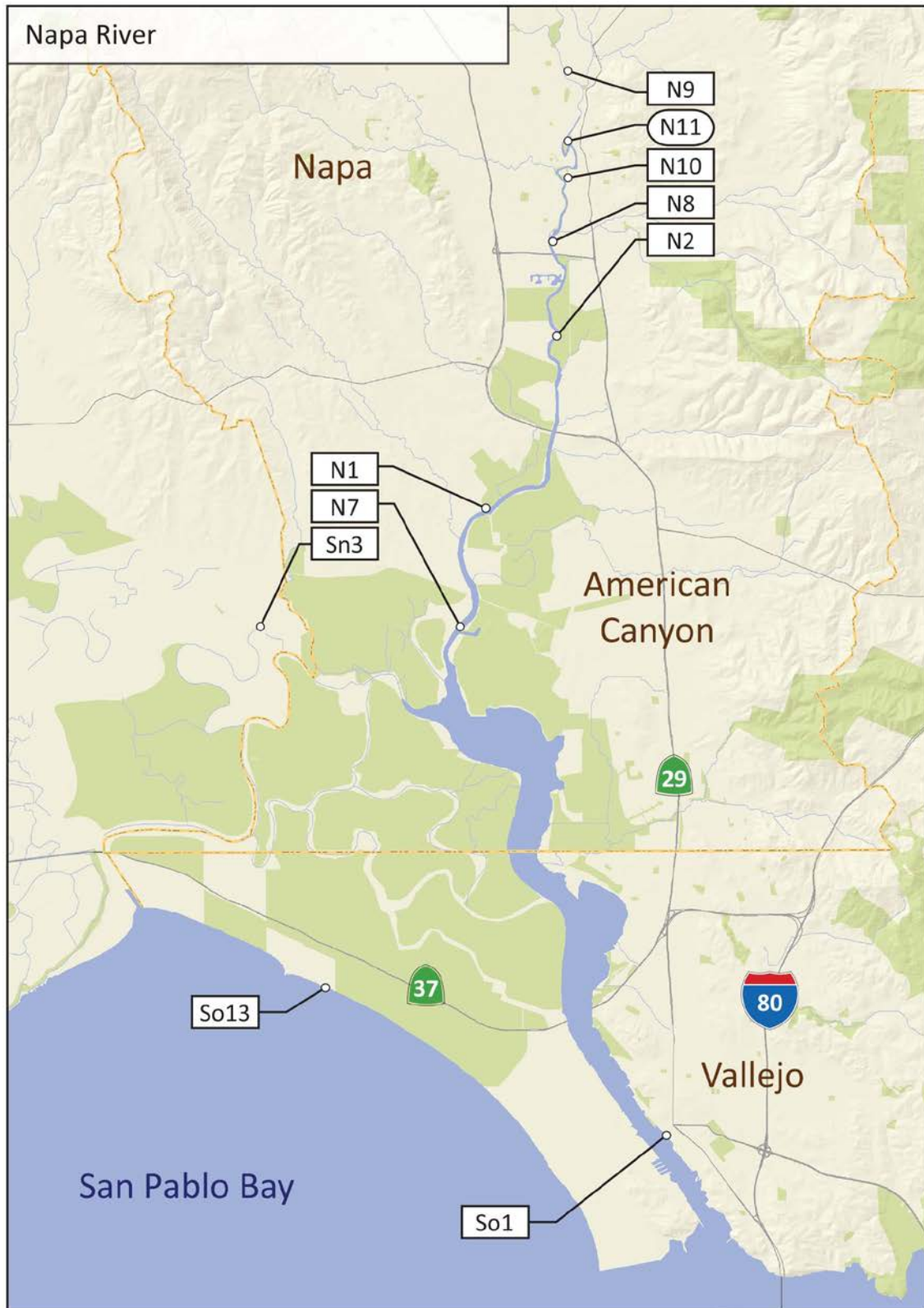


Figure 4.5: Napa River Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

4.3.4 About the Napa River Geo-Region

The Napa River geo-region includes both rural and urban/industrial characteristics. The upper reaches of the river are shaded by a mature tree canopy in a natural setting, downtown Napa offers restaurants and lodging, and further downstream there is a regional park and more exposed conditions as the river widens.

Site ID	Site Name	Beach	Firm Surface Beach	Low-Freeboard Dock	High-Freeboard Dock	Transfer System	Boat/Trailer Ramp	Water Entry Path	Accessible Parking	ADA Restrooms	Loading/Unloading	Boat Storage	Boating Concession	Club
N9	Trancas Crossing Park													
N10	Downtown Napa Main Street Dock													
N8	Riverside Drive Launch Ramp													
N2	JFK Memorial Park													
N1	Cutting's Wharf													
N7	Green Island Boat Launch Ramp													
Sn3	Hudeman Slough													
So13	Cullinan Ranch													
So1	Brinkman's Marina													
Total		0	0	2	5	2	5	2	6	6	5	0	0	0

Table 4.4: Napa River Geo-region

Description of Sites in the Napa River Geo-Region (Table 4.4)

Trancas Crossing Park (N9): This wooded site marks the northern end of tidal influence on the Napa River. Access to launching at the river bank is by a steep, informal path, but other supporting facilities onsite are more accessible, such as the restroom and parking.

Downtown Napa Main Street Dock (N10): There is a new high-freeboard dock with gangway in downtown Napa. On a seasonal basis, the City of Napa adds a low-float, transfer dock to assist kayakers wishing to disembark and get onto the main dock. This is a site that a person would get to from the water only (a “destination site”). Downtown Napa Main Street Dock is a conditionally designated Water Trail site.

Riverside Drive Launch Ramp (N8): This privately owned site has historically allowed NMSB users to launch watercraft from the boat ramp. There is limited parking onsite.

JFK Memorial Park (N2): Also referred to as “Kennedy Park,” this site is attractive to large groups who also use the picnic facilities and to others riding by on the Bay Trail. The high-freeboard dock and boat ramp are both affected by exposed mud at lower tides. The dock rests on the mud at a cross slope at times. This part of the Napa River may be dredged in the coming years and the City of Napa has been discussing the possibility of dock improvements.

Cuttings Wharf (N1): This site, owned and managed by the County of Napa, is designed primarily for use by large boats and trailers. It offers a typical marina configuration of ramp and high-freeboard dock, but at this site the ramp is very wide and there are two long docks that turn at right angles along the shoreline.

Green Island Boat Launch Ramp (N7): There are two water entry points at this location, both of which are sloped. One is a silt-covered gravel path, and the other is a rather old, concrete ramp. At lower tides mud, exposed rocks, and an abrupt ending to the gravel path make the site difficult to use.

Hudeman Slough (Sn3): Located within wetlands of Sonoma County, this site at one time had a dock with a transfer system to assist persons with disabilities, but the metal transfer parts were stolen. Site managers are currently planning a design for a new, accessible launch in association with an upgraded parking area and path of travel. The site is best used at higher tides only.

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Cullinan Ranch (So13): Access to the sloughs of the Napa-Sonoma Marshes north of Highway 37 will improve in the next year or so, after restoration planning is complete at Cullinan Ranch and levees are breached to allow the Napa River back into the marshes. Once the breach is complete, the newly built finger docks at this site will be on the water and ready for use.

Brinkman's Marina (So1): Construction work will soon be making this site unusable by all NMSB users, presumably on a temporary basis. Historically, mud has prevented safe use of the site at lower tides.

Description of Planned Sites in the Napa River Geo-Region

Jim Hench Memorial Kayak Launch (N11): This site is in the planning stages and cannot yet be described except for the planned location.

General Recommendations for the Napa River Geo-Region

This geo-region does not have any beaches; thus, the focus of enhancements needs to be on dock-based entry into the water. There is one transfer system in place – the finger docks at Cullinan Ranch – which includes grab bars. In order to enhance accessibility for persons with disabilities to the WT, one or more additional adaptive transfer systems is needed. The City of Napa has been encouraged to consider additional features that would assist persons with disabilities at its low-float dock at the downtown dock – possibly transfer steps, which are successfully being used at Pier 52 in San Francisco. Similarly, future enhancements at Hudeman Slough could include a roller-type transfer system that works well in protected waters but not in exposed conditions. This will be encouraged and, as possible, facilitated.



Figure 4.6: Carquinez Strait Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

4.3.5 About the Carquinez Strait Geo-Region

The Carquinez Strait experiences strong tides and winds and has both a rural feeling in some areas and urban in others. Large vessels travel through the Strait en route to the Delta and Sacramento/Stockton and NMSBs need to stay clear of them. There may be opportunities for camping in the future and there currently are many restaurants near sites in Benicia.

Site ID	Site Name	Beach	Firm Surface Beach	Low-Freeboard Dock	High-Freeboard Dock	Transfer System	Boat/Trailer Ramp	Water Entry Path	ADA Parking Spaces	ADA Restrooms	Loading/Unloading	Boat Storage	Boating Concession	Club
So7	Matthew Turner Park													
So8	West 9th Street Launching Facility													
CC2	Carquinez Strait Regional Shoreline (Eckley Pier)													
So10	Benicia Marina													
So9	Benicia Point Pier													
CC1	Martinez Marina													
Total		3	0	0	3	0	3	1	6	5	5	0	0	1

Table 4.5: Carquinez Strait Geo-region

Description of Sites in the Carquinez Strait Geo-Region (Table 4.5)

Matthew Turner Park (So7): This site is used by kite boarders and windsurfers who set up on the provided lawn, but must use the dirt path down to a rocky/muddy beach for water entry.

West 9th Street Launching Facility (So8): Home of the Benicia Outrigger Canoe Club, this launch is popular for many different uses, including fishing, and for different boat types. The high-freeboard dock unfortunately makes entry into even outrigger canoes difficult for persons using wheelchairs.

Carquinez Strait Regional Shoreline (Eckley Pier)(CC2): Entry into the water at this site is from a beach next to the fishing pier. Access to the beach is down a short but sloped path, and access to the shoreline requires crossing the railroad tracks.

Benicia Marina (So10): The location of the marina boat ramp offers water entry in a more wind-protected environment than directly into the Carquinez Strait.

Benicia Point Pier (So9): This site provides relatively new, permanent restrooms, lights, ample parking, and access to the Carquinez Strait from a small beach. There are old pilings near the shoreline of the beach, however, and there is no firm surface for crossing the beach.

Martinez Marina (CC1): Similar to the Benicia Marina, entry into the water from this boat ramp or high-freeboard dock offers some protection from the winds and tides out in the waters of the Carquinez Strait.

General Recommendations for the Carquinez Strait Geo-Region

Accessibility for persons with disabilities to the WT within this geo-region would benefit from the installation of a firm-surface beach crossing, a low-freeboard dock, and/or a transfer system of some type. Windy conditions and strong tides may present constraints to some enhancement options. Nonetheless, NMSB use in the Carquinez Strait is a unique experience that cannot be duplicated elsewhere.



Image Credit Members of BASK

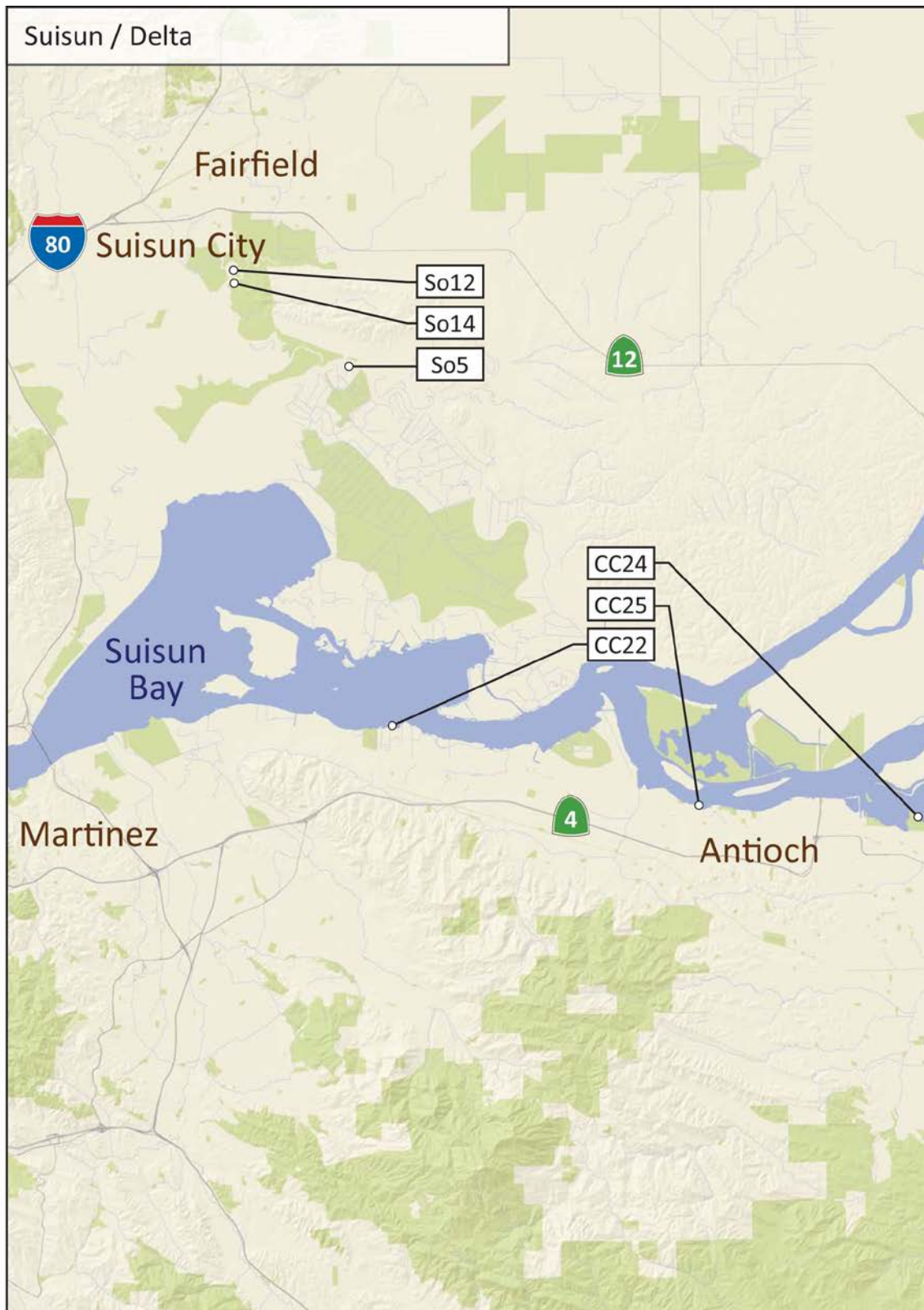


Figure 4.7: Suisun / Delta Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

4.3.6 About the Suisun/Delta Geo-Region

As the name suggests, this group of sites is positioned at the beginning of the Sacramento/San Joaquin Delta. It can get very windy at the sites that are directly on Delta waters and tides are strong. The geo-region offers a remote/natural experience and yet also has restaurants near several sites.

Site ID	Site Name	Beach	Firm Surface Beach	Low-Freeboard Dock	High-Freeboard Dock	Transfer System	Boat/Trailer Ramp	Water Entry Path	Accessible Parking	Accessible Restrooms	Loading/Unloading	Public Boat Storage	Boating Concession	Club
So12	Suisun City Marina													
So14	Downtown Suisun City													
So5	Belden's Landing													
CC25	Antioch Marina													
CC24	Big Break													
CC22	Bay Point Regional Shoreline													
Total		1	0	0	4	0	3	1	6	5	3	0	2	0

Table 4.6: Suisun / Delta Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Description of Sites in the Suisun Delta Geo-Region (Table 4.6):

Suisun City Marina (So12) and Suisun City Downtown (So14) were recently conditionally designated into the Water Trail. City staff has expressed an interest in upgrading facilities at the marina location to make them more usable for all persons launching NMSBs.

Belden's Landing (So5): This site is tucked up in the sloughs of Grizzly Bay and is popular with people going fishing. The site has stair steps leading to the water, but they are not configured like tidal tiers. Otherwise, there are high-freeboard docks.

Antioch Marina (CC25): The Antioch marina has two high-freeboard docks. They have also expressed an interest in installing an accessible restroom closer to the launch site.

Big Break (CC24): This charming site on the edge of the Delta is part of an East Bay Regional Park District park. The launching/landing site is not near the parking area.

Bay Point Regional Shoreline (CC22): Even at high tide, water entry is difficult at this site.

General Recommendations for the Suisun/Delta Area Geo-Region

In order to enhance accessibility for persons with disabilities to the WT, this geo-region needs a firm-surface beach crossing, a low-freeboard dock, and a transfer system of some type.



Image Credit Members of BASK

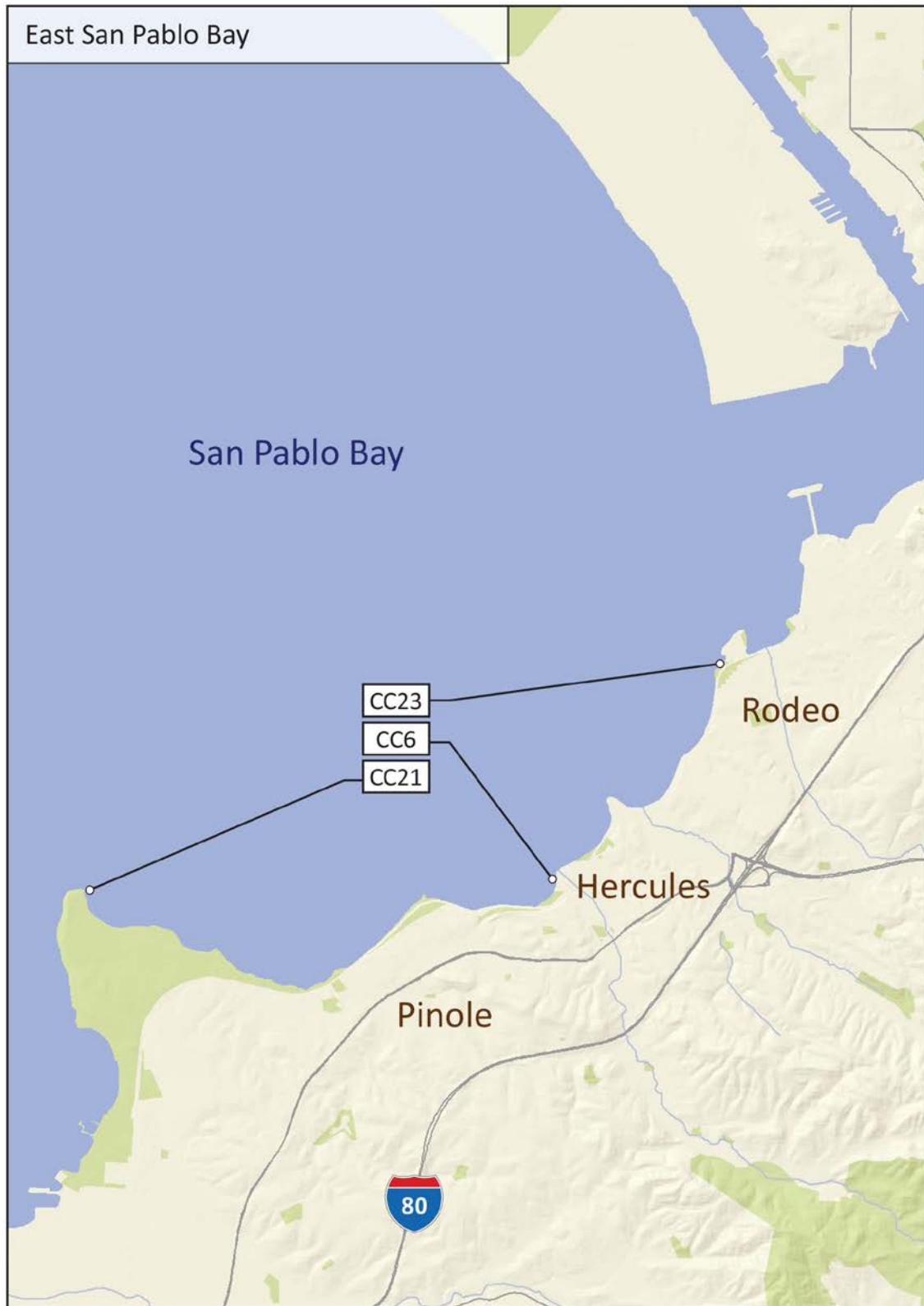


Figure 4.8: East San Pablo Bay Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

4.3.7 About the East San Pablo Bay Geo-Region

This shoreline is somewhat underutilized and remote; access can be difficult because of railroad tracks, heavy industry (oil refineries), and sedimentation/mud flats.

Site ID	Site Name	Beach	Firm Surface Beach	Low-Freeboard Dock	High-Freeboard Dock	Transfer System	Boat/Trailer Ramp	Water Entry Path	Accessible Parking	Accessible Restrooms	Loading/Unloading	Public Boat Storage	Boating Concession	Club
CC23	Lone Tree/Rodeo Beach													
CC6	Pinole Bayfront Park													
CC21	Point Pinole													
Total		3	0	0	0	0	0	1	2	2	1	0	0	0

Table 4.7: East San Pablo Bay Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Description of Sites in the East San Pablo Bay Geo-Region Table 4.7:

Lone Tree/Rodeo Beach (CC23): This site is tucked away on the Rodeo shoreline and is an attractive spot to get out of the wind and rest. Parking is at some distance but it could be a nice destination site.

Pinole Bayfront Park (CC6): Kayakers sometimes scramble down a short but steep incline near this park to get into the water where Pinole Creek empties into San Pablo Bay. Otherwise, this site is usable only at high tide because of exposed tidal flats.

Point Pinole (CC21): The site owner, East Bay Regional Park District, developed a group campsite at this location several years ago and is working on plans to make other upgrades to make the site more accessible to persons wishing to land at the site in a non-motorized small boat and get up on shore to rest, picnic or camp. There are extensive mud flats at low tide.

General Recommendations for the East San Pablo Bay Geo-Region

In order to enhance accessibility for persons with disabilities to the WT, this geo-region would benefit from the addition of a firm beach surface. None of the sites are likely to add docks in the future.



Image Credit Members of BASK

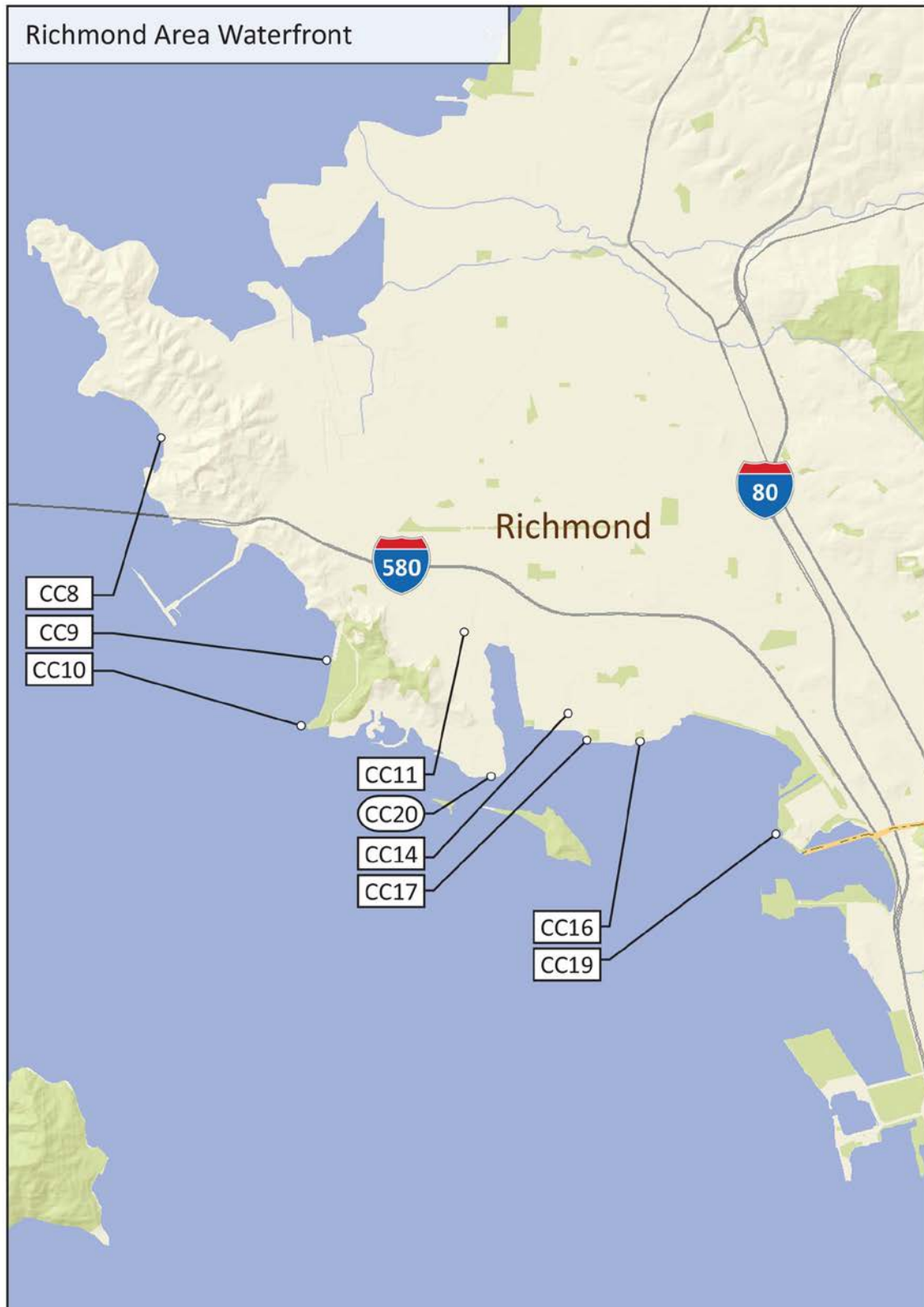


Figure 4.9: Richmond Area Waterfront Geo-region

4.3.8 About the Richmond Area Waterfront Geo-Region

The views of San Francisco Bay and beyond from most of these sites is spectacular. All are located on or very close to the San Francisco Bay Trail, and most have ample parking and permanent restroom facilities. A new ferry route is coming to this geo-region, and other large vessels travel regularly in waters running parallel to the Richmond shoreline. The southern-most site, Point Isabel (popular with windsurfers), is very near the beginning of the next group of sites (Albany/Berkeley/Emeryville), and paddlers sometimes make multiple-stop trips between these two geo-regions.

Site ID	Site Name	Beach	Firm Surface Beach	Low-Freeboard Dock	High-Freeboard Dock	Transfer System	Boat/Trailer Ramp	Water Entry Path	Accessible Parking	Accessible Restrooms	Loading/Unloading	Public Boat Storage	Boating Concession	Club
CC8	Point Molate Beach Park													
CC9	Keller Beach													
CC10	Ferry Point		*							*				
CC11	Boat Ramp Street Launch Area													
CC14	Richmond Municipal Marina													
CC17	Barbara & Jay Vincent Park													
CC16	Shimada Friendship Park													
CC19	Point Isabel Regional Shoreline													
Total		6	2	0	1	0	2	1	7	6	5	0	0	0

Table 4.8: Richmond Area Waterfront Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Description of Sites in the Richmond Water Front Geo-Region (Table 4.8):

Point Molate Beach Park (CC8): This beach park was recently reopened for public use. There is a sloped drop-off from the parking lot to the beach itself. Low-tide water entry would be quite muddy.

Keller Beach (CC9): This exceptionally beautiful beach is down an incline from the main roadway that provides the only parking opportunities.

Ferry Point (CC10): The site owner, East Bay Regional Park District, is currently making improvements to the site, including upgrading the restrooms and path of travel to the beach. There are plans to install a concrete, gently sloped beach access route to or near the high-tide line from the parking area. This site is a conditionally designated Water Trail site.

Boat Ramp Street Launch Area (CC11): This small, neighborhood park includes an old boat ramp and a picnic table, with street parking. At low tide the ramp is especially slippery with algae and mud.

Richmond Municipal Marina (CC14): The City of Richmond is currently exploring options for adding a low-float dock to one of the high-freeboard boarding piers. Possible approaches for increased accessibility at this site are discussed in *San Francisco Bay Area Water Trail Issues and Recommendations for Improved Accessibility* (see Resources for a link).

Barbara and Jay Vincent Park (CC17): There is a concrete beach access route across the sand to the approximate high-tide line.

Shimada Friendship Park (CC16) : Entry into the Bay from this attractive park is by stairs only (through riprap). These stair steps are not the same as “tidal tiers,” and at lower tides transition to mud and rocks. Some windsurfers use the stairs, which are best used at medium to high tide.

Point Isabel Regional Shoreline (CC19): This site is popular with windsurfers and entry into the water is from a set of stairs down to a gravelly beach. There is a café in addition to restrooms.

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Description of Planned Sites in the Richmond Waterfront Area Waterfront:

SS Red Oak Victory (CC20): The SS Red Oak Victory is a historic ship built in Richmond during World War II. It is able to accommodate groups that wish to experience an overnight stay on board. Currently, the ship is not possible to access from the water, but there is still hope that enhancements may be made in the future.

General Recommendations for the Richard Area Waterfront Geo-Region

In order to enhance accessibility for persons with disabilities to the WT, this geo-region would be enhanced by a low-float dock and transfer system of some type. There is hope that these will be installed at the Richmond Marina.



Figure 4.10: Albany/Berkeley/Emeryville Geo-region

4.3.9 About the Albany/Berkeley/Emeryville Geo-Region

The Albany/Berkeley/Emeryville sites are located in a very densely populated, urban area along a busy frontage road. The sites offer stunning views across San Francisco Bay and direct access to open Bay waters. Strong winds attract windsurfers and kite boarders in particular, but virtually all NMSBs will find the launch facilities they need in this region. There are events, clubs, concessionaires, restaurants, and hotels near several sites.

Site ID	Site Name	Beach	Firm Surface Beach	Low-Freeboard Dock	High-Freeboard Dock	Transfer System	Boat/Trailer Ramp	Water Entry Path	Accessible Parking	Accessible Restrooms	Loading/Unloading	Public Boat Storage	Boating Concession	Club
A1	Albany Beach													
A2	Berkeley Marina, Ramp													
A26	Berkeley Marina, Small Boat Launch													
A4	Point Emery													
A5	Shorebird Park													
A6	Emeryville City Marina													
Total		3	0	1	3	0	1	1	5	2	2	0	2	2

Table 4.9: Albany/Berkeley/Emeryville Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Description of Existing Sites from the Albany/Berkeley/Emeryville Geo-Region (Table 4.9):

Albany Beach (A1): This site is undergoing major redesign that will undoubtedly change features of interest to Water Trail users. The features depicted in this table are sure to remain true. Other features may well be added to the site.

Berkeley Marina, Ramp (A2): Located near a sailing club, this site has the typical features of a public marina.

Berkeley Marina, Small Boat Launch (A26): This site is undergoing substantial upgrades and enhancements to various facilities, including the actual docks. The table shows the current configuration. There are special events for the public at this popular site.

Point Emery (A4): This small point has limited parking but is popular for windsurfing off of riprap on the point, and for the beach that is reached only by an uneven, steep path from the parking area. The City of Emeryville has recently expressed an interest in making improvements to this site.

Shorebird Park (A5): Not to be confused with another “Shorebird Park” next to the Berkeley Marina, this small park in Emeryville is recognizable by the Snoopy sculpture on a viewing platform. Access to the beach at this site is by a staircase only. The City of Emeryville has recently expressed an interest in making accessibility improvements to this site.

Emeryville City Marina (A6): There are two opportunities for launching at this site. One is designed for motor boat launching at a boat ramp (there is a fee) and the other is designed for windsurfing from the point of the peninsula. The windsurfing point is described in detail in *San Francisco Bay Area Water Trail Issues and Recommendations for Improved Accessibility* (see Chapter 6 - Resources for a link).

General Recommendations for the Albany/Berkeley/Emeryville Geo-Region:

Accessibility for persons with disabilities to the WT within this region would benefit from the addition of a firm-surface beach mat, low-freeboard dock, and transfer system.





Figure 4.11: Oakland Waterfront Geo-region

4.3.10 About the Oakland Waterfront Geo-Region

The Oakland Waterfront sites provide the opportunity to see parts of the island of Alameda and the Oakland shoreline that are not visible from the land. At the northwestern end (Middle Harbor), NMSB users need to pay special attention to Port of Oakland vessel traffic and a ferry. At the southeastern end of this group, boaters may experience special wildlife-viewing opportunities. Within the geo-region there are opportunities for windy conditions, calm conditions, wildlife viewing, urban experiences, dining, and overnight accommodations.

Site ID	Site Name	Beach	Firm Surface Beach	Low-Freeboard Dock	High-Freeboard Dock	Transfer System	Boat/Trailer Ramp	Water Entry Path	Accessible Parking	Accessible Restrooms	Loading/Unloading	Public Boat Storage	Boating Concession	Club
A8	Middle Harbor Park													
A9	Jack London Square/CCK													
A11	Jack London Aquatic Center													
A12	Grand Avenue Boat Ramp													
A15	Encinal Facility													
A14	Crown Memorial State Beach													
A25	Tidewater Boating Center													
A28	Elmhurst Creek													
A18	Doolittle Drive; Airport Channel													
Total		3	1	4	5	0	3	1	8	7	4	0	1	2

Table 4.10: Oakland Waterfront Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Description of Existing Sites in the Oakland Geo-Region (Table 4.10)

Middle Harbor Park (A8): Despite having a beach with a beach mat, launching or landing at Middle Harbor can be done only at high tide because of extensive mudflats. Also, the beach is quite far from the parking lot. Near the parking lot there are new outdoor showers.

Jack London Square/CCK (A9): Lessons and kayak/SUP rentals are available at this popular site. There is currently a stair step down to the high-freeboard dock and a second step down to an unstable low-float dock. Possible approaches for increased accessibility at this site are discussed in *San Francisco Bay Area Water Trail Issues and Recommendations for Improved Accessibility* (see Resources for a link).

Jack London Aquatic Center/Estuary Park (A11): This very popular launching/landing site has a long, broad, low-float dock with gangway and is used by youth groups, especially rowing teams, and the public. There is hope that an improved situation with regard to accessible restrooms will be implemented before long.

Grand Avenue Boat Ramp (A12): This Alameda site has a typical marina configuration.

Encinal Launching and Fishing Facility (A15): Home of an outrigger canoe club with boat storage, this site on the island of Alameda is in the midst of plans and fund-raising for major enhancements. The dock is currently taken out in winter.

Robert Crown Memorial State Beach (A14): Kite boarders particularly like this site because of the long beach. There is an outdoor shower spigot for rinsing off and a kite boarding/windsurfing concessionaire on site.

Tidewater Boating Center (A25): This site is noteworthy for being especially well designed with regard to having features that are usable by persons with disabilities. It was recently built and includes a long gangway with resting areas, permanent accessible restrooms (4), plenty of accessible parking, a long low-float dock, and other amenities such as picnic tables, drinking fountain, and a loading/unloading area. This site has been conditionally designated into the Water Trail.

Elmhurst Creek (A28): This rustic site requires a person to descend a short but steep slope from the gravel parking area.

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Doolittle Drive/Airport Channel (A18): There are two places to launch from this East Bay Regional Park District park on San Leandro Bay near the Oakland Airport. The non-motorized small boat low-freeboard launch is at the north end (closer to Oakland). There is a second parking lot closer to the Oakland Airport, where a boat ramp and high-freeboard dock may be found. This second site is used primarily by motorized boats with trailers.

General Recommendations for the Oakland Waterfront Geo-Region

In order to enhance accessibility for persons with disabilities to the WT, this geo-region needs at least one site that has a transfer system associated with a low-float dock as well as at least one beach where all conditions onsite are favorable for access to the high tide line through the addition of some type of firm surface across the sand.

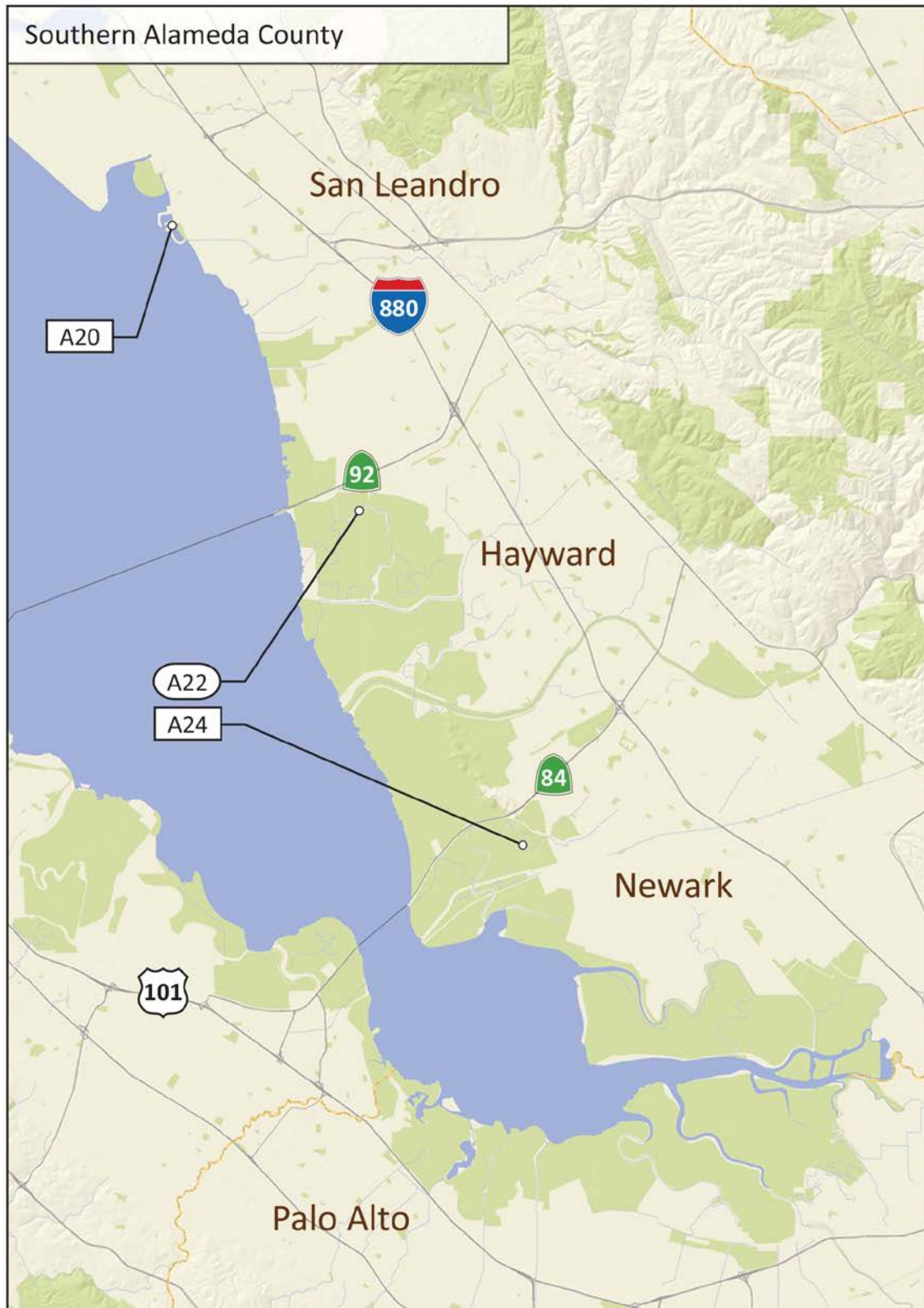


Figure 4.12: Southern Alameda County Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

4.3.11 About the Southern Alameda County Geo-Region

There are few water-access locations in this geo-region because a large swath of waterfront property is privately owned and still used for salt production, and another area is off-limits because of security for the Oakland Airport. There are, nonetheless, opportunities for paddling in sloughs and in both protected and open Bay areas, plus restaurants and overnight accommodations at the San Leandro Marina.

Site ID	Site Name	Beach	Firm Surface Beach	Low-Freeboard Dock	High-Freeboard Dock	Transfer System	Boat/Trailer Ramp	Water Entry Path	Accessible Parking	Accessible Restrooms	Loading/Unloading	Public Boat Storage	Boating Concession	Club
A20	San Leandro Marina													
A24	Jarvis Landing													
Total		0	0	0	1	0	1	1	1	1	2	0	0	1

Table 4.11: Southern Alameda County Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Description of Existing Sites in Southern Alameda Geo-Region (Table 2.11):

San Leandro Marina (A20): The City of San Leandro is midway through an extensive planning process for its marina. There is currently access to the Bay at its boat ramp and high-freeboard dock. Plans for a major redevelopment of the marina are under environmental review and include the addition of a non-motorized small boat launch and boat storage. The marina will continue to have restaurants, overnight accommodations, and plenty of parking.

Jarvis Landing (A24): Rustic is the best way to describe this site, adjacent to the headquarters of the Don Edwards San Francisco Bay National Wildlife Refuge in Fremont/Newark. It is privately owned and provides the experience of boating within a slough. Ownership of the site may change in the not-too-distant future. WT staff does not know if the new owners will make enhancements to the site, or continue to allow NMSB use of the site.

Description of Planned Sites in Southern Alameda County

Eden Landing Ecological Reserve (A22): Former salt ponds at the Eden Landing Ecological Preserve in Hayward are being converted back to tidal and managed wetlands as part of the South Bay Wetlands Restoration Project. In association with this project, a public boat launch for NMSB use has been designed for construction on Mt. Eden Creek and is expected to be opened for public use sometime in 2016 or later. It will be most suitable for shallow-draft boats and boards as the creek is narrow and tidal and opens into a shallow area of the Bay. It may provide wildlife-viewing opportunities. Plans include a low-float dock, boat ramp, loading/unloading and rigging areas. A large parking lot with accessible restrooms is already in place a quarter-mile away. All users of the Eden Landing site will need to pay close attention to the tides, and the range of slopes on the gangway can be assessed once the site is built and in use.

General Recommendations for the Southern Alameda County Geo-Region

This geo-region does not currently have a potential Water Trail site with a beach (unless a beach within the San Leandro Marina is available for public use of NMSBs). In order to enhance accessibility for persons with disabilities to the WT, a low-float dock and transfer system are needed. There will likely be at least one if not two low-float docks once the San Leandro Marina changes are in place and the Eden Landing site is built.

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements



Image Credit Galli Basson



Figure 4.13: Peninsula / South Bay Geo-Region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

4.3.12 About the Peninsula/South Bay Geo-Region

There is an airport exclusion zone around S.F. International Airport and great experiential diversity in this region. In the South Bay there is less large-vessel traffic than elsewhere, and more opportunities to paddle in slough environments, although some wetland areas may not be entered. Both protected/calm experiences and windy environments are present.

Site ID	Site Name	Beach	Firm Surface Beach	Low-Freeboard Dock	High-Freeboard Dock	Transfer System	Boat/Trailer Ramp	Water Entry Path	Accessible Parking	Accessible Restrooms	Loading/Unloading	Public Boat Storage	Boating Concession	Club
SM21	Oyster Point Marina													
SM20	Colma Creek/ Genentech													
SM18	Old Bayshore Highway													
SM23	Coyote Point, Recreation Area													
SM17	Coyote Point, Marina													
SM16	Seal Point Park													
SM13	East 3rd Ave													
SM11	Beaches on the Bay													
SM4	Redwood City Municipal Marina													
SM6	Docktown Marina													
SC3	Palo Alto Baylands Sail Station													
SC2	Alviso Marina County Park													
Total		5	0	3	5	0	5	4	9	7	6	1	3	3

Table 4.12: Peninsula / South Bay Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Description of Existing Sites in the Peninsula/South Bay Geo-Region (Table 4.12):

Oyster Point Marina (SM21): Harbor management is interested developing boat storage opportunities for the public at this site. They are also discussing the possibility of installing a low-float dock. A new trans-Bay ferry comes and goes from this marina. There is a boat ramp and high freeboard dock within the marina where kayakers sometimes launch. On the windier side of the property there are stairs used by windsurfers.

Colma Creek/Genentech (SM20): This small site has a small parking lot and picnic benches along with an informal water entry path through rocks and mud. The mudflats here are extensive; this site may have limited potential as a Water Trail site.

Old Bayshore Highway (SM19): This is an informal beach launching/landing site with no associated facilities and roadside parking.

Coyote Point Recreation Area (SM23): This site is also very popular with windsurfers and kite boarders and includes a boating concession, permanent restrooms, and lots of parking. San Mateo County is currently enhancing the beach promenade and access to the Bay for windsurfing. There is also a long beach.

Coyote Point Marina (SM17): This marina has boat-rinsing facilities and typical marina design.

Seal Point Park (SM16): Launching from this park is from stairs. At lower tides rocks and mud are exposed and water entry may be slippery. The launching/landing site is a long distance from plentiful parking and permanent, accessible restrooms.

East Third Avenue (SM13): This very popular and heavily used site in Foster City has a windy, rip-rapped shoreline, as well as a more protected beach. The City of Foster City is currently preparing to improve parking, concessionaire facilities, and rigging areas for wind-oriented sports. The city is also adding permanent, accessible restrooms, signage, and BBQ facilities. Access into the water for windsurfing and kite boarding is by a steep water entry path. There is a short but steep path to the beach.

Beaches on the Bay (SM11): This is an informal beach in Foster City with parking along the road and no other facilities beyond a sign.

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Redwood City Municipal Marina (SM4): There are several clubs located here and both high and low-freeboard docks.

Docktown Marina (SM6): This privately owned marina is part of a harbor in Redwood City where redevelopment is underway. The future of this marina is unknown.

Palo Alto Baylands Sail Station (SC3): Like many sites in the Bay, this site is directly affected by the tides, and exposed mudflats make use of the dock at certain tides very difficult or impossible. Apart from this challenge, the site is undergoing many upgrades to its accessibility, including improvements to the parking lot, dock, gangway, pier, portable restroom pad, and boat wash. There are also wildlife viewing opportunities at this site and organized canoe trips. This site is conditionally designated into the WT.

Alviso Marina County Park (SC2): Recently designed and built, this site provides both high and low-freeboard docks as well as a boat-rinsing hose. The site provides access to a remote part of San Francisco Bay where one can experience boating in a slough. The waterway narrows at lower tides. Launching and landing at mid to high tides is best. This site has been fully designated into the WT.

Description of Planned Sites in the Peninsula/South Bay Geo-Region

Bair Island Aquatic Center (SM26): The mission of this non-profit organization is to offer human-powered watercraft programs and education. BIAC values stewardship and inclusiveness. Their focus is primarily but not exclusively on sculling. The Center is located in Redwood City near Docktown Marina.

Corkscrew Slough Viewing Platform (SM25): Design specifications are not yet known.

Westpoint Marina (SM24): This very large and recently built private marina is required to provide public access, but was not yet open to the public as of the date of this publication.

General Recommendations for the Peninsula/South Bay Geo-Region

This geo-region has five beaches and yet none have a firm-surface beach access route, which is recommended for at least one site. There are several low-freeboard docks but no transfer systems, which are also recommended.

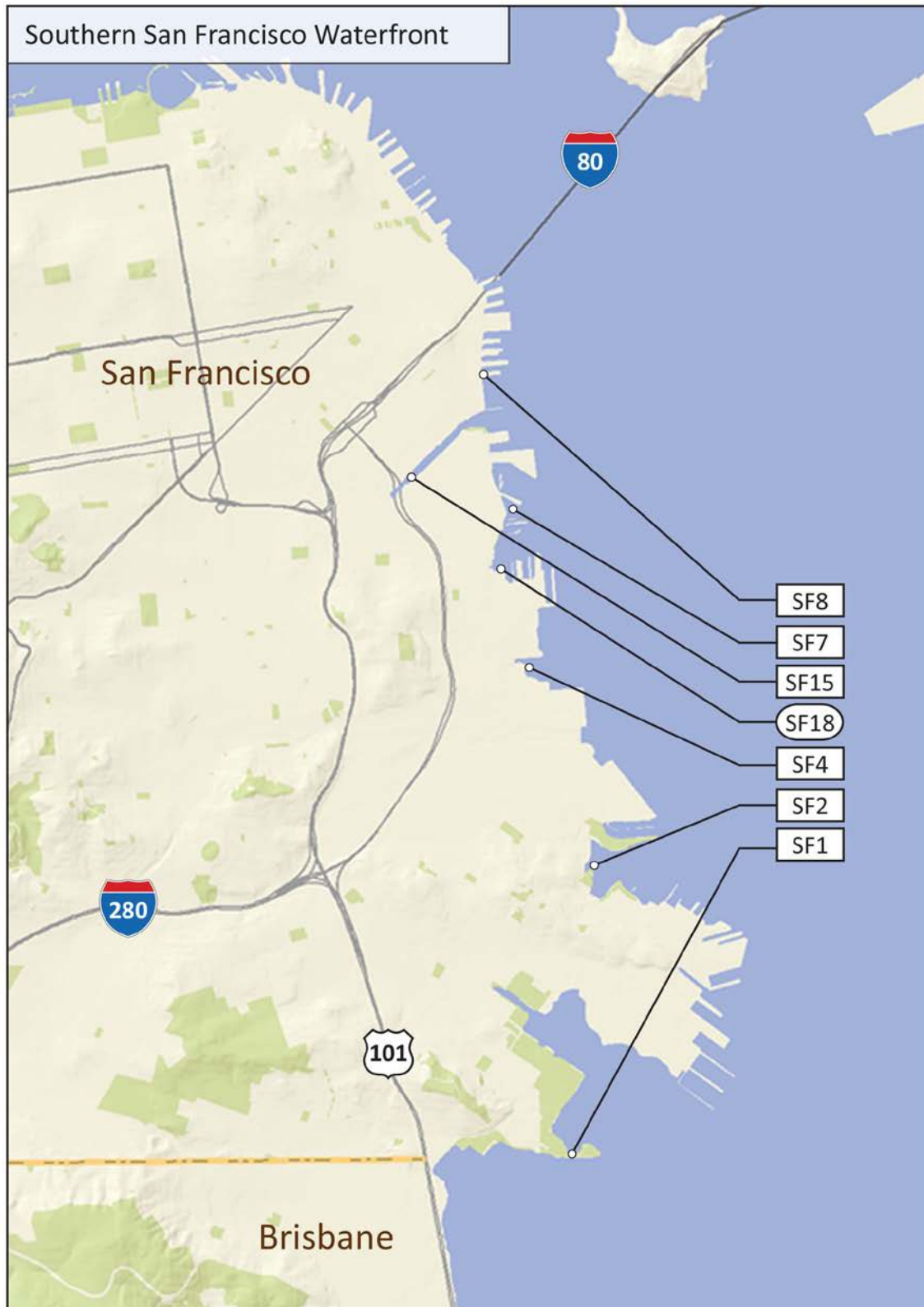


Figure 4.14: Southern San Francisco Waterfront Geo-Region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

4.3.13 About the Southern San Francisco Waterfront Geo-Region

This highly urbanized, densely populated, and somewhat industrialized region of the southern San Francisco waterfront is benefitting from the commitment of the Port of San Francisco to improve access for the public along the waterfront. Tides, wind, and wind-wave action are significant considerations for boaters, as is large-vessel traffic. The baseball stadium at AT&T Park is a major cultural attraction.

Site ID	Site Name	Beach	Firm Surface Beach	Low-Freeboard Dock	High-Freeboard Dock	Transfer System	Boat/Trailer Ramp	Water Entry Path	Accessible Parking	Accessible Restrooms	Loading/Unloading	Public Boat Storage	Boating Concession	Club
SF8	South Beach Harbor (aka Pier 40)													
SF7	Pier 52 Boat Launch													
SF15	Mission Creek													
SF4	Islais Creek													
SF2	India Basin Shoreline Park													
SF1	Candlestick Point State Recreation Area													
Total		3	0	2	3	1	1	1	5	2	5	2	2	3

Table 4.13: Southern San Francisco Waterfront Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Description of Existing Sites in the Southern San Francisco Geo-Region (Table 4.13):

South Beach Harbor (Pier 40): Future improvements identified by the Port of San Francisco as possibilities (not commitments) in the future include: dedicated vehicle loading/unloading zone, method for transporting boats to water without navigating gangway switchbacks, clear public access signage, reserved dock access point, and monthly boat storage rental.

Pier 52 Boat Launch (SF7): The Port of San Francisco recently installed a low-float dock with transfer steps and kayak-oriented transfer assist system at the Pier 52 launch. The Port has expressed interest in providing boat storage and a restroom at the site.

Mission Creek (SF15): Mission Creek is a little known gem located in a somewhat protected waterway with excellent accessibility. It is located within a highly urban area of San Francisco. Future improvements identified by the Port of San Francisco as possibilities (not commitments) include a dedicated loading/unloading zone for boaters.

Islais Creek (SF4): The Port of San Francisco has expressed interest in future enhancements: parking improvements, loading/unloading zone for boaters, extended parking times, and restrooms. A two-foot tide is needed to launch.

India Basin Shoreline Park (SF2): This site is suitable for use at high tides only. The beach is rocky in places; boaters helped move rocks to make the beach more usable.

Candlestick Point State Recreation Area (SF1): Traditionally popular with windsurfers, this area is undergoing complete redevelopment as part of a larger business/residential complex. Plans include access both for wind-oriented NMSB use and kayaking/SUP. The windsurfing site at Windsurfers Circle has firmer mud and the rocks have been cleared by the windsurfers. It is best to launch at medium to high tide.

Description of Planned Sites in the Southern San Francisco Waterfront Geo-Region

Crane Cove Park (Pier 70): Future improvements identified by the Port of San Francisco as possibilities (not commitments) include: beach access, boat storage, vehicle loading/unloading, restrooms, and extended time limits on parking (at paid meters)..

General Recommendations for the Southern San Francisco Waterfront Geo-Region

In order to enhance accessibility for persons with disabilities to the WT, the addition of a firm-surface beach crossing of some type at one of the beach sites is recommended.

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements



Image Credit Lisa Ouellette

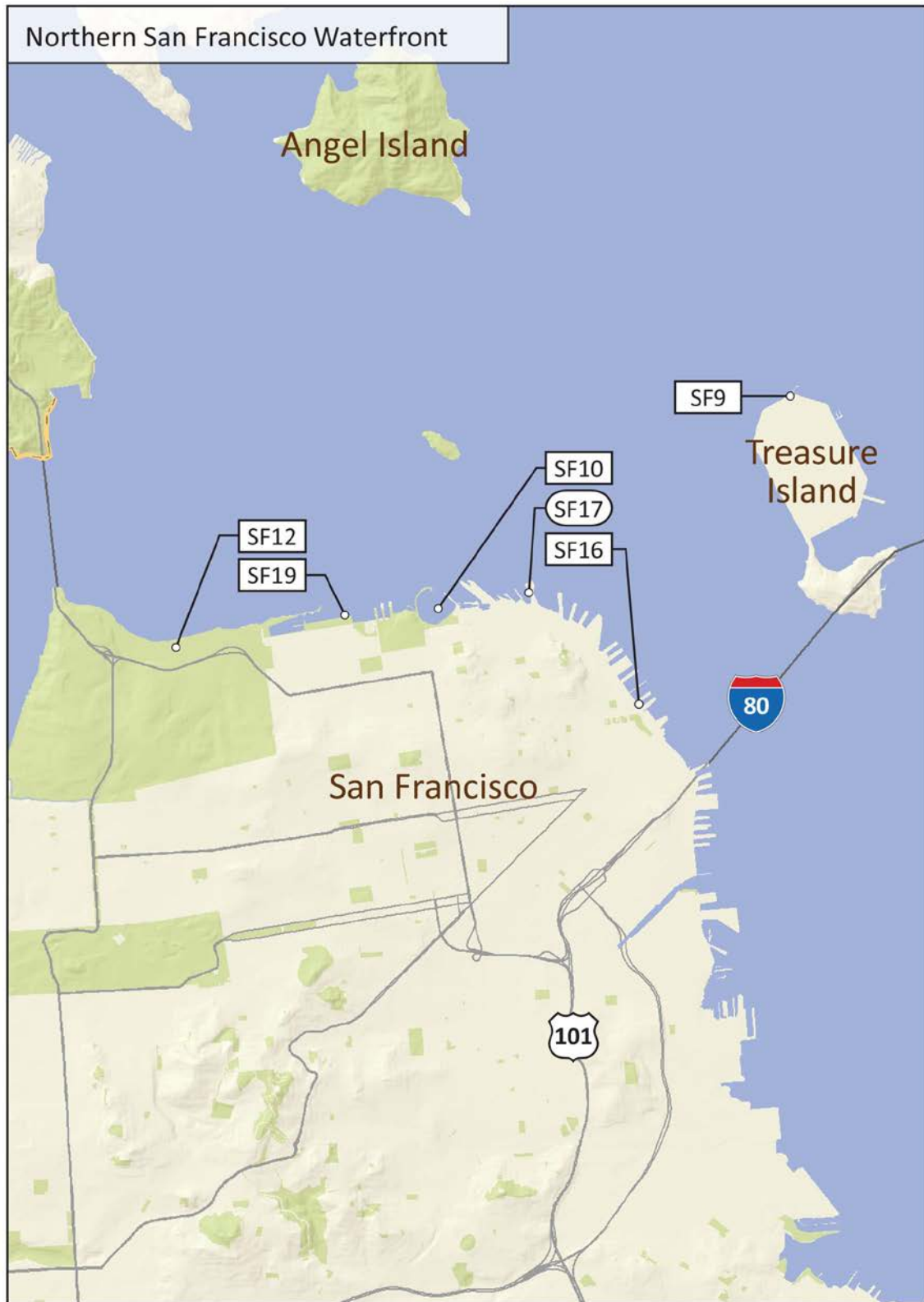


Figure 4.15: Northern San Francisco Waterfront Geo-Region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

4.3.14 About the Northern San Francisco Waterfront Geo-Region

The northern section of San Francisco waterfront is home to a multitude of iconic and scenic landmarks, busy harbors and piers, and much vessel traffic. Tidal currents, wind, and wind-wave action are very strong at times. The waterfront is densely urbanized with many cultural attractions, dining choices and overnight accommodations.

Site ID	Site Name	Beach	Firm Surface Beach	Low-Freeboard Dock	High-Freeboard Dock	Transfer System	Boat/Trailer Ramp	Water Entry Path	Accessible Parking	Accessible Restrooms	Loading/Unloading	Public Boat Storage	Boating Concession	Club
SF12	Crissy Field													
SF19	Marina Green													
SF10	Aquatic Park													
SF16	Pier 1.5													
SF9	Treasure Island													
Total		4	1	1	2	1	0	1	2	2	0	0	0	2

Table 4.14: Northern San Francisco Waterfront Geo-region

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

Description of Existing Sites in the Northern San Francisco Geo-Region (Table 4.14)

Crissy Field (SF12): From the long beach at the east end of Crissy Field, there are spectacular views of San Francisco Bay and the Golden Gate Bridge. The site is famous for its windsurfing and kite boarding opportunities. Accessible restrooms, showers, and parking are nearby. There is a beach mat as well.

Marina Green (SF11): This site has one of the few dock transfer systems in the entire Bay Area. (See photo in Appendix B.) The launch is located within the berthing area of the San Francisco Marina (right name?) and thus is behind a locked gate but down an accessible gangway. A convenient system for gaining entry to the dock is currently being worked out with site management.

Aquatic Park (SF10): This protected beach next to the Hyde Street Pier is used by rowing clubs located onsite and is popular with swimmers, kayakers, and stand up paddlers as well.

Pier 1.5 : (SF16): This site already has an accessible gangway and high-freeboard dock. It is subject to wind-wave action and is fairly busy with visitors in all sizes of motorized and non-motorized vessels. The Port of San Francisco has expressed an interest in installation of a low-freeboard dock with transfer system at this site. The challenge is to engineer a design that can withstand the rough environmental conditions sometimes encountered here.

Treasure Island (SF9): Treasure Island is especially popular with windsurfers, kite boarders, and dragon boats. Although there are various launching and landing sites used by these and other boat types and paddlers, including a rip-rapped point, old boat ramp, sandy beach, and marina, there is no certainty regarding which may become a Water Trail site because of current redevelopment plans, including public water access points.

Description of Planned Sites in the Northern San Francisco Waterfront Geo-Region

Pier 39 (SF17): This site will meet all current accessibility laws and allow for both landing and launching in a protected environment.

General Recommendations for the Northern San Francisco Waterfront Geo-Region

This geo-region meets the minimum goal of at least one site with a firm-surface beach mat and a site with a low-freeboard dock with a transfer system. The public at large can

Chapter 4. Potential Water Trail Sites and Recommendations for Enhancements

participate in public meetings over the short-term to comment on proposed enhancements to individual sites. As each site is considered for designation, there will be an opportunity for further exploration of site enhancements.



Image Credit Lisa Ouellette

4.4 Recommendations for Enhancements Bay-Wide

The tables above provide a site-specific list of features within geo-regions. Below is a summary of these site features, by geo-region.

	Southern Marin	Marin/West San Pablo	Petaluma River	Napa River	Carquinez Strait	Suisun/Delta Area	East San Pablo Bay	Richmond Area	Albany	Oakland	Southern Alameda	Peninsula/South Bay	Southern SF Waterfront	Northern SF Waterfront	Total
Beach	10	7	0	0	3	1	3	6	3	3	0	5	3	4	48
Firm Surface Beach	0	1	0	0	0	0	0	2	0	1	0	0	0	1	5
Low-Freeboard Dock	0	1	0	2	0	0	0	0	1	4	0	3	2	1	14
High-Freeboard Dock	4	3	4	5	3	4	0	1	3	5	1	5	3	2	43
Transfer System	0	0	0	2	0	0	0	0	0	0	0	0	1	1	4
Boat/Trailer Ramp	3	3	3	5	3	3	0	2	1	3	1	5	1	0	33
Water Entry Path	0	0	0	2	1	1	1	1	1	1	1	4	1	1	15
Accessible Parking	6	5	3	6	6	6	2	7	5	8	1	9	5	2	71
Accessible Restrooms	9	3	2	6	5	5	2	6	2	7	1	7	2	2	59
Loading/Unloading	6	7	3	5	5	3	1	5	2	4	2	6	5	0	54
Public Boat Storage	0	1	1	0	0	0	0	0	0	0	0	1	2	0	5
Boating Concession	0	0	1	0	0	2	0	0	2	1	0	3	2	0	11
Club	3	1	1	0	1	0	0	0	2	2	1	3	3	2	19

Table 4.15: Summary of the distribution of site features of 111 water-access sites in 14 geo-regions around San Francisco Bay.

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Table 4.15 and the recommendations following each of the 14 geo-region tables provide an overview of what is missing from the range of features that support NMSB users with disabilities in the Bay Area. Particularly apparent are the low numbers of low-float docks, firm surfaces across beaches, and transfer systems. The data point to where the gaps are found geographically, and reveal where other desirable site features, such as boat storage or a concessionaire, may or may not be found.

All geo-regions offer experiences related to the physical environment (dynamic/sheltered, urban/industrial, natural, slough, open bay, windy) and activities (wildlife viewing, camping, restaurants, cultural, tours/events, clubs, concessionaires), although in different combinations. While physical access improvements can be implemented in a geographically dispersed manner around the Bay, and experiences exist in different combinations around the Bay, the fact remains that some experiences are limited to a small number of geo-regions only.

The recommendations below are for site enhancements to increase accessibility for persons with disabilities at sites that may already be designated into the Water Trail or may become Water Trail sites in the future. The recommendations address three components: the physical site features at the point of launching/landing; the other supporting site features, such as boat storage, accessible restrooms, accessible parking, the presence of an accessibility-support organization, for example; and experiences to be had out on the water.

Beaches. As shown by summary Table 4.15, there are many beaches around the Bay Area. These beaches vary widely, from sandy to pebbly to rocky, and may be flat or sloped. Firm surfaces are very important to some persons with disabilities – particularly those who use mobility devices such as wheelchairs. Only 5 out of 48 beaches included in this analysis have firm surfaces (beach access routes). For other persons with disabilities, beaches may present fewer hazards than docks, piers, and ramps.

Recommended: In every geo-region where beaches are present and are gently sloped, at least one beach should have a firm surface beach crossing that may be accessed via a path of travel that is unobstructed and also reasonably level for its entire length. A variety of beach crossings are feasible, including a mat, concrete beach access route, boardwalk, or some other design.

Docks. Low-freeboard docks are often preferred over high-freeboard docks by persons with disabilities and for certain boat types (Table 2.1). There are far fewer low-

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freeboard docks (14) than there are high-freeboard docks (43) among the 111 potential Water Trail sites. High-freeboard docks are the typical docks in marinas where there is a boat ramp to the side.

Recommended: In every geo-region there should be at least one site with a low-freeboard dock accessed via a path of travel that is unobstructed for its entire length. It is understood that this might not be possible in every geo-region in the near-term; however, as described in Chapter 3, with continued outreach to site owners, accessibility is expected to continue to improve in the long-term.

Transfer Systems. There are only four locations with transfer systems in the entire Bay Area.

Recommended: In every geo-region there should be at least one transfer system. There are many systems described in Appendix B. Hoists are particular in their application and while perfect for locations such as Pier 40 in San Francisco, may not be practical in other locations where they cannot be locked up when not in use. Some transfer systems, such as the roller system pictured at the San Francisco Marina (Appendix B) work very well for kayaks and in calm water, but would not work well in rougher environments. There are options for maintaining the functionality of special systems, such as removing them during winter months, as is done in Napa at the Downtown Napa Main Street Dock. It is understood that transfer system solutions will vary depending on the specifics of each site and their existing docks.

Support Programs. Support programs, such as Environmental Traveling Companions, can make all the difference in the world to a person with a disability of any kind, including “hidden” disabilities that are not always readily visible or obvious to others, such as anxieties or cognitive disabilities. Unfortunately, there are few such programs in the Bay Area.

Recommended: Wherever and however it is possible to financially support programs that support persons with disabilities wanting to participate in NMSB use around the San Francisco Bay Area, such support should be sought. The WT website should identify any such programs and provide links and information about them.

Other Supporting Site Features. There is a clear lack of boat storage around the Bay Area. Beach wheelchairs were not included in the table, but they are known to currently exist at two locations: Schoonmaker Point in Sausalito and Crissy Field. The high occurrence of accessible parking spaces and restrooms is encouraging. Some sites do

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not have restrooms at all; the number in the table represents where there are accessible restrooms.

Recommended: Site owners and managers will be encouraged by the Water Trail to upgrade and maintain supportive site features whenever possible.

Experiences. As discussed in Chapter 3, one of the goals of the Water Trail is to make a rich variety of experiences available to NMSB users around the Bay Area. Persons with disabilities should have access to the same or equivalent experiences as other persons benefitting from the Water Trail program. As also noted above, increasing the number of low-freeboard docks, firm surface beaches, and transfer systems as recommended will incrementally increase access to a variety of experiences around the region. Nonetheless, some experiences are unique to some geo-regions.

The physical settings and activity experiences that stand out as being fairly common around the Bay are dynamic, windy, or open bay waters, and urban/industrial settings; wildlife viewing, clubs, and restaurants, or other cultural activities. The physical setting and activity experiences that are less common are sheltered settings, including natural/slough areas, and camping (rare, and in no case broadly accessible at this time). In particular, the northern and far southern areas of the Bay Area Water Trail have the greatest opportunities for paddling in sloughs and more natural-feeling environments. Marin County has the greatest number of opportunities for beach landings/launchings. On a Bay-wide basis, overnight stays in hotels or hostels will require additional coordination with the owners of those accommodations regarding storage of boats and transportation to and from the launching/landing sites. Other experiences, such as viewing the Golden Gate Bridge, exist only at sites in proximity to or within the line of site of those unique landmarks.

Recommended: Water Trail staff will monitor the evolution of physical access enhancements at potential or designated WT sites around the Bay Area in relation to the availability of the full range of NMSB experiences described above and in Chapter 3. Water Trail staff will encourage owners and managers of sites providing access to rare or unique experiences to enhance their sites to increase usability by boaters with disabilities.



Image Credit BASK

Chapter 5. Laws, Standards, and Ordinances

While the Water Trail program has no legal authority or regulatory power over owners of water access points that may become part of the Water Trail system, site owners are subject to all of the federal, state, and local laws, regulations, and adopted guidelines and standards pertaining to their property, facilities on that property, and customer service practices, whether privately or publicly owned. It is a challenge for many site owners to understand everything that is required of a site, a facility or program, and a challenge as well to understand what would be helpful to provide beyond the current demands of the law.

This chapter summarizes the State of California and federal laws, regulations, and standards that pertain to the accessibility of facilities that support the landing and launching of non-motorized small boats. Users of this Accessibility Plan should review the original, statutory, and regulatory documents for important details. Electronic links to pertinent access laws and regulations are included in Chapter 6 of this Accessibility Plan, along with a list of related, relevant documents produced by various public entities providing additional guidance for boat launch design.

At the time of publication of this document the laws, regulations, and standards that site owners need to be most familiar with on the federal, state and local levels include, but are not limited to:

- 2010 ADA Standards for Accessible Design
- 2013 Architectural Barriers Act Accessibility Guidelines; Outdoor Developed Areas
- 2013 California Building Code – Title 24
- Unruh Civil Rights Act
- California Recreational Trails Act
- City or County Ordinances and Building Officials’ Interpretations

5.1 Federal Accessibility Laws and Regulations

1990 Americans with Disabilities Act (ADA). The Americans with Disabilities Act (ADA) is a civil rights law that prohibits discrimination on the basis of disability. The ADA states: “No individual with a disability shall be excluded from participation in, or denied access to, programs or activities; denied benefits or services; or be subjected to discrimination by any public entity.”

Although the ADA is about providing equal opportunity, it does not guarantee equal results. However, to ensure a genuine, meaningful opportunity for individuals to live and fully participate in their communities, the law recognizes the importance of taking specific concrete steps to

- Remove policy barriers
- Provide program accommodations
- Provide effective communication, aides, and services
- Design and construct accessible buildings and facilities

For new construction and alterations, code compliance at both the federal and state levels is required. When there is a conflict between any of the applicable standards, the standard requiring greater access for persons with disabilities must be applied.

The ADA separately details the accessibility requirements for publicly owned facilities and for privately owned places of “public accommodation.”. Title II of the ADA prescribes the requirements applied to publically owned facilities; Title III prescribes the requirements applied to privately owned places of public accommodation. The differences between the two will be described in greater detail later in this chapter.

Under the ADA, whether the facility is owned or managed by a public entity or is a “public accommodation” owned by a private person or entity, full compliance with the requirements of accessibility laws and regulations may be excused where the owner can demonstrate that it is structurally impracticable due to the unique character of the terrain. Nonetheless, even if full compliance would be structurally impracticable, any portion of the facility that can be made accessible must be made accessible to the extent that it is not structurally impracticable.

1968 Architectural Barriers Act (ABA). The ABA requires that facilities designed, built, altered, or leased with funds supplied by the United States be accessible to the public. The aim of the ABA is to ensure that federally funded facilities are designed and constructed to be accessible to people with disabilities.

5.2 Federal Design Standards

2010 ADA Standards for Accessible Design.² These standards set minimum requirements for newly designed and constructed or altered state and local government facilities, public accommodations, and commercial facilities so that those facilities are readily accessible to and usable by individuals with disabilities. Of particular relevance to Water Trail site owners is the inclusion of new design standards for recreation environments, including recreational boating facilities, included in Chapter 10 of the 2010 Standards.

Adoption of the 2010 Standards also establishes a revised reference point for Title II entities that choose to make structural changes to *existing facilities* to meet their program accessibility requirements and a similar revised reference point for Title III entities undertaking readily achievable barrier removal for *existing facilities*. Any new construction or alternations to existing facilities must at minimum meet the requirements set forth in the 2010 Standards.

Currently the ADA addresses a limited number of recreation environments in these standards, including recreational boating facilities, but other State and Federal regulations provide guidance for other recreation environments.

2013 Architectural Barriers Act Accessibility Guidelines; Outdoor Developed Areas³.

The US Access Board has been developing guidelines for outdoor recreation environments, and published the Accessibility Guidelines for Outdoor Developed Areas (AGODA) in October 2009. The AGODA standards were adopted for purposes of the Architectural Barriers Act (ABA) effective November 25, 2013, applying these standards to all federally owned facilities and to facilities constructed on federal lands (but not to non-federal facilities built with federal grant or loan funds). These guidelines provide standards for a variety of recreation environments including:

² 2010 Standards for Title II and for Title III and additional related information are located: (http://www.ada.gov/2010ADASTandards_index.htm)

³ AGODA Final Rule text (<http://www.access-board.gov/guidelines-and-standards/recreation-facilities/outdoor-developed-areas/final-guidelines-for-outdoor-developed-areas>)
Access Board summary of AGODA (<http://www.access-board.gov/guidelines-and-standards/recreation-facilities/outdoor-developed-areas/a-summary-of-accessibility-standards-for-federal-outdoor-developed-areas>)

- Camping facilities
- Picnic facilities
- Viewing areas
- Outdoor recreation access routes
- Trailheads
- Trails
- Beach access routes

The AGODA have not yet been adopted for purposes of the ADA or for purpose of non-federally owned or operated facilities. However, it is expected that the same or substantially similar guidelines may be adopted in the future for purposes of the ADA. Thus, although not binding under the ADA for public entity-owned facilities or privately-owned public accommodations, these guidelines are a valuable source of information about design and construction standards that may be consulted in developing outdoor areas in order to provide increased access for persons with disabilities.

5.3 California Accessibility Laws and Regulations

1959 Unruh Civil Rights Act. California’s civil rights law, Civil Code Sections 51–55.1, also known as the Unruh Civil Rights Act, establishes the principle of equal rights for persons with disabilities and prohibits discrimination on the basis of disability in business establishments, franchises, etc.

"All persons within the jurisdiction of this state are free and equal, and no matter what their sex, race, color, religion, ancestry, national origin, disability, medical condition, genetic information, marital status, or sexual orientation are entitled to the full and equal accommodations, advantages, facilities, privileges, or services in all business establishments of every kind whatsoever."

1978 California Recreational Trails Act. The California Recreational Trails Act, California Public Resources Code §5070-5077.8, declares that it is the policy of the State of California to “increase accessibility and enhance the use, enjoyment, and understanding of California’s scenic, natural, historic, and cultural resources” and to “provide for the use of recreational trails by physically disabled persons, the elderly, and others in need of graduated trails with special safety features, particularly in conjunction with heritage corridors.” The Act specifically encompasses “boating trails” and directs the development of a state-wide “California Recreational Trails System Plan” that will accomplish the stated policies of providing increased accessibility and other stated policies.

5.4 California Design Standards

2013 California Building Code – Title 24⁴. Title 24 of the California Code of Regulations governs the design and construction of all building occupancies and associated facilities and equipment throughout California. It contains requirements for accessibility in addition to the structural, mechanical, electrical, and plumbing systems, and requires measures for energy conservation, green design, construction and maintenance, and fire and life safety. Accessibility requirements are found in Chapter 11B of Title 24: “Accessibility to Public Buildings, Public Accommodations, Commercial Buildings and Public Housing.” Chapter 11B contains some limited, specific requirements for “Outdoor Developed Areas,” including beaches, day use areas and vista points, camping facilities, picnic areas, parking lots and trails and paths (see §11B-246). In addition, Chapter 11 B includes a division addressing “Recreation Facilities,” with, as relevant here, specific requirements for recreational boating facilities (§11B-1003).

The California Building Code is updated on a triennial basis and the most recent edition should be referenced.

5.5 Local Accessibility Ordinances

Cities and counties are required by state law to enforce Title 24 of the California Building Code but may adopt ordinances making more restrictive requirements than provided by the state code to reflect local climatic, geological, or topographical conditions. Relevant local public entities should be contacted to determine if any such regulations will apply.

5.6 Application of Accessibility Laws, Regulations, and Design Standards

Accessibility Improvements at Existing Publicly Owned Sites – ADA Title II. Public agencies with existing recreational boating facilities and programs have an obligation under the ADA Title II to make their recreational boating program and facilities accessible. Some publicly owned sites with existing boat launching and landing facilities may need to make improvements based on new standards that were finalized in 2010, as discussed below, in order to make their recreational boating program accessible to people with disabilities.

⁴ 2013 California Building Code – Title 24 Chapter 11B
(http://www.documents.dgs.ca.gov/dsa/pubs/2013CBC_Advisory_Manual.pdf)

The federal government required in 1990 that an Americans with Disabilities Act (ADA) Self-Evaluation and Transition Plan (SETP) be written by public agencies with more than 50 employees (ADA Title II). The SETP identifies barriers both in policies and facilities and establishes a plan of action and a schedule for removing accessibility barriers over time. For public agencies that already have an SETP, the SETP might not include recreational boating facilities (if the Plan was written prior to 2010, when the most recent ADA Standards were adopted and recreational boating facility standards were included for the first time).

After reviewing the 2010 ADA Standards for Accessible Design, many site owners may not be sure whether they need to upgrade facilities right away because of the new standards, or whether upgrades to meet the new standards are only triggered when something at the facility is undergoing capital improvements for other reasons. For owners of public agency facilities, the obligation is to provide programmatic access to recreational boating. In many cases, when the agency has only one boating facility, this means making alterations to the existing facility to be in compliance with the law. For agencies with multiple boating facilities, designating appropriate facilities as accessible and making modifications as-needed at those facilities can achieve programmatic access without altering every boating facility.

The Water Trail program strongly encourages public agencies to review their SETP and update the Plan to include recreational boating facilities and programs, if necessary. At a minimum, the Water Trail program encourages site owners and managers to review their facilities for compliance with all laws protecting the rights of persons with disabilities and also for the potential to improve the usability of the launching and landing environment beyond what is included in the law (i.e., improvements not discussed at all in the law). See Appendix B for suggestions and examples of how to improve accessibility at launching and landing sites.

Accessibility Improvements at Existing Privately Owned Sites – ADA Title III. The ADA standards also apply to privately owned facilities described in the ADA as “places of public accommodation or commercial facilities” (also known as Title III facilities). Title III facilities are required to: 1) make accessibility improvements to sites built before 1992 that are “readily achievable,” defined as “easily accomplishable without much difficulty or expense.”; 2) ensure that improvements that were completed after the enactment of the ADA met the requirements of the federal design standards at the time of construction, and; 3) meet the 2010 ADA Standards (in addition to state and local building codes) for all new construction and alterations.

Because recreational boating facilities are now included in the 2010 Standards, private owners subject to Title III of the ADA must make improvements to their existing recreational boating facilities when it is readily achievable to do so.

Determining what is readily achievable will vary from business to business and sometimes from one year to the next. Changing economic conditions can be taken into consideration in determining what is readily achievable. Economic downturns may force many public accommodations to postpone removing some barriers. The barrier removal obligation is a continuing one and it is expected that a business will move forward with its barrier removal efforts when it rebounds from such downturns.

Accessibility Improvements Required When Altering Existing Sites and Buildings. The California Building Code requires that when making renovations, structural repairs, alterations and additions to existing buildings, all of the work in the area of alteration must be done in compliance with current building standards. In addition to the area of renovation, improvements must also be made to the path of travel to the area of the alteration, including the following elements:

- A primary entrance to the building or facility
- The primary path of travel to the specific area of alteration, structural repair or addition
- The sanitary facilities, drinking fountains, signs and public telephones serving the area.

When the construction cost of the renovations, structural repairs, alterations or additions to existing buildings is less than the current Engineering News Record valuation threshold (\$143,303 in 2014), the cost of making improvements to the path of travel and its elements is limited to 20% of the construction cost of the new work.

When the construction costs exceeds the current valuation, and the local enforcing agency determines that the cost of compliance is an “unreasonable hardship,” as defined by the California Building code Chapter 2, Section 202, full compliance is not required.

Compliance with accessibility regulations still must be provided either by equivalent facilitation or the greatest extent possible without creating an unreasonable hardship, but in no case the cost of compliance is less than 20% of the construction costs of the new work. In choosing which accessible elements to provide, priority should be given to those elements that will provide the greatest access in the following order:

- 1) An accessible entrance,
- 2) An accessible route to the altered area,
- 3) At least one accessible restroom for each sex,
- 4) Accessible telephones,
- 5) Accessible drinking fountains, and

5.7 Maintenance of Accessible Features

Site improvements to improve accessibility at both publicly and privately owned facilities must be maintained in a usable condition as required by the ADA..



Image Credit Galli Basson



Image Credit AnnBuell

Chapter 6. Resources for Water Trail Users, Site Owners, Site Managers, and other Water Trails

6.1 Bay Area Organizations Supporting People with Disabilities in Non- Motorized Small Boating Activities

Bay Area Association of Disabled Sailors (BAADS)

Pier 40, The Embarcadero
San Francisco, CA 94107
<http://www.baads.org/>
telephone: (415) 281-0212

BAADS seeks to make all aspects of sailing accessible. To fulfill this mission, they offer dinghy sailing every Saturday and keelboat sailing every Sunday out of South Beach Marina (Pier 40), adjacent to AT&T Park.

Bay Area Outreach and Recreation Program (BORP)

3075 Adeline Street, Suite 155
Berkeley, CA 94703-2545
<http://www.borp.org>
telephone: (510) 849-4663

BORP is headquartered in Berkeley, California and is a leading provider and promoter of accessible sports and recreation opportunities for children and adults with physical disabilities in the greater San Francisco Bay Area. In addition to high quality innovative sports and recreation programs, expert staff provides advocacy, trainings, referrals and consultation services and have helped initiate adaptive sports programs in several other cities across the state. BORP also conducts disability awareness trainings and adaptive sports exhibitions for a variety of community agencies and serves as a valuable resource to physical therapists, rehabilitation hospitals, parks and recreation departments and related organizations. BORP was one of the first agencies in the Bay Area to install a launching and landing ramp with rollers and a transfer system.

Environmental Traveling Companions (ETC)

Fort Mason Center, 2 Marina Blvd. Bldg. C

San Francisco CA 94123

<http://www.etctrips.org>

telephone: (415) 474-7662

Environmental Traveling Companions (ETC) has been providing outdoor adventure opportunities to people of all abilities and backgrounds since 1972. Beginning on the banks of the Stanislaus River, ETC began using volunteers to take people with disabilities and youth from under-resourced backgrounds on whitewater rafting trips. Decades later the organization has grown to include four main programs: whitewater rafting, sea kayaking, cross country skiing, and youth leadership development courses and is recognized as a pioneer in the industry of accessible outdoor adventure. With this growth, ETC has still maintained a strong community, where most trips are staffed by volunteer guides and participants are fully engaged in all aspect of the adventure. An ETC adventure is a unique opportunity to experience nature, achieve growth through challenge, and develop stronger bonds with fellow adventurers.

ETC believes that everyone, regardless of physical or financial limitations, should have the opportunity to experience the challenge and beauty of the wilderness. Through ETC adventures, participants overcome perceived limitations, attain greater personal freedom and confidence, and better understand themselves in relation to others and the environment

Healing Waters – San Francisco

<http://www.hwaters.org/>

Provides outdoor trips specifically for people with HIV and AIDS.

Ride-A-Wave – Santa Cruz

<http://www.rideawave.org/>

Provides children with special needs the chance to feel the thrill of riding a wave and experience a safe, fun-filled day at the beach, whether they are physically, developmentally or economically challenged.

Shared Adventures – Santa Cruz

<http://www.sharedadventures.org/>

Founded on the belief that recreation, fun, challenge and access to the outdoors are an essential part of a healthy and fulfilling life, Shared Adventures is a non-profit organization dedicated to improving the quality of life of people living with disabilities.

California Coastal Commission: Beach Wheelchairs

<http://www.coastal.ca.gov/access/beach-wheelchairs.html>

The California Coastal Commission website has a map and list of California beaches that provide use of beach wheelchairs.

Disabled Sports USA Far West

<http://www.dsusafw.org/about.shtml>

Disabled Sports USA Far West leads adaptive sports and recreation activities, including canoeing and kayaking for people with disabilities. With over 40 years experience, their trained staff and volunteers guide participants in discovering life without limits.

6.2 Adaptive Personal Equipment Links

- www.disabledsportsusa.org
- www.beneficialdesigns.com/
- www.globalkiter.com/
- www.onitabilityboards.org/

6.3 Federal, State and Local Laws, Standards, and Ordinances

ADA Standards for Accessible Design, 2010 Edition

www.ada.gov/regs2010/2010ADASTandards/2010ADASTandards.htm

Architectural Barriers Act Accessibility Guidelines; Outdoor Developed Areas, 2013

www.access-board.gov/guidelines-and-standards/recreation-facilities/outdoor-developed-areas/final-guidelines-for-outdoor-developed-areas/single-file-version-of-rule

California Building Code – 2013

www.bsc.ca.gov/pubs/codeson.aspx

www.documents.dgs.ca.gov/dsa/pubs/2013CBC_Advisory_Manual.pdf

Accessibility Guidebook for Outdoor Recreation and Trails, 2006

USDA Forest Service

<http://www.fs.fed.us/recreation/programs/accessibility/htmlpubs/htm06232801/>

California State Parks Accessibility Guidelines, 2009 Edition

www.parks.ca.gov/pages/21944/files/ca_stateparksaccessguiderev_titlepagewithdisclaimer.pdf

6.4 Various Guidance Documents and Articles

Accessible Boating Facilities - United States Access Board

<http://www.access-board.gov/guidelines-and-standards/recreation-facilities/guides/boating-facilities/accessible-boating-facilities>

AccessSportAmerica

<http://www.accessportamerica.org/index.html>

AccuDock, Kay-aKcess kayak dock system

<http://www.kay-akcess.com/kayak-dock-launch.html>

American Canoe Association – Adaptive Tab

ACA | Canoe - Kayak - SUP - Raft - Rescue

https://aca.site-ym.com/?page=Adaptive_Resources

Americans with Disabilities Act 2010 ADA Standards Excerpts for Recreational Boating Facilities

California Department of Boating and Waterways

http://www.dbw.ca.gov/PDF/Reports/DBW_2010_ADA_Booklet-Dec_2012.pdf

American Trails

<http://www.americantrails.org/resources/water/index.html>

Beneficial Designs

<http://www.beneficialdesigns.com>

telephone: (775) 783-8822

Blue Trails Guide, American Rivers

<http://www.bluetrailsguide.org/>

**Chapter 6. Resources for Water Trail Users, Site Owners, Site Managers, and other
Water Trails**

Canoeing and Kayaking for Persons With Physical Disabilities, 1990

By Anne Wortham Webre and Janet Zeller, American Canoe Association (ACA)

Canoeing and Kayaking for Persons With Physical Disabilities, 1995

By Geoff Smedley, British Canoe Union

Challenge Magazine

Published by Disabled Sports USA

Chesapeake Bay Gateways Network: Water Trail Toolbox

<http://baygateways.net/watertrailtools.cfm>

DeZeen Magazine

<http://www.dezeen.com/2012/08/31/paralympic-design-adaptive-rowing-equipment/>

Disabled Sports USA Far West

<http://www.dsusafw.org>

telephone: (530) 581-4161

Disabled Sports USA

<http://www.disabledsportsusa.org>

telephone: (301) 217-0960

E-Z Dock, Adaptive dock launch systems

<http://www.ez-dock.com/en.html>

Florida Paddling Trails Association

<http://www.floridapaddlingtrails.com/>

**Guidelines for Developing Non-motorized Boat Launches in Florida, 2010, Florida Fish
and Wildlife Conservation Commission**

myfwc.com/media/1092547/Non-motorized-boating-access-guidelines.pdf

Guidelines for Creating Paddling Trails, Accessed December 2013

<http://myfwc.com/boating/waterway/paddling-trails/>

Iowa Construction Site Erosion Control Manual, 2006

Iowa Department of Natural Resources

http://www.ctre.iastate.edu/erosion/manuals/const_erosion.pdf

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Logical Lasting Launches, 2004

National Park Service Rivers & Trails Program

www.nps.gov/ncrc/programs/rtca/helpfultools/ht_launch_guide.html

Minnesota Water Trails Program

<http://www.dnr.state.mn.us/watertrails/index.html>

National Center on Accessibility

Indiana University Bloomington

<http://www.ncaonline.org/>

National Park Service: Rivers, Trails, and Conservation Assistance Program

<http://www.nps.gov/orgs/rtca/index.htm>

<http://www.nps.gov/ncrc/portals/rivers/projpg/watertrails.htm>

Novelty Universal Adaptive Seating System for Dragon Boating, 2012

National Center for Biotechnology Information

<http://www.ncbi.nlm.nih.gov/pubmed/22918915>

Prepare to Launch, 2014

National Park Service Rivers and Trails Conservation Assistance Program and River Management Society

<http://www.river-management.org/prepare-to-launch->

Regulatory Negotiation Committee Final Report, 1999

United States Access Board

<http://www.access-board.gov/guidelines-and-standards/recreation-facilities/outdoor-developed-areas/background/committee-report>

River Voices: What is a Water Trail?, 2006

River Network Publications

<https://www.rivernetwork.org//files/rv/rv2006v16n2.pdf>

San Francisco Bay Area Water Trail Enhanced Water Trail Plan, 2011

San Francisco Bay Area Water Trail | California State Coastal Conservancy

http://scc.ca.gov/webmaster/project_sites/watertrail/enhanced-water-trail-plan-final.pdf

Chapter 6. Resources for Water Trail Users, Site Owners, Site Managers, and other Water Trails

San Francisco Bay Area Water Trail Plan Final Environmental Impact Report, 2011

San Francisco Bay Area Water Trail | California State Coastal Conservancy

http://scc.ca.gov/webmaster/project_sites/watertrail/wtdreir/FEIR_volume_1.pdf

SUP the Mag, 2013

<http://www.supthemag.com/features/standup-from-a-wheelchair/>

Trail Planning, Design, and Development Guidelines, 2007

Minnesota Department of Natural Resources, Trails and Waterways Division

http://www.dnr.state.mn.us/publications/trails_waterways/index.html

Water Trails Toolkit, 2010.

Iowa Department of Natural Resources

<http://www.iowadnr.gov/Recreation/CanoeingKayaking/WaterTrailDevelopmentTools/WaterTrailsToolkit.aspx>

6.5 Product Information and Resources

The products listed here are for informational purposes only and are not endorsed by the San Francisco Bay Area Water Trail Accessibility Plan.

Beach Matting

Mobi-Mat (<http://www.mobi-mat-chair-beach-access-dms.com/>)

AccessRec (<http://accessrec.com/>)

The Mat King (<http://www.thematking.com>)

Invisible Structures (<http://www.invisiblestructures.com/>)

Beach Wheelchairs

AccessRec (<http://accessrec.com/>)

Wheeleez (<http://www.wheeleez.com/>)

Low free-board kayak/canoe launch

EZ-Dock (<http://www.ez-dock.com/>)

Accudock (<http://www.accudock.com/>)

Kay-aKcess (<http://www.kay-akcess.com/>)

Low-freeboard Docks

Accudock (<http://www.accudock.com/>)

Chapter 6. Resources for Water Trail Users, Site Owners, Site Managers, and other Water Trails

Floation Systems (<http://aluminumboatdocks.com/>)

Mid-Cal Construction (<http://mid-calconstruction.com/>)

Overhead Transfer Lifts

Access-able Designs (<http://www.accessabledesigns.com/>)

SpinLife (<http://www.spinlife.com/>)

Amica (<http://www.amicamedicalsupply.com/>)

Accessible Environments (<http://www.acesinc.com/>)

Transfer Steps

EZ-Dock (<http://www.ez-dock.com/>)

Rehab Mart (<http://www.rehabmart.com/>)

Rehab Systems (<http://www.rehabsystems.net/>)

Accessible Gangways

Accudock (<http://www.accudock.com/>)

TechniDOCK (<http://www.technidock.com/>)

Appendix A- List of Potential or Designated San Francisco Bay Area Water Trail Sites

Geographic Region	Site Name	Site ID	Planned	Launch/ Destination	Notes
Southern Marin/ Richardson Bay	Angel Island State Park	M17		Destination	Conditionally Designated
	Bayfront Park	M11		Launch	
	Brickyard Park	M13		Launch	
	Clipper Yacht Harbor	M8		Launch	
	Dunphy Park	M5		Launch	
	Higgins Dock	M25	Planned	Destination	
	Horseshoe Cove	M2		Launch	
	Kirby Cove	M1		Destination	
	Paradise Beach County Park	M48	Planned	Launch	
	Richardson Bay Park/ Blackies Pasture	M16		Launch	
	Sam's Anchor Café	M19		Destination	
	Schoonmaker Point	M6		Launch	
	Swede's Beach	M3		Destination	
	Turney Street Public Boat Ramp	M4		Launch	
Marin/ West San Pablo Bay	Bon Aire Landing	M27		Launch	
	Buck's Landing	M41		Launch	
	Bull Head Flat	M40		Launch	
	China Camp State Park	M39		Launch	
	Harbor 15 Restaurant	M33		Destination	
	Starkweather Shoreline Park	M31		Launch	
	Loch Lomond Marina: Beach	M36		Launch	
	Loch Lomond Marina: Ramp	M35		Launch	
	Marin Rowing Association Boathouse	M28		Launch	
	McNears Beach Park	M38		Launch	Conditionally Designated
	Ramillard Park	M29		Launch	
	San Quentin	M30		Launch	
	San Rafael Yacht Club	M49	Planned	Launch	

Geographic Region	Site Name	Site ID	Planned	Launch/ Destination	Notes
Petaluma River	Black Point Boat Launch	M47		Launch	
	Papa's Taverna/ Lakeville Marina	Sn5		Launch	
	Petaluma Marina	Sn6		Launch	
	Petaluma River Turning Basin	Sn7		Launch	
Napa River	Brinkman's Marina	So1		Launch	
	Cullinan Ranch	So13		Launch	
	Cutting's Wharf	N1		Launch	
	Downtown Napa	N10		Destination	Conditionally Designated
	Green Island Boat Launch Ramp	N7		Launch	
	Hudeman Slough	Sn3		Launch	
	JFK Memorial Park	N2		Launch	
	Jim Hench Memorial Kayak Launch	N11	Planned	Launch	
	Riverside Drive Launch Ramp	N8		Launch	
	Trancas Crossing Park	N9		Launch	
Carquinez Strait	Benicia Marina	So10		Launch	
	Benicia Point Pier	So9		Launch	
	Carquinez Strait Reg. Shoreline (Eckley Pier)	CC2		Launch	
	Martinez Marina	CC1		Launch	
	Matthew Turner Park	So7		Launch	
	West 9th Street Launch	So8		Launch	
Suisun/Delta	Antioch Marina	CC25		Launch	
	Bay Point Regional Shoreline	CC22		Launch	
	Belden's Landing	So5		Launch	
	Big Break	CC24		Launch	
	Downtown Suisun City	So14		Launch	Conditionally Designated
	Suisun City Marina	So12		Launch	Conditionally Designated
East San Pablo Bay	Lone Tree/Rodeo Beach	CC23		Launch	
	Pinole Bay Front Park	CC6		Launch	
	Point Pinole	CC21		Destination	

Geographic Region	Site Name	Site ID	Planned	Launch/ Destination	Notes
Richmond Area	Barbara & Jay Vincent Park	CC17		Launch	
	Boat Ramp Street Launch Area	CC11		Launch	
	Ferry Point	CC10		Launch	Conditionally Designated
	Keller Beach	CC9		Destination	
	Point Isabel Regional Shoreline	CC19		Launch	
	Point Molate Beach Park	CC8		Launch	
	Richmond Municipal Marina	CC14		Launch	
	Shimada Friendship Park	CC16		Launch	
	SS Red Oak Victory	CC20	Planned	Destination	
Albany/Berkeley/ Emeryville	Albany Beach	A1		Launch	
	Berkeley Marina, Ramp	A2		Launch	
	Berkeley Marina, Small Boat Launch	A26		Launch	
	Emeryville City Marina	A6		Launch	
	Point Emery	A4		Launch	
	Shorebird Park	A5		Launch	
Oakland Waterfront	Doolittle Drive; Airport Channel	A18		Launch	
	Elmhurst Creek	A28		Launch	
	Encinal Launching and Fishing Facility	A15		Launch	
	Estuary Park/Jack London Aquatic Center	A11		Launch	
	Grand Avenue Boat Ramp	A12		Launch	
	Jack London Square/CCK	A9		Launch	
	Middle Harbor Park	A8		Launch	
	Robert Crown Memorial State Beach	A14		Launch	
	Tidewater Boating Center	A25		Launch	Conditionally Designated
Southern Alameda County	Eden Landing Ecological Reserve	A22	Planned	Launch	
	Jarvis Landing	A24		Launch	
	San Leandro Marina	A20		Launch	

Geographic Region	Site Name	Site ID	Planned	Launch/ Destination	Notes
Peninsula and South Bay	Alviso Marina County Park	SC2		Launch	Fully Designated
	Bair Island Aquatic Center	SM26	Planned	Launch	
	Beaches on the Bay	SM11		Launch	
	Colma Creek/Genentech	SM20		Launch	
	Corkscrew Slough Viewing Platform	SM25	Planned	Destination	
	Coyote Point Recreation Area	SM23		Launch	
	Coyote Point, Marina	SM17		Launch	
	Docktown Marina	SM6		Launch	
	East 3rd Ave	SM13		Launch	
	Old Bayshore Highway	SM18		Launch	
	Oyster Point Marina	SM21		Launch	
	Palo Alto Baylands Launching Dock	SC3		Launch	Conditionally Designated
	Redwood City Municipal Marina	SM4		Launch	
	Seal Point Park	SM16		Launch	
	Westpoint Marina	SM24	Planned	Launch	
Southern San Francisco Waterfront	Candlestick Point SRA	SF1		Launch	
	Crane Cove Park/Pier 70	SF18	Planned	Launch	
	India Basin Shoreline Park	SF2		Launch	
	Islais Creek	SF4		Launch	
	Mission Creek	SF15		Launch	
	Pier 52 Boat Launch	SF7		Launch	
	South Beach Harbor (aka Pier 40)	SF8		Launch	
Northern San Francisco Waterfront	Aquatic Park	SF10		Destination	
	Crissy Field	SF12		Launch	
	Marina Green	SF19		Launch	
	Pier 1.5	SF16		Destination	
	Pier 39	SF17	Planned	Launch	
	Treasure Island	SF9		Launch	

Appendix B. Enhancing Accessibility of Water Trail Sites

This appendix focuses on measures that site owners and managers may implement to enhance the usability of their sites for persons with disabilities. Information in the sections below builds on Chapter 2, which described the non-motorized small boat (NMSB) types supported by the Water Trail, their launching and landing needs, and the launching and landing environments available for public use around the San Francisco Bay Area.

Increasing opportunities to get out on the water involves enhancements to the launching and landing facilities as well as enhancements to other onsite features, such as restrooms, parking, drinking fountains, showers, and signage, if present. However, because these supportive features are thoroughly addressed in state and federal standards, most are not described in detail here or elsewhere in this Plan. Readers should refer to the resources in Chapter 5 for specifics about accessibility laws. A few general considerations are offered here:

- Minimize the distance between the water's edge and parking/public transportation, restrooms, boat storage, and rental facilities.
- Provide boat drop-off areas near the launch point.
- Maintain level, firm paths of travel.
- Provide accessible support facilities, such as restrooms, water sources, and parking spaces.

Every site will have unique conditions and will require an individual approach to improving accessibility. Some of the following site enhancements are creative solutions to physical barriers and are not addressed in the 2010 ADA Standards for Accessible Design or the State of California Code of Regulations, Title 24 California Building Code. Not all of these solutions and designs are appropriate for all sites or boat types. Cost estimates for potential site enhancements can be found in the cost estimate tables in Appendix C.

Site Enhancements - Toolkit for Physical Fixes

The information below addresses dock enhancements, beach access enhancements, and other enhancements.

A.1.1 Dock Enhancements

Low-freeboard Dock Systems



Image Credit Ann Buell

There are a multitude of manufacturers that offer docks that float 6 to 8 inches above the water line (“low-freeboard” docks). These docks are made of a variety of different materials, but primarily consist of floating drum pontoon systems supporting a single span dock, or polystyrene foam-filled or water-filled pieces that fit together as a puzzle. High-freeboard docks can be made more accessible if there is an attached low-freeboard dock and a suitable transition is provided between the two docks.

Dock systems have a variety of surfaces that have both advantages and disadvantages. For example, non-slip surfaces can help prevent falls, but can be abrasive to the human body and to the bottom of boats. Many users who may sit or scoot along the dock prefer a carpeted surface because it is softer and less likely to get too hot while others may find carpeted surfaces difficult to walk on.

Stability of the dock is another consideration. Low-freeboard docks can be problematic in water environments that are subject to high winds, boat wakes, and waves, because these conditions will affect the stability of the dock.

Low-freeboard Dock with Adaptive Features



Image Credit EZ Dock Accessible Accessories

Adaptive systems that may be used in conjunction with low-freeboard floating dock systems are produced by a variety of manufacturers and can be configured to best meet the needs of the site and boat users. This type of adaptive system typically includes single directional or multi-directional roller chutes that can accommodate stable loading and a “seal-type” launch ramp into the water. This system works in protected waters only, due to the effect of wave, wind, and wake action.

Finger Docks



Image Credit Ellen Miramontes.

Finger docks provide one or more slots for boats, consisting of 36-inch-wide openings with 36 to 48-inch-wide docks on both sides of the boat slot. This allows the watercraft to be supported on both sides for easier entry and exit from the craft. Finger docks are generally custom built systems specific to the site and nature of use.

Toe Boards



Image Credit Galli Basson

Toe Boards provide low-profile edge protection at the edge of docks to assist people with visual impairments by creating a detectable barrier and serve as an edge stop for wheeled mobility devices (strollers, walkers, wheelchairs, etc.), whether assisted or unassisted. It is important to note that Toe Boards may create a tripping hazard for people with limited use of their legs who do not use wheelchairs or mobility devices. Given this countervailing hazard, Toe Boards are not necessarily recommended, but may be considered to provide edge protection and an edge stop.

If installed, Toe Boards should be painted to provide a color contrast with the adjacent surface to increase visibility to persons with limited vision. Color contrast is measured with regard to the brightness and darkness of the reflected lights. When possible, the Toe Board should be installed so that there is a limited space between the Toe Board and the dock surface to reduce the potential for the front of a person's foot to become wedged there by accident. Toe Boards are not preferred when transfer into a watercraft is accomplished from the surface of the dock.

When edge protection is provided, the California Building Code (California Code of Regulations, Title 24, Chapter 11B) requires that it be no more than 4-inches high and no more than 2-inches wide. [California Building Code §§11B-1003.3.1, 11B-1003.3.2]

Gangways



Image Credit Galli Basson

Gangways should be designed to provide the minimum slope feasible for a given site. By extending the length of gangways, maximum grades are decreased at the lowest tides or water levels. At the same time, longer gangways should have level resting areas so that a person using a wheelchair or other mobility device will have the opportunity to slow down the speed of descent or rest. Gangways should be smooth and have proper handrails as well.

Transition plates create a secure connection between the shore surface or dock surface and the gangway. They allow for an accessible path of travel free of changes in level that would prohibit a person using a wheelchair or other mobility device from proceeding. Using a long transition plate is recommended to reduce the potential slope if the available space can accommodate the increased length.

Both the Federal 2010 ADA Standards for Accessible Design and the California Building Code have sections concerning gangways and their design. The following is a brief summary of the requirements:

- Gangways must have a minimum clear width of 48 inches. [California Building Code §11B-405.5]
- Level landings are required at the top and bottom of the ramp run when transition plates are not connected to the gangway. The top landing is required to be a minimum of 60 inches by 60 inches with no more than a 2% slope in any direction. The bottom landing is required to be a minimum of 72-inches long by the width of the ramp or gangway with no more than a 2% slope in any direction. [2010 ADA Standards for Accessible Design §405.7, California Building Code §11B-405.7].
- Compliant handrails are required on gangways. See sections 505 of the 2010 ADA Standards for Accessible Design and 11B-505 of the California Building Code. For exceptions to handrail extensions, see sections 1003.2.1.6 of the 2010 ADA Standards for Accessible Design and 11B-1003.2.1.6 of the California Building Code.

In many respects, gangways are treated similarly to ramps but there are some exceptions unique to gangways serving boating facilities. These can be found in section 1003.2.1 of the 2010 ADA Standards for Accessible Design and section 11B-1003.2.1 of the California Building Code.

- The rise of a single run gangway may be greater than 30 inches before a level resting interval is needed.
- The gangway may be steeper than 8.33 percent where the length of the gangway, or series of gangways, is greater than 80 feet.
- The gangway may be steeper than 8.33 percent where the boating facility contains fewer than 25 boat slips and the length of the gangway, or series of gangways, is greater than 30 feet.

Transfer Boards



Image Credit EZ Dock

Transfer boards are moveable or permanent boards that extend out over a floating watercraft to stabilize a boat and make entry and exit easier, by allowing the boat passenger to slide in a sitting position onto the boat. Permanent boards are also available for other transfer systems.

Transfer Tiers (Tidal Tiers)

Transfer tiers are a conceptual design solution from Beneficial Designs, Inc. comprised of a step system with 36-inch-long treads and low risers (8 to 9 inches) with a transfer platform provided at the top tier. The top tier is located at the high tide level. When combined with transfer steps (see below) a transfer tier system increases access for many individuals. The design principal is derived from similar applications defined in playground and swimming pool standards contained in the 2010 ADA Standards for Accessible Design. This solution provides a more durable solution in areas that may be subject to extreme wind, weather, or wave conditions.

Transfer Step System



Image Credit Galli Basson

The transfer step system, composed of a transfer platform, transfer steps and grab bars is found in the code sections for swimming pools: 2010 ADA Standards for Accessible Design §1009.5 and California Building Code §11B-1009.

Transfer steps are a series of box-style steps that allow a person to shift between a sitting position and the dock/ground level or the entry level of the watercraft.

Transfer Platform. A transfer platform is an elevated horizontal surface at the same height as the seat on a wheelchair onto which a person shifts to or from the wheelchair before moving up or down transfer steps. The basic criteria are as follows:

- A transfer platform is a minimum of 19-inches deep and 24-inches wide and is provided at the top of the transfer system.
- A clear floor space of 60 by 60 inches is centered adjacent to the transfer platform.
- The clear floor space has a 2% maximum slope in all directions.
- The height of the transfer platform is 16 to 19 inches above the dock.

Transfer Steps. Transfer steps are stairs that assist a person in moving up or down between the transfer platform and their destination. The basic requirements are:

- The maximum transfer step riser height is 8 inches.

Appendix B. Enhancing Accessibility of Water Trail Sites

- Ideally, transfer steps consist of a series of 3 steps at heights of 18 inches, 12 inches, and 6 inches in succession. Transfer steps can be permanent or moveable. The 8-inch maximum change in elevation is consistent with the transfer step concept codified in the Play Equipment Accessibility Standards found in the 2010 ADA Standards for Accessible Design §1008.3.2 and the California Building Code §11B-1008.3.2.
- The surface of the transfer system is free of sharp edges.
- Each transfer step has a tread depth of 14 to 17 inches and is a minimum of 24 inches wide.

Grab Bars. A grab bar assists a person in transferring from a wheelchair onto the transfer system. The basic requirements include:

- A grab bar (either continuous, or at each step and the platform) is provided on at least one side of each step and the transfer platform.
- The grab bar at the transfer platform does not obstruct transfer at the clear deck space.
- The top of the grab bar gripping surface is 4 to 6 inches above the tread (nosing) and platform.
- The diameter of the grab bar is 1-1/4 to 2 inches or provides an equivalent gripping surface.
- Grab bars do not rotate in their fittings and will support a minimum 250 lb. load.
- Grab bars are not sharp or abrasive.

Overhead Transfer Lift



Image Credit Water Trail

A lifting device, similar to a pool lift, can be used to assist a person in transferring between the dock and a watercraft. Independent use of the lift is often facilitated by a control device located on a flexible cable. The lift can be fitted with a chair or a sling. The type of seat or sling used must be compatible and usable by the individual. An overhead lift may be most useful for assisting a person with exiting the watercraft.

While independent use of a transfer lift is required, lifts are typically in locations where lifeguards or assistants are on duty. Transfer lifts are not recommended in locations where they are not supervised.

The section of the 20101 ADA Standards for accessible designs that addresses pool lifts provides the most appropriate design to apply to watercraft overhead transfer assistance systems. While some aspects of the Standards, like submersion depth of the

seat and water depth are not applicable, the mechanical and operational requirements provide useful guidance.

The following standards are established by the 2010 ADA Standards for Accessible Design §1009.2 and the California Building Code §11B-1009.2:

- When in the raised position for loading, the centerline of the seat is a minimum 16 inches from the water's edge.
- The seat has a clear floor space of 36 inches by 48 inches with a slope no greater than 2 percent in any direction.
- The seat of the lift is a minimum of 16 inches wide.
- The seat stops at 17 to 19 inches above the floor surface when raised to the loading position.
- The seat has a restraint for the use of the occupant with accessible operable parts able to be used by the occupant.
- The seat is rigid and has a back support that is 12 inches tall.
- Footrests are provided and move with the seat.
- The seat has two armrests. The one opposite the water is removable or can be folded clear of the seat.
- The lift is capable of unassisted operation.
- The lift seat is stable and does not permit unintended movement when a person is getting into or out of the seat.
- The lift has a minimum load capacity of 300 lbs and is capable of sustaining a static load of at least one and a half times the rated load.

Beach Access Enhancements

Beach Matting



Image Credit Galli Basson

Roll-out matting that is easy to transport and can be temporarily staked out across a soft sand beach provides a relatively firm and stable surface to connect site features such as parking, restrooms, and paths of travel to a location close to the water's edge. These types of matting require a varying regime of maintenance to ensure that grade and cross slope requirements are maintained, and to remove accumulated sand from the surface. The expected lifespan of beach matting surfaces varies by type and some products may be permanently installed while others are placed on a temporary basis.

Design standards pertinent to selecting and installing temporary beach matting can be found in section 1018 of the 2010 ADA Standards for Accessible Design and include:

- The mat provides a firm and stable surface.
- The clear width of the beach access route is a minimum of 60 inches.

- The beach access route connects an accessible entry point to the beach to the high tide line at tidal beaches or to the mean high water level at river beaches.
- Obstacles or openings are not larger than ½ inch.
- Slopes are no greater than 10%. Where the running slope of a segment of the beach access route is between 5% and 8.33% the maximum length of that segment is 50 feet between level resting sections. Where the running slope of a segment of the beach access route is between 8.33 and 10% the maximum length of that segment is 30 feet between level resting sections.

Boardwalk

A boardwalk is a permanently accessible path made of wood or plastic boards and pier piles that traverses relatively level soft sand or excessively wet, soft surfaces.

Boardwalks or raised walks are also used in locations where the ground surface is sensitive to pedestrian traffic.

Boardwalks are not applicable for use when the boardwalk surface will be under water. In beach environments where blowing sand will drift onto the boardwalk, regular maintenance is required.

Requirements applicable to boardwalks can be found in the 2010 ADA Standards for Accessible Design §§206.2.2, 302, 303, and 403. California Building Code requirements can be found in §§11B-206.2.2, 11B-302, 11B-303, 11B- 403, and 1013.2.

- The boardwalk is continuous without steps. [2010 ADA Standards for Accessible Design §206.2.2, California Building Code §11B-206.2.2]
- The running slope is 5 percent (1:20) maximum. [2010 ADA Standards for Accessible Design §403.3, California Building Code §11B-403.3]
- The cross slope is 2 percent (1:48) maximum. [2010 ADA Standards for Accessible Design §403.3, California Building Code §11B-403.3]
- The boardwalk is a minimum of 48-inches wide. [2010ADA Standards for Accessible Design §403.5.1, California Building Code §11B-403.5.1.3]
- Surface level changes do not exceed ¼ inch. This includes raised boards or cracks along the surface. One-half inch changes can be permitted with a beveled slope of 50 percent (1:2) maximum. [2010 ADA Standards for Accessible Design §§303.2, 303.3, California Building Code §11B-303.2]
- Openings are ½ inch or smaller where a sphere larger than ½ inch cannot pass through the opening. [2010 ADA Standards for Accessible Design §302.3, California Building Code §11B-302.3]
- Any openings on the surface are positioned so that the longest dimension of opening is perpendicular to the predominant path of travel. [2010 ADA Standards for Accessible Design §302.3, California Building Code §11B-302.3]

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- If the change in level to the adjacent surface is greater than 4 inches, a warning curb, 6 inches minimum in height, is provided. [California Building Code §11B-303.5]
- If the level change between the boardwalk and a lower adjacent surface exceeds 30 inches in height, a 42-inch minimum high guardrail is provided. [California Building Code §1013.2]

Concrete Access Route with Beveled edges

This design resembles standard concrete construction for a permanent route, except that the edges are beveled down at a 30% slope and extend beyond the path of travel 12 to 24 inches into the soft sand surface. This allows sand to sweep up and over the concrete and not deposit on its surface. It is easier to maintain, and does not hold drifts of sand the way that curbing does. Visual accessibility may be maintained by installing detectable surfacing where the bevel meets the tread surface.

This potential solution was suggested by Beneficial Design in “San Francisco Bay Area Water Trail Issues and Recommendations for Improved Accessibility.”

Beach Wheelchair



Image Credit Galli Basson

Beach wheelchairs are equipped with large, wide wheels, which can roll across the sand without sinking. Many products require users to be accompanied by someone to push the chair, but there are also motorized chairs that may be self-propelled. Beach wheelchairs are most commonly made available by a lifeguard or at the entrance kiosk at a beach, but concessionaires may also be tasked with providing them.

There are many manufacturers of beach wheelchairs.

Other Enhancements

Wheeled Boat Cart



Image Credit Ann Buell

An amenity that can be made available on-site or carried to a site by a boater is a wheeled boat cart that can be used to transport a small boat from a storage area or vehicle drop off to the water. For use on a sandy beach or rough terrain, wheeled carts with large balloon tires are preferred. Some carts are compact enough to fit into the hatches of kayaks or are easily stowed in canoes.

Storage and Security

On-site storage for both boats and mobility devices at launch and landing sites will assist all boaters participating in non-motorized small boat activities on the water.

On-site boat storage is convenient for people who frequent the same launch and landing site because they do not have to transport the watercraft from home. Some

Appendix B. Enhancing Accessibility of Water Trail Sites

concessionaires providing on site storage have a valet service that, when notified, will put the boat in the water and have it launch-ready for the boater.

Mobility device storage and security at the launch/landing site provides the boater with assurance that their personal means of travel will be available when they have completed their outing.



Image Credit Galli Basson

Applying Site Enhancements for Launching and Landing Site Conditions

Beach Launch and Landing

Beaches, whether rocky or sandy, typically do not provide a firm and stable surface. Feet, wheelchairs, and other mobility devices such as canes, walkers or scooters have a tendency to sink in soft sand and there are tripping hazards associated with rocky shores. Sand and beach surfaces often change with tides, storm surges and littoral currents. Beach slopes can be steep. Steep embankments are hard to maneuver, especially when the surface gives way. Scrambling is not an option for many people.

Potential Design Solutions: The goal for beaches is to stabilize the beach surface so that people can approach the water line and bring their boat to the water's edge. Tides, currents and specific beach conditions complicate matters. Solutions that have worked to assist people in launching and landing small boats on beaches include:

- 1) Boardwalks
- 2) Temporary or permanent beach access matting
- 3) Concrete access routes with beveled edges
- 4) Tidal tiers
- 5) Wheeled boat cart
- 6) Beach Wheelchair

Examples of existing launch sites with beaches where design solutions may be seen:

- Crissy Field (GGNRA, San Francisco): beach matting
- Barbara and Jay Vincent Park (Richmond): concrete access path

High-Freeboard Dock

High-freeboard docks may be the best choice for certain boat types such as dragon boats and whale boats with high gunnels. However, a drop greater than 9 inches from the surface of the dock to the surface of the water is difficult to navigate for many people who use small boats that sit low in the water (such as canoes, surf skis and kayaks). Good balance is required to avoid tipping the canoe or kayak over when entering, and a high-freeboard dock increases the amount of time and muscle power required to shift from the dock surface to the seat of the watercraft and vice-versa.

Potential Design Solutions: Enabling people to get closer to the water level from a high-freeboard dock can be facilitated by the following:

- 1) Adding a separate low-freeboard dock
- 2) Modifying the high-freeboard dock with a low-freeboard section
- 3) Providing an overhead transfer lift

Examples of existing launch sites with high-freeboard docks where design solutions may be seen:

- Downtown Napa Main Street Dock (Napa): low-freeboard dock section (summer only)
- Pier 40 (San Francisco): overhead transfer lift

1.1.1 Low-Freeboard Dock

Low-freeboard docks can be better than high-freeboard docks for many boat types, but getting from the dock into a boat is still a challenge for many people. Some of the elements listed under high-freeboard docks are also appropriate here with regard to balance and the height of the edge of the watercraft itself.

Potential Design Solutions: Easing the process of getting from the water onto the dock, and into or out of the boat can be facilitated by the following:

- Roller type launch and landing platform
- Finger docks
- Transfer steps
- Transfer boards

Examples of existing launch sites with low-freeboard docks where design solutions may be seen:

- Marina Green (San Francisco): Roller type launch and landing platform
- Pier 52 (San Francisco): added transfer steps
- Cullinan Ranch (Solano County): finger docks (site not open yet)

1.1.2 Boarding Piers at Boat Launch Ramps

Boat ramps are useful for backing up a boat trailer and launching a boat, however they are often slippery, and are then not well-suited for walking or wheeling. With an incline designed for boat trailer launching, and with a concrete surface that is subject to algae growth and exposed slippery surfaces when the tide is out, it is very easy to slip or roll into the water. Launch ramps also do not have level landings at the bottom of the ramp.

A boarding pier adjacent to the boat ramp can serve as a better location to launch and land a small, non-motorized boat. Boarding piers adjacent to boat ramps are most often constructed with only a high-freeboard dock to accommodate power boats. The inclusion of a low-freeboard dock at boarding piers adjacent to boat ramps will facilitate accessible launching and landing.

Potential Design Solutions: An accessible boarding pier associated with a launch ramp provides opportunity for a wide variety of boat types. Design solutions would be the same as for high-freeboard docks if the pier is not too high above the water's surface. If the boarding pier is clearly too high for entry into low-profile NMSBs, then one of the following design solutions may apply.

- 4) Gangway and Transition Plate leading to a high or low-freeboard dock
- 5) Low-freeboard dock
- 6) Overhead transfer lift

Tax Considerations

Some of the site enhancements and adaptive equipment discussed in the previous section are not expensive but others require significant investment. This subsection describes some of the financial incentives and other mechanisms available to help offset the costs of site accessibility improvements and barrier removal. Any business hoping to utilize these incentives should contact its tax professional for advice.

Tax Incentives

Two tax incentives are available to businesses to help cover the cost of making access improvements. The first is a tax credit that can be used for architectural adaptations, equipment acquisitions, and services such as sign language interpreters. The second is a tax deduction that can be used for architectural or transportation adaptations.

(NOTE: A tax credit is subtracted from the tax liability after taxes are calculated, while a tax deduction is subtracted from the total income before taxes, to establish the taxable income.)

Tax Credit

The tax credit, established under Section 44 of the Internal Revenue Code, was created in 1990 specifically to help small businesses cover ADA-related “eligible access expenditures.” A business that for the previous tax year had either revenues of

\$1,000,000 or less or 30 or fewer full-time workers may take advantage of this credit. The credit can be used to cover a variety of expenditures, including:

- Purchase of adaptive equipment
- Production of accessible formats of printed materials (i.e., Braille, large print, audio tape, computer diskette)
- Removal of architectural barriers in facilities or vehicles (alterations must comply with applicable accessibility standards)
- Fees for consulting services (under certain circumstances)
- Provision of readers for customers or employees with visual disabilities
- Production of accessible formats of printed materials (i.e., Braille, large print, audio tape, computer diskette)
- Provision of sign language interpreters

Note that the credit cannot be used to cover the costs of new construction. It can be used only for adaptations to existing facilities that are required to comply with the ADA. The amount of the tax credit is equal to 50% of the eligible access expenditures in a year, up to a maximum expenditure of \$10,250. There is no credit for the first \$250 of expenditures. The maximum tax credit, therefore, is \$5,000.

The tax credit can be used annually. One may not carry over expenses from one year to the next and claim a credit for the portion that exceeded the expenditure limit the previous year. However, if the amount of credit one is entitled to exceeds the amount of taxes one owes, one may carry forward the unused portion of the credit to the following year. More information is provided in IRS Publications 535 and 334.

Tax Deduction

The tax deduction, established under Section 190 of the Internal Revenue Code, is now a maximum of \$15,000 per year—a reduction from the \$35,000 that was available through December 31, 1990. A business of any size may use this deduction for the removal of architectural or transportation barriers. The renovations under Section 190 must comply with applicable accessibility standards. Small businesses can use these incentives in combination if the expenditures incurred qualify under both Section 44 and Section 190.

The tax deduction can be used annually. One may not carry over expenses from one year to the next and claim a deduction for the portion that exceeded the expenditure limit the previous year. More information is provided in IRS Publications 535 and 334.

Appendix B. Enhancing Accessibility of Water Trail Sites

- Site owners and managers intending to use this tax credit must consult a tax professional to verify this information, as laws change and the authors of this Accessibility Plan are not tax professionals. The description in this section is provided for informational purposes only.

Appendix C. Costs for Site Enhancements and Other Features

The purpose of including these estimated costs for some common site enhancements and other site features is to provide site owners and managers with comparative cost ranges for their initial consideration when planning enhancements to improve launching and landing site accessibility. These costs are based on manufacturers' product information and do not include permitting, delivery, installation, or maintenance costs.

Estimated Costs for Site Enhancements

The following costs were compiled in the second quarter of 2014, and are subject to change.

Beach Mats

In addition to materials, and the other costs mentioned above, installing a beach mat will require site grading and staking.

Cost: \$8-9 per square foot for beach matting only

Beach Wheelchairs

Beach wheel chairs require storage. The potential cost for storage can vary greatly from site to site and is not included in the cost shown below.

Cost: \$1,400 - \$2,500 each (chair only)

Low-freeboard kayak/canoe launch

Low-freeboard launches require anchoring. The cost of anchoring is site-specific and not included in the cost shown below.

Cost: \$35 - \$45 per square foot for low freeboard floating dock

Complete systems from \$5,000 to \$35,000

Low-freeboard Docks

Like low-freeboard launches, low-freeboard docks require anchoring, which is not included in the cost shown below.

Appendix C. Costs for Site Enhancements and Other Features

Cost: \$25 - \$50 per square foot (dock only)

Overhead Transfer Lifts

Cost: \$2,500 - \$5,000 each

Transfer Steps

Cost: \$1,500 - \$3,000 each

Gangways

Cost: \$45 - \$60 per square foot for gangway only

Cost Estimates for Other Site Features

The tables in this section provide detailed information on estimated costs for accessible site features on land. The costs shown are based on cost estimating reference materials and a 2013 review by cost estimating professionals. Costs listed here will vary based on the scale and scope of a project, and do not reflect associated permitting, delivery, installation, or maintenance costs. The following items are presented:

- Parking
- Paths of Travel
- Restrooms
- Information
- Amenities

Appendix C. Costs for Site Enhancements and Other Features

Parking

Parking		
A regular accessible parking space with access aisles and signage	\$2,570	each
A van accessible parking space with access aisles and signage	\$2,945	each
Relocate existing wheel stops to provide a 48" path of travel	\$160	each
Install a van sign on a pole or wall	\$375	each
Stripe an access aisle	\$210	each
Stripe a parking space	\$175	each
Stencil a wheelchair symbol on a parking space	\$210	each
Regrade parking space or access aisle (asphalt surface)	\$1,600	each
Regrade parking space or access aisle (concrete surface)	\$2,875	each

Paths of Travel

Curb Ramps		
Install a new curb ramp with flared sides	\$2,460	each
Install a new "parallel" curb ramp	\$4,000	each
Provide a level top landing 48" x 48" space at the top (2%)	\$2,000	each
Regrade gutter to provide a 36"x48" space at base (less than 5%)	\$2,500	each
Install detectable warnings (truncated domes)	\$1,000	each
Resurface curb ramp to provide firm and stable slip resistant surface.	\$5	per square foot
Saw-cut or tool a grooved border at the top of the curb ramp	\$300	each
Grind or patch vertical change of grade	\$250	each
Walks		
Provide a 48" wide accessible walk (concrete)	\$50	per linear foot
Install a warning curb at the edge of a 4"+ drop-off	\$20	per linear foot
Provide a detectable warning next to hazardous vehicular area	\$50	per linear foot
Remove overhanging or protruding objects (tree branch)	\$125	each
Provide passing space (concrete)	\$10	per square foot
Provide passing space (asphalt)	\$5	per square foot
Modify surface to provide a slip resistant texture	\$5	per square foot
Install an accessible tree grate	\$2,000	each
Install an accessible catch basin cover or drainage grate	\$1,000	each
Install an accessible trench drain grate	\$115	per linear foot
Install a new concrete walk	\$10	per square foot
Install a new asphalt walk	\$5	per square foot
Grind or patch vertical change of grade	\$250	each
Widen a concrete walk	\$10	per square foot
Widen an asphalt walk	\$5	per square foot

Appendix C. Costs for Site Enhancements and Other Features

Ramps		
Add handrail extensions to end posts (wood)	\$300	each
Install a handrail in concrete ramp	\$125	per linear foot
Install a pipe handrail on a wall	\$35	per linear foot
Modify handrail or wall to provide a minimum of 1-1/2" between wall and rail	\$35	per linear foot
Modify handrail to return to wall, floor or upright	\$200	each
Modify surface of wall to eliminate abrasive texture next to handrail	\$10	per linear foot
Provide new handrails to reduce diameter of gripping surface (steel)	\$125	per linear foot
Raise or lower existing handrail	\$70	per linear foot
Weld handrail extensions to existing steel pipe handrails	\$125	each
Install a warning curb or wheel-guide at the edge of the ramp	\$25	per linear foot
Provide a level landing at top or bottom of ramp	\$10	per square foot
Modify surface to provide a slip resistant texture	\$5	per square foot
Replace or construct new ramp (concrete)	\$425	per linear foot
Replace or construct new ramp (wood)	\$150	per linear foot
Grind or patch vertical change of grade	\$250	each
Hazards		
Install a warning curb at the edge of a 4"+ drop-off	\$25	per linear foot
Remove overhanging or protruding objects (paper towel or other wall mounted dispenser)	\$125	each
Remove overhanging or protruding objects (tree branch)	\$125	each
Remove overhanging or protruding objects (sign) (add modification \$)	\$125	each
Remove overhanging or protruding objects (provide cane detectable barrier)	\$125	each
Install an accessible grate	\$250	each

Appendix C. Costs for Site Enhancements and Other Features

Doors/Gates		
Adjust door closer timing	\$125	each
Adjust door closer pressure	\$125	each
Provide sign to indicate the location of accessible entrance	\$200	each
Provide an ISA on entrance door	\$210	each
Install a kick-plate	\$225	each
Install an automatic door opener	\$450	each
Replace hinges with off-set type hinges	\$350	per door
Install a new door (height and/or width is inadequate)	\$1,650	each
Increase the maneuvering space	\$1,000	each
Reverse the door swing at doors in a sequence	\$450	each
Install a permanent room sign or EXIT sign at door	\$250	avg.
Raise or lower existing accessible hardware	\$125	each
Replace door knob with lever-type handle	\$425	each
Regrade or level the floor or surface	\$2,500	each side
Replace or modify threshold	\$125	each
Reverse the door swing (to provide compliant strike edge space)	\$450	each
Provide strike edge clearance at door	\$2,500	each
Install an automatic door closer (cannot modify strike edge)	\$1,000	each

Restrooms

Multiple or Single User Restrooms		
Expand turn-around area by relocating fixtures or partitions	\$3,000	each
Raise an existing sink	\$1,350	each
Widen space in the restroom by relocating fixtures or partitions	\$3,000	each
Provide a Braille and raised letter sign on the wall adjacent to the door	\$250	each
Provide a symbol-type sign (circle or triangle) on the restroom door	\$250	each
Insulate hot water and drain lines	\$125	per lavatory
Adjust the height or relocate a light switch	\$200	each
Raise or lower the height of an existing fire alarm activation device	\$200	each
Raise the height or relocate an electrical outlet	\$200	each
Lower or relocate existing dispenser or waste container	\$350	each
Multiple or Single User Restrooms (continued)		
Lower or relocate existing mirror	\$150	each
Relocate existing toilet paper dispenser	\$125	each
Relocate existing toilet seat cover dispenser	\$125	each
Relocate toilet so that center line is between 16-18" from adjacent wall	\$1,250	each
Install new grab bars	\$300	each
Modify wall to support grab bars	\$1,000	each
Raise or lower existing grab bars	\$200	each
Install a new urinal (rim is greater than 14" from wall)	\$3,000	each
Provide new urinal shields	\$1,000	pair
Raise or lower an existing urinal	\$1,500	each
Widen the distance between existing urinal shields	\$500	pair
Replace water controls	\$500	each
Install a new sink (existing sink does not have adequate tolerances)	\$3,000	each
Lower or raise existing sink	\$1,500	each
Move sink to provide 18" between center line and adjacent wall	\$1,500	each
Install stall door handle	\$175	each
Install stall door locking mechanism	\$175	each

Appendix C. Costs for Site Enhancements and Other Features

Modify compartment partition and install new compartment door	\$750	each
Modify compartment partition to increase space in front of toilet	\$500	each
Modify compartment partition to provide 32" beside toilet	\$500	each
Modify compartment partition to provide 60" minimum width	\$500	each
Re plumb toilet so that the flush control is on the side away from the wall	\$750	each
Install new toilet fixture	\$3,000	each
Install new toilet seat with lifts	\$200	each
Install a visual fire alarm	\$450	each
Raise or lower an existing visual fire alarm	\$250	each
Widen entrance corridor (or move privacy screen) into restroom	\$1,000	per linear foot

Amenities

Drinking Fountains		
Modify floor or ground surface to provide a clear, level surface	\$1,000	each
Provide wing walls on both sides of fountains that are protruding hazards	\$1,000	pair
Adjust the water stream height or direction	\$125	each
Install an additional high or low fountain	\$3,000	each
Lower or raise the fountain	\$1,000	each
Replace the entire fountain (can not be lowered or raised, controls, etc.	\$3,000	each
Adjust the water control pressure or handle type	\$125	each
Telephones		
Modify floor or ground surface to provide a clear, level surface	\$1,000	each
Provide a volume control sign	\$225	each
Provide a TTY/TTD sign	\$210	each
Provide new telephone equipment (cord length, volume control, touch tone)	\$0	Telephone Co.
Provide new telephone equipment (phone booth has inadequate dimensions)	\$0	Telephone Co.
Relocate telephone book	\$125	each
Lower the telephone	\$500	each
Modify telephone cabinet so it does not present a protruding hazard	\$500	each
Provide a shelf and an outlet for the TTY telephone	\$1,800	each
Provide a TTY telephone	\$1,500	each

Appendix C. Costs for Site Enhancements and Other Features

Picnic Areas		
Raise the picnic table to increase knee space	\$500	each
Extend the length of the table top to increase knee space	\$500	each
Modify the table structure to provide toe clearance or width of knee space	\$500	each
Provide new accessible picnic table	\$2,500	each
Modify surface to provide adequate maneuvering space at the accessible table	\$700	each
Modify the surface at the accessible table to be firm and stable	\$700	each
Regrade the ground surface to be 2% max. in any direction	\$700	each
Provide an accessible picnic unit.	\$3,200	each
Cooking Surfaces, Grills, Pedestal Grills	\$2,000	each
Modify surface to provide adequate maneuvering space at the grill	\$350	each
Provide single ADA grill	\$2,000	each
Modify the surface around the grill to be firm and stable	\$350	each
Outdoor Constructed Feature		
Clear space near outdoor bench.	\$700	each
Modify surface to provide adequate maneuvering space at the refuse/recycling container	\$700	each
Provide new fixed trash/recycling can	\$500	each
Modify handles or openings to be within reach ranges	\$250	each
Modify controls and mechanisms to operate with 5 lbs. max. force	\$500	each
Modify controls and mechanisms to eliminate grasping and twisting	\$500	each
Modify the surface around the container to be firm and stable	\$700	each
Regrade the ground surface to be 2% max. in any direction	\$700	each
Modify surface to provide adequate maneuvering space at the bench	\$700	each
Modify the surface around the bench to be firm and stable	\$700	each
Regrade the ground surface to be 2% max. in any direction	\$1,000	each
Provide an accessible fixed bench	\$1,500	each

Information

Signs		
Replace overhead signs with signs with 3" letters	\$500	each
Install permanent room sign or EXIT sign at door	\$250	each
Relocate an existing sign to another location	\$125	each