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## 4 CUMULATIVE IMPACTS AND OTHER CEQA SECTIONS

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## 4.0 CUMULATIVE IMPACTS AND OTHER CEQA SECTIONS

“*Cumulative impacts*” refers to “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” (CEQA Guidelines, Section 15355). This section of the EIR focuses only on potential impacts due to implementation of the Water Trail Plan in combination with other reasonably foreseeable projects and general (non-WT-induced) growth of boating on the Bay. Potential regional impacts of the WT (analysis of the designation or use of many WT sites in combination) were discussed in Chapter 3.

CEQA also requires evaluation of potential growth-inducing impacts of the project, discussion of significant unavoidable effects, if any, and the irretrievable/irreversible commitments of any environmental resources. These issues are discussed following the evaluation of potential cumulative impacts.

### 4.1 Cumulative Impacts

CEQA Guidelines Section 15130(b)(1) specifies that cumulative impacts analyses should use either a list of past, present, and probable future project that may have impacts overlapping those of the proposed project, or a summary of projections contained in an adopted document. As detailed below, this EIR uses a hybrid approach that includes: 1) Baywide projects that may have impacts overlapping those of the project, and 2) projections of increased numbers of motorized and other (typically) larger non-motorized boats on the Bay that are not included in the definition of NMSBs used in the Water Trail Plan.

Baywide projects that may have cumulative effects with the implementation of the WT Plan include the Bay Trail Plan, the Ferry Plan developed by the Water Emergency Transportation Authority, and various wetland restoration projects. There are two existing projections from the California State Department of Boating and Waterways (Cal Boating 2009) regarding potential increases in boating on the Bay:

- Projection 1: Increased use of the Bay by NMSBs absent the implementation of the WT (i.e., non-WT-induced growth)
- Projection 2: Increased use of the Bay by other (motorized and large non-motorized) boats (also non-WT-induced).

In addition, with respect to the evaluation of the cumulative effects of implementation of the WT Plan as it relates to greenhouse gas (GHG) emissions, this EIR uses the estimate of total GHG emissions in the Bay Area Air Basin provided in the June 2010, Bay Area Air Quality Management District (BAAQMD) “CEQA Air Quality Guidelines.”

#### 4.1.1 CUMULATIVE PROJECTS CONSIDERED IN THIS EIR

In addition to the projections and projects discussed below, numerous individual projects that affect the Bay margins (ranging from port improvement projects to commercial and residential developments to parks and recreational facilities) are likely to be implemented over the life of the WT Plan. Although those projects may have locally overlapping impacts with those of individual Backbone Sites (such as local traffic and parking impacts), they do not have the

potential for Baywide cumulative impacts when combined with the WT Plan. These locally overlapping impacts would be addressed in the CEQA reviews for specific Backbone Site improvements (i.e., Trailhead Plans).

#### PROJECTION 1: PROJECTED GROWTH IN NMSB USE OF THE BAY (WITHOUT THE WT PLAN)

As described in Chapter 2, Project Description, an extensive survey of NMSB use in California was performed by the California Department of Boating and Waterways in 2006 – 2007 (Cal Boating 2009). The survey states that in 2006, there were an estimated 372,233 individuals in the Bay Area participating in NMSB use of all kinds and that the total number of estimated NMSB participant-days associated with this region in 2006 was 7.4 million. As also explained in Chapter 2, the estimated number of participants days includes use of inflatables, which are generally not used on the Bay; subtracting out the percentage of inflatables results in an estimated 5.3 million participant-days. Actual use of NMSBs within the Bay is likely to be considerably lower, as less than half of the respondents in the survey listed San Francisco Bay as their most used waterway; NMSBs are also used on inland lakes and rivers, and other areas such as Tomales Bay.

Cal Boating projects that NMSB use throughout California will increase by an average 3.84% per year from 2006 to 2010 (see Chapter 2, Project Description for details, including definitions of low, medium, and high estimates). This “medium estimate” of 3.84% is based on the annual compound rate of growth in NMSB use between 2002 and 2006 (Cal Boating 2009) and calculates to be 2,228,077 participants statewide in the year 2010 (a total increase of 16.27% between 2006 and 2010). The low and high growth rate estimates would result in 2,063,801 (total increase of 7.70%) and 2,274,395 (total increase of 18.68%) participants, respectively.

The projected growth estimates provided in the Cal Boating survey are for the State of California as a whole with some regionally specific data about numbers of privately owned NMSBs, numbers of boating participants, and numbers of boating participation days. The Cal Boating survey does not provide specific projected growth figures for the San Francisco Bay Area, nor are there other reliable sources that could provide specific estimates.

#### PROJECTION 2: PROJECTED GROWTH IN RECREATIONAL BOATING USE OF THE BAY (WITHOUT THE WT PLAN)

Growth in recreational boating absent the WT will be comprised of growth in motorized boating and non-motorized boating. As discussed in Chapter 2, based on the two most recent applicable Cal Boating reports (Cal Boating 2002, Cal Boating 2009), motorized recreational boating is expected to increase by 1.4% to 2.5% per year, and non-motorized boating is expected to increase by 3.84% per year. The long-term growth in either motorized or non-motorized boating cannot be predicted with certainty; as also discussed in Chapter 2, growth in non-motorized boating is dependent on demographics and population growth, among other factors, and there are also trends in the use of specific types of NMSBs.

The total usage of motorized and non-motorized boats in the San Francisco Bay Area is substantial. There were an estimated 158,223 registered (predominantly motorized) recreational boats in the San Francisco Bay Area as of 2000, used an average of 25 days per year (Cal Boating 2002), for a total of approximately 3,960,000 participant-days in 2000. The estimated

annual growth rate of 1.4% to 2.5% corresponds to an additional approximately 2,200 to 4,000 motorized boats per year. Thus, growth in motorized boating would contribute an additional 527,000 to 984,000 days of motorized boat use by 2010, for a total of approximately 4,730,000 to 4,980,000 participant-days. NMSB use is expected to grow at a greater rate than motorized boat use, as discussed in Chapter 2, and the medium estimate is 3.84% per year (Cal Boating 2009). As described in detail in Chapter 2, NMSB use is expected to increase from approximately 5.3 million participant-days in 2006 to approximately 6.2 million participant days in 2010. Thus, the combined growth in motorized and non-motorized boating is expected to result in a total of up to 11.2 million participant-days by 2010, absent the WT.

The 2002 and 2009 Cal Boating studies also identified facilities needs for the Bay region, including the need for better waste pump-out facilities, additional boat slips, dock repairs, dredging, restrooms, storage, signage, gas pumps, parking, rigging areas, security and launching capacity.

#### SPECIFIC PROJECTS

##### *BAY TRAIL PLAN (ASSOCIATION OF BAY AREA GOVERNMENTS)*

The San Francisco Bay Trail is a planned bicycle and pedestrian trail system around the perimeter of San Francisco and San Pablo Bays, approximately 500 miles in length. Approximately 300 miles have been completed and are in use by the public. The Association of Bay Area Governments coordinates the completion of this regional trail through 47 cities and nine counties. Table 3.3.3-1 shows WT Backbone Sites that are adjacent to existing segments of Bay Trail spine. There is potential overlap between the two projects in the possibilities to share facilities such as restrooms and parking, construction efforts, and in increasing the overall number of visitors to these locations.

##### *FERRY PLAN (SAN FRANCISCO BAY WATER EMERGENCY TRANSPORTATION AUTHORITY)*

The Water Emergency Transportation Authority (formerly Water Transportation Authority) has adopted an Implementation and Operations Plan (WTA 2003) which has been analyzed in an EIR (URS Corporation 2003). WETA aims to increase regional mobility and transportation options by providing new and expanded water transit services and ground transportation terminal access in the San Francisco Bay Area. The WETA adopted the Final Transition Plan (Transition Plan) for the Bay Area on June 18, 2009.

There is potential for overlap with the WT in the siting of some of the new ferry terminals and potential expansion at others. In addition, new ferry routes would further increase the number of boats on the Bay. Proposed new routes include new routes to downtown San Francisco from Antioch-Martinez, Hercules, Berkeley, Redwood City, Treasure Island and Richmond, as well as a new South San Francisco-Oakland route. New terminal facilities may be required at some or all of these locations. The Transition Plan includes plans for three new service routes (Berkeley/Albany to San Francisco, Oakland to South San Francisco, and Treasure Island to San Francisco), environmental review of the San Francisco to Antioch-Martinez, San Francisco to Hercules, San Francisco to Redwood City, and San Francisco to Richmond routes, as well as investigation of other potential new routes as new major waterfront facilities are developed. With the three new ferry routes proposed in the Transition Plan, WETA estimates that there would be 94 daily (weekday) ferry trips.

*WETLANDS CREATION AND RESTORATION PROJECTS*

The State of California and the federal government together with local and regional agencies and non-profit organizations are currently working on the restoration of approximately 40,000 acres of former wetlands throughout the Bay region for wildlife, fisheries, flood management, and water quality enhancement. A large portion of these former wetlands would be returned to tidal action, and other areas would be managed as ponds, seasonal wetlands, and other types of habitats that support wildlife. In many areas, the restoration work would also provide for public access, wildlife-oriented recreation, and education opportunities. Construction of the restoration projects could cause temporary disturbances to wildlife, and may temporarily reduce available habitat in the vicinity of construction areas. Longer-term, these projects would increase the amount of habitat available to certain types of sensitive species.

**4.1.2 IMPACTS OF PROJECT COMBINED WITH CUMULATIVE PROJECTS AND PROJECTED NON-WT-INDUCED INCREASED BOATING**

The potential impacts for each resource area from the implementation of the WT Plan in combination with the cumulative projects and non-WT growth in NMSB use are evaluated below. Appropriate mitigation is also provided for each resource area, as needed. Potential cumulative impacts evaluated below include potential impacts to recreation, public services, navigational safety, biological resources, hydrology and water quality, and greenhouse gas emissions. Potential impacts to and mitigation measures for aesthetics, cultural resources, hazardous materials, land use planning, and transportation, circulation and traffic, are site-specific and would not result in Baywide cumulative impacts. Therefore these resources are not addressed further in this chapter.

**RECREATION**

Increases in both non-WT NMSB use and non-NMSB use would increase overall demand on existing and planned boat launching facilities. However, potential user conflicts would be evaluated during the trailhead designation process and the WT would strive to direct increased use to sites able to accommodate that growth. In addition, the WT would contribute to improved launch site facilities for NMSB as funding allows, and the overall increase in NMSB use attributable solely to implementation of the WT Plan would be small compared to the regional increases. The potential cumulative impact to recreation associated with increased recreational boating would be less than significant.

Implementation of the WT would complement the San Francisco Bay Trail program in providing for a full range of non-motorized recreational opportunities. Where the Bay Trail intersects with WT sites, the opportunity for sharing visitor amenities exists for the two programs (as identified in WT Strategy 2). The outreach and education functions of the Bay Trail could be used to provide information about the WT and vice-versa. While there could be individual locations where implementation of the WT Plan could conflict with new or expanded Bay Trail facilities, this potential concern would be site-specific. As such, this potential impact would be resolved through the trailhead planning process, and no cumulative impact would occur.

Potential user conflicts between WT sites and existing or new ferry terminals would be addressed during the trailhead designation process, and planning for new ferry terminals would require that potential impacts to nearby recreational facilities and recreational boating activities be addressed.

Thus, potential user conflicts at facilities would be addressed at the site-specific level, and no cumulative impact would occur.

Potential recreational impacts due to implementation of wetlands restoration projects would be minor, isolated, and of short duration. Although construction of wetland restoration projects could temporarily disrupt NMSB access to areas in which construction is occurring, the potential temporary disruptions in combination with any potential disruptions associated with the implementation of the WT are considered less than significant.

Consequently, the project's overall contribution to cumulative impacts to recreation would be **less than significant**.

#### NAVIGATIONAL SAFETY

As described in the Project Description and Section 3.3, use levels of WT-designated sites and other travel routes and areas now popularly visited by NMSB users would increase over time in concert with growth of other boating on the Bay. Such cumulative increases in overall boating on the Bay could result in an incremental increase in boating conflicts and hazards.

As discussed in Section 3.4, the USCG regulates navigation in San Francisco Bay by issuing and enforcing regulations that govern navigation practices, marine events, and safety and security zones within the Bay and is the primary search and rescue agency in a boating emergency throughout the Bay. The Inland Navigation Rules require a boater to try to avoid a collision even if she/he has the right of way, but without explicit, broadly accepted navigational protocols or norms for vessel interactions, the expected increases in fast ferry traffic, large sailing vessels, motorized recreational vessels, and WT users on the Bay may lead to more accidents. Increases in incidents may increase the USCGs' need for personnel or equipment. Some maritime user groups such as fast ferries are developing standard practices (e.g., consistent travel routes) to minimize accidents in general. The San Francisco Bay Harbor Safety Committee coordinates these and other efforts to improve navigational safety. In concert with the work of the USCG and Harbor Safety Committee, implementation of the proposed WT education and outreach program, which includes information on navigational safety, would help to reduce the potential cumulative effect to **less than significant**.

Planned and current wetland restoration projects would not result in any additional navigation challenges, and would not contribute to any potential cumulative impact. Consequently, the project's overall contribution to cumulative impacts to navigational safety would be **less than significant**.

#### PUBLIC SERVICES

Increased use of access sites due to the WT, coupled with increased use by other boaters and non-boating recreationists could lead to an increased need for public safety (police, fire and emergency medical) response. However, all access sites would undergo trailhead review, and the ability of the particular site to accommodate any increase in use (including the potential need for increased public services due to increased use from a variety of uses) would be evaluated during the trailhead designation process. The level of any increased need for public safety services at

any specific site would be small. The cumulative impact on public safety services of the project in combination with increased boating activity on the Bay and future development of the Bay Trail and WETA services would remain **less than significant**.

Planned and current wetland restoration projects would not affect the need for public services or result in any navigation challenges, and would not contribute to any potential cumulative impact. Consequently, the project's overall contribution to cumulative impacts to navigation and public services would be **less than significant**.

#### BIOLOGICAL RESOURCES -- VEGETATION

Construction and use of WT sites could lead to impacts on vegetation and sensitive habitats, as described in Section 3.7. Increased NMSB use could lead to increased unauthorized landings in sensitive habitats and an increased potential for spread of invasive plants. General increases in motorized boating as well as use of larger non-motorized boats on the Bay could incrementally increase impacts to wetland habitats; however, because these boats generally have deeper drafts than NMSBs, they are limited in their ability to access wetlands areas. Therefore, potential impacts to vegetation and sensitive habitats associated with increased motorized recreational boating and larger non-motorized boats would be limited.

Increased use of trailheads associated with increased use by boaters and other recreational users (i.e., due to projected growth in NMSB and motorized boat use not associated with the WT, and/or due to implementation of the Bay Trail) could also lead to increased trampling impacts where wetlands are located near WT trailheads. The Bay Trail attracts visitors to wetland areas, but encourages people to stay on the trail through signage, fencing, and trail design. Because many of the potential new NMSB users that would participate in the sport without the WT, as well as the numerous existing users, would be exposed to WT signage, outreach, and educational materials, the implementation of the WT may slightly reduce the impacts that these users would have on the environment. With the mitigations described in Section 3.7, the potential impact to wetlands from trampling, unauthorized landings and spread of invasive species would therefore be **less than significant**.

Potential cumulative impacts to wetlands could also result from construction activities associated with the implementation of the WT Plan, the WETA Transition Plan, the Bay Trail, and restoration projects. Construction activities could result in damage to or removal of wetlands. However, construction in or near wetlands and sensitive habitats would require site-specific mitigation, if allowed at all, and would therefore be mitigated at the site-specific level, as described in Section 3.7. Consequently, with implementation of the mitigations described in Section 3.7, potential cumulative construction-related impacts to vegetation and wetlands would remain **less than significant**.

#### BIOLOGICAL RESOURCES -- BIRDS

Increased boating of all kinds on the Bay, including regional increases in motorized and non-motorized recreational boating, increased ferry traffic, and increases in commercial boat traffic could increase disturbances to rafting waterfowl and sensitive birds, including nesting birds. As described in detail in Section 3.8, the educational materials and signage provided by the WT would be available to all recreational boaters, not just the small increase in NMSB users

potentially attributable to the implementation of the WT Plan, and the implementation of the education and outreach program of the WT is likely to off-set potential impacts due to the WT, and may result in a small overall reduction of disturbances to waterbirds. WETA would implement its own mitigation measures pursuant to the environmental documents addressing expanded ferry service. With implementation of the mitigation measures described in Section 3.8, therefore, cumulative impacts to waterbirds from the WT in combination with regional growth in recreational boating, ferry traffic and commercial boat traffic would be **less than significant**.

Potential impacts to sensitive birds could also occur from disturbance of habitat, including unauthorized landings in or land-based entry into sensitive habitat as well as disturbance and disruption of habitat due to construction. These types of impacts could result from increased boat use, implementation of the Bay Trail, and construction of wetland restoration projects. As described above (Biological Resources – Vegetation), implementation of the mitigation measures described in Section 3.7 would reduce potential impacts to wetlands and other sensitive habitat to **less than significant**. Thus, with implementation of the mitigations identified in Sections 3.7 and 3.8, potential cumulative impacts of the Proposed Project on birds in combination with projected increases in recreational boat use, increased and new ferry service, implementation of the Bay Trail, and implementation of wetlands restoration projects would be **less than significant**.

#### BIOLOGICAL RESOURCES – OTHER WILDLIFE

##### *MARSH-DEPENDENT WILDLIFE*

Potential cumulative impacts to marsh-dependent wildlife could result from construction activities associated with the implementation of the WT Plan, the WETA Transition Plan (construction of new ferry terminals), the Bay Trail, and restoration projects. Construction in or near wetlands and sensitive habitats would require site-specific mitigation, and would therefore be mitigated at the site-specific level. With implementation of the mitigation measures outlined in Section 3.9, potential cumulative construction-related impacts to marsh-dependent wildlife would remain **less than significant**.

Increased NMSB use in and around wetland areas could also lead to increased impacts to the marsh-dependent wildlife. General (non-WT-induced) increases in recreational boating could incrementally increase impacts to wetland habitats. Because many of the potential new NMSB users that would participate in the sport without the WT, as well as the numerous existing users, would be exposed to WT signage, outreach, and educational materials, the implementation of the WT may slightly reduce the impacts that these users would have on the environment. Motorized boats and larger non-motorized boats generally have deeper drafts than NMSBs and are limited in their ability to access wetlands areas. Therefore, impacts associated with increased motorized recreational boating and larger non-motorized boats would also be limited. The Bay Trail attracts visitors to wetland areas, but encourages people to stay on the trail through signage, fencing, and trail design. The potential cumulative effect on marsh-dependent wildlife would remain **less than significant** with the mitigation described in Section 3.9.

##### *SEALS*

Neither the implementation of the WETA Transition Plan nor the continued build-out of the Bay Trail would increase impacts to seals. Similarly, most wetland restoration projects would not

affect potential haul-out sites, and where haul-out sites are present, each restoration project would implement the required mitigation.

However, increased motorized and larger non-motorized boating on the Bay in combination with increased NMSB use could have the potential to further impact seals, particularly at the pupping sites. Implementation of the mitigation measures identified in Section 3.9 of this document, would help to reduce potential impacts associated with all NMSB use, not only the small increase in NMSB use potentially associated with the implementation of the WT Plan. Consequently, the potential cumulative impact to seals of the Proposed Project in combination with the other projects would remain **less than significant**.

#### HYDROLOGY AND WATER QUALITY

The cumulative impacts of the WT project on the hydrology and water quality of the Bay would be limited to impacts related to increased impermeable surfaces in the watershed. The proposed increase in impermeable areas due to the WT in combination with regional development of the Bay Trail and the WETA Transition Plan would be very minor within the scope of existing development in the Bay Area, and would not substantially increase pollution due to run-off into the Bay. In addition, new or expanded WT facilities and parking would be highly dispersed around the Bay, and impacts would be further mitigated by mitigation measures identified in this EIR. Therefore, they would not contribute to cumulative water quality impacts. Potential overlapping cumulative impacts associated with individual WT sites would be addressed in the project-level reviews of the Trailhead Plans for those sites. Therefore, with implementation of the mitigation measures described in Section 3.12, potential cumulative impacts to hydrologic and water quality conditions in the Bay would remain **less than significant**.

#### GREENHOUSE GASES AND CLIMATE CHANGE

As discussed in Section 3.15 of this EIR (Greenhouse Gas Emissions and Climate Change) and more specifically in Section 3.15.6 (Impacts and Mitigation Measures), the revised CEQA guidelines pose two questions that must be answered in assessing the environmental effect of a project's greenhouse gas (GHG) emissions: 1) Does the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? and 2) Does the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

In the absence of any adopted statewide guidelines for GHG emission impacts and thresholds of significance, the only criterion available to the Conservancy to measure the significance of impacts is to assess whether the project would be in conflict with the AB 32<sup>1</sup> State goals for reducing GHG emissions. Although BAAQMD adopted guidelines applicable to the Bay Area on June 2, 2010, those guidelines have not been adopted by the Conservancy, which precludes their use as a measure of the significance of impacts for this analysis. However, their adoption by BAAQMD does make them suitable for consideration under the second question above and strengthens their usefulness to this evaluation of potential cumulative impacts of GHG emissions. For the purposes of this EIR, then, the project would be considered to have a

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<sup>1</sup> Assembly Bill No. 32; California Health and Safety Code, Division 25.5, Sections 38500, et seq. (California Global Warming Solutions Act of 2006).

significant impact if implementation of the project would conflict with the AB 32 State goals for reducing GHG emissions. The BAAQMD-adopted threshold of 1,100 metric tons per year for any “land use project” below which the effects of a project would be deemed “not significant,” is used to establish additional context in which to consider the order of magnitude of WT Plan-generated GHG emissions.

BAAQMD arrived at this proposed threshold through an eight-step analysis by which it identified the additional extent of reductions in GHG emissions associated with land use projects that must be achieved, apart from what will be achieved by statewide emissions reduction strategies under the AB 32 Scoping Plan, in order to meet the AB 32 requirement of reducing GHG emissions to the 1990 level by 2020. Based on this analysis, BAAQMD concluded that if additional GHG emissions reduction measures were required of any project that exceeded annual GHG operational emissions of 1,100 metric tons per year, the AB 32 requirement would be met. Thus, any land use project that falls below this threshold need not include any further reduction measures and could be considered as “not significant” with respect to cumulative GHG emissions impacts.

Application of the process and methodology prescribed by the CEQA Guidelines (described in Section 3.15.6) to assess cumulative impacts from GHG emissions associated with this project indicated that implementation of the WT project would slightly increase GHG emissions in the project area, and that there would be some emission reductions expected from the replacement of non-local trips made by non-motorized boat owners with local trips to San Francisco Bay. The process and methodology that led to this conclusion is presented in detail in Appendix G.

The GHG evaluation estimated that GHG emissions associated with construction of projects that can be anticipated under implementation of the WT Plan over the next 10 years would be approximately 46.5 metric tons of CO<sub>2</sub>e per year during construction. These construction-related emissions would be temporary and finite in nature and spread over the useful life of the improvements.

The GHG emissions associated with additional vehicle trips attributable to the WT Plan (“operational emissions”) are estimated to be 2,483 metric tons over 20 years, or 124 metric tons/year. However, a small portion of longer, out-of-the-area vehicle trips would be expected to be replaced with local trips once the WT is established. The replacement of longer, out-of-the-area trips with local trips would reduce vehicle emissions by an estimated 1,046 metric tons over 20 years, or -52 metric tons/year. The total operating GHG emissions reasonably attributable to WT-related vehicle trips would thus be 72/tons of CO<sub>2</sub>e/year (124 – 52). The total GHG emissions reasonably attributable to implementation of the WT Plan on an annual basis, therefore, when vehicle trips and construction are combined, would be 170.5 metric tons/year (46.5 + 124) and 119 metric tons/year when reductions are considered (46.5 + 124 – 52). As a point of comparison, these annualized emissions are only a small fraction of the 1,100 metric tons/year significance threshold adopted by BAAQMD, . An annual emissions rate of 119 metric tons CO<sub>2</sub>e/year corresponds to 0.0002 % of the annual emissions in the Bay Area, and 0.00003% of annual emissions in California.

The WT Project would be implemented throughout the Bay Area, and thus the project is not subject to meeting the requirements of any city or county Climate Action Plan (although the requirements of a given plan may apply to construction of WT facilities within a city or county).

Other recreational activities, including the expansion of the Bay Trail, and increased non-motorized and motorized boat use of the Bay that is not related to the WT could also result in increases in GHG emissions. Implementation of increased ferry service would be expected to, overall, slightly reduce commute-related GHG emissions, and new wetland restoration projects would be expected to serve as long-term carbon sinks, compensating for their construction-related GHG emissions after several years of marsh development. These projects would therefore not contribute to any cumulative increases in GHG emissions.

Tidal wetland restoration projects are typically carbon sinks. While these projects result in construction-related GHG emissions, tidal marshes can be highly effective at sequestering CO<sub>2</sub>. For example, the Draft EIS/EIR for the Sears Point Restoration Project estimates that the approximately 1,000 acres of restored wetlands will sequester between 800 and 4,500 tons of CO<sub>2</sub> per year (Sonoma Land Trust, et. al 2009). Thus tidal marsh restoration projects would have a beneficial effect on cumulative GHG emissions.

Measures related to the reduction of GHG emissions through reducing the need to access trailheads by car are found in WT Plan Strategies 11 and 12. These measures are broadened and strengthened in Strategy 28 of the Enhanced Water Trail Plan Alternative, discussed in Chapter 5 (Alternatives to the Project). For example, the WT would encourage use and development of access sites that are accessible by public transportation, and, as part of the WT ethic, would encourage awareness of climate change, and actions that individual boaters could take to reduce their carbon footprint (e.g., carpooling or taking public transportation to the trailhead, boating closer to their homes, using non-motorized boats instead of motorized boats, etc.). None of these measures could reasonably be expected to fully mitigate for cumulative increases in GHG emissions. However, on balance, the cumulative impact of implementation of the Water Trail Plan in combination with other projects such as the Bay Trail, ferry traffic, and wetland restoration would be minimal. At the scale of impacts now being considered by the California Air Resources Board under AB 32 and within the context of viable near-term options for public transportation and recreation, these impacts are minimal.

Based on the foregoing, the cumulative GHG emission impacts due to implementation of the WT Plan are considered **less than significant**.

## 4.2 Growth-Inducing Impacts

CEQA requirements for evaluation of growth-inducing impacts are set forth in Section 15126.2 (d) of the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387). CEQA requires that both direct and indirect impacts of all phases of a proposed project be considered. Growth-inducement is typically considered to be a direct or indirect effect of an action that either directly fosters growth or removes an obstacle to economic or population growth, or the construction of new housing. The CEQA Guidelines also require evaluation of new infrastructure and service facilities needed to serve growth induced by a

project. The Guidelines note that “it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.” Therefore, the nature of the effects of any induced growth also must be considered to determine if the impacts of that growth are potentially significant.

Some projects may be considered growth inducing while others may be growth accommodating (i.e. they are intended to accommodate planned growth, but do not induce that growth). The distinction is primarily whether or not a project removes an obstacle to growth. It is sometimes argued that, if growth is already planned for in a jurisdiction’s General Plan, then infrastructure supporting that development is growth accommodating rather than growth inducing. However, CEQA is concerned with on-the-ground impacts to the environment. Therefore, if planned development cannot move forward absent a particular infrastructure project, or the development is substantially encouraged by that infrastructure, that project is generally considered growth inducing. The CEQA Guidelines also state (Section 16064 (d)(3)) that an indirect physical change is to be considered only if that change is “a reasonably foreseeable impact which may be caused by the project. A change which is speculative or unlikely to occur is not reasonably foreseeable.”

The WT Plan includes potential trailhead site designation and education/outreach components. Some additional relatively minimal facility development may occur if the WT Plan is implemented. This development would likely be of small scale and would serve local and regional recreational boaters. It is unlikely that this development would be of a scale to induce substantial additional economic or physical development beyond the immediate access point. As discussed in the Project Description and in Section 3.3 (Recreation) of this EIR, the project is not expected to substantively increase the use of NMSBs in the San Francisco Bay estuary beyond the expected growth levels without the WT. Impacts of this growth are addressed in Chapter 3 of this EIR. The WT Plan site designations and subsequent education and site improvements could result in shifting of boating use to and from certain sites. As noted above, this sort of shift in recreation use is unlikely to induce growth beyond the local access point. Therefore potential growth-inducing impacts would be **less than significant**.

### **4.3 Significant Unavoidable Environmental Effects**

This EIR identified a number of potentially significant impacts in each of the analyzed topics. All of those impacts were found to be at a less than significant level by application of the mitigation measures identified in this document.

### **4.4 Irreversible/Irretrievable Environmental Effects**

Public Resources Code Section 21100(b)(2)(B) and CEQA Guidelines Sections 15126(c), 15126.2(c) and 15127 provide that the EIR for a project that involves adoption of a plan of a public agency, such as the WT Plan, must consider “significant irreversible environmental changes” that may be caused by the project. Guidelines Section 15126.2(c) clarifies that use of non-renewable resources during the initial and subsequent phases of a project may be “irreversible”, if a *large commitment* of non-renewable resources may make subsequent discontinuance or removal of the project thereafter unlikely.

Implementation of the WT would result in the use of natural resources including fossil fuels and building materials associated with the printing and dissemination of educational materials, construction of facility improvements, and boaters getting to and from the WT access sites. However, the use of resources under these activities are quite minor, are far from a ‘large commitment’ of resources, and, with implementation of the required avoidance and mitigation measures will be less than significant both individually and cumulatively, as discussed at length in this EIR. The WT Plan does not pose any significant risk of long-term and material use of resources such that one could reasonably conclude that it would result in future “irreversible effects”.

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## 5 ALTERNATIVES TO THE PROJECT

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## 5 ALTERNATIVES TO THE PROJECT

This chapter describes three alternatives to the Proposed Project, and evaluates the environmental impacts of those potential alternatives compared to those of the Proposed Project. It also identifies the environmentally superior alternative (see Section 5.4, below).

### 5.1 GENERAL CEQA REQUIREMENTS FOR ALTERNATIVE EVALUATION

CEQA requires that a reasonable range of feasible alternatives to the Proposed Project be described and considered within an EIR. The alternatives considered should represent scenarios that could feasibly attain most of the basic objectives of the project, and would avoid or substantially lessen any of the significant environmental effects of the project. The purpose of this process is to provide decision-makers and the public with a discussion of viable options and to document that other potential options that could avoid or substantially lessen one or more of the Proposed Project's significant environmental effects were considered (CEQA Guidelines, §15126.6).

CEQA provides the following guidelines for discussing project alternatives:

- An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation (§15126.6(a)).
- An EIR is not required to consider alternatives that are infeasible (§15126.6(a)).
- The discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project (§15126.6(b)).
- The range of potential alternatives to the Proposed Project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects §15126.6(c)).
- The EIR should briefly describe the rationale for selecting the alternatives to be discussed §15126.6(c)).
- The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis and comparison with the Proposed Project §15126.6(d)).

### 5.2 PROJECT ALTERNATIVES

Although the Proposed Project was determined not to have any significant unmitigable impacts, a range of alternatives is presented in this document for the consideration of the public and decision-makers.

#### 5.2.1 ALTERNATIVES CONSIDERED AND REJECTED FROM FURTHER ANALYSIS

The SCC, as CEQA lead agency, considered a full range of alternatives to the Proposed Project. These alternatives included:

- **Partial Water Trail Alternative:** This alternative would limit the Water Trail to certain areas of the Bay (e.g., the Central Bay). This alternative was rejected because it would not meet the legislatively-mandated goals of the WT Act to improve access within, and provide recreational opportunities to, the entire Bay Area.

- **Site Closure Alternative:** An alternative that would result in the closure of access sites that may adversely affect sensitive resources was considered but eliminated because under the Water Trail Plan, the Project Management Team has only the authority to designate a WT site, but has no legal authority to order closure of existing access sites.
- **No Major New Facilities Alternative:** An alternative that would reduce or eliminate construction impacts at access sites being considered for WT designation (either with regard to impacts of the construction, or impacts due to increased use associated with enhanced facilities) by prohibiting major facility improvements was considered and determined to be infeasible. Under the WT Act, the Project Management Team has the authority to designate a WT site, but no legal authority to prohibit additional development of existing sites or new future sites. A similar but more feasible alternative – the HOS Only Alternative – is fully evaluated below.
- **Carbon-Neutral Alternative:** An alternative that would prohibit a net increase in the emission of GHGs in the process of arriving at a trailhead or in the process of constructing or enhancing a trailhead was considered but eliminated because it would require that all NMSBs used at WT sites be stored on location and that any increase in NMSB use occur through people arriving at the sites in a manner that did not burn any fossil fuels, such as on foot or on bicycle or by zero-emission public transportation. Although a small number of people could accomplish this scenario at a small number of sites, this alternative would undermine one of the fundamental goals of the Water Trail Act, which is to provide enhanced public access and recreational opportunities on and around the Bay. As discussed under the “No Major New Facilities Alternative” above, prohibition of any construction at WT trailheads is infeasible.

## 5.2.2 ALTERNATIVES EVALUATED IN THIS EIR

The Proposed Project is described in Chapter 2 of this EIR and evaluated in Chapter 3. Three alternatives to the Proposed Project are evaluated in this chapter: Alternative 1, the CEQA-mandated No Project Alternative; Alternative 2, the High Opportunity Sites (HOS) Only Alternative; and Alternative 3, the Enhanced Water Trail Plan Alternative. These three alternatives and their potential impacts, including cumulative impacts, as appropriate, are described below. Cumulative impacts were evaluated using the same recreational boating projections and cumulative projects described in Chapter 4.

## 5.3 EVALUATION OF ALTERNATIVES

### 5.3.1 ALTERNATIVE 1: NO PROJECT

#### DESCRIPTION OF ALTERNATIVE 1

Under Alternative 1, the No Project Alternative, the WT Plan would not be implemented. No new infrastructure, signage, education, outreach, or other WT activities would be implemented by the WT program. Many planned sites identified in the WT Plan, such as Eden Landing (A22), would be developed even in the absence of the WT, as exemplified by the opening of the “planned” launch site at the Alviso Marina (SC2) in June, 2010. New sites would be developed, and some existing sites would be enhanced. NMSB use would increase Baywide as the regional

population continues to grow and in response to other demographic changes, such as the retirement of “baby boomers,” many of whom will have more time to recreate around the Bay. This general growth would drive the need for new facilities and access sites. As discussed in Chapter 2, these factors would form the basis for the majority of the projected growth in NMSB use. Therefore, under the No Project Alternative, the majority of the projected growth in NMSB use would still occur; the only difference in growth in NMSB use between the No Project Alternative and the Proposed Project is that the Proposed Project would potentially generate a very small increase in NMSB use due to increased publicity and education. Facility improvements would occur on an *ad hoc* basis by over 50 local and regional jurisdictions. Education, navigational safety, and environmental protection efforts would likewise continue to be implemented as they currently are, with each governmental agency, organization, or private business determining its own priorities, standards of quality, and content as allowed by existing plans, laws, and necessary permits. There would be no attempt to guide or plan NMSB use on a regional basis.

By definition, because an “impact” is an adverse consequence of a proposed project, when there is no project, there can be no impacts. Consequently, there are also no cumulative impacts associated with the No Project Alternative. However, environmental effects would continue to occur as a result of the anticipated non-WT-induced growth in NMSB use. Because the WT would not be implemented, there would be no coordinated effort to educate NMSB users. In comparison to the Proposed Project, then, potential environmental effects absent the WT could be greater for some resources than potential effects with the Proposed Project. Potential effects on recreation, navigational safety, public services, and biological resources (vegetation, birds, and other wildlife) may be slightly less with the Proposed Project than under the No Project Alternative, because the Proposed Project would provide more coordinated planning and improved educational and safety information and signage than the No Project Alternative. The potential environmental effects associated with the No Project Alternative are summarized below.

## DESCRIPTION OF THE NO PROJECT ALTERNATIVE’S ENVIRONMENTAL EFFECTS

### *RECREATION*

Under the No Project Alternative, recreation planning for NMSB use would continue to occur primarily at the local level, and opportunities for regionally-coordinated, optimal placement of new facilities and new access locations would not be realized. Most notably, regional maps, brochures, guidebooks, boating educational materials, and other trip planning materials and assistance tailored for the nine-county Bay Area would not be developed. Changes in use levels at facilities may occur, as individual jurisdictions and owners/managers undertake improvement projects and their own publicity efforts, retail businesses serving NMSB use are established at certain sites, or sites deteriorate to the point of not being usable. Facilities that are provided may or may not meet all the needs of NMSB users, as some jurisdictions may lack the expertise to properly prioritize needed facilities and design the best site lay-out. The No Project Alternative provides fewer benefits to recreation, and may result in a slight increase in recreational conflicts compared to the Proposed Project.

### *NAVIGATIONAL SAFETY*

Under the No Project Alternative, educational materials on the subject of navigational safety hazards would not be developed, coordinated, or distributed by the WT. Safety training would continue on an *ad hoc* basis, and access sites would not receive any new project-related signage pertaining to safety considerations. Navigational risks that may be associated with existing, new, or enhanced sites would still occur. As with the Proposed Project, increased use of NMSBs may lead to an increase in incidents (increased use of all kinds of boats on the Bay may also increase the rate of incidents). Effects on navigational safety associated with the No Project Alternative would likely be slightly greater than if the Proposed Project is implemented.

#### *PUBLIC SERVICES*

Under the No Project Alternative, growth in NMSB use would still occur, and increased public services may be required to support increased use at existing access sites and any new sites that are constructed. Increased public services could also be required at locations where site owners are providing new or improved facilities. Because no action supported by the WT would be taken to improve navigational safety, the demand for emergency services may be slightly higher for the No Project Alternative than for the Proposed Project.

#### *AESTHETICS*

Under the No Project Alternative, no new access facilities would be supported by or developed pursuant to the WT. However, new facilities would continue to be developed at various sites around the Bay in response to boater demand or owner initiative. New facilities would be subject to local, state, and federal agency design review, as applicable, but not to WT Trailhead Plan review. It is likely that the No Project Alternative would have an overall similar effect on visual quality as the Proposed Project.

#### *BIOLOGICAL RESOURCES – VEGETATION*

As described above, under the No Project Alternative, projected growth in NMSB use would still occur, leading to a higher number of NMSB users potentially coming into contact with sensitive habitat and/or contributing to the spread of invasive plants. Most facility improvements and new (planned) sites would likely still be constructed to accommodate the increase in NMSB use, leading to potential effects on sensitive habitats as a result of construction activities; however, these impacts would be controlled through site-specific permits and associated mitigation requirements. Because the No Project Alternative would not provide the educational component, the avoidance strategies, and the mitigation measures included in the Proposed Project, vegetation would likely be affected to a somewhat greater degree than under the Proposed Project.

#### *BIOLOGICAL RESOURCES -- BIRDS*

##### **Waterbirds**

Under the No Project Alternative, projected growth in NMSB use would still occur, leading to a higher number of NMSB users potentially coming into contact with rafting birds. Most facility improvements and new (or planned) sites would likely still be constructed to accommodate the increase in NMSB use, leading to potential effects on waterbirds in areas reachable by NMSBs launching from new or existing access sites. Because the No Project Alternative would not provide the educational component and the avoidance strategies included in the Proposed

Project, the effects of the No Project Alternative would be slightly greater than the effects of the Proposed Project.

### **Tidal-Flat Specialists (Shorebirds)**

The No Project Alternative would have no discernible effect on tidal-flat specialists because there would be little or no anticipated disturbance to shorebirds due to NMSB use. Shorebirds forage on exposed tidal flats, which is habitat unavailable to watercraft. Likewise, when the tidal flats are inundated and accessible to watercraft, shorebirds gather to roost at supratidal habitats – seasonal wetlands, emergent tidal marshes, levees, jetties, piers, docks, etc. Therefore there would be no substantive difference in effects between the No Project Alternative and the Proposed Project

### *BIOLOGICAL RESOURCES – OTHER WILDLIFE*

#### **Seals**

Under the No Project Alternative, some increased disturbance to harbor seal haul-out sites could still occur from the overall increase in NMSB use. Current seasonal closures of sensitive areas (e.g., Mowry Slough) would remain in place and the USFWS may implement additional seasonal closures with or without the Proposed Project. However, there would be no overall effort to educate boaters about the need to avoid seal haul-out areas and about the special sensitivity of seals during pupping and molting seasons. Thus potential effects to seals from on-going use of NMSBs would likely be slightly greater than for the Proposed Project. Potential effects on seals associated with the No Project Alternative would likely be similar to the Proposed Project with respect to the potential for construction-related impacts because such activities would be regulated by permits.

#### **Other Marsh-Dependent Sensitive Wildlife**

Under the No Project Alternative, the projected growth in NMSB use would still occur, leading to a higher number of NMSB users potentially coming into contact with marsh-dependent sensitive wildlife. The No Project Alternative would not include the Proposed Project's educational component and its avoidance strategies, however.. Therefore, potential effects on other marsh-dependent sensitive wildlife associated with the No Project Alternative would likely be similar to the Proposed Project with respect to potential construction-related impacts, but due to the lack of educational materials and outreach, may be greater overall.

### *CULTURAL RESOURCES*

The No Project Alternative would avoid the potential for the WT to influence development of new access sites or major enhancement of existing sites in the future, but would not be any different from the Proposed Project with regard to regulations protecting cultural resources. Existing plans for the development of new access sites, new facilities, or facility enhancements for NMSB use may be developed independent of the WT planning process. Therefore, effects of the No Project Alternative on cultural resources would be similar to those of the Proposed Project.

### *HAZARDOUS MATERIALS*

The No Project Alternative would avoid the potential for the WT to influence the development of new access sites or major enhancement of existing sites, and therefore reduce the potential for project-related activity that could expose hazardous materials if those activities were funded by

sources that could only be used for WT-related purposes. As described in Chapter 2, however, most new facilities and new access sites would likely still be developed whether or not the WT is implemented. Therefore, the potential of the No Project Alternative to expose humans or the environment to hazardous materials would be similar to those of the Proposed Project.

#### *HYDROLOGY AND WATER QUALITY*

The No Project Alternative would likely result in a similar level of development of new sites or enhancement or addition of new facilities at existing sites as would the Proposed Project. Therefore, the effects of the No Project Alternative would generally be similar to those of the Proposed Project.

#### *LAND USE PLANNING*

Under both the No Project Alternative and the Proposed Project, the San Francisco Bay Plan policies for access to the Bay would continue to govern land use planning within the shoreline band of the Bay. In addition, local, regional, state, and federal agencies' plans for lands under their jurisdictions would continue to guide development of new or improved Bay access under the No Project Alternative or the Proposed Project. It is therefore likely that there would be little difference in land use effects between the No Project Alternative and the Proposed Project, although the Proposed Project would provide beneficial effects due to the regional planning and additional CEQA review of facility improvements inherent in the Trailhead Designation process.

#### *TRANSPORTATION, CIRCULATION AND PARKING*

Under the No Project Alternative, local and regional transportation demand increases and traffic facility improvements would continue to occur, as they would under the Proposed Project. Site-specific facility improvements would still be required to undergo CEQA (and/or NEPA, if applicable) review for traffic impacts and mitigations, if the proposed improvements were large enough. Development of Trailhead Plans that would consider traffic and parking needs, and additional CEQA review during the trailhead designation process, would not exist under this alternative. Overall, the effects on transportation, circulation, and parking would be similar under the No Project Alternative or the Proposed Project.

#### *GREENHOUSE GASES AND CLIMATE CHANGE*

Under the No Project Alternative, no WT-related construction would occur. There would be no incremental growth in NMSB use due to WT publicity and educational materials, and associated vehicle use. This would eliminate GHG emissions associated with implementation of the WT. However, most of the proposed construction of new facilities and facility improvements would still occur under the No Project Alternative, as would the growth in NMSB use and associated vehicle use. Consequently, in the short term, potential GHG emissions under the No Project Alternative would likely be slightly smaller or similar to GHG emissions under the Proposed Project. However, because there would be no coordinated effort to reduce vehicle miles traveled, longer term emissions of GHGs under the No Project Alternative may exceed the emissions of the Proposed Project.

### 5.3.2 ALTERNATIVE 2: HIGH OPPORTUNITY SITES ONLY

#### DESCRIPTION OF ALTERNATIVE 2

The goal of the HOS Only Alternative is to eliminate potentially significant WT-related impacts by eliminating sites with management concerns from the original list of Backbone Sites, leaving only sites that meet the HOS criteria. As described in Chapter 2, Project Description, HOSs are those sites that have no substantial management concerns and are expected to require only signage for inclusion in the Water Trail. A preliminary list of 57 HOSs is included in the WT Plan and presented in Table 2.3.2-1. Alternative 2 would effectively limit potential construction activity at WT sites by only considering sites that meet the criteria for an HOS and generally remain neutral on the use of other public access sites already available to the public for NMSB use.

For Alternative 2, the trailhead designation process would consist solely of development of a Site Description and Signage Plan. Any site that would require a detailed Trailhead Plan would be eliminated from further consideration for the WT. The actual list of HOSs for Alternative 2 cannot be defined with complete certainty at this time, because conditions at some sites may have changed since the preliminary list of HOSs was developed during the preparation of the Draft WT Plan from 2005 – 2007. It is likely, however, that the final number of HOSs would be similar to the number of preliminary HOSs (i.e., some sites preliminarily identified as HOSs might fail to meet HOS criteria, whereas some sites not originally identified as HOSs might meet HOS criteria). Figure 2.3.2-1 shows the location of the preliminary list of HOSs around the Bay.

The effect of restricting the WT to HOSs is that the WT would influence NMSB user behavior and site management at those sites, but otherwise boating would continue as at present at all other sites around the Bay. As is the case for the Proposed Project, improvements at non-WT sites would occur at the discretion of the site owners/managers and permitting agencies and new recreational sites could be established. The overall level of non-HOS access site development and use is likely to be similar to that for the Proposed Project. Thus, the goal (under this alternative) of limiting potentially significant NMSB-related impacts (by not designating any sites with any management concerns) would not be met by this alternative.

Growth in NMSB use would be very similar to the level of growth that would occur with the Proposed Project, because the majority of anticipated growth in NMSB use would be due to population growth and other demographic factors. Reducing the number of sites included in the WT would not substantively affect that growth in NMSB use or determine where NMSB users would choose to recreate.

The non-HOSs would not be designated as WT sites, nor would the WT assist with any improvements, or site-specific education or outreach programs associated with those sites.

Many of the mitigation measures developed for the Proposed Project would also apply to Alternative 2. Mitigation measures pertaining to impacts associated with construction or improvement of facilities and avoidance of sensitive habitat on or in the immediate vicinity of the site would not be applicable because sites having these types of issues would not be classified as HOSs. All applicable mitigation measures are incorporated into Alternative 2.

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## EVALUATION OF IMPACTS

### *RECREATION*

The HOS Only Alternative would reduce the recreational and public access benefits of the project because it would limit the total number of sites to be supported by the Water Trail to HOSs (preliminarily estimated to be 57 sites) instead of potentially 112 or more. It could result in increased use of some HOSs, based on the fact that outreach materials would focus on these sites. Because the WT would consist of only a portion of the Backbone Sites, overall planning and coordination of access on a Bay Area-wide scale, as required in the WT Act, would not be possible. As a result, new non-Water Trail NMSB facilities may not be constructed in optimal locations, and site spacing could be less favorable or safe for NMSB users. Potential conflicts between NMSBs and other recreational activities may or may not remain the same between this alternative and the Proposed Project, depending on whether such conflicts occur at HOS or non-HOS sites. Thus, potential impacts to recreation under Alternative 2 would be quite similar to those for the Proposed Project, but potential benefits to recreation and public access would be decreased. Cumulative impacts to recreation may be slightly greater than under the Proposed Project because possibly as many as half of all access sites around the Bay would not be part of the WT's regional planning efforts.

### *NAVIGATIONAL SAFETY*

Under the HOS Only Alternative, some NMSB use could be redirected toward the HOSs by WT outreach information. Some HOSs are near ferry terminals and shipping channels, and any existing navigational dangers associated with these sites would continue to exist. However, the total number of WT access sites, and consequently the incremental growth in NMSB use attributable to the project would be lower than for the Proposed Project, and the potential impact of the HOS Only Alternative on navigational safety would likely be slightly less than for the Proposed Project.

Regional, non-Water Trail-related NMSB growth would continue and NMSB use at all existing non-HOS sites would continue. The HOS Only Alternative would limit the project's proposed site-specific educational and safety components to HOSs only, thus decreasing the Proposed Project's potential to provide these services to many more sites. Cumulative impacts to navigational safety from growth in NMSB use on the Bay coupled with growth in motorized boats may therefore be somewhat greater for Alternative 2 than for the Proposed Project because of the lack of site-specific educational and safety activities at non-HOSs.

### *PUBLIC SERVICES*

Limiting the project to HOSs only under this HOS Only Alternative may result in increased use of these sites over time because only this more limited set of sites would be actively publicized, leading to potentially higher use of HOSs compared to the Proposed Project. Potential demands on public services would therefore be the same or slightly greater at HOSs as compared to the Proposed Project. Under the HOS Only Alternative, however, there would be about half as many sites, so total demand on public services would be decreased in comparison to the Proposed Project, and the potential impact to public services from the HOS Only Alternative would be slightly lower than for the Proposed Project.

Cumulative impacts on public services would likely be similar to or slightly greater than the Proposed Project because the regional increase in NMSB use due to population growth and other demographic factors would be similar to that anticipated for the Proposed Project. Existing boating hazards and thus the need for public emergency services would remain at all existing sites and any new sites, with only the HOSs benefiting from the full educational and safety components of the WT program. Further, the WT program would not be working with site owners/managers of non-HOSs to help improve management for NMSB use at existing sites or helping to plan for anticipated services needed at future sites.

#### *AESTHETICS*

The HOSs require, by definition, virtually no development beyond signage. Development at non-HOSs would occur without any association with the WT and at the discretion of the site owners and managers and any necessary agency review or permitting. The HOS Only Alternative would reduce the potential project-induced impact on visual resources to those at HOSs only. Under Alternative 2, potential impacts to aesthetics associated with the implementation of the WT would be less than those associated with the Proposed Project. Cumulative aesthetic impacts of NMSB launch site development/modification under the HOS Only Alternative would likely be the same as for the Proposed Project, because site owners and managers of any site around the Bay would have to meet agency review and permitting requirements, thus decreasing the likelihood of aesthetic impacts despite enhancements occurring at a greater number of sites.

#### *BIOLOGICAL RESOURCES – VEGETATION*

HOSs would be identified as such in part because they pose only a minimal potential for impacts to sensitive habitats and species. Thus, the potential for WT-related impacts to sensitive habitat and sensitive plants under the HOS Only Alternative is lower than under the Proposed Project. However, under this Alternative, site-specific WT educational materials, signage, and other programs would not be made available to the other Backbone Sites, which would continue to be managed at the discretion of the site owners. Most facility improvements and the planned sites identified in the WT Plan would likely still be constructed to accommodate the increase in NMSB use, leading to potential effects on sensitive habitats as a result of construction activities. These construction-related impacts, however, would be controlled through site-specific permits and associated mitigation requirements, and cumulative impacts on vegetation due to construction are expected to be similar to the Proposed Project. Cumulative impacts to vegetation resulting from use of access sites under this Alternative would be greater than under the Proposed Project because overall use levels of NMSBs on the Bay are expected to increase and the WT program would not be working with site owners/managers of non-HOSs to reduce the potential for spread of invasive species or to educate users with regard to protection of sensitive habitats.

#### *BIOLOGICAL RESOURCES – BIRDS*

##### **Rafting Waterbirds, Nesting Waterbirds (Including Threatened and Endangered Species), and Tidal Marsh Birds**

The HOS Only Alternative would eliminate sites that require more than just the addition of signage to avoid potential impacts to rafting or nesting waterbirds or tidal marsh birds in general. Therefore, potential levels of disturbance directly attributable to the WT may be lower in this alternative than in the Proposed Project. However, NMSB use would continue at existing non-

HOSs, and the project's site-specific education and management programs would not be extended to those sites. Therefore, existing biological effects from those sites would continue, and would likely increase as use increases due to population growth and other demographic factors. The lack of education for these non-HOS access locations would likely result in a somewhat greater effect on waterbirds from non-HOSs than under the Proposed Project. Therefore, cumulative impacts of this Alternative with the remaining Backbone Sites not included under this Alternative, and other activities that could disturb rafting waterbirds, nesting waterbirds, and/or tidal marsh birds, including the Bay Trail, ferry boat expansion, and temporary disturbances due to wetland restoration, would be somewhat greater than cumulative impacts associated with the Proposed Project.

### **Tidal-flat Specialists (Shorebirds)**

As with the Proposed Project, the HOS Only Alternative would result in no significant disturbance to shorebirds because shorebirds forage on exposed tidal flats, which is habitat unavailable to watercraft. Likewise, when the tidal flats are inundated and accessible to watercraft, shorebirds gather to roost at supratidal habitats – seasonal wetlands, emergent tidal marshes, levees, jetties, piers, docks, etc. Therefore, there would be no substantive difference in impacts between this alternative and the Proposed Project, both regionally and cumulatively.

### *BIOLOGICAL RESOURCES – OTHER WILDLIFE*

#### **Seals**

Because HOSs would not be located near known seal haul-outs and would not have site construction related to the WT, potential disturbance to seals under the HOS Only Alternative would be minimal or non-existent. Given the reduced number of Water Trail sites under this Alternative, and its elimination of non-HOSs (which would include some sites with the potential to affect seal haul-out sites), potential impacts would be less than under the Proposed Project. Under this Alternative, however, NMSB use would continue at existing non-HOSs, and the project's site-specific education and management programs would not be extended to those sites. Therefore, existing impacts to harbor seals from non-HOSs would most likely continue, and increase as NMSB use increases over time due to general population growth and other demographic factors. Consequently cumulative impacts of the HOS Only Alternative would be slightly greater than cumulative impacts associated with the Proposed Project and other projects that may affect seals.

#### **Other Marsh-Dependent Sensitive Species**

Because only signage would be needed at HOS sites, potential construction disturbances to sensitive habitats sheltering special status marsh-dependent species would be small or non-existent under the HOS Only Alternative. The potential impacts to these species would be lower under this Alternative than for the Proposed Project because there would be fewer sites associated with the WT. This would reduce the potential WT-related spread of invasive species through NMSB activities, predator impacts from trash generation, and trampling impacts in sensitive habitat. However, the remaining access sites not included in this Alternative would still be used, and the cumulative impact of NMSB use from HOSs and non-WT sites combined with other boating activities and expected population growth would be greater than for the Proposed Project, because the sites not included in the WT would not receive the benefits of the site-specific education, outreach, and stewardship programs that would be implemented at all Backbone Sites under the Proposed Project.

### *CULTURAL RESOURCES*

The HOSs would result in virtually no project-related development beyond the addition of signage, in contrast to the remaining Backbone Sites, which could have some development. Thus, the HOS Only Alternative would reduce the potential project impact to cultural resources associated with the implementation of the WT Plan in comparison to the Proposed Project. However, NMSB use would continue at existing non-HOS sites, and site owners/managers could still develop new facilities that could adversely affect cultural resources. Cumulative impacts on cultural resources would therefore remain the same under this Alternative as under the Proposed Project because the effects of development on cultural resources at non-HOSs would be very similar to or the same as for the Proposed Project, and permits would be required of any site owner/manager engaging in construction activities that could disturb cultural resources under any scenario.

### *HAZARDOUS MATERIALS*

It is not known at this time if any of the Backbone Sites are impacted by contaminated soil, sediment, and/or groundwater. Because only HOSs are part of the project for the HOS Only Alternative, there would be virtually no project-related development or excavation at any of the sites. Potential impacts associated with hazardous materials would likely be lower under this Alternative than under the Proposed Project. Under this alternative, potential development of non-HOSs by owners/managers would be very similar to or the same as for the Proposed Project because of required compliance with applicable regulations pertaining to hazardous materials and contaminated soil and groundwater. Consequently, cumulative impacts of the HOS Only Alternative with other NMSB projects would remain the same as for the Proposed Project.

### *HYDROLOGY AND WATER QUALITY*

Under the HOS Only Alternative, potential impacts to hydrology and water quality would be less than under the Proposed Project, because the HOSs would only require the addition of signage. There would be no disturbance of soil or sediment, and the quantity of run-off would remain the same because construction activities near the shore and the creation of impervious surfaces would be minimal or non-existent. Cumulative impacts of this Alternative with other development along the Bay shore would be the same as for the Proposed Project because owners/managers of non-HOSs would still have the potential to enhance or develop new facilities and these facilities could result in water quality impacts that would also require compliance with stormwater management regulations.

### *LAND USE PLANNING*

Given the minimal improvements expected at HOSs as a result of WT Plan implementation, few, if any, conflicts with local land use plans or nearby land uses are likely. Most local land use plans for bayside jurisdictions and land management agencies support access to the Bay. The HOS Only Alternative, could, however, present a land use conflict at the regional and state level. This Alternative would conflict with the Bay Conservation and Development Commission's (BCDC's) Bay Plan policies to increase public access onto the Bay to the maximum extent feasible. It would also fall short of implementing the intent of the Water Trail Act, which set the geographic scope of the Water Trail to be within the jurisdiction of BCDC and to link access to the waters of San Francisco Bay. Such a conflict would not exist with the Proposed Project. Thus, the impact of this Alternative on land use planning would be greater than under the

Proposed Project. Cumulative impacts of this Alternative with other Bay shore development would be generally the same as for the Proposed Project because existing and new access sites could still be developed and used in the absence of the Water Trail.

#### *TRANSPORTATION, CIRCULATION AND PARKING*

The HOSs have existing parking facilities. Limiting the project to HOSs only under this HOS Only Alternative may result in increased parking demand over time because only this more limited set of sites would be actively publicized, leading to potentially higher use of HOSs. HOSs that have marginal or inadequate parking facilities, or have existing roadway or traffic hazards/constraints (e.g., railway crossing issues), would continue to have the same or greater impacts under this Alternative. Cumulative impacts on parking would likely be similar to the Proposed Project because the regional increase in NMSB use due to population growth and other demographic factors would be similar to that anticipated for the Proposed Project.

#### *GREENHOUSE GASES AND CLIMATE CHANGE*

Under the HOS Only Alternative, construction would be minimal, and would be limited to the installation of new signs. This would reduce the amount of GHG emissions associated with construction of the WT. Similarly, potential emissions due to vehicle trips from WT-related NMSB users going to WT-designated sites would be slightly less, because fewer sites would be part of the WT. Impacts on GHG emissions and climate change would be slightly less than under the Proposed Project. Cumulatively, potential effects of the HOS Only Alternative combined with other recreational development (including development at non-HOSs) and general population-driven growth of NMSB use would remain the same as cumulative impacts associated with the Proposed Project.

### **5.3.3 ALTERNATIVE 3: ENHANCED WATER TRAIL PLAN ALTERNATIVE**

#### **DESCRIPTION OF ALTERNATIVE 3**

The Enhanced Water Trail Plan Alternative (Alternative 3) is designed to enhance the existing Draft WT Plan to further reduce potential impacts associated with implementation of the Plan. As described in Chapter 3 of this DEIR, the main potentially significant impacts potentially associated with implementation of the WT Plan include biological impacts, navigational safety impacts, and potential impacts to (conflicts with) other recreational uses at proposed WT trailheads. Under this Alternative, the existing Draft WT Plan would be modified to incorporate four additional strategies: Strategy 25, Comprehensive Education Program; Strategy 26, Navigational Safety; Strategy 27, Boatwashing Facilities; and Strategy 28, GHG Best Management Practices for Construction and Trailhead Operation. All mitigation measures identified in Chapter 3 that require revisions to existing strategies (mitigation measures Rec-M4A (Strategy 14), Bio M5 through Bio M8 (Strategies 17, 18, 19, and 21) and TPC-M2 (Strategy 8) would also be incorporated into the Enhanced WT Plan. Under this Alternative, the WT Plan would contain the same number of Backbone Sites, use the same process for trailhead designation, and also include Strategies 1 through 24 to avoid or help reduce potential impacts of WT Plan implementation. The proposed language for the new strategies is provided in Appendix H. All mitigation measures that would be implemented for the Proposed Project would also be implemented for this Alternative.

There would be no difference in the number of existing and planned Backbone Sites that would be included in the WT compared with the Proposed Project because the criteria for trailhead designation would remain the same. Similarly, the criteria for adding future sites would remain the same as with the Proposed Project. Consequently, the potential level of development and construction would be the same as for the Proposed Project. The primary difference between this Alternative and the Proposed Project is that the Enhanced Water Trail Plan would provide more detailed guidance regarding implementation, provide a comprehensive educational framework, would put greater emphasis on promoting navigational safety, directly address the potential spread of invasive species through NMSB use, and help further the goals of AB32 regarding GHG emissions. There is overlap between Strategies 25 and 26, in that improved education would enhance boater safety.

Strategy 25 would create an overall educational framework to support the various educational elements of the WT (signage, media, boater-to-boater education, stewardship, etc.). This comprehensive educational framework would include identification of available resources, and development of a centralized resource for up-to-date information on various WT-related topics. By creating a comprehensive educational framework, specific topics, such as appropriate buffer distances for sensitive species, would be clearly and consistently communicated across a wide range of educational media and activities.

Strategy 26 would build on existing information, education, outreach, and coordination efforts to enhance navigational safety by creating a focus on NMSB-specific safety education needs for San Francisco Bay. Safety training is currently conducted on an *ad hoc* basis by boating clubs, outfitters, tour operators, and instructional facilities. Strategy 26 calls for development of comprehensive safety education guidelines and basic information, drawing on existing, reliable sources of guidance such as Cal Boating and the U.S. Coast Guard. These guidelines and the identified basic information would help ensure that safety training provided by various organizations would meet a minimum standard. An accompanying train-the-trainer program would be enacted if feasible to provide a deeper level of knowledge to those who provide safety training. By providing a centralized forum for safety-related information, updated safety information can be provided more easily to those who provide safety education.

Strategy 26 also calls for safety-related signage, development of a WT “safety ethic” as part of the overall WT ethic, and an increased emphasis on promptly reporting incidents to provide an improved understanding of the causes of various types of incidents, and allow long-term improvement in navigational safety for NMSBs. Sharing information regarding accidents and their causes would help boaters understand the potential implications of their actions. Other efforts to improve navigational safety would include improved facility design, and education regarding the Rules of the Road, regulated navigation areas, and security zones.

Strategy 27 would encourage site owners/managers to provide boat and gear washing opportunities at their trailheads. Boat and gear washing facilities would help reduce the potential for spread of invasive plants by reducing the likelihood that seeds are carried from one location to another. Boat and gear washing facilities would be designed to comply with any permit requirements, and would be particularly encouraged in areas that are known to contain large populations of invasive plants.

Strategy 28 calls for the inclusion of measures (best management practices) to reduce GHG emissions in the design and construction of any new facilities constructed using SCC funding; WT staff and PMT efforts to encourage site owners/managers to implement a similar approach; and for the incorporation of climate change awareness and carbon footprint reduction strategies into WT educational materials. Strategy 28 will help reduce the emissions attributable to the implementation of the WT project and help further the goals of AB32.

## EVALUATION OF IMPACTS

### *RECREATION*

Alternative 3 would provide the same recreational benefits and have the same impacts to recreation as the Proposed Project because the quantity and types of facilities provided would be the same. While it is possible that improved safety training and information could create a minimal increase in WT users by elevating their confidence level, this increase would not be expected to create added impacts to recreational resources. Similarly, there would be no or minimal change to cumulative recreational impacts.

### *NAVIGATIONAL SAFETY*

The Enhanced WT Plan Alternative would improve navigational safety relative to the Proposed Project, beyond the level provided by the mitigations proposed in Section 3.4, because safety education would be more systematic, and likely more comprehensive, than what would be available with the Proposed Project. In addition, through targeted signage (and possibly other efforts such as warning buoys) safety information would be made available where it is most important and effective – at the trailhead and on the water. Strategy 26 also includes an emphasis on encouraging boaters to report incidents, and a mechanism for modifying safety information in response to the information gained from incident reports.

American Whitewater and the American Canoe Associations have similar recommendations for improving NMSB safety. They are to 1) provide better reporting of accidents, 2) improve coordination between paddle interest groups and government agencies, and 3) increase education efforts. American Whitewater found that many deaths were preventable by using simple precautions: 1) wearing PFDs, 2) better assessing water conditions, and 3) using proper (warm/waterproof) clothing. Other factors influencing boater safety include lack of adequate skills, lack of adequate equipment, lack of adequate information (pertaining to weather and/or water conditions), lack of knowledge of boating or equipment, and poor judgment. All of these factors could be ameliorated to some degree by an education program that stresses the need for proper preparation, training, and equipment, and provides information or links to information about weather and water conditions.

The potential value of additional safety education and an increased emphasis on safe boating is supported by both USCG and Cal Boating surveys. The USCG conducts annual wear surveys for PFDs; the survey includes eight sites in California. The 2005 national data showed that 74% of adult kayakers were wearing PFDs, but only 15% of canoeists. The 2002 National Recreational Boating Survey (Cal Boating 2009) California data indicate that only 72.3% of California kayakers wear PFDs all the time; the numbers for canoeists (65.6%), row boat users (40%) and

sail boat users (36.4%) are all lower. The percentage of respondents who said that they never wear a PFD ranged from 3.1% for kayakers to 36.4% for sailboat users.

Locally, 61% of experienced NMSB users and 75% of commercial/institutional survey respondents indicated that inexperienced/unprepared boaters presented a significant safety concern. This was the top concern for commercial/institutional respondents, and second only to interactions with motorized vessels for experienced NMSB users (Cal Boating 2009).

A safety program that emphasizes PFD use, adequate preparation, knowledge of the Rules of the Road, and understanding one's capabilities would reduce the potential for accidents on the water. Under Alternative 3, potential impacts to navigational safety would be less than for the Proposed Project, and cumulative impacts would similarly be less than for the Proposed Project.

#### *PUBLIC SERVICES*

The need for public services (such as police or ranger patrols) at trailheads would be the same as or very slightly less than the Proposed Project. Improved safety education may lead to a slight reduction in the need of emergency services relative to the Proposed Project. The cumulative impact to public services would also be the same or very slightly less under the Enhanced Water Trail Plan Alternative than the Proposed Project.

#### *AESTHETICS*

The approach to evaluating and developing potential trailheads would be the same as for the Proposed Project, and the number and location of potential sites would be identical to the Proposed Project. Consequently, the potential project-specific and cumulative impacts to aesthetics associated with Alternative 3 are the same as for the Proposed Project.

#### *BIOLOGICAL RESOURCES – VEGETATION*

Potential impacts to sensitive habitats, special status plants, and the potential for spread of invasive vegetation would be slightly lower under Alternative 3 than for the Proposed Project. Implementation of Strategy 25 may lead to a higher success rate in motivating WT users to avoid sensitive habitats and special status plants and to comply with boat-washing guidelines. Increased availability of boat washing facilities (Strategy 27) would facilitate compliance with boat washing recommendations, which would help to reduce the potential impact associated with the spread of invasive species. Improved knowledge about safe boating practices as provided through Strategy 26 may decrease emergency landings in locations other than designated destinations and launches. . The addition of Strategies 25 through 27 would slightly reduce the potential project-related and cumulative impacts to vegetation of Alternative 3 compared with the Proposed Project.

#### *BIOLOGICAL RESOURCES – BIRDS*

##### **Rafting Waterbirds, Nesting Waterbirds (Including Sensitive Species), and Tidal Marsh Birds**

Under Alternative 3 there would be the same number of trailheads in the same locations as the Proposed Project. The goal of Strategy #25 is to lead to even better dissemination of educational information, including information pertaining to the protection of sensitive and listed species. Implementation of Strategy 25 may lead to a slightly higher success rate in motivating WT users

to avoid rafting birds and to recognize when birds are alerting than under the Proposed Project. Potential project-related impacts would therefore be potentially slightly less than for the Proposed Project, and cumulative impacts would also be slightly less.

### **Tidal-flat Specialists (Shorebirds)**

As with the Proposed Project, this Alternative would result in no significant disturbance to shorebirds. Therefore, there would be no difference in impacts between this Alternative and the Proposed Project; cumulative impacts would also be the same.

## *BIOLOGICAL RESOURCES – OTHER WILDLIFE*

### **Seals**

Alternative 3 would include the same number of trailheads in the same locations and with the same level of improvements as the Proposed Project. Use of any of these trailheads by WT users could potentially result in the disturbance to harbor seals at haul-outs by boaters, and contribute to avoidance or abandonment of traditional haul-out sites due to project and cumulative increased use of the Bay by NMSBs. Implementation of Strategy 25 may lead to a slightly higher success rate in motivating WT users to avoid seal haul-out sites and to recognize when seals are registering alarm. Potential project-related impacts would therefore be potentially slightly less than for the Proposed Project, and cumulative impacts would also be slightly less.

### **Other Marsh-Dependent Sensitive Species**

Potential impacts to other marsh-dependent sensitive species would be almost the same as for the Proposed Project. Implementation of Strategy 25 may lead to a slightly higher success rate in motivating WT users to avoid sensitive habitats and disturbance to marsh-dependent species, and thereby slightly reduce potential project and cumulative impacts to these species.

## *CULTURAL RESOURCES*

The level of development at the existing, planned and potential future sites would be the same as for the Proposed Project. Thus development under Alternative 3 has the same potential to affect buried cultural resources as the Proposed Project. Similarly, cumulative impacts would remain the same.

## *HAZARDOUS MATERIALS*

For the Enhanced Water Trail Plan Alternative, WT trailheads would be located in the same locations as for the Proposed Project, and would thus have the same likelihood of encountering contamination during development of new (planned) access sites or during major facility improvements. Therefore, potential hazardous materials impacts of Alternative 3 would be the same as for the Proposed Project, and potential cumulative impacts would be the same as well.

## *HYDROLOGY AND WATER QUALITY*

The level of construction and development, including impervious surfaces at trailheads around the Bay would be the same for the Enhanced Water Trail Alternative as for the Proposed Project. Strategy 27 would encourage the inclusion of boat rinsing facilities at trailheads. The use of these stations would not adversely affect water quality because only fresh water would be used. Potential impacts associated with Alternative 3 would therefore be the same as for the Proposed Project. Cumulative impacts would also be the same.

*LAND USE PLANNING*

Most local land use plans for bayside jurisdictions and land management agencies support access to the Bay. As mentioned above, Alternative 3 would result in the same level of development at WT trailheads as the Proposed Project, and would therefore have the same types and level of potential impacts. Similarly, potential cumulative impacts to land use would also be similar and remain less than significant.

*TRANSPORTATION, CIRCULATION AND PARKING*

Demands for parking would be the same for the Enhanced Water Trail Plan Alternative as for the Proposed Project, because the level of development would be the same for both. Modified Strategy 8 (incorporating mitigation measure TCP-M2) would ensure that parking at all WT trailheads is provided in accordance with the anticipated need and consistent with local jurisdiction requirements. Project-specific and cumulative impacts would be the same for Alternative 3 as for the Proposed Project.

*GREENHOUSE GASES AND CLIMATE CHANGE*

Under Alternative 3, the same level of proposed construction of new facilities and facility improvements would occur as for the Proposed Project. Growth in NMSB use and associated vehicle use would also be the same. Strategy 28 would encourage reduction in construction and operational GHG emissions through design, construction practices, and education. Consequently, potential GHG emissions for the Enhanced Water Trail Alternative are expected to be slightly lower than GHG emissions under the Proposed Project. Cumulatively, potential generation of GHG for Alternative 3 would be slightly lower than the Proposed Project and potential cumulative impacts would remain less than significant.

## **5.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

CEQA Guidelines (Section 15126.6(a) and (e)(2)) require that an EIR's analysis of alternatives identify the "environmentally superior alternative" among all of those considered. In addition, if the No Project Alternative is identified as environmentally superior, then the EIR also must identify the environmentally superior alternative among the other alternatives. Under CEQA, the goal of identifying the environmentally superior alternative is to assist decision makers in considering project approval. CEQA does not, however, require an agency to select the environmentally superior alternative, nor to consider the feasibility of environmentally superior project alternatives identified in the EIR if described mitigation measures will reduce environmental impacts of the approved project to acceptable (less than significant) levels. (*Laurel Heights Improvement Association of San Francisco v. Regents of the University of California*, 47 Cal.3d 376, 400-3 (1988); *Laurel Hills Homeowners Association v. City Council* 83 Cal. App. 3d 515 (1978), CEQA Guidelines Sections 15042–15043). Given that the Proposed Project, as mitigated, avoids or reduces to less than significant levels all potential impacts, the lead agency may elect to adopt the Proposed Project, incorporating all mitigation measures.

Based on the above analysis, the Enhanced Water Trail Plan Alternative would be the environmentally superior alternative. This alternative would provide, at a minimum, the same level of protection (impact reduction) as the Proposed Project for all resources. Potential impacts to all resources would remain less than significant. The increased emphasis on safety would reduce the potential navigational safety impacts associated with increased NMSB use of the Bay,

relative to the Proposed Project. The improved sharing of information about incidents would provide further opportunities for enhancing NMSB safety on the Bay by helping project proponents and NMSB users become aware of potential safety concerns. The comprehensive educational framework would improve the effectiveness of the various educational and outreach initiatives included in the Proposed Project, and therefore potentially further reduce potential impacts to biological resources. The increased number of boat washing facilities promoted by Strategy 27 would help reduce the potential for spread of invasive plants. Finally the greater emphasis on GHG reductions would result in a small decrease in construction and operational emissions of GHGs compared to the Proposed Project.

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## 6. REPORT PREPARERS, REFERENCES AND DEFINITIONS

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## **6.0 REPORT PREPARERS, REFERENCES AND GLOSSARY**

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### **PERSONAL COMMUNICATIONS**

Brian Aviles, GGNRA, January 10, 2008.

Peter Bay, personal communication with Gavin Archbald 2009

Peter Bay, personal communication with Katharyn Boyer 2009

V. Bloom, USFWS, January 30, 2008.

James Browning, USFWS, May 27, 2008.

Winnie Chan, USFWS, January 22, 2008

S. Euing, July 3, 2009

Emma Grigg, January 27, 2010

Emma Grigg, personal communication with S. Allen, National Park Service, July \_\_2010

Emma Grigg, personal communication with D. Greig, The Marine Mammal Center, July \_\_2010

Emma Grigg, personal communication with J. Ryan, Don Edwards San Francisco Bay National Wildlife Refuge, July \_\_2010

Roger Jaeckel, California Maritime Academy, December 1, 2009.

R. Leong, USFWS, January 17, 2008.

Bob Licht, January 7, 2008

Mia Manroe, GGNRA, January 7, 2008.

Steve Ortega, GGNRA, January 7, 2008.

John Sindzinski, WETA, January 9, 2008

Penny Wells, January 9, 2008

### **WEBLINKS**

[www.efloras.org](http://www.efloras.org)

### 6.3 GLOSSARY

**Access point** – A shoreline location where human-powered boats and/or beachable sail craft can be launched and/or landed. Term refers to both launch and destination sites.

**Backbone Site** – Existing or planned access points on the Bay, as identified in the draft Water Trail Plan, for non-motorized small boats. These sites include both launch and destination sites, are open to the public, and do not have conditions that would preclude inclusion in the Water Trail.

**California Bay-Delta Authority** – The California Bay-Delta Authority oversees the implementation of the CALFED Bay-Delta Program for the 25 state and federal agencies working cooperatively to improve the quality and reliability of California’s water supplies while restoring the Bay-Delta ecosystem. The Authority is comprised of state and federal agency representatives, public members, a member of the Bay-Delta Public Advisory Board, ex-officio legislative members and members at large.

**Bay Plan** – The San Francisco Bay Plan was completed and adopted by BCDC in 1968 and was adopted by the State of California in 1969. The Bay Plan contains policies to guide current and future uses of the Bay and shoreline, and maps that apply these policies to the present Bay and shoreline. BCDC may amend the Bay Plan from time to time as long as the changes are consistent with the McAteer-Petris Act.

**Bay Trail Plan** – The Bay Trail Plan was adopted by ABAG in July 1989. It is a plan to develop a trail that forms a “ring around the Bay.” It includes a proposed trail alignment; a set of policies to guide the future selection, design and implementation of routes; and strategies for implementation and financing.

**Cal Boating** – California Department of Boating and Waterways. Cal Boating’s mission is to provide safe and convenient public access to California’s waterways and leadership in promoting the public’s right to safe, enjoyable, and environmentally sound recreational boating.

**Canoe** – Small boat usually crewed by one to three people, open-hulled and propelled by single-bladed paddles. Suitable for protected waters.

**Conservancy** – California State Coastal Conservancy. The Conservancy is a state agency established in 1976 to work with others to preserve, protect and restore the resources of the California Coast.

**Destination site or landing site** – A shoreline location where human-powered boats and/or beachable sail craft can land, but from which they cannot or should not be launched. A destination site still needs to have, at a minimum, facilities for landing and then re-launching a non-motorized small boat (e.g. a ramp, float, beach, etc.). Most of these landing-only sites are neither accessible by car (e.g. Angel Island) nor within a reasonable distance for boaters to transport their boats to the launch.

**Dinghy** – See **Rowboat**.

**Dragon Boat** – Relatively large, open-hulled small boat up to 45-feet long and usually crewed by 22 paddlers. Some designs are suitable for open waters. Frequently raced.

**Embayment** – A small indentation of the shoreline, possibly including a small beach.

**High Opportunity Sites** - A subset of Backbone access points requiring minimal planning, management changes and improvements on which initial implementation of the Water Trail Plan will be focused. In addition, such sites do not require additional improvements beyond signage. No major management issues (e.g. user conflicts, wildlife disturbances, and health risks from poor water quality) are expected to be caused by trailhead designation that would require further site assessment, planning or management changes prior to designation.

**Human-powered boats and beachable sail craft** – Any type of paddle or rowing vessel (e.g., kayak, dragon boat, rowboat, scull, etc.), or sailboard (windsurfer or kiteboard). The terms are used interchangeably with “NMSBs” to refer to the WT user groups.

**Kayak** – Relatively long (12-19 feet) and thin, small boat crewed by one or two people and maneuvered by a single double-bladed oar. Includes traditional kayaks (sea or touring kayaks) and sit-on-top kayaks (restricted to calm waters and suitable for users with relatively little training).

**Kiteboarder/Kitesurfer** – Board strapped to feet of single user, propelled by kite attached via harness. Needs 10-25 knot winds.

**Landing site** – See “Destination site.”

**Launch site** – A shoreline location where human-powered boats and/or beachable sail draft gain access onto the Bay or a waterway connected to the Bay.

**McAteer-Petris Act** – Passed in 1965, this act established BCDC and mandated the development of the Bay Plan.

**Non-motorized small boat (NMSB)** – Any type of paddle or rowing vessel (e.g. kayak, dragon boat, rowboat, scull, etc.), or sailboard (windsurfer or kiteboard). This phrase is used interchangeably with “human-powered boats and beachable sail craft” to refer to the WT user groups.

**Outrigger Canoe** – Open-hulled, small boat up to 40-feet long, usually crewed by six paddlers, well-suited to Bay open waters. Frequently raced.

**Paddlesport** – Includes use of kayaks, canoes, dragon boats, sculls, whaleboats and rowboats or dinghies. Also includes rafting (not common on San Francisco Bay).

**Participant-days** – The total number of days that NMSBs are used. For example, one NMSB used 12 days would constitute 12 participant-days. Two NMSBs used 4 days each would constitute 8 participant-days.

**Rowboat** – Relatively wide, heavy, small boat usually rowed by one person, stable.

**Rules of the Road** – USCG’s Inland Navigation Rules.

**Safety Exclusion Zone** – Areas where navigation is prohibited to protect land-side facilities and/or protect boaters from hazards.

**Sailboard** – See **windsurfer** and **kiteboarder**.

**Scull** – Narrow and long, open-hulled small boat with two, four, or eight rowers with long rowing oars. Requires calm water. Team racing is popular.

**Site designation** – Inclusion of a boat launch or destination site into the Water Trail. Once a site has been designated, it is considered a trailhead and can be promoted as part of the WT. Ownership and responsibility for site management remain with the site manager and/or owner (i.e. these do not transfer to the WT organization). A trailhead can be undesignated by the WT Project Management Team. This removes it from the WT, and thus from any education or outreach media (e.g. guidebook, website, etc.). However, undesignating a site does not necessarily affect the availability of access and facilities at the site.

**Take** – Under Section 3(18) of the Endangered Species Act: “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” with respect to federally listed endangered species of wildlife.

**Trailhead** – A boat launch or destination site that has been designated as part of the Water Trail.

**Trailhead Plan** – A plan prepared by the WT Site Manager that describes existing site features and proposed WT-related improvements, management and maintenance, and education, outreach and stewardship actions for the WT site and how these support the vision and goals of the Bay Area Water Trail. The Trailhead Plan identifies who will be responsible or take the lead for implementing the proposed components and should include a budget describing funding that the site manager is seeking for the trailhead development.

**United States Code** – the code of laws of the United States. Also known as the "U.S. Code," it contains 50 titles, each of which covers a subject area such as Agriculture, Labor, and Public, Health and Welfare. As each new law is passed, the relevant sections of the code are modified and updated.

**Water Trail Plan** - San Francisco Bay Area Water Trail Plan.

**Water Trail** – A network of launch and destination, or landing, sites that allow people in human-powered boats and beachable sail craft to take multiple-day and single-day trips on the Bay.

**Whaleboat** – Wide, heavy rowboat with a usual crew of 10 (eight rowers). Stable in open waters. Frequently raced.

**Windsurfer** – Board 6-10 feet long with removable mast and single sail, maneuvered by single user, requires strong (15-30 knot) winds.

## **ACRONYMS AND ABBREVIATIONS**

|          |   |
|----------|---|
| AB 1296  | Water Trail Act   |
| ABAG     | Association of Bay Area Governments                       |
| ADA      | Americans with Disabilities Act                           |
| BCDC     | San Francisco Bay Conservation and Development Commission |
| BMP      | Best Management Practice                                  |
| BNA      | Boating Needs Assessment (2002 Cal Boating Report)        |
| CalEPA   | California Environmental Protection Agency                |
| CalTrans | California Department of Transportation                   |
| CDBA     | California Bay-Delta Authority                            |
| CCP      | Comprehensive Conservation Plan                           |

|         |   |
|---------|---|
| CDBA    | California Dragon Boat Association                            |
| CEQA    | California Environmental Quality Act                          |
| CESA    | California Endangered Species Act                             |
| CMA     | Congestion Management Agency                                  |
| CNPS    | California Native Plant Society                               |
| CSU     | California State University                                   |
| CWA     | Federal Clean Water Act                                       |
| DEIR    | Draft Environmental Impact Report                             |
| DFG     | California Department of Fish and Game                        |
| DWR     | California Department of Water Resources                      |
| EIR     | Environmental Impact Report                                   |
| EBRPD   | East Bay Regional Park District                               |
| ESA     | Federal Endangered Species Act                                |
| GGNRA   | Golden Gate National Recreation Area                          |
| HOS(s)  | High Opportunity Site(s)                                      |
| HSC     | Harbor Safety Committee of the San Francisco Bay Region       |
| MARAD   | U.S. Department of Transportation Maritime Administration     |
| MMPA    | Marine Mammal Protection Act                                  |
| MROSD   | Midpeninsula Regional Open Space District                     |
| NEPA    | National Environmental Policy Act                             |
| NHPA    | National Historic Preservation Act                            |
| NMSB(s) | Non-motorized small boat(s)                                   |
| NSMWA   | Napa Sonoma Marshes Wildlife Area                             |
| NWR     | National Wildlife Refuge                                      |
| NOA     | Notice of Availability  |
| NOAA    | National Oceanic and Atmospheric Administration               |
| NOP     | Notice of Preparation   |
| NPPA    | California Native Plant Protection Act                        |
| NPS     | U.S. Department of the Interior, National Park Service        |
| OSPR    | Lempert-Keene-Seastrand Oil Spill Prevention and Response Act |
| PMT     | Project Management Team                                       |
| RNA     | Regulated Navigation Area (established by U.S. Coast Guard)   |
| SD      | Site Description  |
| SF      | San Francisco   |
| SPRR    | Southern Pacific Railroad                                     |
| SWPPP   | Storm Water Pollution Prevention Plan                         |
| SWRCB   | California State Water Resources Control Board                |
| TH      | Trailhead   |

|        |   |
|--------|---|
| U.S.C. | United States Code  |
| USCG   | United States Department of Homeland Security, United States Coast Guard          |
| USEPA  | United States Environmental Protection Agency                                     |
| USFWS  | United States Department of the Interior, United States Fish and Wildlife Service |
| VTS    | Vessel Traffic Service  |
| WETA   | San Francisco Bay Water Emergency Transportation Authority                        |
| WT     | San Francisco Bay Area Water Trail  |
| WTA    | San Francisco Bay Water Transit Authority – replaced in 2007 by WETA              |

